Journal of Business Models (2018), Vol. 6, No. 3, pp. 45-62

Journal of Business Models

Identifying Contexts of Business Model Innovation for Exploration and Exploitation Across Value Networks

Louise Kringelum[1] and Allan Næs Gjerding[2]

Abstract

Purpose: This exploratory study develops insights into how inter-organizational projects can be part of a process of intra-organizational business model innovation in an incumbent firm.

Design/Methodology/Approach: The present study is based on a longitudinal case study of an asset-based logistics intermediary. The case study focuses on four instances of inter-organizational projects in a port system. Following an abductive logic, the empirical findings result in a conceptualization of business model innovation that describes how to strike a balance between exploration and exploitation across intra- and inter-organizational levels.

Findings: We present a novel conceptualization of business model innovation as a process that bridges the exploration and exploitation of business opportunities by means of organizational integration within value networks.

Originality/Value: Business model innovation entails both exploration and exploitation of business opportunities. However, as stated by Levinthal and March (1993), prior experience tends to trap firms in patterns of competences that limit future balancing of exploration and exploitation. Based on the findings of a real-time case study, we suggest how firms can protect themselves against trapping by creating contexts of exploration and exploitation that span organizational boundaries. In doing so, we respond to the call put forward by Wilden *et al.* (2018) for research on how institutional context affects the exploration-exploitation balance, which represents a research gap. Addressing this research gap from a business model perspective represents a novel discourse in business model innovation.

Keywords: Business Model Innovation; Exploration; Exploitation; Value Network

Please cite this paper as: Kringelum, L. and Gjerding, A. N. (2018), Identifying Contexts of Business Model Innovation for Exploration and Exploitation Across Value Networks, Vol. 6, No. 3, pp. 45-62

1-2 Department for Business and Management, Aalborg University, kringelum@business.aau.dk, ang@business.aau.dk

Introduction

The present paper responds to the call put forward by Wilden *et al.* (2018) for research on how institutional context affects the balance between exploration and exploitation, which represents a research gap in the surge of academic work that has followed upon the seminal contribution of the exploration-exploitation paradox by March (1991). While the paradox was originally phrased in terms of processes of organizational learning, the subsequent research has covered a broad range of additional topics, including dynamic capabilities, knowledge management, technological innovation, and the relationship between ambidexterity and organizational performance (Wilden *et al.*, 2018: 3-7). A core theme is that firms develop routines and procedures for decision-making that reflect how problems have been solved and potentials have been realized in the past, which tend to trap firms in patterns of competence that limit the ability to balance exploration and exploitation (Levinthal and March, 1993), hence the paradox. The paradox represents a challenge of business model innovation, as firms must be prepared to address environmental uncertainty as opportunities that can be either explored or exploited (Schneider and Spieth, 2013) through the existing or new business models. In the context of business model innovation within a port system lead by a dominant asset-based logistics intermediary, we offer a conceptualization of how to strike a balance between contexts of exploration and exploitation in a value network to mitigate the trapping effect of prior experience for the focal firm.

At the outset, it must be considered that the context of business model innovation is not a trivial one, since the very concept of business model is widely diffused (Ghaziani and Ventresca, 2005; Lambert, 2015) and therefore holds no unitary definition (Al-lebei and Avison, 2010; Jensen, 2013). According to Schneckenberg, Spieth and Matzler (2016), this conceptual ambivalence is caused by the fact that the gestalt of the business model as a research object has not been adequately defined. It has been argued that a business model paradox exists in the sense that the concept is widely criticized while simultaneously being highly popular, prevalent, and applied among both scholars and practitioners (Klang, Wallnöfer and Hacklin, 2014).

In consequence, there is no common understanding of business model innovation (Schneider and Spieth, 2013; Foss and Saebi, 2017). Because business model innovation has received increasing research and management attention since the turn of the century (Wirtz, Göttel and Daiser, 2016), the research community has experienced a need to unify extant research on business model innovation, which has resulted in the publication of several broad, synthesizing literature reviews on the topic see; Schneider and Spieth (2013), Schneckenberg, Spieth and Matzler (2016), Foss and Saebi (2017) and Wirtz and Daiser (2017).

The proliferation of understandings of business model innovation represents what Hirsch and Levin (1999) have described as the occurrence of umbrella constructs, i.e. constructs that try to comprehend broad phenomena in new lines of research. Umbrella constructs reflect that research is on the verge to establish patterns of mutual understandings that need to be validated within the scientific community. Hirsch and Levin (1999: 204-207) portray this process as a cycle where emerging excitement creates a validity challenge that calls for tidying up with typologies. In the following, we contribute to tidying up by identifying dominant perspectives in business model innovation and developing a conceptualization of business model innovation.

Our contribution is based on the application of abductive reasoning (Dubois and Gadde, 2002) to bridge existing theoretical explanations with a longitudinal case study in an asset-based logistics intermediary including four subcases of inter-organizational projects in a port system. Inspired by Nenonen and Storbacka (2010), who claim that business logics with focus on value chains is being replaced by business logics focusing on value networks, we argue that the case captures an evolving trend of business model innovation. In doing so, we answer the call for more research on the intra- and inter-firm challenges of business model innovation put forward by Berglund and Sandström (2013) and Foss and Saebi (2017).

The remainder of this paper is organized as follows: in Section 2, we present three existing perspectives on business model innovation and the fundamental premises of these. We discuss the interconnections between the perspectives and the existing research gaps. Based on these insights, we then elaborate on the applied research methodology as well as the abductive process underlying the methodology. This is followed by a description of the longitudinal case study. Section 4 covers the abductive reasoning (O'Mahoney and Vincent, 2014) by which we have identified different instances of business model innovation in four embedded subcases of inter-organizational projects in the longitudinal case study. Subsequently, a conceptualization of business model innovation in value networks is compiled and related to existing theory in the field. Finally, the scientific and managerial implications, research limitations, and future avenues for research are put forward and discussed in Section 6.

Perspectives on Business Model Innovation

The approach taken to business models in the current paper is inspired by Shafer, Smith and Linder (2005: 202) who, "... define a business model as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network," as value creation is increasingly regarded as a phenomenon occurring in value networks (Massa and Tucci, 2013). Although often applied in research on business models, the structure of value networks is rarely defined. We adhere to the definition proposed by Allee (2000), who state that: "A value network generates economic value through complex dynamic exchanges between one or more enterprises, its customers, suppliers, strategic partners, and the community" for which reason it can be regarded from the point of view of a focal firm. While the value network can function as a source of both complementary and substitutive resources (Pynnönen, Hallikas and Ritala, 2012), this also implies that firms due to the intricate links of resources and activities across the value network cannot maintain complete control of their operations (Berglund and Sandström, 2013).

Based on the definition presented above, we regard business model innovation in incumbent firms as a process of renewal that can occur through contexts of exploitation and exploration in a value network. The research question that we address is how inter-organizational projects contribute to intra-organizational business model innovation in an incumbent firm. To answer this question, we elaborate on perspectives of business model innovation to emphasize the boundaries inherent in the existing theoretical conceptualizations, and we argue that firms can innovate their business models through contexts of exploitation and exploration across the value network. By pursuing this line of questioning, we follow the call from both Spieth, Schneckenberg and Ricart (2014) and Storbacka *et al.* (2012) to analyze the process of integrating stakeholders in business model innovation and to reconfigure existing models to enable collaboration. In doing so, we are inspired by a number of scholarly reviews of dimensionality in business model innovation research, notably Schneider and Spieth (2013) and Foss and Saebi (2017). Furthermore, we build on a variety of contemporary business model innovation classifications and typologies, including Amit and Zott (2001, 2010), Hock, Clauss and Schulz (2016), Wei *et al.* (2014), and Taran, Boer and Lindgren (2015).

Current conceptualizations of business model innovation

Multiple researchers have highlighted the need to integrate customers, external network partners, and additional stakeholders when undertaking business model innovation (Giesen *et al.*, 2010; Frankenberger, Weiblen and Gassmann, 2014; Spieth, Schneckenberg and Ricart, 2014; Laudien and Daxböck, 2015). It is generally acknowledged, that business model innovation is not confined to the spatial boundaries of the focal firm. Rather, it goes beyond the focal firm (Clauss, 2016) and its existing boundaries (Cavalcante, Kesting and Ulhøi, 2011) and is often interlinked with the value chain or network (Voelpel, Leibold and Tekie, 2004; Girotra and Netessine, 2011; Breuer and Lüdeke-Freund, 2017).

In order to identify existing conceptualizations of business model innovation that transcends firm boundaries, a theoretical review including 45 peer-reviewed papers on business model innovation was undertaken (Petticrew and Roberts, 2006). Based on this, three perspectives were identified as recurring in business model innovation: 1) change or innovation; 2) novelty and efficiency; and 3) incremental and radical. These three perspectives represent summative conceptual dimensions of existing themes in the current literature on business model innovation and will be elaborated in the following to provide the foundation for the abductive reasoning behind the conceptualization presented in section 5.

Change or innovation

Since both the classification of innovation (Garcia and Calantone, 2002) and of business model innovation (Gassmann, Frankenberger and Sauer, 2016; Wirtz, Göttel and Daiser, 2016; Foss and Saebi, 2017) is ambiguous, a recurring question in the current literature is when to regard changes in business models as innovations (Spieth and Schneider, 2016).

As some of the first authors to discuss this subject, Linder and Cantrell (2000) highlighted the static one-dimensional perspective of business models, as it merely presents the status quo at one point in time, and thus does not take into account the continuous need for change. As a result, they introduced change models such as (p: 1): "... the core logic for how a firm will change over time in order to remain profitable in a dynamic environment". Four change models were advanced based on the degree of change in the core logic: realization models, renewal models, extension models, and journey models. Realization and renewal models cover the exploitation and exploration, respectively, of the existing business model. Therefore, they are rarely regarded as business model change according to the model presented by Linder and Cantrell (2000). A similar distinction is put forward by Cavalcante, Kesting and Ulhøi (2011), in which they distinguish between business model creation, extension, revision, or termination, depending on the degree of innovation. In doing so, Cavalcante, Kesting and Ulhøi (2011) introduced various levels of analysis regarding the innovation of processes and the change in business models as different entities as well as the role of individual agency in the process of change.

The exploration of business model innovation by Mitchell and Coles (2003) was based on a distinction between the degrees of change and innovation, which are categorized in terms of the number of changed business model elements. Based on this, they proposed four types of models: 1) business model improvement; 2) catch-up; 3) replacement; and 4) innovation.

In short, current research that conceptualizes business model innovation as either change or innovation reflects a focus on both the cognitive dimension of logic and the operational dimension of building blocks and elements. The distinction between cognitive and operational dimensions reflects that business model innovation can occur at different levels of analysis. While Mitchell and Coles (2003) argue that the change of one building block is merely a business model improvement, Linder and Cantrell (2000) claim that even marginal changes can reflect innovation to the extent that the change of one building block represents a completely new business logic. Consequently, the level of analysis as well as to whom the innovation represents something new must be considered as dimensions when conceptualizing business model innovation.

Novelty and efficiency

A recurring theme in conceptualizations of business model innovation is the organization of transaction costs. This theme has arisen from one of the early perspectives on business model innovation, which was developed by Amit and Zott (2001) in their analysis of value creation in e-business. Their model of value creation potential that can lead to new sources of innovation, i.e., business model innovation, has inspired many ensuing papers on the subject see e.g.; Wei *et al.* (2014) and Hock, Clauss and Schulz (2016), as well as the their own continuous development focusing on business model innovation, as seen in Amit and Zott (2010, 2012) and Zott and Amit (2008).

Amit and Zott (2001) included four dimensions of value creation in their model: efficiency, complementarities, lock-in, and novelty. These four value drivers, which are firmly grounded in economic theories (Gassmann, Frankenberger and Sauer, 2016), can be considered as different dimensions of change which can be deployed as means of business model innovation. Especially the dimensions of efficiency and novelty, inspired by transaction cost economics and Schumpeterian innovation (Gassmann, Frankenberger and Sauer, 2016), have been acknowledged in business model research. Wei *et al.* (2014) applied the design themes of novelty and efficiency in an analysis of the fit between technological innovation and business model design. While novelty-centered business model design covers all areas of content, structure, and governance as a part of the innovation, efficiency-oriented business model design is limited to focusing on the organization of the boundary-spanning activity system to enable efficiency, seemingly focusing primarily on the transactions found within the structure. The business model innovation is in this context tightly linked to the reduction or new organization of transaction costs (Zott and Amit, 2007; Casadesus-Masanell and Zhu, 2013). Following the same track, Hock, Clauss and Schulz (2016) include the notions of novelty and efficiency as business model design themes in analyzing organizational value and capabilities. They employ this division in connecting business model innovation and behavioral management to show how the underlying organizational value affects the capabilities needed in the innovation process to enable new transactions or minimize existing transaction costs.

Incremental and radical innovation

The third perspective found in extant research on business model innovation focuses on value and is frequently explored along a continuum of incremental and radical innovation. The degree of change is often analyzed in terms of changes in value proposition, value creation, and value capture (Velu and Jacob, 2016).

Based on the degree and type of innovation and the change of building blocks, Witell and Löfgren (2013) identified three degrees of business model innovation that occur through transition strategies: no or minor changes, incremental innovation, or radical innovation. In business model change, no or minor changes occur in the building blocks. Incremental business model innovation is defined as changes in the content or structure of the business model, while radical business model innovation takes place when governance is affected, which is often marked by a change in business relationships (Witell and Löfgren, 2013: 528). As the distinction is essentially based on the ways in which the revenue structure of the firm changes, it is focused primarily on the demand-side of business model innovation, which is generally referred to as value creation and value capture.

Summary

The three perspectives presented above each emphasize three converging perspectives of business model innovation. The nature of business model innovation depends on how the change in question affects the cognitive dimension of the business model and the interplay between business model constituents represented by the operational building block dimension. Furthermore, the nature of business model innovations are affected by the objective of minimizing or restructuring transaction costs or increasing the value created and captured. The three perspectives presented above converge in a number of areas, and complement rather than substitute each other. Essentially, value and cost are not opposites but rather reciprocal in nature. Innovating transaction costs, i.e., managing costs most optimally, is basically a search for stability. In contrast, innovating to create or capture value requires flexibility and change. The contradictions inherent in this relationship of perspectives do not stand out in the existing literature, but instead represent a challenge inherent in most processes of business model innovation as one of balancing the tensions of exploration and exploitation (O'Reilly and Tushman, 2013).

In the following abductive case analysis, the three perspectives on business model innovation have been used to bridge the empirical observations and existing theoretical explanations. A bridging mechanism is inherent in the abductive approach, and including the three perspectives have, in the present case, enabled the identification of the foci in business model innovation, cost reconfiguration or value creation, and the means for structuring the process, e.g. whether the process unfolded as change or innovation both cognitively and operationally. We applied these distinctions to explore the mechanisms affecting a process of business model innovation that occurred at various levels of analysis.

The remainder of this paper is devoted to presenting a process of business model innovation by abductively combining the empirical data and the conceptual foundation presented previously. This is concluded by presenting a conceptualization of how to strike a balance between exploration and exploitation when business model innovation is undertaken across a value network.

Research Methodology

Since the research described in this paper is abductive in nature, the process of developing a conceptual framework of business model innovation is based upon an engagement with the actors in the case at hand, i.e., the

Phase 1: Developing preliminary conceptualization	**Phase 2: Reconfiguring conceptualization**
• Prior knowledge on business models and business model innovation • Initiation of a longitudinal process study at logistics intermediary • Engaged scholarship approach (Van de Ven, 2007) to collect data through interaction with organizational members • First conceptualization of business model innovation developed based on preliminary observations	• Presenting and discussing results with practitioners • Refining model based on inputs • Theoretical literature review on business model innovation • Identifying conceptual perspectives of business model innovation • Analysis of four subcases in the longitudinal case • Reconfiguring conceptualization based on insights gained from the literature

Feedback from peers and practitioners

Figure 1: An abductive process of conceptualizing business model innovation

logistics intermediary. Abduction entails re-describing the empirical, observable world through abstraction in order to describe the causations creating patterns in events (O'Mahoney and Vincent, 2014). Following an abductive logic, the research process has combined empirical data, case analyses, and theoretical modeling in order to expand the knowledge on both theoretical concepts and empirical phenomena (Dubois and Gadde, 2002) and to develop probable explanations of causality in a critical realist sense (Edwards, O'Mahoney and Vincent, 2014).

The research has unfolded as a longitudinal process study spanning from 2013 to 2016 based primarily on qualitative data. Inspired by previous research on business models (Nenonen and Storbacka, 2010), the research process has progressed through two phases, which will be elaborated in the following.

Data collection and analysis

In Phase 1, data were primarily collected via engaged scholarship (Van de Ven, 2007) in the logistics intermediary and supplemented by secondary data, summaries of meetings, and email correspondences. The engaged scholarship approach (Van de Ven, 2007) enabled the inclusion of perspectives from multiple stakeholders, which has in turn ensured a focus on both the theoretical and practical dimensions of the subcases. In order to gain interactional expertise (Collins, 2004; Langley *et al.*, 2013) and in-depth knowledge on both the daily processes and top management decision making, we participated in and facilitated seminars at all levels of the logistics intermediary and with external stakeholders taking part in the process of innovation. We participated in eight strategy seminars with external participants of which seven were recorded, transcribed and thematically coded in Nvivo (Miles, Huberman and Saldãna, 2014). Summaries were written concurrently and approved by all participants. The data were included in the analysis with the aim of identifying existing mechanisms (Ackroyd and Karlsson, 2014) affecting the processes of business model innovation in the logistics intermediary.

To ensure breadth in describing and analyzing the process of business model innovation, the case study is presented through four embedded subcases (Yin, 2003), representing four inter-organizational projects in which the logistics intermediary took part. This approach is possible because we have followed multiple projects that have been conducted as a part of the overall business model innovation within the firm of the logistics intermediary between 2013 and 2016.

Based on the empirical observations and a conceptual grounding in business model research, a preliminary model conceptualizing the process was developed.

Between Phases 1 and 2, see Figure 1, the preliminary model was presented at an academic conference and to the organizational actors of the case study. The input from these events triggered the initiation of Phase 2 and the need for a more extensive literature review covering existing perspectives of business model innovation as described in Section 2. A broader conceptual insight enabled the reconfiguration of the preliminary model, supplemented by an analysis of the four sub-cases that also substantiated the conceptualization and the constructs included herein.

The Case of the Logistics Intermediary and the Value Network

The longitudinal case study followed the process of business model innovation in a logistics intermediary. The logistics intermediary is a municipality-owned private limited firm. The firm acts within a port system and is locally-embedded due to extensive asset commitments and a dual role of contributing to regional growth while maintaining a viable business. For this reason, the political pressure induced by being owned by a municipality affects the objectives of the firm and the competitive potential. The dual roles define the business logic of the logistics intermediary, which must balance an objective of profit maximization while also initiating projects for the benefit of a multitude of stakeholders in the port system. Consequently, the logistics intermediary functions as a focal firm in a value network of logistics operators, transport intermediaries and manufacturing firms, with whom the firm is experiencing complementarity and substitutability of resources and activities due to the existing transactional links established between the firms.

What initiated the case study was the baffling observation that the logistics intermediary CEO continuously stated that the existing business model was not viable. He argued that in order to ensure future survival, new approaches to manage the relations with external stakeholders had to be considered: "This is a part of our strategy now: how can we activate collaboration with companies so we can create trust, which can create intuitive exchange and openness, so we can help each other obtain lower costs and with it streamline or create new ideas" (CEO Strategy Seminar 2). This statement marked a break with the existing business logic in the port system, which was characterized by sub-optimization in the existing value chains, limited integration, low levels of trust and, as a result, no openness between firms, impairing the ability to meet emerging competitive challenges.

The emerging challenges experienced within the port system reflect a global trend where port competitiveness is no longer determined by the result of a single firm or value chain but rather by collaborative efficiencies of value networks (Meersman, Van de Voorde and Vanelslander, 2010; van der Lugt, Dooms and Parola, 2013). The development reflects that managerial focus increasingly needs to shift from value chain to value network (Malhotra, 2000; Nenonen and Storbacka, 2010). However, the majority of firms observed in the port system reported that increased competitive pressures made cost reductions on primary activities necessary. Given the nature of exploitative behavior, cost reductions obstructed the potential of exploration of new relations across the value network. This mismatch between future challenges and current solutions provided by firms motivated the logistics intermediary to initiate a process of business model innovation.

Thus, the reason for changing the existing business logic of the logistics intermediary was to pursue a managerial objective of growth by reconfiguring the relationships across the value network of the port system, thereby assuming a baffling approach to innovating the existing business model both intra- and inter-organizationally. This process is explained in the four inter-organizational projects presented in the following.

Four projects stimulating business model innovation

Throughout the research project, we observed and took part in four projects in which the logistics intermediary interacted with external stakeholders to strive towards the above-mentioned objective. We followed the four projects concurrently with the overall process of business model innovation in the logistics intermediary. The projects were initiated with stakeholders across the value network, as depicted in Figure 2, which illustrates a section of the value network of the logistics intermediary within the port system. The arrows indicate the flow of tangible and intangible goods in which

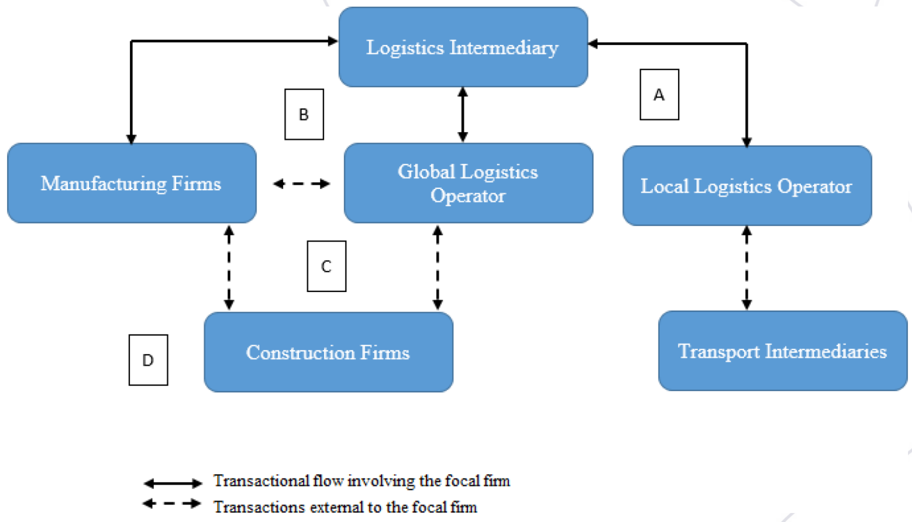


Figure 2: Inter-organizational projects across the value network

the logistics intermediary participated, while the dotted links represent transactions external to the firm and thus beyond the existing value network. The four projects are marked by letters and placed according to the existing transactional flows.

In the first project, **Project A,** the logistics intermediary collaborated with a local logistics operator with whom the logistics intermediary had existing transactional links based on ownership of a logistics hub. The aim of the project was twofold: 1) to operationally streamline the activities at the hub with the aim of reducing costs and increasing efficiency; and 2) to uncover the growth potential and eliminate obstacles in reaching out for new potential customers of transport intermediaries. The project was aimed at transport intermediaries with whom only the operator had recurring transactions, which meant that the project enabled an exploitation of existing value creating activities by connecting them to the existing transactions between the operator and transport intermediaries. For this reason, the project was highly dependent on the knowledge and legitimacy of the operator.

Project B and **Project C** were both part of a long-term collaboration between the intermediary and a globally oriented logistics operator. The first project, **Project B**, was based on asset similarity between the operator and the intermediary regarding the provision of services to manufacturing firms in the value network. By coordinating existing activities through both knowledge- and asset-sharing, the firms improved and expanded their range of services, thus increasing the scope of value creation whilst additionally obtaining intangible benefits through co-branding.

Based on the interaction and trust-building in Project B, **Project C** was initiated with the purpose of taking advantage of several expected industrial changes concerning the logistical flow across the value network. Both the logistics intermediary and the global operator were expecting and threatened by future changes, and decided to proactively develop an innovative solution to support their own future value creation. The project was aimed at the triangle-flow between the global operator, manufacturing firms, and construction firms, and thus extended the existing transactional links of the logistics intermediary. For this reason, it marked a significant shift in their business logic in order to create value for firms outside their current value network.
Extending significantly beyond the value network of the logistics intermediary, the aim of **Project D** was to innovate the construction process of goods from several manufacturing firms, thus radically changing the operational process underlying their supply chain. Several companies, including local logistics operators and education centers, were considered as partners in terms of daily activities and management, and the value created was to be captured mostly by the construction firms. However, due to lack of both operational and cognitive links between the firms the project did not progress beyond the idea phase.

Conceptualizing Business Model Innovation

The preliminary model developed in Phase 1 (see Figure 1) depicted the overall process of business model innovation for the logistics intermediary as interacting with firms in both familiar and unfamiliar contexts. The variety of perspectives reviewed in Phase 2 added to the insights of what constitutes the contexts, providing a new setting for empirically conceptualizing business model innovation as changing relationships within a value network along different dimensions. The identification of the three perspectives on business model innovation – i.e. change-innovation, novelty-efficiency, and incremental-radical provided different lenses for elaborating on the mechanisms underlying the process. These complementary perspectives were relevant as the analysis of each project demonstrated that different reasoning and objectives affected the extent to which ongoing activities and the relational links of the value network were changed. In consequence, the model was augmented by the dimensions of minor, medium and major changes in logic behind the business model of the focal firm.

In doing so, the theoretical perspectives of organizing transaction costs and managing activities for value creation either cognitively or operationally, enabled a reconfiguration of the two contexts to be defined respectively as contexts of exploitation and exploration of the existing business model with differing degrees of uncertainty, as illustrated in Figure 3. The exploitation context entails low risk changes of the business model close to existing activities of the focal firm and within the transactional boundaries of the existing value network. The exploration context is more uncertain, extending beyond the existing value network with a potential to increase the radicality of innovations through new value creation.

Furthermore, the case study showed that competitive pressures increasingly challenged the business logic of cost reduction, that permeated the value network, stimulating collaboration instead of sub-optimization across firm boundaries. As a result, processes of exploring value co-creation were evolving across the value network. These insights led us to conceptualize business model innovation as a process by which firms balance exploration and exploitation through the context of the value network. The final elaboration of the conceptualization is presented in Figure 3. In the following, the conceptualization will be described and discussed based on the empirical insights from the four subcases.

The subcases show three important insights. First, business model innovation is driven by a change of logic in the focal firm that can be operationalized within and across the contexts of exploration and exploitation. Second, exploration and exploitation does not necessarily represent opposite logics, but may be part of a continuum of logics where the distinction between

Change in logic / Change in value network	*Context of exploitation*	*Context of exploration*
Minor	1. Fine-tuning existing activities (A)	2. Exploiting opportunities, i.e., preparing them for being moved into the exploitation context
Medium	3. Changing activities inspired by the advent or creation of new opportunities (B)	4. Exploring how to exploit opportunities which are discovered or co-created (C)
Major	5. Exploiting opportunities moving in from the exploration context	6. Exploring opportunities which are discovered or co-created (D)

Figure 3: Business model innovation logics within two contexts

innovation and change becomes less important. Third, business model innovation can be based on explorative or exploitative search, depending on the context in which it takes place, but it can also be based on a process by which explorative search in one context leads to exploitative search in another context.

In the following, the conceptualization is substantiated by exploring the four inter-organizational projects of the case study. We will denote the logistics intermediary as the focal firm undertaking business model innovation by engaging in inter-organizational projects. The purpose is to distinguish between business model innovation of the focal firm and the change or reconfiguration of relationships across the value network. This distinction of micro- and meso-level business model innovation will be further discussed in Section 6.

Inter-organizational projects for business model innovation

A within-case analysis of the subcases revealed that the previous degree of interaction between the focal firm and the external stakeholders, and the scope in regards to affecting third parties, varied considerably. The scope ranged from seeking operationalization efficiency in activities to improved communication in order to enable value co-creation by altering the relations of the existing value network and inherent supply chains.

Projects A and B took place within the existing value network based on the current logic of value creation of the focal firm. The overriding aim was to exploit existing activities and appertaining relations. In Project A, activities were adjusted and relations strengthened based on existing transactions, while Project B provided medium changes in the value network by mitigating transaction costs through novel asset sharing. Project C involved transcending the existing value network by exploring the scope of value creation in order to transcend the value network relations of the focal firm. This was enabled through value co-creation with a partner from the existing value network. As a result, the addition to the value network represented a medium change, as existing relations mediated the exploration. Project D was planned as exploring completely beyond the existing value network, based on collaboration with multiple participants outside the existing value network. The value capture of Projects C and D were not explicated, but were expected to ripple through the value network rather than be centered at the focal firm, based on a major reconfiguration of the value network.

As mentioned previously, Figure 3 embodies the modes of innovation that we have identified from our review of research on business model innovation. The conceptualization can be interpreted as instances of business model innovation, as in the case of projects A and D, but also as a cyclical process starting with general exploration beyond the existing value network (6), exploring how to exploit the identified value (co)-creation potential (5), exploiting the opportunities by establishing relations, thus extending the value network of the focal firm, followed by preparing (4) and moving (3) the project into the context of exploitation. This process can require reconfiguration and thus major changes to the value network of the focal firm. Moreover, exploiting opportunities will often necessitate changing activities (2), which directly influences the micro-level business model of the focal firm. The activities must continually be fine-tuned according to developments in the value network (1).

In sum, the conceptualization represents a process of business model innovation for a focal firm that is based on balancing the exploration and exploitation of business opportunities. In addition, it indicates how these opportunities can drive organizational integration as the focal firm manages the relational links of the value network in order to achieve exploration and exploitation. It emphasizes the prerequisite of moving between contexts of exploitation and exploration as one of value exchange configuration, drawing on the relational dimension of business model innovation (Dyer and Singh, 1998; Gassmann, Frankenberger and Sauer, 2016). The stability-seeking approach of activity-system reconfiguration can thus inform the innovation of business models within the context of exploitation, while the context of exploration provides an arena for establishing new approaches to value creation or potential value co-creation.

Discussion and Concluding Remarks

The paper has presented a novel conceptualization of business model innovation as a process that bridges the exploration and exploitation of business opportunities by means of organizational integration across value networks. Based on a longitudinal case study involving four sub-cases, the conceptualization suggest how firms can protect themselves against being trapped by prior experience that prevent the firm from striking a new balance between exploration and exploitation. The paper contributes to the validity challenge (Hirsch and Levin, 1999) of current research in business model innovation, especially by responding to the call for more research on the intra- and inter-firm challenges of business model innovation that has been put forward by Berglund and Sandström (2013) and Foss and Saebi (2017). We have organized the development of the conceptualization in an abductive stepwise fashion, where initial empirical insights have been interpreted in terms of overriding perspectives on business model innovation that can be inferred from extant literature. In doing so, our research contributes to the understanding of business model innovation by emphasizing, in line with Laudien and Daxböck (2015), that business models are contextual, which implies the blurring of organizational boundaries as value is co-created among various actors in a networked market (Nenonen and Storbacka, 2010; Storbacka *et al.*, 2012).

In the following section, we discuss the scientific and managerial implications of the findings and contrast these with existing approaches in the research field. Subsequently, we present the limitations and potential avenues for future research. Here, we emphasize the need to consider the macro-, meso-, and micro-levels of business model innovation and the potential contribution from including perspectives from the ambidexterity literature.

Implications

We have argued that business model innovation can occur in contexts of exploitation and exploration across a value network. Thus, business model innovation in collaboration with external stakeholders can be regarded as an approach taken to obtain ambidexterity by balancing exploitation and exploration through domain separation (Lavie, Stettner and Tushman, 2010; Hollen, 2015).

This is an important take-away for managers who struggle with the exploration-exploitation paradox. Ambidextrous organizations have traditionally been perceived as firms with dual structures or a variety of organizational arrangements that facilitate the simultaneous management of exploration and exploitation (Duncan, 1976; Tushman and O'Reilly, 1996; O'Reilly and Tushman, 2013), involving cognitive frames that allow paradoxical recognition (Smith and Tushman, 2005). This implies that ambidextrous organizations are differentiated firms that rely on an intricate balance of coordinating parallel or sequential processes of exploration and exploitation (Benner and Tushman, 2003; Gupta, Smith and Shalley, 2006; O'Reilly and Tushman, 2013). However, as pointed out by Simsek (2009), ambidexterity is not necessarily an intra-organizational phenomenon, but also occurs as inter-organizational arrangements, where ambidexterity is especially strong in cases that imply a high level of manageable diversity in inter-organizational ties. In effect, ambidexterity can be achieved by inter-organizational arrangements, however only to the extent that intra-organizational arrangements facilitate and accommodate the dynamic requirements that the inter-organizational arrangements create.

We argue that the managerial implication of this is that alignment of intra- and inter-organizational arrangements is contextual and changes over time as explorative activities turn into actual implementation that allows exploitation to occur. This implies that in order to be ambidextrous, a firm must possess not only intra-organizational structural and contextual ambidexterity (Birkinshaw and Gibson, 2004), but also the ability to develop and change these properties over time (Markides, 2013; O'Reilly and Tushman, 2013; Papachroni, Heracleous and Paroutis, 2015). The conceptualization of business model innovation that we have derived in the present paper (see Figure 3) can serve as a prescription for how the threshold capability of structural and contextual ambidexterity can be turned into a dynamic capability by utilizing inter-organizational ties to develop domain ambidexterity (Lavie, Stettner and Tushman, 2010; Hollen, 2015). Our conceptualization shows that this can be done through a sequence of steps through which loose couplings gradually become tighter as explorative activities turn into coordinated or internalized exploitative activities. Thus, while the conceptualization presented in Figure 3 presents various instances of business model innovation, it also presents a generalized pattern of transition from exploration to exploitation, implying that business model innovation occurs both within a framework, i.e., a setup of an exploration-exploitation balance, and along a learning curve. Furthermore, the simultaneous occurrence of instances within the framework implies that inter-organizational arrangements are a viable alternative to intra-organizational arrangements when it comes to facilitating the co-existence of different business logics along the exploration-exploitation continuum.

Limitations and avenues for future research

Based on the theoretical and empirical premises of the current research, we have identified two primary limitations. The first and most central limitation is based on the empirical setting provided by the in-depth study of the logistics intermediary. Due to the fact that the logistics intermediary is required to pursue the objectives of both profit-maximization and regional growth, it is to be questioned whether similar readiness for exploitation and exploration across the value network will be found in private firms.

Second, research following abductive reasoning is influenced by the researcher's theoretical frame of reference (Dubois and Gadde, 2002). Additional central theoretical perspectives, such as network analysis (Granovetter, 1973), have not been included in the current conceptualization. Nevertheless, this could provide a frame for analyzing the construction of inter-organizational networks more profoundly (Gulati and Gargiulo, 1999) and should, along with the following themes, be regarded as an avenue for future research to substantiate the current analysis of value networks and relational theory.

In terms of future research, three avenues are of interest based on additional theoretical input and existing research gaps. The conceptualization proposed in the current paper can serve as a point of departure for studying business model innovation as a process occurring across various contexts for exploitation and exploration in a value network. In doing so, we emphasize the need to consider both the micro-organization level logic of business model innovation in the focal firm, the existing transactional structure of the value network, and the relational links (Santos, Spector and Van Der Heyden, 2009) inherent herein. When widening the scope of business model innovation to include external stakeholders, the concept of meso-level interaction becomes of essence. With inspiration from evolutionary economics, it could be argued that the meso-level must be taken into account when business model innovation of a focal actor affects the organizational context, thus changing the meso-level order, which can in turn have possible repercussions for the macro domain (Dopfer, Foster and Potts, 2004). A future line of research could pursue the levels of business model innovation inspired by a discussion of the micro- and meso-levels of business models, as described by Storbacka *et al.* (2012).

By initiating projects with or aimed at actors not directly included in the current value network, business model innovation goes beyond simple transactions of goods and services. As such, the relational links have to be reconsidered, as intangible transactions of alternative currencies (Allee, 2000) might also influence the reconfiguration. This involves reconsidering the intertwinement of business models and value nets, as Zott and Amit (2008: 3-4), based on Brandenburger and Nalebuff (1996) state: "The players in the value net, such as competitors and certain complementors, may or may not be part of the business model because some of them may not transact with the focal firm." Maintaining this divide can mislead research to overlook relational links currently not supported by transactional activities, thereby dismissing potential avenues of business model innovation.

Finally, additional research is required in order to further explore business model innovation through domain separation as an approach to obtain ambidexterity.

References

Ackroyd, S. and Karlsson, J. C. (2014) 'Critical Realism, Research Techniques, and Research Design', in Edwards, P. K., O'Mahoney, J., and Vincent, S. (eds) *Studying Organizations Using Critical Realism*. Oxford: Oxford University Press, pp. 21–45.

Al-lebei, M. M. and Avison, D. (2010) 'Developing A Unified Framework Of The Business Model Concept.', *European Journal of Information Systems*. Nature Publishing Group, 19(3), pp. 359–376.

Allee, V. (2000) 'Reconfiguring the Value Network', *Journal of Business Strategy*, 21(4), pp. 36–39.

Amit, R. and Zott, C. (2001) 'Value creation in e-business', *Strategic Management Journal*, 22(6–7), pp. 493–520.

Amit, R. and Zott, C. (2010) *Business Model Innovation: Creating Value In Times Of Change*. IESE Business School, Spain.

Amit, R. and Zott, C. (2012) 'Creating value through business model innovation', *MIT Sloan Management Review*, 53(3), pp. 41–49.

Benner, M. J. and Tushman, M. L. (2003) 'Exploitation, exploration, and process management: The productivity dilemma revisited', *Academy of management review*, 28(2), pp. 238–256.

Berglund, H. and Sandström, C. (2013) 'Business model innovation from an open systems perspective: structural challenges and managerial solutions', *International Journal of Product Development*, 18(3/4), pp. 274–285.

Birkinshaw, J. and Gibson, C. (2004) 'Building Ambidexterity Into an Organization', *MIT Sloan Management Review*, 45(4), pp. 47–55.

Brandenburger, A. M. and Nalebuff, B. J. (1996) *Co-opetition*. New York: Doubleday.

Breuer, H. and Lüdeke-Freund, F. (2017) 'Values-Based Network and Business Model Innovation', *International Journal of Innovation Management*, 21(3), pp. 1–35.

Casadesus-Masanell, R. and Zhu, F. (2013) 'Business Model Innovation and Competitive Imitation: The Case of Sponsor-based Business Models', *Strategic Management Journal*, 34, pp. 464–482.

Cavalcante, S., Kesting, P. and Ulhøi, J. (2011) 'Business model dynamics and innovation: (re)establishing the missing linkages', *Management Decision*, 49(8), pp. 1327–1342.

Clauss, T. (2016) 'Measuring business model innovation: Conceptualization, scale development, and proof of performance', *R&D Management*, 47(3), pp. 385–403.

Collins, H. (2004) 'Interactional expertise as a third kind of knowledge', *Phenomenology and the Cognitive Sciences*, 3(2), pp. 125–143.

Dopfer, K., Foster, J. and Potts, J. (2004) 'Micro-meso-macro', *Journal of Evolutionary Economics*, 14(3), pp. 263–279.

Dubois, A. and Gadde, L. E. (2002) 'Systematic combining: An abductive approach to case research', *Journal of Business Research*, 55(7), pp. 553–560.

Duncan, R. B. (1976) 'The ambidextrous organization: Designing dual structures for innovation', in Kilmann, R. H., Pondy, L. R., and Slevin, D. (eds) *The management of organization*. New York: North Holland, pp. 167–188.

Dyer, J. H. and Singh, H. (1998) 'The Relational View: Cooperative Strategy and Sources of Interorganizational Competitive Advantage', *Academy of Management Review*, 23(4), pp. 660–679.

Edwards, P. K., O'Mahoney, J. and Vincent, S. (2014) *Studying Organizations Using Critical Realism - A Practical Guide*. Edited by P. K. Edwards, J. O'Mahoney, and S. Vincent. Oxford: Oxford University Press.

Foss, N. J. and Saebi, T. (2017) 'Fifteen Years of Research on Business Model Innovation: How Far Have We Come, and Where Should We Go?', *Journal of Management*, 43(1), pp. 200–227.

Frankenberger, K., Weiblen, T. and Gassmann, O. (2014) 'The antecedents of open business models: an exploratory study of incumbent firms', *R&D Management*, 44(2), pp. 1–33.

Garcia, R. and Calantone, R. (2002) 'A critical look at technological innovation typology and innovativeness terminology: a literature review', *Journal of product innovation management*, 19(2), pp. 110–132.

Gassmann, O., Frankenberger, K. and Sauer, R. (2016) *Exploring the Field of Business Model Innovation*. Springer.

Ghaziani, A. and Ventresca, M. J. (2005) 'Keywords and cultural change: Frame analysis of business model public talk, 1975-2000', *Sociological Forum*, 20(4), pp. 523–559.

Giesen, E. *et al.* (2010) 'When and how to innovate your business model', *Strategy & Leadership*, 38(4), pp. 17–26.

Girotra, K. and Netessine, S. (2011) 'How to Build Risk into Your Business Model', *Harvard Business Reiew*, (May), pp. 100–106.

Granovetter, M. S. (1973) 'The Strength of Weak Ties', *American Journal of Sociology*, 78(6), pp. 1360–1380.

Gulati, R. and Gargiulo, M. (1999) 'Where Do Interorganizational Networks Come From?', *American Journal of Sociology*, 104(5), pp. 1439–1493.

Gupta, A. K., Smith, K. G. and Shalley, C. E. (2006) 'The interplay between exploration and exploitation', *Academy of management journal*, 49(4), pp. 693–706.

Hirsch, P. M. and Levin, D. Z. (1999) 'Umbrella Advocates Versus Validity Police : A Life-Cycle Model', *Organization Science*, 10(2), pp. 199–212.

Hock, M., Clauss, T. and Schulz, E. (2016) 'The impact of organizational culture on a firm's capability to innovate the business model', *R&D Management*, 46(3), pp. 433–450.

Hollen, R. (2015) *Exploratory Studies into Strategies to Enhance Innovation-Driven International Port Competitiveness in a Port Context*. Erasmus University Rotterdam.

Jensen, A. B. (2013) 'Do we need one business model definition?', *Journal of Business Models*, 1(1), pp. 61–84.

Klang, D., Wallnöfer, M. and Hacklin, F. (2014) 'The business model paradox: A systematic review and exploration of antecedents', *International Journal of Management Reviews*, 16(4), pp. 454–478.

Lambert, S. C. (2015) 'The Importance of Classification to Business Model Research.', *Journal of Business Models*, 3(1), pp. 49–61.

Langley, A. *et al.* (2013) 'Process Studies of Change in Organization and Management: Unveiling Temporality, Activity, and Flow', *Academy of Management Journal*, 56(1), pp. 1–13.

Laudien, S. and Daxböck, B. (2015) 'Antecedents and Outcomes of Collaborative Business Model Innovation', in *The XXVI ISPIM Conference*. Hungary: Budapest.

Lavie, D., Stettner, U. and Tushman, M. L. (2010) 'Exploration and Exploitation Within and Across Organizations', *Academy of Management Annals*, 4(1), pp. 109–155.

Levinthal, D. A. and March, J. G. (1993) 'The Myopia of Learning', *Strategic management journal*, 14(Winter), pp. 95–112.

Linder, J. and Cantrell, S. (2000) 'Changing Business Models : Surveying the Landscape', *Accenture Institute for Strategic Change*, pp. 1–15.

van der Lugt, L., Dooms, M. and Parola, F. (2013) 'Strategy making by hybrid organizations: The case of the port authority', *Research in Transportation Business and Management*, 8, pp. 103–113.

Malhotra, Y. (2000) 'Knowledge management and new organization forms: a framework for business model innovation', *Information Resources Management Journal*, 13(1), pp. 5–14.

March, J. G. (1991) 'Exploration and Exploitation in Organizational Learning', *Organization Science*, 2(1), pp. 71–87.

Markides, C. C. (2013) 'Business Model Innovation: What can the Ambidexterity Literature Teach Us?', *The Academy of Management Perspectives*, 27(4), pp. 313–323.

Massa, L. and Tucci, L. C. (2013) 'Business Model Innovation', in Dogson, M., Gann, D., and Phillips, N. (eds) *The Oxford Handbook of Innovation Management*. Oxford: Oxford University Press, pp. 420–441.

Meersman, H., Van de Voorde, E. and Vanelslander, T. (2010) 'Port Competition Revisited', *Review of Business and Economics*, 55, pp. 210–232.

Miles, M. B., Huberman, M. A. and Saldãna, J. (2014) *Qualitative Data Analysis*. Thousand Oaks, CA: Sage.

Mitchell, D. and Coles, C. (2003) 'The ultimate competitive advantage of continuing business model innovation', *Journal of Business Strategy*, 24(5), pp. 15–21.

Nenonen, S. and Storbacka, K. (2010) 'Business model design: conceptualizing networked value co-creation', *International Journal of Quality and Service Sciences*, 2(1), pp. 43–59.

O'Mahoney, J. and Vincent, S. (2014) 'Critical Realism as an Empirical Project', in Edwards, P. K., O'Mahoney, J., and Vincent, S. (eds) *Studying Organizations Using Critical Realism*. Oxford: Oxford University Press, pp. 1–20.

O'Reilly, C. A. and Tushman, M. L. (2013) 'Organizational Ambidexterity: Past, Present and Future', *The Academy of Management Perspectives*, 27(4), pp. 324–338.

Papachroni, A., Heracleous, L. and Paroutis, S. (2015) 'Organizational ambidexterity through the lens of paradox theory: Building a novel research agenda', *The Journal of Applied Behavioral Science*, 51(1), pp. 71–93.

Petticrew, M. and Roberts, H. (2006) *Systematic reviews in the social sciences: A practical guide*. Malden, MA: Blackwell Publishing.

Pynnönen, M., Hallikas, J. and Ritala, P. (2012) 'Managing Customer-Driven Business Model Innovation', *International Journal of Innovation Management*, 16(4), p. 1250022. doi: 10.1142/S1363919612003836.

Santos, J., Spector, B. and Van Der Heyden, L. (2009) *Toward a Theory of Business Model Innovation within Incumbent Firms*, *INSEAD Working Paper Colelction*. Fontainebleau, France.

Schneckenberg, D., Spieth, P. and Matzler, K. (2016) 'Theorising Business Model Innovation: Mapping Research Dimensions and Positions in an Integrative Framework', in *European Academy of Management*. France: Paris.

Schneider, S. . and Spieth, P. (2013) 'Business Model Innovation: Towards an Integrated Future Research Agenda', *International Journal of Innovation Management*, 17(1), pp. 1–34.

Shafer, S. M., Smith, H. J. and Linder, J. C. (2005) 'The power of business models', *Business Horizons*, 48(3), pp. 199–207.

Simsek, Z. (2009) 'Organizational ambidexterity: Towards a multilevel understanding', *Journal of Management Studies*, 46(4), pp. 597–624.

Smith, W. K. and Tushman, M. L. (2005) 'Managing strategic contradictions: A top management model for managing innovation streams', *Organization science*, 16(5), pp. 522–536.

Spieth, P., Schneckenberg, D. and Ricart, J. E. (2014) 'Business model innovation - state of the art and future challenges for the field', *R&D Management*, 44(3), pp. 237–247.

Spieth, P. and Schneider, S. (2016) 'Business model innovativeness: designing a formative measure for business model innovation', *Journal of Business Economics*, 88(6), pp. 671–696.

Storbacka, K. *et al.* (2012) 'Designing Business Models for Value Co-Creation', *Review of Marketing Research*, 9(June), pp. 51–78.

Taran, Y., Boer, H. and Lindgren, P. (2015) 'A business model innovation typology', *Decision Sciences*, 46(2), pp. 301–331.

Tushman, M. L. and O'Reilly, C. A. (1996) 'Ambidextrous organizations: Managing evolutionary and revolutionary change', *California Management Review*, 38(4), pp. 8–30.

Velu, C. and Jacob, A. (2016) 'Business model innovation and owner–managers: the moderating role of competition', *R&D Management*, 46(3), pp. 451–463.

Van de Ven, A. H. (2007) *Engaged scholarship: Creating knowledge for science and practice*. Oxford: Oxford University Press.

Voelpel, S. C., Leibold, M. and Tekie, E. B. (2004) 'The wheel of business model reinvention: how to reshape your business model to leapfrog competitors', *Journal of Change Management*, 4(3), pp. 259–276.

Wei, Z. *et al.* (2014) 'The fit between technological innovation and business model design for firm growth: evidence from China.', *R&D Management*, 44(3), pp. 288–305.

Wilden, R. *et al.* (2018) 'Revisiting James March (1991): Whither exploration and exploitation', *Strategic Organization*.

Wirtz, B., Göttel, V. and Daiser, P. (2016) 'Business Model Innovation: Development, Concept and Future Research Directions', *Journal of Business Models*, 4(1), pp. 1–28.

Wirtz, B. W. and Daiser, P. (2017) 'Business Model Innovation : An Integrative Conceptual Framework Identifying existing BMI', *Journal of Business Models*, 5(1), pp. 14–34.

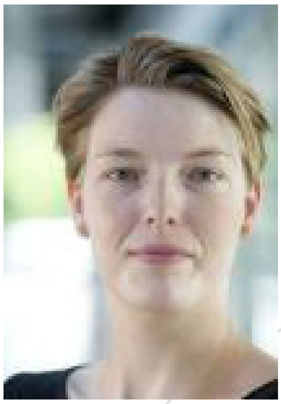
Witell, L. and Löfgren, M. (2013) 'From service for free to service for fee: business model innovation in manufacturing firms', *Journal of Service Management*, 24(5), pp. 520–533.

Yin, R. K. (2003) *Case study research design and methods*, *Applied social research methods series*. Thousand Oaks, CA: Sage Publications Inc.

Zott, C. and Amit, R. (2007) 'Business model design and the performance of entrepreneurial firms', *Organization Science*, 18(2), pp. 181–199.

Zott, C. and Amit, R. (2008) 'The fit between product market strategy and business model: Implications for firm performance', *Strategic Management Journal*, 29(1), pp. 1–26.

About the Authors



Louise Kringelum is Assistant Professor at Department for Business and Management, Aalborg University. In 2018 she received her Ph.D. degree in intra- and inter-organizational business model innovation from the faculty of social science at Aalborg University Denmark. She is affiliated to the Center for Logistics and Cooperation in Aalborg, where she has facilitated processes of collaborative business model innovation and studied the development of port ecosystems. Her research interests are in the field of organizational development, collaboration and inter-organizational business models. Email: kringelum@business.aau.dk

Allan Næs Gjerding is Associate Professor and Head of Section at Department for Business and Management, Aalborg University. He has previously served as Dean at the Faculty of Social Science, Aalborg University, and as Vice President at Vestas Control Systems. He is a senior consultant at the Center for Logistics and Cooperation in Aalborg, where he is involved in collaboration between ports and the development of port industrial parks. His current research interests are organizational development, eco systems, and varieties of collaboration, including inter-organizational business models. Email: ang@business.aau.dk