Chapter 19
Collaboration Between Universities and SMEs for Value Co-Creation in Business Model Innovation for Sustainability

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Abstract True value co-creation initiatives on Business Model Innovation for Sustainability (BMIfS) are essential for universities and Small to Medium Enterprises (SMEs) for addressing the challenges created by the wicked problem of sustainability. Currently, however, such inter-organizational collaboration initiatives are understudied. This article, which examines two inter-organizational collaboration initiatives involving two universities and two SMEs that were engaged in true value co-creation in BMIfS, makes a two-fold contribution. The article unravels the opportunities and risks associated with two true value co-creation BMIfS initiatives (between university students and SME managers) and proposes a set of key

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principles underpinning the success of inter-organizational collaboration for true value co-creation in BMIfS.

Keywords Business Model Innovation for Sustainability · Inter-organizational collaboration · Value co-creation · University · SMEs · 7C principles

Introduction

The many social and economic issues confronting companies today, such as climate change, social inequality, and digitalization, present both opportunities and risks (Kohn Rådberg et al., 2020; Sharma et al., 2022). Managing these opportunities and risks requires re-thinking the business-as-usual, profit normative logic and instead focusing on innovation and sustainability (Snihur & Bocken, 2022; Upward & Jones, 2015; von Kutzschenbach et al., 2023).

Re-thinking traditional education and business practices can have enormous significance for the transition toward sustainability and systemic change in business and in academia. To be successful, inter-organizational collaboration, such as true value co-creation in Business Model Innovation for Sustainability (BMIfS), is a key requirement. Based on Ehrenfeld and his concept of "true sustainability" (2008), true value co-creation is seen as a process that benefits the entire system. Kohn Rådberg et al. (2020, p. 24), for example, emphasize the important role students can play in "open collaboration for the purpose of creating, elaborating, and prototyping radical solutions to open-ended systemic challenges."

Academia should equip students with the skills needed to navigate the VUCA (volatile, uncertain, complex, and ambiguous) world. On the one hand, academia should focus on the expansion of curricular content to reflect the interconnected and systemic nature of socio-technical and economic developments and to introduce students to the complex concept of BMIfS (e.g., Geissdoerfer et al., 2018) and "real-world" situations where they can exercise a high degree of autonomy, and in co-creation with Small to Medium Sized Enterprises (SMEs).

Traditionally, the role of universities has been to educate the future workforce and to create new knowledge. However, in inter-organizational collaboration for true value co-creation in BMIfS, their role shifts to capacity building for the entire ecosystem (Lundberg & Öberg, 2021).

Likewise, the business community needs to understand how management routines must transform to leverage diverse stakeholders' learning capabilities to engage in true value co-creation in BMIfS (von Kutzschenbach & Brønn, 2010; von Kutzschenbach & Daub, 2021). Complex and systemic changes require new approaches and managerial mindsets (Perna et al., 2022). Given the nature of sustainability, which is dynamic, complex, and impacts diverse stakeholders, it can be classified as a "wicked problem" (Rittel & Weber, 1973; Brønn & Brønn, 2018). This process, which requires changes in current innovation practices, may reveal organizational and cognitive barriers (Chesbrough, 2010). The process also requires

the inclusion and critical discussion of broader stakeholder perspectives acquired in value co-creation, thereby inter-organizational collaboration.

For this article, we build on the Service Dominant Logic (SDL) as described by Vargo et al. (2017), and Vargo and Lusch (2008, 2016). While critics admit that the SDL acknowledges that value co-creation occurs in systems, it lacks principles for inter-organizational collaboration that supports true co-creation. Moreover, most co-creation literature focuses on traditional actors (e.g., collaboration among companies), thus overlooking other important stakeholders in the system (e.g., students and society). To address these research gaps, we examine the use of SDL in a new context, here universities and SMEs, thereby responding to recent calls to study value co-creation with other stakeholders (cf. Thomas & Ambrosini, 2021).

True value co-creation in BMIfS is important because it provides an opportunity for the expression of less traditional insights and opinions than are typically voiced in the innovation process (Vargo & Lusch, 2008, 2016). However, value co-creation in BMIfS currently focuses more on how single organizations create value and less on the systemic nature of BMIfS, the "true" value (Fehrer et al., 2020; Geissdoerfer et al., 2018).

In other words, BMIfS requires companies to engage inter-organizational collaboration to co-create value that addresses these challenges (Rill, 2016; Fehrer & Wieland, 2021). However, several difficulties arise that question the effectiveness of inter-organizational collaboration for true value co-creation in BMIfS initiatives.

The use of the adjective "true" to characterize value co-creation has inspired researchers to emphasize its aspirational vision. True value co-creation, building on the concept of "true sustainability" from Ehrenfeld (2008), is seen as a process that benefits the entire system. Therefore, our research question is the following: *How can inter-organizational collaboration between universities and SMEs be supported in true value co-creation in Business Model Innovation for Sustainability in ways that have systemic implications?*

We begin by reviewing the literature on BMIfS and value co-creation. We then describe the opportunities and risks in true value co-creation in BMIfS. We next describe insights gained from two true value co-creation initiatives that were conducted in 2021 and 2022. These inter-organizational collaborations took place in two countries between university students from various disciplines (e.g., psychology, engineering, and business) and managers from SMEs. This approach allowed us to formulate tentative principles for true value co-creation in BMIfS and to discuss related issues from inter-organizational collaboration perspectives.

The article makes a two-fold contribution. It presents two true value co-creation in BMIfS initiatives in the university-SME context; and it takes a systemic perspective in proposing seven tentative principles that may underpin the success of inter-organizational collaboration.

Business Model Innovation for Sustainability with SMEs and Universities

The growing interest in sustainability presents significant opportunities and risks for the business world. This calls business to embrace a fundamental shift from the "profit-normative" logic (Upward & Jones, 2015) to the logic of sustainability-as-flourishing or by becoming "positive-impact companies" (Pavez et al., 2021). A flourishing organization aspires to "do good to do well" (Upward & Jones, 2015, p. 10). To realize this aspiration, an organization must conceptualize and implement a new business logic, mastering BMIfS. This involves altering organizations' value creation, delivery, and capture mechanisms (Teece, 2010), allowing them to develop, diversify, acquire, and/or transform their business (Geissdoerfer et al., 2018). Established organizations face challenges when they attempt to change their business logic (Chesbrough, 2010). While the importance of the role of the organization in facilitating this transition is well-known, little attention has been paid to how organizations (including SMEs) can effectively engage in BMIfS (Bidmon & Knab, 2018). Furthermore, research is needed on how inter-organizational collaboration for true value co-creation in BMIfS can be supported. The practical implementation of learning activities that strengthen students' and managers' capabilities for value co-creation has not been adequately investigated (Wyss et al., 2021).

True Value Co-Creation in BMIfS

Various researchers emphasize that multiple stakeholders are needed in true value co-creation in BMIfS (e.g., Breuer et al., 2018; Fehrer & Wieland, 2021; Perna et al., 2022). Other researchers emphasize that collaborative dialogue among multiple stakeholders is essential for addressing "wicked" problems involving diverse values and perspectives (Head, 2019) and for advancing a shared understanding of possible solutions (Innes & Booher, 2016). To study true value co-creation in BMIfS, consistent with these researchers' insistence on multiple stakeholder participation, we rely on the SDL (Vargo & Lusch, 2008, 2016) that posits that value is co-created in service ecosystems by various stakeholders who exchange resources and services. This logic also suggests that value is context-specific because context influences the definition and understanding of value (Vargo & Lusch, 2008, 2016). Therefore, this article explores true value co-creation in BMIfS in a specific inter-organizational setting, wherein SMEs' managers meet with university students.

True value co-creation in general is different from other forms of mass collaboration (e.g., crowdsourcing and brainstorming) because it involves generative dialogue. While other collaborations may generate multiple ideas, they lack the transformative, inspirational experience of innovation fostered by true value co-creation in BMIfS. The emphasis on generative dialogue in true value co-creation in BMIfS facilitates the integration of diverse values and perspectives with the

development of a shared vision around a mutually beneficial goal (Nicholas et al., 2019; Prahalad & Ramaswamy, 2004). This defining characteristic of true value co-creation in BMIfS, which distinguishes it from mere brainstorming, is evidenced by the active and required stakeholder involvement and collaboration.

University settings provide the ideal platform for engaging multiple stakeholders (students, teachers, practitioners, and others) in generating new knowledge and in testing solutions to contemporary "real-world" challenges (Beynaghi et al., 2016; Holgaard et al., 2016; Muff, 2013). In these settings, students can address such challenges through open inquiry and experimentation and can propose possible configurations that enable true value co-creation in BMIfS. Laszlo and Brown (2014, p. 65) suggest that open inquiry and dialogue "allow a group to learn its way through complexity to sustainable action." In this context, students and managers can participate in learning in action, thus making sense of complexity and creating reflexive practitioners (Holman, 2000).

To move beyond incremental changes to create true value in BMIfS, organizations must understand the necessity of a shared vision for sustainability. According to Senge et al. (2012, p. 88), "[s]hared vision strategies should be developmental." It is essential to take the time needed to craft a better vision of the future, to share it with others, and to include others' visions. Thus, a shared vision provides the motivation and energy needed in BMIfS.

Challenges for True Value Co-Creation in BMIfS with Universities and SMEs

Although the research interest in BMIfS has increased considerably in recent years, the theory behind BMIfS has not developed as rapidly. Some conceptual inconsistencies and ambiguity remain in BMIfS theory (Foss & Saebi, 2017; Snihur & Bocken, 2022). Furthermore, despite the interest in inter-organizational approaches that connect university students from different departments with managers from companies, the SME-university collaboration in true value co-creation in BMIfS is still at an early stage.

In this section, we examine three BMIfS issues that are relevant to our study: (1) Fragmented Views of BMIfS Collaborations, (2) Limitations of Traditional Educational Settings in BMIfS Collaborations, and (3) Limited Engagement by SMEs in BMIfS Collaborations.

Fragmented Views of BMIfS Collaborations

In Walsh's (1995) meaning, business models act as cognitive maps that managers use to process information and make decisions. However, managers, teams, and external stakeholders have fragmented and often contrasting views of

BMIfS (Amit & Zott, 2015; Sund et al., 2021). To achieve superior performance in a context with multiple values (social, environmental, and economic), companies must adapt their assumptions about value creation, delivery, and capture as they collaborate with new stakeholders (Fehrer & Wieland, 2021; Mohammed et al., 2000). Achieving such collaboration in BMIfS requires that all parties engage in a process of shared sensemaking through dialogue, co-creation, and learning activities focused on value co-creation. Standardized frameworks and visualization tools are needed to support this process (Sund et al., 2021; Taescher & Nizar Abdelkafi, 2017). Therefore, it is necessary to understand how to integrate the various stakeholders in true value co-creation in BMIfS (Brodie et al., 2019).

Limitations of Traditional Educational Settings in BMIfS Collaborations

Traditional educational settings can hinder the initiation, design, implementation, and institutionalization of pedagogic approaches that connect students with companies. The result is that emergent learning (e.g., self-organized and student-led learning, action-learning, and experiential learning) does not develop. Pedagogies have long discussed the need to prepare engineering students to manage complex wicked problems in work life. One recommendation is that students should receive more practical experience during their university studies (Crawley et al., 2007; Lehmann et al., 2008).

Some researchers also criticize business programs for placing too much emphasis on shareholder value and profit maximization while neglecting the broader social and environmental contexts of business operations (Dyllick, 2015; Hoffman, 2020). These critics question whether business programs provide students with the skills and values needed for work life. A specific criticism is that business education, which is fundamentally disciplinary, is silo-structured such that learning is compartmentalized with little opportunity for students to deal with "messy" real-world challenges (Dyllick, 2015; Hoffman, 2020).

Sustainability challenges, which are "wicked," require creative, systemic, and divergent approaches. Thus, sustainability instruction should be taught in inter- and trans-disciplinary programs rather than in isolated disciplines (Muff, 2013).

Many organizational and practical impediments, however, block the implementation of such innovative learning approaches. These impediments include fixed curriculum timeframes in place, limited resources of various kinds, and the perception that the new approaches should only be used in elective courses or as add-ons in required courses. As many researchers have observed, this inability or reluctance to provide students with opportunities to future relevant learning limits their preparation for work life (Dyllick, 2015; Muff, 2013).

Limited Engagement by SMEs in BMIfS Inter-Organizational Collaborations

SMEs are acknowledged as a fundamental component of the European Union's economy (Angelova & Gkofas, 2021). Yet numerous studies reveal that SME managers require significant support as they lead and develop their companies (Storey, 1994). They often lack the resources necessary to address internal development issues (Rothwell, 1991). Paradoxically, although SME managers need advice, they are often reluctant to discuss their BMIfS experiences with others (e.g., Hillary, 2000). According to Chesbrough (2010), this hesitancy can be partially attributed to organization and cognitive barriers like those encountered in traditional business model innovation. Resource allocations or missing fit with existing business logics may also erect cognitive barriers. These barriers can stem from managers' insufficient knowledge of alternative business models or from their resistance to change (Chesbrough, 2010; Prahalad & Bettis, 1986). In such cases, it is difficult for organizations to learn new things (e.g., Argyris, 1999; Levitt & March, 1988). Given this attitude, SMEs may resist engagement in radical, proactive BMIfS. To enable true value co-creation in BMIfS, inter-organizational collaboration, which is open to entrepreneurial thinking and experimentation, is necessary (Fehrer et al., 2020; Vargo & Lusch, 2016). However, proactive engagement in and commitment to true value co-creation in BMIfS between SMEs and universities are more the exception than the rule today.

Illustrative Experiences from Two Value Co-Creation Initiatives with Universities and SMEs

Universities can originate and support educational initiatives for collaborative, inter- and trans-disciplinary true value co-creation in BMIfS with students and company managers (Wyss & von Kutzschenbach, 2020). True value co-creation in BMIfS, however, is a challenging task. To illustrate, we describe two university/SME initiatives: (1) Think Tank-Business Model Innovation (TT-BMI) and (2) Project 0 Polestar. In this section, we report on how learning spaces for true value co-creation in BMIfS developed in the two initiatives.

Think Tank-Business Model Innovation (TT-BMI)

The Think Tank-BMI initiative (www.TT-BMI.ch) involved an inter-disciplinary group of students and a German SME that was part of an elective module in the trinational, Bachelor's degree program in international management at the University of Applied Sciences and Arts FHNW. The SME, an incubator for innovative theme

park design, media-based entertainment, and media content, is a division of a 245-year-old family business with a good reputation in the entertainment industry. This industry has experienced extraordinary technological advances in recent years, particularly in emerging digital technologies such as virtual reality (VR) and augmented reality (AR). Therefore, the YY-BMI initiative focussed on leveraging sustainability via digitalization in the entertainment industry.

Twenty-seven university students and five SME managers participated in the YY-BMI initiative. They formed six inter- and trans-disciplinary teams comprised of students from the University of Applied Sciences and Arts FHNW (Switzerland) degree programs in Art and Design, Engineering, and Business, and engineering psychology students from Furtwangen University (Germany). The four workshops, which were held in the SME's theme park, followed the YY-BMI Design Sprint approach (Wyss et al., 2023). In this approach, an engagement phase, which precedes the workshops, includes a case acquisition and an initial problem-framing session with the SME managers. The activities that follow this session are in seven phases: understand, discover, define, ideate, decide, prototype, validate, and deliver. Figure 19.1 illustrates the TT-BMI design sprint approach and activities.

The first three phases of the approach introduced the concept of BMIfS, the SME, and the sustainability challenge. The students engaged in a vision co-creation exercise using a backcasting logic (Broman & Robèrt, 2017; Vergragt & Quist, 2011) in which the goal—the "north star" for the BMIfS challenge—was defined. The managers gave the students a tour of the company's theme park and described their experiences with VR technologies. This information helped the students define the sustainability challenge as they identified industry trends and the direct and indirect stakeholders. The students also interviewed the managers and potential target groups, who explained their goals, needs, challenges, and points of view. Each student team synthesized its findings as a problem statement that was reframed into a "How might we?" question to prepare for ideation and opening the solution space.

The solution space, introduced in the ideate phase, was intended to generate as many ideas as possible around the "How might we?" question and to identify the

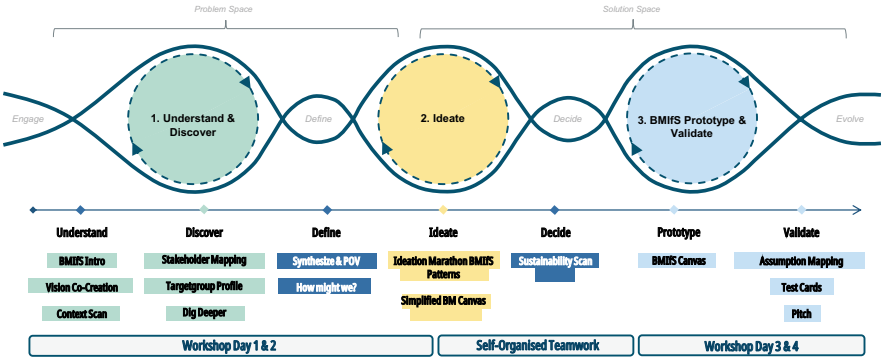

Fig. 19.1 The TT-BMI design sprint approach and activities (Wyss et al., 2023)

target group's needs in the greater socio-ecological context. For this activity, the student teams used BMIfS prompts such as the sustainable business model ideation and pattern cards (Hovgaard, n.d.; Lüdeke-Freund et al., 2019). Using the BMIfS evaluation funnel and the sustainability scan, inspired by Bocken and Short's (2021) sustainability criteria, the teams then selected a single promising idea to use in the sustainability challenge. This decision also required consideration of the ideas' desirability, feasibility, and viability (Brown, 2008). The teams then created solution sketches for interim presentations to the managers and other students.

The teams generated additional ideas between the first two and the final two workshops. They could ask questions or request feedback in online calls with the managers. At the final two workshops, the teams developed their ideas into BMIfS prototypes using the YY-BMI canvas for BMIfS. This canvas, which lists guiding questions for each of its building blocks, is a compilation and adaptation of other business model canvases such as the Business Model Canvas (Osterwalder & Pigneur, 2010), the Sustainable Business Canvas (Tiemann et al., 2016), and the Sustainable Business Model Canvas (CASE, 2017; Hovgaard, n.d.). The teams used assumption mapping to test the validity of their BMIfS prototypes' assumptions. Finally, the teams presented interactive and comprehensive pitches for their BMIfS prototypes to the managers and other students.

Uncovering Business Opportunities Opened by a Climate-Neutral Car

The Uncovering Business Opportunities Opened by a Climate-Neutral Car initiative was a co-creation sustainability challenge for students at Halmstad University and managers at the Swedish SME, Polestar. The students were participants in a large, co-creation multi-disciplinary workshop where they presented their business model prototypes to the managers, students from other programs, and university faculty members. The goal of the challenge, which is integrated with the current engineering curriculum, was to co-create business model prototypes by building on the multiple competencies of the students from the different engineering programs at the university.

Polestar's most ambitious project—Project 0 Polestar, announced in April 2021)—aims to produce a climate-neutral car by 2030 by the reduction of emissions throughout the supply and production chains (www.polestar.com).

Two questions were posed in the sustainability challenge: (1) How can Polestar create and capture true value from different stakeholders' point of view in the ownership phase of a climate-neutral car's lifecycle? and (2) How can Polestar increase the use of the car in the ownership phase while continuing to capture true value (i.e., sustainability) while maintaining recurrent revenue streams? The students were tasked with co-creating a business model for one of the following time horizons: 0–2 years with existing cars; 5 years with cars with small adjustments; and up to 10

years with new cars. The students were required to specify the context in which the cars would be used and how their business models would capture value.

In the fall of 2021, twenty-six engineering students in Master's degree programs at Halmstad University participated in the eight-week initiative. Five student teams used the backcasting method that involves mapping the trajectory of a company from the desirable future back to the present to test the feasibility of plans, policies, and projects (Broman & Robèrt, 2017). The students followed scientific principles in the challenge and received feedback from the Polestar managers.

In the first of several phases, the teams' focus was on creating awareness and establishing a bold, long-term Vision (A) for Polestar. The teams studied sustainability reports and literature, entrepreneurial learning, and business modeling for sustainability. In the second phase, the teams established the Baseline (B) for the world and for Polestar by identifying relevant micro, meso, and macro trends and their relationships with the context-relevant SDGs proposed by the United Nations. In the third phase, the teams created, presented, and tested Creative Solutions (C), and refined different business model prototypes using Upward and Jones's (2015) Flourishing Business Canvas, and the Future-Fit Business Benchmark tool used for evaluation and refinement of their business model prototypes (Kendall & Willard, 2015). In the fourth phase, the teams created Devise a Plan (D) they could use to communicate their ideas to the Polestar managers and other stakeholders. During this phase, the teams were trained in how to pitch their business model to different stakeholders and how to create an action plan/impact statement for their business model. The Polestar managers discussed the students' sustainable business model innovations in all phases of the challenge. Figure 19.2 illustrates the eight-week Project 0 Polestar initiative.

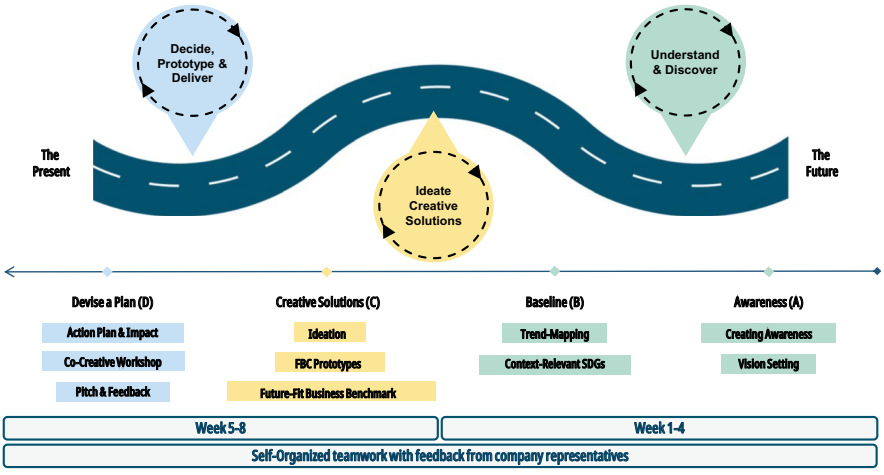

Fig. 19.2 Approach to true value co-creation in BMIfS at "Uncovering Business Opportunities Opened by a Climate-Neutral Car" (The third and fourth Author's Own)

Reflections on Designing Inter-Organizational Value Co-Creation in BMIfS Initiatives with Universities and SMEs

In this section, we identify the main causes of the challenges to true value co-creation in BMIfS that the university students and the SME managers encountered in the Polestar initiative and the TT-BMI initiative. We also propose seven tentative principles to refer to when designing co-creation BMIfS initiatives that can bridge the knowledge-doing gap—that is, the gap between information and action. We argue that considering these principles during inter-organizational collaborations will foster more fruitful value co-creation initiatives.

Causes of the Co-Creation Challenges: Educational Approaches

Despite the increased use of innovative approaches in education aimed at "wicked," complex challenges (e.g., Dyllick, 2015; Muff, 2013), traditional educational approaches persist in higher education. The economic pressure to reduce costs and to conserve resources (e.g., via lecture format, large class size, and low lecturer compensation), combined with a reluctance to change curricula and pedagogic methods, often impedes the transition to more innovative educational approaches.

Universities must engage in persuasive communications with SMEs when they make their pitch for value co-creation initiatives in BMIfS. University personnel, however, may lack the motivation or even competence to initiate and maintain such communications. Most educational institutions are organized according to the traditional assembly-line concept of educators, controllers, and inspectors.

Co-creation initiatives in BMIfS are also challenging for students and educators. Students are more committed to projects when they are responsible for student-led instruction. Educators take on untested and unfamiliar workloads when they relinquish the comfort and custom of lecture-based instruction. Educators need to coordinate interdisciplinary student teams and develop networks of experts who can provide coaching and other assistance. Building and maintaining these networks are especially challenging tasks when new initiatives are undertaken at a time when traditional, lecture-based formats—with fixed course schedules and standardized grading criteria—remain firmly in place.

Faculty members and students engaged in co-creation in BMIfS initiatives also need systemic competencies. Such competencies are seldom taught in traditional university programs that focus on compartmentalization. Integrating the approaches and supportive tools needed for the systemic perspective in co-creation initiatives in BMIfS present challenges. However, a broader systemic perspective is necessary that integrates external stakeholders' needs and that addresses environmental issues (Breuer et al., 2018). Yet this perspective is rarely presented in educational settings. The use of sustainability-oriented business modeling tools is still limited (Wyss et al., 2021a, 2021b).

In conclusion, the challenges caused by educational approaches used in true value co-creation in BMIfS can seem quite discouraging because they are numerous and complex. Yet, if universities enthusiastically promote a more flexible and experimental educational approach, these challenges may be overcome.

Causes of the Co-Creation Challenges: SME Approaches

The SME focus on fast problem-solving, near-future outcomes, and quick returns on investment can conflict with the essence of inter-organizational collaboration, especially with the university's mission of knowledge advancement. This goal inconsistency can be problematic for value co-creation initiatives. SMEs may lack the resources, time, and interest needed to participate fully in such initiatives. Universities that lack established relationships with candidate SMEs may know little about the SMEs' reputation, results, and trustworthiness. SMEs may be reluctant to provide this and further information to the universities and students. SMEs may even have expectations of the collaboration that are outside the scope of the agreed-upon collaboration terms (e.g., requests for business consulting).

The universities' acquiring and onboarding process with SMEs is thus complex and not without risk. For their part, SMEs may assume university students lack the expertise, knowledge, and time needed to contribute meaningfully to proposed initiatives. Additionally, SMEs may not have a clear understanding about who has the main responsibility for the initiative or about the resources they are expected to commit to it. SMEs may worry that the collaboration may disrupt and/or cannibalize their well-functioning activities, leading to reactive risk management and a short-term focus that hinders tackling complex and dynamic sustainability challenges. As a result, during initiatives the students' innovative and transformative capabilities are often undeveloped or, at best, only minor, incremental improvement activities are initiated.

In conclusion, while many university students are eager to participate in co-creation initiatives, some SMEs are hesitant for a variety of reasons. This hesitancy poses challenges for university programs that seek collaborative business partners. This broken link in the true value co-creation in BMIfS between students and SMEs requires more analysis if solutions are to be identified.

Tentative Principles for Leveraging True Value Co-Creation in BMIfS with Universities and SMEs

Building on value co-creation theory (Vargo et al., 2017; Vargo & Lusch, 2008, 2016), in this section, we develop a set of tentative principles applicable to the design of value co-creation in BMIfS initiatives such as the YY-BMI and the Project

0 Polestar initiatives described in this article. While co-creation theory acknowledges that value co-creation occurs in systems, it does not identify specific principles for value co-creation in BMIfS. Additionally, the value co-creation literature primarily focuses on traditional stakeholders, such as customers and companies (e.g., Srivastava et al., 2024), while overlooking other important stakeholders in the system (e.g., universities and SMEs). Following Thomas and Ambrosini (2021) and Lin and Lekhawipat (2023), we respond to recent calls (e.g., Vargo et al., 2017) for an examination of the use of value co-creation by diverse stakeholders.

We label our tentative design principles as the 7C principles that bridge the knowledge-doing gap in the true value co-creation in BMIfS initiatives. These principles are Confirmation, Confidence, Creativity, Credibility, Communication, Capability to Co-create, and Capacity to Address the Systems-Citizenship Gap. Success with value co-creation initiatives in BMIfS requires that these principles create value for all parties (e.g., universities and their students, SMEs and their managers). Furthermore, these initiatives should have flexible, systemic design-based formats that are organized around a specific BMIfS challenge (i.e., the boundary object). Figure 19.3 illustrates the 7 C principles for true value co-creation in BMIfS initiatives.

Confirmation This principle refers to "the unique, hard-to-imitate competitive resource that unleashes and leverages relational capabilities" (Milton, 2008, p. 1065) in true value co-creation in BMIfS. Prior research suggests successful collaboration in BMIfS between universities and companies requires aligning their identities (Hamann & Faccer, 2017; Parola et al., 2022). Our research unravels the alignment forms. To students, confirmation means applying and communicating their knowledge, presenting and receiving feedback on their ideas, and building relationships with stakeholders that could lead to future employment. To SMEs managers, confirmation allows to experiment safely with innovative approaches and ideas and build relationships with other stakeholders. These opportunities allow to reduce the

Fig. 19.3 Tentative principles for designing true value in co-creation BMIfS initiatives (The Authors' Own)

uncertainty associated with new projects. Overall, the Confirmation principle allows to leverage and strengthen the relationships between stakeholders.

Confidence This principle refers to "the assuredness in oneself and in one's capabilities" (Norman & Hyland, 2003, p. 264). Our initiatives align with Bartunek and Ren's (2022) description of two types of meaningful events that shape students' learning: learning that provides student practice and learning that provides student insights. Support for university students and SME managers requires that universities create a setting where the parties can connect (Brodie et al., 2019). This safe space for dialogue should help the parties express their individuality as they learn from others' ideas and experiences (Bartunek & Ren, 2022) and increase their self-confidence rather than provoke closure and dissociation from the learning experience. The Confidence principle fosters reward systems for participants, push boundaries, and challenge established norms.

Creativity This principle refers to "the ability to turn new and imaginative ideas into reality" (Caeiro-Rodríguez et al., 2021, p. 29236). Creativity means addressing challenges, listening to unbiased ideas, and acquiring new knowledge. Usually, corporate innovation prioritizes companies' interests, which hampers creativity (Sharma et al., 2022). Addressing "wicked" problems requires that all stakeholders embrace creativity (Micheli et al., 2019) and use their resources to achieve creative outcomes (Carmeli & Schaubroeck, 2007).

Creative work that benefits SMEs can occur outside their business silos by involving new stakeholders, such as students and other SMEs. Students can also produce creative ideas that they present to teachers and managers for validation. Thus, creative ideas co-emerge when stakeholders embrace different roles (i.e., university students as innovators; SME managers as validators). The Creativity principle requires patience to wait for the co-emergence of creative ideas.

Credibility This principle refers to the trust required among parties in true value co-creation in BMIfS. For example, a teacher is credible to students if the students think the teacher cares about their educational welfare (Cavanagh et al., 2018). For the students, acquiring credibility means they are trusted to work collaboratively with wicked problems and to receive constructive feedback. For the SME managers, acquiring credibility means they are trusted to work collaboratively on projects and to accept students as valuable resources. Collaborative activities are meaningful to students, especially when practical skills are used and opportunities for self-improvement are presented (Bartunek & Ren, 2022). In applying the Credibility principle, initiative designers may test learning approaches that are transparent, tolerant, and inclusive.

Communication This principle refers to the creation of and support for mutual understanding among stakeholders in true value co-creation in BMIfS. According to Ganapathy (2020), "robust academic-practitioner networks' are needed to tackle today's complexities." In such networks, communication is the glue that unites the

seven principles of true value co-creation in BMIfS. Effective communication can reduce the tension among the parties by facilitating their proactive socialization (Parola et al., 2022). Engagement platforms for effective communication are essential for the exchange of knowledge and resources by stakeholders (Brodie et al., 2019; Thomas & Ambrosini, 2021) and for the alignment of goals and boundaries in BMIfS (Fehrer & Wieland, 2021; Vargo & Lusch, 2016). Embracing the Communication principle allow parties to engage more enthusiastically and cooperatively to align objectives, worldviews, and expectations.

Capability to Co-create This principle refers to the parties' aptitude for and commitment to true value co-creation in BMIfS. Recent research emphasizes that collaborating stakeholders should share their localized knowledge, relinquish their roles as "experts" with exclusive knowledge, and embrace the roles of participant, organizer, or knowledge partner (Sharma et al., 2022; Thomas & Ambrosini, 2021). For example, students rather than their instructors typically take the leadership role in unorthodox, co-creation projects with various expected outcomes. A potential problem with such projects is that one party may expect outcomes that the other party has not agreed to (Montonen et al., 2021).

In applying the Capability to co-create principle, initiative designers may promote innovation activities that the parties have jointly designed and adopted.

Capacity to Address the Systems-Citizenship Gap This principle refers to the capacity of people to think in systems and see interdependencies (c.f., Senge, 2006). The systems-citizenship gap results from the increase in globalization and digitalization that requires people to understand interdependence better and take greater responsibility for the earth and its resources. Universities, in particular, are expected to respond to this demand (Montonen et al., 2021; Sandhu et al., 2019) in their research on organizational phenomena and their selection of external research partners for collaboration projects.

In applying the Capacity to address the Systems-Citizenship Gap principle, initiative designers may advocate for more use of the tools, immersive activities, and frameworks needed to achieve a better understanding of the natural world and of the interdependence of all living things.

Discussion

Our study challenges popular approaches to value co-creation that often rely on advisory activities led by third parties such as outside consultants or university researchers (Senge et al., 2012). When consultants or researchers advise collaborations of diverse parties, the usual assumptions are that the parties have clearly defined roles, and that one party has the "best" expertise. These assumptions fragment the complex and dynamic sustainability challenge into piecemeal components

suitable for linear problem-solving, often limiting the parties' interaction, knowledge exchange, and creativity.

We claim that an inter-organizational collaboration gap exists between universities and SMEs that can be overcome by emphasizing the advantages of true value co-creation in BMIfS initiatives that embrace a more systemic approach (Ganapathy, 2020). Such initiatives can benefit all stakeholders, including SMEs that lack sufficient resources to address "wicked" problems by themselves and universities that lag in their research and teaching efforts (Montonen et al., 2021; Sharma et al., 2022). This article enriches the business model literature (e.g., Foss & Saebi, 2017; Zott et al., 2011) by outlining the 7C principles that can guide inter-organizational collaboration in BMIfS. These principles are intended to stimulate discussion and evaluation.

Our study supports other research on true value co-creation that emphasizes the systemic nature of BMIfS (Fehrer & Wieland, 2021) and the importance of systemic interaction and alignment among organizations during BMIfS (Fehrer & Wieland, 2021; Snihur & Bocken, 2022) especially that diversity of organizations' goals and interests can result in tension and friction (Fehrer et al., 2020). This article contributes to recent discussions on the role of universities in driving change in the broader ecosystem (e.g., Sharma et al., 2022; Thomas & Ambrosini, 2021). In true value co-creation in BMIfS, universities shift their focus from case studies of SMEs in isolation, to co-creation of design initiatives (Gumusay & Reinecke, 2021). It emphasizes the importance of designing a true value co-creation environment where no organization is an expert, rather all organizations are knowledge partners.

Most of the business model innovation literature that conceptualizes value co-creation in BMIfS oversimplifies the process by focusing on companies' resources and activities while neglecting the linkage between companies' and other parties' resources and activities (Vargo & Lusch, 2008, 2016). True value co-creation in BMIfS is even more complex when the organizations' goals and needs conflict (Fehrer & Wieland, 2021). Therefore, it is imperative to radically re-think the design and process of value co-creation in BMIfS by paying close attention to the organizations, which expect BMIfS to create value for them, for partner organizations, and the overall system (Fehrer & Wieland, 2021).

Our research extends the work by Lundberg and Öberg (2021) and Perna et al. (2022) to shed light on the importance of meaningful classroom activities in inter-organizational collaboration, especially innovation and value co-creation between universities and SMEs. We argue that the classroom could be extended to a value co-creation setting wherein diverse organizations participate. In this setting, we demonstrate that students' and managers' learning experiences are mutually influential. Furthermore, we acknowledge that value co-creation settings pose significant challenges for universities and SMEs, outlining principles to overcome these challenges.

Conclusions

Our 7C principles, a novel framework for true value co-creation in BMIfS from an inter-organizational perspective, are the result of our experience with two value co-creation initiatives in two countries. We believe these principles could be generalizable to other initiatives of true value co-creation in BMIfS. Different settings with different stakeholders (e.g., NGOs managers and governments representatives) could further explore the relevance of the 7C principles and enrich them.

Future research should explore how organizations can leverage our 7C principles in new contexts (e.g., industries, regions) and by involving new organizations (e.g., NGOs and governmental agencies). Additionally, the research could explore strategies to increase SME participation in inter-organizational initiatives of true value co-creation with universities. A convincing business case for such work could overcome the SMEs' resistance to co-creation initiatives with external stakeholders.

Universities and SMEs have a crucial role in promoting sustainability. Working in joint projects, students and managers can co-create true value not only for their organizations but also for society (e.g., Hoveskog et al., 2018; Tell & Hoveskog, 2022). We hope our article inspires future collaboration between universities and SMEs in sustainability and other wicked problem projects.

References

Amit, R., & Zott, C. (2015). Crafting business architecture: The antecedents of business model design. *Strategic Entrepreneurship Journal, 9*(4), 331–350.

Angelova, M., & Gkofas, P. (2021), *Next generation SME strategy—Enhancing effective and swift delivery.* OPINION - European Economic and Social Committee. https://www.lfb-rlp.de/assets/files/INT_947_english.pdf

Argyris, C. (1999). *On organizational learning* (2nd ed.). Blackwell Publishers.

Bartunek, J. M., & Yi Ren, I. (2022). Curriculum isn't enough: What relevant teaching means, how it feels, why it matters, and what it requires. *Academy of Management Learning and Education, 21*, 503–516. https://doi.org/10.5465/amle.2021.0305

Beynaghi, A., Trencher, G., Moztarzadeh, F., Mozafari, M., Maknoon, R., & Leal Filho, W. (2016). Future sustainability scenarios for universities: Moving beyond the United Nations decade of education for sustainable development. *Journal of Cleaner Production, 112*, 3464–3478.

Bidmon, C. M., & Knab, S. F. (2018). The three roles of business models in societal transitions: New linkages between business model and transition research. *Journal of Cleaner Production, 178*, 903–916.

Bocken, N. M., & Short, S. W. (2021). Unsustainable business models–Recognising and resolving institutionalised social and environmental harm. *Journal of Cleaner Production, 312*, 127828. https://doi.org/10.1016/j.jclepro.2021.127828

Breuer, H., Fichter, K., Lüdeke-Freund, F., & Tiemann, I. (2018). Sustainability-oriented business model development: principles, criteria and tools. *International Journal of Entrepreneurial Venturing, 10*, 31. https://doi.org/10.1504/IJEV.2018.10013801

Brodie, R. J., Fehrer, J. A., Jaakkola, E., & Conduit, J. (2019). Actor engagement in networks: Defining the conceptual domain. *Journal of Service Research, 22*(2), 173–188.

Broman, G. I., & Robèrt, K. H. (2017). A framework for strategic sustainable development. *Journal of Cleaner Production, 140*, 17–31. https://doi.org/10.1016/j.jclepro.2015.10.121

Brønn, P. S., & Brønn, C. (2003). A reflective stakeholder approach: Co-orientation as a basis for communication and learning. *Journal of Communication Management, 7*(4), 291–303. https://doi.org/10.1108/13632540310807430

Brønn, C., & Brønn, P. S. (2018). Sustainability: A wicked problem needing new perspectives. In H. Borland, A. Lindgreen, F. Maon, V. Ambrosini, B. P. Florencio, & J. Vanhamme (Eds.), *Business strategies for sustainability*. Routledge. https://doi.org/10.4324/9780429458859

Brown, T. (2008). Design thinking. *Harvard Business Review, 86*(6), 84.

Caeiro-Rodríguez, M., Manso-Vázquez, M., Mikic-Fonte, F. A., Llamas-Nistal, M., Fernández-Iglesias, M. J., Tsalapatas, H., Heidmann, O., Vaz De Carvalho, C., Jesmin, T., Terasmaa, J., & Sørensen, L. T. (2021). Teaching soft skills in engineering education: A European perspective. *IEEE Access, 9*, 29222–29242. https://doi.org/10.1109/ACCESS.2021.3059516

Carmeli, A., & Schaubroeck, J. M. (2007). The influence of leaders' and other referents' normative expectations on individual involvement in creative work. *The Leadership Quarterly, 18*, 35–48. https://doi.org/10.1016/j.leaqua.2006.11.001

CASE. (2017). *CASE knowledge platform: Sustainable business model Canvas*. https://www.case-ka.eu/index.html%3Fp=2174.html

Cavanagh, A. J., Chen, X., Bathgate, M., Frederick, J., Hanauer, D. I., & Graham, M. J. (2018). Trust, growth mindset, and student commitment to active learning in a college science course. *CBE—Life Sciences Education, 17*(1), 10. https://doi.org/10.1187/cbe.17-06-0107

Chesbrough, H. (2010). Business model innovation: Opportunities and barriers. *Long Range Planning, 43*, 354–363. https://doi.org/10.1016/j.lrp.2009.07.010

Crawley, E., Malmqvist, J., Ostlund, S., Brodeur, D., & Edstrom, K. (2007). Rethinking engineering education. *The CDIO Approach, 302*(2), 60–62.

Dyllick, T. (2015). Responsible management education for a sustainable world: The challenges for business schools. *Journal of Management Development, 34*(1), 16–33. https://doi.org/10.1108/JMD-02-2013-0022

Ehrenfeld, J. R. (2008), Sustainability by design: A subversive strategy for transforming our consumer culture. Yale University Press. https://www.jstor.org/stable/j.ctt1np8xc.

Fehrer, J. A., & Wieland, H. (2021). A systemic logic for circular business models. *Journal of Business Research, 125*, 609–620. https://doi.org/10.1016/j.jbusres.2020.02.010

Fehrer, J., Wieland, H., & Bosl, P. (2020). Understanding path dependencies when innovating technology-shaped business models: Insights from the mobility industry. In *SERVSIG conference, July 9–12, 2020, Brisbane, Australia*.

Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management, 43*(1), 200–227. https://doi.org/10.1177/0149206316675927

Ganapathy, D. (2020). GE innovates through continuous internal and external communication: An interview with Rachana Panda. *Academy of Management Learning and Education, 19*(1), 110–111. https://doi.org/10.5465/amle.2017.0455

Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *Journal of Cleaner Production, 198*, 401–416. https://doi.org/10.1016/j.jclepro.2018.06.240

Gumusay, A. A., & Reinecke, J. (2021). Researching for desirable futures: From real utopias to imagining alternatives. *Journal of Management Studies*. https://doi.org/10.1111/joms.12709

Hamann, R., & Faccer, K. (2017). Mind the transformation gap: Knowledge exchange, interests, and identity in research-practice collaborations. In J. M. Bartunek & J. McKenzie (Eds.), *Academic–practitioner relationships: Developments, complexities and opportunities* (pp. 234–252). Routledge.

Head, B. W. (2019). Forty years of wicked problems literature: Forging closer links to policy studies. *Policy and Society, 38*(2), 180–197. https://doi.org/10.1080/14494035.2018.1488797

Hillary, R. (2000). *Small and medium-sized enterprises and the environment business imperatives*. Greenleaf Publishing.

Hoffman, A. (2020). Business education as if people and the planet really matter. *Strategic Organization, 19*, 513–525. https://doi.org/10.1177/1476127020967638

Holgaard, J. E., Hadgraft, R., Kolmos, A., & Guerra, A. (2016). Strategies for education for sustainable development–Danish and Australian perspectives. *Journal of Cleaner Production, 112*, 3479–3491. https://doi.org/10.1016/j.jclepro.2015.09.063

Holman, D. (2000). Contemporary models of management education in the UK. *Management Learning, 31*(2), 197–217. https://doi.org/10.1177/1350507600312004

Hoveskog, M., Halila, F., Mattsson, M., Upward, A., & Karlsson, N. (2018). Education for sustainable development: Business modelling for flourishing. *Journal of Cleaner Production, 172*, 4383–4396. https://doi.org/10.1016/j.jclepro.2017.04.112

Hovgaard, E. T. (n.d.). *Download tools and resources for sustainable business model innovation*. https://hovgaard.no/sustainable

Innes, J. E., & Booher, D. E. (2016). Collaborative rationality as a strategy for working with wicked problems. *Landscape and Urban Planning, 154*, 8–10. https://doi.org/10.1016/j.landurbplan.2016.03.016

Kendall, G., & Willard, B. (2015). Future-fit business benchmark. *Public Draft, 2*, 1–63.

Kohn Rådberg, K., Lundqvist, U., Malqvist, J., & Hagvall Svensson, O. (2020). From CDIO to challenge-based learning experiences - Expanding student learning as well as societal impact? *European Journal of Engineering Education, 45*(1), 22–37. https://doi.org/10.1080/03043797.2018.1441265

Laszlo, C., & Brown, J. S. (2014). *Flourishing enterprise: The new spirit of business*. Stanford University Press.

Lehmann, M., Christensen, P., & Thrane, M. (2008). Problem-oriented and project-based learning (POPBL) as an innovative learning strategy for sustainable development in engineering education. *European Journal of Engineering Education, 33*, 283–295. https://doi.org/10.1080/03043790802088566

Levitt, B., & March, J. G. (1988). Organizational learning. *Annual Review of Sociology, 14*(1), 319–338. https://doi.org/10.1146/annurev.so.14.080188.001535

Lin, M., & Lekhawipat, W. (2023). Key influencing factors for the success of external innovation strategies in the biotechnology industry. *Journal of Business & Industrial Marketing, 38*(12), 2745–2759. https://doi.org/10.1108/JBIM-07-2022-0307

Lüdeke-Freund, F., Gold, S., & Bocken, N. (2019). A review and typology of circular economy business model patterns. *Journal of Industrial Ecology, 23*(1), 36–61. https://doi.org/10.1111/jiec.12763

Lundberg, H., & Öberg, C. (2021). Teachers, researchers, but not innovators? Rethinking university-industry collaboration. *Journal of Business & Industrial Marketing, 36*(13), 161–173. https://doi.org/10.1108/JBIM-03-2020-0126

McKenney, S., & Reeves, T. (2012). *Conducting educational design research*. Routledge.

Micheli, P., Wilner, S. J., Bhatti, S. H., Mura, M., & Beverland, M. B. (2019). Doing design thinking: Conceptual review, synthesis, and research agenda. *Journal of Product Innovation Management, 36*(2), 124–148. https://doi.org/10.1111/jpim.12466

Milton, L. P. (2008). Unleashing the relationship power of family firms: Identity confirmation as a catalyst for performance. *Entrepreneurship Theory and Practice, 32*(6), 1063–1081. https://doi.org/10.1111/j.1540-6520.2008.00273.x

Mohammed, S., Klimoski, R., & Rentsch, J. R. (2000). The measurement of team mental models: We have no shared schema. *Organizational Research Methods, 3*, 123–165. https://doi.org/10.1177/109442810032001

Montonen, T., Eriksson, P., & Woiceshyn, J. (2021). It's not a lonely journey: Research collaboration strategies for knowledge production with allies. *Academy of Management Learning and Education, 20*(2), 233–248. https://doi.org/10.5465/amle.2020.0318

Muff, K. (2013). Developing globally responsible leaders in business schools: A vision and transformational practice for the journey ahead. *Journal of Management Development, 32*, 487–507. https://doi.org/10.1108/02621711311328273

Nicholas, G., Foote, J., Kainz, K., Midgley, G., Prager, K., & Zurbriggen, C. (2019). Towards a heart and soul for co-creative research practice: a systemic approach. *Evidence & Policy, 15*(3), 353–370.

Norman, M., & Hyland, T. (2003). The role of confidence in lifelong learning. *Educational Studies, 29*(2–3), 261–272. https://doi.org/10.1080/03055690303275

Osterwalder, A., & Pigneur, Y. (2010). *Business model generation: A handbook for visionaries, game changers, and challengers*. Wiley. https://doi.org/10.1523/JNEUROSCI.0307-10.2010

Parola, G., Spiess-Knafl, W., & Thaler, J. (2022). The butterfly effect: How academics and practitioners' micro-practices shape turning points in response to paradox. *Academy of Management Learning and Education, 21*(3), 369–393. https://doi.org/10.5465/amle.2021.0235

Pavez, I., Kendall, L. D., & Laszlo, C. (2021). Positive-impact companies: Toward a new paradigm of value creation. *Organizational Dynamics, 50*(4), 100806., ISSN 0090-2616. https://doi.org/10.1016/j.orgdyn.2020.100806

Perna, A., O'Toole, T., Baraldi, E., & Gregori, G. L. (2022). The value co-creation journey: A longitudinal process unfolding in a network through collaboration. *Journal of Business & Industrial Marketing, 37*(13), 182–196. https://doi.org/10.1108/JBIM-09-2021-0439

Prahalad, C. K., & Bettis, R. A. (1986). The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal, 7*(6), 485–501. https://doi.org/10.1002/smj.4250070602

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creation experiences: The next practice in value creation. *Journal of Interactive Marketing, 18*, 5–14. https://doi.org/10.1002/dir.20015

Rill, B. (2016). Resonant co-creation as an approach to strategic innovation. *Journal of Organizational Change Management, 29*(7), 1135–1152. https://doi.org/10.1108/JOCM-01-2015-0009

Rittel, H. W. J., & Weber, M. M. (1973). Dilemmas in a general theory of planning. *Policy Sciences, 4*(2), 155–169. https://doi.org/10.1007/BF01405730

Rothwell, R. (1991). External networking and innovation in small and medium-sized manufacturing firms in Europe. *Technovation, 11*(2), 93–112. https://doi.org/10.1016/0166-4972(91)90040-B

Sandhu, S., Perera, S., & Sardeshmukh, S. R. (2019). Charted courses and meandering trails: Crafting success and impact as business school academics. *Academy of Management Learning and Education, 18*, 153–185. https://doi.org/10.5465/amle.2017.0385

Senge, P. (2006). Systems citizenship: The leadership mandate for this millennium. *Leader to Leader*, (41), 21–26. https://doi.org/10.1002/ltl.186

Senge, P. M., Cambron-McCabe, N., Lucas, T., Smith, B., & Dutton, J. (2012). *Schools that learn (updated and revised): A fifth discipline fieldbook for educators, parents, and everyone who cares about education*. Currency.

Sharma, G., Greco, A., Grewatsch, S., & Bansal, P. (2022). Cocreating forward: How researchers and managers can address problems together. *Academy of Management Learning and Education, 21*(3), 350–368.

Snihur, Y., & Bocken, N. M. P. (2022). A call for action: The impact of business model innovation on business ecosystems, society, and planet. *Long Range Planning, 55*(3), 102182. https://doi.org/10.1016/j.lrp.2022.102182

Srivastava, S., Iyer, P., Davari, A., Williams, W. A., Jr., & Parke, P. L. (2024). How much customer collaboration is too much? Implications for user entrepreneurship and product performance. *Journal of Business & Industrial Marketing, 39*(5), 919–932. https://doi.org/10.1108/JBIM-04-2022-0188

Storey, D. J. (1994). *Understanding the small business sector* (1st ed.). Routledge. https://doi.org/10.4324/9781315544335

Sund, K. J., Galavan, R. J., & Bogers, M. (2021). Exploring the connections between business models and cognition: A commentary. In K. J. Sund, R. J. Galavan, & M. Bogers (Eds.), *Business models and innovation* (Vol. 4, pp. 1–13). Emerald Publishing.

Taescher, K., & Nizar Abdelkafi, N. (2017). Visual tools for business model innovation: Recommendations from a cognitive perspective. *Creativity and Innovation Management, 26*(2), 160–174. https://doi.org/10.1111/caim.12208

Teece, D. J. (2010). Business models, business strategy and innovation. *Long Range Planning, 43*, 172–194. https://doi.org/10.1016/j.lrp.2009.07.003

Tell, J., & Hoveskog, M. (2022). Applied engineering education for soft skills in the context of sustainability and mobility. *International Journal of Sustainability in Higher Education, 23*(8), 324–336. https://doi.org/10.1108/IJSHE-07-2022-0202

Thomas, L., & Ambrosini, V. (2021). The future role of the business school: A value cocreation perspective. *Academy of Management Learning and Education, 20*(2), 249–269.

Tiemann, I., Fichter, K., & Hain, A. (2016). *Developing business models with the sustainable business canvas*. Carl von Ossietzky Universität Oldenburg.

Upward, A., & Jones, P. (2015). An ontology for strongly sustainable business models: Defining an enterprise framework compatible with natural and social science. *Organization & Environment*, 1–27. ISSN 1086-0266. http://openresearch.ocadu.ca/id/eprint/381/

Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: Continuing the evolution. *Journal of the Academy of Marketing Science, 36*(1), 1–10. https://doi.org/10.1007/s11747-007-0069-6

Vargo, S. L., & Lusch, R. F. (2016). Institutions and axioms: An extension and update of service-dominant logic. *Journal of the Academy of Marketing Science, 44*(1), 5–23. https://doi.org/10.1007/s11747-015-0456-3

Vargo, S. L., Akaka, M. A., & Vaughan, C. M. (2017). Conceptualizing value: A service-ecosystem view. *Journal of Creating Value, 3*, 117–124. https://doi.org/10.1177/239496431773286

Vergragt, P. J., & Quist, J. (2011). Backcasting for sustainability: Introduction to the special issue. *Technological Forecasting and Social Change, 78*(5), 747–755. https://doi.org/10.1016/j.techfore.2011.03.010

von Kutzschenbach, M., & Brønn, C. (2010). You can't teach understanding, you construct it: Applying social network analysis to organizational learning. *Procedia - Social and Behavioral Sciences, 4*, 83–92. https://doi.org/10.1016/j.sbspro.2010.07.485

von Kutzschenbach, M., & Daub, C. H. (2021). Digital transformation for sustainability: A necessary technical and mental revolution. In R. Dornberger (Ed.), *New trends in business information systems and technology. studies in systems, decision and control* (Vol. 294). Springer. https://doi.org/10.1007/978-3-030-48332-6_12

von Kutzschenbach, M., Wyss, A., Kerr, I., and Frasca, J. (2023, June 22–23), Challenging the existing approach to business model innovation for sustainability: How might a co-emergent approach to change move us beyond the "(business) model" paradigm. In *The 8th international NBM conference, Maastricht*. https://doi.org/10.26481/mup.2302

Walsh, J. P. (1995). Managerial and organizational cognition: Notes from a trip down memory lane. *Organization Science, 6*, 280–321. https://doi.org/10.1287/orsc.6.3.280

Wyss, A., & von Kutzschenbach, M. (2020, July 1–2). How to better educate for more sustainability: Entrepreneurship for sustainability in business schools. In *Proceedings 5th international online conference on new business models: Sustainable, circular, inclusive* (pp. 302–309). Radboud University Nijmegen.

Wyss, A., Meyer, R., & von Kutzschenbach, M. (2021, June 22–24). Sustainable business model innovation for society 5.0: Towards a collaborative inter- and transdisciplinary approach with students and organizations. In *Proceedings of the first international conference on society 5.0. Virtual forum* (Vol. II, pp. 246–261). https://doi.org/10.5281/zenodo.5203145

Wyss, A., von Kutzschenbach, M., & Meyer, R. (2021a). *Studierende innovieren zukunftsfähige Geschäftsmodelle für KMUs: Übersicht zu bestehenden Initiativen und Ansätzen*. Forschungsbericht, Institut für Unternehmensführung, Fachhochschule Nordwestschweiz. https://doi.org/10.26041/fhnw-3774

Wyss, A., von Kutzschenbach, M., & Meyer, R. (2021b). *Inter- und Transdisziplinäre Innovationsansätze mit Studierenden und Firmen: Analyse und Bewertung von bestehenden Best-Practice-Fällen und Ansätze*. Forschungsbericht, Institut für Unternehmensführung, Fachhochschule Nordwestschweiz. https://doi.org/10.26041/fhnw-3889

Wyss, A., von Kutzschenbach, M., & Meyer, R. (2023), *Der TT-BMI Design Sprint Ansatz zur Initiierung von Geschäftsmodellinnovationen für Nachhaltigkeit mit Studierenden und KMUs*. Institut für Unternehmensführung, FHNW. https://doi.org/10.26041/fhnw-4774

Zott, C., Amit, R., & Massa, L. (2011). The business model: Recent developments and future research. *Journal of Management, 37*, 1019–1042. https://doi.org/10.1177/0149206311406265

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Maya Hoveskog is an Associate Professor in Innovation Management at the School of Business, Innovation and Sustainability, Halmstad University, Sweden. Her research focuses on innovation processes with special interest in sustainability-oriented business model innovation and value creation as well as teaching and learning in higher education. She has co-authored numerous scientific publications in these fields. Maya has a particular interest in visualization tools and approaches to support the early phases of the innovation process. She collaborates with colleagues from various disciplines (e.g., environmental studies, design studies, informatics, humanities). Furthermore, she is engaged in the creation of different co-creation arenas and conditions for entrepreneurial skills, knowledge and attitudes development that are needed for the VUCA world. Maya is sitting on the Board of the International Conference on New Business Models. She is also an initiator and one of the organizers of the doctoral workshop in the frame of the same conference.

Joakim Tell is an Associate Professor in Innovation Management at the School of Business, Innovation and Sustainability, Halmstad University, Sweden. His research interests concern the development of different action technologies, such as learning networks, managerial behavior in small enterprises, and leadership and learning issues in general. Since 2014, he is the head of the Innovation Management Department at Halmstad University. Something Joakim has worked with during the last years is to create and develop collaboration arenas, where students run real development projects and collaborate with business and public actors. Two examples are Halmstad University Solar Team (HUST) with focus on building a solar-powered electric car, and the Catfish project with focus on a system for water sampling and water quality analysis in real time.

Fatima Khitous is a researcher and educator affiliated to Oulu University (Finland) specializing in circular economy and sustainability. Her work focuses on business models that facilitate the transition to circular and sustainable practices. Adopting a systemic perspective, she explores how collaboration among actors can drive transformative change, and co-creating value for businesses, the environment, and society. She is particularly interested in leveraging design thinking as an innovation tool to help organizations successfully integrate circular economy principles. Fatima has published on topics such as circular business models, product-service systems, customer and stakeholder engagement, and the role of stakeholders' engagement in advancing sustainability. Her research has appeared in high-impact journals, including *Journal of Cleaner Production, and Business Strategy and the Environment*. She has contributed to policy-oriented projects on the green transition. An avid learner, she is committed to advancing knowledge and teaching in this evolving field.