

## Logic Multiplicity in Digital Business Models – An Institutional Logics Perspective

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### Abstract

*Digital business models (DBM) are built upon digital technologies with complexity-inducing characteristics, connecting multiple heterogeneous actors seeking to co-create value. Institutional logics coordinate and constrain actors' value co-creation interactions. Multiple, competing institutional logics can co-exist and create barriers to value co-creation. However, we argue that business model research in the information systems (IS) discipline still assumes a homogeneous concept, overlooking the possibility of logic multiplicity within DBMs. We conceptually show why logic multiplicity should be acknowledged and derive three propositions introducing logic multiplicity to the structures and practices of DBMs. By assuming an institutional logics perspective, challenging the assumption of homogeneity, and introducing a logic multiplicity lens, we call for a return to the discipline's sociotechnical roots. We thereby enable scholars to study the complex reality of digital business and aid practitioners in turning situations of multiplicity into opportunities.*

**Keywords:** Digital business models, institutional logics, logic multiplicity, sociotechnical perspective, value co-creation

### 1. Introduction

Digital business models (DBM) play a crucial role in digital transformation efforts as firms seek to alter their existing value creation mechanisms to keep up with the competitive environment. These changes are fueled by emerging digital technologies that have inherent complexity-inducing characteristics (Benbya et al., 2020), such as embeddedness (Yoo et al., 2012), editability (Kallinikos et al., 2013), reprogrammability, and communicability (Yoo et al., 2010). The characteristics lead to the continued increase in the interconnectedness of a multitude of actors (El Sawy et al., 2010; Tilson et al., 2010). Consequently, DBMs built upon digital technologies are becoming ever more complex (El Sawy & Pereira,

2013). Research on business models (BM) has strong roots in the information systems (IS) discipline (e.g., Al-Debei & Avison, 2010; Timmers, 1998). The discipline continues to offer insights into how novel digital technologies such as blockchain (Chong et al., 2019) and cloud computing (Labes et al., 2017) alter firms' existing BMs or enable them to offer new innovative BMs. The BM forms a crucial link between a firm's strategy, business processes, and information technologies (Veit et al., 2014). Increasingly, BMs are understood from a systemic perspective (Zott et al., 2011) since firms rely on value co-creation with numerous heterogeneous actors for their value propositions to materialize. The resulting complex sociotechnical systems blur and cross previously established boundaries of organizations, industries, and markets (El Sawy et al., 2010; Márton, 2021).

Actors' value co-creation interactions are shaped by institutions and institutional arrangements (Vargo & Lusch, 2016). These guiding norms, values, and beliefs play a decisive role in facilitating and coordinating but also constraining actors' interactions (Edvardsson et al., 2014). Prior literature on institutional logics (Thornton et al., 2012) has shown that actors are guided by multiple, co-existing logics, which sometimes compete or clash (Reay & Hinings, 2009; Zilber, 2011). The competition between alternative institutional logics presents barriers to collaboration and value co-creation (Cloutier & Langley, 2017). Scholars have studied this multiplicity of institutional logics and the resulting tensions in various settings (e.g., Greenwood et al., 2011; Reay & Hinings, 2009), recently also within the sharing economy context from an IS perspective (Schultze & Bhappu, 2017; Schulz et al., 2020).

However, while digital technologies connect ever-more heterogeneous actors seeking to co-create value, IS research still treats the BM as a homogeneous concept. Despite the institutional logics perspective's growing footprint on the discipline (Busch, 2018), the multiplicity of institutional logics shaping actors' value co-creation interactions has, thus far, not received attention within studies on DBMs. Boundary-

crossing phenomena such as digital health care require digital startups and big tech firms to co-create value with patients, doctors, public authorities, and insurance providers. They connect actors with fundamentally different assumptions and strong professional codes regarding questions of what accessible healthcare is and how digital technologies can replace physical appointments (Sharon, 2018). For the digital startups' and big tech firms' DBM to work, accepting the sociotechnical nature of DBMs and accounting for the inherent logic multiplicity seems inevitable. Therefore, we raise the following research question: *How can an institutional logics perspective enrich information systems research on digital business models?*

The purpose of this paper is to challenge the implicit assumptions of the homogeneity of actors and logics within the BM concept and call for the acceptance of logic multiplicity in DBMs. We argue for enriching the current understanding of DBMs with an institutional logics perspective to capture the complex reality of today's digital businesses. To achieve this objective, we highlight conceptually why IS research should acknowledge institutional logics' role as barriers and facilitators in value co-creation and innovation at the level of DBMs. To address this gap, we derive three central propositions introducing logic multiplicity to the structures and practices of DBMs.

This paper is structured into five sections. Following this introduction, we first outline the theoretical foundation of our research, i.e. BMs at the core of firms' digital transformation efforts as well as institutional logics and the multiplicity of logics in value co-creation. Second, based on a review of recent work on BMs within IS, we challenge the discipline's current assumption of homogeneity and address the topic of logic multiplicity. Third, we introduce logic multiplicity to advance the current understanding of DBMs and detail our propositions. Fourth, we discuss the implications of accepting logic multiplicity for future DBM research and suggest avenues for conceptual and empirical investigation. We conclude by underscoring how dismantling the assumption of BMs' homogeneous actor composition contributes to the community's sociotechnical tradition, lay the necessary groundwork for further research into institutional logics' hindering or fostering role, and emphasize the practical implications for managers.

## **2. Theoretical foundations**

### **2.1. Business models**

Over the past decades, the BM concept has enjoyed a great interest in a variety of research fields

(e.g., Foss & Saebi, 2016; Massa et al., 2017; Wirtz et al., 2016)—including the IS community (Al-Debei & Avison, 2010; Alt, 2020; Veit et al., 2014). While early research focused on explaining how firms could monetize their then emergent e-businesses (Timmers, 1998), the concept has now left an essential mark in strategy and innovation research and, more recently, has even spread to other fields of application. Despite the growing numbers of publications and a general common understanding of what BMs are, research has yet to agree on a definition of the very core concept, resulting in a situation where there “are almost as many definitions of a business model as there are business models” (Teece, 2018, p. 41). Moreover, Massa et al. (2017) identify three diverging interpretations in the literature of what a BM is (i.e., attributes of real firms, cognitive/linguistic schemas, and formal conceptual representations/descriptions). Notwithstanding the lack of conceptual clarity, the BM has established itself as a distinct unit of analysis (Zott et al., 2011), which we adopt in this paper, and an important vehicle between a firm's strategies, processes, and information technologies (Veit et al., 2014). With time, scholars came to understand the BM as a systemic, holistic concept (Zott et al., 2011), consisting of multiple components and their interlinkages. The systemic perspective on BMs points to a focal firm's boundary-crossing value co-creation and co-capture efforts with its customers, suppliers, key partners, and other stakeholders. Thus, “the locus of value creation is no longer perceived to reside within firm boundaries; but rather, value is co-created between actors in a network” (Storbacka et al., 2012, p. 59). As such, the BM represents the boundary-spanning activities that tie a firm with diverse actors.

Much of the research on BMs has focused on providing archetypes, typologies, and sets of components (cf. Wirtz et al., 2016; Zott et al., 2011). In an attempt to map the numerous content-related conceptualizations of BMs, Wirtz et al. (2016) identify four dominant areas of research investigating structural aspects of BMs, i.e. forms and components, value system, actors and interaction, and innovation. The categories show the importance of the actors themselves and their value co-creation interactions for a BM's structure. Besides the content-related questions about BMs' structures, research has also investigated BMs from a process perspective. Zott et al. (2011) note that “the business model perspective thus involves simultaneous consideration of the content and process of ‘doing business’” (p. 1037). Other authors highlight BMs' dynamic and emergent character and focus on the practices of enacting BMs (Mason & Spring, 2011; Storbacka & Nenonen, 2011).

In IS research, the BM is mainly used to understand the impact of novel digital technologies on firms' business logics. The use of digital technologies has triggered wide-reaching digital transformations, with digital innovations at their core (Nambisan et al., 2017). DBM innovations are one type of digital innovation and thus drive digital transformations, understood as the holistic changes to an organization's strategy, structure, and culture brought about by the implementation of digital innovation (Hess et al., 2016; Vial, 2019; Wiesböck & Hess, 2020). In the scope of digital transformation, the reconfiguration of BMs is occasionally "seen as the most profound form of digital transformation" (Alt, 2020, p. 405). Digital technologies enable firms to alter how value is delivered to customers and pave the way for entirely different value propositions and revenue mechanisms. The intended changes to value creation are one of the central elements of organizations' digital transformation strategies (Hess et al., 2016) and highlight the strategic importance of BMs for firms' success in the digital age. Hanelt et al. (2021) note that recent scholarly conversation on digital transformation revolves around two themes, i.e. a shift toward malleable organizational designs and a shift toward digital business ecosystems. Both aspects underscore digital technologies' inter-organizational and dynamic nature (El Sawy et al., 2010; Tilson et al., 2010; Yoo et al., 2010), triggering fundamental changes in organizations and systems.

Recent research within the IS community has studied BMs for digital technologies such as blockchain (Chong et al., 2019), cloud computing (Labes et al., 2017), and big data (Loebbecke & Picot, 2015). This focus highlights the importance of information technology for today's business and the IS community's unique perspective (Rai & Tang, 2014). With the ever-increasing importance of emerging digital technologies, scholars have shifted attention to the distinct properties of DBMs. While the lack of consensus regarding a common BM definition also translates into conceptual discussions related to their digital counterparts, we follow Veit et al. (2014) in understanding BMs as "digital if changes in digital technologies trigger fundamental changes in the way business is carried out and revenues are generated" (p. 48). Driven by the boundary-spanning and inter-organizational nature of digital technologies (El Sawy et al., 2010; Tilson et al., 2010), actors' attempts to collaboratively co-create value within DBMs have led to the emergence of complex digital ecosystems (El Sawy et al., 2010; Márton, 2021).

While emerging digital technologies continue to drive the interconnectedness of actors seeking to co-create value and create systemic DBMs, research has

neglected "actors & interactions in the context of business models" (Wirtz et al., 2016, p. 51). The established firm-centric approach has put the focal firm in the spotlight, downplaying other actors' crucial importance in creating and materializing the value the focal firm tries to capture (Nenonen & Storbacka, 2010). Despite the increasing systems-level perspective and the implicit realization that firms do not act in isolation, the multiple actors within DBMs have, thus far, received little attention beyond the recognition of their mere existence.

## **2.2. Institutional logics and logic multiplicity in value co-creation**

The value co-creation activities of complex systems of actors are commonly conceptualized through a service-dominant lens (Vargo & Lusch, 2008). Originally stemming from marketing research, service-dominant logic initiated a significant paradigm shift from the existing goods-dominant logic (i.e., firms produce goods that users consume) toward a service-dominant logic. This perspective understands all social and economic actors as co-creators of value and services as the basis of all economic exchange. Subsequently, service-dominant logic promotes a systemic view of actor-to-actor networks, questioning the previously dominant focus on dyadic exchange. Following service-dominant logic, value co-creation occurs when actors—including customers—exchange services and integrate resources (Lusch & Nambisan, 2015). This value co-creation does not occur in a vacuum but is instead embedded in institutional arrangements that coordinate and facilitate "an ever-increasing level of service exchange and value cocreation under time and cognitive constraints" (Vargo & Lusch, 2016, p. 11). These actor-generated institutional arrangements play a vital role in determining value perceptions and coordinating resource integration processes, i.e. the cooperative activities of actors integrating and using resources for a potential value to materialize (Edvardsson et al., 2014). When actors share the same institutional logics, "a shared worldview ensures that actors can interpret resource integration opportunities coherently and come together quickly to exchange or integrate resources" (Lusch & Nambisan, 2015, p. 165).

Institutional logics are "the socially constructed, historical patterns of cultural symbols and material practices, including assumptions, values, and beliefs, by which individuals and organizations provide meaning to their daily activity, organize time and space, and reproduce their lives and experiences" (Thornton et al., 2012, p. 2). They represent reference frames for the sensemaking of individuals and

organizations, guiding principles, and whole vocabularies. Institutional logics have material (i.e., structures and practices) and symbolic (i.e., ideas and meanings) elements (Thornton et al., 2012). Since they both enable coordination between actors through collective identities yet also constrain action, institutional logics have a dual character. Further, actors develop dominant logics, resembling mental barriers or cognitive myopia (Storbacka & Nenonen, 2011). Institutional logics' constraining effects become particularly prevalent in situations where multiple logics co-exist. In these situations of institutional multiplicity (Zilber, 2011), competition between alternative institutional logics can occur, hinder successful collaboration, and trigger or impede change (cf. Greenwood et al., 2011 for an overview). Literature has studied competing institutional logics and their effects in several empirical settings, such as healthcare (Reay & Hinings, 2009), higher education publishing (Thornton & Ocasio, 1999), and the sharing economy (Mair & Reischauer, 2017). For example, Reay and Hinings (2009) describe how the introduction of a new public business-like healthcare logic to increase efficiency and reduce costs competed with doctors' existing dominant logic of medical professionalism. Particularly in cross-sector collaborations, such as public-private partnerships, fundamental disputes about the collaborations' very purpose are likely to simmer beneath the surface since they are rarely articulated and mostly taken for granted (Cloutier & Langley, 2017). While such latent tensions often go unnoticed and do not develop into open conflict, they can quickly become salient in situations of change and plurality when actors are faced with competing goals or roles (Smith & Lewis, 2011). For DBMs marked by complexity and turbulence, change and plurality are rather the rule than the exception (El Sawy et al., 2010; El Sawy & Pereira, 2013).

### **3. Challenging business model research's assumption of homogeneity**

Reconfiguring and innovating BMs is at the core of firms' attempts to alter value creation and value capture logics, driving digital transformation initiatives of strategic importance. The nature of the emerging digital technologies fueling these changes is inherently inter-organizational and complexity-inducing. Benbya et al. (2020) argue that the complexity of today's sociotechnical systems stems from the fact that digital technologies are, among other characteristics, *embedded* in material objects (Yoo et al., 2012), *connected* in webs of sociotechnical relations (Sarker et al., 2019), *editable*, which enables constant modification and updating (Kallinikos et al.,

2013), *reprogrammable* through the separation of software and hardware (Yoo et al., 2010), and *communicable* via shared protocols creating global infrastructures (Tilson et al., 2010). Additionally, digital technologies' *self-referential* nature fosters interconnections (Yoo et al., 2010). Consequently, digital technologies drive the interconnectedness of a multitude of actors, increasingly leading to complex DBMs that cross and blur previously established boundaries of organizations, industries, and markets (El Sawy et al., 2010; Márton, 2021). Phenomena such as digital healthcare are not bound to one specific industry or market and connect a multitude of actors for a central value proposition to materialize. Digital care providers, such as Swedish startups Kry or Doktor24 that offer text-based or video-based access to healthcare professionals via mobile applications, do not only rely on users to accept their service as a valuable alternative to established primary care. They also depend on public authorities, health insurance providers, doctors, nurses, and pharmacists. The digital care providers' resulting DBMs paint a complex picture of numerous actors seeking to co-create more accessible healthcare.

As DBMs become ever more pervasive and connect actors previously separated by industry boundaries, they become more likely to be home to actors guided by multiple logics. To continue with the example from digital health care, digital startups seeking to disrupt the health care sphere and big-tech firms expanding their portfolio seem to follow different institutional logics than doctors who have strong opinions and influential professional codes of conduct (Sharon, 2018). Public authorities might hold fundamentally different assumptions about how accessible healthcare should be or how digital healthcare should be reimbursed (Reay & Hinings, 2009). Consequently, managing the relationships with important actors and understanding their goals and guiding institutional logics are critical for these digital care providers' DBMs. However, we argue that this multiplicity of logics within DBMs, which must increasingly be expected in digital business's complex reality, is not reflected in IS research.

Al-Debei and Avison (2010) acknowledge that an organization's relationships with various players within a BM are vital for its success and that "the expected benefits are not achieved easily as actors might pursue different business logics, and chase different strategic goals with the collaboration" (p. 374). Nonetheless, BM research within IS has largely overlooked the possibility of a multiplicity of institutional logics within a firm's BM. We reviewed research on BMs published in the discipline's most influential outlets in the past decade (i.e., journals and

conferences ranked B or better based on the VHB-JOURQUAL3 ranking), yet we found surprisingly few studies challenging the assumption of a homogeneous BM. While Mini and Widjaja (2019) identified tensions faced by platform owners when designing their DBMs, they did not elaborate on how and why “performing tensions arise when a plurality of actors seek for conflicting goals” (p. 4). Table 1 provides an overview of the characteristics of complex real-world DBMs and connected key assumptions in IS research. The comparison shows how the literature has yet to account for the multiplicity of logics in DBMs.

**Table 1. Comparing real-world digital business models and assumptions in literature**

Characteristics of real-world DBMs	Assumptions in IS research	Exemplary work
Importance of novel digital technologies (e.g., blockchain, cloud computing)	Digital technologies as key component of BMs	Chong et al. (2019); Veit et al. (2014)
Increasing complexity of interconnections and dependencies with other actors from different industries	Systemic perspective on BMs	El Sawy and Pereira (2013); Zott et al. (2011)
	Digital technologies’ complexity-inducing characteristics	Benbya et al. (2020); Yoo et al. (2012)
Value co-creation with heterogeneous actors with diverse backgrounds and different logics	Actors as one component of BMs; implicit assumption of homogeneity	Al-Debei and Avison (2010); Wirtz et al. (2016); Zott et al. (2011)
Settings in which actors follow competing logics and assumptions		Schultze and Bhappu (2017); Schulz et al. (2020)

Over the past decade, the institutional logics perspective has increasingly informed IS research (Busch, 2018). However, the possibility of competing logics’ coexistence and the resulting dynamics have been largely overlooked thus far. Focusing on the B2B2P2P (i.e., business-to-business-to-peer-to-peer) BM of a ridesharing platform, Schultze and Bhappu (2017) used three archetypical institutional logics to analyze the inherent dialectics in the BM’s setup between market logics, hierarchy logics, and clan logics. While the authors’ study points toward the fact that some BMs, such as those with complex stakeholder setups like B2B2P2P, host different logics per definition, the acknowledgment that this might be

true for DBMs per se has not been made. A notable exception is the study by Schulz et al. (2020), who study the detrimental effects of logic multiplicity in the service ecosystem for intermodal mobility. The authors define logic multiplicity as “the adoption of multiple, partly different, institutional logics, and possibly even different dominant institutional logics through actors and resulting problems” (Schulz et al., 2020, p. 429). They suggest that situations of value co-creation between a multitude of heterogeneous actors are riddled with multiple, competing institutional logics. These competing logics can be crucial barriers to innovation and BMs’ functioning since actors hold fundamentally different assumptions about the joint value co-creation’s goals and vision. The authors highlight the previously neglected link between competing institutional logics in a service ecosystem and technology (Busch, 2018), arguing that contradictions can limit the functional range of service platforms. Overall, the insights seem to be limited to phenomena related to shared mobility.

Despite the few notable attempts to break up the BM concept and understand settings of logic multiplicity, we argue that the IS discipline essentially still holds the implicit assumption of homogeneity among actors within a BM. This assumption understates the importance of actors themselves and the social context in which DBMs are embedded. This observation is in line with an overall trend within the discipline. The discipline’s connection to the perspective it has thrived on—i.e., the sociotechnical perspective—has faded in recent years (Sarker et al., 2019). In essence, the sociotechnical perspective promotes focusing on the technical artifacts and the social contexts in which these artifacts are embedded (Orlikowski & Robey, 1991). We believe that keeping the implicit assumption that actors within DBMs are homogeneous and share the same logics runs counter to IS research’s sociotechnical tradition. Therefore, we challenge the homogeneity assumption, as it does not capture the complex, conflicted reality of digital business. In times when digital technologies cross long-established boundaries and, consequently, a multiplicity of logics within a BM becomes ever more likely, the IS community still assumes a homogeneous concept. The fact that theories tend to “homogenize what is, in reality, a pluralistic world” (Glynn et al., 2000, p. 726) has been the source of criticism in neighboring disciplines before. Thus, we call for an acceptance of the inherent heterogeneity of today’s actor systems of value co-creation. We believe that enriching IS research’s current understanding of BMs with an institutional logics perspective would benefit research and contribute to catching up on the dynamic developments in a complex digital reality. In the

following, we will derive propositions and outline suggestions for a future research agenda to study DBM multiplicity.

#### 4. Introducing logic multiplicity in digital business models

We have argued that current BM research in the information discipline lacks an acceptance of logic multiplicity within BMs. Following the guidelines for conceptual papers by Hirschheim (2008) and Jaakkola (2020), we suggest extending existing theory by proposing areas in which an institutional logics perspective would further our understanding of the inner dynamics of complex DBMs. We follow the predominant understanding that the BM perspective includes both a structural perspective and a process perspective (Wirtz et al., 2016; Zott et al., 2011). Consequently, our three propositions address how logic multiplicity in DBMs impacts matters of structure, particularly actors and their value co-creation interactions, and the processes and practices of co-creating value. While we focus on value co-creation, this is equally applicable to value co-capture.

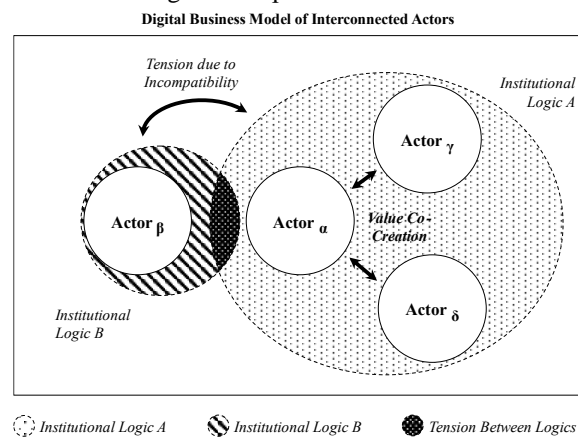
##### 4.1. Structural perspective on logic multiplicity in digital business models

While the focus on the impact of novel digital technologies on the associated BMs is well within the IS research's agenda, we argue that recent literature has given too little attention to the social aspects of BMs beyond the technical perspective. Since DBMs often rely on a multitude of actors to co-create value (Zott et al., 2011), their systemic structures become more complex. The cooperation of numerous actors tied together in value co-creation efforts becomes crucial. Drawing on the central assumption of IS research, namely the sociotechnical perspective (Orlikowski & Robey, 1991), we suggest that the social contexts actors are embedded in and, thereby, BMs are built upon should complement investigations into the effect of novel digital technologies on BMs. Following service-dominant logic (Schulz et al., 2020; Vargo & Lusch, 2016), actors' institutional arrangements framing their value co-creation interactions play a crucial role in coordinating service exchange and resource integration (Edvardsson et al., 2014). Actors' institutional logics do not necessarily need to match but become more likely to compete when DBMs cross established boundaries (Cloutier & Langley, 2017). Consequently, this requires breaking up the implicit assumption of a homogenous BM concept and calls for recognizing BM multiplicity. Put

differently, BMs in the digital sphere are ever more likely to bring together actors with heterogeneous logics—something that the concept should reflect. We consequently propose:

**P1:** *Digital business models are characterized by a multiplicity of institutional logics shaping actors' value co-creation.*

Logic multiplicity does not necessarily have detrimental effects on the BM's function since often the actors' guiding institutional logics enable cooperation, facilitating interactions through shared rules, norms, and values (Edvardsson et al., 2014; Vargo & Lusch, 2016). However, when incommensurable institutional logics shape actors' interactions, the dual character of institutions (i.e., facilitating and constraining) becomes salient. When actors hold fundamentally opposing views about how the world should be, this constraining facet can become an insurmountable barrier to cooperation (Cloutier & Langley, 2017). Figure 1 pictures institutional logics' competition within a DBM.



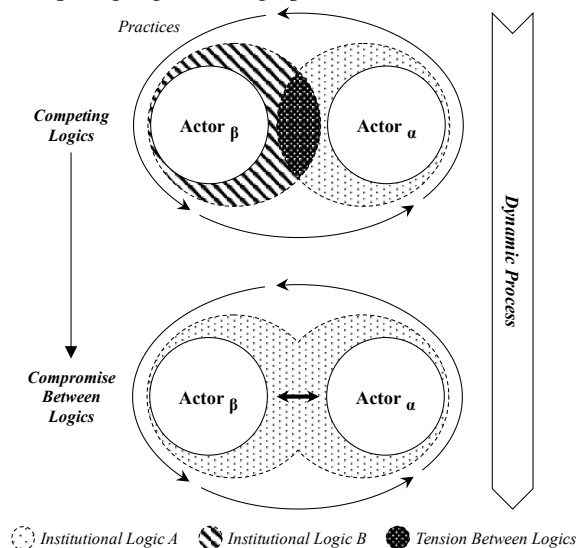
**Figure 1. Logic multiplicity in digital business models**

Using the example from digital health care, doctors' resentment toward the idea that algorithms can replace their human experience and that patients can be diagnosed via video chat can represent a major hurdle for digital care providers' BM. The underlying dispute about whether healthcare should be a patient-driven or a doctor-driven system poses an even more fundamental challenge to actors' value co-creation. If actors do not manage to align their logics, value co-creation seems hardly possible. Consequently, a logic multiplicity lens unearths situations in which value co-creation seems impossible, providing a promising tool to understand settings in which value co-creation efforts and, therefore, DBMs fail to deliver their achieved results. Questioning the default assumption of value co-creation enables research to understand breakdowns and failures. This leads us to the following proposition:

**P2:** *Logic multiplicity in digital business models acts as a barrier to actors' value co-creation.*

#### 4.2. Process perspective on logic multiplicity in digital business models

DBMs are embedded in dynamic, even turbulent, settings, in which change is rather the rule than the exception (El Sawy et al., 2010; El Sawy & Pereira, 2013). While the BM concept is understood mainly as a snapshot of how a firm does business (Zott et al., 2011), the concept is also argued to be inherently dynamic (Mason & Spring, 2011) and driven by value co-creating actors' interactions (Storbacka et al., 2012). The dynamic nature becomes particularly prevalent in DBMs (El Sawy et al., 2010). Following the prominent practice turn, the processes and practices of how BMs are enacted (Storbacka & Nenonen, 2011) are equally as important as their structures and design elements. Particularly in situations riddled with logic multiplicity (Schulz et al., 2020; Zilber, 2011), the spotlight falls on how actors draw on institutional logics, how they negotiate and, potentially, resolve their disputes between competing logics (Greenwood et al., 2011). Cloutier and Langley (2017) identify five outcomes of actors' struggles and negotiations over a collaboration's purpose, ranging from fallout-type outcomes where actors could not find common ground to compromises where actors achieved a synthesis of logics. This range of outcomes highlights the multitude of options through which actors negotiate and resolve competitions between multiple logics. Figure 2 presents an exemplary representation of the dynamic process of negotiating competing logics through practices.



**Figure 2. Process perspective on competing logics in digital business models**

Further, research shows that the disputes associated with colliding logics within collaborations cannot only be overcome by one actor conceding to the other or one actor forcing a dominant logic on the partner but also by forming compromises (Cloutier & Langley, 2017; Reay & Hinings, 2009). Stark (2009) argues that bridging these frictions can be a source of innovation—through the recombination of diverse and multiple principles previously assumed incompatible—and should not be avoided per se since productive frictions can enable the innovative recombination of resources (Schultze & Bhappu, 2017). This has implications for logic multiplicity in DBMs since the disputes caused by actors' opposing institutional logics need to be turned into productive frictions to enable value co-creation. This leads to the following proposition:

**P3:** *Logic multiplicity in digital business models is enacted and shaped by actors' practices and can lead to a range of different outcomes, including compromise and innovation.*

#### 5. Implications for further research

Our suggestions to challenge the previously assumed homogeneity of the BM concept and investigate logic multiplicity in DBMs have implications for further research within the IS discipline. In the following, we suggest avenues and highlight potential areas of interest for future conceptual and empirical research revolving around the three propositions we have formulated in the prior section. Our suggestions are summarized in Table 2.

**Table 2. Research agenda for digital business model multiplicity**

Prop.	Exemplary research questions
<b>P1</b>	<ul style="list-style-type: none"> <li>• How must DBMs be conceptualized to account for logic multiplicity?</li> <li>• How does logic multiplicity affect DBMs' design in practice?</li> </ul>
<b>P2</b>	<ul style="list-style-type: none"> <li>• What are actors' competing institutional logics in boundary-crossing DBMs?</li> <li>• How can an institutional logics perspective explain value co-creation breakdowns in DBMs?</li> </ul>
<b>P3</b>	<ul style="list-style-type: none"> <li>• What are actors' practices to reconcile conflicts caused by competing logics in DBMs?</li> <li>• What is boundary objects' role in stabilizing compromises between competing logics?</li> </ul>

First, no longer treating the BM as a system of homogeneous actors and taking the logic multiplicity of complex DBMs into account raises questions of

whether current conceptualizations of BMs need to be adapted. The many definitions and conceptualizations of the BM with a slightly different focus and scope have been the subject of much discussion (cf. Massa et al., 2017; Wirtz et al., 2016; Zott et al., 2011). While we recognize that the field would probably benefit from integration rather than more fragmentation with yet another conceptualization, we ask whether the role of institutional logics for value co-creation should be reflected in DBM concepts. Whereas the BM concept has traditionally been understood from a firm-centric yet systemic perspective, little attention has been given to actors' characteristics beyond the focal firm. Therefore, we believe that much can be gained from future conceptualizations of DBMs with a greater focus on actors and the institutional logics shaping their interactions. The insights would enrich our theoretical understanding and enable scholars to investigate the design of real-world DBMs. Since BMs are also tools for practitioners, the question arises of how managers deal with logic multiplicity when designing BMs.

Second, having shown the fundamental barriers competing logics can pose to actors' value co-creation solely on a conceptual level, empirical studies should uncover the institutional logics that compete in DBMs. Which logics are creating the most fault lines in digital value co-creation settings? Since logic multiplicity and associated disputes are more likely to become salient in value co-creation interactions that cross sectors (Cloutier & Langley, 2017) or established boundaries, we suggest investigating DBMs in particularly those settings (e.g., digital healthcare or public-private collaborations). Situations in which value co-creation breaks down or fails to fulfill expectations could also provide fruitful settings for future research. Can logic multiplicity shed light on why some BMs in the digital sphere work while others do not?

Third, emphasizing BMs' process aspect, future research needs to further our understanding of actors' practices of reconciling situations in which logics compete within DBMs. How can compromises between institutional logics be found, and what role play the digital technologies underlying these value co-creation efforts? Since material manifestations of compromises reached between competing logics were found to stabilize them (Cloutier & Langley, 2017), we call on research to investigate the role of boundary objects in solidifying fragile compromises within DBMs. Sociological approaches such as the orders of worth framework (Boltanski & Thévenot, 2006) or the study of controversies (Venturini, 2010) could enrich the conventional methodological toolbox and benefit

future research by untangling the complex actor nets shaped by multiple logics in DBMs.

## **6. Contributions**

### **6.1 Theoretical contributions**

DBMs fueled by emerging digital technologies with complexity-inducing characteristics are at the heart of firms' digital transformation efforts. These complex DBMs are increasingly systemic, driving the interconnectedness of multiple actors and crossing previously established boundaries of organizations, industries, and markets. The heterogeneous set of actors seeking to co-create value is shaped by a multiplicity of institutional logics. The co-existing and sometimes competing institutional logics that guide actors can present barriers to value co-creation and innovation. By enriching the BM concept with an institutional logics perspective, our work contributes to IS research in several ways.

First, by challenging IS research's implicit assumption of a homogeneous BM concept, we emphasize the importance of acknowledging the potential heterogeneity of BMs and advance the discussion on DBMs' distinct characteristics. We thereby enable scholars to investigate the complex reality that characterizes today's DBMs. Second, by highlighting the role of the multiplicity of institutional logics shaping actors' value co-creation efforts, we advance our understanding of the social aspects of DBMs. We thereby answer the prominent call within IS research to remember the discipline's guiding principles rooted in the sociotechnical perspective. Further, we also show the institutional logics perspective's potential to enrich yet another field in IS research. Third, by introducing DBM multiplicity, we provide a promising theoretical lens to further our understanding of situations in which institutional logics hinder or foster value co-creation. Not least due to its sociotechnical heritage, we argue that IS research is uniquely positioned to investigate the logic multiplicity of DBMs driven by digital technologies.

### **6.2 Implications for practice**

This paper suggests that emerging digital technologies central to today's DBMs lead firms to be interconnected with an increasingly heterogeneous set of actors seeking to co-create value. We argue that practitioners need to consider the multiplicity of logics diverse actors might be guided by when designing and governing DBMs. The first step toward introducing the perspective of logic multiplicity to managerial



thinking requires the realization that actors within the firm's systemic DBM cannot automatically be assumed to follow the same logic. Clashing logics can represent fundamental differences between actors' mental frames, basic assumptions, and beliefs. Put simply, actors think differently and even speak different languages. Being aware of the possibility of logic multiplicity sensitizes managers and enables them to see beyond superficial disagreements.

Moreover, we argue that logic multiplicity in complex digital environments presents new challenges for governance on several levels, from a zoom-in to dyadic exchanges to a holistic, systemic view of DBMs. Relational governance mechanisms gain particular importance when firms are faced with a high degree of interconnectedness with external actors due to complex value co-creation dependencies and a high likelihood that a multiplicity of logics will turn into salient conflicts. Consequently, existing inter-organizational relational governance mechanisms need to account for actors' potentially opposing logics and create a common ground that solidifies fragile compromises and ensures consistent cooperation.

As soon as managers gain a deeper understanding of actors' logics and their role as a barrier to successful co-creation, firms can start working on negotiating potential compromises that ease tensions and form a basis for coordination. Recognizing actors' heterogeneity as productive frictions that could be the source of innovation instead of demonizing them as destructive conflicts offers opportunities for new DBMs. This perspective shift means designing DBMs that seek multiplicity rather than avoid it. Linking firms' more abstract strategies and operational business process models, the BM presents a particularly appropriate level where compromise could pave the way for successful cooperation.

## 7. References

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