University of Bremen

Verzahnung von Wissenschaft und Praxis – Transdisziplinarität im Open Innovation Field Bremen

- 31. Technologieparkfrühstück -

Bremen, 05.11.2025

Prof. Dr. Tobias Röth

Open Innovation Field – Das Schaufenster der Zukunft

?!

Vision: **Transformation des Technologieparkgeländes in eine Plattform für verschiedene Reallabore**

Reallabore: Idealtypischer Raum für Transdisziplinarität

Reallabor

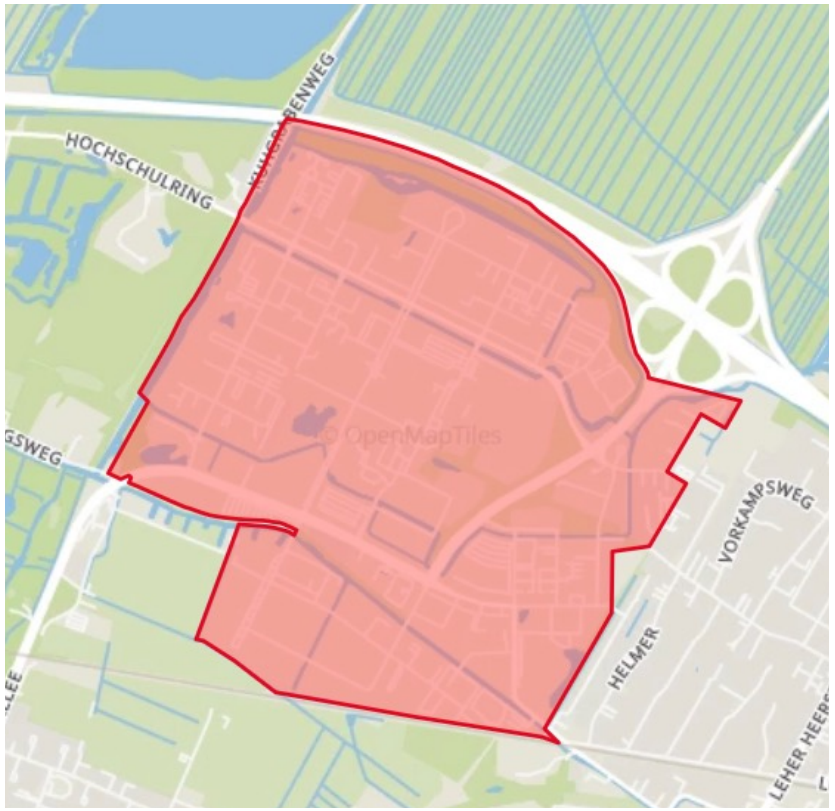
= „einen zeitlich und oft räumlich oder sachlich begrenzten Testraum, in dem innovative Technologien oder Geschäftsmodelle unter realen Bedingungen erprobt werden“ (BMWE 2025)

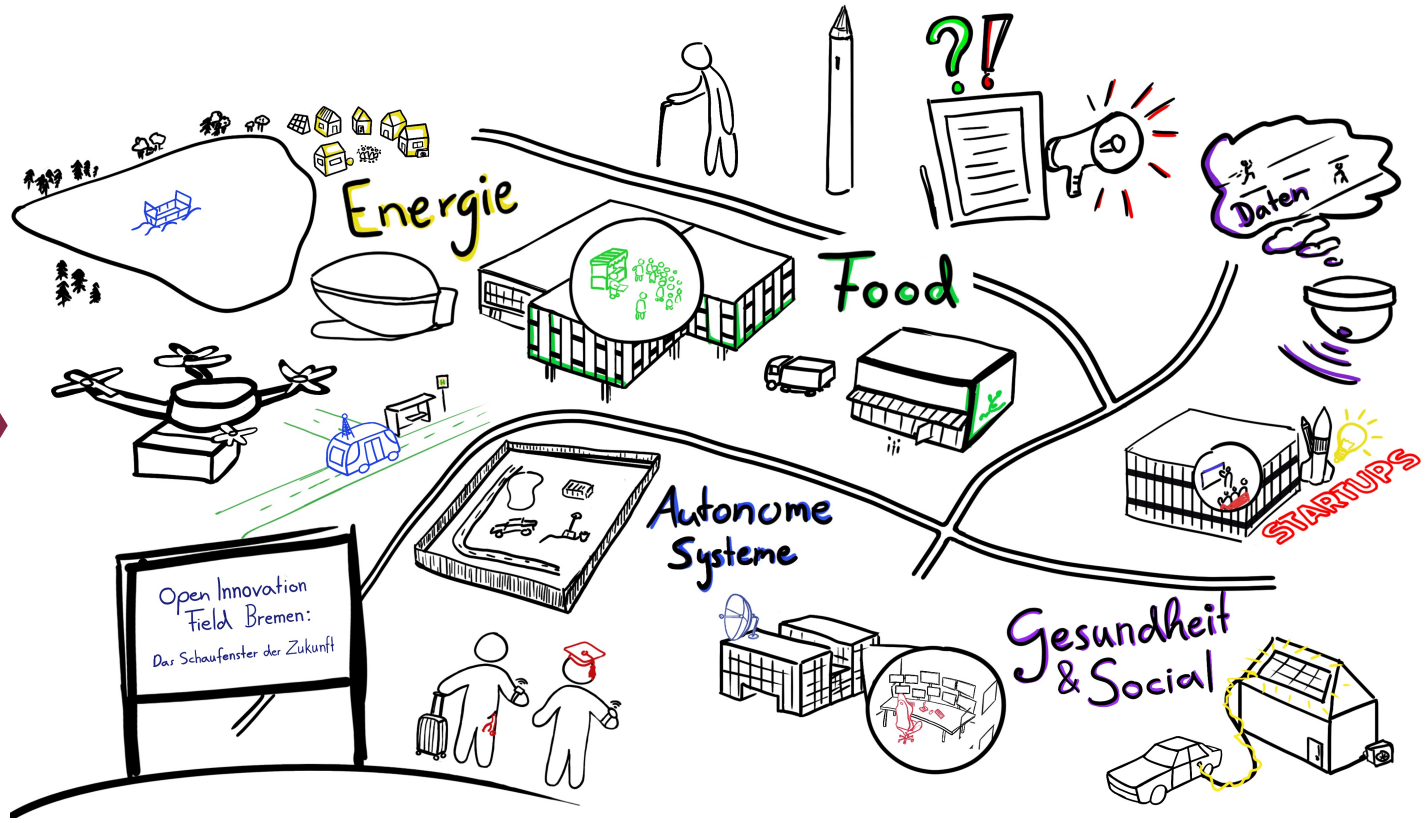
Aber…

- Keine Verstetigungsoption
- Unzureichende Skalierung
- Fragmentierte Zuständigkeiten
- Höhe des administrativen Aufwands insbesondere für KMUs und Startups

Open Innovation Field – Das Schaufenster der Zukunft

Vision





Open Innovation Field – Das Schaufenster der Zukunft

Ergebnisbeitrag

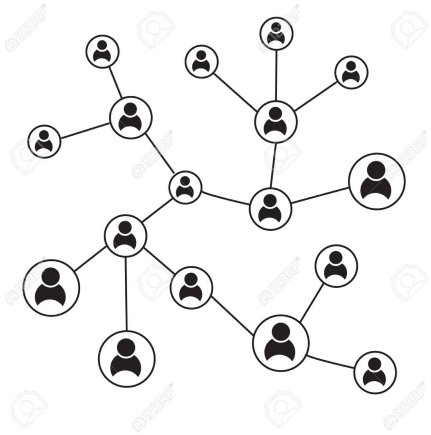
- ***Physischer Raum:***
  - Moderne Infrastruktur
  - Rechtliche Ausnahmeregelungen
  - Testung, Prototyping und Weiterentwicklung von Innovationen in einer realen Umgebung

- ***Plattform:***
  - Strukturelle, rechtliche und prozessuale Heimat für Reallabore
  - Prozess- und Expertenwissen
  - Räumliche Erweiterung auf andere Räume (bspw. Häfen)

- ***Infrastruktur:*** Transparenz, Öffnung und Erweiterung
- ***Multiplikator:*** Zusammenführung und Verstärkung unterschiedlichster Formate zu Service-, Produkt-, und Geschäftsmodellinnovation

Open Innovation Field – Das Schaufenster der Zukunft

Ihre Kooperationschance



Einladung zur transdisziplinaren Zusammenarbeit zwischen Wirtschaft, Gesellschaft/Politik und Forschung

Transdisziplinarität

Transdisziplinarität = Integrative Forschung von wissenschaftlichen und nicht-wissenschaftliche Akteure (bspw. Politik, Wirtschaft oder Zivilgesellschaft)

- Grenzüberschreitend

- Gemeinschaftliche Problemdefinition und –lösung

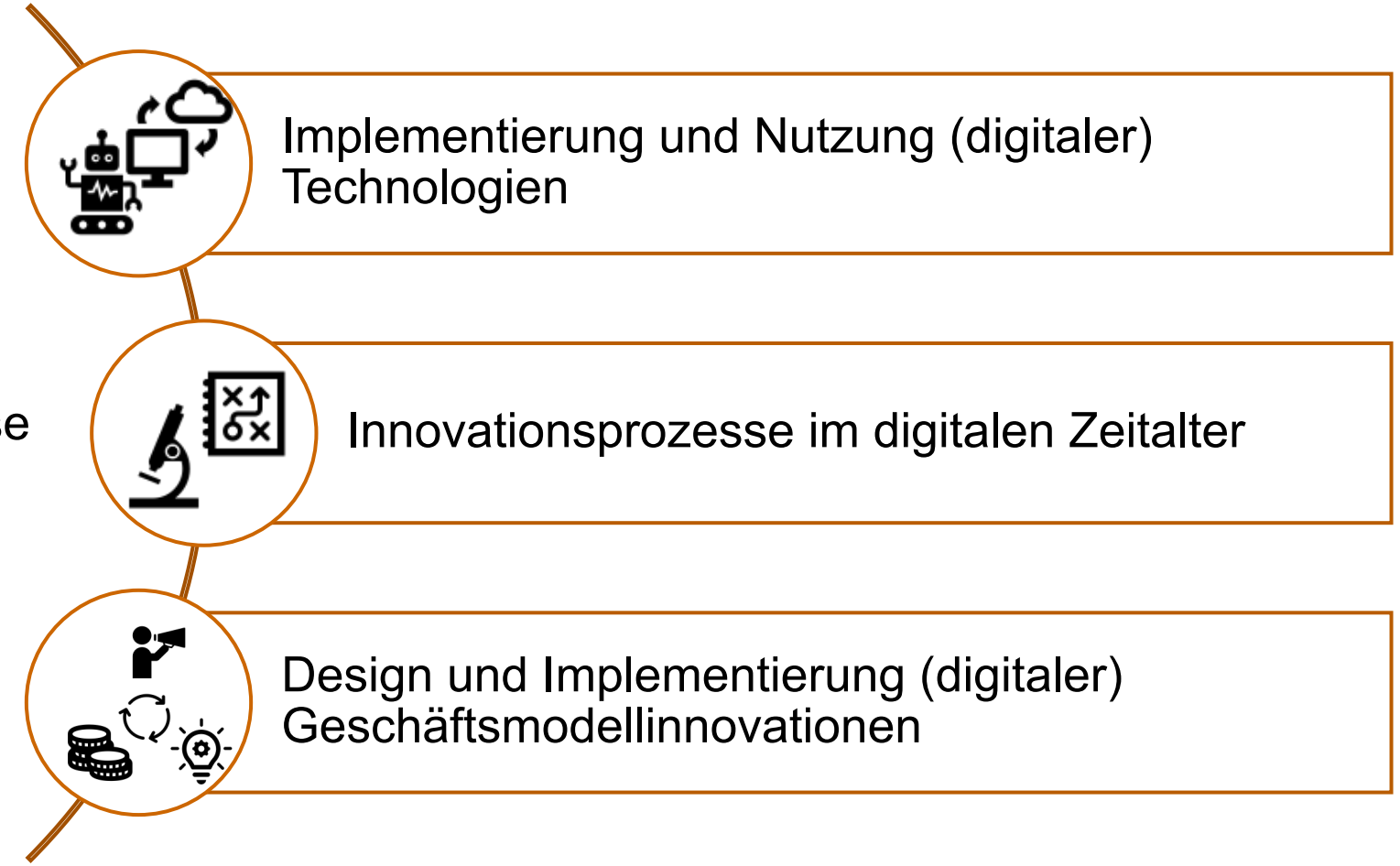
- Co-creation

Versprechen: Nutzbares und sozial eingebettet Wissen anstatt disziplinspezifischer Publikationen

Transdizplinäre (Innovations-)Forschung:

Open Innovation Field als ideales Setting

Wie können Organisationen Transformationsprozesse verantwortungsvoll und erfolgreich managen



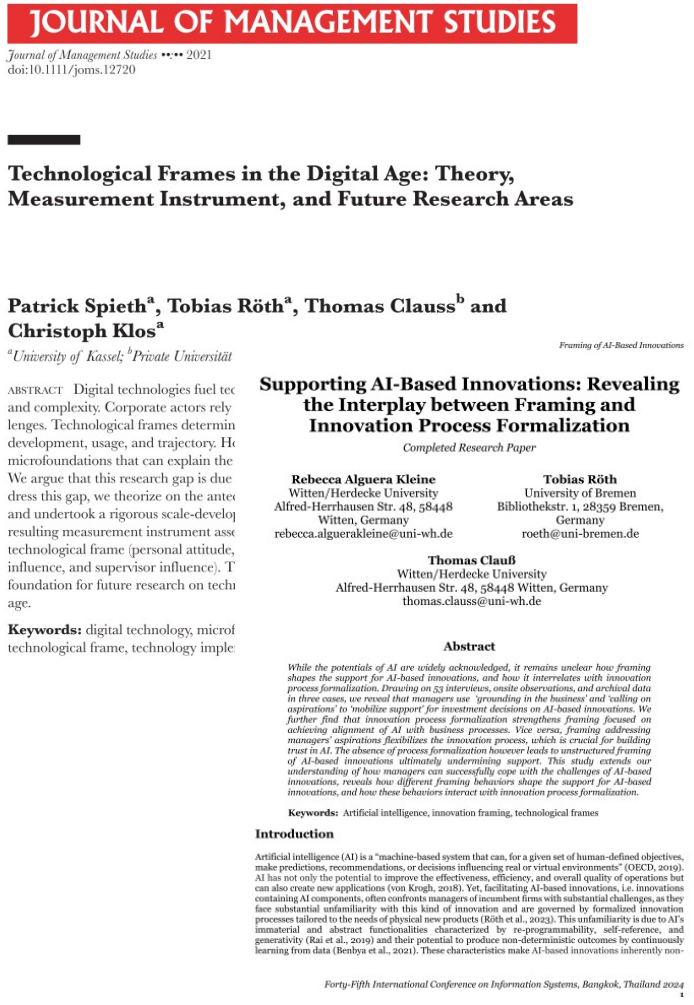
Transdizplinäre (Innovations-)Forschung:

Implementierung und Nutzung (digitaler) Technologien

- ✓ **State-of-the-Art:** Sensemaking von Technologien (Struktur, Verhaltensweisen & Dynamiken)

- Stakeholder- und technologiespezifische Sinnkonstruktion und Verhalten
  - *Widerstandsgefüge*
  - *Gewünschte und unerwünschte Funktionalität*
  - *Einfluss auf Adoption, Nutzungsverhalten, Fehlerumgang, …*
- Kann ein unterschiedliches Verständnis sinnvoll sein? Wenn, unter welchen Umständen?

- ➢ *Leuchturmprojekte, Policyempfehlungen und Implikationen zur nutzerzentrierten Technologiegestaltung*



JOURNAL OF MANAGEMENT STUDIES

Journal of Management Studies ••:•• 2021
doi:10.1111/joms.12720

Technological Frames in the Digital Age: Theory, Measurement Instrument, and Future Research Areas

Patrick Spieth[a], Tobias Röth[a], Thomas Clauss[b] and Christoph Klos[a]

[a]University of Kassel; [b]Private Universität

Framing of AI-Based Innovations

ABSTRACT Digital technologies fuel tec
and complexity. Corporate actors rely
lenges. Technological frames determin
development, usage, and trajectory. H
microfoundations that can explain the
We argue that this research gap is due
dress this gap, we theorize on the ante
and undertook a rigorous scale-develo
resulting measurement instrument asse
technological frame (personal attitude,
influence, and supervisor influence). T
foundation for future research on techn
age.

Keywords: digital technology, microf
technological frame, technology imple

Supporting AI-Based Innovations: Revealing the Interplay between Framing and Innovation Process Formalization

Completed Research Paper

Rebecca Alguera Kleine
Witten/Herdecke University
Alfred-Herrhausen Str. 48, 58448
Witten, Germany
rebecca.alguerakleine@uni-wh.de

Tobias Röth
University of Bremen
Bibliothekstr. 1, 28359 Bremen,
Germany
roeth@uni-bremen.de

Thomas Clauß
Witten/Herdecke University
Alfred-Herrhausen Str. 48, 58448 Witten, Germany
thomas.clauss@uni-wh.de

Abstract

While the potentials of AI are widely acknowledged, it remains unclear how framing shapes the support for AI-based innovations, and how it interrelates with innovation process formalization. Drawing on 53 interviews, onsite observations, and archival data in three cases, we reveal that managers use 'grounding in the business' and 'calling on aspirations' to 'mobilize support' for investment decisions on AI-based innovations. We further find that innovation process formalization strengthens framing focused on achieving alignment of AI with business processes. Vice versa, framing addressing managers' aspirations flexibilizes the innovation process, which is crucial for building trust in AI. The absence of process formalization however leads to unstructured framing of AI-based innovations ultimately undermining support. This study extends our understanding of how managers can successfully cope with the challenges of AI-based innovations, reveals how different framing behaviors shape the support for AI-based innovations, and how these behaviors interact with innovation process formalization.

Keywords: Artificial intelligence, innovation framing, technological frames

Introduction

Artificial intelligence (AI) is a "machine-based system that can, for a given set of human-defined objectives, make predictions, recommendations, or decisions influencing real or virtual environments" (OECD, 2019). AI has not only the potential to improve the effectiveness, efficiency, and overall quality of operations but can also create new applications (von Krogh, 2018). Yet, facilitating AI-based innovations, i.e. innovations containing AI components, often confronts managers of incumbent firms with substantial challenges, as they face substantial unfamiliarity with this kind of innovation and are governed by formalized innovation processes tailored to the needs of physical new products (Röth et al., 2023). This unfamiliarity is due to AI's immaterial and abstract functionalities characterized by re-programmability, self-reference, and generativity (Rai et al., 2019) and their potential to produce non-deterministic outcomes by continuously learning from data (Benbya et al., 2021). These characteristics make AI-based innovations inherently non-

Forty-Fifth International Conference on Information Systems, Bangkok, Thailand 2024

Transdizplinäre (Innovations-)Forschung:

Open Innovation Field als ideales Setting

Wie können Organisationen Transformationsprozesse verantwortungsvoll und erfolgreich managen

Transdizplinäre (Innovations-)Forschung:

Innovationsprozesse im digitalen Zeitalter

- ✓ **State-of-the-Art:** Innovationswirksamkeit von Flexibilität, Reaktivität, Proaktivität und Geschwindigkeit

- Projektsteuerung bei co-kreierten Innovation
  - Verbindlichkeit vs. Flexibilität
  - Zentrale Kontrolle vs. Autonomie
  - Langfristige Projektvision vs. Reaktivität
  - Kundenorientierung vs. Wissensgenerierung
  - …

- ➢ *Best Practices & theoretisch fundierte Managementtools um schneller, kundenzentrierter und effektiv zu innovieren*

Contents lists available at ScienceDirect

Journal of Strategic Information Systems

journal homepage: www.elsevier.com/locate/jsis

Digital new market creation by inc
on the effect of formalization on a

Tobias Röth [a], Fiona Schweitzer [b], Patrick Sp

[a] University of Kassel, School of Economics and Management, Chair of Techn Germany
[b] Grenoble Ecole de Management, Marketing Department, 12 rue Pierre Sém

ARTICLE INFO

Keywords:
Agility
Decision agility
Digital new market creation
Digital innovation
Formalization
Incumbent firms
New product development
Political behavior

ABSTRAC

Digital new mar
'incumbents') t
new product de
the dimensions
insights into fo
In response to t
of 129 incumb
formalization i
decision agility
effect on spee
iteration. We o
systems and in

Journal of Product Innovation Management

WILEY | pdma

ORIGINAL ARTICLE OPEN ACCESS

Steering the Sustainability Course of Innovation Portfolios: An Agile Control Perspective

Leonie Müller[1] | Tobias Röth[2] | Patrick Spieth[1]

[1]School of Economics and Management, Entrepreneurship University of Kassel, Kassel, Germany | [2]University of Bremen, Bremen, Germany

Correspondence: Patrick Spieth (spieth@uni-kassel.de)

Received: 12 October 2023 | **Revised:** 7 April 2025 | **Accepted:** 13 July 2025

Special Issue Guest Editors: Aron O'Cass and Sven Heidenreich

Funding: The authors received no specific funding for this work.

Keywords: agile control | agility | environmental sustainability | levers of control | portfolio management | portfolio sustainability | scale development

ABSTRACT

Although innovation portfolio management (IPM) and agility are central to managing portfolio sustainability, we know little about how strategic actors can control the innovation portfolio to do so. Although strategic actors must address both portfolio sustainability and economic portfolio performance, the literature tends to investigate both consequences of IPM in separation. Moreover, research tends to conceptualize agility as a higher-level ability to sense and react to changes, ignoring how strategic actors use agility for target-oriented steering of innovation portfolios. In response, this study investigates the following research questions: How can an agile approach to the levers of control be conceptualized and measured? How does agile control relate to both portfolio sustainability and performance? We synthesized the literature on sustainability, agility, and the levers of control

Table 3 Study-Level Moderator Analysis

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
Intercept	0.440***	0.198†	0.526***	0.230*	0.513***	0.220*	0.398***	0.173
	(0.031)	(0.110)	(0.027)	(0.110)	(0.029)	(0.111)	(0.033)	(0.110)
Characteristics								
Reactivity	0.200***	0.122**						
	(0.035)	(0.038)						
Proactivity			0.116**	0.094**				
			(0.035)	(0.035)				
Speed					0.107***	0.065*		
					(0.032)	(0.033)		
Count							0.117***	0.079***
							(0.017)	(0.019)
Innovation Type								
Incremental		-0.073*		-0.077*		-0.077*		-0.075*
		(0.030)		(0.030)		(0.030)		(0.030)
Input		-0.014		-0.019		-0.014		-0.024
		(0.058)		(0.059)		(0.059)		(0.058)
Output		-0.051		-0.056		-0.055		-0.059
		(0.063)		(0.063)		(0.063)		(0.062)

Hoch, F. Röth, T., et al. „ Agility in Innovation Management: A Meta-Analysis“, JPIM, in revision

Transdizplinäre (Innovations-)Forschung:

Open Innovation Field als ideales Setting

Wie können Organisationen Transformationsprozesse verantwortungsvoll und erfolgreich managen

Transdizplinäre (Innovations-)Forschung:

Design und Implementierung (digitaler) Geschäftsmodellinnovationen

✓ **State-of-the-Art:** Archetypen, Tools und Templates

- Neue ko-kreierte Geschäftsmodelle
  - Tragfähigkeit und Variantentestung
  - Start-ups: Skalierung zum „Dauerbetrieb“
  - Etablierte Unternehmen: Transformation und Öffnung
  - Governance: Finanzierungspfade, Rechte an Eigentum/Daten/ Erlös sowie Fair-Use- und Zugangsregeln
  - …

➢ *Systematische Gestaltung, Testung, Transfer und Skalierung der Wertschöpfung- und Finanzierunglogiken sowie Governanceansätze*

Contents lists available at ScienceDirect

Industrial Marketing Management

journal homepage: www.elsevier.com/locate/indmarman

Research paper

Reinventing a business model in industrial networks: Implications for customers' brand perceptions

Patrick Spieth[a,*], Tobias Roeth[b], Svenja Meissner[c]

[a] Technology and Innovation Management, University of Kassel, Nora-Platiel-Str. 4, 34109 Kassel, Germany
[b] Technology, Innovation Management and Entrepreneurship, University of Kassel, Kleine Rosenstraße 3, 34117 Kassel, Germany
[c] BMW AG, Germany

ARTICLE INFO

Keywords:
Business model innovation
Brand trust
Brand loyalty
Brand equity
Customer perceptions
Industrial networks

ABSTRACT

Although researchers recognize the need for established market-centered business models that address and satisfy consumer's needs, little research has been done on the link between a customer's perception and a business model innovation (BMI). We addressed this research opportunity by conducting a case study encompassing 394 respondents to explore how a BMI affects customers' brand perceptions, distinguishing between their brand trust, brand loyalty, and brand equity. We conceptualize a BMI from an industrial network perspective and decompose the effect of different BMI dimensions: value offering innovation (VOI), value architecture innovation (VAI), and

Received: 28 April 2022 | Revised: 11 July 2023 | Accepted: 21 September 2023

DOI: 10.1111/jpim.12704

ORIGINAL ARTICLE

JOURNAL OF PRODUCT INNOVATION MANAGEMENT

Business model innovation: Integrative review, framework, and agenda for future innovation management research

Patrick Spieth | **Pascal Breitenmoser** | **Tobias Röth**

Technology and Innovation Management, Entrepreneurship, University of Kassel, Kassel, Germany

Correspondence
Patrick Spieth, Technology and Innovation Management, Entrepreneurship, University of Kassel, Nora-Platiel-Str. 4, 34109 Kassel, Germany.
Email: spieth@uni-kassel.de

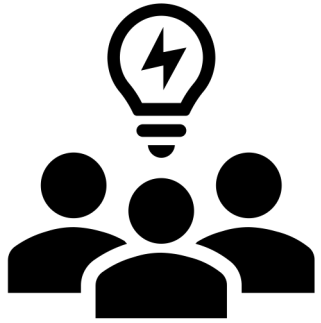
Associate Editor: Ahmet H. Kirca

Abstract
The business model innovation (BMI) concept has become a well-established phenomenon of current academic research. While Foss and Saebi's (*Journal of Management*, 2017, 43, 200–227) seminal literature review on BMI revealed 349 articles on BMI published between 1972 and 2015, an additional number of 1727 articles on the topic have been published since 2016. In contrast to this overall interest in the BMI phenomenon, innovation-focused journals include only a limited number of publications on BMI. Further, besides the valuable insights and fruitful research directions of extant literature reviews, they tend also to overlook the linkages between traditional innovation management and the majority of BMI research. Given this underrepresentation of BMI research in the innovation management literature, we conduct an integrative literature review to bring the disconnected literature closer together and offer directions for future research. Our literature review applies the review strategy of blending and merging the literature across domains. First, we blend the knowledge base of the BMI domain by applying the Product Development and Manage-

Transdizplinäre (Innovations-)Forschung:

Open Innovation Field als ideales Setting

Einladung zur transdisziplinären Zusammenarbeit



- Implementierung und Nutzung (digitaler) Technologien
- Innovationsprozesse im digitalen Zeitalter
- Design und Implementierung (digitaler) Geschäftsmodellinnovationen

Kontakt

Prof. Dr. Tobias Röth

Professor
für Technologie und Innovationen

WiWi2-Gebäude, Raum F2240
Max-von-Laue-Str. 1
28359 Bremen

roeth@uni-bremen.de
https://www.uni-bremen.de/bit-institute

Literatur

- BMWE (2025): https://www.bundeswirtschaftsministerium.de/Redaktion/DE/FAQ/Innovationspreis-Reallabore/innovationspreis-02.html (abgerufen am 30.10.25)
- Geels, F. W., & Schot, J. (2007). Typology of sociotechnical transition pathways. *Research Policy*, *36*(3), 399–417.
- Gibbons, M. (1999). Science's new social contract with society. *Nature*, *402*(S6761), C81–C84. https://doi.org/10.1038/35011576
- Jahn, T., Bergmann, M., & Keil, F. (2012). Transdisciplinarity: Between mainstreaming and marginalization. *Ecological Economics*, *79*, 1–10.
- Kleine, R. A., Röth, T., & Clauß, T. (2024). Supporting AI-Based Innovations: Revealing the Interplay between Framing and Innovation Process Formalization. *ICIS 2024 Proceedings*.
- Müller, L., Röth, T., & Spieth, P. (2025). Steering the Sustainability Course of Innovation Portfolios: An Agile Control Perspective. *Journal of Product Innovation Management*.
- Roeth, T., Spieth, P., & Dzomba, H. (2025). Shaping innovation portfolios: The effect of interactive and diagnostic control use on organizational politics and agility. *Management Accounting Research*, *66*, 100934. https://doi.org/10.1016/j.mar.2025.100934
- Röth, T., Schweitzer, F., & Spieth, P. (2023). Digital new market creation by incumbent firms: A political lens on the effect of formalization on agility. The Journal of Strategic Information Systems, 32(1), 101755.
- Spieth, P., Breitenmoser, P., & Röth, T. (2025). Business model innovation: Integrative review, framework, and agenda for future innovation management research. *Journal of Product Innovation Management*, *42*(1), 166–193. https://doi.org/10.1111/jpim.12704
- Spieth, P., Roeth, T., & Meissner, S. (2019). Reinventing a business model in industrial networks: Implications for customers' brand perceptions. *Industrial Marketing Management*, *83*, 275–287. https://doi.org/10.1016/j.indmarman.2019.04.013
- Spieth, P., Röth, T., Clauss, T., & Klos, C. (2021). Technological Frames in the Digital Age: Theory, Measurement Instrument, and Future Research Areas. *Journal of Management Studies*, *58*(7), 1962–1993.