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As a result of the commitment and dedication of contributors and colleagues, we find ourselves able to publish this standard issue of the journal at what is an unprecedented time in modern history. A further issue of short papers originally submitted for the 2020 Business Model Conference will follow soon.

We also have a good number of submissions in the review process and continue to receive further pieces on a regular basis. There will soon be announcements regarding proposed special issues of standard papers and, with luck, details of the 2021 Business Model Conference.

Many thanks to all for your continued support for the journal.

Stay safe and keep well

The editorial team.

JOURNAL OF BUSINESS MODELS

Divide and Create: A Commoning Approach to Business Modeling

Walter van Andel¹, Arne Herman², Annick Schramme³

Abstract

Purpose: Under pressure of declines in the cultural sector, many classical music organizations are reacting similarly with a turn towards predictability regarding both organizational model and artistic output. In response to this situation, this paper examines the business model of an organization that utilizes a commoning approach in order to unlock possibilities for artistic innovation.

Design/Methodology/Approach: This study follows an in-depth single case study of a business model of an alternatively-organized music venue. Data on the Splendor case have been collected during several on-site visits, and a series of three interviews with key representatives.

Findings: The case study demonstrates that commoning principles can be utilized in a business model through a series of collective duties, which help unlock the potential for individual artistic freedom.

Originality/Value: The article highlights the potential of designing of a business model that is based on commoning principles. Commoning is increasingly gathering momentum as a new way of collectively organizing the use of a (im)material resource, which is based on the values of sharing, common (intellectual) ownership, and cooperation.

Keywords: Commoning; Classical Music; Artistic innovation

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Introduction

Over the last decade, classical music organizations have been affected particularly hard by declines in the cultural sector. Arguments over government funding, homogeneous audience bases, and the perceived irrelevance of a reproductive institution in an innovation-oriented society dominate the global classical music scene (Glynn, 2000). As a result, a particular 'dominant logic' (Prahalad and Bettis, 1986) has emerged, in which music organizations around the world react similarly to the current situation by making safe and predictable choices in terms of their organizational structure (commonly a hierarchical structure led by a director of music and a director of operations), as well as in terms of their musical choices (commonly playing older, well-known works by famous composers as they are universally accepted and can therefore attract audiences and external financiers, without much effort). This has led to focus on a certain selection of works from the past (a canon), over innovative and contemporary works of art that have not yet endured a historical selection process (Herman, 2019). It could be argued that these attempts to protect the field of classical music might have a detrimental long-term affect, as it in effect blocks all creative experimentation in the field. Recently, alternative musical ensembles and venues have emerged, underpinned by innovative business models that enable them to reopen possibilities for artistic innovation, while averting the above-mentioned challenges to the current musical landscape. The emergence and advance of new organizational initiatives exemplify artists' urge to develop initiatives that actively explore the possibility to foster their creativity in the most unrestricted form, while also being more adapted to the eclectic demands of the present-day audience and financial challenges of the current cultural environment.

Approach

Through an in-depth case study of the business model of the music venue Splendor Amsterdam, this paper attempts to explore the overall potential of such an alternative. Data on the Splendor case have been collected during several on-site visits, in a series of three interviews with key rep-

resentatives: the chairman and co-founder David Dramm; venue manager Norman van Dartel; and co-founding Splendor musician Michael Gieler. The business model is a particularly useful concept for studying cultural initiatives (Van Anandel, 2020), as it goes beyond a mere analysis of financial aspects of an organization, highlighting the holistic system that enables an organization to create and capture value in many forms (Magretta, 2002; Fiel, 2013). Moreover, it also highlights a fundamental issue that underlies cultural organizations: the distinction between value creation and value capture, where it is often suggested that the main purpose for artists is value creation, rather than value capture (Fuller, Warren, Thelwall and Alamdar, 2010). Currently the debate within arts management focuses mainly on the value creation capacity of the organizations, as well as on how to manage and innovate the business model to make this capacity more sustainable and impactful (Schiuma and Lerro, 2017). The commercial exploitation of the created value, however, is often claimed to be neglected under peer pressure (Thelwall, 2007). Value capture for arts organizations, however, is typically seen as not only the firm's capacity to capture a material (financial) return, but is regularly seen in terms of the appropriation of immaterial (e.g., knowledge, reputation, reach) returns received in exchange for the cultural product or experience delivered (Van Anandel, 2020, see also Powell and Hughes, 2016; Dane-Nielsen and Nielsen, 2019). Highlighting both aspects of the business model in an analysis of a cultural organization can therefore provide interesting insights into its working. In this paper, the concept of the business model is used to analyze which specific business model choices are made by our focus organization that enable them to create value for its stakeholders, and capture value in return.

Key Insights

Since 2013, Splendor unites composers, musicians, and stage artists, who came together to form an artist-run cooperative that independently exploits a music venue in which the musicians have complete autonomy. In this initiative, a professionally equipped music venue is operated in its entirety by a group of

50 top-flight professional musicians (among which players of the main Dutch orchestras such as the Concertgebouw Orchestra, Rotterdam Philharmonic and the Radio Orchestras, as well as names from the world of opera, jazz, electronics and ethnic music) who felt the necessity for having a place for experimentation outside of the institutionalized environments in which they are employed. The musicians display a high degree of diversity, both in terms of instruments as well as in musical styles employed. This diversity offers unique opportunities for cross-fertilized artistic innovation through unexpected combinations. Moreover, it provides possibilities to fully utilize the venue's capacity and opportunities, as various musicians tend to use the building in different ways, and on different moments of the week (e.g. some concerts are more suited for a Sunday afternoon, while others might be more appropriate for a Friday night).

Utilizing a specific organizational model in which responsibility for all aspects of the organization (from acquiring finances to musical programming) is shared among all members, Splendor is an example in which 'commoning' is an integral part of their business model. Commoning is increasingly gathering momentum as a new way of collectively organizing the use of a (im)material resource, which is based on the values of sharing, common (intellectual) ownership, and cooperation while it emphasizes solidarity and trust among participants to develop new ways of production and management (Dockx and Gielen, 2018). Through their organizational decisions, Splendor is able to fully utilize the twofold character of a common good (De Angelis, 2017): on the one hand Splendor exemplifies a use-value for a plurality (by providing artistic freedom to all connected artists), on the other it requires a plurality claiming and sustaining the ownership of the common good. Together, these two elements form the core values of the Splendor business model: the pursuit of complete artistic freedom and autonomy, and a collectively shared sense of ownership and responsibility. By operationalizing these core values, Splendor is able to offer a unique value proposition to their artists as well as to the public. To the participating artists, Splendor offers a venue in which they are free to practice and perform, as well as where they can experiment with reducing the often-perceived gap

between the artists and the public. Towards the audience, Splendor is able to offer a value proposition which is built on three elements: 1) unique, high-quality, and innovative concerts; 2) possibilities for direct contact and interaction with the artists; and 3) an experience of being a contributing part of a music development process.

Financial viability

To make the Splendor business model financially viable, the organization has developed a financial model that is dependent on different types of income. Utilizing the cooperative rationale, the initial capital input needed came from the 50 musicians, who each invested €1.000 in the form of a corporate bond. The remaining startup funding was raised through private investors, who in return for providing capital - in the form of purchasing a ten-year bond - received a private concert by one or some of the musicians at home as dividend (the more that was invested, the more musicians you receive at home). As the artists are not financially reliant on their activities at Splendor (they are all professionally employed musicians), the venue strives for break-even operations. Operational costs are covered by a combination of individual ticket sales for concerts (of which 70% goes to the organizing musician, and 30% to the venue) and income coming from the approximately 1200 Splendor members. For an annual contribution of €120, these public members are entitled to designated free concerts, as well as reduced ticket prices for other concerts. Finally, income through the in-house exploitation of food and beverages goes to the venue. Through their financial model, Splendor is able to run a break-even operation without relying on external (governmental) subsidies. For the artists, financial gains from their endeavors at Splendor usually adequately covers their costs incurred. However, this is complemented by a large value creation and appropriation in an immaterial sense, as the venue offers the artists unique opportunities for artistic exploration. Their value capture focuses therefore mostly on the artistic freedom and autonomy that is made possible through the business model.

Artistic freedom and autonomy

The first and foremost goal of Splendor is to create an environment with complete artistic independence. As a general rule, Splendor does not make a formal

procedure for something unless it is absolutely required. Splendor was meant to be a place free of institutional and artistic boundaries, where anything is possible and appreciated. In terms of musical output, there are no limitations: repertoire and newly composed avant-garde music are equally welcomed, as well as experimentation in content, concept and artist-audience relationship is embraced. Such a venue was missing in the Amsterdam musical landscape: "We needed somewhere to play little ideas, and make small concerts. That was important. And maybe a place to work" Van Dartel states.

Based on this premise of artistic autonomy, Splendor takes on specific business model activity sets that enable the organization to further exploit its vision. First, Splendor has decided to employ a 'no-programming program' for the venue. Splendor has an open agenda, in which each of the 50 musicians can reserve a slot for any of the three possible performance spaces (housing an audience of 100, 60, or 30 people) in the building on a first-come, first-served basis. The musicians can reserve a place for a rehearsal or concert of themselves but are also free to program a concert played by outside musicians that they deem interesting to showcase. In the absence of a Splendor programmer, all partaking musicians are free to develop any project they want, without having to answer to anyone but themselves. Indeed, every musician is responsible for his/her own projects, both artistically and financially speaking, as their fees depend on the number of people that attend the concerts. Based on the same logic, Splendor has deliberately decided to not make a claim for any subsidies, as this choice could push Splendor into a context of more institutionalization. Subsidies often come with their own set of stipulations toward the organization in terms of elements such as organizational structures, reporting, expectations, and a certain balance in musicians, concerts, outreach, etc. (Stockenstrand and Ander, 2014). As such, the autonomy which forms the essence of this endeavor could be compromised drastically.

Shared ownership and responsibility

A second foundational element of the Splendor business model concerns a sharing of ownership and responsibility. Through this system, each artist has cer-

tain duties towards the organization as a whole, which collectively unlocks possibilities for unrestricted personal artistic endeavors. In return for their commitment to the project, and the initial €1.000 investment, each musician literally received the key to the building, indicating the unlimited potential for ad hoc creative endeavours and encounters among all musicians. The venue is available to them for 365 days per year, day and night for any musical endeavour, from rehearsals to performances, to create and explore, to produce and to program in whatever manner they find interesting. Besides the initial investment, each musician commits themselves to give one 'member-concert' per year, in which the Splendor members have free entrance. As there is no intervening programmer, and as all musicians have collectively invested financially as well as in terms of time and effort in the project, Splendor is truly a representative of a 'common good': it is owned, produced and sustained by all. As such, Splendor will never interfere in the content of the programming of the individual musicians but the group does consider tactics to maximize the use of the building in order to create the largest common good for all. For example, it is always allowed to give a concert that will probably only attract a very limited amount of people, but then the group might suggest to plan it on the same evening as another small concert so that they can work that day with just a limited staff for the bar. The sense of co-ownership is not limited to just the musicians, as the organization deliberately attempts to induce a sense of co-ownership among the audience as well, especially with its members. The audience's input goes beyond the mere financial aspect that they bring in, as Splendor concerts are deliberately organized in order to enhance the artist-audience connection. By cultivating an informal setting during the concerts - which often includes many moments of interaction with the audience - as well as after the concerts where artists and audience meet at the bar for discussion afterwards, a sense of artistic exchange occurs. Such an approach, that incorporates the three core values mentioned above, facilitates feedback loops between artists and audience that is nearly impossible in the more distant institutionalized classical music settings. This enables Splendor to promote peer-to-peer as well as artist-to-audience exchanges which support the development of innovative music.

Discussion and Conclusions

Developed out of a sensed urgency among a group of musicians for more autonomy, the Splendor model emerged from within the cracks of the current dominant system, and provides opportunities for artistic development that the stable and secure traditional institutions are unable to provide. This model of an artist-run cooperative has the potential to play an interesting complementary role in many cultural fields currently under pressure for innovation (see Schiuma and Lerro, 2017). The case example indicates that a viable business model in the arts does not only answer the typical business model question: 'What is of value to the customer' (see e.g. Fjeldstad and Snow, 2018), but also and even more: 'What is of value to the artist'. Splendor has found the answer to these questions in its interconnectivity. In that manner, value

creation and value capture manifest themselves through a collective and shared approach in which artists as well as the audience add to, and appropriate from, the common creation in an immaterial form. A weakness of the model, however, lies in the fact that the Splendor organization alone is not able to provide a large financial gain to the artists, and these (small) gains are dependent on the musicians' own initiatives, which are unpredictable in frequency as well in terms of revenue. As the artists are all professionally-employed musicians, the organization can only survive by virtue of an overarching, institutionalized subsidizing system. Therefore, the Splendor model can be seen as an important addition to the larger music ecosystem as it reintroduces opportunities for artistic innovation, rather than a replacement model for the established music institutions.

References

- Dane-Nielsen, H., and Nielsen, C. (2019), Value Creation in Business Models is Based on Intellectual Capital – and Only Intellectual Capital! *Journal of Business Models*, Vol. 7, No. 2, pp. 64–81.
- De Angelis, M. (2017), *Omnia Sunt Communia: On the Commons and the Transformation to Postcapitalism (In Common)*. Zed Books, London.
- Dockx, N. and Gielen, P. (2018), *Exploring Commonism—A New Aesthetics Of The Real*. Valiz.
- Fielt, E. (2013), Conceptualising Business Models: Definitions, Frameworks and Classifications. *Journal of Business Models*, Vol. 1, No. 1, pp. 85–105.
- Fjeldstad, Ø. D. and Snow, C. C. (2018), Business models and organization design. *Long Range Planning*, Vol. 51, No.1, pp. 32–39.
- Fuller, T., Warren, L., Thelwall, S. and Alamdar, F. (2010), Rethinking Business Models as Value Creating Systems. *Leonardo*, Vol. 43, No. 1, pp. 96–97.
- Gandia, R. and Parmentier, G. (2017), Optimizing value creation and value capture with a digital multi-sided business model. *Strategic Change*, Vol. 26, No. 4, pp. 323–331.
- Glynn, M. A. (2000), When Cymbals Become Symbols: Conflict Over Organizational Identity Within a Symphony Orchestra. *Organization Science*, Vol. 11, No. 3, pp. 285–298.
- Herman, A. (2019), Pragmatized Aesthetics: The Impact of Legitimacy Pressures in Symphony Orchestras. *The Journal of Arts Management, Law, and Society*, Vol. 49, No. 2, pp. 136–150.
- Magretta, J. (2002), Why business models matter. *Harvard Business Review*, Vol. 80, No. 5, pp. 86–92.
- Powell, T. H. and Hughes, M. (2016), Exploring Value as the Foundation of Value Proposition Design. *Journal of Business Models*, Vol. 4, No. 1, pp. 29–44.
- Prahalad, C. K., and Bettis, R. A. (1986), The dominant logic: A new linkage between diversity and performance. *Strategic Management Journal*, Vol. 7, No. 6, pp. 485–501.
- Ramnarine, T. K. (2011), The Orchestration of Civil Society: Community and Conscience in Symphony Orchestras. *Ethnomusicology Forum*, Vol. 20, No. 3, pp. 327–351.
- Schiuma, G. and Lerro, A. (2017), The business model prism: managing and innovating business models of arts and cultural organisations. *Journal of Open Innovation: Technology, Market, and Complexity*, Vol. 3, No. 1, pp. 3–13.
- Stockenstrand, A.-K. and Ander, O. (2014), Arts Funding and Its Effects on Strategy, Management and Learning. *International Journal of Arts Management*, Vol. 17, No. 1, pp. 43–53.
- Thelwall, S. (2007), Capitalising creativity developing earned income streams in cultural industries organisations. *Cultural Snapshot*, Vol. 14, pp. 1–14.
- Van Anel, W. (2020), Balancing the creative business model. *International Journal of Entrepreneurship and Small Business*, Vol. 40, No. 2, pp. 230–246.

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JOURNAL OF BUSINESS MODELS

A 'Storytelling Science' Approach Making the Eco-Business Modelling Turn

David M. Boje, Kenneth Mølbjerg Jørgensen

Abstract

Purpose: To develop a transdisciplinary approach called eco-business modelling.

Design/Methodology/Approach: The first step is an analysis of the ways triple bottom line and circular economy emplotments have colonized and co-opted the United Nations and European Union Agenda 2030 initiatives by privileging business-as-usual scenarios. The second step is to construct a storytelling approach model to business modelling. The third step is to propose a 'self-correcting' storytelling science method to make the transition from the contemporary business-as-usual model to eco-business modelling.

Findings: The challenge is to create comprehensive ecological business models that foster worst-case and best case scenario comparisons with status quo business-as-usual.

Originality Value: We propose that business modelling is about storytelling, making 'bets on the future' scenarios, and we propose a 'five worlds of storytelling model' business modelling.

Research Implications: The contribution is to propose a 'self-correcting' storytelling method of iterative, 'crossover storytelling conversations' as a way of developing collaborative 'interdisciplinary learning' across specialized business model disciplines.

Practical Implications: We call for crossover conversations that challenge the unintended consequences of the triple bottom line and circular economy business models.

Social Implications: With ozone depletion, climate change, natural resource depletion, loss of biodiversity and habitat, there are pressures to develop ecologically sensitive business models.

Key words: eco-business models, storytelling, triple bottom line, circular economy, scenario-analysis, transdisciplinary conversations

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A 'Storytelling Science' Approach Making the Eco-Business Modelling Turn

Approaches to sustainable business modelling have been dominated by triple bottom line (3BL) and circular economy (CE) approaches to shape what is called corporate environmentalism (Linstead and Banerjee, 2009). Therefore, they reduce the context of sustainable business modelling to a matter of customer value, profit, and market opportunities. Thus, a real turn to eco-business modelling in which nature matters as much as profit, costs, revenues, and growth has been co-opted, colonized, and obscured by corporate environmentalism that serves the PR purposes of greenwashing rather than actual moves to limit ozone depletion, global heating, natural resource depletion, and loss of biodiversity and habitat. Such shallow forms of sustainable business modelling preserve and perpetuate a non-ecological business modelling logic. Critics have argued that they can also colonize areas of Third World social life that are not yet ruled by the logic of the market or the consumer and violate forests, water rights, and sacred sites (Banerjee, 1999: 9; Escobar, 1995; Visvanathan, 1991).

In this paper, we suggest a more holistic and grounded eco-business modelling approach, which we construct through storytelling and storytelling science. This approach answers our research question: How to begin an ecological turn from 'corporate environmentalism to 'eco-business modelling'? We answer this question in three steps. First, we deconstruct the dominant narratives of business modelling to disclose how two corporatized environmentalism approaches, triple bottom line (3BL) and circular economy (CE), dominate and prevent a turn to eco-business modelling. Both narratives have been coming under increasing criticism for putting economic bottom line interests ahead of both equity and ecosystem concerns (Lazarevic and Valve, 2017; Milne, 2005; Norman and McDonald, 2004). We conclude that CE uses the same logic as 3BL and therefore merits the same critique. The 3BL theory tries to balance profit, people, and planet, aka economic prosperity, or by economics, equity, and environment.

Our proposed ecological approach to business modelling is based in theories of storytelling and a comprehensive ethical framework that connects business model cycles with the cycles of nature. The principle that these cycles can begin again is identified as the highest principle of all being, and it is embedded in our storytelling approach. We propose a 'five worlds of storytelling model' in order to visualize our understanding of the complex interactions between past/future and abstract narratives/grounded stories in business modelling which construct 'bets on the future' scenarios.

Second, we propose a 'self-correcting' storytelling science method to make the transition from contemporary business-as-usual model to an ecological and in the end ecological business ethics model. Iterative, crossover storytelling conversations are ways of developing collaborative 'interdisciplinary research projects' across specialized business model disciplines. These storytelling conversations are important to allow comparisons of alternative future scenarios with business models for more effective and extended risk management in which nature's cycles play an important part.

Deconstructing Triple Bottom Line (3bl) and Circular Economy (Ce)

The climate crisis has set a new agenda for 21st century strategies and business models. In 2015, members of the United Nations (UN) agreed on 17 sustainable development goals (SDG) that encompass and combine goals concerning nature, cultural, social and economic development. Partnerships for the goals was mentioned as the last one. Collaboration among actors, strong institutions, and peace were seen as important for avoiding temperatures that rise to more than 1.5-2 degrees. Climate action and policies concerning life on land, life below water, clean water, and so forth were seen as necessary for avoiding not only rising temperatures but also a decline in biodiversity, changes in land systems, loss of animal and fish populations (including commercial fish), ocean acidification, and so forth. For business and business modelling, the UN SDGs have been understood differently. McAteer (2019) argues

that sustainability is a new advantage and defines sustainability in a way which is perfectly consistent with corporate social responsibility (CSR), namely as a balance between profit, people, and planet (McAteer, 2019: 29).

This is also consistent with the narrative of globalization, which according to Latour (2018) has accompanied post-war political and economic agendas. Latour instead proposes coming down to earth through what he calls a 'terrestrial politics' that not only sustains nature's life cycles but also engenders them. His suggestion is radical and implies moving our attention from 'systems of production' to 'systems of engendering' in business modelling (Latour, 2018: 82). This new narrative entails moving attention to the multiple agencies that are entangled in the living matter that is laying between the atmosphere and bedrock in a minuscule 'critical zone' (Arènes et al., 2018) that is only few kilometers thick—"...a biofilm, a varnish, a skin, a few infinitely folded layers" (Latour, 2018: 78). This narrative of the Terrestrial is directly opposed by an out-of-this world climate denial narrative (i.e., Latour, 2018) supported financially by major corporations and of course Donald Trump.

To return to the ground is to extend Arendt's (Arendt, 1998: 12-15) notion of natality to all living beings such that all these Terrestrials, among which we humans are only one, have reasonable possibilities to not only recreate themselves but also to flourish and appear as beautiful and unique creations among diverse and multiple beings. This entails seeing 'nature as a process' instead of 'nature as a context' for our actions (Gleason, 2019; Latour, 2018). Moving towards such systems of engendering is a huge challenge for business modelling. Contemporary approaches to business modelling, also those that claim to be sustainable, are firmly embedded in a systems of production approach.

29th July was Earth Overshoot Day, the calculated day when humanity's resource consumption exceeds Earth's capacity to regenerate those resources that year. In 1987, the Earth Overshoot Day was 23rd October. In 1970 it was 29th December. The Earth Overshoot Day for Denmark was March 29 in 2019. For USA it was March 15th. While the Earth Overshoot

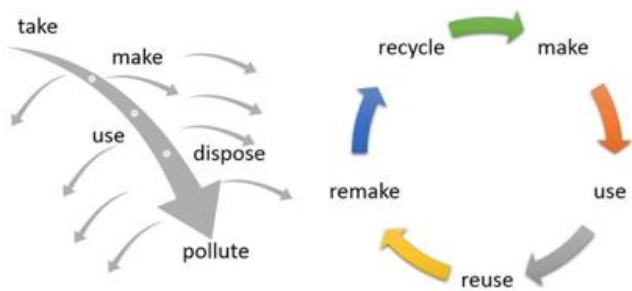
Day is a very rough estimate, it does tell a story of the mismatch between contemporary material practices, including business models, and the cycles of nature. Perhaps the Earth Overshoot Day even paints a more optimistic picture, since scientists all over the world have been claiming that we currently are living through a 6th mass extinction event.

Businesses in Denmark and all over the world have embraced the UN SDGs. Or have they? The UN SDGs have actualized a renewed interest in corporate social responsibility and their proposal of a balance between profit, people and planet (Vallentin, 2011), i.e., 3BL. Furthermore, CE has been emphasized as the new economic concept that would save the planet from resource depletion. Thus, it is narrated that if we can just recycle, then there would be no need or at least less need for the planet's resources. However, we suggest that 3BL and CE combined is a narrative hoax designed to keep the relations of production and consumption going at the same pace of business-as-usual scenarios. This has been observed by several authors such as Valenzuela and Böhm, among others.

"Given the all too obvious social and environmental crises associated with out-of-bounds growth capitalism, the circular economy has been one of the main references for rebuilding and reforming a political economy of sustainable growth" (Valenzuela and Böhm, 2017: 23).

Today 3BL and CE have interpenetrated ideas of sustainable business modelling and are endorsed by the UN (see for example Business & Sustainability Development Commission, 2017) as well as the EU (see for example European Commission, 2018). One is translating its concepts into the other, while watering them down so they do not address the complexity and breadth of problems of climate change, global warming, and what most scientists predict as catastrophic consequences of business-as-usual approaches. From a storytelling standpoint, this includes the ways that the business models' chronotopes are coming into alignment. Chronotopes (Bakhtin, 1981) are the spacetime emplotments of their respective narrative events unfolding into the future. Emplotment is central here in denoting how

people transform and reorganize events in a story and thus insert themselves into history through processes of interpretation and action (Rhodes & Brown, 2005; Young-Bruehl, 1977). Such employment is embedded in human constructs which include concepts, theories, and models. Both sets of chronotopes in 3BL and CE respectively lack the deep ecology standpoint to be of much use in achieving the UN Agenda 2030 limit of 1.5 degree C average earth temperature increase. CE is usually seen as a sustainable alternative to the linear model of economy as illustrated by Weetman (2016).



CC 3.0 Catherine Weetman 2016

Figure 1: Contrast of Linear Economy Model to Circular Economy (CE) Model

We suggest that CE is a counternarrative that needs deconstruction because it reduces ecosystem stewardship to just an economic bottom line. In short, CE is constituted as a solution to the business of 'sustainable development, which is itself a watered-down version of deep ecology and is an example of 'corporate environmentalism'. It is a weak appropriation with substitutions of economic prosperity and continued growth of the linear economy that CE purports to move away from. There are few published critiques of CE (see Valenzuela and Böhm, 2017). Geissdoefer, Savaget, Bocken, and Hultink's (2017) review of the merger of business modelling with the circular economy focuses on areas of attention such as closed loop value and supply chains (Guide and Van Wassenhove, 2009; Wells and Seitz, 2005; Govindan et al., 2015; Stindt and Sahamie, 2014), circular business models and product design (Bocken et al., 2016).

Our argument is that the 3BL and CE chronotopes need to be more long-term and more terrestrially grounded to be effective. Nature consists of

multiple ecological systems and critical zones (i.e., Arènes et al., 2018; Jørgensen et al., in review; Latour, 2018) which are exacerbated by temperature increase (Boje, 2019). The earth is approximately 4.5 billion years old, and in the span of their 140,000 year existence, humans have managed to disrupt the climate, raising its temperature about 1 degree C since the industrial revolution. If the existence of the Earth were reduced to 24 hours, humankind would have existed only three seconds. The extinction of animals is now 1,000 times the natural background rates. Both CE and 3BL are for putting profit/economics ahead of people/equity and planet/environment. They may contribute to slowing down the pace of climate changes but will not stop them. CE and 3BL have robust measures of profit/economic variables but not much on the people/equity or planet/environment, and this supports our argument.

The premise of CE is that there is a set of boundary conditions that ensures that all activity translates to contributing towards a positive impact for 3BL, profit, people, and planet (aka economic, equity and environment). The business modelling logic of CE can be as profitable as it has been in the linear model of grow now, clean up later. Focus is still on short-term gains at the expense of long-term externalities. While it is possible to somewhat reduce, reuse, and recycle, the circular economy, in its circularity, is all about economy and development without limits to growth. CE is then rather traditional in following the same kind of growth-mania economics, which keep placing more demands for additional natural resources and evermore growth, and it does not account for exceeding nine planetary limits on the carrying capacity for all life on planet Earth (Rockström et al, 2009).

As an example, CE puts eco-business modelling (Pateli and Giaglis, 2004) within economic logic. Lewandowski (2016) offers the critique: "existing business models for the circular economy have limited transferability and there is no comprehensive framework supporting every kind of company in designing a circular business model." A limitation is that Lewandowski tries to translate business model concepts, such as the value proposition, as a core component of the circular business model and extend how the circular value proposition offers a product,

product-related service, or a pure service. A problem with such an approach is that it does not address the myopic approach of the circular economy itself and its reductionism of climate changes to product design, component reuse, and recycling. Bakker et al. (2014) consider circularity as absolutely necessary for sustaining economic output, but they do not give equal attention to ecosystem or equity. Next, we will begin constructing a new eco-business modelling approach based on storytelling and storytelling science. We will begin by discussing relations between storytelling and business modelling.

Storytelling and Business Modelling

A business model is a description of the value a company offers to one or several sets of customers. This means developing and adopting business models with strategies that have a positive economic, social, and environmental impact, i.e., 3BL. Joyce and Paquin (2016) extend the original 3BL model by adding two layers to economic development: an environmental layer based on a lifecycle perspective and a social layer based on a stakeholder perspective. As with earlier versions, Joyce and Paquin (2016) place the economic development over and above the equity (social) and the ecology (nature) layers. Rather than continuing business-as-usual modelling through 3BL and CE, we suggest ecological business modelling needs to partner with more contextual and relational business storytelling by reframing market competitive dynamics as a much wider geological and longer term sustainability-ethics shift (Agrafioti and Diamadopoulou, 2012). We thus suggest that business models are all about storytelling in that they can be seen as chronotopes that integrate diffused and differentiated activities and events unfolding in different time-spaces. Such chronotopes include the usual business modelling questions.

- How are key components and functions, or parts, integrated to deliver value to the customer?
- How are those parts interconnected within the organization and throughout its supply chain and stakeholder networks?
- How does the organization generate value or create profit through those interconnections?

The chronotopes embedded in business models can be more or less complex. Corporations seek to enact complex chronotopes through integrating activities in many diffused and differentiated time-spaces. For understanding the complexities involved and for using storytelling to make a move towards eco-business storytelling, we need to distinguish between the different ways in which storytelling works. Three characteristics of storytelling need to be discussed: storytelling as sensemaking, politics, and how storytelling relates to sustainability.

Storytelling and sensemaking: Antennarrative, living story, and narrative

First, storytelling is important for sensemaking and meaning-making in business modelling. Boje (1991) argues that storytelling is the dominant sense-making currency in organizations. Storytelling is thus essential for the motivation to enact business models in practice and for the communication and coordination among actors participating in the business model's value chain. We can further distinguish between three different modes of storytelling as sensemaking. Business modelling is about storytelling by making 'antennarrative bets on the future' (Boje, 2001; Boje, Haley and Sailors, 2016; Vaara and Tienari, 2011). Antennarrative is a story of the future. Business model canvas and other methods and concepts are all designed to produce and support antennarrative future-scenarios.

Business modelling is about storytelling in that the socio-material enactment of business models relies on living stories which emerge spontaneously through the situated, collective, discursive, and material interactions between people (Boje, 2001, 2008; Jørgensen and Boje, 2010; Jørgensen and Strand, 2014; Strand, 2012). Living stories constitute the present and involve the techniques, systems, procedures, and competences through which business models are to be enacted in practice. Business storytelling is about storytelling in producing or at least embedding stories from the past. This interpretation of the past can be more or less institutionalized in stiffened or petrified narratives: a dominant linear

and undisputed account of what the organization's business is, how it was created, and so forth (Boje, 2001, 2008; Czarniawska, 1997). Such retrospective sensemaking (Weick, 1995) is about the past and is often used to describe the organization's identity, which should be materialized in the business model.

Storytelling as Politics

Second, storytelling is important for the 'politics of business modelling'. This politics signals that actors, who are at the same time acted upon, enact business models in time-spaces. In practice, this means that business models are continuously shaped and reshaped through potentially complex interactions in many different time-spaces. As a chain of interactions, business models are storied and re-storied by many different actors. Storytelling is never merely a matter of sense- and meaning-making but an aspect of the between-ness of actors in which a variety of different private and public interests are always problematically in play (Arendt, 1998; Jackson, 2013; Jørgensen, 2020). Business models are spatial practices whose outcomes are responded to by stakeholders and shareholders and which feed back into business models. Three different parts of the politics of storytelling are of interest in business modelling: appearance, mobilization, and negotiation.

Business modelling is about storytelling in terms of how organizations appear before the shareholders, stakeholders, and society. An important aspect is how the story of the business model is perceived and how that influences the value of the business model (i.e., market value, future expectations, and attractiveness of the organization to customers, suppliers, investors, new leaders, new employees, and so forth). A bad story can be devastating for an organization. Non-sustainable and non-ethical business models become bad stories and can influence all of the other business models in an organization.

Storytelling is essential for business modelling in that a good story mobilizes and collects stakeholders and generates resources. As an 'act of love' (Sandoval, 2001) a good story can mobilize both internal and external actors inviting them to be part of the story. In contrast, a business model without a story is no

business model at all. Finally, storytelling as politics makes evident that business models are the results of negotiated relationships between stakeholders across time-spaces. All actors in the business model seek to generate value from the business model and satisfy their interests.

Storytelling and Sustainability

Storytelling is also about sustainability. Arendt suggests that storytelling is the means by which people become reborn again in action. She identified this principle as natality (Arendt, 1998: 176-185) but only applied it to humans (Totschnig, 2017). However, she submitted natality to what she identified as the highest principle of beings, namely eternal recurrence (Arendt, 1998: 97). Latour, as noted before, reconfigures the human as a Terrestrial with the intention of dissolving the duality of human and non-human actors. We are Terrestrials among many; we are parts and rely on the entanglement of multiple agencies contained in the topsoil, water, air, forests, lakes, plants, and other animals. We are part of how multiple species translate and rework life and our life and our aliveness physically, materially, spiritually, and culturally. We rely on what Haraway (2016: 10) calls 'multi-species storytelling'. The point is one of fundamental interdependence on the eternal recurrence of the multiplicities of species and life forms, but also societies and communities. Business modelling is part of communities' and nature's life cycles and depends on them.

Terrestrial politics (Jørgensen, Svane and Boje, forthcoming) is thus a 'politics of natality' (Vatter, 2006) extended to all Terrestrials in ways in which sustainability is not only a question of survival and reproduction but of flourishing. In other words, sustainability is not only a question of keeping nature alive at the minimum level required, but it is a question of allowing nature to unfold and live for the good of all Terrestrials. A transition from business models to eco-business models is accomplished in a deep and pervasive sense when the politics of natality becomes embedded in all processes and relations and becomes grounded in ecosystem constraints and biophysical realities. In this way, business modelling becomes not only a matter of eco-efficiency but also of viable logistics and supply chain relationships. Eco-business

modelling practices sustainability without exceeding the planetary limits of the Earth's ecosystems.

Sustainability storytelling within business modelling implies extending the 'the bets on the future' and develop business modelling scenarios of planet and people without falling into hyperbole or clinging to the status quo scenario, the 'only bottom line is profit' trap of business model value creation.' The current state of 'storytelling science' is dominated by 'status quo' business model theories, methods that lack interdisciplinary collaboration, and interventions that produce status quo scenarios that, we contend, do not go far enough or fast enough to keep up with global climate change. It is the storytelling business culture that drives the business modelling's geographical and temporal horizons. When Corporate Social Responsibility (CSR) is framed as a mainstream business 'climate change' strategy, it then expresses concerns for its geo-economic and long-term value chain rather than being reduced to short-term ways to maximize Net Present Value (NPV) and Return on Investment (RIO). Storytelling can play a crucial role in strategy and achieve a different value proposition in its business modelling by integrating contextual, relational, and extensive temporal horizons into the firm's business culture and transorganizational partners.

This transorganizational and geo-ecological horizon addresses longer term social and ecological problems of the firm's sustainability. For businesses to address climate change requires a change in the foundational storytelling and sensemaking apparatus as well as change in the political relations between organizations and its stakeholders at a deep business culture level, a change which extends throughout the transorganizational supply chain. This ethical approach to storytelling diffuses accountability to space, time, and matter throughout the enterprise. The next section presents a five worlds of the storytelling model that can be used to analyze and demonstrate the dynamics of eco-business modelling and which can help enact eco-business models in practice.

Five worlds of storytelling

Storytelling is often prompted by some crisis or loss of ground in the relations that persons or organizations

have with the world (Jackson, 2013: 37). Storytelling thus involves re-storying experiences by constructing, relating, and sharing stories to restore viability. The turn to eco-business modelling from business-as-usual-modelling is initiated by such a crisis in the relations between organizations' business models and the terrestrial conditions on which they stand. Thus the storytelling model is by no means a model for surface change but involves deep pervasive re-storying. The 17 UN SDGs are ethical markers that require re-storying business models in ways that integrate both sensemaking, politics, and sustainability. Figure 2 below brings together narrative, antenarrative, and living story together in a five world storytelling model. The figure visualizes the complex relations between narratives, antenarrative, and living stories as well as between the past and the future involved when re-storying business models.

The deep challenges concerning new eco-business modelling are that such modelling implies building from the Terrestrial principles of interdependence, multiplicity, and groundedness. As a consequence, the CSR pyramid (Carroll, 2016) for managing responsibility is reversed. Climate is first, society second, and economy third (Jørgensen & Boje, 2020). Re-storying business models towards eco-business models involves such reflections and actions concerning how our business models can connect with these goals. We do not expect it to be easy. It is hard to do the right thing. Business models can be complex and extended in time and space across many different legal, social, and economic contexts. They are held together by a complex set of relations that spans across organizational, institutional, and national boundaries. Changing business models involves negotiations between the organization and the stakeholders which impact the perceived value of the business model (is the business model legitimate), the motivation of employees (do the employees find it meaningful to work in the organization), the organization's employer brand (what kind of employees can the organization attract), and the organization's brand in general (is the organization an attractive collaborative partner). Such political processes as well as the ethical principles which they are submitted to are parts of the complex interplay illustrated by the five worlds of storytelling model.

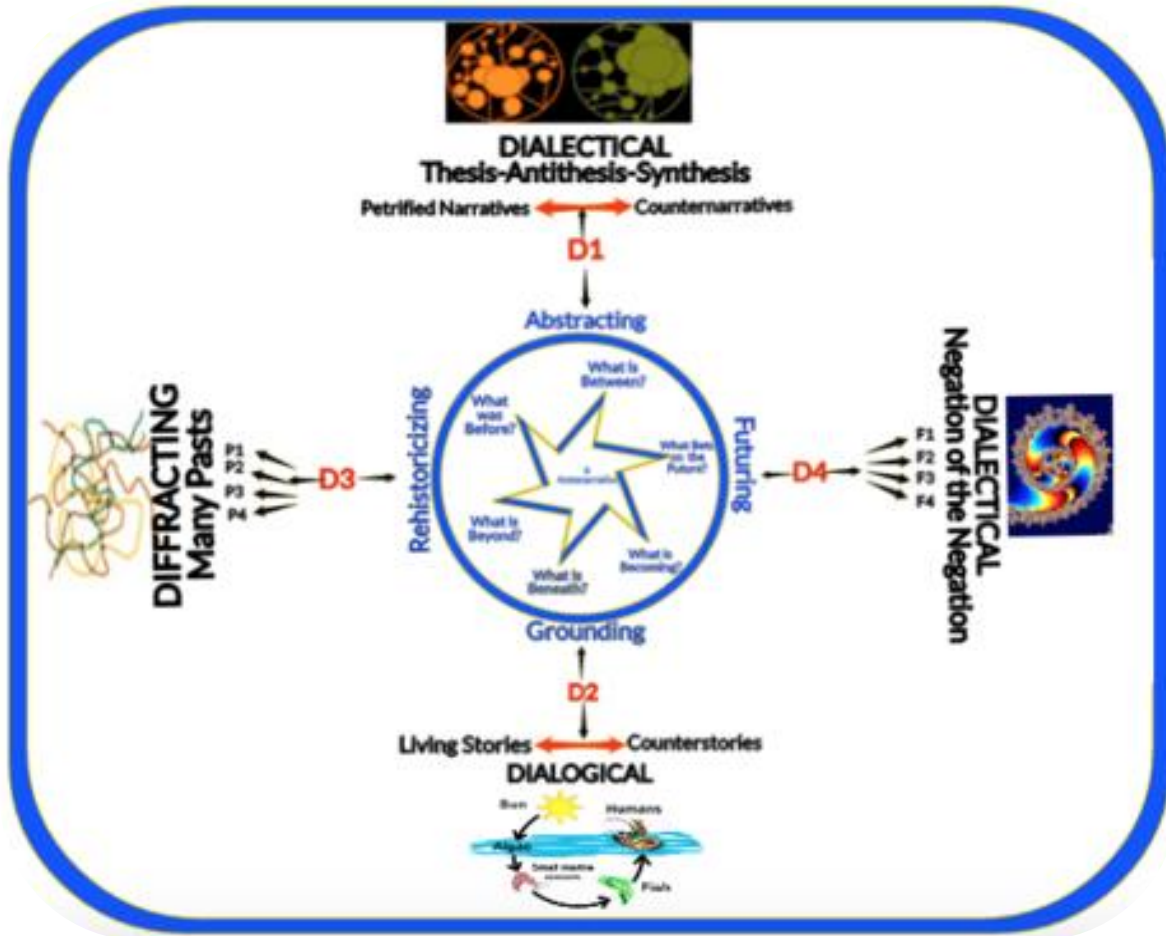


Figure 2: Five Worlds of Storytelling Theory

The five worlds of storytelling are organized around 'the antenarrative' which contains the dynamics that shape future possibilities. This dynamic contains the 'Abstracting' (petrified narrative-counter narrative) world (top), the 'Grounding' (living stories-counter stories) world (below), the 'Rehistoricizing' (diffracting many pasts) world (left), and the 'Futuring' world (Negation of the Negation)(at right).

Antenarrative world is all about processes that are constitutive of the other worlds. Every re-storying process involves exploring and re-storying the relationship with the past and the future and the relationship between the abstract and the grounded. With the ecological crisis of business modelling, there is a need for re-storying the relationship with the past, given that water, CO2 emission, plastic, waste, and resource depletion were not at the

center of attention in the past. For instance, this involves re-storying business relations with natural and material geographies. Water, air, waste, or resource depletion are stories and material conditions that diffract the contemporary business modelling stories and create a need for the organization to reinvent its identity and hence its past and its future. Boje, Svane and Gergerich (2016) and Boje and Rosile (2020) have come up with six questions that can help sort out the antenarrative world. These questions are summarized in Figure 3.

The abstracting world tries to fit history into a mold, a plot, a scenario. It's political, and it ignores a lot of the living story world to make this happen. There is never a retrospective narrative, looking backwards at the past, without a bunch of counternarratives sprouting up to take issue with the grander more



Figure 3: The Six Antenarrative World Questions

'petrified' narratives. Petrified narratives are at the level of an organization, a culture, a nation, United Nations, and so on. The Narrative-Counternarrative World is in a dominating relationship to the Living Story World. We are against it. Narrative-counter-narrative (N-CN) is too 'abstracting', missing all the salamanders, all of the important relations of life itself, all of the family dynamics, and the relation of humans to nature. The abstract is a business-as-usual strategy: top-down, far-away, and blind to the relational dynamics that make places and spaces. Often the abstract is squeezed into a simple beginning, middle, and end 'emplotment' that cuts across time-spaces and severs life-worlds in the most violent fashion. What N-CN worlds need to do is more 'grounding' and less 'abstracting'.

In the grounding world, we ground our living stories in relation to others (people and organizations) and with nature. Living stories are always multiple, we can never tell just one; always interrupt to tell another and then one more after that. A living story has a place, a time, and a mind all of its own, because a living story is an aliveness. Living stories include the untold stories of what we choose not to pay attention to but is happening all around us in the foreground, background, and in-between. We live and are aware of the sights, sounds, smells, touches, and

tastes around us, and at other times, we are completely oblivious to how inseparable we are from nature, how we are part of nature, and how we change nature by our actions. We are therefore complicit in climate change. We suggest that eco-business modelling implies resituating the relationship between the abstracting and the grounding in a way in which grounding takes center stage while abstracting must be reduced to a minimum. Grounding involves 'rooting' business models in terrestrial conditions. Through restorying, the attempt is to emplace business models in the variable critical zones with which these business models become entangled. When business models become extended across time-spaces, we need to re-story the meaning from these different grounds. Otherwise, we as well as our business models lose our ground and place in the world.

The rehistoricizing world is all about diffracting lots of different pasts that all come to light given what we notice in the present. We have illustrated four pasts (P1, P2, P3, and P4). Say P1 is the past that fits predictions of the status quo, that we have solved many crises before, so why not this one. P2 is a piling up of disaster after disaster that is catching up with us, and key tipping points (peak oil, peak water, hole in the ozone layer) have happened, and as the temperature rises more than 2 degrees, the 6th Extinction is about to wipe out most of humanity. P3 is a change in how business is conducting itself and giving itself awards for its many feats of sustainability, mostly bogus, but it keeps the wheels of commerce turning. P4 is what Prince Charles is trying to tell Trump. It's time for action, to prepare in advance and soon but make a different future come about.

The futuring world is a dialectical storytelling. The 'Negation of the Negation' is a different sort of dialectical pattern than the thesis-antithesis-synthesis of the Narrative-Counternarrative World. Mostly it is a squabble, a polemical battle between political parties, between neo-liberal economists and environmentalists, or between Democrats and Republicans, two parties so far to the right that you cannot tell the difference between them anymore. In Denmark and New Zealand, there are coalition governments. That means lots of parties, and you have to negotiate to get a coalition and then get things done. Notice

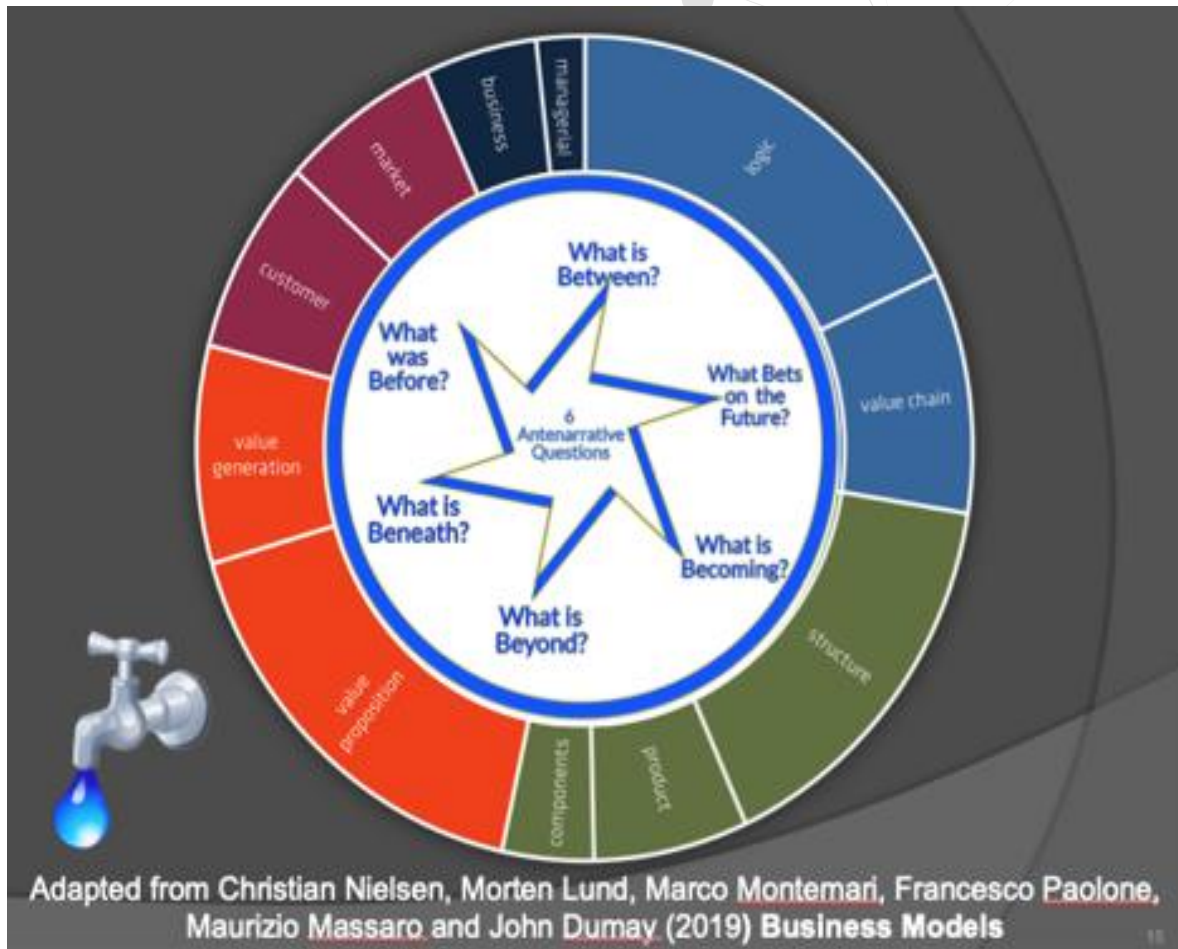


Figure 4: How Antenarrative Process Questions relate to Business Modeling

how far ahead New Zealand and Denmark are compared to Trumpland. This says something about the difference between the Living Story World, which is much more dialogical (people having conversations, negotiating positions, but not just giving in), and the dialectics of the Narrative-Counternarrative World (with all its polemical dialectics). Futuring World is a different kind of dialectical pattern, not really dialogical, and not about finding synthesis. We have put in a fractal image in Futuring, a spiral rhizome. In fact, each of the images in the figure above is a different sort of fractal pattern: cyclic for the dialogical, interweaving for diffracting, oppositional for abstracting, and the spiral rhizomatic for Futuring World.

By starting with the Antenarrative World, we can look at the dynamics involved for eco-business modelling both in terms of sensemaking as well as the political opportunities and challenges. We illustrate

in Figure 4 below how the six antenarrative questions are at the heart of business modelling. This is followed by a discussion of how a storytelling science approach can be designed for eco-business modelling.

A Storytelling science approach to business modeling

A business model is a complex assemblage of material practices that combines actors, stakeholders, objects, and artifacts within and across historical, spatial, and material contexts. A business model is enacted and acted upon as it touches and is touched by many people, communities, institutions, and policies in the natural and material worlds. Products, components, structures, perceived values (both tangible and intangible), customers, markets, management philosophies, structures, and collaborative

relations and norms between actors in the value chain are parts of the complexity gathered in the chronotope.

Such emplotment indicates that business models are held together by practices and relationships that make up some common ground for the business model to work. Normally, in organization studies, strategies are seen as providing such emplotments. From the political point of view of storytelling, narrative strategies are usually too abstract and petrified and are blind to spontaneous and situated living stories that unfold along the chain of activities that make up the business model. Business models need to contain some degree of flexibility as they are enacted through time and space, because many people potentially have something at stake in regard to the unfolding of the business model in practice. Living story captures the between-ness of practices. It might refer to the between-ness of people but also to places, to nature, to the cosmos, and so forth.

When business modelling is making a transition towards eco-business modelling, emplacement is an appropriate supplement to emplotment. It captures how business models need to be grounded in the living stories and be tied to a place, a community, a natural and material geography (Jørgensen, 2020). Thus, it is the living stories and their rootedness and belongingness to a place which hold the key to shape eco-futures of business modelling. Living stories take place in multiple spaces that are scattered all over the activities in the business model, and they assemble managers, employees, suppliers, customers, politicians, institutions, and citizens and are conditioned on material practices as well as the multiple agencies embodied in terrestrials. Making a transition towards eco-business modelling is an iterative and collaborative process that comprises actors from communities, public organizations, businesses, and stakeholders. The ultimate goals would be that communities embrace businesses and businesses embrace communities, so that a business does not perceive itself as a separate entity that has no other obligation to society than abiding the law.

We suggest a 'storytelling science' approach (Boje & Rana, in review) to how 'sustainable business

modelling' could be designed and implemented in ways going beyond disciplinary silos that underestimate the severity of the climate change crisis. This approach is reflexively designed to test multiple scenarios and go beyond current best-practice examples of circular economy, and triple bottom line case studies. A storytelling science should make small iterative steps along the business model value chain to implement sustainability goals. The UN SDGs can provide the headlines for such work that can bring businesses and communities together towards the overall goals that we perceive as living well and healthy and producing and consuming in a durable and sustainable fashion.

A 'storytelling science' method is a problem-based scientific approach designed towards making steps and aligning actors' expectations and actions so that they re-story their stake in the business model toward eco-business model positions. By 'storytelling science' (little 's'), we suggest Charles Sanders Peirce's (1931-1960) self-correcting semiotics of abduction-induction-deduction. It contains three different types of reasoning (Peirce, 1958: 8.385).

- 1st Deduction which depends on our confidence in our ability to analyze the meanings of the signs in or by which we think;
- 2nd Induction, which depends upon our confidence that a run of one kind of experience will not be changed or cease without some indication before it ceases; and
- 3rd Retrodution [aka abduction], or hypothetic inference, which depends on our hope, sooner or later, to guess at the conditions under which a given kind of phenomenon will present itself".

In contrast, Karl Popper (2008) developed a 'zigzag' scientific method which is appropriate for getting closer to sustainable solution approximations, given the super wicked complex problems of 'sustainable business modelling', knowing that we are never arriving at 'absolute truth' because of our own fallibilism. We propose doing refutations to attain Popper's (1956/1983: xxv) 'metaphysical realism' by being critical of the stories, narratives and antenarratives of a 'small stories' 'storytelling science' and their relation to 'Grand Narratives' ['Master Narratives' and 'Petrified Narratives'] of 'Big S' 'Science Narratives', In

other words, we organize business models in a multiplicity of interdisciplinary units and circles in pursuit of the 'Myth of the Framework' (Popper, 1994), and of course 'business models' are seduced by the myth of the framework. Peirce (1931/1960: 2.758-2.759) puts three kinds of induction in relationships:

1. **Crude Induction:** "Future experience will not be utterly at variance with all past experience." In storytelling, this is a retrospective sensemaking narrative making linear plots.
2. **Quantitative Induction:** "What is the 'real probability' than in individual member of a certain experiential class, say the S's, will have a certain character, say that of being P?"
3. **Qualitative Induction:** This is intermediate between Crude and Quantitative Induction. "Upon a collection of innumerable instances of equal evidential value, different parts of it have to be estimated according to our sense of the impression they make upon us." This we first deduce from 'abductive' (or 'retroductive') hypothesis (terms he uses sometimes differently, other times interchangeably).

The self-correcting approach to storytelling science involves successive attempts to refute abductive-hypotheses and deductive-theories by doing a series of inductive inquiries. In each iteration, the storytelling researchers document their abductive-hypotheses and any deductive-theories and associated assumption sets. Then, the inductive methods such as conversational interviews, participative observation, and field experiments are conducted along with attempts to test all three kinds of inferences. The theory-method-praxis of four successive self-correcting tests are shown below:

1. **Test One: Try to dismiss or refute business model precepts.** This is a self-reflexivity conversation to dismiss precepts that have a kind of framework fiction and if this is not workable, proceed to Test Two,
2. **Test Two: Ask other people about the business model assumptions.** Critical cross-disciplinary conversations with others. If several people concur, then the induction is conclusive, if not proceed to Test Three.

3. Test Three: Use knowledge of laws of nature.

Understand scalability processes of nature in relation to business models. Here we apply knowledge of nature by making business model assumptions consistent with observations of laws of nature. If that does not work, proceed to Test Four.

4. Test Four: Do experiments (and practice interventions) to see if business model assumptions are illusory.

Do experiments and practice interventions to get closer to solutions to super wicked water and climate changes that are ushering in more and more crises which are larger and on larger scales.

"All of these tests, however, depend upon inference" (Peirce, 1931/1960: 2.143). They all depend upon a method of self-correction in which the inferences are not made *post hoc* and instead are antecedent to the observation predictions (abductive-hypotheses). The antenarrative 'bets on the future' are recorded in advance of doing the inductive observation inquiry. While 'self-correcting' is the aim of 'little s' storytelling science, we approach the topic with the humility of fallibilism, knowing fully, as Popper (1956/1983: 50, 6) puts it, "scientific method does not exist" and there is no method of "finding a true theory" and the best one can get at is a 'kind of criticism' of the assumptions and the 'isms' so we get "*closer approximation to the truth*" by *critically discussing*" to show what is 'not true' (Popper, 1956/1983: 20, 23, 25). The 'storytelling science of self-correcting' deploys the Peircean Abduction-Induction-Deduction cycles in several phases (shown here are Phases I. to IV.) of inquiry. Each Inquiry Phase (I. to IV.) begins with an abductive hypothesis and deductions that are then studied by induction methods.

Conclusions

As business modelling is making an ecological turn, it is important not to adopt superficial and shallow approaches. We have pointed out two examples of corporatized environmentalism, the triple bottom line (3BL) and the circular economy (CE). Both reinforce a shallow approach to business modelling's ecological turn. Our article contributes a five world storytelling model as well as a longitudinal learning approach

called 'self-correcting storytelling science'. This approach offers a way to go beyond inductive case analysis methods and sequential refutations of abductive assumptions and deductive assumptions in theory building.

By 2050, the United Nations predicts five billion people will be in fresh water shortage crises (see Guardian article). The problem, as we see it, is that the kinds of solutions being proposed will be too little and too

late to save the lives of most of humanity from the Sixth Extinction (aka Anthropocene Extinction, see website). Unless we do something major to change our production and consumer habits, and real soon, the temperature will rise, the weather patterns will be more flood and more drought, the sea level will rise, the groundwater will be pumped dry, and that precious 1% of available drinkable fresh water will be mostly polluted. We can make the necessary changes, but it will be necessary to do so immediately.

References

- Agrafioti, E., and Diamadopoulos, E. (2012). A strategic plan for reuse of treated municipal wastewater for crop irrigation on the Island of Crete. *Agricultural Water Management*, Vol. 105, pp. 57-64.
- Arendt, H. (1998). *The Human Condition*, Chicago: Chicago University Press.
- Arènes, A., Latour, B., & Gaillardet, J. (2018), Giving depth to the surface: An exercise in the Gaia-graphy of critical zones. *The Anthropocene Review*, 5(2), 120-135. <https://doi.org/10.1177/2053019618782257>
- Bakhtin, M. M. (1981), *The Dialogic Imagination: Four Essays* (edited by Michael Holquist), Austin, University of Texas Press.
- Banerjee, B. S. (1999), Sustainable Development and the Reinvention of Nature, paper presented at the Critical Management Studies Conference (Environment Stream) Manchester, UK, July 14-16. Accessed Aug 10 2019 at <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.199.8759&rep=rep1&type=pdf>
- Bocken, N., Boons, F., and Baldassarre, B. (2016), Sustainable business model experimentation by understanding ecologies of business models. *Journal of Cleaner Production*, Vol. 208, pp. 1498-1512.
- Boje, D. M. (1991), The storytelling organization: A study of storytelling performance in an office-supply firm, *Administrative Science Quarterly*, Vol. 36, pp. 106-126.
- Boje, D. M. (2001), *Narrative Methods for Organizational and Communication Research*, London: Sage.
- Boje, D. M. (2008), *Storytelling Organizations*, London: Sage.
- Boje, D. M. (2019), *Storytelling in the global age: There is no Planet B*. Singapore: World Scientific Books.
- Boje, D. M., Haley, U., and Saylor, R. (2016), Antenarratives of organizational change: The microstoria of Burger King's storytelling in space, time and strategic context. *Human Relations*, Vol. 69, No. 2, pp. 391-418.
- Boje, D. M., Svane, M., & Gergerich, E. M. (2016), Counternarrative and antenarrative inquiry in two cross-cultural contexts. *European Journal of Cross-Cultural Competence and Management*, 4(1), 55-84.
- Boje, D. M. & Rosile, Grace Ann. (2020), *Doing 'storytelling science' for Your Dissertation*. NY: Edwin Elgar Press.
- Boje, D. M. & Rana, M. B. (In review), Defining Sustainably-Driven Business Modeling Strategy with a 'storytelling science' Approach, in Markovic, S., Sancha, C. and Lindgreen, A. (Eds.), *Handbook of Sustainability-driven Business Strategies in Practice*, Northampton, MA: Edward Elgar.
- Business & Sustainability Development Commission. (2017), *Better Business, Better World*. United Nations.
- Carroll, A. B. (2016), Carroll's pyramid of CSR: taking another look. *International Journal of Corporate Social Responsibility*, 1(3), 1-8.
- Czarniawska, B. (1997), *Narrating the Organization - Dramas of Institutional Identity*, Chicago, Chicago University Press.

Escobar, A. (1995), *Encountering development: the making and unmaking of the Third World, 1945-1992*, Princeton, NJ, Princeton University Press.

European Commission. (2018), *European Commission—PRESS RELEASES - Press release—Plastic Waste: A European strategy to protect the planet, defend our citizens and empower our industries*. https://europa.eu/rapid/press-release_IP-18-5_en.htm

Geissdoerfer, M., Savaget, P., Bocken, N. M., and Hultink, E. J. (2017), *The Circular Economy—A new sustainability paradigm?* *Journal of cleaner production*, Vol. 143, 757-768. Accessed Aug 10 2019 at https://www.repository.cam.ac.uk/bitstream/handle/1810/261957/The%20Circular%20Economy%20-%20a%20new%20sustainability%20paradigm_accepted%20version.pdf?sequence=1

Gleason, T. (2019), *Towards a terrestrial education: A commentary on Bruno Latour's Down to Earth*. *Environmental Education Research*, 25(6), 977-986.

Govindan, K., Azevedo, S. G., Carvalho, H., & Cruz-Machado, V. (2015), *Lean, green and resilient practices influence on supply chain performance: interpretive structural modeling approach*. *International Journal of Environmental Science and Technology*, Vol. 12, No. 1, pp. 15-34.

Guide, V., and Van Wassenhove, L. (2009), *The Evolution of Closed-Loop Supply Chain Research*. *Operations Research*, Vol. 57, No. 1, 10-18. Retrieved September 21, 2020, from <http://www.jstor.org/stable/25614727>

Haraway, D. J. (2016), *Staying with the Trouble: Making Kin in the Chthulucene*, Durham, Duke University Press.

Jackson, M. D. (2013), *The Politics of Storytelling: Variations on a theme by Hannah Arendt*, Copenhagen, Museum Tusulanum Press.

Joyce, A., and Paquin, R. L. (2016), *The triple layered business model canvas: A tool to design more sustainable business models*, *Journal of Cleaner Production*, Vol. 135, pp. 1474-1486.

Jørgensen, K. M. (2020), *Storytelling, space and power: An Arendtian account of subjectivity in organizations*. *Organization* June 2020. doi:10.1177/1350508420928522

Jørgensen, K. M. and Boje, D. M. (2010), *Resituating narrative and story in business ethics*. *Business Ethics: A European Review*, Vol. 19, pp. 251-262.

Jørgensen, K.M. and Strand, A.M.C. (2014), "Material storytelling – learning as intra-active becoming", in Jørgensen, K.M. and Largarcha-Martinez, C. (Eds.), *Critical Narrative Inquiry – Storytelling, Sustainability and Power*, New York: Nova Science Publishers, Hauppauge, NY, pp. 53-72.

Jørgensen, K. M., & Boje, D. M. (2020), *Storytelling sustainability in problem based learning*. In R. V. Turcan & J. E. Reilly (Eds.), *Populism in Higher Education Curriculum Development*. London: Palgrave Macmillan.

Jørgensen, K. M., Strand, A. M. C., Hayden, J., Larsen, J., & Sparre, M. (In review), *Gaia storytelling and the learning organization*. *The Learning Organization*.

Jørgensen, K.M., Svane, M. & Boje, D.M. (Forthcoming), *A terrestrial ethics of storymaking for sustainable enterprise*. in Jørgensen, K.M (ed.), *Business Storytelling and Sustainability*. World Scientific.

Latour, B. (2018), *Down to Earth – Politics in the New Climatic Regime*, Cambridge, Polity Press.

Lazarevic, D., and Valve, H. (2017), Narrating expectations for the circular economy: Towards a common and contested European transition, *Energy research and social science*, Vol. 31, pp. 60-69.

Lewandowski, M. (2016), Designing the business models for circular economy—Towards the conceptual framework. *Sustainability*, Vol. 8, no. 1, 43.

Linstead, S., Banerjee, B. (2009), *Managing Sustainability*, in Linstead, S. Fulop, L. and Lilley, S. (Eds.), *Management and Organization: A Critical Text*. 6th Edition. New York: Palgrave Macmillan, pp. 239-276.

McAteer, P. (2019), *Sustainability is the New Advantage—Leadership, Change and the Future of Business*. New York: Anthem Press.

Milne, M. J. (2005), "From soothing palliatives and towards ecological literacy: A critique of the Triple Bottom Line." Accessed Aug 1 2019 at https://ourarchive.otago.ac.nz/bitstream/handle/10523/1551/From_soothing_palliatives_and_towards_ecological_literacy.pdf

Nielsen, C., Montemari, M., Paolone, F., Massaro M., Dumay J., and Lund, M. (2019), *Business Models: A Research Overview*, London, Routledge.

Norman, W. and MacDonald, C. (2004), Getting to the bottom of "triple bottom line". *Business ethics quarterly*, Vol. 14, No. 2, pp. 243-262.

Pateli, A.G., Giaglis, G.M. (2004), A research framework for analysing eBusiness models. *European Journal of Information Systems*, Vol. 13, pp. 302-314.

Peirce, Charles Sanders. (1931/1960), *Collected Papers of Charles Sanders Peirce*. Vol I Principles of Philosophy & Vol II Elements of Logic. Edited by Charles Hartshorne & Paul Weiss, quotations according to volume and paragraph. Cambridge, MA: The Belknap Press of Harvard University Press.

Peirce, C. S. (1958), *Collected Papers: Science and Philosophy and Reviews, correspondence, and bibliography (Vol. 7) and Reviews, Correspondence, and Bibliography (Vol. 8)*. Edited by Arthur W. Burks, quotations according to volume and paragraph. Cambridge, MA: Belknap Press of Harvard University Press.

Popper, K. R. (1935/1959/1992/2000), *The Logic of Scientific Discovery*. *Logik der Forschung* first published 1935 by Verlag von Julius Springer, Vienna, Austria. First English translation by Hutchinson & Co. then 1992 by London: Routledge, and again by Routledge Classics 2000, accessed online Mar 6 2019 at <http://strangebeautiful.com/other-texts/popper-logic-scientific-discovery.pdf> and from <http://www.math.chalmers.se/~ulfp/Review/logicscdis.pdf>

Popper, K. (1956/1983), *Realism and the aim of science*. London and New York: Routledge

Rhodes, C., & Brown, A. D. (2005), Narrative, organizations and research. *International Journal of Management Reviews*, 7(3), 167-188. <https://doi.org/10.1111/j.1468-2370.2005.00112.x>

Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin III, F. S., Lambin, E. F., ... and Nykvist, B. (2009), A safe operating space for humanity, *Nature*, Vol. 461, pp. 472-475.

Sandoval, C. (2001), *Methodology of the Oppressed*, Minneapolis, MN: University of Minnesota Press.

Stindt, D., and Sahamie, R. (2014), Review of research on closed loop supply chain management in the process industry. *Flexible Services Manufacturing Journal*, Vol. 26, pp. 268-293.. <https://doi.org/10.1007/s10696-012-9137-4>

Strand, A. M. C. (2012), *Enacting the between: On dis/continuous intra-active becoming of/through an apparatus of material storytelling*, PhD Thesis, Aalborg: Aalborg University.

Totschnig, W. (2017), Arendt's notion of natality—An attempt of clarification. *Ideasy Valores*, LXVI(165), 327-346. <http://dx.doi.org/10.15446/ideasyvalores.v66n165.55202>

Vaara, E. and Tienari, J. (2011), On the narrative construction of multinational corporations: an antenarrative analysis of legitimation and resistance in a cross-border merger, *Organization Science*, Vol. 22, No. 2, pp. 370-390.

Valenzuela, F., and Böhm, S. (2017), Against wasted politics: A critique of the circular economy, *Ephemera: theory and politics in organization*, Vol. 17, No. 1, pp. 23-60. Accessed Aug 1 2019 at http://irep.ntu.ac.uk/id/eprint/30441/1/PubSub8234_Valenzuela.pdf

Vallentin, S. (2011), *Afkastet og Anstændigheden: Social Ansvarlighed i Kritisk Belysning*, Frederiksberg C: Samfundslitteratur.

Vatter, M. (2006), Natality and biopolitics in Hannah Arendt. *Revista de Ciencia Política*, 26(2), 137-159.

Visvanathan, S. (1991), "Mrs Brundtland's disenchanted cosmos", *Alternatives*, Vol. 16, No. 3, pp. 377-384.

Weetman, C. (2016), *A Circular Economy Handbook for Business and Supply Chains: Repair, Remake, Redesign, Rethink*. London: Kogan Page Publishers.

Weick, Karl E. (1995), *Sensemaking in Organizations*, London, Sage.

Wells, P. and Seitz, M. (2005), Business Models and closed-loop supply chains: a typology, *Supply Chain Management*, Vol. 10, No. 4, pp. 249-252. <https://doi.org/10.1108/13598540510612712>

Young-Bruehl, E. (1977), Hannah Arendt's Storytelling. *Social Research*, 44(1), 183-190. JSTOR. <https://www.jstor.org/stable/4097027>

[1] [Climate.nasa.gov](https://climate.nasa.gov/news/2458/why-a-half-degree-temperature-rise-is-a-big-deal/) "Why a half-degree temperature rise is a big deal (Ju 29, 2016) by Bob Silberg, accessed Jul, 2019 at <https://climate.nasa.gov/news/2458/why-a-half-degree-temperature-rise-is-a-big-deal/>

[2] [Vox.com](https://www.vox.com/energy-and-environment/2018/1/19/16908402/global-warming-2-degrees-climate-change) This graphic explains why 2 degrees of global warming will be way worse than 1.5' by David Roberts (Oct 7, 2018), accessed July 2019 at <https://www.vox.com/energy-and-environment/2018/1/19/16908402/global-warming-2-degrees-climate-change>

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JOURNAL OF BUSINESS MODELS

Accounting and ecocentrism: some reflections

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Abstract

This commentary on A *'storytelling science' approach making the eco-business modelling turn* discusses ecocentrism in relation to accounting, providing an overview of the debate on the matter. Some tools are suggested to provide organisations and research with food for thought in the perspective of creating higher awareness of value generated by ecosystems.

Introduction

Over the past ten years, increasing attention has been devoted to the practical implementation of business logics inspired by the Circular Economy (CE) and the Triple Bottom Line (3BL), aiming at constructing an alternative to the dominant economic development model – i.e., the so-called “take, make and dispose” (Ness, 2008) – and its negative consequences on the long-term sustainability of economies and the integrity of natural ecosystems (UNEP, 2013; EC, 2014). With the above context as a backdrop, the paper *A 'storytelling science' approach making the eco-business modelling turn* makes two essential points. First, it provides a critique of CE and 3BL and their narratives, explaining how these dominate with the effect of preventing an actual turn to eco-business modelling by putting economic bottom line interests before of equity and ecosystem issues. Second, it refutes the idea of balancing profit, people, and the planet that underpins both CE and 3BL, and suggests an eco-centric approach to business modelling based on storytelling science.

The paper's approach in discussing CE and 3BL is highly realistic, and the proposed construction of an alternative storytelling roadmap for an 'eco-revolution' is political in nature.

The current commentary adopts a similar approach focusing on issues relating to the accounting perspective of business modelling *lato sensu*, namely on the meaning of ecocentrism in the perspective of 'account giving'

Keywords: ecosystem accounting; accounting research; disclosure

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to stakeholders. More specifically, the commentary adopts a realistic lens as it discusses the actual possibility for an accounting approach to be nowadays fully eco-centric and introduces the debate on the matter. This debate still remains incipient in the accounting field but already ongoing in the economic and ecological areas of research, which could fruitfully trigger the development in the accounting field as well.

In addition, the commentary seeks to produce some actual changes by suggesting – in contrast with the paper – non-definitive solutions aimed at providing organisations and research with tools already able to increase the businesses' awareness of the values generated by natural ecosystems. Although these tools still represent a compromise between the economic logic and the 'natural primacy' of ecosystems, they could represent an initial move towards a prospective eco-turn. From an eco-centric perspective, the ideas suggested in this commentary are not first-best solutions. These tools are conceived, indeed, as initial steps within a context in which organisations seem reluctant to engage seriously in sustainability disclosure and the eco-turn could be still far. They derive not only from reviewing the extant literature, but also from the actual engagement in interdisciplinary research projects with the main focus on the value added by ecosystem services to businesses and their outputs, and aimed at developing both reporting tools and the businesses themselves in a sustainable perspective.

An Eco-Centric Approach to Accounting: Some (Critical) Issues

One of the paper's main arguments is that, for business modelling purposes, the 2015 United Nations' sustainable development goals have been interpreted very differently. In some quarters, the approach to sustainability seems consistent with corporate social responsibility, thus refers to a balance between profit, people and the planet (McAteer, 2019). In contrast, the view supported by the authors is radically different and refutes the conceptual validity of this balance (considered as part of an *out-of-this-world climate denial narrative*). Indeed, it looks at the

systems of productions as economic activities that jeopardise the ecosystem (Latour, 2018). In the authors' view, only rejecting production business models as a taken for granted allows rethinking business models in a way that shifts the focus from economic activity to the ecosystem. From an accounting perspective, the actual possibility to address such a change depends on the extent to which there is consensus on the object of reporting, the values to be represented and their presentation.

In order to develop sustainable business models, it is an issue whether accounting should become eco-centric too, extending its focus well beyond the 'traditional' reporting entity to deal with values emerging from a broader context (i.e. the ecosystem/its parts), and with new and unusual solutions for presentation purposes (Russell, Milne and Dey, 2017). While this debate within the accounting field is still in its infancy, there is an ongoing conversation involving ecologists and economists, triggered by the interest of global organisations in implementing effective systems of the so-called environmental accounting (Millenium Ecosystem Assessment, 2005; TEEB, 2010).

In the economists' perspective, environmental accounting focuses on economic activities at the aggregate level and also accounts for the environmental costs, intended as the exploitation of natural resources by these activities. Specifically, environmental accounting represents a development of the *System of National Accounts* (SNA) (European Commission *et al.*, 2009) that addresses environmental concerns, as national accounting *per se* does not include an environmental dimension. The System of Environmental Economic Accounting (SEEA) published in 1993 evolved in the SEEA Central Framework (SEEA-CF), which provides a system of satellite accounts building on stock and flow accounting of physical and monetary data to represent interrelationships between economy and the natural environment (United Nations *et al.*, 2014a). It incorporates relevant environmental information (natural inputs, residual flows and environmental assets) and provides a standardised structure for organising the information on the interactions economy/environment to support policymakers' activity (Vardon, Burnet and Dovers, 2016). This framework has been

further extended through *Experimental Ecosystem Accounting* (SEEA-EEA) (United Nations et al., 2014b), that addresses the issue of how ecosystem services could have been included in a system in line with national accounting (Banzhaf and Boyd, 2012) given the role of ecosystem services to human activities (TEEB, 2010).

In contrast to this framework, which entails a compromise between the economic reality and the ecosystem, the ecological lobby refuses the compromise and reaffirms the ecosystem as the primary object of reporting. From this perspective economic reality and its parts (such as the enterprises) consists of pressures and damages inflicted to the ecosystem. Many ecologists also refuse to compromise with an anthropocentric perspective and build on the idea of 'strong sustainability', according to which development is sustainable if it maintains constant the capital stock or (at least) ecosystem services over time (Costanza and Daly 1992; De Groot, Wilson and Boumans, 2002). This is the assumption underlying the ecological view of environmental accounting. Based on this assumption, accounting consists in the assessment of natural stock together with the holistic consideration of flows generated by the stock and exploited by humans (Costanza and Daly, 1992). In this context, biophysical methods¹ measuring natural resources through cost of production are used to perform valuations of natural capital impairment. It is to note that these methods adopt a 'donor-side approach', as they are mainly founded on the assessment of inputs (Patterson, 1998)².

What Comes Next?

The paper effectively remarks that rhetoric characterising business-as-usual models has become self-referential. The authors propose alternative storytelling to construct eco-business models. However, it is to note that, in the continuum of solutions potentially leading to such a radical change, many intermediate steps can be individuated, especially in

¹ Examples of biophysical methods are embodied energy analysis, exergy analysis, ecological footprint, material flow analysis, and land-cover flow.

² In contrast, a user-side approach focuses on outputs and on the identification of users that exploit them.

terms of environmental accounts and non-financial disclosures.

Although it is true that "monetised environmental accounts have not taken off" (Russell et al., 2017: 1435), experiments in this field are an opportunity to reflect on potential reporting solutions. As mentioned above, the SEEA-EEA is an experimental step towards a statistical standard framework for ecosystem accounting (United Nations et al., 2014b) that aims at representing interrelationships between the economy and the natural environment (see also Edens and Hein, 2013; Cavalletti, Di Fabio, Lagomarsino and Ramassa, 2020). To this end, the framework incorporates relevant environmental information (natural inputs, residual flows and environmental assets) and provides a tabular structure to represent the interactions between the economy and the environment (Vardon et al., 2016). In particular, the ecosystem accounts link ecosystems to human activities and provide information that can be aggregated and disaggregated based on units, namely spatial areas about which information is summarised in tables. The link between ecosystem assets and the benefits enjoyed by humans³ are ecosystem services. Thus, the framework provides a definition and classification of ecosystem services, indications on their measurement in physical terms, and approaches to their monetary evaluation.

Based on this framework, experimental efforts have been made in designing *ad hoc* ecosystem-accounting systems for ecosystem services and geographical settings. Besides, research has discussed classification issues related to ecosystem services' definition, the methodological issues on biophysical assessment and measurement of ecosystems, valuation challenges, and indicators expressing degradation of ecosystems (Edens and Hein, 2013; Remme, Schroter and Hein, 2014; Suwarno, Hein and Sumarga, 2016; Cavalletti et al., 2020).

If the challenge opened up by ecosystem accounting has prompted experimental research, the field of non-financial disclosures provides interesting

³ These are both the products of economic units and the benefits accruing to individuals but not produced by economic units.

opportunities for account-giving purposes. For instance, it can be particularly useful considering that the six capitals flow diagram incorporated within the *International <IR> Framework* (IIRC, 2013) has been complemented in recent experiences by information derived from Natural Capital Accounting - NCA (i.e., the methods used to take account of businesses' impacts and dependencies on natural capital assets) to enable more effective management of natural capital (Dickie, Royle and Anderson, 2016). Although the Integrated Reporting (IR) approach can be criticised as 'old wine in new bottles' (see Roslender and Nielsen, 2020), complementing IR through information derived from NCA can represent a sound practice. While IR promotes connectivity of information concerning value creation through financial, manufactured, intellectual, human, social and relationships, and natural capital, NCA measures businesses' impact and dependence on the ecosystem providing the goods/services exploited by business activities and seeks to measure the value generated by the ecosystem.

In the perspective of a revolution towards reporting for sustainable business models, non-financial disclosure is still "focused on the central organising tendencies of economic entities" (Russell *et al.*, 2017: 1436) and this would make it an obsolete tool, and in theory - I agree - only a second-best solution. In practice, however, many businesses still do not fully accept the business

case for taking better account of natural capital, so a timely evolution of business models and their inherent logics into eco-business modelling could be rather unlikely, at least for now. Research highlights that companies often adopt a superficial approach to the disclosure of business models' sustainability, despite its relevance to value creation processes (Bini, Bellucci and Giunta, 2018). Thus, working to provide reliable environmental information to be integrated into decision making and reporting practices could represent a preliminary but necessary step to work towards an eco-turn.

Starting from this point, reporting that adopts an integrated approach could evolve into giving accounts of the extent to which ecosystem services benefit businesses by enabling them to increase the value delivered to customers. Overall, this effort could represent an initial attempt to produce information of interest not only to investors considering traditional financial disclosures no more sufficient to evaluate the overall businesses' sustainability, but also to the community as a whole, i.e., the public interest, broadly defined (Stuebs and Wilkinson, 2014).

References

- Banzhaf, H. S., and Boyd, J. (2012). The architecture and measurement of an ecosystem services index. *Sustainability*, 4(4): 430-461.
- Bini, L., Bellucci, M., and Giunta, F. (2018). Integrating sustainability in business model disclosure: Evidence from the UK mining industry. *Journal of Cleaner Production*, 171: 1161-1170.
- Cavalletti, B., Di Fabio, C., Lagomarsino, E., and Ramassa, P. (2020). Ecosystem accounting for marine protected areas: A proposed framework. *Ecological Economics*, 173: 106623.
- Costanza, R., and Daly, H. E. (1992). Natural capital and sustainable development. *Conservation Biology*, 6(1): 37-46.
- De Groot, R. S., Wilson, M. A., and Boumans, R. M. (2002). A typology for the classification, description and valuation of ecosystem functions, goods and services. *Ecological Economics*, 41(3): 393-408.
- Dickie, I., Royle, D. and Anderson, S. (2016). *Integrated Reporting and Natural Capital Accounting*. JNCC Report, No. 587. JNCC, Peterborough.
- Edens, B., and Hein, L. (2013). Towards a consistent approach for ecosystem accounting. *Ecological Economics*, 90: 41-52.
- European Commission – EC (2014). MEMO, Questions and Answers on the Commission Communication “Towards a Circular Economy” and the Waste Targets Review. Available at: http://europa.eu/rapid/press-release_MEMO-14-450_en.htm
- European Commission, International Monetary Fund, Organisation for Economic Cooperation and Development, United Nations, The World Bank (2009). *System of National Accounts 2008*. United Nations, New York.
- IIRC (2013). *International <IR> Framework*. Available at: <http://integratedreporting.org/resource/international-ir-framework>
- Latour, B. (2018). *Down to Earth – Politics in the New Climatic Regime*, Cambridge, Polity Press.
- McAteer, P. (2019), *Sustainability is the New Advantage—Leadership, Change and the Future of Business*. New York: Anthem Press.
- Millennium Ecosystem Assessment, 2005. *Ecosystems and Human Well-Being: Synthesis*. The Millennium Ecosystem Assessment Series Island Press, Washington DC.
- Ness, D. (2008). Sustainable urban infrastructure in China: Towards a Factor 10 improvement in resource productivity through integrated infrastructure systems. *International Journal of Sustainable Development & World Ecology*, 15(4): 288-301.
- Patterson, M. (1998). Commensuration and theories of value in ecological economics. *Ecological Economics*, 25(1): 105-125.

Remme, R. P., Schröter, M., and Hein, L. (2014). Developing spatial biophysical accounting for multiple ecosystem services. *Ecosystem Services*, 10: 6-18.

Roslender, R., and Nielsen, C. (2020). Accounting for the value expectations of customers: Re-imagining the Integrated Reporting initiative. *Critical Perspectives on Accounting*, (in press).

Russell, S., Milne, M. J., and Dey, C. (2017). Accounts of nature and the nature of accounts. *Accounting, Auditing & Accountability Journal*, 30(7): 1426-1458.

Stuebs, M., and Wilkinson, B. (2014). Professionalizing the Tax Accounting profession: Fulfilling Public-Interest Reporting Responsibilities. In Mintz, S. (ed). *Accounting for the Public Interest. Perspectives on Accountability, Professionalism and Role in Society*, pp. 27-50, Berlin: Springer.

Suwarno, A., Hein, L., and Sumarga, E. (2016). Who benefits from ecosystem services? A case study for Central Kalimantan, Indonesia. *Environmental Management*, 57(2): 331-344.

TEEB (2010). *The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB*.

United Nations Environment Programme - UNEP (2013). *Resource Efficiency: Economics and Outlook for China*. Available at: http://www.unep.org/pdf/China_Resource_Efficiency_in_English_2013.pdf

United Nations, European Commission, Food and Agricultural Organization of the United Nations, Organisation for Economic Co-operation and Development, The World Bank (2014a). System of Environmental- Economic Accounting 2012 - Central Framework. New York.

United Nations, European Commission, Food and Agricultural Organization of the United Nations, Organisation for Economic Co-operation and Development, The World Bank (2014b). System of Environmental- Economic Accounting 2012 - *Experimental Ecosystem Accounting*. New York.

Vardon, M., Burnett, P., and Dovers, S. (2016). The accounting push and the policy pull: balancing environment and economic decisions. *Ecological Economics*, 124: 145-152.

JOURNAL OF BUSINESS MODELS

Business Model Opportunities in Brick and Mortar Retailing Through Digitalization

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Abstract

Purpose: In current retailing, digitalization provides new value creation mechanisms that increase competition and offer customers myriad options to fulfil their needs. Increasing complexities in the retail landscape have instigated restructuring, pressuring traditional retailers to reconsider their business models. The purpose of this study is to explore and identify how brick and mortar retailers are approaching opportunities presented by digitalization.

Design/Methodology/Approach: 26 semi-structured interviews were conducted with mid- and top-level retail managers from the UK and Finland. This exploratory study analyzes the qualitative data through the key drivers of innovation (operational effectiveness and efficiency, lock-in, customer efficiency, effectiveness, and engagement). The opportunities are presented in terms of the three business model elements (format, activities, and governance).

Findings: The findings illustrate seven key business model opportunities enabled by digitalization. Retailers are responding to competition, providing speed and convenience through multiple channels, leveraging digital tools to improve efficiencies and deliver customer experiences, rethinking management models, and adjusting organizational approaches. However, brick and mortar retailers should re-evaluate the business model elements collectively in order to seize opportunities that drive profits and gain competitive advantage.

Originality/value: This topic is pertinent due to the accelerated restructuring of retail markets, yet the subject is underexplored in the literature. This paper highlights retail managers' perceptions and experiences of adapting through digitalization. Guided by this enriched data, we provide contributions by developing existing theory and identifying opportunities in brick and mortar retail business models.

Keywords: business model, opportunities, digitalization, brick and mortar retailers

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Introduction

When framing business models, one cannot fail to acknowledge the influence of digitalization. The increased versatility of evolving digital technologies has initiated a series of changes in multiple businesses during the past decade (Hänninen et al., 2018). The extent of retail digitalization cannot be overstated, witnessing the thrust of this typically low-technology sector into the digital era (Willemss et al., 2017). Digitalization has enabled the creation of new mechanisms, forms, and models for trade. While it is uncertain if customer expectations are rising as a result of the myriad options available, or if they are indeed driving retailers to make changes, it is clear that customer behaviour is increasingly complex (Huré et al., 2017; Fuentes et al., 2017; Helm et al., 2020). Currently, the retail environment is unstable, witnessing the restructuring of markets and businesses, and changes in customer behaviour. Due to digitalization, complexities have increased, placing pressure on actors and retail value chains. The questions: who sells? what is sold? to whom, where, and when? (Hagberg et al., 2016) are persistent when designing retail business models, yet answers remain unresolved in the modern retail environment.

The rise of e-commerce has extended traditional value chains by changing the logic of value creation, more specifically, influencing how retailers seek competitive advantage by proposing, creating, and capturing value (see Timmers, 1998). This has led traditional retailers to find ways to integrate existing and extensive parts of the value chain, witnessing the influx of hybrid forms of multiple channel retailing (Beck and Rygl, 2015), such as multi-channel and omni-channel strategies (Verhoef et al., 2015; Yrjölä et al., 2018). However, this is only a short-term solution because striking a balance between a focus on competition, customer needs, and meeting global standards requires significant adjustments in the firm's assets and resource allocation. Changing the fundamentals is rarely a simple equation. Examples show that formerly successful global retailers such as J.C Penney, Sears, and HMV, have struggled to meet modern requirements and to transform their business models. Digitalization as a topic has gained

interest among scholars and retail practitioners, and current developments indicate that significant retail restructuring has begun (see Corkery, 2017; US Census, 2020) which has been further accelerated by the COVID-19 pandemic (e.g. McKinsey, 2020).

This study is motivated by the idea that traditional retailers have much to lose in this restructuring. Digital retailers such as Amazon, eBay, and Zalando have proved their ability to grow, stay, and gain solid positions within their markets (Hänninen et al., 2018; Reinartz et al., 2019). At the same time, consumer trust in online retailing has increased and the internet has become one important information source when evaluating purchase decisions (Lubis, 2018; Simonson and Rosen, 2014; Labrecque et al., 2013). Additionally, in large retail markets such as the U.S and Europe, online retailing is growing relatively faster than retail markets overall (Statista A; Statista B). As a result, these developments challenge the need and role of physical retail space and thus, traditional retailers. This forces traditional retailers to compete for market share that they originally possessed.

Consequently, the research purpose is to explore how traditional brick and mortar retailers approach opportunities in the current evolutionary phase of digitalization. To enable this exploration, we decided to adopt a business model lens. Two reasons motivated this decision. First, the business model reflects management beliefs and assumptions of the actions of customers, competitors, and markets (Teece, 2010); and second, the ability to seize these opportunities is strongly related to managements' willingness and capabilities to modify the business model (Teece and Linden, 2017). Moreover, with exception of a few studies (Jocovski et al., 2019; Matzler et al., 2018; Sorecsu et al., 2011), the influence of the digital transformation from the retail business model perspective has been underexplored. To address this research gap, we conducted 26 semi-structured interviews in two fundamentally different retail markets with retail managers that belong to mid- and top management teams, in pursuit of covering current and future management of the industry.

Theoretical Background

A turbulent retail environment: failures, competitive forces, and customers

During the past five years, the European retail market has witnessed various bankruptcies. To explore this phenomenon, we gathered a list of traditional retail firms that held a solid market position at some phase in the past decade yet entered administration between 2015 to 2020 (Appendix 1). The list highlights that retailers who predominantly sell consumer goods through physical stores, regardless of product category, have faced difficulties. Department stores established over 100 years ago (British Home Stores, Debenhams, and House of Fraser), luxury brands (Diesel, Roberto Cavalli), clothing and footwear retailers (Blanco, Karen Miller, Brantano), electronics and video game stores (Maplin, HMV), and discounters (Poundworld) serve as examples of retailers that were unable to adapt to current market developments. To verify this is not normal market behaviour, we scrutinized U.S retail markets to identify similar developments. European retailers have tended to follow U.S retail markets closely due to its size, diversity, technological improvements, and especially, its ability to provide a vision of future trends (Helm et al., 2020; McArthur et al., 2016).

In the U.S, researchers and media both emphasize structural retail changes. Digital advancements and the rise of e-commerce have led to disruption in the U.S retail industry (Saghiri et al., 2018; Davis-Sramek et al., 2020; Gupta, 2017). It is estimated (by Bloomberg and New York Times) that retailing has reached a "tipping point", indicating permanent restructuring that is not yet visible but will lead to changes some physical retailers will not be able to endure (Townsend et al., 2018; Corkery, 2017).

Currently, 26 retail bankruptcies have been filed in 2020, including Neiman Marcus and J.C Penney. We focused on 30 traditional retail firms (inc. Sears, A&P, and Toys "R" US) that filed for bankruptcy between 2015 and 2018 (Appendix 2). The selected timeframe meant that we had access to firms' obligatory management bankruptcy briefing. However, after further scrutiny, no common pattern was revealed between the firms, and importantly, no consistency in terms of the reasons for their downfall (see Helm et al., 2020). In brief,

the firms varied by size (turnover between \$112 million to \$17,5 billion), lifespan (less than 10 to more than 100 years), and offering (apparel and accessories, beauty, consumer goods, clothing, grocery, electronics, and toys). Retailers highlighted the reasons for their downfall (bankruptcy briefings) included declined traffic in physical stores, increased competition against online retailers, and unsuccessful process management, among other reasons for their demise. This indicates that the inability to adapt through digitalization must have been at least one of the influential factors. Historically, brick and mortar retailers have managed to engage and lock-in customers through strictly controlled value chain mechanisms, however, this luxury is seemingly fading away.

As technologies continue to transform retailing, brick and mortar retailers have endured turbulent times in the highly competitive market. The most disruptive external competitive forces come from three different domains, 1) competition, 2) customer behaviour, and 3) global standards, placing traditional retailers in the middle of a riptide. The most notable of which has been the rise of online-based retailers, such as Amazon, Alibaba, and ASOS, who earned their positions as market leaders by operating with lower overheads (Reinartz et al., 2019), offering cheaper pricing (Brynjolfsson et al., 2013) and wider assortments (Hänninen et al., 2018), and providing their customers with convenience and transparency (Reinartz et al., 2019). These developments have reduced customer switching costs when considering shifting from one service provider to another. Secondly, online channels have extended the market, leading to disintermediation as suppliers and manufacturers offer their products directly to the customer (Doherty and Ellis-Chadwick, 2010). Thirdly, new forms of trading, such as business models focusing on providing temporary access to goods (Frenken et al., 2015; Kumar et al., 2017) or consumer-to-consumer trade which extends product lifecycles (Ariely and Simonson, 2003; Abdul-Ghani et al., 2011; Black, 2005) compete with and complete existing retailing. Consequently, retailers face new digitally enabled competitive forces in addition to their regular local competition.

Simultaneously, consumers face multiple changes that influence their everyday lives. Various

developments including the introduction of self-service technologies (Demirci Orel and Kara, 2013; Inman and Nikolova, 2017), adoption of mobile payments (Holmes et al., 2013; Taylor, 2015), last-mile delivery options (Vakulenko et al., 2019), global offerings (Hänninen et al., 2018), and the COVID-19 pandemic, have shaped customer behaviour. Alongside the extensive use of the internet and ramified globalization, there has been a growing emphasis on individual autonomy, individualization, and transparency (Reinartz et al., 2019). This has, in turn, influenced the shift in power balance from the retailer to the customer, a notion referred to as consumer power (Hagberg et al., 2017; Helm et al., 2020; Labrecque et al., 2013). Moreover, limitless access to information and wider offerings have enabled consumers to use more straightforward decision-making mechanisms (e.g. Bettman, 1998) and provided ample solutions to fulfill their needs. For example, Google has earned a position as a trustworthy information distributor causing extensive use of heuristics in consumer decision making (see Hauser, 2014). Another explicit example is the rise of consumer-to-consumer interaction that has emerged through social media platforms, such as Best Buy (Bassano et al., 2018). Offerings such as this contribute towards the emergence of emphasized emotional, life-changing, and social values (see Almquist et al., 2016).

Business models: retail business models and a look to the future

Although the term business model is over a half-century old, the concept has gained more attention since the millennium due to the rise of the internet (e.g. Afuah, 2003; Osterwalder, 2004). It has been used for multiple purposes in strategic planning, for example, to evaluate the commercial potential of innovations (Doganova and Eyquem-Renault, 2009), to assess value creation in online businesses (Amit and Zott, 2001), and in re-organizing firm structures (Teece, 2009; Teece, 2010). However, it should be noted that the business model is often seen as a context-dependent tool, and consequently lacks a commonly approved definition. Despite this, most popular business model definitions include proposing, creating, and capturing value. In business model literature, value creation consists of multiple streams focusing on internal (Amit and Zott, 2001;

Zott and Amit, 2010), external (Day and Moorman, 2010; Yrjölä, 2014), or hybrid value creation (Kaplan et al., 2004; Johnson et al., 2008).

In the context of retailing, business models have not received great scholarly attention. In this regard, one of the most cited studies is Sorescu et al. (2011) in which the researchers elaborated retail model innovations inspired by the work of Amit and Zott (2001). Accordingly, "a business model is a well-specified system of interdependent structures, activities, and processes that serves as a firm's organizing logic for value creation for its customers, and value appropriation for itself and its partners" (Sorescu et al., 2011, S4). The authors emphasized that designing a retail business model is a rigorous consideration of interdependencies concerning choices of format, activities, and governance. The format refers to choices in interface selection and design that position a retailer in the market and enable customer touchpoint coordination for creating experiences. The activities define the exact selection of activities that enable and fulfill the experiences. Governance sets rules for actors performing the activities by defining the roles and incentives to motivate them (Sorescu et al., 2011). In the multi-channel retail literature, several streams touch on the concept of business models but only focus on certain areas concerning digitalization. For example, how the digital transformation influences the customer (Labrecque et al., 2013), retail channels (Picot-Coupey et al., 2016; Yrjölä et al., 2018; Rangaswamy and Van Bruggen, 2005), retail workforce (Huré et al., 2017; Pantano and Migliarese, 2014; Rafaeli et al., 2017), or the future of retailing (Grewal et al., 2017), leaving room for more comprehensive investigations, especially from a business model perspective.

Today, retailers should be described as orchestrators of multi-sided platforms that serve value creation and capture in ecosystems for customers, business partners, and the retailers themselves (Sorescu et al., 2011). This statement appoints several transformative requirements on traditional retail business models. First of all, instead of linking products and consumers, retailers would act as an intermediary or marketplace that enables people and organizations to share information, access a variety

of goods and services, and buy or sell (Cusumano et al., 2019). Taking an intermediary role transits a retailer from dyadic (i.e. retailer and buyer) to triadic (i.e. between seller and buyer) relationships (Gawer, 2014); secondly, instead of focusing on controlling efficiency and product assortment, an intermediary turns sight to establishing connections through value networks (seeking value through interactions) (Shafer et al., 2005) and partner networks (seeking value through relationships) (Amit and Zott, 2011) to enable value creation. This causes a retailer to operate in networks instead of value chains (see Achrol and Kotler, 2011); and finally, as an intermediary operating in networks, a retailer seeks suppliers and manufacturers with product and service offerings (e.g. value) that link with demand, without controlling every part of the value chain between them. This suggests that the retail offering is co-produced (Lusch et al., 2010), which leads to the integration of value co-creation (see Grönroos, 2011; Saarijärvi et al., 2013) as a central mechanism instead of internally controlled retail operations. Van Alstyne et al. (2016) stated three major shifts for businesses that increase dynamics significantly when moving towards platform business models. They suggested (1) shifting from resource control to resource orchestration, referring to a total change in asset management, resource allocation, and success indicators; (2) shifting from internal optimization to external interaction, emphasizing modifications in appropriation logic; and finally, (3) shifting a focus from customer value to ecosystem value, highlighting a need to abandon the value chain approach (Van Alstyne et al., 2016). These suggestions place pressure on traditional retail business models to undergo transformation. In this study, we are focusing on the main elements of the retail business model which include format, activities, and governance (Sorescu et al., 2011).

Drivers that create incentives to modify the retail business model

When evaluating business model relevancy, one should consider competitors' models, sources of appropriation, external threats, and sustainability of the business (Bertolini et al., 2016). Successful businesses normally revise the business model

four times before reaching profitability, indicating that traditional retailers must tolerate initial failures and course correction in shifting to a new business model (Johnson et al., 2008). Taking such a path may not sound attractive, especially if the current business is profitable. However, Sorescu et al. (2011) defined six drivers related to capturing and creating value that motivate, incentivize, or force retailers to consider business model reconfiguration. First, they highlight opportunities to gain operational efficiency, this includes efforts to streamline back-end operations (e.g. sourcing, inventory levels), enhance the store environment (e.g. seeking cost reductions and increased profits in-store), and make cost savings (e.g. automation, process digitization). Second, opportunities to gain operational effectiveness, such as finding ways to maximize probabilities in meeting organizational objectives (e.g. investments enabling longer-term profit, or market expansion). Third, opportunities to design lock-in themes, which involve the development of mechanisms that minimize customer costs and increase switching costs (e.g. memberships, subscriptions, or guarantees). These drivers motivate retailers from a value capture perspective. Fourth, opportunities to increase customer efficiency, which can be achieved through improving the convenience of service (e.g. store networks vs. online, pick-up services). Fifth, opportunities to influence customer effectiveness, referring to how effectively a retailer can facilitate consumers to meet their consumption goals (e.g. depth of assortment or long tail). And sixth, opportunities to increase customer engagement, involving the ability to evoke emotional involvement that goes "beyond purchase" (e.g. customer experience design, brand perceptions).

To explore the current opportunities for brick and mortar retailers brought to fruition by digitalization, we approach the data through the six drivers posited by Sorescu et al. (2011). This enabled us to gain an understanding of what brick and mortar retailers currently have turned their sights towards. To aid this exploration we propose the following question: What do retail managers perceive as existing opportunities in the retail business model enabled by digitalization?

Methodology

To respond to our research question, qualitative research methods were employed, and an exploratory approach was adopted. Qualitative research methods were selected to enable participants to share explanations, descriptions, and interpretations of the phenomenon (Lichtman, 2017). Moreover, we intended to explore our topic by “following wherever the informants lead us in the investigation” (Gioia et al., 2013, p. 20), an aim which seemed best attained through qualitative methods.

When considering countries that would provide comprehensive research settings according to the research topic, we were seeking markets that represent digitally advanced extremities from the European retail landscape. According to a study conducted by IMD World Competitive Center (2019), the UK (13th) and Finland (10th) represent high positions in a global comparison of digital competitiveness including evaluations of knowledge, technology, and future-readiness. While these countries differ by size, market structure, infrastructure, and consumption habits, the UK retail market is significantly bigger, more competitive, and considered to be advanced in terms of retail digitalization (Piotrowicz and Cuthbertson, 2014). However, interestingly the IMD study highlights Finland as a forerunner in technology and future-readiness. As such, these countries provide a fruitful combination when researching digital opportunities concerning retail business models.

To identify interviewees who could offer insights from the managerial perspective we conducted theoretical sampling. Theoretical sampling enables researchers to create specifications so that experiences can be compared across accounts to gain a better understanding from a particular perspective (Eisenhardt and Graebner, 2007; Given, 2008). Thus, the following criteria were determined about the participants: a) the retailer they work for predominantly operates through physical stores, b) they hold mid- to top-level management positions and, c) they work for retailers in the UK or Finland. To gain a broad understanding of how retail managers perceive opportunities presented by digitalization, it was considered advantageous to include a wide range of retailers. Therefore, we sent 250

requests to LinkedIn members that met the selection criteria. From this number, 87 people accepted the request, 54 responded, and 24 people agreed to be interviewed (27% response rate). The other two interviewees were identified by participants during the interview through the snowball technique (Noy, 2008). In total, 26 semi-structured interviews were conducted between April and July 2019 (see Appendix 3). Conducting semi-structured interviews enabled rich insights to be gained from retail managers and thus, create “rich opportunities for the discovery of new concepts rather than affirmation of existing ones” (Gioia et al., 2013, p. 17).

Participants were asked questions around four key themes including managerial insight, digital strategy and management, customer experience, and omni-channel integration. The length of the interviews ranged from 30 to 60 minutes, which together totaled 16 hours and 42 minutes. The participants held high-ranking positions and their number of years of retail experience varied from two to 30 years, enabling us to gain insights from individuals who are expected to be involved in both current and future management of the retail industry. Two of the participants were retail consultants, one from each country. Moreover, various retail branches (e.g. home furnishings, electronics, beverages, cleaning supplies, grocery, pet supplies, fashion, sport, and optical) and physical store formats (e.g. discount stores, department stores, hypermarkets, specialty stores, and supermarkets) were represented in the data.

The interviews were transcribed verbatim, resulting in 197 pages of interview transcription. The anonymity of participants was respected throughout the study, as such, each interviewee was assigned a code from M1 to M26 (Appendix 3). Once the transcripts were prepared, they were imported into Atlas.ti, a program that facilitates the organization and analysis of qualitative data.

Qualitative content analysis was deployed to ensure the analysis process was structured and systematic. This process involved three main stages including 1) preparation (e.g. selecting unit of analysis), 2) organization (e.g. coding and categorizing) and 3) reporting (e.g. presenting results) (Elo and Kyngäs, 2008).

Though there are different methods of content analysis, the process adopted in this study was inspired by directed qualitative content analysis (Hsieh and Shannon, 2005). In addition, to ensure vigor in the coding of the data, all the authors were involved in the data analysis process. As is advocated by Eisenhardt (1989), the involvement of multiple investigators enables richer insights from the data to be gained and instills confidence in the findings. First, we adopted the three main elements of the retail business model - format, activities, and governance (Sorescu et al., 2011) to begin coding the data. At this stage we highlighted all the units of thought that were relevant to the retail business model elements, this resulted in the identification of 144 quotations that express the main issues discussed by the retail managers.

Once the relevant units of thought were coded according to the retail business model elements, we applied the second level of coding using the six drivers discussed in Sorescu et al. (2011) - operational effectiveness, operational efficiency, customer lock-in, customer effectiveness, customer efficiency, and customer engagement. This involved

revisiting the 144 quotations to code the relevant drivers. During the analysis, we observed that two of the drivers, customer effectiveness and customer engagement, overlapped. As is discussed by Sorescu et al. (2011), linkages between these two drivers exist through value creation. This can also be seen in other prior literature in which perceived customer value (e.g. retail mix combination) is recognized as an input to customer engagement (e.g. brand perception) (see Gallarza et al., 2011; Rintamäki et al., 2007). Consequently, we combined these drivers in further analysis as customer effectiveness and engagement. Steps were then taken to refine the list, this involved analyzing quotations with similar meanings and removing those which did not directly address the aims of this study, 35 key quotations emerged in this process.

In the final step, quotations were interpreted, conceptualized, and grouped accordingly, enabling category formation. This resulted in the identification of the seven key areas of opportunity perceived by retail managers that will be elaborated in the section that follows. An illustration of the analysis process is provided in table 1.

Table 1

Raw Data - Unit of Thought	Code 1	Code 2	Concepts	Category
M7: "So having this digital reach... Reaching our customers through digital channels, like Instagram for example for example: Facebook, Twitter, advertisements in banners and in various websites. So, we create the need that people feel that... okay this is a dress I need to have because I can see it everywhere. It's a trend now and everyone has it, or something. I need to recreate the need. That they actually need to buy it."	Format	Operational Effectiveness	- Increased touchpoints - Retailers influence customer behavior	Offer Different Retail Channels

Table 1: Illustration of the data analysis process

Findings

In this section, we present the data to illustrate how retailers are perceiving and seizing the opportunities presented by digitalization in formats, activities, and governance.

Opportunities for retail formats

Respond to Pre-existing and Extended Competition

If company management is not willing to change the business model, they may cannibalize their business (Teece, 2010). According to the data, the digital environment provides multiple opportunities for traditional brick and mortar retail business models. However, opportunities may, in some cases, emerge from fundamental threats. This realization is greatly important, even if operating under the same conditions would not terminate business activities, increased awareness pushes companies to react and pursue opportunities.

M8: "Those [retailers] who don't digitize, don't have a website, don't allow the customers to purchase at home or on the move on their mobile, factually, they will fail in the next few years. They will not survive. So being blunt about it, survival is the need to move there."

M19: "In the big picture the traditional brick and mortar stores have been...or at least if not yet, they are facing very strong pressure to change and modify their business models and distribution chains. The pressure coming from online companies are the big ones like Amazon or really small ones like pure players then that really is making a huge need for everyone to change in terms of increased competition, more choices, and better prices for consumers. So, the ones that are not able to reach the same pace as these online players will eventually be banished out of the market unless they are able to make some kind of competitive advantage."

Digital channels and new business forms have taken market share and have changed the dynamics of competition. While traditional competition has not vanished, developments have blurred industry boundaries and competition has increased.

Consequently, it is not necessarily clear who retailers are competing against these days. Opportunities lie in brand eco-systems that enable retailers to compile information, build customer profiles, and create personalized experiences through combining channels. In brand eco-systems, customers interact more with the retailer which decreases the chances of them switching to a competitor, suggesting customer lock-in is a driver. An example is provided in the following quotation:

M16: "It's just not the case that everyone needs to do everything digital, you've got to think of your positioning in the market, you've got to think have you got a brand people really want, is it really authentic? So, you just can't say we'll have an online platform and we'll sell to people, it's not like that, you've got to work about which parts you want to integrate with, you've got to work out how to get your brand across and what's your brand all about."

The current level of awareness and understanding of the digital influence on business has enabled retail management to regain confidence, emphasize opportunities, and seek competitive advantages over threats. As retailers continue to diversify, there has been a focus on building brand eco-systems (Reinartz et al., 2019).

Offer and Integrate Various Retail Channels

With the rise of the internet, brick and mortar retailers have broadened their customer offering through different channels, this effort has seen the proliferation of terms such as 'cross-channel' (Chatterjee, 2010; Picot-Coupey et al., 2016), 'multi-channel' (Verhoef et al., 2015), and most recently, the 'omni-channel' (Brynjolfsson et al., 2013; Huré et al., 2017; Von Briel, 2018; Willems et al., 2017; Yrjölä et al., 2018). The data indicates that managers consider the capability to combine various channels as an advantage and that through integrating channels they can enable seamless shopping for the customer, which will in turn enable the retailer to capture the most value. This thought is expressed in the following extract:

M26: "Because we can see, for example, that the brick and mortar stores, the value of them will change in the eyes of the customers. More and more people buy

online, but what we see is that we still need to have the store where the customers can come and get inspired, and then go back home and shop online.”

It is also noteworthy that although online channels are growing, managers recognized that physical stores remain an integral part of the business. In recent years, retailers have turned their attention towards reinventing the purpose to visit physical stores. Literature has already acknowledged the changing role of physical stores, claiming that they serve as ‘showrooms’ for customers (Picot-Coupey et al., 2016; Piotrowicz and Cuthbertson, 2014; Verhoef et al., 2015). The findings illustrate that brick and mortar stores offer customers an experience that cannot be rivaled by online channels, and managers maintained that the demise of the physical store is not on the horizon. This point is captured in the following quotation:

M23: “Whereas historically it was all driven towards getting visits to the store, now we still want to do that, but we need to find other ways to do that rather than just be the product because you can get the product online and never visit a store. So, we have to find other ways to encourage people to visit, through workshops, home furnishing events, knowledge... experiences you can’t get online, because the store is still the most fundamental part.”

Brick and mortar retailers are in a prime position, presented with the opportunity to leverage their offline and online channels to their advantage. In the highly competitive market, operational effectiveness is clearly a driver for retailers to utilize all the channels at their disposal in order to reach their customer base. Through combining different channels, retailers maintain numerous touchpoints with the customer which allows them to inspire, inform, upsell, and communicate with the customer on an ongoing basis. The findings suggest that retailers are aiming to deliver the same experience across channels, making for seamless shopping that meets customer expectations.

Provide Speed and Convenience

As customer demands continue to increase, several managers noted that customers are most concerned

with convenience. To provide ease of shopping, retailers are implementing digital technologies within stores to minimize customer sacrifices and maximize customer efficiency. These include tools such as saved shopping lists, scan and go devices, guided picking routes, and self-checkouts. In the following quotations, managers acknowledge the extension of different retail formats to offer convenience for the customer.

M25: “When I started in this company, basically the customers’ buying journey was quite structured. If they wanted to buy a sofa, they had to buy it through self-serve, so they would find where it is located in the self-serve area and they basically picked it up, or a store co-worker would make a list for them. But today customers can choose all varieties of how they want to shop, services are more aligned to the shopping process, meaning that customers can also order the goods to their homes... they can order the goods to their homes by themselves after seeing the products.”

M10: “Most of our feedback is around [...] how quickly they [the customer] could get through that check-out and get home. That is where a lot of our feedback is, so that is where a lot of our technology development and digitization are focused. So, we can make that experience easy and fast for them which is the technology side of it, which benefits us because they keep coming back, but it also benefits the customer because they walk out of the door with a smile on their face and say good things.”

These quotations illustrate that digital developments taking place are not only for the benefit of the customer. Managers noted that digitalization creates opportunities to decrease customer sacrifices while simultaneously increasing benefits for the retailer. An explicit example of this is the implementation of self-checkouts which enables customers to buy more efficiently while increasing retailers’ operational efficiency by reducing labor costs.

Opportunities for retail activities

Deliver Customer Experience

Customer experience is about stimulating consumers to respond in desirable ways (see Becker and Jaakkola, 2020) at touchpoints during the customer

journey (Lemon and Verhoef, 2016). In retail settings, customers traditionally perceived experiences through a cognitive approach, for instance, by assessing functionality or speed of service (Kranzbühler et al., 2018). The data indicates that brick and mortar retailers are currently creating customer touchpoints (i.e. additional opportunities for interaction) outside the store environment. The very idea and opportunity is to enrich experiences and engage customers through social, emotional, and sensory aspects, in addition to cognition (Keiningham et al., 2017). One manager explained how their branded mobile application is used to track customer fitness activities which consequently reveals customer needs:

M17: "When you go into the store you can show them your QR code and it will show them everything that you have bought and the person in the store will be able to offer or suggest by looking at your [fitness activity] history and your purchase history, what would be a good sell for you. So, it kind of creates a through the line...not through the line, but basically a borderless experience for the consumer, at a marketing level, but also at a sales and CRM level. So, it is kind of like the store is no longer just about when you get into the store, but it is also what's happened before you get there."

Retail activities such as this are driven by customer efficiency, effectiveness and engagement. By utilizing digital tools, retailers can identify customer needs and provide them with access to multiple touchpoints through which they can seek assistance, find new information, browse products, and make relevant purchases. While digital development has pressured traditional retailers, it has also broadened the horizons for firms, enabling them to push industry boundaries to seek competitive advantages (Mendelson, 2000). Former research indicates that creating experiences influences, for example, customer satisfaction, retention, loyalty, and consequently share-of-wallet (Keiningham et al., 2017).

Utilize and Implement Digital Tools

The surge of digital developments has provided retailers with new sources of value creation and capture. Digital tools offer retailers the opportunity

to streamline processes and amplify their existing offerings by enhancing the customer experience (Reinartz et al., 2019). Retail managers discussed the various digital tools that their firms have implemented, these include employees using iPads on the shop floor to improve customer interactions, handheld devices that provide employees with real-time inventory data, and customers using their smartphones to scan their products as they shop. In the examples provided by the retail managers, operational efficiency was considered a driver.

One manager gave an example of how digitalization has transformed stock management in the store and detailed the benefits of its implementation. This is referred to in the below quotation.

M10: "Rather the person walking up and down and just saying, oh I need to go and get a packet of this from the back, which in a store our size is quite a long job to go and get. If the first thing in the morning, the robot goes up and down the aisle and counts what is there and checks how much is there...it makes it much easier. That feed of information comes back out to a mobile device to then not have to count it, but just get it, and put it on the shelf and replenish. So, from a customer point of view, they won't see that technology, but they feel the results because it's always available. It is one of our phrases as well as strategies, you should have a full shelf all the time."

This quotation illustrates how digital tools enable firms to speed up their back-end operations while spending less on labor costs and indirectly improving the customer experience.

Opportunities for retail governance

Rethink the Management Model

Though retail digitalization has attracted much scholarly interest, to the best of our knowledge, the influence on the internal management models within brick and mortar retailers has been obscured (with the exception of Mende and Noble, 2019). Managers discussed the various implications of digitalization on management, most notable of which include data-driven decision making and a change in managerial skill sets.

The power of data and the benefits it can bring to retailers is already a prevalent topic in research (Grewal et al., 2017; Hänninen et al., 2019) and the findings from this study complement the literature. Managers claimed that data enables retailers to better understand the business and their customers, which aids and influences the decision-making process, as is illustrated below:

M19: "What it has brought along is this sort of...how to take advantage of digitalization in making internal operations and usage of data to make management decisions and steer operations more efficiently. How can you make that a success story as well, because I think there is huge potential with many retailers and many challenges as well about how to exploit that opportunity in the best way. [...] Let's say for example a top store manager, a well-performing manager, might not be able to stay with the pace of digitalization. And once you are not being able to adapt and develop new ways of working and using digital tools it will make you actually go from being a high-performing store manager to a low-performing store manager."

This manager also discussed the need to adjust the existing managerial skill set. Although this could be perceived as a threat, as digital literacy becomes a more important skill to possess in the job market, retailers can take the opportunity to train staff and maintain a skilled workforce who are capable of adapting to the digital environment. This illustrates that retailers are focusing their efforts on operational effectiveness and efficiency as drivers.

Adjust Organizational Approach

Exploiting digital opportunities requires dynamic capabilities from top management to recognize and seize the opportunities (Teece et al., 2016). Although, the way an organization approves, adapts, and executes changes remains uncertain. One could say that resistance to change is inevitable when combining digital business requirements into traditional retail business models, as it can lead to confrontations.

M22: "[The company] is going through a big transformation at the moment, which is all based around the need to change and find ways to be more profitable

in this new environment, because the business was based upon stores and the busier the stores got, the cheaper they were to run, and then the more we could reduce prices, and the more you would reduce prices the more people come and buy and the more you sell, the more you become efficient. It's become this positive cycle. And I guess visitation drops in the stores because people are buying online, so we need to find other ways to bring them in, so that experience and exponential things in stores will be important in the coming years."

Adapting to digitalization from an organizational perspective requires significant investments (Helfat and Martin, 2015; Moorman and Day, 2016). Reconfiguring firm structure, metrics, and incentives/controls (e.g. Moorman and Day, 2016) is a slow but essential process for companies to transform. Recognition of this process was shared by managers in the following quotations:

M26: "One big change which we are doing on an organizational level right now. It was like over 1 year ago, [...] we just talked about IT, and now we have a digital function on a global level, and during the autumn we will have it in every country, so we will kind of move to 'real digital thinking'."

M4: "So, digitalization has an impact actually on everything that we do; how we talk to our customers, how we improve our processes, how we try to understand the kind of 360 degrees of our customers, whether they are online or offline. It impacts on logistics, on how we buy...well our supply chain and so forth. And I think also it really changes the culture and... or at least, it should change how the company is managed."

To summarize, digitalization will inevitably influence how companies stay relevant, control their resources, and foster firm culture. Retailers are faced with adopting necessary capabilities, ensuring continuously well-timed and efficient asset management, and managing to create a culture that supports resilience in a rapidly changing business environment. Being unsuccessful in even one phase of the process may lead to failure. On the other hand, it should be considered more as an opportunity to learn, react,

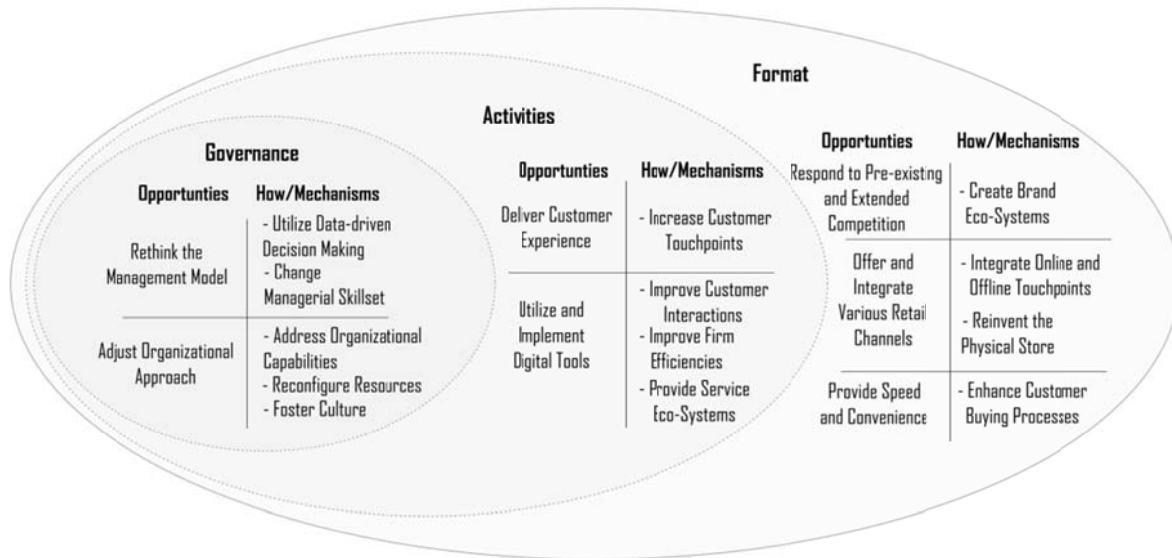


Figure 1. Retail business model opportunities enabled by digitalization

and respond to the demands of current business requirements in retailing. In this regard, operational effectiveness is a driver for retailers when considering changing the organizational approach.

To clearly express the findings, an illustration is provided that summarizes the key points discussed throughout this section (see figure 1). The figure represents the retail business model in terms of the three main elements. Within each element, we present the opportunities and the ways in which retailers are pursuing them.

Discussion and Conclusion

This study aimed to explore how retail managers perceive opportunities presented by digitalization. In addition, we challenged ourselves to identify how these digitally enabled opportunities influence retail business models. We investigated the topic through the elements of the retail business model by Sorescu et al. (2011) including format, activities, and governance. By conducting 26 semi-structured interviews we were able to gain an understanding of how brick and mortar retailer managers perceive opportunities through digitalization. Focusing on business model opportunities also allowed us to interpret, reflect, and compare the findings against the view of the future of retail represented in the scientific literature. The topic is relevant for three reasons. First, views

from current retail markets in Europe show that traditional and formerly successful retailers (e.g. Debenhams, House of Fraser, Diesel) have struggled to adapt to current market requirements. At the same time, evidence from other markets (U.S) draws a picture of acceleration in retail restructuring. Second, current retail environments provide consumers with unlimited product offerings, low switching costs, and exceptional convenience, which can be seen through the increase in online consumption. Third, assimilating digital technologies into the retail business requires a change concerning how companies approach organizational design in the future. Indeed, these changes present challenges for brick and mortar retailers, however, the findings show explicitly that they see opportunities in each element of the business model.

Although some may see physical stores as unnecessary assets due to falling footfall, reinventing the purpose of the store to serve multiple channels and meet customer desires for traditionally offered value is considered a central source of competitive advantage. According to our findings, retailers are seeking opportunities for three critical purposes: 1) to differentiate, 2) to create, deliver and capture value, and 3) to manage the change. To differentiate in local, pre-existing, and extended global competition, retailers have turned their sights towards providing speed and convenience through multiple customer

channels and brand ecosystems. Rather than only focusing on cognition, brand ecosystems enable social, emotional, and sensory aspects to be engaged. To ensure that new and relevant value is created, an increasing number of customer touchpoints have been generated to deliver increasingly personalized experiences regardless of location. Touchpoints located in store (e.g. self-service checkouts or integrated mobile apps) additionally enhance store operations, enabling retailers to increase the cost-benefit ratio while decreasing customer sacrifices. Furthermore, retailers are employing data-driven decentralized decision-making models and lowering hierarchical organizational structures. However, the influences of digitalization extend over management systems. Ensuring organizational ability to deliver desired experiences in the changing business environment requires continuous evaluation of capabilities and assets, as well as fostering supportive company culture for fast adaptation. Yet, the prerequisites of the retail business model reconfiguration demand significant changes in the organizational approach.

This study makes several theoretical and practical contributions that are elaborated in the following paragraphs. Three theoretical contributions are emphasized. First, this study makes a theoretical contribution to the literature through “providing connections among previous concepts” (Corley and Gioia, 2011, p. 15). Hence, our main theoretical contribution lies in the further exploration of the existing theory presented by Sorescu et al. (2011). In their article, Sorescu et al. (2011) utilize two key concepts, the retail business model elements (format, activities, and governance) and six innovation drivers (operational effectiveness, operational efficiency, customer lock-in, customer effectiveness, customer efficiency, and customer engagement), which served as the basis for our data analysis. We applaud their work as it illustrates the highly interconnected nature of the retail business model and further provides an insight into business model innovation in the retail context. In the paper, Sorescu et al. (2011) suggest that each business model element is connected to all drivers. However, by combining the elements and drivers in our analysis, further insights were gained, suggesting that certain drivers push

specific business model elements in the context of brick and mortar retailing. More specifically, that format is driven by operational effectiveness and efficiency, and customer lock-in and efficiency. Activities are driven by operational efficiency, customer efficiency, effectiveness and engagement. And governance is driven by operational efficiency and effectiveness. This illustrates that managers do not perceive all drivers in each business model element.

Second, it seems that a paradox exists in the retailing literature, on the one hand telling a story of the retail apocalypse (Baggi, 2014; Helm et al., 2020), and on the other recognizing new sources of competitive advantage (Mende and Noble, 2019; Reinartz et al., 2019; Saarijärvi, 2012). Between these competing narratives, the threats and opportunities facing retailers are explored predominantly from the customer perspective (Hagberg et al., 2016; Picot-Coupey et al., 2016; Chatterjee, 2010; Fuentes et al., 2017; Helm et al., 2020; Labrecque et al., 2017) and employee perspective (Huré et al., 2017; Pantano and Migliarese, 2014; Rafaeli et al., 2017). However, to the best of our knowledge, no other papers explore retail digitalization from the perspective of retail managers. As retail managers are responsible for transforming the retail business model and adapting to changes in the environment, managerial insights on this topic are important. The findings of this paper open new avenues to influence and impact restructuring, instead of identifying phenomenon related sub-phenomena. Therefore, our paper serves as a foundation for building theory on the managerial perspectives on the retail business model through digitalization by linking opportunities and mechanisms.

And finally, the current stage of retailing is extremely important revealing the speed at which traditional retailers are able to understand and respond to new competitive forces. However, when reflecting on the fundamental shifts (asset management, resource allocation, appropriation logic, and abandonment of the value chain approach) (Van Alstyne et al., 2016; Helfat and Martin, 2015; Moorman and Day, 2016) that take place when moving from traditional retailing toward platform business models (Van Alstyne et al., 2016) suggested by Sorescu et al. (2011), only one

correlated. Retailers have used ecosystem perspectives as a competitive tool to orchestrate internal processes and to ensure coherence in the customer experience (e.g. generating data from off-store environments). Whilst, traditional retailers are far away from abandoning the value chain approach, in this study we found that digitalization influences every business model element (format, activities, and governance). Thus, adopting a 'business model-centric' approach in a manner that recognizes every business model element and develops the business model as a coherent entity is an important vehicle for traditional retailers to adapt to the rapidly changing business environment of restructuring. Eventually, the forceful phase of digital evolution that we are witnessing will reveal the future directions of retailing and business model centrality may turn very beneficial.

This study has various implications for retailers, consequently, we detail the three main practical contributions of this research to guide retailers seeking opportunities in the retail business model. First, the study shows how brick and mortar retailers perceive the opportunities from a business model perspective, covering format, activities, and governance in the analysis. As such, this study provides a valuable checklist for traditional retailers to ensure that they are staying relevant in the current business environment. Second, it reveals that brick and mortar retailers are focused on the short-term rather than the long-term. The study participants recognized opportunities from capabilities or resources that exist at the moment, this is due to the need to react rapidly in the changing retail market. Through interpreting these developments, it is possible to determine that brick and mortar retailers are far from pursuing a complete shift to new business models, such as platforms (Sorescu et al., 2011) that have gained popularity and success due to different business model logic. We suggest that brick and mortar retailers turn sights towards their current and future competitor's business models to seek opportunities. Third, brick and mortar retailers have high confidence in competing against online retailers (e.g. Amazon, Alibaba) by centering competitive advantage around the stores as the heart of traditional retailing and the source of price-quality

relation of offerings. However, when scrutinizing the profit equation of platform-based business models, it is clear that most traditional business models tied capital (e.g. in products or stores) has been liberated to enhance the customer experience. By focusing on experiences, traditional retailers may have selected to compete against new rivals with the same weapons, indicating that new rivalries are developing customer experience with extensive intensity while operating asset-light business models. The study suggests that brick and mortar retailers should evaluate distinct options for the value chain, enabling them to respond to current competition and anticipate the emergence of other forms of competition. These changes suggest a new retail paradigm is emerging, one which requires recognition in both theory and practice.

Limitations and future research

This paper set out to extend the understanding of existing opportunities in the retail business model enabled by digitalization. As an ambitious aim, inevitably there are associated limitations, these relate to the data sample and research methods. Although we endeavored to identify the opportunities across the retail industry, we only collected data from the UK and Finland, which renders our findings and implications limited to retailers in developed European countries. Though we assert that what we lack in scale, we compensate with rich managerial insights from multiple mid- and top-level managers working in various types and sizes of retailers. An additional limitation concerning the data sample is the focus on the retail manager's perspective. As a retailer's *raison d'être*, it could have proven beneficial to include the customer perspective, however, due to limited resources, this was not possible. In terms of the research methods, qualitative data was generated through interviews which can present challenges for researchers in terms of influencing the data. When conducting interviews researchers are a part of the data generation which can restrict the discussion to predefined notions and ideas within the researcher's knowledge. In this regard, Gioia et al. (2013) advocate that researchers should emphasize the interviewee's voice over their own to enable new insights to be gained. To ensure that the discussions were not impeded and to provide flexibility (Queirós

et al., 2017), the semi-structured nature of the interviews meant that the questions played a supporting rather than leading role to enable the exploration of the topic through the eyes of the retail managers.

While digitalization has presented businesses with multiple challenges, it is also important to highlight the opportunities to support organizations as they adapt to digital ways of working and reconfigure their business models. We maintain that adopting a business model lens uncovered profound influences on the retail business model. Therefore, it is suggested that further research be conducted on the influence of digitalization on business models in other markets and industries. We selected digitally competitive markets for exploration, however it could be fruitful to examine countries that have yet to develop progressive attitudes and obtain business agility with cohesive technological integration. As a

final note, we would like to mention that an abundant source of data was generated which unfortunately could not be fully explored within the scope of this study, as such, we suggest a direction for future research. An emerging theme within the data was business expansion, more specifically, that brick and mortar retailers are increasingly able to take advantage of digital technologies to reach new businesses, suppliers, and customers. Digitalization has facilitated the burgeoning of international mergers, enabled the diversification of retail products as buyers video call suppliers to secure new products, and supported the growth of new markets as retailers sell their products to customers overseas. Digitalization has opened up the world, initially instigating rising threats from competition 'entering in' the market, but going forward, brick and mortar retailers are well-placed to consider 'expanding out' to exploit the existing opportunities.

Appendix 1

"Brick and mortar" retail examples	Founded	Categories	Annual turnover in the glorious times M\$	Number of stores before entering administration	Date of Bankruptcy
Debenhams	1813	Department store chain	3088	122	July 2020
Poundworld	1974	Discount retail store	1742	355	July 2018
House of Fraser	1891	Department store chain	1530	59	Aug 2018
G-Star Raw	1989	Luxury fashion	1002	400	July 2020
Diesel	1978	Luxury Fashion	927	424	March 2019
HMV	1921	Music, DVD, video games store	476	113	June 2020 (Second bankruptcy)
Blanco	2009	Clothing store	467	120	Dec 2016 (second bankruptcy)
British Home Store (BHS)	1928	Department store chain	389	163	Aug 2016
Brantano	1962	Footwear	348	286	June 2017
Maplin	1976	Electronics store	312	217	June 2018
Roberto Cavalli	1975	Luxury fashion	231	51	March 2019
Karen Millen	1981	Clothing store	232	57	March 2017
Sonia Rykiel	1968	Luxury fashion	75	10	June 2019

Appendix 1: Examples of brick and mortar retail entered administration in the Europe between 2015 and 2020

Appendix 2

"Brick and mortar" retail examples	Founded	Categories	Annual turnover in the glorious times M\$	Number of stores before Chapter 11	Date of Bankruptcy
Sears	1886	Retail chain	16700	434	October 2018
Toys "R" Us	1948	Children's toys	12400	807	September 2017
Great Atlantic and Pacific Tea (A&P)	1859	Grocery	5500	296	July 2015
sports authority	1928	Sportswear	3500	463	March 2016
RadioShack	1963	Electronics	3400	425	March 2017 (second bankruptcy)
Payless	1956	Footwear	3000	3600	April 2017
Bon-ton	1898	Department Store Chain	2700	272	February 2018
HHGregg	1955	Consumer electronics and home appliances	1960	220	March 2017
Quiksilver	1960	Surfwear apparel	1800	122	September 2015
Nine West Holdings Inc.	1970	Shoes, fashion, accessories	1600	70	Date: April 2018
Southeastern Grocers	2011	Grocery stores	1500	852	Date: March 2018

Appendix 2: Examples of brick and mortar retail bankruptcies (chapter 11) in the U.S between 2015 and 2018

"Brick and mortar" retail examples	Founded	Categories	Annual turnover in the glorious times M\$	Number of stores before Chapter 11	Date of Bankruptcy
Gander Mountain	1960	Outdoor recreation	1300	162	March 2017
Gymboree	1976	Children's apparel	1270	1100	Date: June 2017
Vanity	1955	Women's apparel	1200	140	March 2017
Mattress Firm	1986	Mattresses	900	200	October 2018
Rue21	1970	Teen apparel	822	400	May 2017
Pacsun	1980	Teen apparel	797	645	April 2016
KIKO USA	1971	Beauty	700	28	January 2018
Charming Charlie	2004	Apparel and accessories	620	67	December 2017
BCBG	1989	Women's apparel	600	259	February 2017
American apparel	1989	Apparel	600	250	November 2016 (second bankruptcy)
Gordmans	1915	Discount department store	579	68	March 2017
Aerosoles	1987	Footwear	550	80	September 2017
Wet Seal	1962	Teen apparel	500	173	February 2017 (second bankruptcy)

Appendix 2: Examples of brick and mortar retail bankruptcies (chapter 11) in the U.S between 2015 and 2018 (Continued)

"Brick and mortar" retail examples	Founded	Categories	Annual turnover in the glorious times M\$	Number of stores before Chapter 11	Date of Bankruptcy
Perfumania	1988	Perfume and beauty	490	240	August 2017
True Religion Apparel Inc.	2002	Denim and jeans	419	27	July 2017
Eastern Outfitters	1967	Outdoor apparel and gear	400	18	February 2017
Brookstone	1965	Gadgets and gifts	351	100	August 2018
The Walking Company	1991	Footwear	272	69	March 2018
Vitamin World	1977	Vitamins	200	158	September 2017
Hancock fabrics	1957	Fabrics	200	185	February 2016 (second bankruptcy)
Cache	1975	Women's clothing retailer	200	150	February 2015
A'gaci	1971	Apparel and Accessories	136	76	January 2018
Samuels Jewelers Inc.	1956	Jewelry chain	112	121	August 2018

Appendix 2: Examples of brick and mortar retail bankruptcies (chapter 11) in the U.S between 2015 and 2018 (Continued)

Appendix 3

Code	Position	Experience (years in industry)	Country
M1	Head of Technology	21	Finland
M2	Customer Marketing Manager	6	UK
M3	Chief Information Officer	8	Finland
M4	Chief Digital Officer	20	Finland
M5	Digital Customer Experience	5	Finland
M6	Commercial Manager	2.5	Finland
M7	Store Manager	10	UK
M8	Chief Executive Officer	30	UK
M9	E-commerce Manager	6.5	Finland
M10	Project Manager	25	UK
M11	Managing Director	20	UK
M12	Chief Technology Officer	30	UK
M13	Regional Manager	30	UK
M14	Digital Business Advisor	22	Finland

Appendix 3. The characteristics of interviewees

Code	Position	Experience (years in industry)	Country
M15	Marketing and Communications Manager	8	UK
M16	General Manager	20	UK
M17	Head of Digital and Technology	20	UK
M18	Head of Digital Marketing	11	Finland
M19	Country Manager	20	Finland
M20	Chief Digital Officer	15	Finland
M21	Strategy Manager	7	Finland
M22	Market Manager	24	UK
M23	Head of Customer Experience	16	UK
M24	Country Manager	19	Finland
M25	Communications and Insights Manager	16	Finland
M26	Country Transformation Manager	10	Finland

Appendix 3: The characteristics of interviewees (*Continued*)

References

- Abdul-Ghani, E., Hyde, K. F., and Marshall, R. (2011) 'Emic and etic interpretations of engagement with a consumer-to-consumer online auction site', *Journal of Business Research*, 64(10), p1060-1066.
- Achrol, R. S., and Kotler, P. (1999) 'Marketing in the network economy', *Journal of Marketing*, 63, p146-163.
- Afuah, A., and Tucci, C. L. (2003) *Internet business models and strategies: Text and cases. Vol. 2.* New York: McGraw-Hill.
- Almquist, E., Senior, J., and Bloch, N. (2016) 'The elements of value', *Harvard business review*, September, p47-53.
- Amit, R., and Zott, C. (2001) 'Value creation in e-business', *Strategic management journal*, 22(6-7), p493-520.
- Ariely, D., and I. Simonson. (2003) 'Buying, Bidding, Playing, or Competing? Value Assessment and decision dynamics in online auction', *Journal of Consumer Psychology*, 13(1), p113-123.
- Baggi, S. (2014) 'The revolution will be digitized. *Journal of Direct', Data and Digital Marketing Practice*, 16(2), p86-91.
- Bassano, C., Piciocchi, P., Spohrer, J. C., and Pietronudo, M. C. (2018) 'Managing value co-creation in consumer service systems within smart retail settings', *Journal of Retailing and Consumer Services*, 45, p190-197.
- Beck, N., and Rygl, D. (2015) 'Categorization of multiple channel retailing in Multi-, Cross-, and Omni-Channel Retailing for retailers and retailing', *Journal of Retailing and Consumer Services*, 27, p170-178.
- Becker, L., and Jaakkola, E. (2020) 'Customer experience: fundamental premises and implications for research', *Journal of the Academy of Marketing Science*, 48(4), p630-648.
- Bertolini, M., Duncan, D., and Waldeck, A. (2015) 'Knowing when to reinvent', *Harvard Business Review*, 93(12), p90-101.
- Bettman, J. R., Luce, M. F., and Payne, J. W. (1998) 'Constructive consumer choice processes', *Journal of consumer research*, 25(3), p187-217.
- Black, G. S. (2005) 'Is eBay for everyone? An assessment of consumer demographics', *SAM Advanced Management Journal*, 70(1), p50.
- Brynjolfsson, E., Hu, Y. J., and Rahman, M. S. (2013) 'Competing in the age of omnichannel retailing', *MIT Sloan Management Review*, 54(4), p23-29.
- Chatterjee, P. (2010) 'Multiple-channel and cross-channel shopping behavior: role of consumer shopping orientations', *Marketing Intelligence and Planning*, 28(1), p9-24.
- Corkery, M. 2017. 'Is American Retail at a Historic Tipping Point?', *The New York Times*, 16. (Available at) <https://www.nytimes.com/2017/04/15/business/retailindustry.html> (accessed 12 November 2019).

Corley, K.G. and Gioia, D.A. (2011) 'Building Theory about Theory Building: What Constitutes a Theoretical Contribution?', *The Academy of Management Review*, 36(1), p12-32.

Cusumano, M.A., Gawer, A., and Yoffie, D.B. (2019) *The Business of Platforms: Strategy in the Age of Digital Competition, Innovation, and Power*. HarperCollins Publishers.

Davis-Sramek, B., Ishfaq, R., Gibson, B. J., and Defee, C. (2020) 'Examining retail business model transformation: a longitudinal study of the transition to omnichannel order fulfillment', *International Journal of Physical Distribution & Logistics Management*, 50(5), p557-576.

Day, G., and Moorman, C. (2010) *Strategy from the Outside-In: Profiting from Customer Value*. New York: McGraw Hill Professional.

Demirci Orel, F., and Kara, A. (2014) 'Supermarket self-checkout service quality, customer satisfaction, and loyalty: Empirical evidence from an emerging market', *Journal of Retailing and Consumer Services*, 21(2), p118-129.

Doganova, L., and Eyquem-Renault, M. (2009) 'What Do Business Models Do?': Innovation Devices in Technology Entrepreneurship, *Research Policy*, 38(10), p1559-1570.

Doherty, N. F., and Ellis-Chadwick, F. (2010) 'Internet retailing: The past, the present and the future', *International Journal of Retail and Distribution Management*, 38(11-12), p943-965.

Eisenhardt, K.M. (1989) 'Building theories from case study research', *Academy of management review*, 14(4), p532-550.

Eisenhardt, K.M., and Graebner, M.E. (2007) 'Theory building from cases: opportunities and challenges', *The Academy of Management Journal*, 50(1), p25-32.

Elo, S. and Kyngäs, H. (2008) 'The qualitative content analysis process', *Journal of Advanced Nursing*, 62(1), p107-115.

Frenken, K., and Schor, J. (2017) 'Putting the sharing economy into perspective', *Environmental Innovation and Societal Transitions*, 23(3), p3-10.

Fuentes, C., Bäckström, K., and Svingstedt, A. (2017) 'Smartphones and the reconfiguration of retailscapes: Stores, shopping, and digitalization', *Journal of Retailing and Consumer Services*, 39, p270-278.

Gallarza, M. G., Gil-Saura, I., and Holbrook, M. B. (2011) 'The value of value: Further excursions on the meaning and role of customer value', *Journal of consumer behaviour*, 10(4), p179-191.

Gawer, A. (2014) 'Bridging differing perspectives on technological platforms: Toward an integrative framework', *Research Policy*, 43(7), p1239-1249.

Gioia, D. A., Corley, K. G., and Hamilton, A. L. (2013) 'Seeking qualitative rigor in inductive research: Notes on the gioia methodology', *Organizational Research Methods*, 16(1), p15-31.

- Given, L. M. (2008) *The SAGE encyclopedia of qualitative research methods*. Vol. 1. Thousand Oaks, CA: SAGE Publications Inc.
- Glaser, B. G., and Strauss, A. L. (1967) *The discovery of grounded theory: Strategies for qualitative research*. Chicago: Aldine.
- Grewal, D., Roggeveen, A. L., and Nordfält, J. (2017) 'The future of retailing'. *Journal of Retailing*, 93(1), p1-6.
- Grönroos, C. (2011) 'Value co-creation in service logic: A critical analysis', *Marketing Theory*, 11(3), p279-301.
- Gupta, S. (2017) 'Why retail supply chain transformations fail—and how to get it right', *Logistics management* (2002), 56(9), p45-53.
- Hagberg, J., Jonsson, A., and Egels-Zandén, N. (2017) 'Retail digitalization: Implications for physical stores', *Journal of Retailing and Consumer Services*, 39, p264-269.
- Hagberg, J., Sundstrom, M., and Egels-Zandén, N. (2016) 'The digitalization of retailing: An exploratory framework', *International Journal of Retail & Distribution Management*, 44(7), p694-712.
- Hauser, J. R. (2014) 'Consideration-set heuristics', *Journal of Business Research*, 67(8), p1688-1699.
- Helfat, C. E., and Martin, J. A. (2015) 'Dynamic managerial capabilities: Review and assessment of managerial impact on strategic change', *Journal of Management*, 41(5), p1281-1312.
- Helm, S., Kim, S., and Van Riper, S. (2020) 'Navigating the "retail apocalypse": A framework of consumer evaluations of the new retail landscape', *Journal of Retailing and Consumer Services*, p54.
- Holmes, A., Byrne, A., and Rowley, J. (2013) 'Mobile Shopping behaviour: insights into attitudes, shopping process involvement and location', *International Journal of Retail & Distribution Management*, 42(1), p25-39.
- Hsieh, H.-F., and Shannon, S. E. (2005) 'Three Approaches to Qualitative Content Analysis', *Qualitative Health Research*, 15(9), p1277-1288.
- Huré, E., Picot-Coupey, K., and Ackermann, C. (2017) 'Understanding omni-channel shopping value: A mixed-method study', *Journal of Retailing and Consumer Services*, 39, p314-330.
- Hänninen, M., Smedlund, A., and Mitronen, L. (2018) 'Digitalization in retailing: Multi-sided platforms as drivers of industry transformation', *Baltic Journal of Management*, 13(2), p152-168.
- Hänninen, M., Mitronen, L., and Kwan, S. (2019) 'Multi-sided marketplaces and the transformation of retail: A service systems perspective', *Journal of Retailing and Consumer Services*, 49, p380-388.
- Inman, J. J., and Nikolova, H. (2017) 'Shopper-facing retail technology: A retailer adoption decision framework incorporating shopper attitudes and privacy concerns', *Journal of Retailing*, 93(1), p7-28.
- Jocevski, M., Arvidsson, N., Miragliotta, G., Ghezzi, A., and Mangiaracina, R. (2019) 'Transitions towards omni-channel retailing strategies: a business model perspective', *International Journal of Retail and Distribution Management*, 47(2), p78-93.

Johnson, M. W., Christensen, C. M., and Kagermann, H. (2008) 'Reinventing your business model'. *Harvard Business Review*, 56(12), p50-59.

Kaplan, R. S., Kaplan, R. E., Norton, D. P., Davenport, T. H., and Norton, D. P. (2004) *Strategy maps: Converting intangible assets into tangible outcomes*. Boston: Harvard Business Press.

Keiningham, T., Ball, J., Benoit, S., Bruce, H. L., Buoye, A., Dzenkowska, J., and Zaki, M. (2017) 'The interplay of customer experience and commitment', *Journal of Services Marketing*, 31(2), 148-160.

Kranzbühler, A. M., Kleijnen, M. H., Morgan, R. E., and Teerling, M. (2018) 'The multilevel nature of customer experience research: an integrative review and research agenda', *International Journal of Management Reviews*, 20(2), p433-456.

Kumar, V., Lahiri, A., and Dogan, O. B. (2017) 'A strategic framework for a profitable business model in the sharing economy', *Industrial Marketing Management*, 69, p147-160.

Labrecque, L. I., Vor Dem Esche, J., Mathwick, C., Novak, T. P., and Hofacker, C. F. (2013) 'Consumer power: Evolution in the digital age', *Journal of Interactive Marketing*, 27(4), p257-269.

Lemon, K. N., and Verhoef, P. C. (2016) 'Understanding customer experience throughout the customer journey', *Journal of Marketing*, 80(6), p69-96.

Lichtman, M. (2017) *Qualitative research for the social sciences*. London: SAGE Publications, Inc.

Lusch, R. F., Vargo, S. L., and Tanniru, M. (2010) 'Service, value networks and learning', *Journal of the academy of marketing science*, 38(1), p19-31.

Lubis, A. N. (2018) 'Evaluating the customer preferences of online shopping: Demographic factors and online shop application issue', *Academy of Strategic Management Journal*, 17(2), p1-13.

Matzler, K., Eichen, S., Anschober, M., and Kohler, K. (2018) 'The crusade of digital disruption', *Journal of Business Strategy*, 39(6), p13-20.

McArthur, E., Weaven, S., and Dant, R. (2016) 'The evolution of retailing: A meta-review of the literature', *Journal of Macromarketing*, 36(3), p272-286.

McKinsey. (2020) *Adapting to the next normal in retailing: the consumer experience imperative* [Online]. Available at: <https://www.mckinsey.com/~media/McKinsey/Industries/Retail/Our%20Insights/Adapting%20to%20the%20next%20normal%20in%20retail%20The%20customer%20experience%20imperative/Adapting-to-the-next-normal-in-retail-the-customer-experience-imperative-v3.pdf> (Accessed: 22 June 2020)

Mende, M., and Noble, S. M. (2019) 'Retail apocalypse or golden opportunity for retail frontline management?', *Journal of Retailing*, 95(2), p84-89.

Mendelson, H. (2000) 'Organizational architecture and success in the information technology industry', *Management Science*, 46(4), p513-529.

Moorman, C., and Day, G. S. (2016) 'Organizing for marketing excellence', *Journal of Marketing*, 80(6), p6-35.

- Noy, C. (2008) 'Sampling knowledge: The hermeneutics of snowball sampling in qualitative research', *International Journal of Social Research Methodology*, 11(4), p327-344.
- Osterwalder, A. (2004) *The business model ontology a proposition in a design science approach*. Doctoral dissertation, Université de Lausanne, Faculté des hautes études commerciales.
- Pantano, E., and Migliarese, P. (2014) 'Exploiting consumer-employee-retailer interactions in technology-enriched retail environments through a relational lens', *Journal of Retailing and Consumer Services*, 21(6), p958-965.
- Picot-Coupey, K., Huré, E., and Piveteau, L. (2016) 'Channel design to enrich customers' shopping experiences: Synchronizing clicks with bricks in an omni-channel perspective - the Direct Optic case', *International Journal of Retail and Distribution Management*, 44(3), p336-368.
- Piotrowicz, W., and Cuthbertson, R. (2014) 'Introduction to the special issue information technology in retail: Toward omnichannel retailing', *International Journal of Electronic Commerce*, 18(4), p5-16.
- Queirós, A., Faria, D., and Almeida, F. (2017) 'Strengths and Limitations of Qualitative and Quantitative Research Methods', *European Journal of Education Studies*, 3, p369-387.
- Rafaëli, A., Altman, D., Gremler, D. D., Huang, M. H., Grewal, D., Iyer, B., and de Ruyter, K. (2017) 'The future of frontline research: Invited commentaries', *Journal of Service Research*, 20(1), p91-99.
- Rintamäki, T., Kuusela, H., & Mitronen, L. (2007). Identifying competitive customer value propositions in retailing. *Managing Service Quality: An International Journal*.
- Reinartz, W., Wiegand, N., and Imschloss, M. (2019) 'The impact of digital transformation on the retailing value chain', *International Journal of Research in Marketing*, 36(3), p350-366.
- Ritter, M., and Schanz, H. (2019) 'The sharing economy: A comprehensive business model framework', *Journal of cleaner production*, 213, p320-331.
- Saarijärvi, H. (2012) 'The mechanisms of value co-creation', *Journal of Strategic Marketing*, 20(5), p381-391.
- Saarijärvi, H., Kannan, P. K., and Kuusela, H. (2013) 'Value co-creation: Theoretical approaches and practical implications' *European Business Review*, 25(1), p6-19.
- Saghiri, S. S., Bernon, M., Bourlakis, M., and Wilding, R. (2018) 'Omni-channel logistics special issue', *International Journal of Physical Distribution & Logistics Management*, 48(4), p362-364.
- Shafer, S. M., Smith, H. J., and Linder, J. C. (2005) 'The power of business models', *Business horizons*, 48(3), p199-207.
- Simonson, I., and Rosen, E. (2014) 'What marketers misunderstand about online reviews', *Harvard Business Review*, 92(1), p7.
- Sorescu, A., Frambach, R. T., Singh, J., Rangaswamy, A., and Bridges, C. (2011) 'Innovations in retail business models', *Journal of Retailing*, 87(1), p3-16.

Statista. (2020a) 'Retail market in the U.S', available at: <https://www.statista.com/study/78976/retail-market-in-the-united-states/> (accessed: 26 October 2020).

Statista. (2020b) 'e-commerce in Europe', available at: <https://www.statista.com/study/28488/e-commerce-in-europe-statista-dossier/> (accessed: 26 October 2020).

Taylor, E. (2016) 'Mobile payment technologies in retail: A review of potential benefits and risks' *International Journal of Retail & Distribution Management*, 44(2), p159-177.

Teece, D. J. (2009) *Dynamic capabilities and strategic management: Organizing for innovation and growth*. Oxford: University Press on Demand.

Teece, D. J. (2010) 'Business models, business strategy and innovation', *Long range planning*, 43(2-3), p172-194.

Teece, D. J., Peteraf, M., and Leih, S. (2016) 'Dynamic capabilities and organizational agility: Risk, uncertainty, and strategy in the innovation economy', *California Management Review*, 58(4), p13-35.

Teece, D. J., and Linden, G. (2017) 'Business models, value capture, and the digital enterprise', *Journal of Organization Design*, 6(1), p1-14.

Timmers, P. (1998) 'Business models for electronic markets', *Electronic Markets*, 8(2), p3-8.

Townsend, M., Surane, J., Orr, E. and Cannon, C. (2018) 'America's 'Retail Apocalypse': is really just beginning. Bloomberg', (Available at) <https://www.bloomberg.com/graphics/2017-retail-debt/> (Accessed 26 October 2020).

US Census. (2020) Quarterly retail-commerce sales, 1st quarter 2020 [Online]. Available at: <https://www2.census.gov/retail/releases/historical/ecom/20q1.pdf>. (Accessed: 28 May 2020).

Vakulenko, Y., Shams, P., Hellström, D., and Hjort, K. (2019) 'Online retail experience and customer satisfaction: the mediating role of last mile delivery' *The International review of retail, distribution and consumer research*, (3), p306-320.

Van Alstyne, M. W., Parker, G. G., and Choudary, S. P. (2016) 'Pipelines, platforms, and the new rules of strategy', *Harvard business review*, 94(4), p54-62.

Verhoef, P. C., Kannan, P., and Inman, J. (2015) 'From multi-channel retailing to omni-channel retailing: Introduction to the special issue on multi-channel retailing', *Journal of Retailing*, 91(2), p174-181.

Von Briel, F. (2018) 'The future of omnichannel retail: A four-stage Delphi study', *Technological Forecasting and Social Change*, 132, p217-229.

Willems, K., Smolders, A., Brengman, M., Luyten, K., and Schöning, J. (2017) 'The path-to-purchase is paved with digital opportunities: An inventory of shopper-oriented retail technologies', *Technological Forecasting and Social Change*, 124, p228-242.

Yrjölä, M. (2014) 'Value creation challenges in multichannel retail business models', *Journal of Business Models*, 2(1), p89-104.

Yrjölä, M., Saarijärvi, H., and Nummela, H. (2018) 'The value propositions of multi-, cross-, and omni-channel retailing', *International Journal of Retail and Distribution Management*, 46(11-12), p1133-1152.

Zott, C., and Amit, R. (2010) 'Business model design: an activity system perspective', *Long range planning*, 43(2-3), p216-226.

Zott, C., Amit, R., and Massa, L. (2011) 'The business model: recent developments and future research', *Journal of Management*, 37(4), p1019-1042.

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JOURNAL OF BUSINESS MODELS

Sustainable Value Creation Through Business Models: The What, the Who and the How

Florian Lüdeke-Freund¹, Romana Rauter², Esben Rahbek Gjerdrum Pedersen³, and Christian Nielsen⁴

Abstract

Purpose: We discuss traditional assumptions about value creation and confront these with current views on sustainable value creation (SVC). Against this backdrop, the articles contained in the special issue 'Sustainable Value Creation Through Business Models' are introduced, and their contributions to the exploration of SVC are highlighted.

Methodology: Assumptions about value creation are summarised and turned into an initial theoretical framework concerning the what, who and how of value creation. This framework is used to structure and discuss current views on SVC that have been presented in the sustainable business model (SBM) literature.

Findings: The proposed framework identifies cornerstones for theorising about SVC in regard to the what, who and how of value creation. A main finding is that, although value creation and SVC are widely discussed in the literature, there are huge gaps in terms of the who, what and how of value creation, particularly in the SBM field.

Research implications and limitations: The major implication is that the SBM discourse still lacks clear SVC concepts, and closing this gap may enable the creation of a new multi- and interdisciplinary research programme. A major limitation of this paper is the mainly theoretical and preliminary nature of the presented discussion and framework.

Originality and value: There is a surprising dearth of definitions and concepts of value creation in both the traditional business model and SBM research. The originality and value of this paper lie in its potential to stimulate further research on the theoretical foundations of SVC. Various theoretical propositions are developed, including notions such as stakeholder-responsive and relational interpretations of value creation.

Keywords: Sustainable value creation, business model, sustainability, stakeholder, triple bottom line, framework

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Introduction

The discussion presented in this paper, which also serves as a guest editorial for the special issue 'Sustainable Value Creation Through Business Models' (Journal of Business Models, 2019, Vol. 7, No. 1), was motivated by an observation that has kept us wondering for quite some time. The whole business model discourse, including both its traditional and sustainability-oriented streams, receives its legitimacy and urgency from its focus on value, which is proposed, delivered, created and captured through business models (Massa, Tucci and Afuah, 2017; Richardson, 2008; Stubbs and Cocklin, 2008; Upward and Jones, 2016; Zott, Amit and Massa, 2011). The notion of value creation is fascinating as it implies the emergence (or creation) of something valuable that did not exist previously.

But surprisingly, although it is a key concept in business model research, the notion of *value creation* remains a black box in most publications issued in the past two decades. It is remarkable that a whole field of research gains its legitimacy from the need to better understand how firms create value, but it neither offers nor uses clear definitions and explanations of this concept. At best, value creation is articulated as the 'value chain' part of a company, or the difference between revenues and costs. The same applies to the notion of *sustainable value creation* (SVC), which is increasingly used and discussed in the literature, but hardly defined and explained. Extensions of the concept of value creation to include sustainability considerations have been discussed in various fields, including corporate sustainability, sustainable and social entrepreneurship and marketing. However, this idea is of particular importance to *sustainable business model* (SBM) research (Dentchev, Rauter, Jóhannsdóttir, Snihur, Rosano, Baumgartner, Nyberg, Tang, van Hoof and Jonker, 2018; Lüdeke-Freund and Dembek, 2017), as SVC is its major reference point and the core of its identity. Despite the obvious interest in and increasing use of the notion of SVC, its definitions and theoretical foundations are still weak, possibly because of the variety of theories and concepts underlying discussions and explorations of SBMs in general and SVC in particular (e.g. Dentchev *et al.*, 2018; Stubbs and

Cocklin, 2008). We are not saying that a single theory or concept – or some other form of monism – is what is needed, but we argue that starting to open up the black box of SVC is crucial for stimulating progress in SBM research.

Value creation is an inherently normative concept. Even though many scholars may think that they are working on 'values-free' or 'neutral' grounds, they are not and cannot. However, this is not problematic per se. The issue is whether 'the normative' is made transparent and accessible to criticism and systematic investigation (cf. Albert, 1985). Assumptions, such as that companies must make superior profits or that the economy must grow quantitatively, are neither neutral nor laws of nature. These assumptions reflect man-made properties of social systems that can be critically debated and designed, either in this way or another (cf. Mazzucato, 2018). Of course, the same holds true for SVC. The assumption that companies should consider stakeholders and the natural environment in their value-creating activities is grounded in certain normative positions, such as prioritising a just distribution of benefits (however this is defined) or giving a voice to nature. Such assumptions can and should be critically debated, which requires making them transparent.

We therefore start by briefly acknowledging the inherently normative characteristics of value creation. This has two purposes: first, to clarify that not only sustainability-related concepts are grounded in certain norms, values and judgements; and second, to show that moving from traditional assumptions about value creation to SVC can be guided, for example, by 'triple bottom line' and stakeholder theory approaches. To address the research gaps and opportunities that exist in this area, we develop an initial theoretical framework for *the what, who and how* of sustainable value creation that enables us to propose cornerstones for future theorising about this concept. The articles contained in the special issue are introduced and their contributions to the exploration of SVC are highlighted against the backdrop of the proposed theoretical framework. This paper concludes with a brief summary of the theoretical propositions presented in this paper and suggestions for future research.

Value Creation as a Normative Concept

From a traditional strategic management perspective, customers' willingness to pay decides whether the value proposed by a company, which is embedded in the products and services it offers, materialises as benefits for customers and monetary earnings for the company (Bowman and Ambrosini, 2000; Garcia-Castro and Aguilera, 2015). However, this commercial logic of value exchange (customer benefits in exchange for monetary payments), which forms the underlying rationale of the strategy and business model literature (Laasch, 2018; Teece, 2010), is reducing the concept of value creation, typically, to value for customers and the company.

The field of SBM research (e.g. Dentchev *et al.*, 2018; Lüdeke-Freund and Dembek, 2017), which is the context of the special issue, tries to extend this traditional understanding of value and how it is created. Scholars from this field call for business models and business model innovation that incorporate sustainability principles (e.g. efficiency, consistency and sufficiency) (Geissdoerfer, Vladimirova and Evans, 2018; Lüdeke-Freund, Schaltegger and Dembek, 2019), sustainability concepts (e.g. social responsibility, stakeholder inclusiveness and systems thinking) (Breuer, Fichter, Lüdeke-Freund and Tiemann, 2018; Schaltegger, Lüdeke-Freund and Hansen, 2012, 2016) and broader notions of value creation that consider the needs and interests of various stakeholders (Bocken, Short, Rana and Evans, 2013). More recent works also highlight the different roles that these stakeholders can play. There can be important differences between value creation *with* stakeholders (e.g. making employees work for a company and contribute to its value creation processes) and value creation *for* stakeholders (e.g. considering and satisfying the needs of these employees) (e.g. Freudenreich, Lüdeke-Freund and Schaltegger, 2020).

One result of this normative call for SBMs is the extension of the financial bottom line of business towards ecological and social bottom lines (e.g. Boons and Lüdeke-Freund, 2013; Breuer *et al.*, 2018; Stubbs and Cocklin, 2008; Upward and Jones, 2016). Generally speaking, it also results in the requirement of

mutual value creation with and for all stakeholders of a company (Freeman, 2010; Freudenreich *et al.*, 2020). While some authors offer examples of such forms of value creation (e.g. den Ouden, 2012; Evans, Vladimirova, Holgado, van Fossen, Yang, Silva and Barlow, 2017; Lepak, Smith and Taylor, 2007; Upward and Jones, 2016) and corresponding business model designs and patterns (Lüdeke-Freund, Carroux, Joyce, Massa and Breuer, 2018), our understanding of SVC is still very limited.

Typical definitions of this idea refer to 'a promise on the economic, environmental and social benefits that a firm's offering delivers' (Patala, Jalkala, Keränen, Väisänen, Tuominen and Soukka, 2016, p. 144), 'economic, social and environmental benefits conceptualized as value forms' (Evans *et al.*, 2017, p. 601) or 'stakeholder value creation' (Freudenreich *et al.*, 2020, p. 3). The notion of the triple bottom line, which considers the planet, people and profit (Elkington, 1997), is one of the most common foundations of current SVC definitions in the SBM field (e.g. Evans *et al.*, 2017; Stubbs and Cocklin, 2008). However, sustainable value creation, as dealt with in the SBM field, remains as unclear as the notion of value creation in traditional business model research.

All these definitions, including traditional utilitarian ones, are difficult as they are inherently – but often not explicitly or even knowingly – normative (cf. Hahn, Figge, Pinkse and Preuss, 2018; Santos, 2012). This is not problematic per se; values, norms and subjectivity are always elements of scientific, economic and other social processes. However, we must be aware of what normative and value-laden notions, such as 'sustainable' or 'stakeholder-inclusive', do to the theories and concepts we use, and vice versa.

Acknowledging this idea leads to a series of questions, such as the following: How can we define ecological and social value, and how can we distinguish these concepts from economic value? How can we define which form of value creation is desired and which is not, both currently and in the future? Does any form of economic value creation inherently lead to social benefits, as some authors argue? If so, why distinguish between economic and social value creation, and later argue that it has to be (re-)integrated?

The situation becomes even more complex when one claims that nature is a stakeholder. Which kinds of value does nature 'prefer': relative improvements in resource use and toxic waste or the absolute avoidance of both? How can business model designers make sure that their organisations save trees from being cut and animals from becoming extinct while contributing to gross domestic product and promoting social wellbeing? How can we account for all these forms of value creation? Even if we were able to associate all this with certain business model designs and had access to all the key performance indicators needed to measure and manage them (cf. Montemari, Chiucchi and Nielsen, 2019; Nielsen, Lund, Schaper, Montemari, Thomsen, Sort, Roslender, Brøndum, Byrge, Delmar, Simoni, Paolone, Massaro and Dumay, 2018), how would we know which kind of value creation is more or less relevant for a certain stakeholder group in a certain geographical or cultural context? The list of theoretical and practical problems goes on and on.

Towards the What, Who and How of Sustainable Value Creation

We have to face it: *so far, we have failed to properly define SVC*. It is clear that the complex, ambiguous and elusive nature of value creation becomes even trickier by adding the call for business contributions to sustainable development. In its current form, the discourse on SBMs and SVC is clearly facing the so-called Münchhausen trilemma (cf. Albert, 1985). Many definitions build on *circular arguments* (defining SVC by referring to something done 'in a sustainable way'), *infinite regress* (as the theoretical propositions underlying SVC require further supportive propositions, which require further supportive propositions, and so on) and *dogmatism* (when SVC is posited as a self-evident and ultimate necessity). The third aspect highlights the thin line between embracing the normativity of social issues in a constructive and systematic way on the one hand and simply declaring how things ought to be on the other hand.

Therefore, the aim of the special issue was to invite authors from various disciplines to improve our understanding of SVC and what it could mean in the

context of business model research (Dentchev *et al.*, 2018; Lüdeke-Freund, Freudenreich, Schaltegger, Saviuc and Stock, 2017, Nielsen, Montemari, Paolone, Massaro, Dumay and Lund, 2019; Roslender and Nielsen, 2019) to contribute to several goals. First, to closely look at theories, concepts and cases that apply comprehensive notions of value creation to better understand *what* SVC entails (cf. Freeman, 2010; Freudenreich *et al.*, 2020). Second, to consider various forms of value (e.g. economic, ecological, social, cultural, relational, psychological), their underlying subjective and normative values (Breuer and Lüdeke-Freund, 2017) and *who* might benefit from these forms of value. Third, to explicitly connect comprehensive notions of value creation to business models and business model innovation in order to explore *how* SVC functions from methodical, instrumental and practical points of view (cf. Buser and Carlsson, 2020; Foss and Saebi, 2017; Massa *et al.*, 2017; Wirtz, Göttel and Daiser, 2016).

A major finding of the special issue is that our field has only just started to open the black box regarding the what, who and how of SVC. In addition, many new questions have emerged as a result of the research presented here. We therefore extended the scope of this guest editorial to contextualise the articles contained in the special issue and offer a more structured view of SVC guided by the following questions:

- What is value and what are its sources?
- For whom is value created?
- How is value created?
- Who captures value?

Traditional assumptions about value creation

Value creation is typically associated with how companies create and offer products and services for which customers are willing to pay and how they try to capture a share of the total value that is created in the corresponding economic exchange processes (e.g. Bowman and Ambrosini, 2000; Freudenreich *et al.*, 2020; Garcia-Castro and Aguilera, 2015). From the inception of business model research, certain streams of the literature have been concerned with how firms can increase customer satisfaction, develop a competitive advantage and achieve above-normal returns within changing business environments that

are characterised by, for example, the emergence of e-business and hyper competition (e.g. Amit and Zott, 2001; Zott and Amit, 2007). A major issue is how companies can maintain and improve their ability to create and capture value through business models (Foss and Saebi, 2017; Massa *et al.*, 2017; Wirtz *et al.*, 2016). As these streams of business model research address core topics and concerns of classic strategic management studies, it seems appropriate to use one of the most-cited strategic management articles to introduce the notion of value creation (Bowman and Ambrosini, 2000).

What is value and what are its sources?

The main forms of value are typically defined as value for customers (i.e. *use value and customer surplus*) and value for the company (i.e. *exchange value and financial profit*). If other stakeholders are considered, they are typically employees, who are paid wages, and capital providers and shareholders, who receive interest and dividend payments. To understand the sources of these forms of value, starting from the basic assumptions of resource-based theory, Bowman and Ambrosini (2000, p. 2; orig. emphasis) posit that 'resources have value in relation to their ability, *inter alia*, to meet customers' needs'. A resource that is valuable, rare, inimitable and organised (VRIO) allows a company to meet customer needs better or at a lower cost than its competitors, and it helps the company to exploit market opportunities and/or neutralise threats in its business environment (Barney, 1991). As a result, applying VRIO resources and corresponding capabilities (Teece, 2018) allows companies to offer valuable products and services and improve their market positions. Hence, *resources* and *capabilities* are traditionally seen as the sources of value.

For whom is value created?

Typically, two stakeholders are considered. First, customers are interested in obtaining use value, which is the usefulness of products and services offered by companies. Bowman and Ambrosini (2000) argue that use value is a subjective notion and thus can be referred to as perceived use value. The perceived usefulness of an offering is based on, for example, customers' beliefs about the offering, their unique experiences and expectations and their personal needs and wants. Perceived use value can

be translated into monetary value by evaluating the price customers are prepared to pay (which is based on, e.g., their willingness to pay, their economic circumstances, awareness of competing offerings). The difference between the monetary value and the actual price to be paid leads to customer surplus ('value-for-money'), assuming that the actual price is lower than the monetary value assigned by customers.¹ Second, the company offering products and services is mainly interested in exchange value, which is the actual price paid by the customer to obtain the perceived use value ('money-for-value'). These or comparable definitions of value creation for *customers* and *companies* are typical of strategic management and business model studies (e.g. Garcia-Castro and Aguilera, 2015).

How is value created?

Value creation is defined as the provision of new use value resulting from the application of organisational resources and capabilities. The provision of new use value – and corresponding perceived use value – is a precondition of new or additional monetary value from the customer perspective as well as new or additional exchange value for the company (cf. Bowman and Ambrosini, 2000; Mazzucato, 2018). The exchange value resulting from the new use value can only be determined at the time of sale, when the new use value is actually appreciated by a customer and a certain price is paid. This is because 'we cannot assert that, in the process of new use value creation, "value" has [actually] been added. Different use value has been created which *may or may not* yield added exchange value' (Bowman and Ambrosini, 2000, p. 5; orig. emphasis changed). A company achieves financial profit if the exchange value, or price, exceeds the costs of, for example, resources, wages and opportunity costs. Profit can only be attributed to the labour performed by organisational members ('human capital resources', according to Barney, 1991), as their activities are the 'only input into the production process that has the capacity to create new use values, which are the source of the realized exchange value' and, hence, profit (Bowman and Ambrosini, 2000, p. 5). From a

¹ This conception of perceived use value, monetary value and consumer surplus holds true not only for private customers (B2C) but also for firms' purchasing decisions, in which managers assess various offers on behalf of their organisation (B2B).

traditional strategic management perspective, value creation refers to the provision of new use value to customers, which is a precondition for companies to yield a financial profit from exchange value. Resources, including certain types of labour, are required to create value for customers and companies.

Who captures value?

For a company, value capture involves obtaining exchange value (and thus profit) by realising a price (and thus revenue) at the moment of selling. The ability to capture value by appropriating a share of the total value created (the latter approximated by customers' willingness to pay) is determined by the perceived power relationships between actors on the market (Bowman and Ambrosini, 2000). Of major importance are the relationships between the company and its customers (who has the power to determine the price of the product or service?) and resource suppliers (who has the power to determine the costs of resources, including labour and financial capital?). Finally, due to the limited bargaining power of employees, a company can capture value by employing labour (ibid.). Typically, labour suppliers are paid a fixed amount for their labour power, without a specified number of outputs (although models with a specified number of outputs have always existed and might spread in the future due to the rapid growth of the 'gig economy'). This creates an opportunity for firms to benefit from employees' variable contributions to the creation of new

use value. Variable in the sense that the amount of outputs can vary, e.g. increase, while the labour costs remain constant. Hence, due to increasing labour productivity, the value of labour suppliers' contributions may exceed the share of the exchange value they capture in the form of wages. However, the bargaining power of labour suppliers typically depends not (only) on their productivity, but on their ability to help a company achieve superior profits relative to competing firms. As a consequence, different types of labour suppliers have different possibilities to capture value (Bowman and Ambrosini, 2000). In summary, value capture has different meanings for different stakeholders (Freudenreich *et al.*, 2020). Traditionally, for customers, it means realising *new use value and customer surplus*; for the company, it means *obtaining exchange value and financial profit*; for labour suppliers, it means *being paid wages*; and for capital suppliers and shareholders, it means *receiving interest and dividend payments* based on a share of the exchange value created by the company.

This overview of traditional assumptions about value creation shows that, first, value creation is a complex and non-trivial phenomenon, and second, both value creation and SVC require conceptual clarity. Where do we stand in this endeavour? The following section gives a brief overview of some of the developments in the SBM field that have aimed to extend our understanding of value creation.

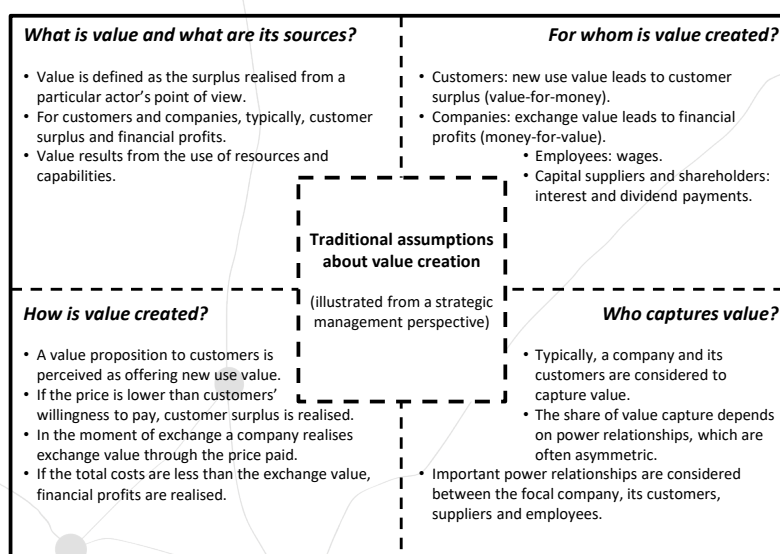


Figure 1: Traditional assumptions about value creation.

Extended assumptions about value creation: Triple bottom line and stakeholder theory perspectives

Although traditional business model research sometimes refers to value creation for various stakeholders (e.g. Zott and Amit, 2010), this notion is mostly limited to the value created for customers, business partners (such as suppliers) or investors. The aforementioned distinction of value creation *with* and value creation *for* stakeholders is also typically ignored. These limitations lead to correspondingly limited perspectives on business models and business model innovation, which are insufficient to deal with pressing sustainability issues (in particular, see the critique presented in Upward and Jones, 2016).

Following Stubbs and Cocklin's (2008) seminal article on their 'sustainability business model ideal type', the new field of SBM studies started to develop alternative approaches to framing business models and value creation. Researchers have used certain propositions to distinguish their research questions, theoretical approaches, ontologies and epistemologies from those of traditional business model studies (Lüdeke-Freund and Dembek, 2017, p. 1670):

'These features are (i) an explicit sustainability orientation, integrating ecological, social and economic concerns, (ii) an extended notion of value creation, questioning traditional definitions of value and success, (iii) an extended notion of value capture in terms of those for whom value is created, (iv) an explicit emphasis on the need to consider stakeholders and not just customers, and (v) an extended perspective on the wider system in which an SBM is embedded'.

Different approaches to defining SVC can be found in the SBM literature. First, some approaches build on the *triple bottom line (TBL)* or comparable concepts based on the argument that SVC requires contributions to all dimensions of sustainable development (typically, ecological, social and economic value). Second, some approaches have been framed by *stakeholder theory*, arguing that mutual value creation with and for stakeholders (i.e. considering and integrating all stakeholders' needs and interests) is a precondition for SVC. Third, some

approaches *merge both arguments*, both explicitly and implicitly.

An emphasis on SVC resonates well with previous attempts to move beyond traditional assumptions about value creation and identify common features of the sustainability, stakeholder theory and business model literature (cf. Wheeler, Colbert and Freeman, 2003). A central underpinning of the SBM field is a more holistic understanding of value that goes beyond customers, companies and their owners and includes a broader range of stakeholders and TBL performance (Bocken, Rana and Short, 2015; Boons and Lüdeke-Freund, 2013; Pedersen, Gwozdz and Hvass, 2018). Indeed, Schwartz and Carroll (2008) explicitly highlight value as a core concept (along with balance and accountability) that ties together business and society in fields such as corporate social responsibility, business ethics, stakeholder management, sustainability and corporate citizenship. More specifically, the authors argue that

'the fundamental element underlying the entire business and society field appears to be the generation of value. Value is primarily created when business meets society's needs by producing goods and services in an efficient manner while avoiding unnecessary negative externalities' (Schwartz and Carroll, 2008, p. 168).

Below, we briefly discuss the TBL and the stakeholder theory perspectives as these are, according to our reading of the literature, the most developed and prominent approaches in the SBM field. The aim is to offer a first, although admittedly very rough, overview of the existing views on SVC within the SBM field.

Some authors argue for deliberate consideration of all stakeholders' needs and interests - often presenting non-exclusive lists of stakeholders that include, for example, customers, employees, investors, the natural environment (typically represented by other stakeholders), society, non-governmental organisations and so on (e.g. Bocken *et al.*, 2013; Evans *et al.*, 2017; Upward and Jones, 2016) (see Table 3) - and the resultant need to consider and integrate diverse forms of value creation and dimensions of

performance (Freudenreich *et al.*, 2020; Tapaninaho and Kujala, 2019). Here, the reference to stakeholders serves as a frame for identifying *who* should be considered in the context of value creation, both as beneficiary (value creation *for* stakeholders) and contributor (value creation *with* stakeholders). The more stakeholder-sensitive this notion, the more types of value – and their tensions and trade-offs – must be considered. As a consequence, the whole concept of ‘business success’ fundamentally changes (Upward and Jones, 2016).

The TBL perspective is based on consideration of different types of value and *what* is to be achieved (Elkington, 1997), specifically the ecological, social and economic performance of companies. Sustainable development (WCED, 1987) underpins the TBL approach, extending accounting systems to cover non-financial dimensions as well (Lamberton, 2005). While no singular theory serves as the backbone of sustainable development (and hence the TBL approach), the arguments for SVC by companies are often rooted in theories concerning the social responsibility of businesses (cf. Bansal and Song, 2017; Carroll and Shabana, 2010; Garriga and Melé, 2004). Related to these theories are strategic approaches, such as the natural-resource-based view of the firm (Hart, 1995); approaches that combine considerations of social justice and inclusion with new business opportunities, such as the base of the pyramid (Prahalad, 2005); or primarily instrumental approaches that reconcile corporate social and financial performance (cf. Busch and Friede, 2018). Some authors, such as Stubbs and Cocklin (2008), suggest that alternative paradigms, such as ecological modernisation, underpin SBMs and SVC. This diversity of theories offers various opportunities to merge two or more arguments in favour of SVC, as several authors have done (see Table 1).

It can be argued that, in the business context, the TBL and stakeholder theory perspectives present overarching views with different yet complementary foci. The TBL approach adds additional performance dimensions to traditional financial accounting and emphasises *which types of value* are created (the what), while the stakeholder theory

approach focuses on *for whom* value is created (the who), which affects *the ways* in which value is created (the how).

In the absence of an integrative and holistic theory of SVC, bringing these propositions together in the form of multiple value creation (or TBL value creation) and value creation for stakeholders allows for further theorising about SVC. A future theory of SVC could embrace the TBL and stakeholder theories of value creation, but it might also go beyond these and merge them with further theoretical streams. This understanding of SVC, which implies different types of value as well as varying roles and expectations for different stakeholders, distinguishes SBM from traditional business model studies (Lüdeke-Freund and Dembek, 2017). In other words, from the point of view of SBM research, the notion of value creation is not limited to customer surplus or financial profits, but includes ecological, social and other types of non-financial value (cf. Schaltegger *et al.*, 2016; Upward and Jones, 2016).

As stated above, we must consider that both the traditional and sustainability-oriented views are normatively grounded (e.g. Agle and Caldwell, 1999; Breuer and Lüdeke-Freund, 2017). The most important difference between these views lies in their scope and the content of their normative underpinnings. While some may say that the sustainability and stakeholder-oriented view is normative and values-driven, the (implicit) decision to focus on certain stakeholders’ interests (e.g. customers, companies and investors) and not others’ (e.g. civil society, local communities, fringe stakeholders or organisations representing the natural environment) is *always* a normative decision. As Upward and Jones (2016, p. 101) state, ‘no designed artefact, such as a business model or an ontology of business models, is value-neutral’. Even if an explicit normative positioning is missing from most of the traditional business model literature, this ‘can be read as implicitly profit-normative’ (*ibid.*) Studying SBMs and SVC is one way to make the inherently normative characteristics of business activities explicit and transparent and to use them in a systematic and constructive way.

Table 1

Sources (alphabetically)	Definitions, main assumptions and references to sustainable value creation (SVC)	Literature streams/origins	Theoretical foundation/scope of value creation
Bocken <i>et al.</i> , 2013	The scope of value creation results from the relationships, exchanges and interactions that take place among stakeholders (Allee, 2011), which are represented by value flows within networks of stakeholders (den Ouden, 2012). Developing sustainable value propositions includes considering the value that is destroyed (negative outcomes), the value that is missed (currently non-captured value) and new value creation opportunities.	Sustainable business model innovation	<i>Primarily stakeholder-based; the scope of value creation includes the value that is proposed, the value that is destroyed and missed and new value opportunities</i>
Brennan and Tennant, 2018, p. 622	'Sustainable value is created when tangible factors of production (structural resources), including processes, business models, products, services and infrastructure, are brought into particular combinations with <i>ideas</i> of sustainability impact and sustainability <i>values</i> (cultural resources). Sustainability cultural resources include important concepts such as net positive benefits and the creation of "common good" value (Dyllick and Muff, 2016) and sustainability values, which have recently been recognized as pivotal to sustainable business model innovation (BMI) (Breuer and Lüdeke-Freund, 2017)' (orig. emphasis).	Network-centric business model innovation	<i>Structural and cultural resources as origins of value; negotiating the strengths of different stakeholders and situational logics results in (un-) sustainable value</i>
Dembek, York and Singh, 2018	Implicitly, SVC is defined as value creation for multiple stakeholders and the natural environment, considering non-financial forms of value as well as the value that is destroyed and uncaptured (Bocken <i>et al.</i> 2013; Yang, Evans, Vladimirova and Rana, 2017).	Business models at the base of the pyramid	<i>TBL and stakeholder-based; the scope of value creation includes the value that is destroyed and uncaptured</i>

Table 1: Exemplary definitions of sustainable value creation.

Sources (alphabetically)	Definitions, main assumptions and references to sustainable value creation (SVC)	Literature streams/origins	Theoretical foundation/scope of value creation
Evans et al., 2017, p. 600	Similar to Bocken et al. (2013), Evans et al. (2017) propose that the scope of value creation results from relationships, exchanges and interactions that take place among stakeholders (Allee, 2015), which are represented by value flows within networks of stakeholders (den Ouden, 2012). This leads to 'a holistic view of sustainable value integrating economic, environmental and social value forms' (see also Figure 1, p. 600).	Sustainable business model innovation	<i>TBL and stakeholder-based; the scope of value creation results from value flows within stakeholder networks</i>
Lüdeke-Freund, 2020, pp. 668-669	Business cases for sustainability are co-constructed by diverse stakeholders, and thus they can take different forms (Schaltegger, Hörisch and Freeman, 2019). This implies that value portfolios can consist of different kinds of value (e.g. dividends, customer solutions, employment, reduced environmental harm). Additionally, 'business cases for sustainability leading to value creation with and for stakeholders should be synonymous with <i>sustainable value creation</i> ' (orig. emphasis).	Sustainable entrepreneurship business models	<i>Primarily stakeholder-based; the scope of value creation results from different types of business cases for sustainability</i>
Upward and Jones, 2016, pp. 105-106	Upward and Jones (2016) propose that value can be defined as 'the perception by a human (or non-human) actor of a "fundamental need" (Max-Neef, Elizalde and Hopenhayn, 1991, p. 8) being met measured in aesthetic, psychological, physiological, utilitarian, and/or monetary terms' (p. 105). SVC should be measured as a 'single tri-profit metric [that] would be calculated as the conceptual net <i>sum</i> of the costs (harms) and revenues (benefits) arising as a result of a firm's activities in each of the environmental, social, and economic contexts in a given time period measured in units appropriate to each. A tri-profitable firm creates sufficient financial rewards, social benefits, and environmental regeneration, with sufficiency defined by stakeholders with the governance rights (power) to do so' (p. 106).	Sustainable business model innovation	<i>TBL and stakeholder-based; the scope of value creation results from stakeholders' fundamental needs and all harms and benefits of business activity</i>

Table 1: Exemplary definitions of sustainable value creation

Sustainable value creation through business models: The what, the who and the how

Current research directions: Articles in the special issue

The primary goal of the special issue was to motivate novel approaches to define and study SVC through business models, typically understood as the integration of ecological, social and economic value creation with and for stakeholders, as discussed above. Such approaches take into account the negative impacts on ecological systems and human societies, and, as a logical consequence, the tensions and trade-offs between different forms of value creation and different stakeholders (cf. Hahn, Figge, Pinkse and Preuss, 2010, 2018). This, in turn, leads researchers to extend the notion of value creation to include forms of value destruction. 'Truly' sustainable value creation is not only about reducing or avoiding harm by overcoming value destruction but also about achieving net-positive effects for a prospering natural environment and human livelihoods (Dyllick and Muff, 2016). This is a perspective that we can label as strong sustainability or strongly sustainable value creation (Upward and Jones, 2016). Last but not least, the challenge of surviving as a company (i.e. acknowledging the necessity of value capture at the level of organisations) would also be an element of SVC through business models.

As manifold research questions can be derived from these issues, we were open to any kind of theory, methodology or epistemology that could improve our understanding of SVC through business models. The articles contained in the special issue offer valuable insights into defining SVC more holistically through *value proposition design* (Vladimirova, 2019), studying SVC from a *process and social practice perspective* (Boons and Laasch, 2019), investigating the role of business models for *sustainable technologies in dynamic business environments* (Wadin and Ode, 2019) and *motivating sustainable organisational transformation* through circular business model innovation (Guldmann, Bocken and Brezet, 2019).

Doroteya Vladimirova (2019) presents a new tool and workshop facilitation process, the so-called

Sustainable Value Proposition Builder, which has been developed and tested to support the development and communication of value propositions for multiple stakeholders. This tool builds on a definition of sustainable value that comprises ecological, social and economic forms of value and considers the positive and negative value perceptions of stakeholders. This paper contributes to the special issue by offering a more holistic view of how value propositions can be designed and communicated to multiple stakeholders. It points to possibilities of integrating various forms of value creation and various stakeholder needs and interests.

Frank Boons and Oliver Laasch (2019) propose a new way of seeing business models. Drawing upon theories of practice, an approach stemming from sociology, these authors develop a process-oriented conceptualisation of business models. In their theory, business models are assemblages of pre-existing social practices that are continuously perpetuated by inclusive processes of enrolment (e.g. by members of an organisation). Furthermore, business models constantly compete (e.g. for resources), and thus all business models have relationships with other business models, whether symbiotic, competitive or parasitic. This paper contributes to the special issue by preparing a new theoretical ground on which SVC can be studied and understood as an emergent process of social practices.

Jessica Lagerstedt Wadin and Kajsa Ahlgren Ode (2019) provide detailed insights into how business models for sustainable (i.e. solar photovoltaic) technologies can adapt to their dynamic environments. The authors use a contingency framework to study business model dynamics in terms of business model adaptation and innovation. Environmental contingencies, such as changing policies and customer expectations, are related to business model elements (e.g. value proposition and revenue model) and how these can be used to adapt to environmental contingencies. Rich insights are derived from studying two different contexts: California and Germany. Introducing and scaling new technologies, such as solar photovoltaic, and being able to sustain these in dynamic business environments is an important way of creating sustainable value through business models.

The fourth paper in the special issue, by *Eva Guldmann, Nancy Bocken and Han Brezet* (2019), introduces an empirically grounded framework to assist circular business model innovation. The authors provide in-depth insights into the use of design thinking and a number of tools that can be used for circular business model innovation within existing organisations. Important stages and activities of introducing such innovation process within organisations are identified. The ability of companies to engage in transformational innovations that follow alternative paradigms, such

as moving towards the circular economy, is crucial to enhance their capabilities to leave ‘business as usual’ behind and contribute to SVC.

By relating these articles to the key topics proposed in the original call for papers (see Table 2), we see that adopting a relational perspective (e.g. stakeholder relationships, inter-organisational relationships and network settings) seems to be a common and fruitful approach. We also see that various theories (e.g. theory of practice and contingency theory)

Table 2

Topics addressed in the call for paper	Vladimirova (2019): Building Sustainable Value Propositions for Multiple Stakeholders: A Practical Tool (short paper)	Boons and Laasch (2019): Business Models for Sustainable Development: A Process Perspective (short paper)	Wadin and Ode (2019): Business Models for Sustainability: Change in Dynamic Environments (full paper)	Guldmann, Bocken, and Brezet (2019): A Design Thinking Framework for Circular Business Model Innovation (full paper)
What is sustainable value and how is it created?	X	n.a.	n.a.	n.a.
Which instruments can support sustainable value creation?	X	n.a.	(X)	X
How can sustainable value be created in relationships?	X	X	X	X
How can sustainable value creation be studied with novel approaches?	Theoretical considerations of value creation applied in <i>tool development</i> and <i>practitioner workshops</i>	<i>Theories of practice</i> used to develop a <i>process perspective</i> on business models for sustainable development	<i>Contingency theory</i> applied to <i>case studies</i> of business model change in dynamic environments	<i>Design thinking</i> framework for circular business model innovation derived from <i>case studies</i>

Table 2: Articles contained in the special issue.

and research methods (e.g. conceptual framework development, case studies, tool design and workshops) can be used to study SVC through business models. Less studied are more fundamental questions related to defining sustainable value and SVC and how it can be supported by certain instruments. Although our special issue offers innovative and rich insights into SVC through business models, there are plenty of open questions – and thus opportunities for future research.

Cornerstones of theorising about SVC

Based on our reading of the literature and the contributions to the special issue of *Journal of Business Models*, we discuss some cornerstones of theorising about SVC. This is not an attempt to offer one-size-fits-all definitions or to present a full-fledged theory. Rather, to address the research gap described in the introduction, we aim to think about how to structure a more systematic discussion of SVC through business models and how to prepare the ground for future theoretical work on this topic.

According to Lepak *et al.* (2007), some reasons for the lack of ‘consensus on what value creation is or on how it can be measured’ are the plurality of targets and sources as well as the fact ‘that value creation refers both to the content and process of new value creation’ (pp. 180–181). In response to these challenges, we propose, first, that it is necessary to acknowledge that the TBL and stakeholder theory perspectives are important foundations for the SBM discourse and, hence, SVC. Second, we propose thinking about the what, who and how of SVC using the four guiding questions introduced above. Third, as an underlying assumption, we propose embracing the inherently normative characteristics of value creation and using these in a systematic and constructive way.

The final proposal is more than just a philosophical exercise. It has become clear that the TBL and stakeholder theory perspectives require explicit acknowledgement of norms, values and subjectivity (e.g. that value *should* be defined in ecological and social terms and that all of a company’s stakeholders *should* be considered). Going beyond these two streams in particular and accepting the implications of normativity in general leads to an approach in

which a ‘consensus on what value creation is’ (*ibid.*) cannot be the primary goal of theorising – or at least performed at only a very high level of abstraction. A more appropriate goal would be to develop cornerstones that allow researchers to see and theorise about the pluralistic, relativistic and relational characteristics of SVC (e.g. the realist social theory-based approach to studying SVC proposed by Brennan and Tennant, 2018).

In the following, *SVC is understood as a process that is embedded in various stakeholder relationships and requires various stakeholders’ needs to be satisfied in various ways* (cf. Upward and Jones, 2016). Thinking about SVC involves coping with plurality, relativism and relationships. More detailed guiding principles to define ‘local truths’ or ‘local monism’ (cf. Baghrarian, 2004) can only be found in negotiations about, for example, the meaning of sustainable development, ecological and social justice and what is desirable. Therefore, the following discussion can offer only a general frame with which to think about the theoretical properties and process of SVC. Study of the actual content of SVC (i.e. the actual forms of value that are created) is left to other kinds of investigation that consider the local truths, norms, values and subjectivity of those involved as what they are: values-based expressions of what people really care about (cf. Breuer and Lüdeke-Freund, 2017).

What is value and what are its sources?

The notion of value has been subject to historical debates in philosophy, economics, psychology, sociology and many more areas (den Ouden, 2012; Ueda, Takenaka, Váncza and Monostori, 2009). It is one of those concepts for which, as a result of embracing its inherently normative characteristics, we must accept that ‘it depends’ is part of its definition. While more traditional approaches reduce the problem of defining value to concepts such as value for customers and the company, as mentioned above, the TBL and stakeholder theory perspectives demand a broader and more inclusive conceptualisation of value, which we term a *stakeholder-responsive interpretation of value*.

Such a conceptualisation is proposed by Upward and Jones (2016, p. 104): [a] strongly sustainable

firm requires the central concept of value is revised from the current “thin” definition as a source of individual or organizational enrichment, measured uniquely in monetary units’. Building on Max-Neef *et al.* (1991), who argue for ‘a sociological and human sciences conception of value and human values’ (Upward and Jones, 2016, p. 104), Upward and Jones (2016) introduce two notions to the SBM discourse that have been hardly considered to date. First, there are *fundamental needs* that must be met in aesthetic, psychological, physiological, utilitarian and/or monetary terms. Second, so-called *satisfiers* are the means of satisfaction (e.g. a well-crafted product, a safe home) and are aligned with the recipient’s worldview and needs. As an initial explanation, we can say that value is created whenever the activities of a company help to satisfy a fundamental need of a stakeholder or other beneficiary, which occurs when someone perceives a net benefit and, hence, additional utility, joy or so on.

The potential net benefit of a company’s offerings is perceived from the customer’s perspective, which is based on the customer’s fundamental needs, values, beliefs, opportunity costs and so on. These net benefits result from the different kinds of value, such as exchange value, use value, experience value, sign value and ideal value, that a customer associates with an offering (Bowman and Ambrosini, 2000; Breuer and Lüdeke-Freund, 2017; Lepak *et al.*, 2007). Even if we limit the conceptualisation of value to customer value, it is a complex bundle of different forms of value, which in turn leads to perceived net benefits. These bundles and their perceptions can vary from customer to customer and from stakeholder to stakeholder, which calls for a stakeholder-responsive conceptualisation of forms and sources of value. This is a significant extension of the concept of value, which traditionally focused on mere surplus and considered a limited number of stakeholders.

Offerings to customers are just one of many possible starting points. If we follow the relational view of stakeholder theory (Bridoux and Stoelhorst, 2016), we can easily identify numerous other stakeholder relationships (e.g. with employees, suppliers, financiers, local communities and civil society organisations) in

which companies are engaged (Freudenreich *et al.*, 2020; Upward and Jones, 2016). All of these relationships require specific forms and sources of value, or stakeholder-responsive ways of satisfying fundamental needs through satisfiers. Correspondingly, in the SBM discourse, different stakeholders are typically associated with different forms of value. These forms are often labelled as ecological, social and economic, roughly following a TBL-based approach. However, this is not an exclusive list, but a placeholder for the *value pluralism* that must be acknowledged when a stakeholder-responsive interpretation of value is applied (cf. Breuer and Lüdeke-Freund, 2017; Castellás, Stubbs and Ambrosini, 2018; Davies and Chambers, 2018). Much research needs to be done to really understand the plurality of stakeholder relationships and the forms and sources of value that lead to ‘truly’ sustainable value creation.

The Sustainable Value Proposition Builder proposed by Vladimirova (2019) in the special issue adopts a qualitative approach to identifying different forms of value, interpreted as benefits to and contributions from stakeholders. This view highlights the mutuality of stakeholder relationships and the notion of value creation with and for stakeholders (Freudenreich *et al.*, 2020). The aim of this new tool is to support value proposition design and facilitate stakeholder engagement to better understand the positive and negative aspects perceived by stakeholders and identify potential risks and opportunities for them in the early stages of business model development. Such an approach addresses the fundamental question of what value is and for whom it should be created.

For whom is value created?

In an early article on sustainable value creation, Hart and Milstein (2003) define SVC as maintaining and increasing shareholder value through business contributions to sustainable development. Their sustainable value framework considers time, management of current and future performance and management of internal and external stakeholders. However, it remains focused on benefits for the focal firm, which implies a rather narrow definition of the notion of sustainable value (for the firm) (cf. Hahn *et al.*, 2018). The current understanding of SBMs goes further and requires one to *consider the*

broader systems and stakeholder networks in which a company is embedded as well as acknowledge these as potential recipients of value (e.g. Abdelkafi and Täuscher, 2016). An SBM spans and is managed beyond organisational boundaries (Schaltegger *et al.*, 2016; Upward and Jones, 2016), which is a prerequisite for creating value for a broader range of stakeholders (Geissdoerfer *et al.*, 2018). Hence, the 'total value created' (Lüdeke-Freund, Massa, Bocken, Brent and Musango, 2016) by a company is a function of the boundaries of the value creation system under consideration (e.g. in terms of time, space and actors), which also determine which stakeholders are directly or indirectly involved and affected (Baumgartner and Rauter, 2017). When considering the resulting variety of stakeholders, it is important to also scrutinise different value creation processes and different forms of value at different levels (e.g. from local markets to global ecosystems).

While many have acknowledged this call to consider the plurality of stakeholders (Freudenreich *et al.*, 2020; Lüdeke-Freund and Dembek, 2017), the resulting necessity of a pluralistic (Brennan and Tennant, 2018) and relativistic approach to defining value creation has not been considered to the same degree. The same can be said for the various levels of analysis (e.g. individuals, organisations, networks and society). While there seems to be a general awareness for the need to reflect upon different analytical levels, substantial multi-level analyses of value creation are rare. Den Ouden (2012), for example, lists users, the organisation, the ecosystem and society as levels at which value creation can be studied. Likewise, Freudenreich *et al.* (2020) propose an analytical stakeholder value creation framework that includes various typical stakeholder groups, including customers, employees, business partners, financial stakeholders and societal stakeholders. However, in most cases, researchers still struggle to extend their investigations beyond typical stakeholders (see Table 3). Additionally, there is a general lack of detailed and theoretically informed analyses of whether and how value is created for typical and non-typical stakeholders. Such analyses require tools and metrics that most likely exceed the scope of traditional performance measurement systems.

Based on the above discussion, SVC is a *level-spanning, inter-temporal* and *spatially open notion* (cf. Hahn *et al.*, 2018) that requires a systems approach to define and measure which form of value is created for whom (Starik, Stubbs and Benn, 2016; Stubbs and Cocklin, 2008; Upward and Jones, 2016). Based on an analysis of multi-attribute utility functions, Tantalo and Priem (2016) demonstrate 'how value can be created for multiple essential stakeholder groups simultaneously' (p. 315). This highlights promising research directions for SVC studies to extend our ability to define and study value creation with and for 'all' stakeholders on 'all' levels.

Another important issue resulting from this systemic view of the recipients of value are tensions, trade-offs and paradoxes. These occur as companies have to cope with multiple and often conflicting goals simultaneously (Hahn, Pinkse, Preuss and Figge, 2015; Hahn *et al.*, 2010, 2018), which can lead to situations in which 'organizations promote their own economic growth at the expense of environmental and social goals' (Brennan and Tennant, 2018, p. 623). This means that the value captured by a focal company or another actor dominates all other needs and interests within a value creation system. Such situations are likely to occur as '[d]ifferent business models [...] bring partners together with differing access to resources and place them in particular power relations and situational logics' (ibid.). Therefore, 'organizations must direct time and effort toward recognizing and, to some degree, reconciling these differences' (Lepak *et al.*, 2007, p. 200). Continuing in a more proactive and constructive direction, a 'paradox perspective on corporate sustainability' has been proposed to overcome the typical subordination of sustainability goals to company goals (Hahn *et al.*, 2018). This is a new and inspiring approach that could inform future theorising about who can benefit from SVC. Approaches dealing with value destruction and ignored value creation opportunities (e.g. Bocken *et al.* 2013; Yang *et al.*, 2017) could be combined with a paradox perspective to better understand the tensions and trade-offs that occur with SBMs and SVC.

Table 3

Publication (alphabetically)	Stakeholder groups explicitly considered	Value created for stakeholder group
Bocken, Short, Rana and Evans, 2014	Customers	Use value
	Network actors	Transaction value
	Society	Societal benefits and impacts
	Environment	Environmental benefits and impacts
Boons and Lüdeke-Freund, 2013	Customers/users/consumers	Value proposition – measurable ecological and/or social value in concert with economic value; balanced fulfilment of customer needs
	Suppliers	n.a.
	Regulators	n.a.
	Competitors	n.a.
	Actors involved in the business model	(Distribution of) economic costs and benefits
	NGO	n.a.
	Society	n.a.
Evans <i>et al.</i> , 2017	Key stakeholder segments (including society, natural environment, customer, supplier, shareholders)	Forms of environmental value forms (renewable resources, low emissions, low waste, biodiversity, pollution prevention), social value (equality and diversity, community development, secure livelihoods, labour standards, health and safety) and economic value (profit, return on investments, financial resilience, long-term viability, business stability)
	Policy makers	n.a.

Table 3: Stakeholder groups and value creation for stakeholders considered in the SBM literature (Freudenreich *et al.*, 2020).

Publication (alphabetically)	Stakeholder groups explicitly considered	Value created for stakeholder group
Joyce and Paquin, 2016	Customer segments	n.a.
	Partners	n.a.
	Clients	Functional value
	Employees	Working conditions and personal growth initiatives
	Local communities	n.a.
	Suppliers	n.a.
	Society as a whole	Promoting positive values
	End users	Value proposition
Stubbs and Cocklin, 2008	Board, management, staff, shareholders and customers	Resources (people, profit, time or natural resources)
	Shareholders	Economic, social, environmental outcomes
	CEOs	n.a.
	Nature	n.a.
	Future generations	n.a.
Upward and Jones, 2016	Actors for whom the organisation exists	n.a.
	Actors affected	Value created or value destroyed
	Actors involved	n.a.

Table 3. Stakeholder groups and value creation for stakeholders considered in the SBM literature (Freudenreich *et al.*, 2020). (Continued)

Publication (alphabetically)	Stakeholder groups explicitly considered	Value created for stakeholder group
Yang <i>et al.</i> , 2017	Multiple stakeholders (such as customers, end users, suppliers, shareholders, governments and partners)	Monetary value as well as wider value for the environment and society

Table 3. Stakeholder groups and value creation for stakeholders considered in the SBM literature (Freudenreich *et al.*, 2020). (Continued)

What has not been considered so far is the processual nature of value creation, or how value creation emerges, unfolds, changes and disappears. Investigations of the paradoxes of value creation would benefit from a processual perspective, as the occurrence of tensions and trade-offs – and possible solutions – could be explored in processes; such a processual perspective would add the dimension of time and the possibility of different alternative trajectories. In the special issue, *Boons and Laasch* (2019) propose such a processual understanding of business models. Understanding value creation as a ‘multi-stranded dynamic process’ in which ‘normative criteria for business models for sustainable development are inherently processual’ (*ibid.*, p. 10) offers not only a new way of seeing, developing and studying business models but also new approaches to SVC.

How is value created?

The traditional view, introduced above, posits that value creation implies the provision of new use value and customer surplus to customers as well as the realisation of exchange value and financial profits for companies (Bowman and Ambrosini, 2000). This view focuses on the moment of exchange – implying a mainly transactional interpretation of value creation – and the conditions under which this exchange leads to value creation. However, our discussion so far has revealed that theorising about SVC requires a *relational interpretation of value creation* as the notions of stakeholder-responsive value creation and the embeddedness of business in systems and stakeholder networks require a much stronger focus

on the relationships between those involved in value creation (Freudenreich *et al.*, 2020).

The way in which value is created is often associated with processes in which new value is generated and in which stakeholders play different roles (cf. Lepak *et al.*, 2007). Different theories and concepts are used to describe and analyse these processes. Massa and Tucci (2013, p. 9), for example, describe a business model as a ‘systematic and holistic understanding of how an organization orchestrates its system of activities for value creation’. This view emphasises the activities underlying certain business processes as well as the notion of the value chain (DaSilva and Trkman, 2014; Porter, 1985; Ritter and Lettl, 2018). Rooted in traditional theories of value creation, supply-side value creation is based on the available resources (Barney, 1991; Wernerfelt, 1984) and the dynamic capabilities of a company (Teece, 2018). More recently, new perspectives offer insights into demand-side value creation (Massa *et al.*, 2017; Priem, Wenzel and Koch, 2018), a process in which value is created ‘by customers and other members of their ecosystems’ (Massa *et al.*, 2017, p. 92). Thus, the how of value creation can be studied from both the supply and demand side, with a focus on resources, capabilities, activities and business processes and how these are orchestrated in value chains and whole stakeholder networks. The moment in which value is created (i.e. a fundamental stakeholder need is met by an appropriate satisfier) cannot be limited to the moment in which new use value and money are exchanged or the employment of resources and capabilities to create a product or service. Rather, value

creation must be understood to include a *plurality of moments and processes in which new value can be created* (cf. the 'situational logics' of value creation discussed by Brennan and Tennant, 2018). This is an immediate consequence of the various stakeholder relationships in which a company is engaged and the various forms of value it can create with and for its stakeholders.

In the special issue, *Wadin and Ode* (2019) well illustrate the need to understand the plurality of moments and processes in which value can be created. By analysing cases in which companies adapted their solar business models to dynamic business environments, the authors found that different adaptations are needed for different business model elements. While a company's whole business model is subject to environmental dynamics, adaptations may be necessary in some of its elements (e.g. the value proposition and revenue model) but not others. In other words, maintaining the ability to create value requires differentiated adaptations of business model elements and stakeholder relationships to situational dynamics.

In addition to how value is created, it is important to consider who creates value, as those involved and their respective roles partly differ from the traditional view. In the context of SVC, an understanding of stakeholders as both contributors to and beneficiaries of value creation seems to be appropriate 'since the source that creates a value increment *may or may not* be able to capture or retain the value in the long run' (*Lepak et al.*, 2007, p. 181, italics added). There might be discrepancies between those stakeholders who contribute to value creation processes, those who are defined as beneficiaries and those who are able to capture a share of the total value created. Thus, processes of value creation need to be understood as collaborative and mutual processes in which stakeholders are not only recipients or providers of something valuable, but *can* be both *co-beneficiaries and co-creators* (*Freudenreich et al.*, 2020; *Khmara and Kronenberg*, 2018). The relational interpretation of value creation proposed above, which suggests a pluralistic perspective on value-creating processes, is thus complemented by the notions of *co-beneficiary and co-creator* and

collaborative value creation. Acknowledging the multiple roles played by different stakeholders is supposedly a major shift in perspective compared to traditional assumptions about value creation, which are typically based on narrow (but non-trivial) cost-benefit considerations.

Who captures value?

The traditional view typically assumes that a company and its customers are those who capture value. All other stakeholders, such as employees, suppliers, owners and other financiers, are often indirectly considered as costs (cf. *Bowman and Ambrosini*, 2000). This approach would suffice if financial value were the only relevant value. In this case, the costs of labour, supplies and capital would represent the value captured by the respective stakeholder. However, employees, suppliers and others are not only interested in financial income. Employees, for example, may also feel the need to belong to a group of people and to identify with an organisation's purpose, mission and vision. This fundamental need cannot be satisfied with a paycheck. Likewise, suppliers might wish to not only deliver goods to a customer but also cooperate with admirable companies. Reviewing the list of stakeholders and their potential non-financial needs and interests clearly shows that value capture cannot be limited to a company and its customers while the rest is seen as costs. Rather, thinking about value capture from a stakeholder-responsive, systemic and collaborative perspective requires one to think about *value capture from each single stakeholder's point of view*. It requires one to consider the particular forms of value that particular stakeholders wish to capture.

This way of looking at value capture has been partly established in the strategic management literature. *Garcia-Castro and Aguilera* (2015), for example, propose a model to analyse total value creation and the shares of this value that different stakeholders can appropriate. Their model considers value in economic terms (e.g. willingness to pay, price, costs and opportunity costs) and allows researchers to study the total value created (defined as the difference between willingness to pay and opportunity costs) and how it is allocated amongst those involved in value creation (e.g. customers, capital providers, management and employees). It also allows trade-offs between

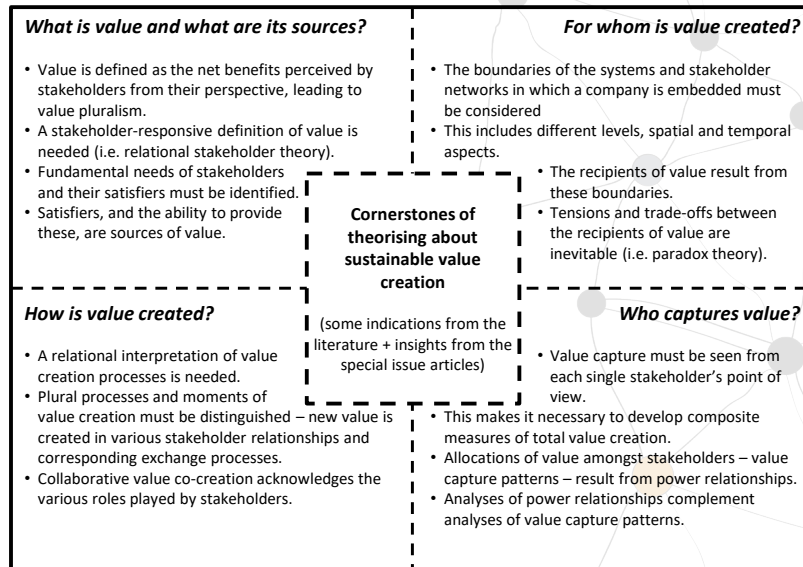


Figure 2: Theoretical framework of sustainable value creation.

stakeholders to become visible. Although this model is clear and stringent, due to many simplifications, it shows that even analyses in economic terms 'only' are already quite complex. Extending such models in line with the aforementioned principles of stakeholder-responsive, systemic and collaborative value creation will inevitably lead to even more complex analyses. However, if developing a theory of SVC and methods for its analysis are deemed important, this complexity must be accepted.

Finally, it has already been mentioned that the share of value capture by a particular stakeholder depends on the *power relationships* in which this stakeholder is involved and that these power relationships are typically asymmetric. Any analysis of value creation and capture should therefore be flanked by an analysis of the power relationships that lead to certain *patterns of value capture* (i.e. certain allocations of value within a stakeholder network). The normative principles that guide any theory and analysis of SVC, be it TBL-based, stakeholder theory-based or framed in any other way, will inevitably indicate which patterns of value creation and capture are more desirable and which are not.

The circular economy is such a case. Here, ecological value creation is typically seen as one of the main goals of changing the way in which business is done.

However, in the special issue, *Guldmann, Bocken and Brezet* (2019, p. 47) argue that it is 'clear that CBMI [circular business model innovation] involves challenges at the employee, organisational, value chain and institutional levels [...] [and that] [t]hese challenges relate to lock-ins in terms of value creation logic and structures and result in organisational inertia'. This often results from vested interests and established power relationships (cf. Chesbrough, 2010) regarding who captures value from 'business as usual.' Changing this is a very difficult task, but as shown by *Guldmann et al.* (2019), new ways of developing business models may help new value creation and capture patterns to emerge.

Summary and outlook

The notion of value creation is fascinating for various reasons. Not only does it imply that something valuable is newly emerging, or that needs are satisfied in a way not seen before, but also is it a key concept in domains such as strategic management and business model research. Sustainable value creation, which is an extension of the traditional understanding of value creation developed in fields such as corporate sustainability, sustainable and social entrepreneurship and SBM research, is no less fascinating. However, it seems to be less clear and understood.

Although SVC is increasingly used and discussed in the literature, there are huge gaps in terms of the who, what and how of value creation, particularly in the SBM field. This was the motivation for the 'Sustainable Value Creation Through Business Models' special issue of *Journal of Business Models* (2019, Vol. 7, No. 1). This paper serves as a guest editorial for the special issue, and it attempts to offer an initial theoretical framework of sustainable value creation based on our reading of selected publications from the SBM field as well as the articles contained in the special issue.

We discussed traditional assumptions about value creation from a strategic management perspective and confronted these with current views on SVC in SBM research, particularly the TBL and stakeholder theory perspectives. To open up the black box of SVC, support the development of conceptual clarity and facilitate future theories of SVC, it is proposed that traditional and sustainability-oriented views on value creation be contrasted and linked. The first result of this paper is an initial theoretical framework of SVC whose key themes are the what, who and how of value creation. By offering four dimensions along which SVC can be systematically studied and defined, the framework can structure the discussion of SVC. The following four guiding questions represent these theoretical dimensions.

What is value, and what are its sources?

While more traditional approaches reduce the definition of value to concepts such as value for customers and the company, the TBL and stakeholder theory perspectives demand a broader and more inclusive definition, which we term a *stakeholder-responsive interpretation of value*. Furthermore, different forms of value (e.g. relational or psychological value) at different levels (e.g. individuals, ecosystems) need to be created if multiple stakeholders are to be considered and their needs are to be satisfied. This shifts the focus from a company's resources and capabilities as sources of value to so-called satisfiers as necessary for responding to stakeholders' needs (e.g. products, social relationships or infrastructures).

For whom is value created?

As a direct consequence of the TBL and stakeholder theory perspectives, a greater variety of stakeholders need to be considered and partly engaged in value creation. This results in an understanding of SVC as a *level-spanning, inter-temporal and spatially open notion*, which in turn requires a *systems approach* to defining and measuring which forms of value are created for whom. Such a conceptualisation of SVC will inevitably require researchers to deal with tensions, trade-offs and, in some cases, paradoxical situations. Future research is needed to better understand the attributes of the created value that are required to speak of 'sustainable value'. How can we know that the new value created, i.e. the value added perceived from various stakeholders' points of view, has positive ecological, social and so on impacts?

How is value created?

As argued above, theorising about SVC requires a *relational interpretation of value creation* that places more attention on the systems and stakeholder networks in which companies are embedded as well as the relationships between stakeholders. Value creation, therefore, needs to be understood from each stakeholder's point of view (value creation *with* stakeholders), acknowledging the multiple ways and moments in which new value can be provided to them as well as the various roles played by stakeholders (*collaborative value co-creation*). An important question that was only indirectly discussed in this paper and calls for further research is whether and how value creation as such, i.e. the processes needed to satisfy certain stakeholder needs, can be designed in more sustainable ways. How can value creation – from a process perspective – become more sustainable?

Who captures value?

Again, as a consequence of the aforementioned assumptions, thinking about value capture from a stakeholder-responsive, systemic and collaborative perspective requires one to think about *value capture from each single stakeholder's point of view*. This requires consideration of the specific forms of value that particular stakeholders wish to capture (value creation *for* stakeholders) as well as the power relations among various stakeholders. *Power relationships* – a topic addressed by a small number of authors only – may be critical for understanding the

what, who and how of value creation in general and the resulting *patterns of value capture* among stakeholders in particular. As a result, it is necessary to develop composite measures of total value creation in conjunction with methods to analyse power relationships among stakeholders.

As a conclusion, we summarise some of the main propositions contained in the theoretical framework introduced in this paper. Sustainable value creation requires (i) a stakeholder-responsive definition and understanding of value; (ii) a systems approach that includes spatial and temporal aspects to identify the

recipients of value; (iii) a relational interpretation of and collaborative approach to value co-creation; and (iv) measures of total value creation that consider power relationships and value capture patterns that occur among stakeholders.

With the propositions and theoretical framework outlined in this paper, we hope to inspire various avenues of future research on SVC, especially critical studies that replace our initial thoughts with more refined assumptions about SVC through business models. Our work so far is, and will remain, just preliminary.

References

- Abdelkafi, N. and Täuscher, K. (2016), "Business Models for Sustainability From a System Dynamics Perspective", *Organization & Environment*, Vol. 29 No. 1, pp. 74-96.
- Agle, B.R. and Caldwell, C.B. (1999), "Understanding Research on Values in Business", *Business & Society*, Vol. 38 No. 3, pp. 326-387.
- Albert, H. (1985), *Treatise on critical reason*, Princeton University Press, Princeton, NJ.
- Allee, V. (2015), *Value networks and the true nature of collaboration*, Meghan-Kiffer Press, Tampa, FL.
- Amit, R. and Zott, C. (2001), "Value Creation in E-Business", *Strategic Management Journal*, Vol. 22 No. 6-7, pp. 493-520.
- Baghramian, M. (2004), *Relativism, Problems of philosophy*, Routledge, London.
- Bansal, P. and Song, H.-C. (2017). "Similar But Not the Same: Differentiating Corporate Sustainability from Corporate Responsibility", *The Academy of Management Annals*, Vol. 11 No. 1, pp. 105-149.
- Barney, J. (1991), "Firm Resources and Sustained Competitive Advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99-120.
- Baumgartner, R.J. and Rauter, R. (2017), "Strategic perspectives of corporate sustainability management to develop a sustainable organization", *Journal of Cleaner Production*, Vol. 140, pp. 81-92.
- Bocken, N.M.P., Rana, P. and Short, S.W. (2015), "Value mapping for sustainable business thinking", *Journal of Industrial and Production Engineering*, Vol. 32 No. 1, pp. 67-81.
- Bocken, N.M.P., Short, S.W., Rana, P. and Evans, S. (2013), "A value mapping tool for sustainable business modelling", *Corporate Governance: The International Journal of Business in Society*, Vol. 13 No. 5, pp. 482-497.
- Bocken, N.M.P., Short, S.W., Rana, P. and Evans, S. (2014), "A literature and practice review to develop sustainable business model archetypes", *Journal of Cleaner Production*, Vol. 65, pp. 42-56.
- Boons, F. and Laasch, O. (2019), "Business Models for Sustainable Development: A Process Perspective", *Journal of Business Models*, Vol. 7 No. 1, pp. 9-12.
- Boons, F. and Lüdeke-Freund, F. (2013), "Business models for sustainable innovation: state-of-the-art and steps towards a research agenda", *Journal of Cleaner Production*, Vol. 45, pp. 9-19.
- Bowman, C. and Ambrosini, V. (2000), "Value Creation Versus Value Capture: Towards a Coherent Definition of Value in Strategy", *British Journal of Management*, Vol. 11 No. 1, pp. 1-15.
- Brennan, G. and Tennant, M. (2018), "Sustainable value and trade-offs: Exploring situational logics and power relations in a UK brewery's malt supply network business model", *Business Strategy and the Environment*, Vol. 27 No. 5, pp. 621-630.

- Breuer, H., Fichter, K., Lüdeke-Freund, F. and Tiemann, I. (2018), "Sustainability-oriented business model development: principles, criteria and tools", *International Journal of Entrepreneurial Venturing*, Vol. 10 No. 2, p. 256.
- Breuer, H. and Lüdeke-Freund, F. (2017), "Values-based Network and Business Model Innovation", *International Journal of Innovation Management*, Vol. 21 No. 3, Article 1750028 (35 pages).
- Bridoux, F. and Stoelhorst, J.W. (2016), "Stakeholder Relationships and Social Welfare: A Behavioral Theory of Contributions to Joint Value Creation", *Academy of Management Review*, Vol. 41 No. 2, pp. 229-251.
- Busch, T. and Friede, G. (2018), "The Robustness of the Corporate Social and Financial Performance Relation: A Second-Order Meta-Analysis", *Corporate Social Responsibility and Environmental Management*, Vol. 25 No. 4, pp. 583-608.
- Buser M. and Carlsson, V. (2020), "Developing New Sustainable Strategy: The Struggle of Small and Medium Swedish Contractors Companies to Experiment with Business Models", *Journal of Business Models*, Vol. 8 No. 2, pp. 101-114.
- Carroll, A.B. and Shabana, K.M. (2010), "The business case for corporate social responsibility: a review of concepts, research and practice", *International Journal of Management Reviews*, Vol. 12 No. 1, pp. 85-105.
- Castellas, E.I., Stubbs, W. and Ambrosini, V. (2019), "Responding to Value Pluralism in Hybrid Organizations", *Journal of Business Ethics*, Vol. 159 No. 3, pp. 635-650.
- Chesbrough, H. (2010), "Business model innovation: opportunities and barriers", *Long Range Planning*, Vol. 43 No. 2/3, pp. 354-363.
- DaSilva, C.M. and Trkman, P. (2014), "Business Model: What It Is and What It Is Not", *Long Range Planning*, Vol. 47 No. 6, pp. 379-389.
- Davies, I.A. and Chambers, L. (2018), "Integrating hybridity and business model theory in sustainable entrepreneurship", *Journal of Cleaner Production*, Vol. 177, pp. 378-386.
- Dembek, K., York, J. and Singh, P.J. (2018), "Creating value for multiple stakeholders: Sustainable business models at the Base of the Pyramid", *Journal of Cleaner Production*, Vol. 196, pp. 1600-1612.
- den Ouden, E. (2012), *Innovation design: Creating value for people, organizations and society*, Springer, London.
- Dentchev, N., Rauter, R., Jóhannsdóttir, L., Snihur, Y., Rosano, M., Baumgartner, R., Nyberg, T., Tang, X., van Hoof, B. and Jonker, J. (2018), "Embracing the variety of sustainable business models: A prolific field of research and a future research agenda", *Journal of Cleaner Production*, Vol. 194, pp. 695-703.
- Dyllick, T. and Muff, K. (2016), "Clarifying the Meaning of Sustainable Business: Introducing a Typology From Business-as-Usual to True Business Sustainability", *Organization & Environment*, Vol. 29 No. 2, pp. 156-174.
- Elkington, J. (1997), *Cannibals with forks: The triple bottom line of 21st century business*, Capstone, Oxford, U.K.

- Evans, S., Vladimirova, D., Holgado, M., van Fossen, K., Yang, M., Silva, E.A. and Barlow, C.Y. (2017), "Business Model Innovation for Sustainability: Towards a Unified Perspective for Creation of Sustainable Business Models", *Business Strategy and the Environment*, Vol. 26 No. 5, pp. 597-608.
- Foss, N.J. and Saebi, T. (2017), "Fifteen Years of Research on Business Model Innovation", *Journal of Management*, Vol. 43 No. 1, pp. 200-227.
- Freeman, E. (2010), "Managing for Stakeholders: Trade-offs or Value Creation", *Journal of Business Ethics*, Vol. 96, pp. 7-9.
- Freudenreich, B., Lüdeke-Freund, F. and Schaltegger, S. (2020), "A Stakeholder Theory Perspective on Business Models: Value Creation for Sustainability", *Journal of Business Ethics*, Vol. 166 No. 1, pp. 3-18.
- Garcia-Castro, R. and Aguilera, R.V. (2015), "Incremental value creation and appropriation in a world with multiple stakeholders", *Strategic Management Journal*, Vol. 36 No. 1, pp. 137-147.
- Garriga, E. and Melé, D. (2004), "Corporate Social Responsibility Theories: Mapping the Territory", *Journal of Business Ethics*, Vol. 53 No. 1/2, pp. 51-71.
- Geissdoerfer, M., Vladimirova, D. and Evans, S. (2018), "Sustainable business model innovation: A review", *Journal of Cleaner Production*, Vol. 198, pp. 401-416.
- Guldmann, E., Bocken, N. and Brezet, H. (2019), "A Design Thinking Framework for Circular Business Model Innovation", *Journal of Business Models*, Vol. 7 No. 1, pp. 39-70.
- Hahn, T., Figge, F., Pinkse, J. and Preuss, L. (2018), "A Paradox Perspective on Corporate Sustainability: Descriptive, Instrumental, and Normative Aspects", *Journal of Business Ethics*, Vol. 148 No. 2, pp. 235-248.
- Hahn, T., Pinkse, J., Preuss, L. and Figge, F. (2015), "Tensions in Corporate Sustainability: Towards an Integrative Framework", *Journal of Business Ethics*, Vol. 127 No. 2, pp. 297-316.
- Hahn, T., Figge, F., Pinkse, J. and Preuss, L. (2010), "Trade-Offs in Corporate Sustainability: You Can't Have Your Cake and Eat It", *Business Strategy and the Environment*, Vol. 19 No. 4, pp. 217-229.
- Hart, S.L. (1995), "A Natural-Resource-Based View of the Firm", *Academy of Management Review*, Vol. 20 No. 4, pp. 986-1014.
- Hart, S.L. and Milstein, M.B. (2003), "Creating sustainable value", *Academy of Management Executive*, Vol. 17 No. 2, pp. 56-69.
- Joyce, A. and Paquin, R.L. (2016), "The triple layered business model canvas: A tool to design more sustainable business models", *Journal of Cleaner Production*, Vol. 135, 1474-1486.
- Khmara, Y. and Kronenberg, J. (2018), "Degrowth in business: An oxymoron or a viable business model for sustainability?", *Journal of Cleaner Production*, Vol. 177, pp. 721-731.
- Laasch, O. (2018), "Beyond the purely commercial business model: Organizational value logics and the heterogeneity of sustainability business models", *Long Range Planning*, Vol. 51 No. 1, pp. 158-183.

Lamberton, G. (2005), "Sustainability accounting—a brief history and conceptual framework", *Accounting Forum*, Vol. 29 No. 1, pp. 7-26.

Lepak, D.P., Smith, K.G. and Taylor, M.S. (2007), "Value Creation and Value Capture: A Multilevel Perspective", *Academy of Management Review*, Vol. 32 No. 1, pp. 180-194.

Lüdeke-Freund, F. (2020), "Sustainable entrepreneurship, innovation, and business models: Integrative framework and propositions for future research", *Business Strategy and the Environment*, Vol. 29 No. 2, pp. 665-681.

Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L. and Breuer, H. (2018), "The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation", *Sustainable Production and Consumption*, Vol. 15, pp. 145-162.

Lüdeke-Freund, F. and Dembek, K. (2017), "Sustainable business model research and practice: Emerging field or passing fancy?", *Journal of Cleaner Production*, Vol. 168, pp. 1668-1678.

Lüdeke-Freund, F., Freudenreich, B., Schaltegger, S., Saviuc, I. and Stock, M. (2017), "Sustainability-Oriented Business Model Assessment—A Conceptual Foundation", in Carayannis, E.G. and Sindakis, S. (Eds.), *Analytics, Innovation, and Excellence-Driven Enterprise Sustainability*, Vol. 17, Palgrave Macmillan US, New York, pp. 169-206.

Lüdeke-Freund, F., Massa, L., Bocken, N., Brent, A. and Musango, J. (2016), *Business Models for Shared Value - Main Report*, Network for Business Sustainability - South Africa, Cape Town.

Lüdeke-Freund, F., Schaltegger, S. and Dembek, K. (2019), "Strategies and drivers of sustainable business model innovation", in Boons, F. and McMeekin, A. (Eds.), *Handbook of Sustainable Innovation*, Edward Elgar Publishing, pp. 101-123.

Massa, L. and Tucci, C.L., "Business Model Innovation", in Dodgson, M., Gann, D.M. and Phillips, N. (Eds.), *The Oxford Handbook of Innovation Management*, Oxford University Press, Oxford, U.K., pp. 420-441.

Massa, L., Tucci, C. and Afuah, A. (2017), "A Critical Assessment of Business Model Research", *Academy of Management Annals*, Vol. 11 No. 1, pp. 73-104.

Max-Neef, M.A., Elizalde, A. and Hopenhayn, M. (1991), *Human scale development: Conception, application and further reflections*, Apex Press, New York.

Mazzucato, M. (2018), *The value of everything: Making and taking in the global economy*, First US edition, Public Affairs, New York.

Montemari, M., Chiucchi, M.S. and Nielsen, C. (2019), "Designing Performance Measurement Systems Using Business Models", *Journal of Business Models*, Vol. 7 No. 5, pp. 48-69.

Nielsen, C., Lund, M., Schaper, S., Montemari, M., Thomsen, P., Sort, J., Roslender, R., Brøndum, K., Byrge, C., Delmar, C., Simoni, L., Paolone, F., Massaro, M. and Dumay, J. (2018), "Depicting A Performative Research Agenda: The 4th Stage of Business Model Research", *Journal of Business Models*, Vol. 6 No. 2, pp. 59-64.

Nielsen, C., Montemari, M., Paolone, F., Massaro, M., Dumay, J. and Lund, M. (2019). *Business Models: A Research Overview*. London, Routledge.

Patala, S., Jalkala, A., Keränen, J., Väisänen, S., Tuominen, V. and Soukka, R. (2016), "Sustainable value propositions. Framework and implications for technology suppliers", *Industrial Marketing Management*, Vol. 59, pp. 144-156.

Pedersen, E.R.G., Gwozdz, W. and Hvass, K.K. (2018), "Exploring the Relationship Between Business Model Innovation, Corporate Sustainability, and Organisational Values within the Fashion Industry", *Journal of Business Ethics*, Vol. 149, pp. 267-284.

Porter, M.E. (1985), *Competitive advantage: Creating and sustaining superior performance*, Free Press, New York.

Prahalad, C.K. (2005), *The fortune at the bottom of the pyramid*, Wharton School Pub., Upper Saddle River, NJ.

Priem, R.L., Wenzel, M. and Koch, J. (2018), "Demand-side strategy and business models: Putting value creation for consumers center stage", *Long Range Planning*, Vol. 51 No. 1, pp. 22-31.

Richardson, J. (2008), "The business model: an integrative framework for strategy execution", *Strategic Change*, Vol. 17 No. 5-6, pp. 133-144.

Ritter, T. and Lettl, C. (2018), "The wider implications of business-model research", *Long Range Planning*, Vol. 51 No. 1, pp. 1-8.

Roslender, R. and Nielsen, C. (2019), "Performative research in the business model field: Exploring the underpinnings of studying business models in action", *Journal of Business Models*, Vol. 7 No. 2, pp. 31-36.

Santos, F.M. (2012), "A Positive Theory of Social Entrepreneurship", *Journal of Business Ethics*, Vol. 111 No. 3, pp. 335-351.

Schaltegger, S., Lüdeke-Freund, F. and Hansen, E.G. (2012), "Business cases for sustainability: the role of business model innovation for corporate sustainability", *International Journal of Innovation and Sustainable Development*, Vol. 6 No. 2, pp. 95-119.

Schaltegger, S., Hörisch, J. and Freeman, R.E. (2019), "Business Cases for Sustainability: A Stakeholder Theory Perspective", *Organization & Environment*, Vol. 32 No. 3, pp. 191-212.

Schaltegger, S., Lüdeke-Freund, F. and Hansen, E.G. (2016), "Business Models for Sustainability: A Co-Evolutionary Analysis of Sustainable Entrepreneurship, Innovation, and Transformation", *Organization & Environment*, Vol. 29 No. 3, pp. 264-289.

Schwartz, M.S. and Carroll, A.B. (2008), "Integrating and Unifying Competing and Complementary Frameworks: The Search for a Common Core in the Business and Society Field", *Business & Society*, Vol. 47 No 2, pp. 148-186.

Starik, M., Stubbs, W. and Benn, S. (2016), "Synthesising environmental and socio-economic sustainability models: a multi-level approach for advancing integrated sustainability research and practice", *Australasian Journal of Environmental Management*, Vol. 23 No. 4, pp. 402-425.

Stubbs, W. and Cocklin, C. (2008), "Conceptualizing a 'sustainability business model'", *Organization & Environment*, Vol. 21 No. 2, pp. 103-127.

Tantalo, C. and Priem, R.L. (2016), "Value creation through stakeholder synergy", *Strategic Management Journal*, Vol. 37 No. 2, pp. 314-329.

Tapaninaho, R. and Kujala, J. (2019), "Reviewing the Stakeholder Value Creation Literature: Towards a Sustainability Approach", in Leal Filho, W. (Ed.), *Social Responsibility and Sustainability, World Sustainability Series*, Vol. 29, Springer International Publishing, Cham, pp. 3-36.

Teece, D.J. (2010), "Business Models, Business Strategy and Innovation", *Long Range Planning*, Vol. 43 No. 2-3, pp. 172-194.

Teece, D.J. (2018), "Business models and dynamic capabilities", *Long Range Planning*, Vol. 51 No. 1, pp. 40-49.

Ueda, K., Takenaka, T., Vánca, J. and Monostori, L. (2009), "Value creation and decision-making in sustainable society", *CIRP Annals*, Vol. 58 No. 2, pp. 681-700.

Upward, A. and Jones, P. (2016), "An Ontology for Strongly Sustainable Business Models: Defining an Enterprise Framework Compatible With Natural and Social Science", *Organization & Environment*, Vol. 29 No. 1, pp. 97-123.

Vladimirova, D. (2019), "Building Sustainable Value Propositions for Multiple Stakeholders: A Practical Tool", *Journal of Business Models*, Vol. 7 No. 1, pp. 1-8.

Wadin, J.L. and Ode, K.A. (2019), "Business models for sustainability - change in dynamic environments", *Journal of Business Models*, Vol. 7 No. 1, pp. 13-38.

Wernerfelt, B. (1984), "A resource-based view of the firm", *Strategic Management Journal*, Vol. 5 No. 2, pp. 171-180.

Wheeler, D., Colbert, B., and Freeman, R.E. (2003), "Focusing on Value: Reconciling Corporate Sustainability, Sustainability and a Stakeholder Approach in a Network World", *Journal of General Management*, Vol. 28 No. 3, pp. 1-28.

Wirtz, B., Göttel, V. and Daiser, P. (2016), "Business Model Innovation: Development, Concept and Future Research Directions", *Journal of Business Models*, Vol. 4 No. 2, pp. 1-28.

Yang, M., Evans, S., Vladimirova, D. and Rana, P. (2017), "Value uncaptured perspective for sustainable business model innovation", *Journal of Cleaner Production*, Vol. 140, pp. 1794-1804.

Zott, C. and Amit, R. (2007), "Business model design and the performance of entrepreneurial firms", *Organization Science*, Vol. 18 No. 2, pp. 181-199.

Zott, C. and Amit, R. (2010), "Business model design: an activity system perspective", *Long Range Planning*, Vol. 43 No. 2/3, pp. 216-226.

Zott, C., Amit, R. and Massa, L. (2011), "The Business Model: Recent Developments and Future Research", *Journal of Management*, Vol. 37 No. 4, pp. 1019-1042.

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Business Model Canvas Insights for the Adoption of International Patient Summary Standards in the Mhealth Industry

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Abstract

Purpose: This article intends to present and discuss two promising business models for deploying IPS (international patient summary) standards in mobile health (mHealth) apps, enhancing the value brought by standards, in particular by HL7 (Health Level Seven International) of the FHIR (Fast Healthcare Interoperability Resources) for IPS. More specifically, it will explain how these standards may be understood as the strategic and financial incentives for organisations - and nations - to adopt the IPS.

Approach: A thorough analysis of concepts will be followed by the presentation of a business canvas for mHealth applications, that aggregates basic information on a common framework for the adoption of IPS standards.

Findings: To better understand this framework, two illustrative use cases (Disaster management and MOCHA - Models of Child Health Appraised/Vaccination) are presented and the benefits of IPS standard adoption in these situations are specifically highlighted as they may translate better quality care and well-being and, at the same time, represent reduction of costs on health-related expenditure.

Originality: This article is a summary of work developed specifically as part of the Trillium II project, primarily by collaboration by the organisations represented by the authors. Logically, it uses concepts previously developed, and referenced in the text as appropriate, however the authors maintain that the business models presented represent an original synthesis of these concepts specifically appropriate to the task of encouraging widespread adoption of the HL7 FHIR IPS.

Keywords: Patient Summary; Standards; mHealth apps; Electronic Health Records; Business models

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Introduction

This paper identifies and discusses two possible business models to be used in deploying patient summary standards in mobile health (mHealth), thereby enhancing the value brought by standards, in particular Health Level 7 International (HL7) of the Fast Healthcare Interoperability Resources (FHIR) for the International Patient Summary (IPS),² More specifically, it explains how these standards may be understood as the strategic and financial incentives for organisations – and nations – to adopt the IPS.

The Trillium-II project³ responded to the EU-US interoperability roadmap call (SCI-HCO-14-2016) of the European Union Research and Innovation Horizon 2020 Programme to realize as its key recommendation: to advance IPS standards to enable people to access and share their health information for emergency or unplanned care anywhere and as needed. Connecting regional or national eHealth projects to standardization to highlight best practices and share resources where possible was another aspiration for Trillium II, towards the creation of a global IPS community of practice for digital health innovation. To this end, Trillium partners aimed to identify relevant projects and use cases of interest that help validate and promote the use of IPS standards in demonstrations, readiness exercises, and other pilot projects. This project activity responsible for this task was “Explore business models for patient summary standards adoption in mHealth apps” and its main outputs and conclusions are presented in the following pages.

Concepts and background

In order to better understand the content of the paper, some basic concepts are briefly outlined.

¹ HL7 (2020 last update), International Patient Summary Implementation Guide, available at: hl7.org/fhir/uv/ips/index.html;

² Hausam R., Cangoli G. (2020 last update), International Patient Summary (IPS) FHIR Repository, available at: <https://github.com/HL7/fhir-ips>.

³ The Trillium II project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 727745 (<https://trillium2.eu/>).

1. *The International Patient Summary (IPS)* is a concise document or set of information components that can inform clinicians at the point of care about relevant personal health information such as conditions, allergies, medication. IPS information is useful in planned care but is critical to the safety of the patient when an unscheduled or unplanned health care event occurs, and the patient's clinical history is unknown to the attending clinician(s). In such cases it may be the only source of information available to support the clinical process and decision making, and its absence may have life changing or life-threatening consequences for the patient. An IPS provides information needed for healthcare coordination and for the continuity of care.

There are considerable benefits to the patient if an accurate and up to date IPS is available at the point of care and conversely there are the associated high risks and costs for that person if it is unavailable. In addition to the patient safety aspects, for an organization, the absence of IPS information can be costly and wasteful of both clinical and administrative resources. IPS is not the same as a patient's full electronic health record; it is often an extract of the full record, so it does not include the detailed previous history, e.g. detailed history of medication or a comprehensive account of each health condition and contact with the health system that a person may have had. The objective of the IPS is to provide sufficient, relevant and usable information, fit for purpose at the point of care⁴ optionally with links to further information:

“A Patient Summary is an identifiable ‘dataset of essential and understandable health information’ that is made available “at the point of care to deliver safe patient care during unscheduled care [and planned care] with its maximal impact in unscheduled care”; it can also be defined at a high level

⁴ Joint Initiative Council (2018), Patient Summary Standards Set. Guidance Document v1.0, January 2018, available at: http://www.jointinitiativecouncil.org/registry/Patient_Summary_Standards_JIC_Jan_2018.pdf.

as: 'the minimum set of information needed to assure healthcare coordination and the continuity of care'.⁵

"IPS is a minimal and non-exhaustive Patient Summary, specialty-agnostic, condition-independent, but readily usable by all clinicians for the unscheduled (cross-border) care of a patient"⁶.

"A Patient Summary provides background information on important aspects such as allergies, current medication, previous illnesses and surgeries, etc. These are necessary for the proper treatment of a patient abroad, especially when there is a language barrier between the healthcare professional (HP) and the patient."⁷

2. *Mobile Healthcare (mHealth)* is a second relevant concept. It refers to the use of apps to allow users to monitor, evaluate and improve their health using data recorded by their smartphones and other mobile devices. While apps of this type clearly provide a vastly useful service to their users, the data the apps record – e.g. heart rate, blood-sugar levels, general fitness, behavioural data etc. – is highly sensitive. Therefore, mobile health apps must be designed in such a way that the privacy of the end users is optimally protected. Similarly, these apps have the potential to empower users, provided that the users receive sufficient insight into the functioning of the app and are able to assess more easily which of the many apps on the market meet their privacy and safety

concerns. In addition, these apps can increase patient satisfaction and understanding, while empowering them to take charge of their own health. mHealth apps have the potential to make healthcare professionals' work more efficiently and reduce the cost of healthcare, resulting in the current availability of more than 325,000 mHealth. A stream of new, exciting products and services are being launched every day.⁸ When creating an app for the mHealth space, there is a plethora of rules and regulations that determine how they should handle data privacy and security, as well as efficacy and safety. All these rules and regulations can have a chilling effect on innovation in the mHealth space. Certifications may be the future of mHealth apps, but this is still a very new space that may be explored also as an opportunity for new business models.

3. *Standards.* Most importantly to Trillium II's purposes, compliance with relevant standards may be a differentiating factor for apps to sell their potential to the consumer and build their trust. Therefore, analysing how standardization is enforced is a cornerstone to evaluate future business models for IPS standards in this sector.
4. In this paper a *Business Model* is understood to describe the rationale of how an organization creates, delivers and captures value, in economic, social, cultural or other contexts. The process of business model construction and modification is widely referred to as business model innovation, and forms a part of business strategy⁹.

Finally, the term B2B stands for *business to business* and refers to businesses who sell products and services to other businesses instead of to consumers¹⁰. This can include everything from invoicing software

⁵ eHealth Network (2013), Guidelines on minimum/nonexhaustive Patient Summary dataset for electronic exchange in accordance with the Cross-Border Directive 2011/24/EU. Release 1, adopted on 19 Nov 2013, available at: https://ec.europa.eu/health/sites/health/files/ehealth/docs/guidelines_patient_summary_en.pdf.

⁶ The Implementation Guide for the International Patient Summary is hosted in an ad hoc wiki identifying the required clinical data, vocabulary and value sets, available at: http://international-patient-summary.net/mediawiki/index.php?title=Main_Page

⁷ eHealth Network (2016), Guideline on the electronic exchange of health data under CrossBorder Directive 2011/24/EU. Patient Summary for unscheduled care, Release 2, adopted on 21 Nov 2016, available at: https://ec.europa.eu/health/sites/health/files/ehealth/docs/ev_20161121_co10_en.pdf.

⁸ Pohl M (2017), 325,000 mobile health apps available in 2017 – Android now the leading mHealth platform, articles based on Research2Guidance mHealth App Developer Economics Study 2017, available at: <https://research2guidance.com/325000-mobile-health-apps-available-in-2017/>.

⁹ Geissdoerfer M., Savaget P., Evans S. (2017), The Cambridge Business Model Innovation Process. *Procedia Manufacturing*. 8: 262-269. doi:10.1016/j.promfg.2017.02.033.

¹⁰ Market Business News, What is B2B or business-to-business? Definition and examples, accessed in 2020-10-06, <https://marketbusinessnews.com/financial-glossary/b2b>.

to office furniture to security services for office buildings. Digital goods, physical products, and services can all be included here. B2B's counterpart is B2C, which stands for business to consumer. The focus here is selling products, goods, and services to customers for personal use. *Business to government* (B2G) is a business model that refers to businesses selling products, services or information to governments or government agencies. B2G networks or models provide a way for businesses to bid on projects or products that governments might purchase or need for their organizations. This can encompass public sector organizations that propose the tenders or offers. B2G activities are increasingly being conducted via the Internet through real-time bidding. The B2G acronym is widely referred to in public sector marketing¹¹.

Stakeholder identification

As one component of the broader Trillium II project¹² a stakeholder identification exercise was pursued, resulting in the identification of a wide range of potential stakeholders, most of whom are expected to be positive and supportive to Trillium II's objectives:

- Patients and their carers;
- Health and care professionals, including organisations and professionals in Europe, China, Australia, Japan and the United States of America (USA), international emergency agencies (Doctors without Borders, Red Cross, IMC ...) and other country-based organisations;
- Early organisational users including Foreign Affairs Ministries, University educational exchange departments, Military staff serving abroad, North Atlantic Treaty Organization (NATO), tour operators and cruise ships, travel organisers, tourism offices;

¹¹ Market Business News, What is B2G or business-to-government? Definition and examples, accessed in 2020-10-06, <https://marketbusinessnews.com/financial-glossary/b2g/>.

¹² Lowe C. et al. (2018), Deliverable D7.1 Stakeholder analysis and dissemination plan, published in the frame of Trillium II project, available at: <https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5bb4ff7dc&appId=PPGMS>.

- Indirect beneficiaries including travel insurance organisations, Healthcare provider organisations (public and private), Community care organisations (including civil protection, social care, and integrated care), National health ministries and their agencies, 112/911/999 service providers, Patient associations, e.g. European Patient Forum and disease specific organisations such as the European Heart Association;
- Health and Care Information Technology/Service vendors and national eHealth agencies i.e. patient summary providers;
- Transnational organisations including the European Commission (DGs CNECT, Sante, Grow, Competition, Research and Innovation, ECHO), World Health Organisation (WHO), other United Nations (UN) Agencies, such as UNHCR, IOM, UNICEF, IMO; and
- Project team members, including members of the steering committee of the IPS Community of Practice for digital health innovation.

From this comprehensive list of stakeholders, the following were found to be the most crucial for analysis in regard to the development of the business strategy and models:

- developers
- governments
- healthcare providers
- insurance providers
- health and care professionals
- citizens

Empirical insights

The Business Model Canvas (BMC), developed by Osterwalder and Pigneur (2010), is the most widely recognised strategic management and lean start-up template used for developing new or documenting existing business models. It is a visual chart ('canvas') incorporating elements describing the value proposition, products, infrastructure, customers and finances of a firm, designed to assist businesses in aligning their activities by identifying potential

trade-offs. The BMC was recognised to be of potential utility to participants in the Trillium-II project in realising their objective promoting the adoption of IPS standards within the evolving mHealth industry.

Two potential BMCs were developed based on experiences consequent on involvement in two very different case settings. The first case relates to the benefits derived from IPS standards adoption in the context of disaster management. By contrast the second case relates to how IPS standards can be utilised to enhance child health appraisal and child vaccination activity.

Case 1: Disaster management experience from EU Modex Patient with IPS on their mobile

This case highlighted the cost savings that could accrue to national emergency services from improved management of teams and more effective emergency response, as a result of embedding IPS standards on individuals' mobile phones. These savings are potentially large; for example, in the UK, in 2003 the Fire Service reckoned that every person lost in a house fire costs the nation £1m¹³. In Portugal, in 2017, the fire losses implied over 523 million euros¹⁴ and in the US the average fire injury is estimated at \$128,800 (2013 US\$)¹⁵.

The Trillium-II project participated in the 5th European Union Module Exercise (EU MODEX-Ro) to evaluate the utility of the International Patient Summary (IPS) in the context of a disaster management and emergency response civil protection exercise with

participation of 28 countries. EU MODEX-Ro was the largest medical exercise in the history of the European Union with more than 3500 participants and by number of teams and participants it was the largest Medical Module Exercise within the framework of the Union Civil Protection Mechanism with participants from all member states, 600 role players and 2000 medical injects. The EU MODEX-Ro exercise scenario involved a devastating earthquake of 7.5 Richter in Bucharest. At the request of the Romanian government, the EU responded by, amongst others, sending a large and highly skilled Emergency Medical Team (EMT), merging on the spot with an Israeli IDF, an EMT-3 (level 3 means fully operational field hospital).

The value of the IPS available in the smartphone of a victim in the aftermath of a disaster was assessed at different levels of disaster management. The IPS comprises key elements of a person's health profile as critical problems and conditions, allergies, medication, vaccinations, aiming to serve as a window to a person's health data prior to the disaster. During the EMT-3 shifts on October 16, 2018, 20 earthquake victims (role players) arrived in groups with other medical cases to the mobile field hospital for treatment. The victims had the IPS on their mobile phones and showed it to the EMT team.

The visual presentation of specific medical case injects was assessed on three different apps developed by GNOMON (eHealthPass), SPMS (MySNS), and SRDC (Care Planner of the C3Cloud project), as well as in free text in discussions with the Italian, Austrian, and Israeli medical teams:

1. *eHealthPass* enables patients to carry their medical information (medical record, vaccination list, prescriptions calendar, appointments with doctors, etc) on their smartphone and empowers them to gain control of their own data by determining who will have access to which piece of information. In the context of the Bucharest exercise, *eHealthPass* facilitated the demonstration of the IPS on the victims' smartphones and additionally it incorporated the produced encounter report on the victims' medical record. European Mobile Field Hospital information

¹³ Office of the Deputy Prime Minister (2005), *The Economic Cost of Fire: estimates for 2003*, March 2005, London, available at: <https://webarchive.nationalarchives.gov.uk/20120919224305/http://www.communities.gov.uk/documents/corporate/pdf/145111.pdf>

¹⁴ Pedro A. (2017), *Incêndios custaram cerca de 613 milhões de euros*, published on *S//Portugal* on 12 Oct 2017, available at: <https://www.sabado.pt/portugal/detalhe/os-custos-associados-ao-incendio-de-pedrogao-grande>.

¹⁵ Yellman, M. A., Peterson, C., McCoy, M. A., Stephens-Stidham, S., Caton, E., Barnard, J. J., Padgett, T. O., Jr, Florence, C., & Istre, G. R. (2018). Preventing deaths and injuries from house fires: a cost-benefit analysis of a community-based smoke alarm installation programme. *Injury prevention: journal of the International Society for Child and Adolescent Injury Prevention*, 24(1), 12-18. <https://doi.org/10.1136/injuryprev-2016-042247>.

system developed by Leipzig University accessed and retrieved IPS and subsequently produced the encounter report retrieved by eHealthPass.

2. MySNS was developed by SPMS in Portugal, and allows presentation of IPS related information in different cards information on vaccinations, allergies, etc. and is available to all Portuguese citizens.
3. The SRDC adaptive care planner accesses the IPS and can assist health professionals to formulate a care plan based on the most recent professional guidelines covering the care of patients already suffering from chronic diseases including diabetes, heart failure and renal failure. It is a technology tested in the C3Cloud project, which could appeal to social workers dealing with earthquake victims in the period following the disaster, while still in the hospital or evacuation camp. The adaptive Care Planner also allows medical professionals to quickly review the medical summary of a patient by processing and visualizing the IPS.

The HL7 FHIR IPS format used has been the result of collaboration between CEN and HL7 and provides a refined representation of the IPS used in the Connecting Europe Facility (CEF) eHealth Digital Services Infrastructure (eHDSI).

In the exercise earthquake incident medical cases were evaluated both with and without IPS information. In this way, Trillium-II assessed the advantage of having an IPS as a document or as set of information blocks or parts e.g. medications, allergies, etc., in real emergency situations, by developing several in depth interviews (9 interviews and 11 interviewees)¹⁶. They reflected the importance of keeping a photo in the IPS as a means of confirming identification and supporting the language of the country where the disaster occurs. They also illustrated the importance of the user interface design. Depending on the setting where information is used

¹⁶ Thiel R. et al. (2019), D6.2 Establishing the value case for the international patient summary: indicators and results, published in the frame of Trillium II project, available at: <https://ec.europa.eu/research/participants/documents/downloadPublic?documentIds=080166e5c54d8e9b&appId=PPGMS>.

and the specific medical case, different elements of the IPS were considered of higher importance. Whereas, in the Emergency Room, physicians stated the medical background is of lesser importance, physicians at the field hospital's Ward believed their work could benefit the most from the IPS. Additionally, as part of the integration with the EUMFH Electronic Health Record system (EHR), which can provide long-term medical relief to the earthquake victims, the relevant information (procedures, medication, other medical actions, etc.) is available to the team accompanying the patient as an encounter report, which can also be imported to GNOMON's eHealthPass mHealth app.

It became evident, from the experience gained in EU Modex-RO, that the integration of IPS in disaster management scenarios results in low cost-benefit ratios, which makes it an attractive scenario for a business model that could be government-lead with national authorities being the leading costumers of the supported IPS services.

Based on the experiences of the exercise, the BMC presented in table 1 was developed. It incorporates the various components valuable for this use case and displays the value proposition it brings to citizens and mHealth app user organisations, that were identified as the most direct users/buyers of the model. As noted at the beginning of this section, this canvas represents the more generic portrait of this business model and not only the disaster management one, but incorporates all the relevant information for this specific situation as well.

Case 2: Child health - MOCHA home-based records and the European Vaccination Card

The second case relates to the European project MOCHA: "Models of Child Health Appraisal"¹⁷, which aims to define optimal models of primary child health care that have potential of transferability to other EU countries. After productive discussion with the World Health Organisation Child and Adolescent Health and Development Division¹⁸, MOCHA has undertaken an

¹⁷ The MOCHA project is funded by the European Commission through the Horizon 2020 Framework under the grant agreement number: 634201. <http://www.childhealthservicemodels.eu/>.

¹⁸ <http://www.euro.who.int/en/health-topics/Life-stages/child-and-adolescent-health>

Table 1.

Key Partners & Suppliers	Key Activities	Value Proposition	Customer Relationships	Customer Segments
<p>Key partners:</p> <ul style="list-style-type: none"> • Healthcare Providers: need to incorporate IPS in their eHealth strategy to cover safer patient mobility needs • Health authorities: they set the certification criteria for the apps, thus enhancing the demand for specific services and standards • Emergency services and civil protection: need to use IPS in eHealth apps to access valuable information for accidents and emergency response • Telecomm companies: they are increasingly interested in incorporating health services in their digital offer • Mobile health companies developing complementary apps • Healthcare Software Providers: seeking for new services to incorporate in the EHR or HIS they offer/manage • Venture capitals/investors: seeking for innovative breakthrough services • Insurances: they seek for IPS as additional service to offer to clients and benefit data collection from IPS to better assess health related risk • Healthcare professional associations: they influence the offer and guide the demand for mHealth apps embedding specific services and standards by testing and validating apps <p>Key suppliers:</p> <ul style="list-style-type: none"> • SDOs • Terminology organizations 	<ul style="list-style-type: none"> • Integration of IPS in mHealth app • Promotion and marketing actions to create awareness of the added value of having mHealth apps complying with IPS standards • Participation in standardization groups • Participation in data-thons, connectathons, and similar. <p>Key Resources</p> <ul style="list-style-type: none"> • HL7 FHIR Foundation • Trillium II digital health innovation community • eHDSI Resources and Governance • Agreements with terminology organizations (SNOMED) • Standardization groups • Resources such as datasets, servers and tools provided by the SDOs 	<p>We may distinguish different types of values generated by the adoption of the IPS in mHealth apps:</p> <p>Value for citizens:</p> <ul style="list-style-type: none"> • Ease cross border health data mobility • Increase safety in travelling • Ease emergency and disaster response • Ease chronic disease self-management <p>Value for mHealth app user organizations:</p> <ul style="list-style-type: none"> • By adopting the IPS they are provided with a set of resources to enhance the services they are offering • Be part of a co-creation environment for building and expanding the IPS components • More easily integrate with or be acquired by mainstream companies 	<p>Although citizens and patients and, more in general, citizens are the final beneficiaries of the IPS integrated in the mHealth apps they use, different types of customers and, thus, customer relationship may be envisaged:</p> <ul style="list-style-type: none"> • Citizen as direct clients of the mHealth app developing company (B2C relationship): the citizens themselves search for the product addressing their needs in a marketplace, pay for subscription or use, review the apps and contribute in iterative co-design processes by providing their feedbacks. Such processes are encouraged or led by patient organizations. • Healthcare providers or mainstream telecom providers as clients (or even buyers of the whole mHealth company) in a B2B approach. • Health authorities as direct interlocutors of the mHealth companies as data third party suppliers setting minimum criteria to be complying with (B2G approach). <p>Channels</p> <ul style="list-style-type: none"> • Online marketplaces for apps • Apps prescribed as clinical services by health professionals • Apps tested/validated/recommended by patients' associations or healthcare professional societies • Apps integrated in mainstream devices • Cross sector collaboration (e.g. services offered by work insurances to expat workers) 	<ul style="list-style-type: none"> • Citizens In particular those benefiting of cross border healthcare services: <ul style="list-style-type: none"> - Tourists - Chronic patients - Expat workers • Healthcare professional associations (e.g. EU Society of Hypertension, etc.) • Healthcare provider organisations (e.g. hospital, primary care provider) • Insurers • Patient advocacy organizations • Medical tourism / hospitality organizations • Other digital health companies and EHR/PHR/HIS software providers

Table 1: Business model canvas for IPS standards adoption in mHealth

Cost Structure	Revenue Streams
<p>The Cost Structure is:</p> <ul style="list-style-type: none"> • value driven, thus less concerned on cost minimization and more focused on value creation by enhancing the services offered by the app incorporating the IPS; • characterized by "economies of learning" meaning here that incorporating the IPS gives them the opportunity to know in advance the key information to be searched for and its format and may access to a set of resources such as training, servers, and tools provided by the SDOs which reduce considerably their R&D and integration costs. <p>Main categories of costs are software development; integration costs; training; personal assistance and software maintenance; certification; standardisation training and membership fees.</p>	<p>Key types of revenues envisaged for mHealth companies are:</p> <ul style="list-style-type: none"> • Subscription/download fees following e.g. medical prescription of the mHealth app, recommendations formulated by patients' associations or healthcare professionals' societies • Usage fees • Agreements with healthcare providers, insurers which outsource the development of their own apps • Acquisition by mainstream devices or OEM Revenue sharing on end to end services

Table 1: Business model canvas for IPS standards adoption in mHealth (Continued)

in-depth investigation to find out more about the existence and use of home-based records in the EU and EEA countries. A home-based record (also known as a 'parent held record') is a record of a child's growth, development and utilisation of public health/preventive health services. It is normally issued at birth and held by the parents. Traditionally the record was a paper booklet but some countries now use digital platforms, including Citizen Patient Portals. In a home-based record, a health professional adds key information about the child, but in some cases the parent(s) and other professionals also make entries. The MOCHA Home Based Records report¹⁹ investigates the extent of use of such records, and how they fit into the delivery of primary care services to children in the digital age.

There is considerable heterogeneity between primary care systems that have evolved in individual national cultural environments. MOCHA studied how the transfer of models or their individual components can be achieved across nations, using examples of combinations of settings, functions, target groups and tracer conditions. There are many factors that determine the feasibility of successful transfer of these from one setting to another, which must be recognised and considered. These include the environment of the care system, national policy

¹⁹ Deshpande S. et Al. (2018), Home Based Records, published in the frame of MOCHA project in dialogue with Dr. Martin Weber, WHO Regional Office for Europe, Sep 2018, available at: <https://www.childhealthservicesmodels.eu/wp-content/uploads/R15-Home-Based-Records-Report.pdf>.

making and contextual means of directing population behaviour – in the form of penalties and incentives, which cannot be assessed or expected to work by means of rational actions alone.

One positive finding evident in the MOCHA report is shown by the design elements present in a home-based record across EU/EEA countries (page 23). From the list below, almost all the countries collect the first 6 items as part of their home-based records and when referring to immunisation, apart from Ireland which only has information on some service areas, all countries include this feature in their regular data collection:

1. Birth and postnatal data
2. Allergies and other alerts
3. Height and weight measurements
4. Immunisation
5. Developmental checks
6. Long-term conditions
7. Prescribed medication
8. Urgent referral plans for long-term conditions
9. Plan of care and services
10. Other

In order to assess transferability, the MOCHA project developed a list of criteria, summarised in a PIET-T process, that identifies key Population

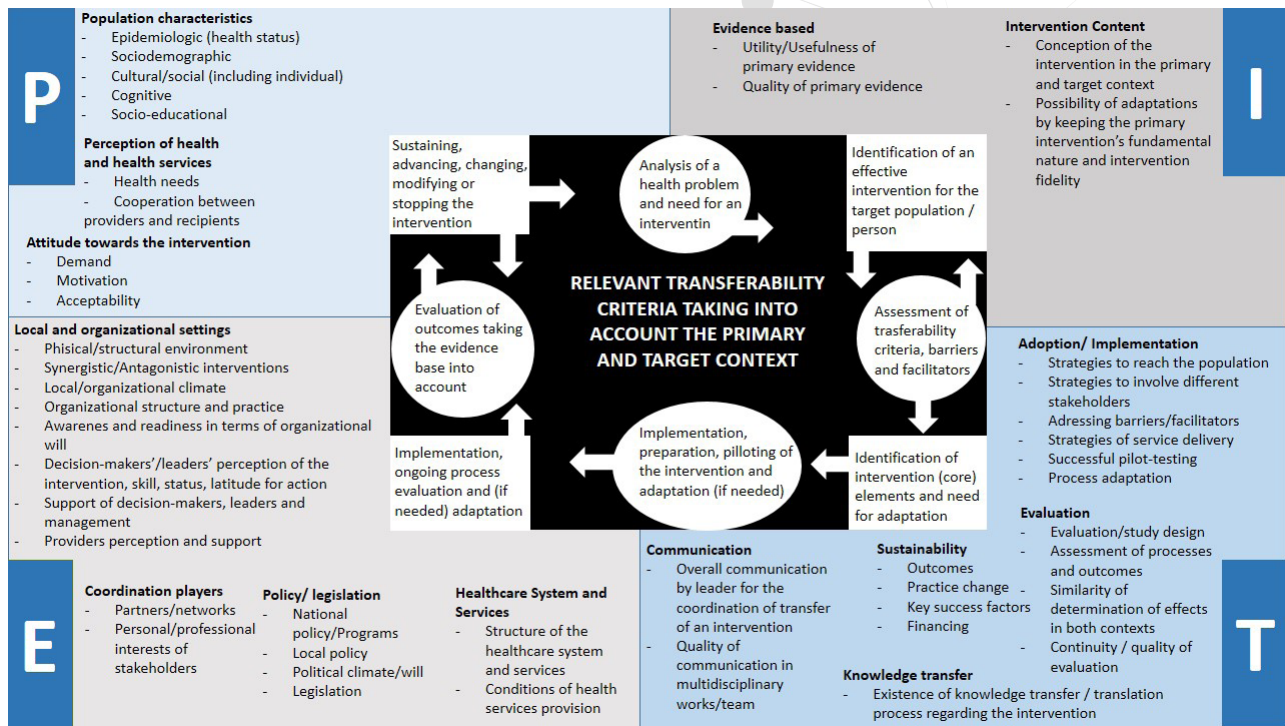


Figure 1: The PIET-T model with systematized criteria to determine transferability

characteristics, Intervention content, Environment and Transfer.

To explore the process and means of transferability, the project obtained consensus statements from the researchers on optimum model scenarios, and conducted a survey of stakeholders, professionals and users of children’s primary care services that involved three specific health topics: vaccination coverage in infants, monitoring of a chronic or complex condition and early recognition of mental health problems.

The results²⁰ provide insight into features of transferability – such as the availability and use of guidelines and formal procedures; the barriers and facilitators of implementation and similarities and differences between model practices and the existing model of child primary care in the country. Stakeholders expressed a need for improvements to the child

primary care system and valued the importance of system components in the field of public access to information about vaccination, coordination and continuity of care, and open access to services for adolescents and confidentiality until treatment is in place. Heterogeneity was found between countries with regard to the presence of these components and their demand for change.

In this context, MOCHA and Trillium-II partners proposed to improve the availability of up-to-date immunisation information on children when they are seen by a health or care professional. These efforts aim to strengthen children’s immunization in Europe through health data standards, by connecting Patient summaries to EU vaccination cards and immunization registries. This may lead to a national, and even international, measure that prevents epidemic outbreaks with relevant financial and health-related outcomes. This information may be vital in emergency situations, to determine the level of immunity of a child who has been exposed to an infection risk, such as tetanus or meningitis. It can also be useful for the care professional to advise a child or parent if the child is due for a vaccine or booster or has fallen behind schedule. It also fits within the context of

²⁰ Blair M. et Al. (2018), Issues and Opportunities in Primary Health Care for Children in Europe: The final summarised results of the Models of Child Health Appraised (MOCHA) Project, published in the frame of the MOCHA project, Nov 2018, available at: <http://www.childhealthservicemodels.eu/wp-content/uploads/MOCHA-Issues-and-Opportunities-in-Primary-Health-Care-for-Children-in-Europe.pdf>.

Table 2.

Key Partners & Suppliers	Key Activities	Value Proposition	Customer Relationships	Customer Segments
<p>Key partners:</p> <ul style="list-style-type: none"> • Healthcare Providers: there is a need to organize, digitize and make accessible also cross-border immunization info (in many countries still paper-based only) • Health authorities: <ol style="list-style-type: none"> 1. they set the app certification criteria 2. they seek to include digital vaccination records in their national/regional eHealth strategies for child health 3. they can benefit from larger datasets of vaccination information (including info from families using private paediatric services) for population health studies, risk detection and prevention • Telecomm companies: they are increasingly interested in incorporating health services in their digital offer and paediatric health is one of the most consulted and pressing topic • Mobile health companies developing complementary apps such apps for parental guidance, child health and wellness trackers, etc. • Healthcare Software Providers: seeking for new services to incorporate in the EHR or HIS they offer/manage • Venture capitals/investors: seeking for innovative breakthrough services • Insurances: additional service to offer to clients and data collection from IPS to better assess risk • Paediatric societies • Parents associations • Educational center <p>Key suppliers:</p> <ul style="list-style-type: none"> • SDOs • Terminology organizations • ECDC and National Center for Disease Control 	<ul style="list-style-type: none"> • Integration of IPS in paediatric mHealth app including vaccination validated info • Promotion of actions to create awareness about the benefits of having a paediatric IPS with the vaccination component • Establish agreements with health authorities to retrieve data from vaccination registries • Establish agreements with associations of paediatric doctors to make their vaccination activity traceable through the app <p>Key Resources</p> <ul style="list-style-type: none"> • HL7 FHIR Foundation • eHDSI Resources and Governance • Agreement with terminology organizations (SNOMED) • Standardization groups • Resources such as datasets, servers and tools provided by the SDOs Data agreements with health authorities • Consent from parents • WHO vaccination strategies • Access to home care records • Access to vaccination cards 	<p>The mHealth companies offer paediatric health management app including IPS</p> <p><i>Value for citizens:</i></p> <ul style="list-style-type: none"> • Ease cross border children health data mobility • Increase safety in travelling • Ease decision-making from the doctors in situations of emergency • Provide public health authorities with reliable datasets including wider coverage of the population (also those using private services) <p><i>Value for mHealth app user organizations:</i></p> <ul style="list-style-type: none"> • Have a set of resources to enhance the services they are offering (e.g. mHealth companies which are already offering paediatric health apps to foster healthy habits, provide guidance to parents, etc.) • Be part of a co-creation environment for building and expanding the IPS components • More easily integrate with or be acquired by mainstream companies 	<p>Different types of customers and thus customer relationship may be envisaged:</p> <ul style="list-style-type: none"> • <i>Parents of minors as direct clients of the mHealth app developing company</i> (B2C relationship): the parents themselves search for the product addressing their needs in a marketplace, pay for subscription or use, review the apps and participate in iterative co-design processes that are frequently encouraged or led by parents' networks or paediatric societies. • <i>Healthcare providers subcontracting a MHealth company to design and operate an app for paediatric care record access</i> (B2B). • <i>Mainstream telecom providers</i> as potential buyers of the apps (B2B). • <i>Health authorities</i> as direct interlocutors of the mHealth companies as third-party suppliers (B2G approach). <p>Channels</p> <ul style="list-style-type: none"> • Online marketplaces for apps • Apps prescribed as clinical services by paediatric doctors • Apps suggested, reviewed or released by paediatric doctor associations (e.g. child health tracker apps) • Apps integrated in mainstream devices 	<ul style="list-style-type: none"> • Citizens, in particular parents • Paediatric doctors and their associations • Healthcare provider organisations (e.g. hospital, primary care provider) • Public health agencies for population studies • Educational centers • Parents associations

Table 2. Business model canvas for child vaccination use case

Cost Structure	Revenue Streams
<p>The Cost Structure is:</p> <ul style="list-style-type: none"> • value driven, thus less concerned on cost minimization and more focused on value creation by enhancing the services offered by the app incorporating the IPS; • characterized by “economies of learning” meaning here that incorporating the IPS gives them the opportunity to know in advance the key information to be searched for and its format and may access to a set of resources such as training, servers, and tools provided by the SDOs which reduce considerably R&D and integration costs. <p>Main categories of costs are software development; integration costs; training; personal assistance and software maintenance; certification; standardisation training and membership fees.</p>	<p>Key types of revenues envisaged for mHealth companies are:</p> <ul style="list-style-type: none"> • Subscription/download fees following e.g. medical prescription of the mHealth app, recommendations formulated by patients’ associations or healthcare professionals’ societies • Usage fees • Agreements with healthcare providers, insurers which outsource the development of their own apps • Acquisition by mainstream devices or OEM Revenue sharing on end to end services

Table 2. Business model canvas for child vaccination use case (Continued)

both the EU and WHO seeking to drive higher child immunisation uptake, and effective holistic child health care.

To this end, it is necessary to examine the data flows that would be needed to enable care professionals to be informed of immunisation status when they consult a child, the feasibility of harmonising the core information at a European level, the data protection and ethical issues that would need to be catered for, how better supply of immunisation status could facilitate improved uptake, and what practical steps might be recommended for action in the near future.

The insights collected in the course of the MOCHA project on home-based medical records can be incorporated into a Business Model Canvas as illustrated in table 2, the principal objective of which is to enhance the value created, delivered and captured for a range of stakeholders.

Synthesis

Although these are two very different cases, they exhibit many common beneficial elements attendant on the use of IPS standards. The following are particularly important:

Cost-saving: the disaster management exercise clearly demonstrated significant cost saving from

the use of the IPS; the child-immunisation example less so, though avoidance of epidemics is clearly a potentially huge benefit;

Improved decision-making by clinicians: both examples highlighted this benefit in a clear manner; *Better patient outcomes:* again, both examples bring this improvement, in the short-term for the disaster management and in the longer term from improved immunisation protecting growing children, especially those moving cross-border;

Peace of mind, especially when travelling: improved safety is clear in both examples.

The above benefits indicate that there is clearly a good business case for all the major stakeholders identified by the project: patients and clinicians obviously benefit hugely; health providers save money and improve the statistics of their patient populations; suppliers access a larger market. This therefore raises the question of why it hasn't already happened. Or, phrasing it as a challenge towards societal development, who needs to initiate the change? In the EU, the temptation is to say that there is only one organisation with the power to enforce implementation; if enforcement is still not the initial solution, adoption may be encouraged by promoting the business case at every opportunity, particularly through standards organisations, to encourage *worldwide* acceptance.

This highlights the crucial question of what the trigger might be to promote international acceptance of this common standard. This is certainly a complex question with multiple pathways, although it is logical that the answer almost certainly involves mHealth app developers as key stakeholders.

Conclusion

As recognized by the WHO²¹, the spread of digital technologies and global interconnectedness has significant potential to accelerate member states' progress towards achieving universal health coverage, including ensuring access to quality health services. Increasing the capacity of member states to implement digital health, and in particular mHealth, could play a major role in realizing that potential, particularly by increasing the safety and quality of care. Mobile phones are now a globally available communications tool, providing telephonic and internet access. Due to smart phones' capacity to deliver computer and communication capabilities, third-party software apps are proliferating as a means to improve diagnosis and personalize health care. Using a wide array of instruments, sensors and other technologies, patient data can be transmitted to clinical and/or research teams, enabling data analysis and facilitating response time.

On the issue of regulation, the healthcare sector is, and has been, subject to a very intense scrutiny. Digital as well as non-digital health solutions that could pose a risk to patient safety must be cleared by an approved regulatory body, such as the FDA in the USA. However, there are signs of big future changes in regulating digital health and thus mHealth too. In

²¹ WHO (2018), "mHealth. Use of appropriate digital technologies for public health", Report by the Director-General, A71/20, 26 March 2018, available at: http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_20-en.pdf.

July 2017, the Food and Drug Administration (FDA) announced a very new approach to approving digital health solutions (called Digital Health Innovation Plan). Instead of approving individual digital products, entire companies could be approved, and digital products released by those pre-selected companies would not have to go through a regulatory process for each of their product releases. This development is still very fresh but the FDA seems to initiate a paradigm change in regulating digital health solutions. This could act as a blueprint for more countries to follow and represents a key opportunity for IPS standards' adoption to position it as a core requirement for approval and/or certification.

The concept of making IPS data available through mobile technologies, and specifically an individual's mobile phone, looks set to increase the safety and quality of care by providing secure access to the information needed by the attending physicians at the time of care. A critical step towards making effective use of health data will be taken. This is particularly important in the event of disasters, emergencies and other unplanned care. Mobile technologies allow individuals to have access to their own summary health records and give physicians timely access to these records, which is particularly important when patients seek care outside of their normal care settings.

To this purpose, it is crucial to build a business case for mHealth app developers to adopt IPS standards and develop tools that will simplify and accelerate adoption. The commercial and competitive advantages of such adoption, together with relevant business models, are presented in this paper with the aim of fostering adoption and further refinement, in addition to serving as the basis of continue innovation.

References

- Aitken M, Clancy B, Nass D (2017). The Growing Value of Digital Health. Evidence and Impact on Human Health and the Healthcare System. Iqvia Institute. Retrieved in 2019-07-22 from <https://www.iqvia.com/institute/reports/the-growing-value-of-digital-health>
- Betts D, Korenda L (2018). Findings from the Deloitte 2018 Health Care Consumer Survey. Inside the Patient Journey: Three key touch points for consumer engagement strategies". Deloitte Center for Health Solutions. Retrieved in 2019-07-22 from https://www2.deloitte.com/content/dam/insights/us/articles/4632_CHS-Consumer-survey/DI_CHS-consumer-survey.pdf
- Blair M, Rigby M, Alexander D (2018). Issues and Opportunities in Primary Health Care for Children in Europe: The final summarised results of the Models of Child Health Appraised (MOCHA) Project. Retrieved in 2019-07-22 in <http://www.childhealthservicemodels.eu/wp-content/uploads/MOCHA-Issues-and-Opportunities-in-Primary-Health-Care-for-Children-in-Europe.pdf>
- Cvrkel T, The ethics of mHealth: Moving forward, Journal of Dentistry, Volume 74, Supplement 1, 2018, Pages S15-S20, ISSN 0300-5712, Retrieved in 2019-07-22 in <https://doi.org/10.1016/j.jdent.2018.04.024>
- eHealth Network (2013). Guidelines on minimum/non-exhaustive patient summary dataset for electronic exchange in accordance with the cross-border directive 2011/24/EU. Retrieved in 2019-07-22 in https://ec.europa.eu/health/sites/health/files/ehealth/docs/guidelines_patient_summary_en.pdf
- European Commission (2017). Public consultation on Transformation of Health and Care in the Digital Single Market. Retrieved in 2019-07-22 from https://ec.europa.eu/info/consultations/public-consultation-transformation-health-and-care-digital-single-market_en
- Joint Initiative Council (2018) Patient Summary Standards Set. Retrieved in 2019-07-22 in http://www.jointinitiativecouncil.org/registry/Patient_Summary_Standards_JIC_Jan_2018.pdf
- Lewis TL, Wyatt JC (2014), mHealth and mobile medical Apps: a framework to assess risk and promote safer use. J Med Internet Res. 2014;16(9): 210. DOI:10.2196/jmir.3133. Retrieved in 2019-07-22 in <https://www.ncbi.nlm.nih.gov/pubmed/25223398>
- Monteiro M, Stichele R, Kalra D, Chronaki C, Cangilioli G, et al (2017). Patient Summary Moving clinical data from country to country in Europe. Accessed in 2019-07-22 in [http://www.estandards-project.eu/eSTANDARDS/assets/File/27062017_%20Patient%20Summary_brochure_V9_eStandards\(1\).pdf](http://www.estandards-project.eu/eSTANDARDS/assets/File/27062017_%20Patient%20Summary_brochure_V9_eStandards(1).pdf)
- Osterwalder, A, Pigneur, Y (2010), *Business Model Generation: A Handbook for Visionaries, Game Changers and Challengers*, Wiley
- Research2Guidance (2017), mHealth App Economics 2017/2018. Current Status and Future Trends in Mobile Health. Retrieved from <https://research2guidance.com/product/mhealth-economics-2017-current-status-and-future-trends-in-mobile-health/>
- Trillium II, Deliverable D6.2 - Establishing the value case for the international patient summary: indicators and results. Retrieved in 2019-09-02 in <https://trillium2.eu/deliverables/>

Trillium II, Deliverable D7.1 - Stakeholder analysis and dissemination plan. Retrieved in 2019-09-02 in <https://trillium2.files.wordpress.com/2018/08/d7-1-v2018-06-05-stakeholder-analysis-and-dissemination-plan-wp7-adi.pdf>

Trillium II, Deliverable D7.4 - Business models for Patient Summary standards in mHealth apps. Retrieved in 2019-09-02 in <https://trillium2.eu/deliverables/>

World Health Organisation (2018). mHealth, Use of appropriate digital technologies for public health. Report by the Director-General, A71/20, 26 March 2018. Retrieved in 2019-07-22 from http://apps.who.int/gb/ebwha/pdf_files/WHA71/A71_20-en.pdf.

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Towards a New Business Model Canvas for Platform Businesses in Two-Sided Markets

Kyllikki Taipale-Eräväla¹, Erno Salmela² and Hannele Lampela³

Abstract

The ambition of this paper is to increase the understanding of digital platform businesses and business model innovation in the context two-sided markets. A proposal for an instructive new business model canvas is developed by combining abductive reasoning with insights from a case study. The case was a unique driving school platform under the employee and professional service platforms. The proposed canvas builds upon Scholten's canvas for platform businesses, complementing it with changes in terminology and the addition of new elements. The contribution of the paper derives from the insights provided by the case study and the identification of a new tool that can help platform businesses innovate in two-sided markets.

Introduction

Digital platforms in two-sided markets are capturing the market from incumbent companies by challenging the present structures, services and business models (Cusumano, Kahl and Suarez., 2015; Parker, Van Alstyne and Choudary, 2016; Salmela and Nurkka, 2018). A platform business is based primarily on innovative business models that create greater value for stakeholders than traditional models do (Parker *et al.*, 2016; Scholten and Scholten, 2012). A two-sided platform business differs from a traditional one-sided value chain business. In a two-sided platform business, growth does not come from vertical and horizontal integration but from network orchestration that results in network effects. Instead of owning resources, the focus is on using external resources. In a two-sided platform business, the user ecosystem is a source of competitive advantage (Parker *et al.*, 2016).

Osterwalder and Pigneur (2010) originally developed the widely embraced Business Model Canvas (BMC) to support the innovation of digital business models. However, their canvas focuses on traditional value chains. The platform

Keywords: digital platform; two-sided market; business model innovation; canvas; driving school.

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business models in two-sided markets differ from the business models of value chains in one-sided markets, which led us to examine whether a different business model canvas should be used for the innovation of platform businesses in two-sided markets. In our literature search we encountered Scholten's (2016) modified business model canvas for platform businesses in two-sided markets, which he has tested on a few platform cases. The case study that informs this paper resulted in suggesting improvements to Scholten's modified canvas for digital platform businesses in two-sided markets, and aims to answer the following research question: *what kind of business model canvas is most suitable for the innovation of platform business models in two-sided markets?*

The choice of Scholten's modified canvas as a key focus for this study was supported by the research results of Parker *et al.* (2016). Their study examined the platform business in detail and incorporated the same elements as Scholten's canvas. Wortmann, Ellermann and Dumitrescu. (2020) have also analysed digital platforms and utilised Scholten's canvas as one example of a potential tool. In order to pursue the present study, an abductive approach and a case study were combined to suggest improvements for the current business model canvas (Dubois and Gadde, 2002) by comparing the canvases and presenting development ideas. The empirical case that informs the present paper is the Finnish digital driving school, Rattifi (hereafter Ratti), which matches people who require driving licences with people who provide driving instruction. Ratti competed against traditional driving schools, which operate in one-sided markets. Unfortunately, the company ceased operations in 2018 due to a change in legislation.

This paper is structured as follows: section 2 presents the relevant prior theoretical knowledge, while section 3 describes the study's research design, including an overview of the case company. In section 4 Ratti's business model is subjected to a comparative analysis. Section 5 the findings of the research are discussed leading to the identification of a new canvas to be used for platform businesses operating in two-sided markets. Finally, section 6 considers the main conclusions of the study and offers some brief suggestions for further research.

Theoretical overview of platform business and business model canvases

Business models and platform businesses

A business model is a visualisation describing how an enterprise operates, who is the customer, what does he/she value, and how to make money in the course of business (Magretta, 2002; Drucker, 1994). To create, deliver and capture value, a business model is a summary of how the company plans to redeem its value proposition to profitably serve its customers by leveraging its own and its partners' resources. A value proposition guides the creation of a new business model (Jaakkola and Hakanen, 2013; Nenonen and Storbacka, 2010; Osterwalder and Pigneur, 2010). After the value offering has been created for customers, further elements of the business model are created and verified. With those elements, the solution is made available to potential customers at a suitable price. Furthermore, cost-effective manufacturing and delivery are created (Osterwalder and Pigneur, 2010; Furr and Dyer, 2014).

This paper focuses on platform businesses. A platform is based in the digital technology environment, including the internet infrastructure, with services being constructed on it (Gawer, 2009). There are various types of business platforms such as employee and service platforms, of which Uber and Airbnb are the most famous examples. A platform makes money through capturing the value from the network effect, for example, by taking part of the transactions for itself and charging for the use of the platform. (Parker *et al.*, 2016; Scholten, 2016).

Platform businesses can be divided into one-sided and two-sided markets. A one-sided market is related to a traditional value chain business where bilateral exchanges follow a linear path as firms purchase material, manufacture components and assemble them into products that are sold to customers. In a two-sided platform business, interaction follows a triangular relationship as stakeholders first affiliate with the platform and then connect or trade using platform resources. The two sides are usually labelled customers and producers (Eisenmann, Parker and Van Alstyne, 2006; Hagiu and Wright, 2015; Parker and Van Alstyne,

2016). A two-sided market differs from a traditional value chain business in that the platform can receive revenue from both producers and customers (Parker *et al.*, 2016; Scholten, 2016).

Business models of platforms differ from those of traditional value chains in one-sided markets. Platforms are crucial to creating a cost-effective user experience and organising resources. The fundamental roles of a platform are to minimise transaction costs by matching customers and producers and to enable value creating exchanges that would not take place otherwise. A digital platform helps to scale business more efficiently than does a physical one (Evans, Hagiu and Schmalensee, 2006; Järvi and Kortelainen, 2011; Parker *et al.*, 2016).

Platforms capture the market from traditional operators thanks to their positive network effects. A two-sided network effect occurs when an increase in the number of people in a single user group increases the number of people in the other group. The growing number of people makes better matching possible; in other words, the customers' needs and the provider's offerings are more likely to meet. The more users, the more connection options between them. Negative network effects between different sides arise when demand and supply are not balanced or matching is difficult due to the heterogeneity of the user community. If there are too many

negative effects, then people will reject or reduce the use of the platform (Parker *et al.*, 2016).

In a two-sided platform business, the platform typically does not own some crucial physical resource. This connects the platform business to the sharing economy (Parker *et al.*, 2016; Vogelsang, 2010).

The goal of business model innovation is to create and validate a strategy to go to the market being a source of competitive advantage (Teece, 2010) and enabling a long-term success (Bucherer, Eisert and Gassmann, 2012). Business model innovation may examine existing parts of a company's business model or visualise a new business model for to satisfy customer needs. Business model canvases are commonly used tools to innovate business models.

The Business Model Canvas (BMC)

To visualise a company's or product's value proposition, Osterwalder (2004) proposed a business model ontology for digital businesses. Subsequently Osterwalder and Pigneur (2010) refined this model to create the BMC, which incorporates various elements to be defined when considering a company's business: value propositions; customer segments; channels; customer relationships; revenue streams; key resources; key activities; key partners; and cost structures. These elements form a holistic model as illustrated in figure 1.

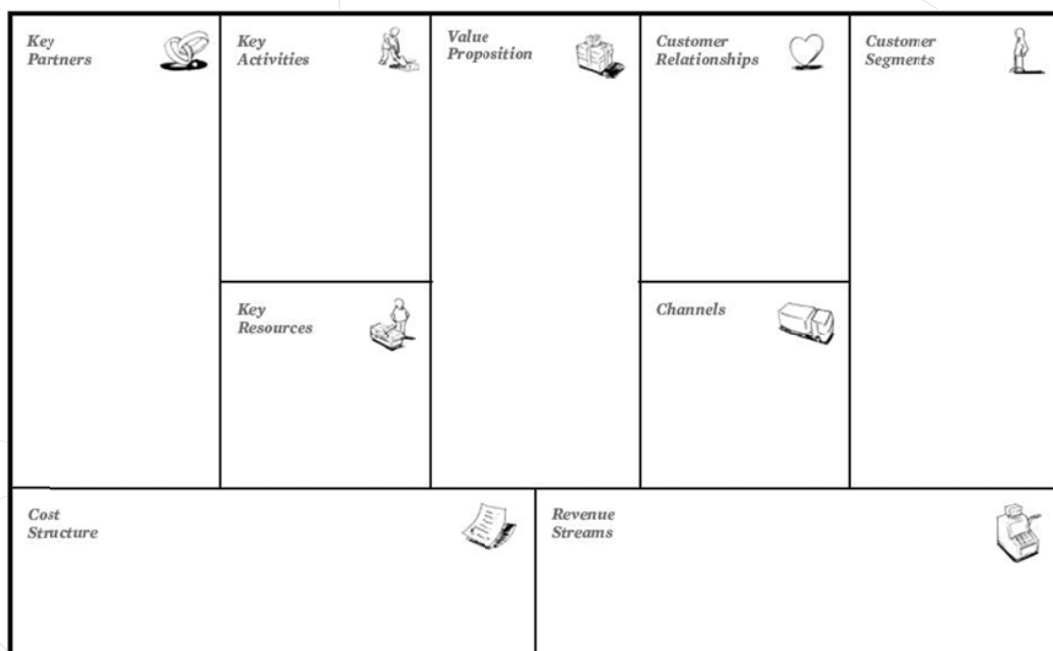


Figure 1: The business model canvas (Osterwalder & Pigneur, 2010).

Each of these components is now briefly outlined. **The Value Proposition** is that the bundle of products and services that create value for a specific customer segment. By means of a value proposition, a business endeavours to solve a customer problem or satisfy a customer need in a way that is different from competing value propositions. **Customer Segments** define the different groups of customers a business aims to reach and serve. When a company has identified its target customers, the appropriate business model requires to be based in a sound understanding of their customers' needs. Via **Channels**, the value propositions are delivered to customers through distribution, sales channels and communication forming a company's interface with the customers. The customers get to know company's products and services through channels, which in turn help customers to evaluate a company's value proposition. **Customer Relationships** relate to the types of relationships a business has identified are required by specific customer segments. Customer relationships are usually connected to boosting sales, customer acquisition and retention. Customer relationships are intended to influence the overall customer experience.

The element of **Revenue Streams** symbolizes the cash a company generates from each customer segment. If a company has many customer segments, a company needs to specify what value each customer segment is willing to pay.

Key Resources makes a business model to work. Key resources enable a company to create and offer a value proposition, to reach markets, attend to relationships with customer segments, and earn revenues. While the key resources make the business model to work, **Key Activities** are those actions that enable the business to operate successfully. When determining key activities, the requirement of value proposition, distribution channels, customer relationships and revenue streams are highlighted as important elements together with the designated key resources. **Key Partnerships** are formed through the network of supplier and partners making the business model to work. Partnerships have become important parts of companies' business models, and therefore, the companies establish

different collaborations and cooperation to acquire resources, reduce risks, or optimize business models and its operations.

The final element is termed **Cost Structure**. The cost structure describes all the costs caused in a particular business model. The cost structure depends on the type of business model, and costs should be minimized in every business model.

Scholten's Two-sided platform business model canvas

Osterwalder and Pigneur's BMC provides a tool for innovating business models for value chains or pipelines. However, this canvas is not applicable to the innovation of business models for digital platforms in a two-sided market (Scholten, 2016). To address this, Scholten (2016) proposed a modified canvas (figure 2) to enable the creation of platform business models. He appears to combine the results of Parker *et al.*'s (2016) platform business research and the BMC created by Osterwalder and Pigneur (2010).

In Scholten's modified canvas, **producers and customers** are the main user groups in a two-sided market. This platform offers these groups value. Role changes are also possible. The customer can periodically be a producer and vice versa (Eckhardt, Houston, Jiang, Lamberton, Rindfleisch and Zervas, 2019; Scholten, 2016; Parker *et al.*, 2016, Gabriel, Korczynski and Rieder, 2015). When designing a platform, it is important to first identify the core interaction, value unit (e.g., Airbnb's list of rental homes) and key user groups. The **core interaction** must be simple, attractive and value generating for users. Platforms encourage producers to create useful, relevant and interesting value units for customers. The platform does not necessarily create any value units at all. It also has no control over the production process of a product or service, which is a major difference from traditional value chain business (Parker *et al.*, 2016; Scholten, 2016).

Partners, filters, rules, and tools and services enable a successful core interaction. Partners provide additional services related to the core interaction. Filters help to match customers and producers - they

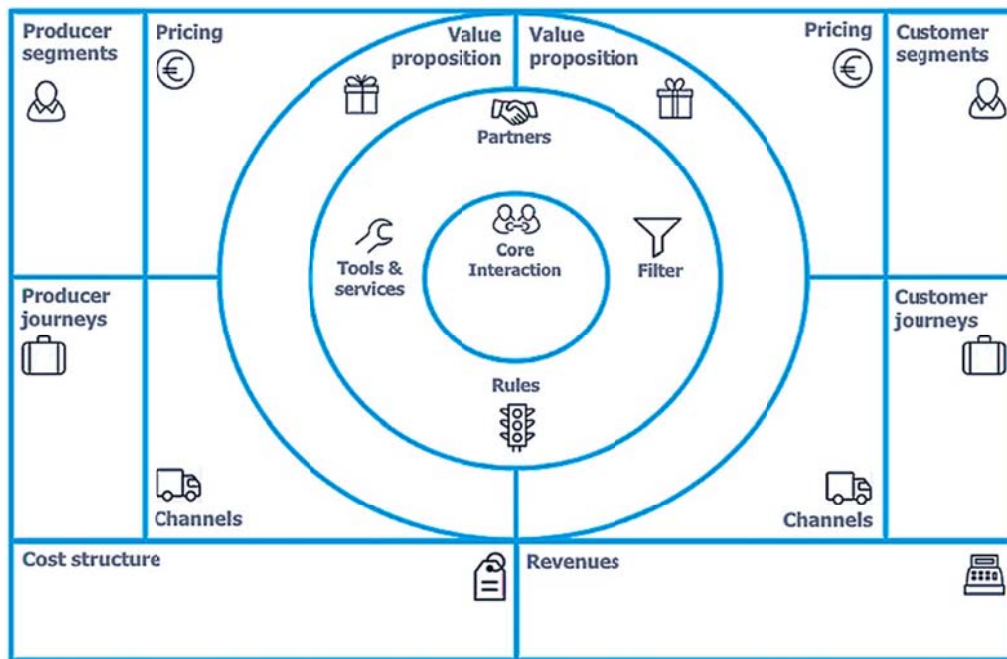


Figure 2: Business model canvas for digital platforms in two-sided markets (Scholten, 2016).

bring together the most suitable parties to create a successful interaction. For example, only relevant producers and their value units are shown for a particular customer. This prevents information overflow and facilitates decision making. Data and algorithms are used to match customers and producers. Tools and services are data-based tools that can create, for instance, loops of community feedback. The constant flow of interesting value units will bring people back and increase the number of users by creating a new value. User feedback helps to control the quality of interactions. In addition, users can recommend the platform to others. Facilitation tools help producers create and deliver high-quality outputs to customers as well as assist in producing marketing material (Parker *et al.*, 2016; Scholten, 2016).

The **rules** are used to orchestrate the ecosystem and guide people's behaviour. They determine who participates in the ecosystem, how the value is shared and how conflicts are resolved. In the platform economy, the platform partners create a significant part of the value, so the profits must be fairly shared. This is not easy because different user groups may have different interests. There will inevitably be conflicts, something clearly evident in Facebook's privacy policy. In addition, sanctions are defined if users act against the rules (Parker *et al.*, 2016; Scholten, 2016).

In the platform business, **revenues** can be made in the following main ways: 1) by charging a transaction fee, which is a percentage of the price or fixed fee; 2) by charging producers for access to customers or vice versa; 3) by charging for improved access to the platform (e.g., better targeted or more attractive messages for customers); or 4) by charging for higher quality than normal (e.g., offering exceptionally reliable child caregivers). The 'freemium business model' is also common (Parker *et al.*, 2016). The **pricing** element of the canvas describes the need to define how much customers or producers are willing to pay for the relevant services. The **cost structure** presents the fixed and variable costs required to operate a business.

Channels refer to how and where a product is distributed and sold and how users are attracted to and engaged in the platform. The **customer journey** involves the customer's every interaction or touch-point with the platform, product, service and brand before ordering, during the order-delivery process and after delivery. A comprehensive experience is formed when the customer is satisfied with the whole journey. The **producer journey** is like the customer journey but from the producer's point of view (Scholten, 2016; Osterwalder and Pigneur, 2010; Kim and Mauborgne, 2005).

Research design

A case study approach (Saunders, Lewis and Thornhill, 2007) was chosen because it allows a broad and in-depth examination of a single instance of the phenomenon of interest (Collis and Hussey, 2003), enhancing understanding of the case by describing the phenomenon in its real context (Yin, 2003) and binding the case by time and activity (Stake, 1995). In this research, the phenomenon under examination is the two-sided platform business.

Ratti, the case company informing this study, exhibits a business model in a two-sided market. Ratti was chosen because it was an innovative newcomer to the driving school sector and an illustrative example of a two-sided digital platform business. Ratti is an employee and professional service platform; this type of platform was chosen because such platforms can significantly change work life and people's earning possibilities (Parker *et al.*, 2016). The use of Ratti as a single case is justified because it is a unique digital driving school platform (Yin, 2003). Empirical data from Ratti were collected from public information found on the company website (www.ratti.fi), together with other digital information sources and from newspapers.

An abductive approach was used to suggest improvements for the existing business model canvas. Abduction is understood as systematised creativity or intuition in research designed to create novel knowledge (Taylor, Fisher and Dufresne 2002) and to escape

already known constructs (Kirkeby, 1990). Intuition may result from an unexpected observation that cannot be explained using an existing theory (Andreewsky and Bourcier, 2000). For researchers, an abductive approach is useful for discovering other variables and relationships (Dubois and Gadde, 2002). An abductive approach is possible when observations are connected to a main idea or clue, and existing theory models alternate in the researchers' thinking (Tuomi and Sarajärvi, 2002) to refine existing theories rather than invent new ones (Kovács and Spens, 2005).

Kovács and Spens (2005) described the abductive research process as a continuous movement between empirical and theoretical issues. In the present study, empirical data about the digital driving school business model and theoretical knowledge of business model canvases provided the sources of inspiration to refine and combine existing theory. The main phases of the abductive research process are illustrated in figure 3. The discontinuous arrows represent the movements in canvas development.

In this study, we conducted four phases (0-3) of the abductive process to suggest improvements for the existing canvas, repeating phases 1 and 2 twice to refine the match between real-life observation and theoretical knowledge. The research process embedded in the abductive approach may begin with real-life observation (Alvesson and Sköldbberg, 1994) or prior theoretical knowledge (Kovács and Spens,

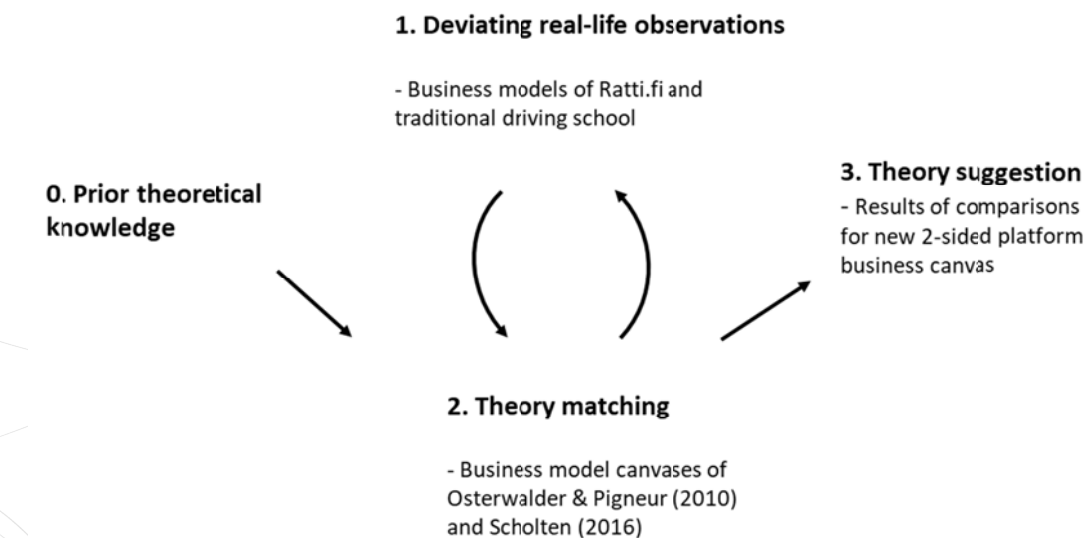


Figure 3: The abductive process of research applied in this study (modified from Kovács and Spens, 2005).

2005). As doctoral-level academic professionals in the fields of engineering and management, we had prior theoretical knowledge about business models in general and about their significance, which corresponds to phase 0 in the abductive process. This study started with real-life observation (phase 1) when the digital driving school Ratti entered the driving school business in Finland and aroused our interest in whether it would succeed in the markets. The platform business model of Ratti was entirely different from those of traditional driving schools. In our search for theoretical knowledge, we initially acknowledged Osterwalder and Pigneur's BMC as developed for digital businesses. The business model of Ratti was compared with their canvas. However, their canvas was designed for one-sided markets and is thus not suitable for two-sided platform businesses as we found out after testing.

In the theory search, we discovered Scholten's modified canvas, developed for two-sided platform businesses, and compared it with the Ratti business model (phase 2). In the comparison and analysis, we noticed an incomplete match between Scholten's theoretical model and Ratti's empirical business model (phase 1). This incomplete match led us to a second loop of theory matching in which we searched for novel theoretical elements to complement the existing canvas (phase 2).

After identifying the differences and similarities of existing business model canvases in comparison with Ratti business model, the research process ended with a theory suggestion in the form of improvement propositions for business model canvas for two-sided platform markets (phase 3).

The Ratti.fi case

This study began by gaining an understanding of the business logic of the Finnish driving school platform Ratti (officially "driving teacher brokerage service"), which was established in 2015 to compete against traditional driving schools. The platform took advantage of Finnish legislative reforms, which made it possible for teachers to teach three non-family students during three years. In the beginning, the platform operated in the Finnish market although the business had the ambition to evolve into an international operation. There are 70,000 driving school students in Finland each year, and Ratti was targeting half of the €120 million Finnish driving school market.

The Ratti platform match-makes driving teachers (producers) and students (customers), as shown in figure 4.

For students seeking a driving licence, Ratti's operations offered a value proposition for about half the price of a traditional driving school. A cheaper option naturally interests them. Teachers offer driving lessons for students and make money this way. The driving lessons are offered by teachers using own cars. Ratti pays teachers a fee for driving lessons. If a teacher teaches the maximum number of three students outside her family, she can earn €960 over a three-year period. Unfortunately this did not attract enough teachers, being Ratti's greatest problem, as a consequence of which many students did not receive a local driving teacher sufficiently rapidly. This reduced the students' willingness to join the platform. Hence, the network effect was negative.

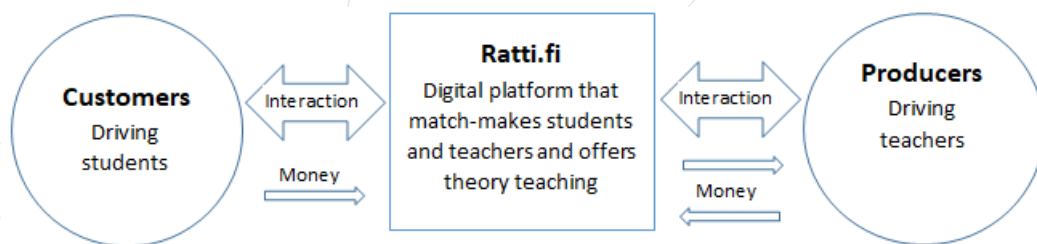


Figure 4: Ratti.fi platform two-sided market.

Ratti also offered theory lessons for students and, if necessary, also for teachers through the digital platform. Additionally, Ratti offered other services for teachers. Teachers can therefore be both producers and customers at the same time. Because of this, the figure 2 shows money flows in both directions regarding teachers. Ratti believed that the legislative limit of three students would be removed in a short time, which would provide instructors with more opportunities to earn money. If this limitation had been removed, teachers could have earned almost €3,000 per month by teaching 150 hours. This would have proved more attractive teachers. However, the opposite happened with the teaching of non-family students becoming banned through changes in legislation. Unfortunately, as a result, Ratti ceased operations in 2018.

A Comparative Analysis of Ratti's Business Model with Extant Alternative Visualisations

This section presents a number of observations regarding the business model in use by Ratti. First, differences between Ratti's business model and the traditional driving school model are presented. Second, the Ratti business model's fit with Osterwalder and Pigneur's BMC is examined. Finally, Ratti is analysed using Scholten's platform business model canvas.

Differences between Ratti's business model and that of the traditional driving school

There are some significant differences (table 1) between the business models of traditional driving schools and that of Ratti. The identified differences are based on a content analysis of text descriptions about Ratti business model.

Ratti has outsourced the critical resources of traditional driving schools serving private individuals, namely driving instructors and cars. It also has no physical teaching and staff facilities. For these reasons, Ratti has considerably less fixed and investment costs, which permits a lower price for its customers. On the other hand, it does not have professional instructors and the quality of car supply is varied.

Compared to a traditional driving school Ratti has to attract a critical mass of instructors other than through a fixed salary. Teaching individuals to drive is just a source of additional income for instructors. In traditional driving schools the permanent staff receive a fixed salary. In consequence, teachers are usually quickly available for students. Furthermore, driving schools do not have the student quantity limitations that Ratti's teachers have. In addition to service producers, instructors are also customers who buy services from Ratti, such as theory lessons for themselves.

Ratti does not have its own quality control or a traditional management structure for monitoring instructors. Students who complete their driving license provide quality control insights through the feedback mechanism. Almost any person can become a driving instructor with Ratti, and is not required to exhibit the values and culture of a traditional driving school. For some students this provides an attractive option. However, for the majority of students, as well as their parents, a traditional driving school that has a history both as a way of working and also as a company offers a preferable alternative. As a new venture, Ratti is only able to rely on a relatively small stock of user experiences of the service. In addition, the absence of a bricks-and-mortar business estate is a concern for some potential clients. A new business model with low demand and little feedback causes doubts in people. A major attraction of Ratti, however, is that it offers a more flexible way to obtain a driving license because of the independence of time and place. There are no eight to four working hours and no need to go to driving school for theory classes. Ratti differentiated itself from traditional driving schools through its novel, youth-oriented marketing approach.

In summary, the core functions of a traditional driving school are to get customers and teach, while the core functions of Ratti is to achieve positive network effect and match-making; in other words, to create a critical and balanced mass of teachers and students, and to provide a local instructor for students. However, Ratti is not a pure platform for a two-sided market because it has its own theory teaching. Ratti also does not provide students with a list of instructors

Table 1.

Factor	Ratti.fi platform	Traditional driving school
Critical resources (driving teachers and cars)	Outsourced to citizens	Owned by driving school
Physical facilities	No need for them	For staff and theory teaching
Costs	Mainly variable	Mainly fixed
Salary for teachers	Additional income	Main income
Student quantity limitations for teacher	Yes	No
Customers	Students and teachers	Students
Quality control	External users	Driving school
Independence of place and time	Yes	No
Core functions	Positive network affect and matchmaking of student and teacher	Obtain customers (students) and teach driving and theory for them.

Table 1: Comparison of Ratti.fi platform and traditional driving school.

but selects the teacher itself. Because of the differences in business models between traditional driving schools and the Ratti platform, the question arose as to whether Osterwalder and Pigneur's BMC could be used for innovation exercises within a platform business such as Ratti.

Interfacing Ratti and the Business Model Canvas

The BMC was developed to support digital business innovation (Osterwalder and Pigneur, 2010) but at that time the object of innovation was value chain

streamlining in one-sided markets. We examined how the traditional canvas fits with the two-sided platform business of Ratti. Based on this analysis, the traditional canvas would not appear to facilitate the innovation of two-sided platform business even if it can somehow describe that kind of business (figure 5).

The traditional canvas focuses on creating value within a company, while in two-sided market value is created outside the company. In other words, platforms do not themselves create value but

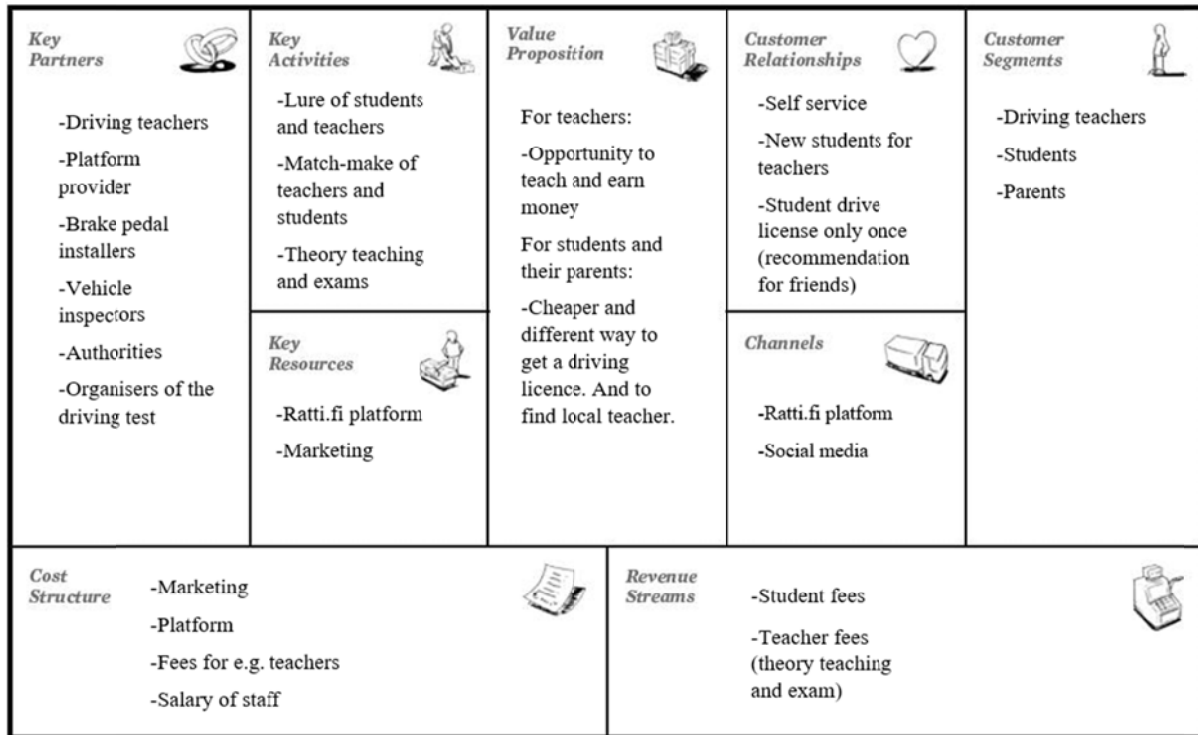


Figure 5: Ratti.fi in traditional business model canvas.

concentrate on matchmaking of customers and producers. Furthermore, producers are often private individuals rather than companies. Thus, there is a big difference in business logic, and it should also show up in the canvas. Scholten has also recognized this difference and developed a modified business model canvas for platform business of two-sided markets (Scholten, 2016).

Ratti in relation to Scholten's two-sided platform modified business model canvas

Within his modified canvas visualisation, Scholten emphasizes match-making between customers and producers. That is why he places core interaction in the centre of the canvas (see figure 2 above). Scholten also emphasizes the importance of filters, rules, and tools and services. Thus we sought to examine how Scholten's modified canvas would help to innovate a business model like Ratti (table 2).

When comparing Ratti's business model with Scholten's modified canvas, we identified a series of improvement needs, which are discussed in following section.

Building on Scholten's Canvas to Better Facilitate Business Model Innovation

Based on the insight presented in the previous section, there are significant differences between the logic of Osterwalder and Pigneur's BMC and Scholten's modified canvas when applying them to a two-sided platform business such as the Ratti case. There are also some limitations or omissions in both canvases that are noted in earlier literature. According to Upward (2013), the BMC overemphasises economic value instead of paying attention to environmental and social value. Neither Osterwalder and Pigneur's canvas nor Scholten's modified canvas pay attention to the business environment, which plays a significant role in the success of a platform business. For example, a platform business is not appropriate in a heavily regulated industry (Parker *et al.*, 2016). In addition, Coes (2014) observes that a crucial limitation of Osterwalder and Pigneur's BMC is that it excludes competition.

Coes (2014) also notes that the value proposition building block is too abstract in Osterwalder's original Business Model Canvas and does not consider

Table 1.

Elements of canvas	Empirical data: Business model of Ratti.fi
Core interaction	Matchmaking of a driving teacher and student
Filter	Helps in finding a teacher from the same locality where the student lives
Rules	Teachers at least 25 years old, driving licence min 3 years and no major traffic offences. A maximum of three non-family students can be taught for 3 years. Driving teaching at least 18 hours per student. Money-back guarantee.
Tools & services	Transparent pass-through rates. Theory teaching and exams for teachers and students. Brake pedal installation and vehicle inspection for teachers.
Partners	Platform provider, brake pedal installers, vehicle inspectors, authorities and organisers of the driving test
Value proposition for producers	Additional incomes by teaching
Producer segments	Citizen teachers
Pricing for producers	Standard price for teaching. Theory teaching, exam, brake pedal installation and car inspection fees.
Channels for producers	Ratti.fi platform and social media
Producer journeys	From marketing to aftermarket mainly on the Internet. Face-to-face contact with students in driving lessons.
Value proposition for customers	Cheaper and different way to get a driving licence. To find a local driving teacher.
Customer segments	Students and their parents, who usually pay for driving school or part of it

Table 2: Ratti.fi in platform business model canvas

Table 1.

Elements of canvas	Empirical data: Business model of Ratti.fi
Pricing for customers	Registration and driving licence fee
Channels for customers	Ratti.fi platform and social media
Customer journeys	From marketing to delivery mainly on the Internet. Face-to-face contact in driving lessons.
Cost structure	Payments for driving teachers, authority fees, slippery weather training fees (total approx €755 eur per license). In addition, other service fees for partners (e.g. marketing and platform) and wages for own personnel.
Revenues	€855 per driving licence, about €100 of which is commission. Additional revenues, such as theoretical education of teachers.

Table 2: Ratti.fi in platform business model canvas (Continued)

how a business satisfies the customers' needs. Osterwalder, Pigneur, Bernada and Smith (2014) attempted to rectify this by adding the 'value proposition canvas', formerly called 'The Customer Value Map V.0.8'. This allowed the alignment between customer needs and a value proposition could be analysed more efficiently.

Based on the findings of our research, neither the Osterwalder and Pigneur BMC nor Scholten's modified canvas is of much use when innovating platform business models for two-sided markets. The match-making activity in the two-sided markets differs remarkably from traditional value chain business. The elements of core interaction, filters, tools and rules are important canvas elements in supporting innovation for two-sided markets. Without these elements, innovation would focus only on enhancing the efficiency of traditional value chains. Nevertheless, Scholten's modified canvas does not seem to support innovation in an optimal way in platform

business for two-sided markets, because it either lacks essential elements or elements are misleadingly named. In order to address these limitations, the following suggestions are designed to further enhance Scholten's canvas:

- When designing a platform, it is important to first identify the core interaction and then design the participants, value units, and filters that will allow for a successful core interaction. (Parker *et al.*, 2016). Scholten's canvas lacks a value unit (e.g. in Ratti this is a list of local teachers).
- Scholten's canvas does not pay attention to the network effect, i.e., how to attract actors to both sides of the platform and make the first interaction, which leaves such a good experience that they want to come again. (Parker *et al.*, 2016). Therefore, we propose adding to canvas an element of network effect tactics.

- Scholten’s canvas lacks an element to identify the key resources to be outsourced. In other words, what part of the business in the industry entails a lot of fixed and investments costs and could citizens or some other party provide this part with sufficient quality.
- In Scholten’s canvas, the term producer does not adequately describe the role of the players, because they may also be customers at the same time. Therefore, the concept of prosumer can work better in the two-sided markets context (Eckhardt *et al.*, 2019; Gabriel *et al.*, 2015)
- The lower part of Scholten’s canvas (cost structure and revenues) is not precise because there is also income from producers (prosumers).

platform business models. *Step 1* involves planning the core interaction where the platform match-makes a prosumer and a customer to create and deliver value. Central to this phase are also the definition of the value unit (what customers buy), user groups (who are prosumers and customers), filter (how to match-make prosumer and customer), network effect tactics (how to increase the number of users on both sides of the markets) and the critical resource to be outsourced (what fixed and investment cost resources could be provided by prosumers). First versions of value proposals (what new value platform could deliver compared to existing offerings) for prosumers and customers should also be made at this phase in order to attract the users to the first experiment.

Figure 6 incorporates the above suggestions to fabricate an enhanced business model canvas for platform business models.

Step 2 is termed value validation in which business potential is identified. In this phase, an experiment is carried out. For the experiment, a so-called rapid platform prototype is created. The purpose of the prototype is to concretize the platform idea and provide a user experience so that the value created for

Furthermore, we recommend the following steps when applying the novel canvas for creating new

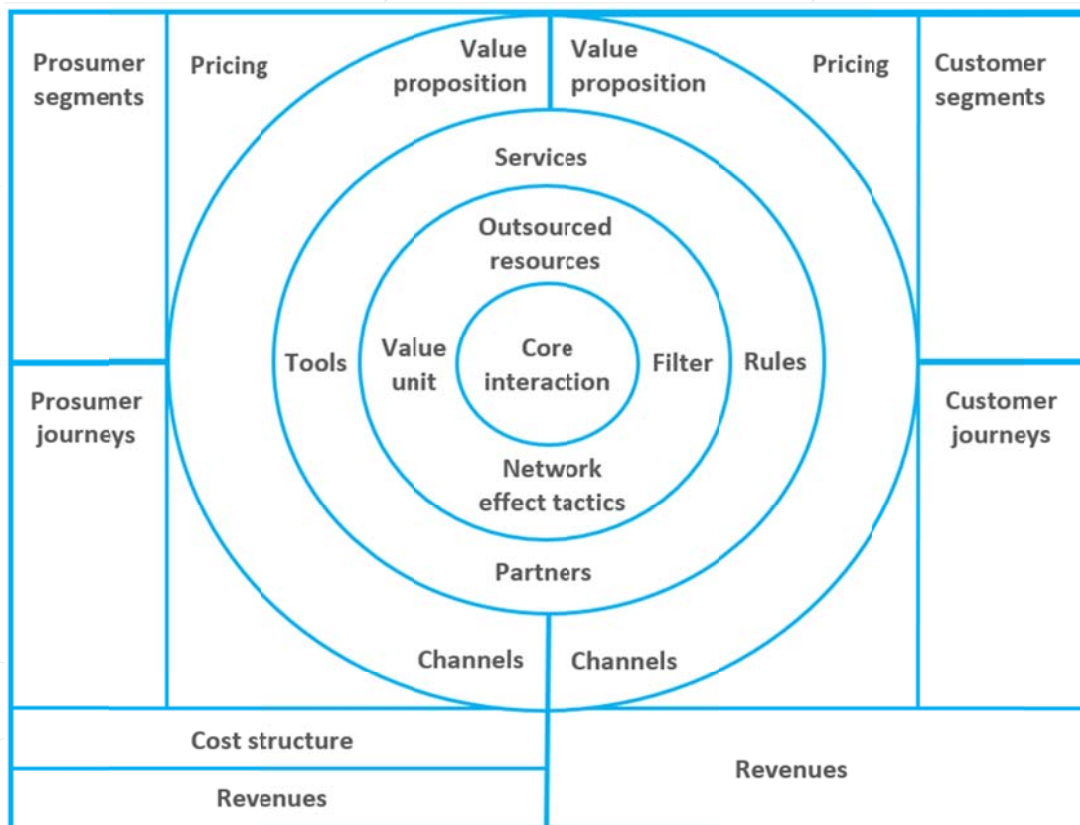


Figure 6: Suggested new canvas for two-sided platform business model innovation.

different parties can be determined. Rapid prototype means the minimum version at which a user experience can be generated. For example, the filters are not automated algorithms, since a human takes care of match-making a prosumer and customer. The first experiment can be done with a very limited number of users - even with a single prosumer and customer. The experiment is repeated several times if necessary. Between experiments, some element (for example, value unit) is changed to achieve a better result - in other words, more value for platform, customer and prosumer. On the other hand, if inadequate value seems to be created for all parties, the platform idea should be abandoned.

If the value is significantly higher than in the industry's existing solutions, then in *step 3* the platform business should be further developed. At this stage, support services are developed and suitable partners sought, as well as rules and tools to promote value creation. In addition, value propositions are specified and pricing and earnings logic are built. Network effect tactics are particularly important to lure and engage a critical mass of users on both sides of markets. For example, channel selections, value propositions and pricing principles are closely related to this. At this time, several experiments are needed to attract users.

When the critical mass has been reached, *step 4* requires the operation to be intensified and streamlined e.g., by creating automated processes, the main goal being to move towards a profitable business. At *the final step*, the customer and prosumer journeys are examined in order to find new potential core interactions and value units to create additional value. After this, the process repeats, starting with *step 1*.

Concluding Observations

This paper sought to increase the understanding of digital platform businesses and business model innovation in two-sided markets. The findings of the research undertaken revealed that two-sided platform businesses require a further reconstructed business model canvas; thus, we proposed a novel

platform business model canvas that supports the innovation of platform business models in two-sided markets. In answer to the research question: *what kind of business model canvas is most suitable for the innovation of platform business models in two-sided markets?*, we conclude that the following elements are needed in a business model canvas:

- Defining a value unit
- Defining the key resources to be outsourced
- Planning network effect tactics
- Renaming producers as prosumers
- Paying attention to revenues also from the producer/prosumer side

These refinements will enable innovating two-sided platform business models with higher accuracy and details corresponding the real-life situation, and also highlight the differences of traditional and platform business models.

The contributions of made in this paper can be recognized from multiple theoretical viewpoints. First, the paper contributes to the platform business discussion in the literature by providing empirical understanding of platform businesses derived from a case example. Second, the paper contributes to the growing literature on business models and especially how they might be successfully innovated. Although extant business model canvases have been found to be an effective tool for this purpose, as a result of our study we are proposing some improvements to the existing canvases to better take into account the differences between two-sided platform business models and traditional business models. In addition, the abductive research process applied in this study can generate new knowledge for digital markets.

The proposed canvas can help practitioners to systematically develop their business models and to create new platform business models for two-sided markets. It will assist managers to identify the core elements for value creation from both customer and producer sides and enables focusing on the critical aspects of business model creation. The proposed model was created by studying an employee and

professional service platform but it can also be used in innovating other types of platforms in different industries or even in the public sector services. The canvas tool can also be utilized for comparisons between different business models.

The proposed canvas was developed with the help of abductive logic and the case study of Ratti a business that incorporated an employee and professional service platform. The new canvas could be applicable to analyse these kind of business platforms. However, more research is needed to gain greater insights into possible canvas applications, which entails applying the proposed canvas in practice. In addition, the applicability of the new business model canvas should be tested on other types of online platforms

in future studies and the implementation process of the proposed canvas improvements should be tested in a follow-up study. As this study covered one case example in one industry, and was carried out employing one methodological approach, there are many possibilities for further research by broadening the scope of empirical cases and by including multiple complementary methods such as systematic literature review, survey or interviews.

Possible topics for future research are the changes in people's values and analysing other environmental issues – for example, how well existing services respond to changing appreciations and how e.g. new technology could be used within the context of these changing appreciations.

References

- Alvesson, M. and K. Sköldbberg. (1994). *Tolkning och Reflektion. Vetenskapsfilosofi och Kvalitativ Metod.* (Interpretation and Reflection, Philosophy of Science and Qualitative Method). Lund: Studentlitteratur.
- Andreewsky, E. and D. Bourcie. (2000). "Abduction in language interpretation and law making." *Kybernetes* 29(7/8): 836-845.
- Bucherer, E., U. Eisert, and O. Gassmann. (2012). "Towards systematic business model innovation: lessons from product innovation management," *Creativity Innovation Management*, 21(2): 183-198.
- Coes, D.H. (2014). *Critically assessing the strengths and limitations of the business model canvas*. Master's thesis, University of Twente, Netherlands.
- Collis, J. and R. Hussey. (2003). *Business Research*. London: Palgrave Macmillan.
- Cusumano, M.A., Kahl, S.J. and Suarez, F.F. (2015). "Services, industry evolution, and the competitive strategies of product firms." *Strategic Management Journal*, 36(4): 559-575.
- Drucker, P.F. (1994). "The theory of the business." *Harvard Business Review*, 72(5): 95-106.
- Dubois, A. and L.-E. Gadde. (2002) "Systematic combining: an abductive approach to case research." *Journal of Business Research* 7(4): 553-560.
- Eckhardt, G.M., M. B. Houston, B. Jiang, C. Lambertson, A. Rindfleisch and G. Zervas. (2019). "Marketing in the sharing economy." *Journal of Marketing* 83(5): 5-27.
<https://doi.org/10.1177/00222242919861929>.
- Eisenmann, T., G. Parker and M.W. Van Alstyne. (2006). "Strategies for two-sided markets." *Harvard Business Review*, 84(5): 92-101.
- Evans, D.S., A. Hagiu and R. Schmalensee. (2006) *Invisible Engines – How Software Platforms Drive Innovation and Transform Industries*. Cambridge, Ma: MIT Press.
- Furr, N. and J. Dyer. (2014). *The Innovator's Method: Bringing the Lean Startup into Your Organization*, Boston, Ma: Harvard Business Review Press.
- Gawer, A. (2009). *Platforms, Markets, and Innovation*. Cheltenham: Edward Elgar.
- Gabriel, Y., M. Korczynski and K. Rieder. (2015). "Organizations and their consumers: bridging work and consumption." *Organization*, 22(5): 629-643. <https://doi.org/10.1177/1350508415586040>
- Hagiu, A. and J. Wright. "Multisided platforms." *International Journal of Industrial Organization* 43: 162-174.
- Jaakkola, E. and T. Hakanen. (2013) "Value co-creation in solution networks." *Industrial Marketing Management*, 42(1): 47-58.

Järvi, K. and S. Kortelainen. (2011). "The dynamism of the two-sided application store market." *International Journal of Technology Marketing*, 6(1): 57-71.

Kim, W.C. and R. Mauborgne. (2005). *Blue Ocean Strategy: How to Create Uncontested Market Space and Make the Competition Irrelevant*, Boston, Ma: Harvard Business Review Press.

Kirkeby, O.F. (1990). "Abduktion", in H. Andersen (ed): "Vetenskapsteori och metodlära. Introduction." Lund, Sweden: Studentlitteratur.

Kovács, G. and K.M. Spens. (2005) "Abductive reasoning in logistics research." *International Journal of Physical Distribution & Logistics Management* 35(2): 132-144.

Magretta, J. (2002). "Why business models matter", *Harvard Business Review* 80(5): 86-92.

Nenonen, S. and K. Storbacka. (2010). "Markkinamuotoilu. Johdatko markkinoita vai johtavatko markkinat sinua?" (*Market Design. Are you leading the market or do the market lead you?*). Helsinki: WSOYpro.

Osterwalder, A. (2004). *The business model ontology: a proposition in a design science approach.* PhD Thesis, University of Lausanne, Switzerland, 2004.

Osterwalder, A. and Y. Pigneur. (2010). *Business Model Generation: A Handbook for Visionaries, Game Changers, and Challengers*, Hoboken, NJ: John Wiley & Sons, Inc.

Osterwalder, A., Pigneur, Y., Bernarda, G. and A. Smith. (2014). *Value Proposition Design*, Hoboken NJ: John Wiley and Sons, Inc.

Parker, G. and M. Van Alstyne. (2016). "Platform strategy" in M. Augier and D.J. Teece *The Palgrave Encyclopedia of Strategic Management*. London: Palgrave

Parker, G.G., M.W. Van Alstyne and S.P. Choudary. (2016) *Platform Revolution: How Networked Markets Are Transforming the Economy and How to Make Them Work for You*, New York: W.W. Norton & Company.

Salmela, E. and N. Nurkka. (2018). "Digital market capture in platform business - how to pass the valley of death?" *Nordic Journal of Business* 67(2): 90-113.

Saunders, M., P. Lewis and A. Thornhill. (2007). *Research Methods for Business Students*, 4e, London: Prentice Hall, 2007.

Scholten, R. (2016) *New business model canvas for digital platforms*. LinkedIn: <https://www.linkedin.com/pulse/new-business-model-canvas-two-sided-digital-platforms-scholten/> (Accessed 5 August 2019).

Scholten, S. and U. Scholten. (2012). "Platform-based innovation management: directing external innovational effort in platform ecosystems." *Journal of Knowledge Economy* 3(2): 164-184.

Stake, R.E. (1995). *The Art of Case Study Research*, California Ca: Sage, 1995.

Taylor, S.S., D. Fisher, and R.L. Dufresne. (2002). "The aesthetics of management storytelling: a key to organizational learning." *Management Learning* 33(3): 313-330.

D. J. Teece (2010). "Business models, business strategy and innovation," *Long Range Planning* 43(2/3): 172-194.

Tuomi, J. and A. Sarajärvi. (2002) "Laadullinen tutkimus ja sisällönanalyysi." (Qualitative research and content analysis.) Helsinki: Kustannusosakeyhtiö Tammi.

Upward, A. (2013). *Towards an Ontology and Canvas for Strongly Sustainable Business Models: A Systemic Design Science Exploration*, Toronto, On: York University, 2013.

Vogelsang, M. (2010). "Dynamics of two-sided internet markets", *International Economics and Economic Policy* 7(1): 129-145.

Wortmann, F., K. Ellermann, A. Kuhn and R. Dumitrescu. (2020). "Ideation for digital platforms based on a companies' ecosystem." *Procedia CIRP* 91: 559-564.

Yin, R.K. (2003). *Case Study Research: Design and Methods*, California, Thousand Oaks: Sage, 2003.

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Dr. Hannele Lampela is a Senior Research Fellow in Industrial Engineering and Management research unit at the University of Oulu, Finland. She has more than 15 years of experience in university teaching and research, with diverse topics in information and knowledge management such as networked value creation, innovation management, distributed knowledge work, competence management, inter-organizational learning, and product lifecycle information management. Her current research interests focus on information and knowledge-driven transformation in different industries, ecosystems and platforms. In addition to her teaching and research experience, Dr. Lampela has extensive project experience by being involved in several EU and nationally funded research projects.





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