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**Project-Based Organizing and Strategic Management:
A Long-Term Research Agenda on Temporary Organizational Forms**

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A Long-Term Research Agenda on Temporary Organizational Forms

Abstract

The last several years have witnessed a growing scholarly interest in project-based organizations. This interest mirrors the diffusion of this organizational form across a wide range of industries, well beyond those where organizations have been traditionally organized by projects. To date, however, research on project-based organizations has not yet offered a systematic investigation of the interactions between project-based organizing and strategic management research. An examination of the existing literature indicates that some of the answers to key strategy questions remain incomplete, at times contradictory, and at best ambiguous. This volume moves the discussion to the next level by offering a comprehensive yet integrated view of cutting edge research on project-based organizing to shed light on some of these ambiguities and clarify the relationship between project-based organizing and strategic management. To accomplish this, the volume includes the contributions of several leading scholars who have been active researchers on this subject. The articles develop and extend key strategic aspects of project-based organizing, raise many new important questions, and identify fruitful areas for future research.

INTRODUCTION

Project-based organizing of company operations is pervasive in today's economy. Early research in this area has been primarily focused on projects as temporary organizational configurations for allocating personnel and resources within stable firms (Hobday, 2000; Davies and Brady, 2000; Gann and Salter, 2000; Prencipe and Tell, 2001). Yet, besides the use of projects as coordinating mechanisms within established companies, project-based organizations – whereby the company is little more than a set of contracts that ceases to exist once the project is completed – can be found across a wide range of industries. Industries where project-based organizations are widespread include: music (Peterson and Berger, 1971; Lorenzen and Frederiksen, 2005), movies (Baker and Faulkner, 1991; Cattani and Ferriani, 2008; Lorenzen and Täube, 2008; Ferriani, Cattani and Baden-Fuller, 2009), software (Ibert, 2004), television (Windeler and Sydow, 2001), construction (Eccles, 1981; Gann and Salter, 2000), new media (Grabher, 2002) and professional service firms such as consulting (Haas, 2006; Semadeni and Anderson, 2010). Also, contemporary industry trends such as 'patching' (Eisenhardt and Brown, 1999) and 'e-lancing' (Malone and Laubacher, 1998) are indicative of the widely shared notion that, across the board, economic action seems to be increasingly taking place in small temporary systems of work organization rather than large permanent organizations (Malone and Laubacher, 1998; March, 1995).

Alternatively referred to as temporary systems (Meyerson, Weick and Kramer, 1996), project-based enterprises (DeFillippi and Arthur, 1998), ephemeral organizations (Lanzara, 1983), synthetic organizations (Thompson, 1967) or single-project organizations (Faulkner and Anderson, 1987; Baker and Faulkner, 1991), these forms of temporary organizing typically appear in the volatile context of market-based free-lance contracting, where they are deliberately created for a limited purpose and disbanded upon its completion. To cope with highly dynamic environments, wherein product demand shifts rapidly and often unpredictably, project-based organizations bring together specialists to work as a team and provide their expertise to a specific task, without any expectation of continued employment or subsequent cooperation after the successful completion of that goal (Bechky, 2006). A project refers to a temporary endeavour undertaken to create a unique result based on a specified business case. In other words, a project is an organizational arrangement often with an agreed pre-defined time frame for initiation and potential ending among participants. It is usually task-driven as it brings together and co-ordinates specialized skills,

resources and knowledge required to complete the project task within time, cost, quality and other business constraints typically by carrying out a series of (largely) non-routine activities.

Over the past ten years scholarly literature has paid increasing attention to this phenomenon, resulting in a body of research that has grown (and continues to grow) exponentially. According to Bakker's (2010) systematic review, a total to 61 studies with an explicit focus on temporary organizational forms were published in books and ISI-indexed journals in the last decade (1998–2008), against 18 studies a decade before (1988–1998)—an increase of 339% (see Figure 1).

<< Figure 1 above here >>

The increasing scholarly interest in project-based organizing calls for a deeper investigation of its theoretical implications for strategic management research. A key strategy question is how firms achieve and sustain their competitive advantage. In the face of a rapidly changing environment, received explanations point to the following conceptual building blocks: a firm's distinctive *capabilities*, the processes by which those capabilities are *learned*, and the relational *context* in which those capabilities are learned and deployed. Specifically, it is the dynamic interaction between capabilities, learning and relational context that ultimately determines whether firm success is long lasting or short-lived.

Extant research on project-based organizing challenges these explanations by showing how capabilities, learning and relational context prove rather elusive concepts within the province of temporary organizational arrangements. The purpose of this volume is to shed new light on how these concepts remain central for our understanding of project-based organizing and its performance implications. The challenge – taken up in this volume – is to promote a view that expounds the relationship between projects and strategic management. As we shall see, while capabilities, learning and relational context remain key conceptual building blocks, some adjustments are needed to account for the unique features of project-based organizing. For instance, given the temporary nature of many project-based enterprises, the context in which capabilities are learned and deployed does not necessarily coincide with the conventional notion of the 'firm' or the 'organization,' but embraces instead the broader web of relationships the actors working on a project formed in previous collaborations (i.e., projects they worked on together). If repeated, these relationships promote trust among the parties involved and function as critical repositories of shared learned experiences and knowledge that can be retrieved as the same actors work together on a new project. As a result, projects are

not necessarily carried out in a social vacuum, but are often socially embedded in a network of previous interactions. This ultimately affects how efficiently and effectively those projects are completed, how participants in new projects are brought together, and how learning and capability building occur within and across (project-based) organizations.

As research on project-based organizing has increasingly incorporated these concepts, an examination of the existing literature indicates that some of the answers to the central questions on this subject still remain incomplete, at times contradictory, and at best ambiguous – especially with respect to the three conceptual building blocks previously mentioned. This volume seeks to shed light on some of these ambiguities by grouping those “central questions” into five major subthemes.

The first subtheme pertains to *definitions and connotations*. With an outset in discussions and generalizations from the relative few prior studies on this research area, the subtheme addresses the following fundamental question: What does project-based organizing really mean? There seems to be consensus around the idea that projects are transitory organizational configurations for allocating personnel and resources. However, a similar consensus is lacking on the question of whether project-based organizing should be restricted to temporary as opposed to stable organizations. For scholars to build a truly informative and significant body of research in this area, it is critical for them to be clear on definitional issues. Also, it is important to ensure that the way project-based organizing is empirically defined is consistent with and appropriate to their conceptual definitions.

The second issue pertains to *temporary structure and permanent learning*. How do temporary organizational structures encode lessons from history and experience? By encoding inferences from history into their enduring routines, organizations learn, memorize and adapt incrementally in response to performance feedback. But while permanent organizational structures allow for the conservation of organizational experience even in the presence of considerable loss of individual actors (Levitt and March, 1988), project-based organizations epitomize a model where no structure persists, as the organization is dissolved once the task is completed. Because project-based organizations have neither past nor future, the usual emphasis on organizational continuity and history as learning vehicles does not appear entirely appropriate. In the course of the short-term life-span of project-based organizations, the locus of learning

shifts continuously across boundaries, undercutting the reassuring coherence and integrity of the firm or the organization as the basic analytic building block (Grabher, 2002).

The third subtheme pertains to *projects, capabilities and innovation*. How is innovation and capability-building carried out by relying on temporary organizational arrangements? While the high flexibility of project-organizing allows companies to modify direction speedily as knowledge and markets evolve, it restricts the development of shared collective identities and firm-specific capabilities through collective learning (Kogut and Zander, 1996). The degree to which project-based organizations can nurture idiosyncratic organizational capabilities appears tightly linked to their longevity, specificity of outputs, and coordination mechanisms. When the project is the organizational vehicle through which permanent organizations address a given knowledge challenge or explore a new knowledge domain with a core group of employees who remain with the firm for some time, then distinctive capabilities which provide the basis for competitive advantage can be developed. Instead, the locus of capability development is more problematic when projects are set up to develop one or a small number of discrete, separate product or service types, and therefore employment contracts are highly project specific. In such cases, as noted by Whitley (2006, p. 93), “insofar as learning does occur in the course of the project, it will be largely accomplished and appropriated by individuals and small teams.” This and related issues seem to be crucial for a deeper understanding of the processes that underlie organizations’ ability to renew themselves and sustain competitive advantage, especially when projects are the privileged organizational setting wherein prototypes and novel principles are tested on a small scale before they are rolled out as templates for the entire organization or market.

The fourth subtheme pertains to *projects and networks*. It relates to the relational context in which learning (at the individual, team and organizational level) occurs, and in which capabilities are developed and used. Indeed, no temporary organization operates in a social vacuum (Engwall, 2003). Even highly singular projects are usually influenced by the wider enduring interpersonal networks and epistemic communities in which their participants are embedded. Social networks involving mobile workers are rich learning environments that act as repositories of information and knowledge that can be mobilized across projects (Bakker, 2010). These interpersonal networks and epistemic communities also share the same conventions and behavioural expectations about, for instance, what a certain task or role (e.g., a movie director, a software engineer, or an industry consultant) actually entails, so that collaboration on a new

project can go on without difficulty (Bechky, 2006). As awareness of the relevance of projects and the temporary nature of associated networks increases, strategic management research must address questions of governance and content of such project networks which differ from more permanent inter-organizational relationships.

The final subtheme pertains to *future directions and emerging paths*. What are the newly emerging themes and most promising avenues for future research? As project-based organizing has become pervasive in today's economy across both temporary and stable organizations, scholars have moved from recognizing the empirical significance of the phenomenon to theorizing on it, to proposing conceptual refinements or extensions. While the recognition that projects are socially embedded points to the influence of the social context in which projects are carried out, it becomes increasingly important to probe the relationship between project-based organizing and the broader institutional environment. Do project-based organizations engage in isomorphic behaviour? Do they face the same conformity pressures from existing institutions that more stable organizations do? How does project-based organizing contribute to changing those institutions?

In the organization of this volume, we tackle each of these subtheme questions and then provide an overview of the 18 papers included in this special research forum on project-based organizing and strategy. As we shall see, these contributions directly or indirectly contribute to a deeper understanding of the social embeddedness of projects, the learning processes unfolding in project-based settings and the development of project-related capabilities—which represent key research foci for any systematic investigation of project-based organizing. The volume brings together a group of scholars interested in project-based organizing, many of whom have been actively involved in a three-year long period of community-building efforts at the Academy of Management Annual Meetings in Anaheim (2008), Chicago (2009) and Montreal (2010).

The selected articles span all levels of analysis: the individual, whether operating in a team or an organizational context (Davies, Brady, Prencipe and Hobday; Lampel; Svejenova, Strandgaard Pedersen and Vives); a project team (Muethel and Hoegl); a single project (Nightingale and Brady; Maoret, Massa and Jones); the organization (DeFillippi and Lehrer; Müller-Seitz and Sydow; Mangematin, Blanco, Genet and Deschamps; Nightingale, Baden-Fuller and Hopkins; Söderlund and Tell; Perretti); social networks (Skilton; Al-Laham and Amburgey; Simon and Tellier) or the wider social context (Woodard and West); and some chapters encompass multiple levels, whether implicitly (Garud, Kumaraswamy and Tuertscher) or explicitly

(Schwab and Miner). The papers therefore range from micro to macro, and we have arranged them in accordance with their treatment of the various issues discussed earlier: social networks, learning and capabilities. Table 1 indicates the link between each chapter and such issues based on our perception of the papers' contributions to them. The next section identifies a set of key research questions that, we believe, should guide future research efforts on the topic of project-based organizing and strategic management.

<< Table 1 above here >>

SOCIAL STRUCTURE AND THE NETWORK EMBEDDEDNESS OF PROJECTS

Over the past two decades several scholars have emphasized that project-based organizations are influenced by the wide enduring interpersonal networks and social structures in which their participants are embedded (Faulkner and Anderson, 1987; Jones 1996; Sydow and Staber, 2002). As noted by Manning and Sydow (2011, p. 33): “Project researchers [...] have increasingly studied the embeddedness of temporary projects in long-term organizational, relational and institutional structures.” While in fact projects are temporary, ties among the parties (individuals or organizations) involved may survive them. Many scholars have observed that the same project-members often cooperate repeatedly, even routinely. For example, Grabher (2004, p. 1492) argued that project-based organizations must be regarded “as inextricably interwoven with a ... social context which provides key resources of expertise, reputation, and legitimization.” In the development of complex industrial products and systems, system integrators typically collaborate repeatedly with specialized component suppliers (Hobday, 2000). Client projects are often complex and customized, and entail long-term service relationships and follow-up projects on the same or related systems (Gann and Salter, 2000). Collaborative experience promotes trust in the ability of partners, which is an important factor in partner selection (Manning, 2010). Prior studies also suggest that team interdependence may emerge among project-participants and reinforce the strength and longevity of ties (Ferriani, Corrado and Boschetti, 2005). In sum, project networks—which are the result of past collaborations and the medium through which future collaborations develop—act as a repository of learned experiences, knowledge and behavioural norms.

In light of the previous considerations, it seems appropriate to use such terms as *social structure* as a metaphorical way of referring to the recurring networks in which projects might be embedded. Some forms of project work recur frequently, others occasionally, some very seldom. As Manning and Sydow (2011, p.

5) pointed out: “[...] since projects are limited in time, the very future of project-based relationships is often highly uncertain; many relationships do not even exceed one single project.” It is in the latter case that project-based organizing seems to be especially challenging as new individuals work on the project for the first time and no prior relationship can be relied upon. Project participants could, of course, decide everything again on each occasion. In fact, people who collaborate on a project usually do not decide things anew, even if they meet for the very first time. *How do project participants arrive at the terms on which they will cooperate? What is it that allows temporary organizations to perform smoothly even in the face of strong time pressures and lack of familiarity among project participants?*

Some scholars have argued how the answers to these questions might be found, at least in part, in those shared understandings and norms that have become part of the accepted way of doing things (Jones, 1996; Jones and Lichtenstein, 2008). These norms regulate rights and obligations of parties and get embodied in equipment, materials, training, facilities, sites or enduring role systems (Bechky, 2006). Even as the project participants do not act together recursively, their replacements are typically proficient in the use of the same conventions so that collaboration can go on without difficulty. But *how does this “grammar of interaction” emerge? How do temporary arrangements become encoded into institutionalized norms? What does turn spot agreements into customary practices?*

LEARNING IN PROJECT-BASED ORGANIZATIONS

The challenges project-based organizations pose to our understanding of knowledge transfer and learning are significant as they rely on transient labor arrangements. The notion of organizational learning is elusive, but in a general sense it involves a form of collective memory that is derived from an organization’s past experiences and that is stimulated by the shared activities of its individual members or collaborators (Cohen and Sproull, 1996). Temporary organizations, however, do not have a collective memory that synthesizes their past experience, nor do they encode inferences from history as there is no ostensible past to build upon and drive their behaviour. They depend on an elaborate body of collective knowledge and diverse skills, even though not enough time is available to ascertain abilities and competences of members in order to plan for a detailed division of labour (Lindkvist, 2003). Most importantly, there seems to be little time to engage

in the usual forms of confidence-building activities that contribute to the development of trust in more traditional, enduring organizational forms (Meyerson et al., 1996).

Because of the prominence given to knowledge and learning as sources of sustainable competitive advantage, the extent to which individual learning can be translated into organizational learning is a key strategic issue for any organizations. However, this outcome is predicated on individuals' willingness to share knowledge with organizations they are merely passing through. These considerations raise important questions for researchers in strategic management: *How does organizational learning occur under conditions of project-based organizing? Which mechanisms (if any) allow project-based organizations to retain their learned experiences, combine their knowledge assets and consistently integrate them into valuable organizational practices?*

A related set of key questions stems from the observation that project learning typically entails different levels of analysis. Tell and Prencipe (2001), for instance, developed a fine-grained analytical framework which suggests that project-to-project learning can only be valued and properly understood if observed as a multi-level construct, without being restricted to a narrow focus on the codified outcomes of a single project. Brady and Davies (2004) further elaborated this framework by proposing a stage model of learning from projects where learning unfolds as a firm moves strategically over time from 1) ambiguous vanguard projects, by which a firm seeks to venture into new technological domains or markets, to 2) project-to-project learning, to 3) more routinized project capabilities embedded in the wider organizational context. It is noteworthy that in a project-based setting, learning has to be distinguished between these different levels: learning from individual project outcomes (e.g., from a specific new prototype) is understood as fundamentally different from learning that results from synthesizing experiences from one successful project to another. Rather than just focusing on knowledge management and learning inside projects we need to understand how project teams engage in learning processes across intra- and inter-organizational boundaries. In other words, the relevant question shifts the locus of memory from the project level to the organizational level. In this sense we need to know more about how learning from projects is transferred and stored in various knowledge bins (Walsh and Ungson, 1999). But then *what are the benefits and problems of learning relative to the organization of multiple projects running simultaneously? How does project learning unfold across levels of analysis?*

CAPABILITIES IN PROJECT-BASED ORGANIZATIONS

The defining characteristics of project-based organizations are that they grow and evolve by working on a series of discrete and diverse projects. Typically, the (project) objective is to produce a unique output, which is delivered in a context of flux in which “elements are combined, taken apart and recombined in a continuous process of organizational formation and dissolution” (Baker and Faulkner, 1991, p. 283). This task is far removed from the repeated problem-solving effort that characterizes stable organizations – which draw more heavily from well established routines to guide their search for solutions (Levitt and March, 1988). As Whitley pointed out (2006, p. 81), the more unique outputs are, the more likely that “organizations will have to deal with exceptions to their routines and adjust to variations in materials and the work environment.” Stinchcombe and Heimer (1985, p. 26) further clarify that a project is a dynamic structure because every aspect of it “must be administered as if it were an innovation or a response to an unusual happening” – whereas traditional volume-based production is predictable, repetitive and programmed.

From a capability-based perspective, projects are used to enact and upgrade existing capabilities, or create new capabilities. The ultimate R&D or new product development projects are the prime example of this type of project-driven capability building. Such *vanguard* projects are often described as “singular” (Whitley, 2006) in that they are defined by their outcome and there exists no client *ex ante*. Vanguard projects might evolve into entrepreneurial ventures through which innovation is brought to the market (Frederiksen and Davies, 2008). Many commentators have highlighted the usefulness of this organizational form for innovation (Mintzberg, 1983; DeFillippi and Arthur, 1998), including the advantages of bringing together a diverse set of skills, knowledge and capabilities. However, the episodic nature of project-based learning that characterizes capability development gives rise to a particular pattern of organizational development that can further innovation but undermine long-term learning.

Most projects thus create an opportunity to refine existing capabilities as well as nurturing new ones (Keegan and Turner, 2002; Turner and Keegan, 2000; Prencipe and Tell, 2002; Acha, Gann and Salter, 2005). Interestingly, the papers in this volume implicitly underline the fact that under certain conditions projects serve as organizational arrangements for exploiting existing operational capabilities (e.g., carrying out projects replicating an established procedure) and/or building new capabilities (Davies and Frederiksen,

2010). The papers in this subtheme contribute to sharpening our understanding of how innovation strategies are envisioned and enacted through projects and how these efforts are eventually turned into new capabilities. Specifically, *how and when can company innovation best be managed and organised through projects? How do capabilities unfold in project-based organizations? What processes underpin the genesis and evolution of project capabilities? Can project-based capabilities promote path dependencies and eventually turn into “core rigidities”?*

THE WORK IN THIS SPECIAL RESEARCH FORUM

The idea for this volume on project-based organizing in strategic management originated from a set of three consecutive professional development workshops and symposia organized by the guest editors at the Academy of Management Annual Meetings 2008-2010. At these events more than 150 scholars from technology and innovation management, entrepreneurship, strategy, organizational behavior, project management, organization theory, met to identify and discuss the conceptual and empirical challenges and opportunities with this increasingly pervasive form of organizing. The five subthemes of the volume are well-aligned with the main topics emerging from the fruitful and vivid discussions in preceding meetings in Anaheim, Chicago and Montreal. Understandably, the papers differ in their treatment of the three main conceptual pillars discussed earlier: the social embeddedness of projects, the learning processes unfolding in project-based settings and the development of project-related capabilities. Below we provide a synopsis of each subtheme and the corresponding papers.

Definitions and connotations

As we noted before, a consensus has been building around the idea that projects are transitory organizational configurations for allocating personnel and resources. However, the central ambiguity in extant research is whether project-based organizing should be restricted to temporary as opposed to stable organizations. This chapter seeks to tackle some of these questions and to ensure that the way project-based organizing is empirically defined and eventually studied is consistent with and appropriate to their conceptual definitions. The paper “Innovation in Complex Products and Systems: Implications for Project-Based Organizing” (Davies, Brady, Prencipe and Hobday, 2011) builds on the results from a major research project of firms

developing and delivering high-value capital, complex products and services. For this distinct and important group of firms projects are at the heart of strategic management activities – i.e., product and process innovation, strategy formulation and implementation, capability building and learning, organizational structure and design, and systems integration (the capability to combine diverse knowledge bases and physical components into functioning systems). Davies and colleagues derive seven conceptual insights about project organizing that inform and contribute to the development and reformulation of more universally applicable formal theories of strategic management and organization. They advance a contingency perspective: the standardized management of projects in high volume production as promoted by tools such as PERT and PRINCE 2 is fundamentally different from strategically managing projects in businesses such as construction, software, entertainment, etc.

The paper “Projects, Paradigms and Predictability” (Nightingale and Brady, 2011) compares and contrasts the diverse theoretical foundations of two paradigms in strategic project management. The first, older paradigm, builds on foundational ideas about nature (i.e., is it predictable) and human rationality (strategy and implementation are distinct) to conceptualize (operations-driven) project management in terms of controlling predictable project processes and their inherent risks, so that project managers can optimize potential trade-offs between timing, cost and quality. The second, practical-based alternative paradigm, conceptualizes people as sources of deterministic behavior in an otherwise often unpredictable world. Projects are key tools that are used to strategically create this predictable behavior, with project plans being used as scaffolding to help co-ordinate the distributed behavior of systemically connected people in space and time as the project proceeds. The paper highlights how this second paradigm has a more robust scientific basis, shows how it informs the development of the Heathrow T5 project, and draws implications for future theory and practice.

Motion picture production has been a common ground to develop and test theory on project-based organizing because it is a project-based industry in which the structure of relationships between companies involved in cooperative strategies is highly visible. In his paper “Varieties of Cooperative Strategy in Project Based Organizing: The Case of International Motion Picture Co-production” Skilton (2011) examines the variety of cooperative strategies used to organize the international co-production of motion pictures. Working from theories of co-production and drawing on the strategic joint ventures literature, he examine

archival data, first for evidence of the strategies predicted by theory, and then for project participation strategies that theory does not account for. Four strategies are identified as idiosyncratic on the basis of the ways that firms participate in international co-productions. Two types of persistent firms cooperate with both direct competitors and complementors but pursue different markets, while a third type avoids cooperation with peers. The observed strategies constitute a hierarchy of strategic roles, and thus demonstrate the complexity of strategic behavior involved in project based production.

Finally, in their paper “Temporary Modes of Project-Based Organization within Evolving Organizational Forms: Insights from Oticon’s Experiment with the Spaghetti Organization” DeFillippi and Lehrer (2011) highlight that project-based organizations refer to a variety of organizational forms that involve the creation of temporary systems for the performance of project tasks. What has been less analyzed to date, however, is the idea of the project-based organization as a temporary mode or phase of organization in firms, both preceded and succeeded by more permanent modes of organization. DeFillippi and Lehrer review the literature on project-based organizations with a focus on how such organizations can serve as a temporary organizational form that arises in response to uncertainty and/or turbulent environmental conditions. They provide a case study of the Danish hearing-aids maker Oticon and the role of its project-based organization (the so-called spaghetti organization) in guiding the company through a specific period of industry turbulence and the company leader's search for a more effective structure for organizing innovation within the company.

Temporary structure permanent learning

Project-based organizations epitomize a model where no structure persists because the organization is dissolved once the task is completed. As a result, organizational continuity and history as learning vehicles do not appear entirely appropriate. Schwab and Miner’s (2011) work “Organizational Learning Implications of Partnering Flexibility in Project-Venture Settings: A Multi-Level Framework” examines this issue and seeks to develop a conceptual framework for analyzing learning in a project-based context. In particular, 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, the authors identify potential organizational and industry level contingency factors in the project context that shape when partner flexibility will have beneficial versus harmful effects.

In the chapter “Terminating Institutionalized Termination: Why Sematech Became more than a Temporary System” Müller-Seitz and Sydow (2011) investigate the institutionalization processes by which temporary organizations become permanent. Drawing on qualitative evidence on the SEMATECH (SEmiconductor MAnufacturing TECHnology) project – which started off as a temporary system and then turned into a permanent interorganizational network the authors elucidate the crucial role of triggering events and self-reinforcing learning processes in fostering a path dependent evolutionary trajectory which eventually led to the gradual institutionalization of a structure originally conceived to be short-lived. Using a path-dependence perspective the study paves the way for a rethinking of temporariness as a temporary feature itself and highlights the institutionalized termination of temporary organizations as an important yet often overlooked learning process.

Finally, the paper “Project Management: Learning by Violating Principles” (Mangematin, Blanco, Genet and Deschamp, 2011) explores learning in a large public research organization – NLAT – which decided to change its internal organization from team-based to project-based. Based on a comparative analysis of 8 internal projects, the paper unpicks three crucial learning mechanisms (low project core staffing levels, which lead to the circulation of engineers and researchers around different projects; the building and managing of thematic projects; and the encouragement of ‘bricolage’ as a project management style) and shows how these mechanisms stemmed from the systematic violation of project management principles subsuming the transferring of learning from one project to another. The authors elaborate on these findings to critically discuss the conditions and situations under which project management principles should be applied, modified or ignored.

Projects, capabilities and innovation

Projects are often the organizational setting wherein prototypes and original principles are created and tested on a small scale before they are rolled out as templates for the entire organization or market. Specifically, R&D and new product development projects is the engine of innovation in most businesses and form the basis for enacting dynamic capabilities. Yet, we have a limited understanding of the strategy of innovation and capability building taking place in and through projects. The paper “Projects, Project Capabilities and Project Organizations” (Nightingale and Baden-Fuller, 2011) clarifies our understanding of project-based organizations by sharpening the theoretical foundations of ‘project capabilities’. By exploring these theoretical foundations the chapter provides a sharper conceptual lens to comprehend where projects are most useful and what organizations are best suited to undertake them successfully. It also highlights how the different ways in which value is captured by project based organizations can feedback to influence how project capabilities are generated and the incentives to generate them. The authors open up new typologies of project based organizations, with interesting implications for theory and practice.

The chapter “Strategy and Capabilities in the P-form Corporation: Linking Strategic Direction with Organizational Capabilities” (Söderlund and Tell, 2011) further probes the relationship between organizational capabilities, strategic direction and competitive performance. Building on the resource-based view of the firm the authors study the organization and integration of resources and knowledge by exploring a particular type of organization – which they refer to as the ‘P-form corporation’ (Project-Form) – its organizational capabilities and options for strategic alternatives. The paper addresses three broad questions: What are the main characteristics of P-form corporations? What are the capabilities acquired and developed by P-form corporations and how are these acquired? How do these capabilities vary across different strategic alternatives in P-form corporations? In addressing these questions, the paper elaborates on some of the key theoretical mechanisms by which these corporations develop new capabilities, and replace old ones, as they seek to sustain their competitive advantage.

Finally, Woodward and West’s (2011) chapter “Strategic Responses to Standardization: Embrace, Extend or Extinguish?” extends prior research on technology standardization in an effort to better understand strategic implications of new product development: processes in which product developers and other stakeholders cooperate to achieve a consensus outcome, and “standards wars” in which competing technologies vie for dominance in the market. This study examines Microsoft’s responses to 12 software

technologies in the period between 1990 and 2005. Despite the company's reputed tendency to pursue a strategy dubbed "embrace, extend, extinguish," a content analysis of news articles from the same period reveals surprising diversity in Microsoft's responses at the product level. Based on cross-sectional and longitudinal evidence, the authors suggest that firms tend to publicly embrace a standard with the aim of gaining legitimacy with a community of adopters, while efforts to extend a standard tend to be motivated by the intent to leverage the underlying technology to achieve or strengthen architectural control. They argue that legitimacy and leverage are strategic complements, making the "embrace and extend" strategy attractive to firms like Microsoft, even though the resulting outcome is unstable. By examining Microsoft's technology ecosystem the chapter paves the way to the next section on social embeddedness in networks.

Projects and networks

Growing evidence indicates that projects are socially embedded even in the absence of stable organizational arrangements. From a social network perspective, the social ties linking project participants define the relational context in which learning occurs and capabilities are created, adapted and deployed over time. In the paper "Staying Local or Reaching Globally? Analyzing Structural Characteristics of Project-based Networks in German Biotech" Al-Laham and Amburgey (2011) analyze how a specific knowledge-intensive industry relies increasingly on a network of collaborations originating from the ongoing process of creating and dissolving relationships that bring new project level opportunities. This paper examines the structural characteristics of project-based network-ties in German biotech and focuses on the consequences of local versus international network ties for the innovative success of German biotechnology firms. The findings of a longitudinal event history analysis indicate that the most valuable learning drivers are international research alliances and centrality within the international research network. Surprisingly, the authors do not find any local effects, neither for the density of a local research cluster, nor its diversity or age. These results shed new light on the relevance of international linkages for firms that are engaged in project based learning networks.

Projects have always been important mechanisms for the generation of new ideas and products. Traditional projects are initiatives involving a dedicated team of actors who come together to accomplish a well-defined task within a specified timeframe. In such a conceptualization of projects, membership is

relatively stable during any particular phase of the project. Tasks are often pre-defined and sequenced so as to orchestrate the activities of different actors through an overall master schedule. Although such traditional projects are still important, digital technologies are offering new options for the organization of projects. The chapter “A Model of and for Virtual Projects” (Garud, Kumaraswamy and Tuertscher, 2011) addresses a fundamental question: What are the processes and mechanisms that underlie collaboration in such virtual projects? They examine how digital technologies enable distributed actors to collaborate asynchronously on virtual projects. Using Wikipedia and associated wiki digital technology as their research site, the authors probe the emergence of Wikipedia articles and identify a distinctive property of such digital technologies as they are put into use: the generation of a digital trace. This digital trace serves as a generative memory that facilitates ongoing co-creation, justification and materialization of contributions from distributed actors. The paper examines the implications of such processes for virtual projects that embrace digital technologies with properties similar to the wiki technology used in Wikipedia.

Muethel and Hoegl’s (2011) article “Shared Leadership Functions in Geographically Dispersed Project Teams” investigates a newly emerging pattern of project leadership. While traditionally, the project leader was considered as the exclusive source of leadership behavior, recent research indicates that particularly dispersed projects may profit from joint leadership efforts by all project members. However, leadership functions in dispersed projects are likely to differ from those in a face-to-face context. The authors specify shared leadership functions for the domain of geographically dispersed project teams with high levels of task uncertainty. Arguing that shared leadership in dispersed teams occurs through interrelation of individual and team actions, they specify a dispersed screening function as well as self-, other-, and team-directed interrelation functions and develop propositions on how these functions are related to project performance. Furthermore, they point to motivational aspects of shared leadership and discuss the role of the vertical leader in developing and facilitating shared leadership.

The focus on an individual’s network is also central to the last chapter of this subtheme “Reconsidering Ambidexterity at the Individual Level: A Social Network Perspective” by Simon and Tellier (2011). Defining ambidexterity as a company’s ability to guarantee both short- and long-term successes by simultaneously exploring new market or new technological paths and improving existing products, the authors demonstrate that this ability can result from the evolution of social networks linking individuals

involved in idea development. Using a longitudinal approach that combines case study and social network structure analysis of the R&D center of a semiconductor company, the paper analyzes six cases selected according to the level of disruption of the first idea generated and the end result in terms of exploration and exploitation. On the basis of these longitudinal case studies, the authors map the relationships between actors who have contributed to the development of the idea through creative thinking and/or helped that idea to become accepted both internally and externally. The paper describes different network evolutions and their influence on idea development. It also highlights specific roles played by actors in this evolution. By showing how groups of individuals can configure networks of relationships to obtain commitment to their idea and describing network evolution over time, the chapter enhances current understanding of how teams can adapt their social network when they are confronted with a different set of objectives—i.e., achieve exploratory or exploitative results.

Future directions and emerging paths

Building on a comprehensive review of the literature on project-based organizing, the last three chapters in this volume identify newly emerging topics and outline promising directions for future research. Over the past few years, the literature on project-based organizing has seen steady growth, both in terms of academic contributions and general attention. The literature's development has paralleled the diffusion of projects as a means through which to organize workflows across multiple industries and societal sectors. The growing literature on project-based organizing has drawn on various theoretical streams based on distinctive and sometimes conflicting assumptions, with the effect of leading to the proliferation of multiple perspectives that are not necessarily consistent. To solve this conundrum, the paper "Toward a Projects as Events Perspective" (Maoret, Massa and Jones, 2011) introduces a "projects as events" perspective in an effort to integrate insights from organization-centric and field-centric studies. Specifically, the authors elaborate on the theorization of this perspective, suggesting various reasons why it might help advance research on project-based organizing. Using examples from the creative industries, they illustrate various instances in which projects, like events, can be considered sequences of activities that unfold gradually *or* suddenly and that are coordinated through a core idea or concept, triggering distinctive networks at multiple levels of

analysis. Finally, the authors examine how this new perspective might benefit from the deployment of innovative qualitative and quantitative methods.

The multi-level institutional underpinnings of project-based organizing are also central to the chapter “Dynamics of Project-Based Creative Organizations: Irving Thalberg and the Hollywood Studio System” by Lampel (2011). Challenging a conventional set of theories in strategic management the author argues that an analysis of the strategy of project-based organizations must take into account the interaction between deliberate and emergent strategic processes in this type of organizations. He then goes on to argue that achieving this goal depends on addressing the ‘multicontextuality’ of project-based organizations – the fact that deliberate strategic processes respond to external environment, while emergent strategic processes are rooted in the organization’s project portfolio. Based on this analysis, the paper advances an institutional framework for analyzing project-based organizations which couples the institutional logic of the external environment, with the institutional logic which emerges from the internal ‘project field.’ To explore this framework the paper examines the emergence of the central-producer system in the Hollywood motion picture industry during the first quarter of the 20th century, and the role that Irving Thalberg played in creating and adaptation of this project-based system.

A large body of research in sociology and organizational theory has shown how classification and categories affect processes of social evaluation and legitimation. By setting social and symbolic boundaries, categories establish the legitimacy of a domain of activity, and how that domain can be observed and accessed—i.e., what kind of behavior is seen as desirable, adequate or prohibited for legitimate participation within those boundaries. A central theme of current research on market categories is that of ‘hybridity.’ Hybrids can be defined as organizations or products whose identity is associated with multiple categories. In the chapter “Temporary Identities: Hybridity and the Construction of Identities in the U.S. Feature Film Industry” Perretti (2011) argues that the association of organizations and/or the products they offer with multiple category memberships has many practical implications, especially for project-based forms of organizations. The paper explores the evolution of hybridity and the conditions under which different kinds of project-based organizations develop hybrid projects within the feature film industry in the U.S. from 1920 until 1970. In particular, it contrasts the current perspective based on status organizing processes and suggests that hybridity is a population-level process that can be interpreted as the result of the construction

and interplay of different identities, and on the dynamic of the identity dimensions employed by different actors in such effort. The paper shows that the development and construction of the identity of a temporary organization is different from other types of organizations, and is linked to identification processes both at the organizational level, with the company or with specific individuals in key roles, and at the institutional/collective level, with pure (single-category) and hybrid (multi-category) genres. An important insight of the study is to highlight the mutual interactions and constraints between these two levels in different life-stages of the film industry.

A final future research topic is discussed in the chapter “Passion-driven Projects: Insights for Strategy and Organizing from Processes of Temporary Art” (Svejenova, Strandgaard Pedersen and Vives, 2011). They advance the notion of *projects of passion* as a class of phenomena for which profits come secondary to an artistic, entrepreneurial, scientific, or professional “calling.” Projects of passion confront the set of well-known assumptions employed in strategic management of project. It distinguishes the “labor of love” archetype from the “love of gain” one. Further, drawing on a comparative case analysis of seven temporary art projects by renowned creators-entrepreneurs Christo and Jeanne-Claude, conceived and realized in the period from 1970 until 2005 the authors put forward a conceptual model. The model specifies critical drivers, mechanisms, and performance outcomes that are essential for the strategic management of projects of passion. In particular, it identifies freedom and novelty as sources of project motivation, individual business models and rhetorical strategies as process mechanisms, and authenticity and value appropriation by third parties as previously uncharted project performance dimensions. The article concludes with implications for the strategy of projects as well as some directions for further research.

Through the five integrated subthemes the eighteen papers in this volume jointly contribute significantly to our knowledge of how and why project-based organizing is an important and growing topic for researchers in strategic management, organizational theory and beyond, as well as for managers and practitioners across a variety of industries.

CONCLUDING REMARKS

We began with the observation that project-based organizations have become pervasive across a wide range of different industries, and stressed the need to probe in greater depth the implications of project-based organizing for understanding capability building, innovation, learning, and organizational performance.

Specifically, we identified five key subthemes related to project-based organizing, including matters of *definitions and connotations; temporary structure permanent learning; projects, capabilities and innovation; projects and networks; and future directions and emerging paths*. Our main goal in this volume is to offer a comprehensive yet integrated view of cutting edge research on project-based organizing in order to demonstrate its distinctiveness and relevance for strategic management and organizational theory, establish it as a separate field of inquiry, and identify fruitful areas for future research. Three core conceptual building blocks emerge from the existing literature and the contributions in this volume: the social embeddedness of projects, the learning processes unfolding in project-based settings, and the development of project-related capabilities. Within each of these conceptual building blocks, the core themes are discussed, and the current state of the art is summarized. Although the same conceptual building blocks are, in general, central to extant research in strategic management, they take on rather distinctive features within the province of project-based organizing.

The articles in this volume do not span the entire spectrum of research on project-based organizing. They nevertheless provide a rather comprehensive overview of some of the questions of primary interest to scholars doing research on the subject. We believe that the volume offers a clearer sense of direction to researchers at the intersection of project, organization and strategy research. The articles – individually and collectively – develop and extend key strategic aspects of project-based organizing, raise many new important questions, and identify viable opportunities for further research. This research is indeed necessary and essential if researchers are to learn how project-based organizing informs us about how organizations can learn more effectively, adapt, and survive in the long-term. We hope that this volume will inspire others to join these scholars in advancing our understanding of project-based organizing and strategic management.

References

- Acha, V., D. Gann, and Salter, A. 2005. Episodic innovation: R&D strategies for project-based environments. *Industry & Innovation*, 12(2): 255-281.
- Baker, W. E., and Faulkner, R. R. 1991. Role as resource in the Hollywood film industry. *American Journal of Sociology*, 97(2): 279-309.
- Bakker, R. M. 2010. Taking stock of temporary organizational forms: A systematic review and research agenda. *International Journal of Management Reviews*, 12(4): 466-486.
- Bechky, B. A. 2006. Gaffers, gofers, and grips: Role-based coordination in temporary organizations. *Organization Science*, 17(1): 3-21.
- Cattani, G., and Ferriani, S. 2008. A core/periphery perspective on individual creative performance: Social networks and cinematic achievements in the Hollywood film industry. *Organization Science*, 19(6): 824-844.
- Cohen, M. D., and Sproull, L. S. (eds.). 1996. *Organizational Learning*. Sage Publications: London.
- Davies, A., and Frederiksen, L. 2010. Project-based innovation: The world after Woodward. In N. Phillips, G. Sewell, D. Griffiths (eds.), *Technology and Organization: Essays in Honour of Joan Woodward (Research in the Sociology of Organizations)*, 29: 177-215. Emerald Group Publishing Limited.
- DeFillippi, R. J., and Arthur, M. B. 1998. Paradox in project-based enterprise: The case of film making. *California Management Review*, 40(2): 1-15.
- Eccles, R. G. 1981. The quasi-firm in the construction industry. *Journal of Economic Behavior and Organization*, 2: 335-357.
- Eisenhardt, K. M., and Brown, S. L. 1999. Patching. *Harvard Business Review*, 77(3): 72-82.
- Engwall, M. 2003. No project is an island: linking projects to history and context. *Research Policy*, 32: 789-808.
- Faulkner, R. R., and Anderson, A. B. 1987. Short-term projects and emergent careers: Evidence from Hollywood. *American Journal of Sociology*, 92: 879-909.
- Ferriani, S., Corrado, R., and Boschetti, C. 2005. Organizational learning under organizational impermanence: Collaborative ties in film project firms. *The Journal of Management and Governance*, 9: 257-285.
- Ferriani, S., G. Cattani, and Baden-Fuller, C. 2009. The relational antecedents of project-entrepreneurship: Network centrality, team composition and project performance. *Research Policy*, 38(10): 1545-1558.
- Frederiksen, L., and Davies, A. 2008. Vanguard and ventures: Projects as vehicles for corporate entrepreneurship. *International Journal of Project Management*, 26(5): 487-496
- Gann, D. M. and Salter, A. 2000. Innovation in project-based, service-enhanced firms: The construction of complex products and systems. *Research Policy*, 29: 955-972.
- Grabher, G. 2002. The project ecology of advertising: Tasks, talents and teams. *Regional Studies: The Journal of the Regional Studies Association*, 36(3): 245-262.

- Grabher, G. 2004. Temporary architectures of learning: Knowledge governance in project ecologies. *Organization Studies*, 25(9): 1491 -1514.
- Jones, C. 1996. Careers project-networks: The case of film industry. In M. B. Arthur and D. M. Rousseau (eds.), *The Boundaryless Career*. Oxford University Press, New York.
- Jones, C., and Lichtenstein, B. B. 2008. Temporary interorganizational projects: How temporal and social embeddedness enhance coordination and manage uncertainty. In S. Cropper, M. Ebers, P. S. Ring and C. Huxham, C. (eds.), *Handbook of Interorganizational Relations*, pp. 231-255. London: Oxford University Press.
- Hobday, M. 2000. The project-based organization: An ideal form for managing complex products and systems? *Research Policy*, 29(7-8): 871-893.
- Keegan, A., and Turner, R. J. 2002. The Management of Innovation in Project-Based Firms. *Long Range Planning*, 35(4): 367-388.
- Kogut, B., and Zander, U. 1996. What Firms Do? Coordination, Identity, and Learning. *Organization Science* 7(5): 502-518.
- Levitt, B., and March, J. G. 1988. Organizational learning. *Annual Review of Sociology*, 14: 319–340.
- Lindkvist, L. 2003. Governing project-based firms: Promoting market-like processes within hierarchies. *Journal of Management and Governance*, 8(1): 3–25.
- Lorenzen, M., and Frederiksen, L. 2005. The management of projects and product experimentation: lessons from the entertainment industries. *European Management Review*, 2: 198–211.
- Lorenzen, M., and Täube, F. A. 2008. Breakout from Bollywood? The roles of social networks and regulation in the evolution of Indian film industry. *Journal of International Management*, 14(3): 286-299.
- Malone, T. W., and Laubacher, R. J. 1998. The dawn of the e-lance economy. *Harvard Business Review*, 76(5): 144-152.
- Manning, S. 2010. The strategic formation of project networks: A relational practice perspective. *Human Relations*, 63: 551–573.
- Manning, S., and Sydow, J. 2011. Projects, paths, and practices: Sustaining and leveraging project-based relationships. *Industrial and Corporate Change*, pp. 1-34. Available online at: doi:10.1093/icc/dtr009.
- March, J. G. 1995. The future, disposable organizations and the rigidities of imagination. *Organization* 2(3/4): 427-440.
- Meyerson, D., K. E. Weick, and Kramer, R. M. 1996. Swift Trust and Temporary Groups. In R. M. Kramer and T. R. Tyler (eds.), *Trust in Organizations: Frontiers of Theory and Research*, pp. 166–195. Thousand Oaks, CA: Sage Publications.
- Mintzberg, H. 1983. *Structures in Fives: Designing effective organizations*. Prentice/Hall International.
- Peterson, R. A., and Berger, D. G. 1971. Entrepreneurship in organizations: evidence from the popular music industry. *Administrative Science Quarterly*, 10: 97–106.

- Prencipe, A., and Tell, F. 2001. Inter-project learning: Processes and outcomes of knowledge codification in project-based firms. *Research Policy*, 30(9): 1373-1394.
- Semadeni, M., and Anderson, B. 2010. The follower's dilemma: Innovation and imitation in the professional services industry. *Academy of Management Journal*, 53(5): 1175-1193.
- Stinchcombe, A. L., and Heimer, C. A. 1985. *Organization theory and project management: Administering uncertainty in Norwegian offshore oil*. Oslo: Norwegian University Press.
- Teece, D. J., Pisano, G., and Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.
- Turner, J. R., and Keegan, A. E. 2000. The management of operations in the project-based organization. *Journal of Change Management*, 1(2): 131-148.
- Walsh, J. P., and Ungson, G. R. 1991. Organizational memory. *Academy of Management Review*, 16(1): 57-91.
- Whitley, R. 2006. Project-based firms: New organizational form or variations on a theme? *Industrial and Corporate Change*, 15: 77-99.
- Windeler, A., and Sydow, J. 2001. Project networks and changing industry practices - collaborative content production in the German television industry. *Organization Studies*, 22(6): 1035-1060.

Figure 1 – Scholarly literature on temporary forms of organizing (*source: Bakker, 2010*)

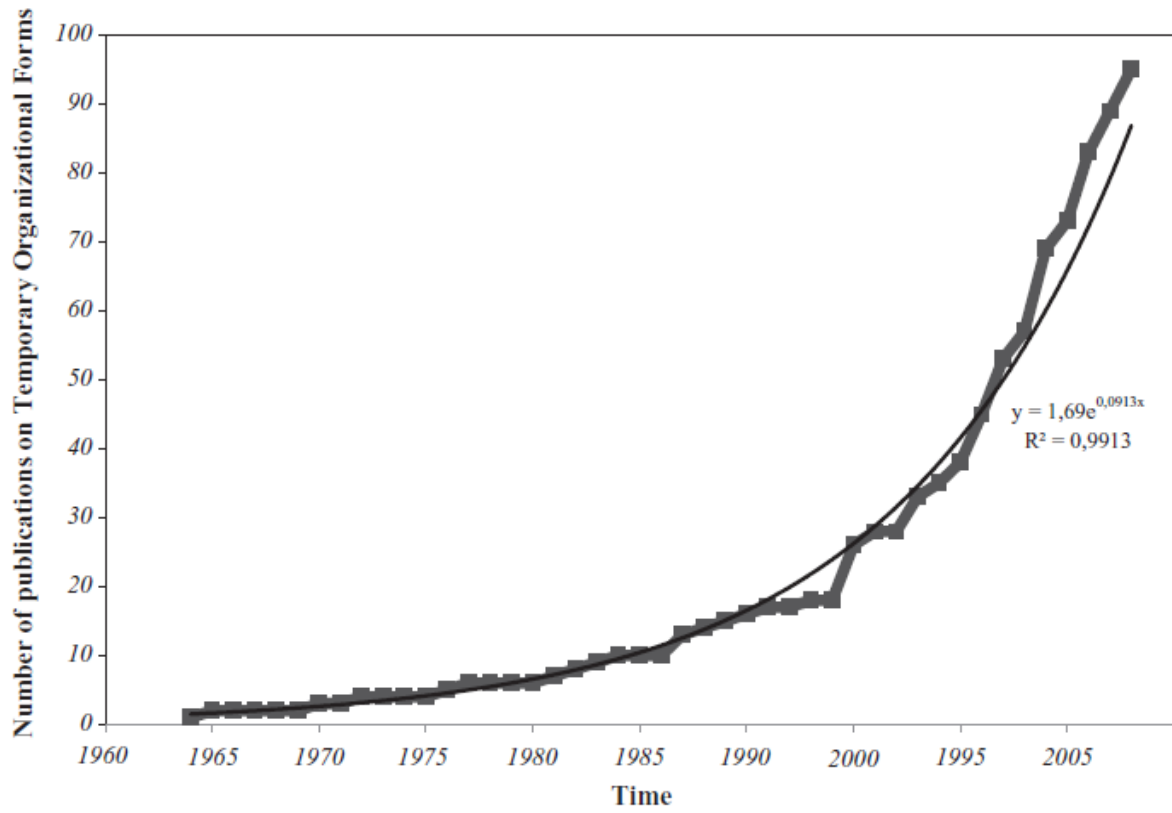


Table 1 – Links between Chapters and Themes

Book “sections”	Chapters	Project-based learning	Project embeddedness	Project capabilities
Definitions and connotations	Davies, Brady, Prencipe and Hobday	X		X
	Skilton		X	X
	DeFillippi and Lehrer	X		X
	Nightingale and Brady	X		
Temporary structure permanent learning	Schwab and Miner	X		X
	Muller-Seitz and Sydow	X	X	
	Mangematin, Blanco, Genet and Deschamp	X		
Projects, capabilities and innovation	Nightingale, Baden-Fuller and Hopkins			X
	Söderlund and Tell			X
	Woodward and West		X	X
Projects and networks	Al-Laham and Amburgey	X	X	
	Garud, Kumaraswamy and Tuertscher	X	X	
	Muethel and Hoegl		X	
	Simon and Tellier	X	X	
Future directions and emerging paths	Maoret, Massa and Jones		X	
	Lampel	X		
	Perretti	X	X	
	Svejenova, Strandgaard Pedersen and Vives	X		X