3 Digital Entrepreneurship across P2P, B2C and B2B Contexts

A Bibliometric Analysis Deconstructing Extant Research on Sharing Economy Business Models

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Introduction

Digital transformation requires businesses to rethink and innovate their business models. Li *et al*. (2018) claim that the internet and big data are currently making an impact on all industries; therefore, businesses need to reconsider their business models in order to adapt to the environment. As new forms of businesses evolve, there is an emerging growth of practices of a sharing economy. A recent search on Google Scholar indicates an astonishing amount of published research articles for search phrases such as "digital business models", 3,080; "digitalization", 61,800; and "sharing economy", 28,000—only since 2016! Another illustration of the increasing interest in the sharing economy is the recent number of special issues addressing the phenomenon (Maurer *et al*., 2020). In practice, within Europe's five most prominent sharing economy sectors, the total value of transactions is expected to reach €335bn in 2025, from €28bn in 2015 (Vaughan and Daverio, 2016). This indicates increased attention to the phenomenon of a sharing economy, for research and practice alike.

Despite an overwhelmingly growing interest in the emerging phenomenon of the sharing economy, it is referred to as an umbrella concept with an inherent variety and unclear dynamics (Trenz *et al*., 2018; Wilhelms *et al*., 2017). To date, there exists no unified definition (Schor, 2014) and the phenomenon remains debated (Martin, 2016). However, the idea of sharing instead of owning is not new (Belk, 2010; Botsman & Rogers, 2010; Schor, 2014). Extant research refers to the same phenomenon with terms such as access economy, circular economy, collaborative consumption, collaborative economy, gig economy and peer economy (Bellotti *et al*., 2015; Strømmen-Bakhtiar & Vinogradov, 2020). Despite the vast number of interchangeable terms, extant research seems to agree on some core properties of the phenomenon, including (1) peer platforms that coordinate, (2) peer providers and (3) peer consumers

(Botsman & Rogers, 2010; Hamari *et al*., 2015; OECD, 2016; Schor, 2014). After analysing 125 definitions, Schlagwein *et al*. (2020) suggest that commonly addressed core properties of the sharing economy relate to peer activities of coordinating the sharing of goods or services through a digital technology platform, without the transfer of ownership. Consequently, existing research regarding the sharing economy primarily focuses on issues related to peer-to-peer (P2P) activities of obtaining, giving or sharing access to goods and services, which are coordinated through community-based online services (Maurer *et al*., 2020), and also concentrates on the P2P business models underpinning the sharing economy phenomenon (Apte & Davis, 2019; Assadi, 2020; Mosmann & Klutt, 2020).

Although established business model research (Baden-Fuller & Haefliger, 2013; Osterwalder & Pigneur, 2010; Teece, 2010; Zott *et al*., 2011) emphasizes the distinction between business-to-consumer (B2C) and business-to-business (B2B) business models, how these established business model distinctions are related to the P2P patterns described in the sharing economy literature remains unexplored. A business model "defines how the enterprise creates and delivers value to customers, and then converts payments received to profits" (Teece, 2010, p. 173). Mosmann and Klutt (2020) argue that the sharing can be of a commercial or non-commercial nature; hence, understanding the phenomenon of the sharing economy could be extended beyond the P2P, B2C and B2B business models. Therefore, the aim of this study was to assess the extant research addressing sharing economy business models in order to synthesize a foundation upon which subsequent empirical research can be built. In particular, more research is necessary to address unresolved issues regarding B2B relations (Grondys, 2019) and placing an emphasis on commercial aspects (OECD, 2016). Furthermore, Agarwal and Steinmetz (2019) call for additional research on B2B business models and their engagement in the sharing economy (Kathan *et al*., 2016). Moreover, the lack of theorization of the business model variations underpinning the sharing economy in general, and in relation to distinctions between P2P, B2C and B2B in particular, warrants taking stock of extant research to establish a unified foundation for subsequent research (Maurer *et al*., 2020). Therefore, the goal of this study was to address the following research question: *How can the sharing economy business model variations and similarities be conceptualized beyond P2P and thus encompass the traditional business model perspectives of B2C and B2B?*

In order to address this research ambition, we initiated our study on February 5, 2020 by examining the extant published academic research for the timeframe of 1997–2020 through a structured literature search. Our initial sample contained 1,266 documents. After excluding irrelevant categories, we had a total of 184 articles for our bibliometric analysis. Bibliometric analysis refers to "the collection, the handling, and the analysis of quantitative bibliometric data, derived from scientific publications"

(Verbeek *et al.*, p. 181 cited in Holand *et al.*, 2019), and it makes it possible to identify similarities and patterns as well to provide insight into specific fields of academic research. Bibliometric analysis may be an appropriate tool for examining study areas, assessing outputs and outcomes of investigations and providing objective evaluations of the rapidly growing research literature (Narin *et al.*, 1994). To conduct the bibliometric analysis, we applied VOSviewer and identified 19 highly relevant interrelated sharing economy articles upon which we conducted a content analysis. This study identified core articles addressing the constituent elements of the sharing economy business model and illuminated variations and similarities across the P2P, B2C and B2B business models as these are reported in the extant literature. Discussing these findings against the underlying theory, we suggest a framework that distinguishes between the P2P, B2C and B2B sharing economy business models. The proposed framework extends the theory on the sharing economy by adding further clarification of the sharing economy business models, thus guiding future research. Moreover, the framework has implications for practitioners as it can serve as an important contributor and basis for discussions related to strategic decisions, thus providing useful information for various structures as well as value creation and value-capturing activities.

This chapter is structured as follows. First, we present the theoretical underpinnings of digital business models and the sharing economy concepts. Second, we describe the bibliometric method applied and the steps taken in the analysis. Third, we reveal the findings from our analysis and subsequently discuss these findings towards the initial theoretical underpinnings. Finally, we present a framework distinguishing between the P2P, B2C and B2B sharing economy business models and conclude with the implications of the distinctions provided in this framework.

Theoretical Underpinnings of the Main Concepts

The purpose of this chapter is to explain the concept of business models and how it relates to the sharing economy, thereby illustrating the gaps in the current theory. The prior theory on business models will be presented before introducing the current theory on the transition of the sharing economy as well as business model variations.

Digital Business Models

Recently, "digitalization has been identified as one of the major trends changing society and business in general" (Parviainen *et al.*, 2017, p. 63; Veit *et al.*, 2014). Since digitalization has influenced various business activities, including companies' business models, "digitalization has put pressure on companies to reflect on their current strategy and explore new business opportunities, by transforming their existing business models" (Rachinger *et al.*, 2019, p. 1143).

Hence, digital transformation is a driver for changes in companies' business models related to changes in their products or services, the organizational structure and automation of processes (Hess *et al*., 2016). Furthermore, the fundamental change in the way businesses operate and generate value is referred to as a shift towards a digital business model, which is the missing link between business strategy, processes and information technology (Veit *et al*., 2014). Technology facilitates easy access to information and customer solutions at a lower cost; hence, it is argued that businesses need to be more customer-centric (Teece, 2010, p. 172). In terms of digital transformation, businesses need to re-evaluate their value propositions in terms of understanding the business model design options as well as the customer needs and technological trajectories (Teece, 2010, p. 173).

Sharing Economy

Driven by the financial collapse in 2008, several firms searched for new ways to create value and reduce costs (Habibi *et al*., 2017). Re-creating value by using existing resources, either for monetary or non-monetary benefits, contributed to the more efficient use of resources (Botsman & Rogers, 2010). As a result, the term "sharing economy" was introduced and opened new ways to deal with capitalism and consumerism (Agarwal & Steinmetz, 2019). The increased attention regarding the sharing economy is causing disruption in well-established and mature industries because consumers are provided with convenient and cost-efficient access to resources, without the responsibility of ownership (Schor, 2014, p. 4; Trabucchi *et al*., 2019).

Defining the sharing economy in a way that reflects common usage has proven to be difficult due to the wide range of perspectives (Schor, 2014, p. 3). One recent attempt at a unified definition has been provided by Plewnia and Guenther (2018, p. 576), who define the sharing economy as "activities or platforms which facilitate the sharing of material, products, product services, space, money, workforce, knowledge, or information based on for-profit or non-profit transactions in a variety of different market structures". However, Mosmann and Klutt (2020, p. 40) have found that the sharing economy is identified across P2P, B2C and B2B relational patterns. Hence, the literature indicates a shift towards a new set of business models that emphasize resource exchange rather than offering new ones (Laamanen *et al*., 2018, p. 213).

Access to new technology and its potential benefits has been an interesting topic within the sharing economy as it allows for interaction between individuals, who do not necessarily know each other, to get in touch for resource exchange (Schor, 2014, p. 12). Both products and services are described in the digital business strategy literature as they both can take advantage of the possibilities within digital resources (Bharadwaj *et al*., 2013, p. 474). More user-friendly solutions as a result of digital improvements is facilitating more comfortable users, which,

in turn, can open new business opportunities as a result of increased quality and quantity of generated data (Bharadwaj *et al.*, 2013, p. 474; Laamanen *et al.*, 2018, p. 213; Schor, 2014). Digital infrastructure that is well embedded in the business strategy is seen as a strategic dynamic capability as it enables the company to scale up or down their infrastructure in line with the market (Bharadwaj *et al.*, 2013, p. 475).

A sharing platform, consisting of all involved parts, is referred to as a community where control and coordination are of high importance for attracting and retaining participants (Mosmann & Klutt, 2020, pp. 40–41). The decisions regarding market orientation and market structure are fundamental when shaping the platform's business model. In terms of market orientation, sharing economy platforms are either for-profit, which strive to optimize generated revenue and asset maximization, or non-profit, in which the primary goal is to serve a community's needs rather than seeking growth or revenue maximization (Schor, 2014, pp. 4–5). A company's market structure reflects its market orientation, and the sharing economy literature distinguishes between P2P and B2C. Within P2P platforms, value capturing is generated through commissions, i.e., revenue growth rises with the number of transactions, whereas for B2C platforms, value capturing occurs through maximizing revenue per transaction (Schor, 2014, p. 5). The sharing economy in terms of P2P has received a lot of attention. P2P is referred to as a multisided platform, consisting of intermediaries who bring together distinct groups of users where network effects are said to be a key differentiator when it comes to value creation (Bharadwaj *et al.*, 2013, p. 475; Jabłoński, 2018). Communities as the source of value creation indicate a shift in value creation drivers (Stabell & Fjeldstad, 1998). Analysis conducted by Lang *et al.* (2015, p. 787) reveals that the co-creation mechanism within these communities can minimize the risk of revenue loss and will benefit the consumers as well as the producers.

Based on the underlying theory related to digital business models and the sharing economy, we recognize the need for a better overview of the sharing economy field. We note that much of the literature is based on the sharing economy as a whole, and it does not differentiate between P2P, B2C and B2B. Agarwal and Steinmetz (2019, p. 12) suggest that the P2P and B2C business models within the sharing economy can be variations of each other but that B2B is rather excluded in the existing literature. This missing link is also recognized by Grondys (2019) and Kathan *et al.* (2016) as they argue that the existing literature, to a large extent, focuses on private sharing and provides less emphasis on issues related to B2B interactions.

Methodology

In order to clarify the understanding of the ambiguous umbrella-term "sharing economy" and to identify the P2P, B2C and B2B business model variations, we conducted a broad and structured search of prior

published research. We subsequently conducted a bibliometric analysis on the retrieved articles in order to distil our search further. There has been a significant increase in the quantification of science, especially in the use of bibliographic analysis for evaluation and monitoring of scientific outputs (Verbeek *et al.*, 2002). Fahimnia *et al.* (2015) promote some of the strengths associated with bibliometrics. For example, network analysis through bibliometric tools can prove powerful for identifying established and emerging topical areas. It can also help to identify the clusters of research and researchers showing how the various areas of thought may have emerged based on author and institutional characteristics. Identifying the more influential researchers within the clusters sets the stage for determining additional emergent study fields through capturing more recent topics covered by these researchers (p. 102). The current study applied this method to identify if, and how, prior research has addressed variations in the B2B, B2C and P2P business model configurations in order to provide a foundation for future research and practice. Levy and Ellis (2006, pp. 172–173) support our choice of a literature review to (1) understand the existing body of knowledge, (2) provide us with a solid theoretical foundation, (3) substantiate the presence of the research problem, (4) justify the proposed study as one that contributes something new and (5) frame the valid research methodologies, approach, goals and research question for the proposed study.

Search Procedure and Sample

The structured search and subsequent refinement were performed by using a database of relevant research articles, and it progressed in several stages. Initially, we experimented with several different search phrase combinations. By using the search string *Topic = ((Business-model) AND Topic = (Digit* OR Sharing-econom*))*, without any limitations, we identified 1,266 documents in an exhaustive search for the period 1997–2020, enabling us to understand the development of research focusing on the sharing economy. Then, we limited our search to only include documents written in English from articles, proceedings, papers, reviews, editorial material, book chapters and book reviews. Excluding irrelevant categories and keeping those with 50 or more contributions, our database was reduced to 809 articles.

In the next stage, we selected all articles with ten or more citations within the timeframe 1997–2017, resulting in a total of 170 articles; we read the abstracts of all of these articles. In addition, we selected 397 articles within the timeframe 2018–2020, with no requirement regarding the number of citations as not much time has passed to be referenced.

With the new sample of 567 articles published between 1997 and 2020, we then conducted a first-order categorization of these articles by colour coding, based on the relevance for our research question, thus reducing the sample to 190 relevant articles. We subsequently omitted the

most recent articles of 2020 as this year had just started, and bibliometric analyses of that year would be skewed by the lack of a full year's publication. The 2020 articles were read and utilized in the positioning of our research question. Considering the final limitations and exclusions, our final literature search sample was 184 articles, which were downloaded from the Web of Science database.

Three-Phase Analysis

The analysis of the 184 research articles included in our final search also progressed in three distinct phases. First, we conducted a descriptive analysis of the overall characteristics of the sample. Subsequently, we conducted a bibliometric analysis. Finally, we utilized bibliometric analysis to further distil our sample and identify 19 core research articles included in a content analysis.

After downloading our final search from the Web of Science database to Excel, we had the basis for the descriptive analysis. We cleaned up all data in Excel so that the analytical tool Microsoft Power BI could read the data and create visualizations. Next, all articles were represented with their title, author(s), journal, discipline category(s) and publication year. The descriptive analysis revealed the development within the sharing economy field as well as the journals that have emphasized the topic and discipline categories. The purpose of the timeframe was to map out the development of published articles over the last 22 years, whereas the categorization overview aimed to identify the categories to which the articles are allocated. We also constructed a summary of the top ten journals in terms of published articles. Subsequently, we utilized basic functions in Excel to make sense of the data, identifying the core scientific disciplines that had contributed, the journal type, the ranking of the journals as well as the influence on sharing economy research by country, year and individual researcher. In the next stage, we applied the software VOSviewer to the 184 articles downloaded from the Web of Science database, enabling us to conduct bibliometric analysis. Bibliometric analysis is the use of statistical methods to analyse books, articles and other publications. Vosviewer is one of several available software tools that enables analysis by visualizing several different relations between downloaded articles, e.g., co-citations or co-occurrence of key terms. To obtain a visual overview in terms of keyword relevance and citations, we conducted co-occurrence, co-citation and bibliographic coupling analyses (Van Eck & Waltman, 2009). These analyses are the most common to study these types of relations (Ding *et al.*, 2016, p. 285), enabling us to identify four different clusters and narrowing our dataset down to a core of highly relevant interrelated sharing economy articles. By calculating network centrality for individual articles related to each of these clusters, we were able to identify central articles for each cluster. When conducting the co-occurrence analysis, we saw that both the terms "business model" and "business models" were represented. In order to obtain a more trustworthy analysis,

we created a VOSviewer thesaurus file in addition to the file including all 184 articles to combine those two terms represented as "business model". However, we did not combine terms like "digitization" and "digitalization" as these terms cover different aspects of the digital concept. The bibliometric analysis was supported by the bibliographic coupling and the analysis of cluster belongingness, total link strength and citations identifying the most influential articles. Based on these relationships, the articles were grouped into clusters. One of the clusters (see the green cluster in Figure 3.4) revealed 39 articles addressing different sharing economy concepts and related terms describing industry-specific cases or conceptual frameworks, and the 19 most influential articles were selected.

Finally, the bibliometric analysis identified the most influential articles. Furthermore, the abstracts of all 184 articles were read to ensure high thematic relevance as well as to reduce the risk that we had omitted relevant articles addressing important distinctions between the P2P, B2C and B2B sharing economy business models. When we were confident that our sample of 19 articles was sufficient in terms of influence and relevance, we conducted a content analysis by closely reading the articles and coding them according to their reference of the P2P, B2C and B2B sharing economy business models.

Findings

Descriptive and Bibliometric Analysis

Recently, there has been a significant increase in the number of articles dealing with business and management published in journals related to sustainability and technology. Due to the exponential increase in publishing, 75% of the articles included in our analysis were published between 2017 and 2019. The remaining 25% of the articles published prior to 2017 were distributed evenly over a fairly flat and stable period between 1997 and 2011, followed by a gentle increase in 2012, before the development really gained momentum in 2017 (Figure 3.1).

The co-occurrence analysis (Figure 3.2) was generated in VOSviewer, by which several analyses were conducted to ensure high thematic relevance of keywords. Cluster two (red) has "sharing economy" as the most influential keyword, but other closely related terms that were identified in the theory chapter like "collaborate consumption", "access-based consumption", and "collaborate economy" are represented as well. The keyword "peer-to-peer" indicates a large amount of sharing economy articles related to P2P, whereas keywords for B2C and B2B are not present. Cluster one (green) contains keywords related to business models and strategy, whereas cluster three (blue) consists of keywords related to digi* concepts like "digital transformation" and "industry 4.0". Cluster four (yellow) contains three keywords representing the business model elements "value creation", "value capture", and "value proposition".

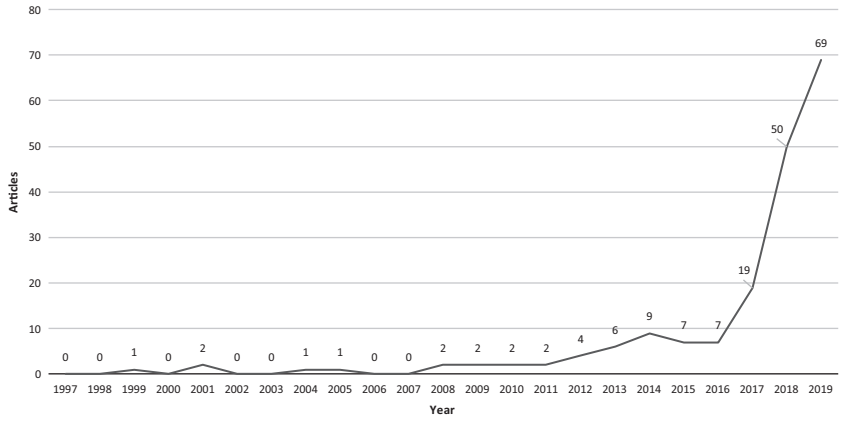

Figure 3.1 Development of publications per year for the period 1997–2019 (N = 184).

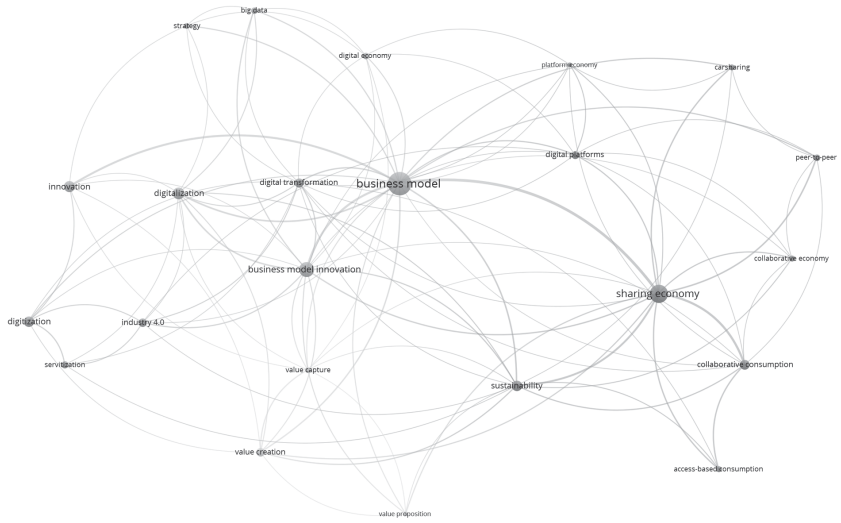

Figure 3.2 VOSviewer map with co-occurrence analysis.

From the co-citation analysis (Figure 3.3), only the article by Cohen and Kietzmann (2014) is included in our core articles as the other articles do not contribute to our research question. The fact that we only managed to identify one of our core articles in this analysis may be explained by the point that business models have been studied for a long time, but the sharing economy is relatively new; hence, there are fewer citations. Another explanation related to the green cluster may be that much has been done in the

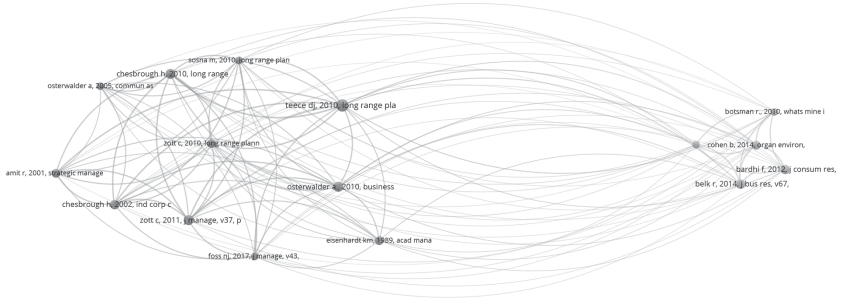

Figure 3.3 VOSviewer map with co-citation analysis.

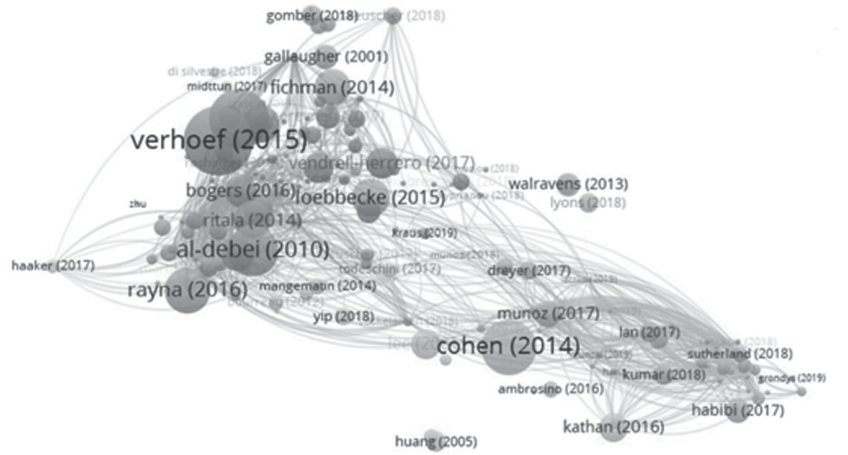

Figure 3.4 VOSviewer map with bibliographic coupling analysis.

field of the sharing economy, but there is limited research related to business models.

We also conducted a bibliographic coupling analysis in VOSviewer (Figure 3.4). This method is used to identify the most central articles by separating clusters by colour-coding. Analysis of the green cluster in Figure 3.4 indicates articles related to different sharing economy concepts, e.g., industry-specific cases, frameworks and related concepts that overlap with the sharing economy concept.

Content Analysis

Within the sharing economy, P2P business models consist of a triadic structure whereby value creation takes place through decentralized transactions and co-creation, and review systems are applied. Value

capturing occurs through commissions, and emphasis is placed on flexibility and safety for the consumer. Meanwhile, B2C business models consist of a dyadic structure whereby value creation takes place in a centralized resource pool. Value capturing occurs through commissions, membership fees and public subsidies, and emphasis is placed on flexibility and safety for the consumer. Finally, B2B business models consist of a polyadic structure whereby co-creation is the basis for value creation. Value capturing occurs through membership fees and commissions, and emphasis is placed on flexibility through coopetition.

To a large extent, prior research has studied the phenomenon of the sharing economy without separating P2P, B2C and B2B. The content analysis revealed that there are some quite unclear boundaries in the literature and that the terms have been used interchangeably. Based on the approach that has been used for the content analysis, we chose to divide the chapter into the sub-groups P2P, B2C and B2B, whereby the identified business model elements "value creation", "value capture" and "value propositions" are presented within. Structural differences were observed, which, in turn, influence the way companies create value, capture value and create added value for consumers. In addition, we chose to include other useful literature that has been identified, which can help influence the research question of this study.

The P2P Sharing Economy Business Model

The identification of underutilized assets is the basis for value creation within the sharing economy and occurs through "P2P intermediation", with a focus on decentralized P2P transactions (e.g., Airbnb) (Acquier *et al.*, 2019, p. 9). P2P business models are described as a triadic relationship in the literature, consisting of providers, intermediaries and consumers, whereby value creation control is decentralized (Ritter & Schanz, 2019). This triadic business model, applied by companies like Airbnb and Uber, is also referred to as a multisided platform (Piscicelli *et al.*, 2018), and the consumer can be either a business or an individual (Kumar *et al.*, 2018, p. 147). The business model that is applied by Airbnb and Uber, for example, is characterized as a "matchmaker" as it is an economic value creator focusing on decentralized for-profit transactions, whereas "mission-driven platforms" that promote a social cause are seen as an extended value creator (Acquier *et al.*, 2019, pp. 13–15).

Underutilized assets form the foundation for value creation (Acquier *et al.*, 2019; Münoz & Cohen, 2017), but P2P services can be extended and "serve as an attractive and profitable option for households and private individuals" (Apte & Davis, 2019, p. 106). Value creation in P2P services has moved beyond Porter's value chain and now requires co-creation with several entities, simultaneously (Apte & Davis, 2019, p. 110). Initially, Apte and Davis (2019) developed a business model that is based on that of Osterwalder and Pigneur (2010), whereby value creation reflects the

company's ability to link customers and the easy-to-use platform. As service platforms like Airbnb and Uber do not offer any products or services of their own, they are generating value through "collecting, aggregating, and presenting information to potential customers and service providers" (Apte & Davis, 2019, p. 119; Cohen & Kietzmann, 2014).

Value capturing within the P2P sharing economy is based on the two extremes: economic value creation and for-profit initiatives on the one hand, and extended value creation and non-profit or limited-profit initiatives on the other hand (Acquier *et al*., 2019, p. 10). "Mission-driven platforms" focusing on extended value creation are based on either non-profit or limited-profit models, by which voluntary contributions are crucial for staying operational (Acquier *et al*., 2019, p. 14; Šiuškaitė *et al*., 2019, p. 375). Value capturing may also occur through advertisements or commissions that are compatible with their mission (Acquier *et al*., 2019, p. 12). On the other hand, "matchmakers" focus on economic value creation through for-profit platforms that capture value through commissions generated from market transactions between peers (Acquier *et al*., 2019, p. 12), "aiming to maximize their revenue stream" (Šiuškaitė *et al*., 2019, p. 375). Täuscher and Laudien's (2018, pp. 321–323) analysis on key revenue streams indicates that commissions are the most preferred option for marketplaces within the P2P sharing economy, comprising 79%.

Value proposition is included as one of the nine business model building blocks developed by Apte and Davis (2019, p. 117), who point out the importance of "being able to quickly link customers with suitable suppliers to cover customer needs". Other significant elements related to value proposition include response speed and variety of offerings, e.g., locations and standards related to properties or skill levels related to labour (Apte & Davis, 2019, p. 117). In the case of the P2P mobility firm GoMore, the value propositions are based on "the intention to offer financial compensation for car ownership and travel costs to peer providers" (Guyader & Piscicelli, 2019, p. 1066). Sharing and redeploying their resources and capabilities across the different business models made them more competitive in terms of quality, growth and profits, but more participants were gained through their initial P2P business model (Guyader & Piscicelli, 2019). The increased focus on cost savings and efficiency in the case of GoMore is supported by Täuscher and Laudien (2018, p. 323), who found that 75% of their sample firms provide additional value by increasing cost savings or efficiency.

The B2C Sharing Economy Business Model

To a large extent, the B2C sharing economy business model has been concentrated to the field of carsharing (Acquier *et al*., 2019; Cohen & Kietzmann, 2014; Münzel *et al*., 2019; Vaskelainen & Münzel, 2018). In contrast to P2P and the triadic approach, value creation in terms of B2C is described as a relationship between provider and consumer and is

referred to as a dyadic relationship (Ritter & Schanz, 2019). This dyadic business model has a governance structure that is characterized by centralization, in which the primary focus is to possess unique and hard-to-imitate resources (Ritter & Schanz, 2019, p. 324). The centralized governance structure is reflected in the B2C value creation mechanism of Acquier *et al.* (2019, p. 9), whereby car rental companies (e.g., Zipcar) and databases for stored contributions (e.g., Wikipedia) are thought to create value through "centralized resource pooling". Within carsharing, station-based and free-floating models have been identified as two alternative business models that differ in terms of their asset availability to consumers (Vaskelainen & Münzel, 2018, p. 275). Station-based business models use the same location for pick-up and delivery, whereas the free-floating model gives the consumer more flexibility in terms of pick-up and delivery and primarily operates in large cities (Vaskelainen & Münzel, 2018, p. 275). These carsharing business models, operating with monetized access to a centralized resource pool, are further described in the literature as "shared infrastructure providers" and are characterized as economic value creators. However, databases like Wikipedia are said to operate as a "commoners" business model that is characterized as an extended value creator in which primary access is free; therefore, it is a non-profit or limited-profit model (Acquier *et al.*, 2019, pp. 10–13).

The "commoners" business model is based on non-profit or limited-profit intentions and strives to capture value by combining different indirect approaches and keeping costs at a low level by receiving voluntary work (Acquier *et al.*, 2019, pp. 11–13). These indirect approaches can take the form of support from third parties, such as public authorities and private donors, to receive financial or physical resources (Acquier *et al.*, 2019, p. 13). Another approach consists of running a "complementary for-profit activity to financially support the main mission" (Acquier *et al.*, 2019, p. 13) such as introducing an online shop or imposing a monthly fee. Another configuration, "shared infrastructure providers", is categorized as a for-profit initiative whereby consumers can use the service for a fee, either as paying members or on a pay-per-use basis (Acquier *et al.*, 2019, p. 10).

In terms of value propositions, the station-based business model is based on market and community logic, whereas the free-floating model is based on corporation logic (Vaskelainen & Münzel, 2018, p. 287). The free-floating business model is a flexible solution for consumers as they can, to a larger extent, pick up and deliver the car at different locations in contrast to the station-based business model. Station-based and free-floating business models contribute to the reduction of emissions and congestion as people, especially Generation Y, prefer renting a car when they need it rather than having their own car (Cohen & Kietzmann, 2014; Ferrell *et al.*, 2017). The value proposition of the case firm GoMore is based on offering car subscriptions to consumers for them to replace

car ownership, and it is financed through P2P car rentals (Guyader & Piscicelli, 2019, p. 1064).

The B2B Sharing Economy Business Model

The sharing economy within the B2B sector operates with the aim of optimizing the use of resources and thereby creating value for society (Grondys, 2019, p. 1). Implementing the sharing economy concept in the B2B sector facilitates (1) reduced production costs, (2) flexible response to customer needs and expectations, (3) faster rebranding through effective liquidation of assets, (4) more flexibility in fulfilling more complex orders cheaper than before and (5) inclusion of both suppliers and customers in the production process, sales and distribution (Grondys, 2019, p. 4). Facilitating the interaction between these actors will enable value co-creation among all stakeholders within the business' network (Laczko *et al*., 2019, p. 214). To be able to co-create value, Laczko *et al*. (2019, p. 216) point out the importance of providing a significant number of users and being attractive for new people to join in, which, in turn, leads to increased platform stickiness. On the other hand, it is imperative that the central actor is able to capture value from its stakeholders, described as stakeholder profitability by Laczko *et al*. (2019).

Capturing the value a company creates is crucial to its survival, and the literature has concentrated on the synergies between value creation and appropriation from the central actor's perspective (Laczko *et al*., 2019). The simultaneous occurrence of value creation and value capture has been put forward by Apte and Davis (2019) for the P2P sector and has been extended to the B2B sector by Laczko *et al*. (2019). Contributing to the literature of the B2B sharing economy, the missing link between this simultaneous occurrence has been established by promoting eight value-driving mechanisms for the central actor to create value for its stakeholders, simultaneously increasing its own value capture opportunities (Laczko *et al*., 2019, p. 227). Collecting and analysing data in terms of value capture is highlighted as one of these mechanisms as "this information can be used to create value by discovering stakeholder needs" (Laczko *et al*., 2019, p. 225). Furthermore, in terms of value capture, analysis reveals that the use of membership fees (66%) is a more frequently applied revenue stream within B2B marketplaces than commissions (33%) (Täuscher & Laudien, 2018, p. 323). Resource sharing within the B2B sharing economy has created the coopetition market model, leading to reduced costs as a result of cooperation between competitors with the aim of operating for the benefit of consumers (Grondys, 2019, p. 3).

Discussion

Based on analyses of the findings and the ensuing discussion, there are some clear patterns. For the purpose of a better overview, we have

separated P2P, B2C and B2B, respectively, and each of the business model elements. There are several obvious similarities between them, but there are also some distinguishing characteristics that make them different in several ways. We have compiled these findings into a framework presented in Table 3.1.

Within the value creation dimension, two distinct structures have been identified for P2P and B2C, respectively. The triadic structure, whereby the interaction between two (or more) distinct types of users is facilitated by intermediaries, is strongly associated with P2P platforms, while the dyadic structure, whereby the interaction between owner and user occurs without the use of intermediaries, is associated with B2C platforms. Within triadic structures, value creation takes place at a decentralized level, while within dyadic structures, it occurs through a centralized resource pool. The ownership of resources is a part of the basis to separate the approaches: in P2P platforms, companies typically do not own any resources, while in B2C platforms, the companies own these resources. The literature does not relate B2B platforms to any specific type of structure; however, we argue that B2B platforms can take the form of triadic or dyadic structures, depending on the platform's purpose and thus ownership of the resources. We characterized this as a polyadic approach in this ecosystem. Nevertheless, value co-creation within the P2P and B2B platforms has been put forward as a crucial activity and takes the form of review systems in P2P. There are several similarities within the value capture mechanism. The use of commissions is put forward as a source of value capture for P2P, B2C and B2B. For P2P platforms, commissions are the only mentioned source for value capturing, while they are the primary revenue stream for B2C platforms. However, it is also recognized that membership fees and public subsidies are other sources of value capture for B2C platforms. In terms of B2B platforms, membership fees are the most preferred revenue stream, but commissions are also frequently used. In terms of value propositions, flexibility in relation to their consumers is put forward within P2P and B2C, which can be achieved through operating different business models, leading to cost savings and efficiency. For the B2B platforms, flexibility for both the consumers and the company itself is achieved through the network of suppliers, referred to as the coopetition model. Technological developments that facilitate better coordination and safety in terms of fraud and theft will, in turn, make the users feel more comfortable and hence serve as an important value extender.

Conclusion

This study addressed sharing economy business model variations based on an exhaustive structured literature search and subsequent bibliometric analysis that identified 19 core articles to synthesize the current state in the sharing economy related to the P2P, B2C and B2B business models.

Table 3.1 Compilation of findings according to the business model dimensions of P2P, B2C and B2B

	P2P	*B2C*	*B2B*
Value creation	• Triadic structure (Ritter & Schanz, 2019) • Decentralized transactions (Acquier et al., 2019) • Co-creation (Apte & Davis, 2019) • Review system (Täuscher & Laudien, 2018)	• Dyadic structure (Ritter & Schanz, 2019) • Centralized resource pool (Ritter & Schanz, 2019; Acquier et al., 2019; Vaskelainen & Münzel, 2018)	• Co-creation (Laczko et al., 2019; Grondys, 2019)
Value capture	• Commissions (Acquier et al., 2019; Täuscher & Laudien, 2018; Guyader & Piscicelli, 2019)	• Commissions, membership fees and public subsidies (Acquier et al., 2019; Täuscher & Laudien, 2018; Guyader & Piscicelli; Vaskelainen & Münzel, 2018)	• Membership fees and commissions (Täuscher & Laudien, 2018)
Value propositions	• Flexibility (Apte & Davis, 2019) and safety	• Flexibility (Vaskelainen & Münzel, 2018) and safety	• Flexibility, "Coopetition" (Grondys, 2019)
Examples	Airbnb, Uber, GoMore	Zipcar, Wikipedia	WeWork, HeadBox
Distinguishing characteristics	Consists of a triadic structure, whereby value creation takes place through decentralized transactions, and co-creation, whereby review systems are applied. Value capturing occurs through commissions, and emphasis is placed on flexibility and safety for the consumer.	Consists of a dyadic structure, whereby value creation takes place in a centralized resource pool. Value capturing occurs through commissions, membership fees and public subsidies, and emphasis is placed on flexibility and safety for the consumer.	Consists of a polyadic structure, whereby co-creation is the basis for value creation. Value capturing occurs through membership fees and commissions, and emphasis is placed on flexibility through coopetition.

To answer the research question of this study, we mapped the similarities and differences in the P2P, B2C and B2B sharing economy business models for the following established business model dimensions: "value creation", "value capture" and "value propositions". Our study revealed that the business model structures are varied when it comes to value capturing and that technological developments and value networks are the basis of the value propositions. The framework distinguishes important characteristics between P2P, B2C and B2B for each of the business model dimensions. The implication of this study for managers and public policy makers is the extension of awareness of a new set of business models, whereby the emphasis is shifted towards resource exchange driven by digitalization. This shift puts pressure on business leaders to transform their existing business models so that the company can perform competitively. The proposed framework provides an ability to distinguish between underpinning structures as well as value creation and value-capturing activities for each of the P2P, B2C and B2B business model types identified within the extant sharing economy literature. Moreover, this study confirms most research related to P2P sharing economy business models. Consequently, further empirical research is necessary, especially that addressing B2B sharing economy business models and the contingencies experienced within different industries and business sectors to better inform sharing economy business model variation.

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