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Business model resilience – understanding the role of companies in societal transformation processes

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Abstract Business model resilience (BMR) is introduced as a conceptual framework to better understand the systemic dimension of companies affected by and shaping sustainability transformations. It offers an interdisciplinary approach for management studies and a framework for orientation in management practice.

Geschäftsmodell-Resilienz – Zur Rolle von Unternehmen in gesellschaftlichen Transformationsprozessen

Zusammenfassung Business Model Resilience (BMR) stellt einen konzeptionellen Rahmen dar, der eine systemische Perspektive auf Unternehmen und ihre Rolle in Transformationsprozessen eröffnet. Die interdisziplinäre Verbindung von Ansätzen aus der Nachhaltigkeits-/ Transformationsforschung und der Geschäftsmodellforschung leisten einen Beitrag zur Management-Forschung und zur Management-Praxis.

1 Introduction: implications of societal transformation for companies

Debates about "fragile modernity" (Dörre et al. 2009; Beck et al. 1994), a "safe operating space for humanity" (Steffens et al. 2015; Rockström et al. 2009) and limits to growth (Streeck 2013; van den Bergh and Kallis 2012; Jackson

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¹ Wuppertal Institute, Döppersberg 19, 42103 Wuppertal, Germany 2011; Meadows et al. 1972) imply that we are facing fundamental processes of societal transformation (van den Bergh et al. 2011; Geels 2011; WBGU 2011; Grin et al. 2010; Elzen and Wieczorek 2005). From the point of view of business and management practice and research, such processes of deep structural change lead to uncertainty and new kinds of risks that companies have to deal with (Dyllick and Muff 2013; Markard et al. 2012; Geels 2011; Hill and Rothaermel 2003; Arend 1999). At the same time, a pressing question is whether companies have a role to play in these complex transitions: can they become proactive players making a positive contribution to a future, more sustainable development. The aim of this contribution is to develop a conceptual framework for a more comprehensive understanding of the role of incumbent firms in sustainability transitions and to guide companies in a productive way of dealing with societal change. The basic question is: how can successful business models be developed that are able to deal with deep-structural societal change? What are the characteristics of business models that are fit to deal with changing circumstances? The fundamental challenge is to prepare for a changing future, possibly even contributing actively to societal change processes, while at the same time guaranteeing internal stability and remaining successful under current market conditions. Assuming that companies are on the one hand affected (and constrained) by societal transformation processes, and on the other hand actively contribute to structural change (or stability) through their actions, the main research question is how an orientation towards sustainability can be translated into strategic management and implemented in practice without losing touch with today's economic and market realities? In order to address this question, theoretical approaches are needed that are broad and comprehensive enough to grasp complex societal transformation processes as well as a good under-

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standing of business models from a strategic management perspective and a societal point of view. Finally, a normative perspective on sustainability needs to be integrated to reflect on the desired directions of societal and organizational change. To arrive at a comprehensive concept, the following sections will begin by reviewing relevant strands of research addressing these different perspectives: These include research on complex societal change towards sustainability (1.1); research on sustainable business models and change at the organizational level (1.2); research on the duality of (societal) structure and agency (of companies) as a way of linking the macro- and micro-perspective (1.3); and research on the normative dimension of sustainability especially at the organizational level (1.4).

Building on such a broad interdisciplinary perspective integrating research strands on sustainable business and management, the interplay of organizational change and societal transformation is of course ambitious. However, it is argued here that this is nonetheless a worthwhile endeavour, in order to address the question what "The consequences of modernity" (Giddens 1990) are for incumbent firms, which have been catalysts and symbols of the traditional model of progress and growth. Building on the missing links between these four research approaches we aim at filling this research gap by introducing a resilience perspective. Resilience is an established research approach to investigate socio-ecological systems under conditions of uncertainty, and it is argued here that it can offer useful new insights when applied to the context of business models and firms in complex systemic transformation processes. developing a theoretical framework called "Business Model Resilience" as an integrated theoretical framework is developed in Sect. 2 with the aim of offering orientation and guidance for strategic management in times of societal transformation.

2 A sustainability transitions perspective on business models

In order to develop a framework for analysing and guiding strategic management in the face of societal transformation or sustainability transitions, we draw on insights from four different fields of research. In principle, research on the role of business in societal, sustainability-oriented transformation processes is emerging in a number of fields, but still remains limited overall and rarely adopts a comprehensive and systemic perspective (Williams et al. 2017). Thus, as the basis for developing a comprehensive framework, we have selected four distinct perspectives that address parts of the overall research question and which can help integrate insights on organizational change and sustainability at the micro level of individual firms and on societal



change and broader concepts of sustainability transitions. A brief overview of these four approaches is thus given in the following and their respective contributions to the research question at hand are discussed: (1) sustainability transitions research focusing on socio-technical change and the interplay of dynamics at niche, regime and landscape levels (Geels and Schot 2007; Rotmans and Loorbach 2010; Nykvist and Whitmarsh 2008; Rotmans et al. 2001); (2) research on business models for sustainability (BMfS) focusing on changing business models at the microlevel (Schaltegger et al. 2016; Boons and Lüdeke-Freund 2013; Schaltegger et al. 2012; Stubbs and Cocklin 2008); (3) the concept of "true business sustainability" as an innovative approach of assessing corporate sustainability in a broader societal context (Muff and Dyllick 2014; Dyllick and Muff 2013); (4) the concept of firms as "structuring agents" (Schneidewind 1998) focusing on the impact of corporate agency on societal structures. Drawing on key insights from these perspectives and aiming to build the missing link between them, we propose and develop the concept of Business Model Resilience as a new framework for understanding the way that companies may develop new ways of dealing with societal transformation processes and possibly even enabling companies to proactively drive the transition towards sustainability.

2.1 Sustainability transitions research

The field of sustainability transitions research has emerged as an interdisciplinary field analysing complex change towards a more sustainable development in socio-technical systems, e.g. food, water, the energy or transport system. Building on approaches from science and technology studies, sociology, evolutionary economics and innovation studies, a transition is defined as radical, structural change as the result of a long-term and co-evolutionary process of technological, economic, institutional and cultural change (Geels and Schot 2007; Grin et al. 2010; Loorbach 2010; Rotmans and Loorbach 2010; van den Bergh et al. 2011). A core analytical framework in this field of research is the "Multi-level Perspective on sustainability transitions" (MLP), which describes a transition as the dynamic interplay of developments across three levels: the landscape, regime, and niche levels. These levels in the MLP are not political, spatial or organizational levels, but levels with differing degrees of structuration, *i. e.*, ranging from unstable and dynamic to rigid and path dependent, drawing on Giddens' theory of structuration (Giddens 1984). In the MLP framework, firms are a societal actor among others that act within this broader framework. Especially large incumbent firms can potentially play a crucial role in advancing sustainability transitions, due to their impact and resources. At the same time, they are benefiting from established regime structures and thus tend to reproduce them, further stabilizing existing path dependencies and securing their power and position (Markard et al. 2012; Geels 2011).

2.2 Business models for sustainability

Research on business models for sustainability (BMfS) is still a small field of research and it analyses how new types of business models can produce competitive outcomes without causing negative externalities or even creating positive environmental effects (see Schaltegger et al. 2012, 2016; Boons and Lüdeke-Freund 2013; Stubbs and Cocklin 2008; Whiteman et al. 2013). Basically, business models can contribute to sustainability in two ways (Boons and Lüdeke-Freund 2013): first, a business model and the way its process is designed produces certain products and services that can be characterized as sustainable technological or social innovations (Teece 2010). Second, the business model itself may be subject to an innovation process leading to an overall more sustainable and competitive firm (Chesbrough 2010; Johnson 2010; Boons and Lüdeke-Freund 2013). Especially, the latter type can in practice be the result of only incremental changes of specific business model components or a fundamental change of the business model as a whole (Schaltegger et al. 2012). Considering this broad range, there is no detailed and shared definition of a BMfS (Schaltegger et al. 2012; Boons and Lüdeke-Freund 2013). Based on a survey by Boons and Lüdeke-Freund (2013), Schaltegger et al. (2016) propose the following definition: "A business model for sustainability helps describing, analyzing, managing, and communicating (i) a company's sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries" (Schaltegger et al. 2016, p. 4 f).

2.3 The role of firms as structuring agents

Discussing the role of firms in sustainability transitions makes sense only if we assume that firms have a certain responsibility for their societal environment and only if it is assumed that they can have a meaningful impact on society and societal structures. Schneidewind (1998) argues that firms are capable of acting as "structuring agents" and thus also have certain responsibilities: This approach is based on Giddens' (1986) concept of the duality of structure and agency, which means that firms' actions are shaped by existing structure, but at the same time structure is (re)produced by the action of firms (as is the case for other types of actors as well). This means that firms do have a specific scope of action that allows them to either reproduce existing structure, or to consciously engage in divergent behavior



with a potential to produce different structural patterns. As a consequence, every action (or inaction) a firm performs has an impact on societal structures. And, following from this, where firms deny or refrain from engaging in an intentional and reflexive form of "structural policy making", they actively contribute to the stabilisation of existing structures (Schneidewind 1998, p. 411). More recent concepts of "transformative firms" (Scholl and Mewes 2015) follow a similar line of thought, where a key task is to know and remove negative externalities along the entire value chain, to convince customers that this creates added value, to convince other firms to do the same, and to change political framework conditions (Scholl and Mewes 2015, p. 3). In that sense, transformative firms are aware of their structuralpolitical impact and use it to act as "Societal Entrepreneur" (Mauerer and Schimank 2008 based on Pfriem et al. 2015) fostering sustainable development for society as a whole.

2.4 True business sustainability

The concept of a true business sustainability has been developed by Dyllick and Muff as an approach for assessing corporate sustainability that includes a perspective on societal developments, needs and limits (Muff and Dyllick 2014; Dyllick and Muff 2013). The key question is whether sustainability is defined from the point of view of the intrinsic logic of the firm itself (inside-out perspective) or whether sustainability challenges are the starting point for developing corporate strategy as a way of addressing these challenges (outside-in perspective). For a detailed assessment of different types of business sustainability, three dimensions are distinguished, i.e. the specific "concerns" (what?), the "organisational perspective" (how?) and the "values created" (what for?). Depending on these three dimensions, three types of business sustainability can be identified (Dyllick and Muff 2013, p. 17). Business sustainability 1.0 is characterised by a focus on economic, environmental and social concerns, similar to the concept of innovative strategic syntheses (Ulrich 1993, p. 17 ff). Business sustainability 2.0 goes a step further by considering not only the interests of shareholders, but also those of other stakeholders, creating value along the triple bottom line. Business sustainability 3.0 takes these approaches another step further and is characterised as a form of truly sustainable business, because here the still dominating inside-out perspective is transformed into an outside-in perspective: instead of improving existing business models, strategies or products, the core focus is on finding ways of utilising resources, competences and processes to solve sustainability problems. Thus, firms that are truly sustainable as defined here assume a share of the responsibility for creating sustainable development (Ulrich 1993, p. 24 ff). In practice this means that completely new socially or environmentally beneficial

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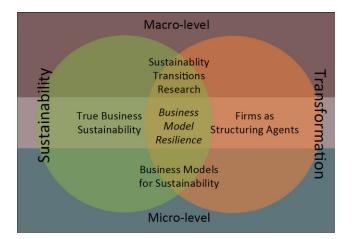


Fig. 1 BMR as a sustainability transitions perspective on business models (Source: Own illustration)

products and services may be created and, where necessary, new coalitions with different types of stakeholders may be formed (Muff and Dyllick 2014, p. 14).

2.5 Addressing the research gap: a transformation perspective on business models

What type of conceptual frameworks can provide orientation and guidance to companies and their strategic management in situations of deep-structural change? Four relevant dimensions can be identified that need to be considered for developing such a comprehensive framework. It is necessary to understand the interlinkages between (1) the societal macro-level; (2) the organizational micro-level of firms; (3) a normative perspective on desired sustainable development; (4) and the phenomenon of transformation as a process of deep-structural change. The theoretical approaches described above can be grouped along these four dimensions as regards their basic assumptions and analytical focus (see Fig. 1).

Each of the four approaches - Sustainability Transitions Research, BMfS, True Business Sustainability, Firms as Structuring Agents - takes one of the four dimensions as their respective starting point and focus. They thus each address one key aspect of the question posed here regarding the role of incumbent firms in the process of societal transformation towards sustainability. A framework to approach this research question should consequently build on these approaches and connect their core aspects. In the following section, the concept of "Business Model Resilience" will be introduced as a possible framework that focuses on the interplay between business model transformation in the context of broader societal change oriented towards sustainability offering analytical depth as well as practical guidance for firms' strategy development. The aim is to arrive at a more in-depth understanding fo the role companies can play in



societal transformation processes and to introduce a broader transformation perspective on business model research. Departing from and building on insights from these four approaches, resilience is introduced as a concept that offers the missing links between internal (organizational) and systemic (societal) perspectives and which can accommodate normative sustainability perspectives as well as a view on structuring agents being influenced by and simultaneously shaping systemic framework conditions. The concept of resilience has been adapted from its origins in ecological systems research to different social science contexts (see below). The starting point for adapting it to the study of companies in societal transformation processes is to connect it to the concept of business models. The following section will outline how the concept of Business Model Resilience is developed.

3 A conceptual framework and contribution to an interpretative, society-oriented management theory

3.1 Business models

The business model concept has emerged prominently during the 1990s as part of the success and ensuing debate about new forms of "e-business" in science and practice (cf. Schaltegger et al. 2012; Zott et al. 2011; Johnson 2010; Johnson et al. 2008; Osterwalder 2004; Amit and Zott 2001; Stähler 2001; Timmers 1998). Following its use in the context of the digital economy, the business model concept has gained prominence in other fields as well and a large number of studies refers to it, albeit using a broad variety of diverse definitions (Zott et al. 2011, p. 1022; Wirtz 2011). The inflationary use of an often rather vaguely defined concept of business models has raised sharp criticism regarding its theoretical rigour (Shafer et al. 2005; Amit and Zott 2001) and overall usefulness (Porter 2001, p. 73). Nonetheless, if defined and applied properly, approaches of strategic management show that the business model concept has some significant strengths, namely offering a way of developing a comprehensive and differentiated understanding of firms in their different organisational dimensions and in relation to their environment. Building on such a more profound overall understanding, a more in-depth analysis of specific strategic options and alternatives becomes feasible (e.g. Afuah 2004; Chesbrough 2007; Hamel 2002; Magretta 2002).

3.2 Resilience

Since the late 1990s¹ the ability of ecosystems to survive under uncertain conditions is discussed in terms of "resilience" in the field of social-ecological research (e.g. Folke 2006; Walker and Salt 2006; Holling 1973, 2001; Walker et al. 2002, 2004; Holling and Gunderson 2002; Carpenter et al. 2001). In this context, resilience is "measured by the magnitude of disturbance that can be absorbed before the system changes its structure by changing the variables and processes hat control behavior. This we term ecosystem resilience" (Holling and Gunderson 2002, p. 27-28). A resilient system is defined as a system that is robust, creative and adaptable enough to function under stable conditions as well as dynamics of change or even shock. Resilience thus describes "the capability of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks" (Walker et al. 2004, p. 2). This does not mean that a resilient system always moves back towards its original state after phases of change, it rather implies an overall dynamic stability and existence under continuously changing framework conditions². The concept of resilience has been adapted in a wide variety across other disciplines and fields of research, e.g. describing the resilience of individuals in psychology or educational sciences³ and applying it to various phenomena in the social sciences⁴- and in business studies: resilience is applied to the study of companies and the way they deal with climate change (Günther 2009) or external shocks such as 9/11 (Gittel et al. 2006). In the field of organizational theory, a broad understanding of resilience is applied, studying successful adaptation and long-term stability of organizations in the face of fundamental crises and changing political, ecological or societal framework conditions (Starr et al. 2003; Stephenson et al. 2010; Seville et al. 2008; Hamel and Välikangas 2003). In the field of international disaster management resilience is discussed as "the capacity of a system, community or society potentially exposed to hazards to adapt, by resisting or changing in order to reach and maintain an acceptable level of functioning and structure. This is determined by the degree to which the social system is capable of organising itself to increase this capacity for leanring from past disasters for better future protection and to improve risk reduction measures." (UNISDR 2009). This broad diffusion

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of the resilience concept across various fields of research indicates a risk of eroding the concept, however, it also shows that there is an increasing awareness of the need to deal with systemic risks, uncertainty and complexity in new ways.

3.3 Business model resilience (BMR)

Applying the concept of resilience to the study of business models can thus serve as a broadened perspective on standard economic assessments of systemic uncertainty and societal transformation processes. Since resilience captures the productive interrelations and tensions between a system and its environment (Gunderson and Hollings 2002; Walker et al. 2012), it offers a new way of approaching the potential for change and transformative impact of business models for the firm and its societal environment. Applying resilience thinking can help generate new frames for interpreting transformation challenges and uncertainty, thus increasing the scope of action and possible solutions. Especially in situations characterised by complex uncertainties, such heuristic frameworks are an adequate means of providing orientation and guidance. In that sense, business model resilience (BMR) can be understood as dilemmamanagement, i. e. as an approach for dealing with tensions and opposing trends or requirements, such as continuity and change, efficiency and redundancy or specialisation and diversification (Augenstein and Palzkill 2016; Lukesch et al. 2010; Remer 2001; Kühl 1998; Fontin 1997; Gutschelhofer 1996; Quinn 1988). The basic dilemma for many firms is that their business models must be able to survive today, as part of an "old" modernity, and be capable of transitioning towards a "new" modernity with changing societal contexts and alternative ideas of progress and prosperity. Based on the core elements of a business model, business model resilience is defined as:

The successful process of interlinking the value proposition and the value chain structure, securing the ability to survive under current as well as potentially different future framework conditions.

This definition shows that the concepts of business models and resilience can be linked by the core idea of a company's value proposition, i. e. the system service offered to society (Fichter et al. 2010, p. 28). While large parts of the literature on sustainable business strategies focus on the environmental opimization of value chains (Gold et al. 2013; Dietsche et al. 2012; Seuring and Müller 2008), the concept of business model resilience places the value proposition center stage. Against the background of increasingly fragile societies and transformation challenges, this focus helps focus on the very fundamental question of the basic function and "license to operate" of business. At the same

¹ Especially with the founding of the Resilience Alliance in 1999 (Resilience Alliance: http://www.resalliance.org/about).

² For a discussion of the resilience concept in the field of engineering vs ecological resilience see Holling (1996).

³ z. B. Zander (2011), Werner and Smith (1979).

⁴ z. B. Brassett et al. (2013; Fath et al. 2015; Amundsen 2012, Hahne and Kegler 2016; Augenstein et al. 2016; Fichter et al. 2010).

Table 1 Dimensions of business model resilience (based on Walker et al. 2004)

Aspects of Resilience (Walker et al. 2004)		Aspects of Business Model Resilience (based on Walker et al. 2004)
Precariousness	The current trajectory of the system, and how close it currently is to a limit or "threshold"	Business closeness to threatening risks/"probability of loss"
Latitude	The maximum amount the system can be changed before losing ist ability to recover	Business scope of action/"extent of damage"
Resistance	The ease or difficulty of changing the system	Business abllity of further develop- ment/"learning capacity"
Panarchy	Infuences from states & dynamics of scales above and below the scale of interests	Impact of external Stakeholders on business/"productive dependency"

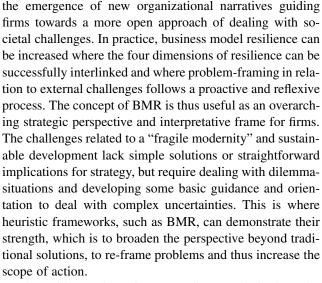
time the concept of business models does not lose sight of the value chain and economic goals of a company.

In order to gain a more detailed understanding of the dynamic interrelations between processes of change and inertia between the different elements of a business model and between the business model and its external environments, four dimensions of (ecosystem) resilience (Walker et al. 2004) can be applied to the study of business models as well (see Table 1):

The first dimension, precariousness, describes how close a firm is to specific risks threatening its business model. This dimension can help assess the probability of loss and whether there is an existential threat. The second dimension, latitude, describes how sensitive a firm is to a specific external trend or shock and the extent of damage that should be expected with regard to a specific threat. The third dimension, resistance, describes the ability to react to external developments and to learn. It is a measure of how quickly and comprehensively a business model can be adapted or proactively changed. The fourth dimension, panarchy, describes the productive dependency and dynamics between a firm and its external stakeholders (cf. Palzkill 2012).

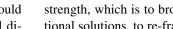
These four dimensions can be applied to the analysis of business models to determine their resilience at a specific point in time and to re-interpret or re-evaluate the current position of a firm. The concept of business model resilience can be understood as a framework for orientation that opens up new perspectives on internal and external interrelations and that points towards a broadened scope of action. Especially in practice, business model resilience can help capture the dilemmas involved in strategic management as regards differing and sometimes conflicting interpretations of internal and external developments and of current and future orientations. The aim of business model resilience is to create awareness for these types of dilemma-situations, to adopt a broader perspective and re-framing specific problems, thus contributing to dealing with them in novel and innovative ways (Augenstein and Palzkill 2016).

BMR can be understood as a new overarching "frame" (Lakoff 2004), enabling alternative interpretations of standard performance indicators and economic data, fostering



The resilience dimensions precariousness, latitude, resistance and panarchy can be linked to different aspects of the four perspectives from different strands of research identified to be relevant above - and they help to relate and connect them in a comprehensive way: a perspective on internal change is addressed by the resistance dimension focusing on organizational learning capabilities. A focus on external (societal) transformation is taken by the dimension of precariousness, i. e. an awareness of systemic risks and external threats. Similar to the idea of agency and structure that shows how an organization and its environment mutually influence each other, the dimensions of latitude and panarchy focus on the organization's scope of action in general and its interaction with external stakeholders. Embedded in a normative sustainability perspective as the overall goal of a resilient system or organization in this context, the concept of Business Model Resilience integrates the core ideas of the four perspectives identified to be relevant for understanding the role of business in sustainability transitions.

Thus, from a scientific point of view, the concept of BMR can function as a useful conceptual heuristic for analyzing the complex interplay of firms' activities and societal transformation processes. It increases awareness for these





interlinkages: Firms and markets are part of a broader societal system with constantly changing rules, structures and framework conditions. Firms are one group of actors that proactively shape this broader system and which experience tension and pressure when the system overall becomes more fragile. Analyzing business as well as societal transformation thus requires interdisciplinary perspectives on the different sub-systems. It also requires an interpretative approach to doing research, a focus on "understanding" rather than distanced "explaining" of objective facts and laws simply because the consequences of scientific analysis and of corporate activities also shape overall system dynamics. Therefore, interpretative approaches in management studies aim at offering interpretations of a complex and to some degree chaotic world, that can help actors to make sense of their environment and guide their behaviour and strategic action (Schneidewind 1998, p. 25 f.).

Similar approaches can be found in narrative research in the field of management and organization studies (Bartel and Garud 2009; Czarniawska 1998; Garud et al. 2010). As a conceptual approach as well as a social practice, narratives are a means of making sense of complex situations, provide orientation and guide action. Especially in transformation processes, narratives are a technique of connecting the past and established frames of reference to the present and translating them across time and space towards a possibly transformed future. This creates interesting links with interpretative approaches in management studies and the concept of BMR, which can also be understood as a means of translation, i. e. translating between internal and external perspectives and between current and future system dynamics. Combining narrative analysis with the concept of BMR could thus be a promising avenue for future research and empirical operationalization, analyzing translation processes within firms, and between firms and their external stakeholders (cf. Augenstein and Palzkill 2016). It could also be analyzed how BMR serves as an overall frame from which new organizational narratives emerge and new strategic approaches to sustainable business models in the context of societal transformation processes.

4 Conclusions: business model resilience as a narrative and interpretative approach

The transformation towards more sustainable societies presents severe challenges for firms and especially incumbent firms with successful business models under current conditions are faced with fundamental uncertainties. Existing approaches of studying the role of business actors in societal transformation processes remain limited, even the recently developed more progressive approaches discussed in this contribution: (1) Sustainability transitions research



is primarily focused on the macro-level of overall transformation dynamics; (2) The concept of true business sustainability focuses on the micro-level of firms, but focuses on a normative ideal-type without a clear transformation perspective; (3) The concept of Firms as Structuring Agents explains basic mechanisms of structure and agency and its potential for the impact of strategic activities by firms, but it fails to offer operative guidance; (4) Research on Business Models for Sustainability fails to address the complex interlinkages between firms and their societal environment. The concept of Business Model Resilience introduced in this contribution is an attempt to integrate the strengths of these approachs and bridge the gap between corporate micro- and societal macro-levels, including a normative sustainability perspective and a comprehensive understanding of transformation processes. Especially for incumbent firms, BMR can be a useful approach of re-framing existing challenges and re-interpreting them against the background of their internal logic. Understanding the interlinkages between the four resilience dimensions, translating between internal and external perspectives enables a productive way of developing new strategic approaches. The concept of BMR is also understood as an approach building on and contributing to the development of interdisciplinary and interpretative approaches in managament studies. Similar to other concepts borrowed originally from the natural sciences, most prominently complex system theory (Luhmann 1995; Parsons 1971), resilience can be introduced to the field of business and societal transformation as a frame offering new orientation, enabling narratives for organizational sense-making and strategic action.

Conflict of interest A. Palzkill and K. Augenstein declare that they have no competing interests.

References

- Afuah A (2004) Business models: a strategic management approach, 1st edn. McGraw-Hill Irwin, New York
- Amit R, Zott C (2001) Value creation in E-business. Strateg Manag J 22(6–7):493–520
- Amundsen H (2012) Illusions of resilience? An analysis of community responses to change in northern Norway. Ecol Soc. doi:10.5751/ ES-05142-170446
- Arend RJ (1999) Emergence of entrepreneurs following exogenous technological change. Strateg Manag J 20(1):31–47
- Augenstein K, Palzkill A (2015) The dilemma of incumbents in sustainability transitions: a narrative approach. Adm Sci 6(1):1
- Augenstein K, Haake H, Palzkill A, Schneidewind U, Singer-Brodowski M, Stelzer F, Wanner M (2016) Von der Stadt zum urbanen Reallabor – eine Einführung am Beispiel des Reallabors Wuppertal. In: Hahne U, Kegler H, Lang GmbH P (eds) Resilienz: Stadt und Region – Reallabore der resilienzorientierten Transformation, Stadtentwicklung\$fUrban Development. PL Academic Research, Frankfurt a. M.
- Bartel CA, Garud R (2009) The role of narratives in sustaining organizational innovation. Organ Sci 20(1):107–117

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- Beck U, Giddens A, Lash S (1994) Reflexive modernization: politics, tradition and aesthetics in the modern social order. Polity Press, Cambridge
- van den Bergh JCJM, Kallis G (2012) Growth, A-growth or Degrowth to stay within planetary boundaries? J Econ Issues 46(4):909–920
- van den Bergh JCJM, Truffer B, Kallis G (2011) Environmental innovation and societal transitions: introduction and overview. Environ Innov Soc Transitions 1(1):1–23
- Boons F, Lüdeke-Freund F (2013) Business models for sustainable innovation: state-of-the-art and steps towards a research agenda. J Clean Prod 45:9–19
- Brassett J, Croft S, Vaughan-Williams N (2013) Introduction: an agenda for resilience research in politics and international relations: agenda for resilience, an introduction. Politics 33(4):221–228
- Carpenter S, Walker B, Anderies JM, Abel N (2001) From metaphor to measurement: resilience of what to what? Ecosystems 4:765–781. doi:10.1007/s10021-001-0045-9
- Chesbrough H (2007) business model innovation: it's not just about technology anymore. Strategy Leadersh 35(6):12–17
- Chesbrough H (2010) Business model innovation: opportunities and barriers. Long Range Plann 43(2–3):354–363
- Czarniawska B (1998) A narrative approach to organization studies. Sage, Thousand Oaks CA
- Dietsche C, Lukas M, Palzkill A, Haake H (2012) Nachhaltige Wertschöpfungsketten zwischen Verantwortung und Regulierung. Einführung in das Schwerpunktthema. Ökol Wirtsch Fachz 27(2):14–15
- Dörre K, Lessenich S, Rosa H (2009) Soziologie Kapitalismus Kritik: Eine Debatte. Suhrkamp, Frankfurt a M
- Dyllick TL, Muff K (2013) Clarifying the meaning of sustainable business: introducing a typology from business-as-usual to true business sustainability. http://www.ssrn.com/abstract=2368735. Accessed 1 Nov 2016
- Elzen B, Wieczorek A (2005) Transitions towards sustainability through system innovation. Technol Forecast Soc Change 72(6): 651–661
- Emmy WE, Smith RS (1979) A report from the Kauai longitudinal study. J Am Acad Child Psychiatry 18(2):292–306
- Fath BD, Dean CA, Katzmair H (2015) Navigating the adaptive cycle: an approach to managing the resilience of social systems. Ecol Soc 20. doi:10.5751/ES-07467-200224
- Fichter K, von Gleich A, Priem R, Siebenhüner B (2010) Theoretische Grundlagen für erfolgreiche Klimaanpassungsstrategien. nordwest2050 Berichte, vol. 1. Projektkonsortium "nordwest2050", Bremen
- Folke C (2006) Resilience: the emergence of a perspective for social-ecological systems analyses. Glob Environ Chang 16:253– 267. doi:10.1016/j.gloenvcha.2006.04.002
- Fontin M (1997) Das Management von Dilemmata Erschließung neuer strategischer und organisationaler Potentiale. Deutscher Universitätsverlag, Wiesbaden
- Garud R, Dunbar RLM, Bartel CA (2010) Dealing with unusual experiences: a narrative perspective on organizational learning. Organ Sci 22(3):587–601
- Geels FW (2011) The multi-level perspective on sustainability transitions: responses to seven criticisms. Environ Innov Soc Transitions 1(1):24–40
- Geels FW, Schot J (2007) Typology of sociotechnical transition pathways. Res Policy 36(3):399-417
- Giddens A (1984) The constitution of society: outline of the theory of structuration, 1st edn. University of California Press, Berkeley
- Giddens A (1990) The consequences of modernity. Stanford University Press, Stanford CA
- Gittell JH (2006) Relationships, layoffs, and organizational resilience: airline industry responses to September 11. J Appl Behav Sci 42:300–329. doi:10.1177/0021886306286466

- Gold S, Hahn R, Seuring S (2013) Sustainable supply chain management in "Base of the Pyramid" food projects: A path to triple bottom line approaches for multinationals? Int Bus Rev 22:784–799
- Grin J, Rotmans J, Schot JW (2010) Transitions to sustainable development: new directions in the study of long term transformative change. Routledge, New York
- Gunderson LH, Holling CS (2002) Panarchy: understanding transformations in human and natural systems. Island Press, Washington DC
- Günther E (2009) Klimawandel und Resilience-Management: interdisziplinäre Konzeption eines entscheidungsorientierten Ansatzes, 1st edn. Gabler, Wiesbaden
- Gutschelhofer A (ed) (1996) Paradoxes Management: Widersprüche im Management – Management der Widersprüche. Linde, Wien
- Hahne U, Kegler H (n.d.) Resilienz: Stadt und Region Reallabore der resilienzorientierten Transformation. PL Academic Research, Frankfurt am Main
- Hamel G (2002) Leading the revolution: how to thrive in turbulent times by making innovation a way of life. Plume Book, New York
- Hamel G, Välikangas L (2003) The quest for resilience. Harv Bus Rev 81(9):52–65
- Hill CWL, Rothaermel FT (2003) The performance of incumbent firms in the face of radical technological innovation. Acad Manag Rev 28(2):257–274
- Holling CS (1973) Resilience and stability of ecological systems. Annu Rev Ecol Syst 4(1):1–23
- Holling CS (1996) Engineering resilience versus ecological resilience. In: Schulze PC, National Academy of Engineering (eds) Engineering within ecological constraints. National Academy Press, Washington DC, pp 31–44
- Holling CS (2001) Understanding the complexity of economic, ecological, and social systems. Ecosystems 4:390–405. doi:10.1007/ s10021-001-0101-5
- Holling CS, Gunderson LH (2002) Resilience and adaptive cycles. In: Panarchy: understanding transformations in human and natural systems. Island Press, Washington DC
- Jackson T (2011) Prosperity without growth: economics for a finite planet. Earthscan, London Washington DC
- Johnson MW (2010) Seizing the white space: business model innovation for growth and renewal. Harvard Business Press, Boston MA
- Johnson MW, Christensen CM, Kagermann H (2008) "Reinventing your business model". Harvard Business Review. http://hbr. org/2008/12/reinventing-your-business-model/ar/1. Accessed 22 May 2014
- Kühl S (1998) Von der Suche nach Rationalität zur Arbeit an Dilemmata und Paradoxen – Ansätze für eine Organisationsberatung in widersprüchlichen Kontexten. In: Howald J, Kopp R (eds) Sozialwissenschaftliche Organisationsberatung. Auf der Suche nach einem spezifischen Beratungsverständnis. Edition Sigma, Berlin, pp 303–322
- Lakoff G (2004) Don't think of an elephant!: know your values and frame the debate: the essential guide for progressives. Chelsea Green Pub. Co, White River Junction VT
- Loorbach D (2010) Transition management for sustainable development: a prescriptive, complexity-based governance framework. Governance 23(1):161–183
- Luhmann N (1995) Social systems. Stanford University Press, Stanford CA
- Lukesch R, Payer H, Winkler-Rieder W (2010) Wie gehen Regionen mit Krisen um? Eine explorative Studie über die Resilienz von Regionen. ÖAR Regionalberatung GmbH, Wien
- Magretta J (2002) Why business models matter. Harv Bus Rev 80:86–92
- Markard J, Raven R, Truffer B (2012) Sustainability transitions: An emerging field of research and its prospects. Res Policy 41(6):955–967



- Meadows DH, Club of Rome (1972) The limits to growth; a report for the club of rome's project on the predicament of mankind. Universe Books, New York
- Muff K, Dyllick TL (2014) An organizational roadmap of business sustainability. SSRN Electronic Journal. http://www.ssrn.com/ abstract=2442211. Accessed 2 Dec 2016
- Nykvist B, Whitmarsh L (2008) A multi-level analysis of sustainable mobility transitions: niche development in the UK and Sweden. Technol Forecast Soc Change 75(9):1373–1387
- Osterwalder A (2004) The Business Model Ontology A Proposition in a Design Science Approach. PhD-These, Licencié en Sciences Politiques de l'Université de Lausanne
- Palzkill A (2012) Business model resilience in the context of corporate sustainability transformation. Conference Paper, Greening Industry Network, Linköping, Sweden
- Parsons T (1971) The system of modern societies. Prentice-Hall, Englewood Cliffs NJ
- Pfriem R, Antoni-Komar I, Lautermann C (2015) Transformation Unternehmen. Ökologisches Wirtschaften Fachzeitschrift 30 (3):18
- Porter ME (2001) Strategy and the internet. Harv Bus Rev 79(3):62–78 Quinn RE (1988) Beyond rational management: mastering the para-
- doxes and competing demands of high performance. Jossey-Bass, San Francisco
- Remer A (2001) Management im Dilemma von der Konsistenten zur kompensatorischen Managementkonfiguration. Swiss J Bus Res Pract 2001(6):353–376
- Resilence Alliance (n.d.) "Panarchy". (http://www.resalliance.org/ panarchy). Accessed 7 November 2016
- Rockström J et al (2009) A safe operating space for humanity. Nature 461(7263):472–475
- Rotmans J, Loorbach D (2010) Towards a better understanding of transitions and their governance: a systemic and relexive approach. In: Grin J, Rotmans J, Schot J (eds) Transitions to sustainable development new directions in the study of long term transformative change. Routledge, New York
- Rotmans J, Kemp R, van Asselt M (2001) More evolution than revolution: transition management in public policy. Foresight 3(1):15–31
- Schaltegger S, Hansen EG, Luedeke-Freund F (2016) Business models for sustainability: origins, present research, and future avenues. Organ Environ 29(1):3–10
- Schaltegger S, Lüdeke Freund F, Hansen EG (2012) Business cases for sustainability: the role of business model innovation for corporate sustainability. Int J Innov Sustain Dev 6(2):95
- Schneidewind U (1998) Die Unternehmung als strukturpolitischer Akteur: kooperatives Schnittmengenmanagement im ökologischen Kontext. Metropolis, Marburg
- Scholl G, Mewes H (2015) Unternehmen in der sozial-ökologischen Transformation. Okol Wirtsch Fachz 30(3):14
- Seuring S, Müller M (2008) From a literature review to a conceptual framework for sustainable supply chain management. J Clean Prod 16:1699–1710. doi:10.1016/j.jclepro.2008.04.020
- Seville E et al (2008) Organisational resilience: researching the reality of New Zealand organisations. J Bus Contin Emerg Plan 2(3):258–266
- Shafer SM, Scott M, Smith HJ, Linder JC (2005) The power of business models. Bus Horiz 48(3):199–207
- Stähler P (2001) Merkmale von Geschäftsmodellen in der digitalen Ökonomie. Eul, Lohmar
- Starr R, Newfroc J, Delurey M (2003) Enterprise resilience: managing risk in the networked economy. Strategy & Business. http:// www.strategy-business.com/article/8375?gko=1c92d. Accessed 15 Nov 2016
- Steffen W et al (2015) Planetary boundaries: guiding human development on a changing planet. Science 347(6223):1259855–1259855
- Stephenson A, Vargo J, Seville E (2010) Measuring and comparing organisational resilience in Auckland. Aust J Emerg Manag 25(2):27–32

الم للاستشارات

- Streeck W (2013) Gekaufte Zeit: Die Vertagte Krise Des Demokratischen Kapitalismus: Frankfurter Adorno-Vorlesungen 2012, 1st edn. Suhrkamp, Berlin
- Stubbs W, Cocklin C (2008) Conceptualizing a "sustainability business model". Organ Environ 21(2):103–127
- Teece DJ (2010) Business models, business strategy and innovation. Long Range Plann 43(2–3):172–194
- The United Nations Office for Disaster Risk Reduction, (UNISDR) (2009) Terminology on disaster risk reduction. United Nations, Geneva
- Timmers P (1998) Business models for electronic markets. Electron Mark 8(2):3-8
- Ulrich P (1993) Integrative Wirtschafts- und Unternehmensethik ein Rahmenkonzept. WE Institut für Wirtschaftsethik, Beiträge und Berichte Nr. 55, Februar 1993
- Walker BH, Salt D (2006) Resilience thinking: sustaining ecosystems and people in a changing world. Island Press: Washington, DC
- Walker B, Carpenter SR, Anderies J, Abel N, Cumming G, Janssen M, Lebel L, Norberg J, Peterson GD, Pritchard R (2002) Resilience management in social-ecological systems: a working hypothesis for a participatory approach. Conserv Ecol 6(1):14
- Walker B, Holling CS, Carpenter SR, Kinzig A (2004) Resilience, adaptability and transformability in social-exological systems. Ecol Soc 9(2):5–5
- Walker BH, Carpenter SR, Rockstrom J, Crépin A-S, Peterson GD (2012) Drivers, "slow" variables, "fast" variables, shocks, and resilience. Ecol Soc. doi:10.5751/ES-05063-170330
- Weick KE, Sutcliffe KM (2001) Managing the unexpected: assuring high performance in an age of complexity, 1st edn. Jossey-Bass, San Francisco
- Whiteman G, Walker B, Perego P (2013) Planetary boundaries: ecological foundations for corporate sustainability: planetary boundaries. J Manag Stud 50(2):307–336
- Williams A, Kennedy S, Philipp F, Whiteman G (2017) Systems thinking: a review of sustainability management research. J Clean Prod 148:866–881. doi:10.1016/j.jclepro.2017.02.002
- Wirtz BW (2011) Business model management: design instruments – success factors, 1st edn. Gabler, Wiesbaden
- Wissenschaftlicher Beirat für globale Umweltveränderungen (2011) Welt im Wandel. Gesellschaftsvertrag für eine große Transformation. Wissenschaftlicher Beirat der Bundesregierung Globale Umweltveränderungen (WBGU), Berlin
- Zander M (ed) (2011) Handbuch Resilienzförderung, 1st edn. VS, Wiesbaden
- Zott C, Amit R, Massa L (2011) The business model: recent developments and future research. J Manage 37(4):1019–1042



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