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Boundary Spanning Practices in BPM: A Dynamic Capability Perspective

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ABSTRACT

Collaborating with actors from outside of an organization, such as consultancies, customers, or suppliers, has proven to be a success factor for business process change. Research on business process change maturity views effective collaboration as a sign for mature organizations. It argues that establishing systematic cross-boundary collaboration and making use of business process change networks is a key challenge that, while not yet achieved, lies ahead of the majority of organizations. However, business process change practice seems to struggle with implementing these envisioned comprehensive collaborative policies. Despite the importance of the phenomenon, research has not yet been able to provide sufficient insight into potential barriers to establishing cross-boundary collaboration in business process change. Therefore, we conduct nine in-depth case studies and explore barriers to collaboration with firm-external actors. Drawing from the Resource-Based View, dynamic capability and boundary spanning theory, we identify a set of resource dependencies that hinder establishing collaborative business process change. Based on these findings, we lay out elements of a problem-oriented theory which contributes to coping with the challenges of and to harvesting the potential benefits of collaboration in business process change.

Keywords

Business process change, collaboration, networks, qualitative study, explorative study, resource-based view, boundary spanning, dynamic capability.

INTRODUCTION

Developments in management, economics, and organization have fueled the study of organizational boundaries (Newell et al. 2001). Major drivers include, for instance, the increasing importance of global value chains (Gereffi et al. 2005; Sia et al. 2008) and production networks (Sturgeon 2002), of interconnected firms (Lavie 2006), collaboration dynamics (Afuah 2001), outsourcing (Walsh & Deery 2006), and the increasing potential of information systems (Phelps 2007). While the boundary phenomenon has already been intensively studied on the level of the business processes (Ashkenas et al. 1995), little research has yet systematically examined the implications of boundary spanning business processes for Business Process Management (BPM). Up to now, research in BPM acknowledges that boundary spanning practices are increasingly important while managing collaboration, networks, and governance are viewed a key challenge to BPM research and practice (Rosemann et al. 2006). Also, early in the development of business process-oriented management, it was recognized that BPM projects can only be effective if BPM teams are made up of people from both inside and outside of the organization (Hammer & Champy 1993). However, literature does not yet provide theory, models, vocabulary, and frameworks (Den Hengst & De Vreede 2004) to a sufficient extent to support organizations in their exploration of new pathways to systematically make use of resources that lies outside of an organization's boundaries through collaborative business process change (Niehaves & Plattfaut 2011).

We view boundary spanning practices in BPM as a dynamic capability. Dynamic capabilities enable organizations to integrate, build, and reconfigure operational capabilities (here business processes) for the purpose achieving a fit with the market environment and thus attaining competitive advantage. In this paper, the boundary of interest is that of the firm and, thus, cross-boundary collaboration in business process change is defined as one that involves firm-external actors. An example of a boundary spanning practice in BPM might be involving customers in process innovation workshops. We thus study a boundary spanning phenomenon that is concerned with the innovation process rather than with process execution. Following Teece et al. (1997, p. 518), we argue that developing dynamic capabilities – here boundary spanning practices in BPM – is shaped by an organization's specific resources and the paths available to it. Against this background, we undertake an explorative study of resource dependencies that hinder the development of boundary spanning practices in BPM. We seek

to address the following research question: *Which resource positions constitute potential barriers for organizations to develop boundary spanning practices in Business Process Management?*

Adopting an explorative qualitative approach, the paper is organized as follows. After reviewing relevant literature, we set out methods and data of a multiple case study analysis. The analysis spans nine settings and is based on multiple sources of evidence, including 76 expert interviews. Following the discussion of results, we reflect on the implications for theory and seek to open up new vistas for boundary spanning practices in Business Process Management. The final section draws some conclusions and considers the research limitations.

THEORETICAL BACKGROUND

Boundary Spanning Practices in BPM

Making use of resources that lie beyond an organization's boundary is key to successful BPM. We identify that a large body of research has focused and identified trends of collaboration on the level of business processes (Gereffi et al. 2005; Lavie 2006; for a literature review see Niehaves & Plattfaut 2011). Literature acknowledges that making use of resources beyond an organization's boundaries in BPM through collaboration, networks, and governance becomes increasingly important and is a key challenge to BPM research and practice. Early in the development of business process-oriented management, it was recognized that BPM projects can only be effective if BPM teams are made up of people from both inside and outside of the organization (Hammer & Champy 1993). Internal and external orientation and learning have long been considered success factors for BPM projects (Al-Mashari & Zairi 1999; Davenport & Short 1990). Specifically, BPM literature discusses the importance of collaboration of organization-internal actors, such as top management (for instance, Bandara & Rosemann 2005; Davenport & Short 1990), middle management (Grover et al. 1995; Sarker & Lee 1999), employees (Boudreau & Robey 1996), and the importance of collaborating with external actors, such as lawmakers (Abdul-Hadi et al. 2005), customers (Ahmad et al. 2007; Hammer 2007; Venkatraman 1994), suppliers (Wu 2002), distributors (Rosemann et al. 2006), software vendors (Akhavan et al. 2006; Gulla & Brasethvik 2000), and BPM consultants (Akhavan et al. 2006; Davenport 1993; Kettinger et al. 1997). Effectively managing such collaboration with firm-external actors and stimulating and utilizing these "BPM networks" (Rosemann et al. 2006) are important for the maturization of an organization in its BPM activities (Fisher 2004; Rosemann & de Bruin 2005; Rosemann et al. 2006). Often, business processes are too narrowly defined (Hall et al. 1993) – meaning: "ending" at the organizational boundaries –and relevant stakeholders (Freeman 1984) not included in BPM projects (Ahmad et al. 2007; Rosemann et al. 2006). According to research on BPM maturity, effective collaboration with (external) stakeholders of an organization (such as customers, suppliers, or distributors) in its BPM projects is an integral characteristic of organizations with high BPM maturity, of "intelligent operating networks" (Fisher 2004). Examples of boundary spanning practices in BPM are the involvement of customers in process innovation workshops or the IT-based exchange of process innovation ideas with firm-external actors. We thus study a boundary spanning phenomenon that is concerned with the business process *management* rather than with business process *execution*.

Dynamic Capabilities

Dynamic capabilities aim at aligning resources with a changing market environment. Drawing from the Resource-based View (RBV, Wernerfeldt 1984), scholars have differentiated two distinct types of resources from one another: (1) Operational capabilities are those "that reflect an ability to perform the basic functional activities of the firm, such as plant layout, distribution logistics, and marketing campaigns, more efficiently than competitors." (Collis 1994, p. 145) They are geared toward the operational functioning of the firm (Zollo & Winter 2002). In this paper, we will understand operational capabilities as the ability of an organization to perform a coordinated set of tasks, utilizing organizational assets, for the purpose of the operational functioning of the firm (Zollo & Winter 2002, Winter 2003, Helfat & Peteraf 2003). (2) Dynamic capabilities, on the other hand, have originally been conceptualized by Teece et al. (1997) as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments." (Teece et al. 1997, p. 516) Other conceptualizations emphasize the nature of these capabilities, "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness." (Zollo and Winter 2002, p. 340). Other authors stress the hierarchical relationship between the two types of capabilities: "Dynamic capabilities build, integrate, or reconfigure operational capabilities. Dynamic capabilities do not directly affect output for the firm in which they reside, but indirectly contribute to the output of the firm through an impact on operational capabilities." (Helfat and Peteraf 2003, p. 999) Based on these arguments, in this paper we will understand dynamic capabilities as the firm's ability to integrate, build, and reconfigure operational capabilities for the purpose achieving a fit with the market environment. In addition, Teece et al. (1997) argue that developing dynamic capabilities is

shaped by an organization's specific resources and the paths available to it. Thus, the development of dynamic capabilities is determined by the specific resources of a firm.

Dynamic Capability Perspectives on Boundary Spanning Practices in BPM

Boundary spanning practices in BPM can be viewed as a dynamic capability. On the one hand, literature discusses a plethora of concrete dynamic capabilities, such as product development (Eisenhardt & Martin 2000, p. 1106), alliancing (Eisenhardt & Martin 2000, p. 1106; Zollo & Winter 2002, p. 347), acquisition (Eisenhardt & Martin 2000, p. 1109; Zollo & Winter 2002, p. 347), and research & development (Zollo & Winter 2002, p. 340). Further, a bundle of dynamic capability examples closely relate to the issue of managing business processes, for instance developing manufacturing processes (Eisenhardt & Martin 2000, p. 1110), "restructuring" (Zollo & Winter 2002, p. 340), "re-engineering" (Zollo & Winter 2002, p. 347), quality improvement (Zollo & Winter 2002, p. 347), and the ability to adapt "operating processes through a stable activity dedicated to process improvements" (Zollo & Winter 2002, p. 340). On the other hand, process-oriented literature views BPM as "a structured approach to analyze and continually improve fundamental activities such as manufacturing, marketing, communications and other major elements of a company's operation" (for example, Zairi 1997, p. 64). Further, a business process is "converting inputs into outputs. It is the way in which all the resources of an organization are used in a reliable, repeatable and consistent way to achieve its goals" (for example, Zairi 1997, p. 64). Against the background of these noticeable commonalities, we review BPM from a dynamic capability perspective, including a re-understanding of operational capabilities as business processes: we define Business Process Management (BPM) as a set of techniques to integrate, build, and reconfigure an organization's business processes for the purpose of achieving a fit with the market environment. In this context, a business process refers to the performing of a coordinated set of tasks, utilizing organizational assets, for the purpose of the operational functioning of the firm (Niehaves et al. 2010). Boundary spanning practices in BPM specifically make use of resources that lie beyond the boundaries of an organization through collaboration with firm-external actors.

Against this background, the existence or absence of particular resource positions may provide explanation for organizations to not have developed boundary spanning practices in BPM.

RESEARCH METHODOLOGY

Investigating into barriers to boundary spanning practices in BPM, we chose to conduct nine in-depth qualitative case studies. Here, our intent is to explore variables as well as to interpret them in relation to the proposed theory background. We do not (yet) intend to statistically test specific hypotheses, but to tie in with the rich tradition of qualitative IS research. First, we will give a brief overview over the case study settings and, then, discuss the process of data collection and analysis in detail.

Table 1: Overview Case Settings

	<i>Annual Turnover</i>	<i>Number of Employees</i>	<i>Primary BPM Objectives</i>	<i>BPM Organization</i>	<i>BPM Coverage</i>
<i>TELCO (Telecommunication)</i>	> 1,100 Million €	> 2200	Process Documentation, Reorganization, Workflow Management	Independent BPM department managing strategic and operative BPM activities (24 employees)	Core processes documented, change management activities, introduction of first process indicators
<i>PRODUCTION (Manufacturing)</i>	> 100 Million €	> 750	Process Documentation	Not clearly defined: BPM responsibilities both with Quality Management and IT department	Core processes documented
<i>BANKING (Banking)</i>	> 8,000 Million €	> 800	Process Documentation, Reorganization, Benchmarking, Internal Audits	BPM responsibilities lie with the organization department	Core processes documented, process indicators defined
<i>CHEMICAL (Fertilizer)</i>	> 500 Million €	> 1200	Process Documentation	Not clearly defined: BPM responsibilities both with Quality Management and IT department	Core processes documented
<i>MINING (Mining)</i>	> 50,000 Million €	>10,000	Process Documentation, Reorganization	Not clearly defined: BPM responsibilities within Technology & Innovation, Business Improvement and Communications & External Relations departments	Core processes documented, change management activities
<i>CONSULTING (Consulting)</i>	> 50 Million €	> 450	Process Documentation	Quality & Business Systems Manager coordinates all BPM efforts	Core processes documented
<i>NET&SMILE (Telecommunication)</i>	> 3,000 Million €	> 2,500	Process Documentation, Reorganization	Not clearly defined: BPM project has been abandoned	Not many ongoing BPM efforts
<i>BIGTEL (Telecommunication)</i>	> 7,000 Million €	> 30,000	Process Documentation	Not clearly defined: BPM responsibility mainly within accounting department (creating the annual financial statements)	Core processes documented
<i>GOVERNMENT (Local Government)</i>	n.a.	> 6,000	Process Documentation, Reorganization	Not clearly defined: BPM responsibilities both with Quality Management and IT department	Core processes documented, change management activities

Case Selection. Nine qualitative case studies were conducted in order to explore barriers to boundary spanning practices in BPM. The cases selected had to fit our given research purpose and had to be stable against particular context variables (Yin 2003), for instance, occurring in particular industry domain. Criteria for case selection included the firm size, here, minimum annual turnover of more than 50 Million € and number of employees greater than 400 (see Table 1). While operating in different industry sectors (telecommunication, manufacturing, banking, chemical, mining, consulting, and government), TELCO, PRODUCTION, BANKING, CHEMICAL, BIGTEL, NET&SMILE, and GOVERNMENT are all European companies.

Table 2: Data Collection Fact Sheet						
	<i>Number of Site Visits</i>	<i>Number of Interviews</i>	<i>Departments and Functions Covered by the Interviews</i>	<i>Interview Time</i>	<i># of Words Transcribed</i>	<i>Period of Data Collection</i>
<i>TELCO (Telecommunication)</i>	6	9	IT, Organization, Business Process Management, Sales, Controlling, Quality Management, Finance	625 minutes	54,402 words	September 2008 to January 2009
<i>PRODUCTION (Industry)</i>	24	21	IT, Controlling, Change Management, Material Management, Logistic, Production, Product Management, Quality Management, Human Resource Management, Organization	1,750 minutes	139,981 words	October 2008 to November 2009
<i>BANKING (Banking)</i>	3	5	IT, Organization, Finance, Controlling, Internal Audit,	320 minutes	13,104 words	August 2008 to February 2009
<i>CHEMICAL (Fertilizer)</i>	2	5	IT, Quality Management, Marketing, Controlling, Logistic	245 minutes	9,185 words	October 2008 to January 2009
<i>MINING (Mining)</i>	6	6	IT, Source & Procurement, Integrated Planning, Controlling, Communications & External Relations, Technology & Innovation	505 minutes	46,677 words	February 2009 to March 2009
<i>CONSULTING (Consulting)</i>	6	7	IT, Quality Management, Project Management, Finance, Civil Engineering, Human Resource Management	385 minutes	29,622 words	February 2009 to March 2009
<i>NET&SMILE (Telecommunication)</i>	5	6	IT, Supporting Unit, Project Management, Operations Management, external Consulting	504 minutes	58,097 words	May 2009
<i>BIGTEL (Telecommunication)</i>	3	5	IT, Business Process Management, Controlling	474 minutes	38,830 words	May 2009
<i>GOVERNMENT (Local Government)</i>	16	12	IT, Organization, Business Process Management, Finance, Strategy, Quality Management, Education, Front Office	1,250 minutes	94,430 words	October 2009 to December 2009
Total	71	76	-	6,058	484,328	August 2008 to December 2009

Data Collection. The period of intensive data collection lasted from August 2008 to December 2009, with a prior wave serving the purpose of selecting adequate cases studies with regard to the research question. We employed multiple data collection methods in order to exploit the synergetic effects of combining them via triangulation (Capaldo 2007). Three sources of evidence are included in our analysis: focused individual interviews (primary method), direct observations, and documentary information.

- **Focused Individual Interviews.** The primary sources of evidence are semi-structured interviews with the key actors in a firm's BPM efforts. Ranks of interview partners included, for instance, head BPM unit, head IT department, head organization department, head controlling, and head quality management. When contacting our case study organizations, we were directed to a contact person, habitually the one formally responsible for BPM in the firm. Being the first experts interviewed, they connected us with other significant actors in each setting. Regarding the interviewee selection, we thus followed a purpose-driven snowball sampling approach (Salganik & Heckathorn 2004). As a result, 5 to 21 interviews were conducted per case leading to a total of 76 interviews, 6,058 minutes of interview time, and 484,328 words of transcript. An interview thus lasted more than 1 hour in average (see Table 2).
- **Documentary Information.** Several materials produced by or about the firms were incorporated as supplementary source of evidence. For instance, business process documentations, organization charts, business press articles, internet sources, research reports, project documentations, minutes of project meetings, or company reports helped us to reconstruct each case study setting in great detail and contributed to further understanding.
- **Direct Observations.** We were able to directly observe the settings and relevant events throughout a total of 71 site visits. This included, for instance, observing the working procedures (e. g., call center operations and process handling at TELCO) and analyses of BPM tools applied. These direct observations yielded additional understanding of each case study setting.

Data Analysis. A total of more than 100 hours of interviews, equating to 484,328 words of transcript, were included in the analysis. As initial step, both authors (open) coded the data individually for any obstacles to boundary spanning practices in BPM, while all interview data was reviewed in the light of available documentary information and of direct case observations. Afterwards, the resulting codes and coded data were contrasted among the two authors' perspectives. In case of unresolved differences, a third party was consulted. Then, the codes were interpreted and structured with the help of the theoretical framework. Here again, if no consensus was achieved among the first and the second author, a third party was involved for conciliation. The interpretation of data and refinement of theory elements were highly recursive and formed a continuous interplay (Myers 2008). Such approach yielded the advantage that, both, the authors' understanding of the case findings as well as the refinement of theory gradually improved. As a consequence, relevant variables were derived that related to prior theory elements while others clearly expanded it. Hence, it can be regarded as a proof of openness in the data analysis procedure that, too, novel aspects were discovered. Still, the authors did enter the field with prior knowledge and concepts, for instance, resources, dynamic capabilities, boundaries, or boundary spanning. Too, it was referred extensively to prior conceptual studies on BPM. The initial set of questions was derived from BPM maturity research (especially Fisher 2004; Rosemann et al. 2006) and covered aspects of, for instance, BPM strategy alignment, process architecture, BPM controlling, BPM organization, BPM methods and tools, process lifecycle management, BPM training, BPM project management, and BPM recruiting (see Appendix). As for each of these aspects, a set of content-oriented questions was presented which was then followed by a comprehensive discussion of the role of external actors for the specific tasks. Here, reasons for not involving external actors were examined intensively.

FINDINGS

Viewing boundary spanning practices in BPM as a dynamic capability, we studied the impact of resource dependencies (Teece et al. 1997). By means of an analysis of nine case studies, we identify 18 barriers that may hinder the development of boundary spanning practices in BPM:

- 1) Fear of knowledge loss. Knowledge is widely seen as one of the most important resources of organizations to achieve competitive advantage (for instance, Grant 1996). Knowledge allows companies to differentiate from other organizations regarding their business processes. But, companies have to face opportunism, a central element of transaction cost theory, that describes firm's enforcement of their interests even by using deceit and fraud (Williamson 1979). Here, fear of knowledge loss refers to the worries of organizations to lose relevant process knowledge to competitors.
- 2) Uncertainty about intellectual property. Intellectual property laws ensure organizations the exclusive rights for specific intangible assets. Inventions can be declared intellectual property of an organization by legal constructs including copyrights, trademarks, and patents. Considering intellectual property rights as resources of an organization, uncertainty about intellectual property rights in boundary spanning practices can refrain companies from starting collaboration.
- 3) High process specificity. High process specificity describes the degree of organization-specific resources in business processes. Companies that exhibit special characteristics may heavily distinguish themselves from other organizations leading to different requirements for boundary spanning practices in BPM. Therefore, finding a suitable partner that can contribute to building up a beneficial boundary spanning BPM collaboration may be hard to achieve.
- 4) Lack of BPM knowledge. BPM knowledge refers to theoretical and practical knowledge about BPM including BPM methodologies, standards, and best-practices. Little BPM knowledge can have the consequence that advantages of boundary spanning practices in BPM are not shared by members of the organization or that boundary spanning initiatives as partnerships are not considered in management decisions.
- 5) Lack of knowledge about potential partners. To initiate meaningful boundary spanning practices in BPM, organizations require suitable external partners. Knowing about external actors, about their capabilities and potential contributions to the project, can be seen as a resource that facilitates the initial phase of a boundary spanning engagement. Without having a clear understanding of what particular external actors could contribute, firms will find it difficult to choose an adequate partner for a collaboration project.
- 6) Lack of process knowledge. Another obstacle may be the missing knowledge about own business processes. Incomplete process documentations or a lack of understanding about the overall process context do not allow for effective boundary spanning practices in BPM. External information cannot be absorbed effectively. This view is supported by absorptive capacity theory which promotes the relationship between existing knowledge and the identification, assimilation, and exploitation of external information (Cohen & Levinthal 1990). Thus, a lack of knowledge about processes hinders boundary spanning practices in BPM.

- 7) Lack of benefit expectations. Benefit expectations describe the estimated returns through boundary spanning practices in BPM. A difficulty of grasping such variable is the fact that, to some extent, it is dependent on other resource positions, such as BPM knowledge and knowledge about partners. If an organization does not have a clear vision of potential advantages through collaboration, they tend to not engage in boundary spanning practices.
- 8) Lack of financial resources. Boundary spanning practices in BPM require companies to invest time and personnel resources. The costs for BPM collaboration projects are usually higher than for internal BPM projects. This can be explained by transaction cost theory that provides an explanation for costs that are necessary for transactions between actors. Due to higher information, bargaining, and policing costs, integrating external actors requires more financial resources compared to internal realization (Williamson 1979).
- 9) High customer satisfaction. A perceived existing high customer satisfaction can be a barrier to establishing boundary-spanning practices in BPM. Currently positive external impressions can lead to the belief that processes do not have to be improved.
- 10) Fear of negative impression. Fear of negative impression corresponds to an expected decrease of reputation in the move of boundary spanning practices in BPM. A negative impression can result from perceived unprofessional behavior. If process documentations show bad quality or employees are very limited in their BPM knowledge, the company could induce negative external impressions in BPM collaboration with other parties.
- 11) Lack of acceptance. Firm-internal acceptance describes the attitude of employees towards the work of and with external actors. If employees have reservations against external actors, a boundary spanning practices in BPM becomes difficult.
- 12) Lack of initiative. Experience in boundary spanning practices in BPM can only be obtained by starting boundary spanning projects. But first, these have to be initiated somewhere in the organization. If company's context hampers employees being proactive and taking initiatives boundary spanning practices in BPM will not be started.
- 13) Lack of top management support. Missing top management support can be an obstacle for the development of boundary spanning practices in BPM (as for any other specific BPM strategy). For example, BPM collaboration projects, such as process redesign together with supply chain partners, can reach a significant size and entail certain risks.
- 14) Fear of competence loss. Fear of competence loss refers to the concern of managers and employees of competences by engaging in boundary spanning practices.
- 15) High frequency of process changes. Market conditions can force companies to perform a high frequency of process changes. An integration of external actors in the management of these volatile processes would result in large efforts compared to the integration in more stable processes.
- 16) Fear of dependency. In boundary spanning practices in BPM resources are exchanged between partners. In doing so, companies benefit by exploiting the capabilities of the other organization. Nevertheless, this can also be seen as negative because a dependency on external actors could arise. Therefore, organizations can fear a potential dependency of an external partner and limit collaboration.
- 17) Fear of decrease in decision speed. This barrier describes the fear of an organization that decision-making in boundary spanning practices in BPM is much slower than in projects conducted internally. This may result from the higher number of participating parties and different objectives.
- 18) Fear of compromise solutions. In boundary spanning practices in BPM, decision power may be divided between the participating actors. At least, concessions have to be made which implies a certain loss of decision power control. If the organization is not willing to reach its goals through negotiation with other parties, it will not start boundary spanning practices in BPM.

Table 3: Overview Findings										
Resource Types (according to Teece et al. 1997)	Barriers (extracted from Case Studies)	TELCO	PRODUCTION	BANKING	CHEMICAL	MINING	CONSULTING	NET&SMILE	BIGTEL	GOVERNMENT
		<i>Technological Resources</i>	1. Fear of knowledge loss	X	X	X	X	X		X
	2. Uncertainty about intellectual property					X				
<i>Complementary Resources</i>	3. High process specificity					X	X			X
	4. Lack of BPM knowledge		X		X		X			
	5. Lack of knowledge about potential partners				X					
	6. Lack of process knowledge	X	X				X			
<i>Financial Resources</i>	7. Lack of benefit expectations		X		X	X	X			X
	8. Lack of financial resources	X	X		X	X	X	X	X	X
<i>Reputational Resources</i>	9. High customer satisfaction			X	X					
	10. Fear of negative impression	X								
<i>Structural Resources</i>	11. Lack of acceptance		X	X	X					X
	12. Lack of initiative		X		X					
	13. Lack of top management support		X							X
	14. Fear of competence loss		X							X
<i>Environmental Resources</i>	15. High frequency of process changes	X								
	16. Fear of dependency			X			X	X		
<i>Organiz. Boundary Resources</i>	17. Fear of decrease in decision speed			X				X		X
	18. Fear of compromise solutions	X		X	X		X	X		X
Sum		6	9	6	9	5	7	5	1	9

DISCUSSION

Towards a problem-oriented theory of boundary spanning practices in BPM. In total, 18 potential barriers to the development of boundary spanning practices in BPM were identified through a thorough analysis of nine in-depth case studies: 1) fear of knowledge loss, 2) uncertainty about intellectual property, 3) high process specificity, 4) lack of BPM knowledge, 5) lack of knowledge about potential partners, 6) lack of process knowledge, 7) lack of benefit expectations, 8) lack of financial resources, 9) high customer satisfaction, 10) fear of negative impression, 11) lack of acceptance, 12) lack of initiative, 13) lack of top management support, 14) fear of competence loss, 15) high frequency of process changes, 16) fear of dependency, 17) fear of decrease in decision speed, and 18) fear of compromise solutions. These barriers express difficulty of organizations in establishing BPM collaboration with external actors and provide a solid foundation for further investigations. For instance, research may study the costs of establishing boundary spanning practices in BPM. Also, which interdependencies exist between the identified barriers and what measures need to be undertaken in order to overcome them?

Development of dynamic capabilities. The RBV and dynamic capability framework build a foundation for understanding boundary spanning practices in BPM as a source of competitive advantage. Still, as Teece et al. (1997) or Winter (2003) argue, building dynamic capabilities – here collaborative BPM – comes with costs and is only advantageous if justified by the market environment of the organization (Eisenhardt & Martin 2000). Here, we contributed an instantiation of the resource dependency argument. Developing dynamic capabilities depends on the specific resources of a firm, for which a categorization is found in Teece et al. (1997). We are able to increase depth of this argument by providing a more detailed set of 18 resource positions that may impact on the development of dynamic capabilities for the exemplary case of boundary spanning practices in BPM. We provide evidence that not all barriers exist in all case settings. This suggests that specific market environments and further organizational attributes, including specific paths and evolution, will need to be taken into account for explaining variations between the case settings. Here, the set of 18 potential variables contributes variables for further specific tests.

Designing methods and tools for boundary spanning practice in BPM. Our research calls for theory development in design science. How can BPM methodologies, tools, and modeling approaches be improved in order to overcome barriers to boundary spanning practices in BPM? Our study did show that firms may face the problem of a cost-benefit imbalance. At

this point, design-oriented research (Hevner et al. 2004) can contribute to the field. A) BPM method engineering. Business process modeling languages could be designed for a specific business problem, e.g. for the involvement of non-proficient customers. Such research could improve the effectiveness of collaborative BPM, and potentially reduce costs. B) BPM collaboration tools. Boundary spanning implies making use of resources that lie beyond an organization's boundaries. In this regard, the application of Web 2.0 technologies in terms of social BPM tools might offer fruitful perspectives. Here, research on collaborative business engineering (Den Hengst & De Vreede 2004; De Vreede 1998) could be extended by a discussion of collaborating beyond firm boundaries. BPM methods and tools are part of the set of factors that affects the advantageousness of boundary spanning practices in BPM.

Implications for practice. Our study offers major implications for practice. The case study results provide companies with an overview over problems they might encounter in their efforts to establish collaborative BPM and to involve firm-external actors. For the maturation of an organization in its BPM activities and in establishing capabilities to exploit firm-external resources through collaboration, these barriers need to be addressed. Here, the typical skill set of business process managers might be challenged. How to assess potential benefits of BPM collaboration (against the background of specific resource positions), how to identify partners and how to stimulate collaboration, how to manipulate firm-internal resistance to this way of process innovation (not invented here-syndrome), how to communicate about business processes to outsiders, how to protect the firm's technological knowledge? Answering these questions might challenge existing skill sets in BPM departments, an issue with which organization will need to cope in case they intend to exploit the potential benefits of collaborative BPM. A quick check on the existence of particular barriers in the specific organizational context can provide a starting point for assessing whether a collaborative BPM strategy is possible/affordable or not.

Limitations. In our study, we examined nine in-depth qualitative case studies, mostly in a European private sector context. The period of intensive data collection lasted from August 2008 to December 2009 and supported a point in time-analysis (per case). Against this background, we see potentially fruitful avenues for future research with regard to the sample size and focus. Extending the number of case studies could improve the robustness of our findings while longitudinal studies in the same nine settings could reveal potential changes over time. Also, we see value in further investigating into contextual factors, for instance, by more extensively studying the impact of industry branches, comparing private and public sector settings, or comparatively analyzing the impact of national contextual variables. Here, studies could take into account more the contextual setting and explain in greater detail why and why not certain barriers emerge. Finally, our qualitative multiple case exploration of barriers to the development of boundary spanning practices in BPM is intended to build a foundation for subsequent quantitative research endeavors and for further efforts to theorize and to design collaborative BPM.

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REFERENCES

1. Abdul-Hadi, N., Al-Sudairi, A., & Alqahtani, S. "Prioritizing barriers to successful business process reengineering (BPR) efforts in Saudi Arabian construction industry." *Construction Management and Economics* (23:3), 2005, pp. 305-315.
2. Ahmad, H., Francis, A., & Zairi, M. "Business process reengineering: critical success factors in higher education." *Business Process Management Journal* (13:3), 2007, pp. 451-469.
3. Akhavan, P., Jafari, M., & Ali-Ahmadi A. R. "Exploring the interdependency between reengineering and information technology by developing a conceptual model." *Business Process Management Journal* (12:4), 2006, pp. 517-534.
4. Al-Mashari, M. & Zairi, M. "BPR implementation process - an analysis of key success and failure factors." *Business Process Management Journal* (5:1), 1999, pp. 87-112.
5. Ashkenas, R. N., Ulrich, D., Jick, T., & Kerr, S. *The Boundaryless Organization: Breaking the Chains of Organizational Structure*, Jossey-Bass, San Francisco, 1995.
6. Bandara, W., & Rosemann, M. "What Are the Secrets of Successful Process Modeling - Insights From an Australian Case Study." *Systèmes d'Information et Management* (10:3), 2005, pp. 47-68.
7. Boudreau, M., & Robey, D. "Coping with contradictions in business process re-engineering." *Information Technology & People* (9:4), 1996, pp. 40-57.

8. Cohen W., & Levinthal, D. "Absorptive Capacity: A New Perspective on Learning and Innovation." *Administrative Science Quarterly* (35:1), 1990, pp. 128-152.
9. Collis, D. J. "Research Note: How Valuable are Organizational Capabilities?" *Strategic Management Journal* (15:S1), 1994, pp. 143-152.
10. Davenport, T. H., & Short, J. "The New Industrial Engineering: Information Technology and Business Process Redesign." *Sloan Management Review* (31:4), 1990, pp. 11-27.
11. Davenport, T. H. "Need radical innovation and continuous improvement? Integrate process reengineering and TQM." *Planning Review* (21:3) 1993, pp. 6-12.
12. Den Hengst, M., & De Vreede, G.-J. "Collaborative Business Engineering: A Decade of Lessons From the Field." *Journal of Management Information Systems* (20:4), 2004, pp. 85-113.
13. Eisenhardt, K. M., & Martin, J. A. "Dynamic Capabilities: What Are They?" *Strategic Management Journal* (21:10/11, Special Issue: The Evolution of Firm Capabilities), 2000, pp. 1105-1121.
14. Fisher, D. M. "The Business Process Maturity Model. A Practical Approach for Identifying Opportunities for Optimization." *BPTrends* (9:4), 2004.
15. Freeman, R. E. *Strategic management: A stakeholder approach*. Pitman, Boston, MA, USA 1984.
16. Friedman, R. A., & Podolny, J. "Differentiation of Boundary Spanning Roles: Labor Negotiations and Implications for Role Conflict." *Administrative Science Quarterly* (37:1), 1992, pp. 28-47.
17. Gereffi, G., Humphrey, J., & Sturgeon, T. "The governance of global value chains." *Review of International Political Economy* (12:1), 2005, pp. 78-104.
18. Grant, R. M. "Toward a Knowledge-Based Theory of the Firm." *Strategic Management Journal* (17:Winter96 Special Issue), 1996, pp. 109-122.
19. Grover, V., Jeong, S. R., Kettinger, W. J., Teng, J. T. C. "The Implementation of Business Process Reengineering", *Journal of Management Information Systems* (12:1), 1995, pp. 109-144.
20. Hammer, M. "The Process Audit." *Harvard Business Review* (85:4), 2007, pp. 111-123.
21. Hammer, M., & Champy, J. *Reengineering the Corporation: A Manifesto for Business Revolution*, Harper Business Press, New York, USA, 1993.
22. Helfat, C. E., & Peteraf, M. A. "The dynamic resource-based view: capability lifecycles." *Strategic Management Journal* (24:10), 2003, pp. 997-1010.
23. Hevner, A., March, S. T., Park, J., & Ram, S. "Design Science Research in Information Systems." *MIS Quarterly* (28:1), 2004, pp. 75-105.
24. Kettinger, W. J., Teng, J. T. C., & Guha, S. "Business Process Change – A Study of Methodologies, Techniques, and Tools." *MIS Quarterly* (21:1), 1997, pp. 55-80.
25. Lavie, D. "The competitive advantage of interconnected firms: an extension of the resource based view." *Academy of Management Review* (31:3), 2006, pp. 638-658.
26. Myers, M. D. "Qualitative Research in Information Systems." *MIS Quarterly* (21:2), 1997, pp. 241-242. *MISQ Discovery*, updated version, last modified: November 5, 2008 www.qual.auckland.ac.nz.
27. Newell, S., Pan, S. L., Galliers, R. D., & Huang, J. "The myth of the boundaryless organization." *Communications of the ACM* (44:12), 2001, pp. 74-76.
28. Niehaves, B. and Plattfaut, R. (2011) Collaborative Business Process Management: Status Quo and Quo Vadis. *Business Process Management Journal*, 17(3).
29. Niehaves, B., Plattfaut, R. and Becker, J. (2010) Does Your Business Process Management (Still) Fit the Market? – A Dynamic Capability Perspective on BPM Strategy Development, in Proceedings of the 16th Americas Conference on Information Systems (AMCIS). Lima, Peru.
30. Phelps, B. "Electronic Information Systems and Organizational Boundaries." *Technology Analysis & Strategic Management* (19:1), 2007, pp. 17-29.
31. Powell, W. W. "Neither market nor hierarchy: Network forms of organization." *Research in organizational behavior* (12), 1990, pp. 295 - 336.

32. Rosemann, M., & de Bruin, T. "Towards a Business Process Management Maturity Model", *Proceedings of the 13th European Conference on Information Systems (ECIS 2005)*, Regensburg, Germany, 2005.
33. Rosemann, M., de Bruin, T., & Power, B. "A Model to Measure Business Process Management Maturity and Improve Performance", *Business process management: practical guidelines to successful implementations* Jeston, J., Nelis, J. (Eds.), Butterworth-Heinemann, London, England, 2006, pp. 299-315.
34. Salganik, M. J., & Heckathorn, D. D. "Sampling and Estimation in Hidden Populations Using Respondent-Driven Sampling." *Sociological Methodology* (34:1), 2004, pp. 193-240.
35. Sarker, S., & Lee, A. S. "IT-enabled organizational transformation – a case study of BPR failure at TELECO." *Journal of Strategic Information Systems* (8:1), 1999, pp. 83-103.
36. Sia, S. K., Soh, C., & Weill, P. "IT Governance in Global Enterprises: Managing in Asia", *Proceedings of the 29th International Conference on Information Systems (ICIS 2008)*, Paper 97, Paris, France, 2008.
37. Sturgeon, T. J. "Modular production networks: a new American model of industrial organization." *Industrial and Corporate Change* (11:3), 2002, pp. 451-496.
38. Teece, D. J., Pisano, G., & Shuen, A.: "Dynamic Capabilities and Strategic Management." *Strategic Management Journal*, (18:2), 1997, pp. 509-533.
39. Venkatraman, N. "IT-Enabled Business Transformation: From Automation to Business Scope Redefinition." *Sloan Management Review* (35:2), 1994, pp. 73-87.
40. Walsh J., & Deery, S. "Refashioning organizational boundaries: Outsourcing customer service work." *Journal of Management Studies* (43:3), 2006, pp. 557-582.
41. Williamson, O. E. "Transaction-cost economics: The governance of contractual relations." *Journal of Law and Economics* (22:2), 1979, pp. 233-261.
42. Winter, S. G. "Understanding dynamic capabilities." *Strategic Management Journal* (24:10), 2003, pp. 991-995.
43. Wu, I. L. "A Model for Implementing BPR Based on Strategic Perspectives - An Empirical Study." *Information & Management* (39:4), 2002, pp. 313-324.
44. Yin, R. K. *Case Study Research: Design and Methods*, Sage Publications, London, England, 2003.
45. Zairi, M. "Business process management: a boundaryless approach to modern competitiveness." *Business Process Management Journal* (3:1), 1997, pp. 64-80.
46. Zollo, M., & Winter, S. G. "Deliberate Learning and the Evolution of Dynamic Capabilities." *Organization Science* (13:3), 2002, pp. 339-351.