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Business Model Activities in C2C eCommerce

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Abstract

Purpose: Business models aiming to extend product lifecycles are recognized as a market opportunity in retailing. While many retailers are evaluating their ambition to participate in the secondary market, prior C2C literature is showing only scarce attention to exploring it from the business perspective. The purpose of this explorative study is to identify and analyze business model value-creating activities in the context of C2C ecommerce.

Design/methodology/approach: This multiple case study focuses on firms that instead of having pre-existence in traditional markets were established in the online environment from the offset. Each of the 18 case examples serve multisided C2C ecommerce markets (i.e., unstructured consumer markets), enabling supply and demand of used goods. The data includes descriptions of 362 identified actions systematically performed by the firms analyzed through qualitative research methods (formal content analysis, categorization, and comparison).

Findings: The findings are presented inductively to help understand the current design of C2C ecommerce BMs, and also to generate a broader view of how traditional retailing can be challenged in the future. The findings identify the content of activity systems used in various business model types in secondary markets and compare the impacts of the choices between activity system structure, actors roles and burden of governance allocation.

Originality/value: This study is among the first attempts to adopt a business perspective to previously consumer centric C2C ecommerce research. By doing this, the paper builds on the foundation of activity systems, lowering the level of abstraction in existing conceptual business model literature and providing tools to compare linear- and/or network-based business models. Furthermore, the findings provide new insights for firms that pursue, participate or refuse to enter the online-based secondary market.

Keywords Business model, Activity systems, Activities, Value creation, Consumer-to-Consumer, ecommerce

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1. Introduction

Digitalization and technological advancements have enabled the rise of open global trading regimes (Teece, 2010). In the past decade, early adapters (e.g., eBay, Etsy and Craigslist) have offered consumers increasing opportunities to interact, sell and buy by leveraging business models (BMs). One such opportunity is Consumer-to-Consumer (C2C) ecommerce, i.e., consumers transacting directly with each other online (Leonard, 2011). In this regard, 19% of consumers have used the internet to sell used goods or services in Europe (Statista, 2020a). At the same time, secondary markets are growing, such as in the U.S, where second-hand trade has exceeded 1.8 billion USD/dollars monthly sales on average, leading to an annual value of 21 billion USD/dollars (Statista, 2021b). Furthermore, in ecommerce, the used goods market share has increased. In China, the world's largest ecommerce market, the latest verifications show that 40.5% of all ecommerce in the first half of 2020 is accomplished between individual consumers (Statista, 2020c). Today, C2C ecommerce has evolved to operate at a larger magnitude of scale than being possible before. Consequently, firms have started to perceive multisided BMs as a growing market opportunity, particularly those which aim to extend product lifecycle through 're-selling and re-using' (Matzler et al., 2015; Ritter and Schanz, 2019; Saarijärvi et al., 2018).

The industrial evolution has changed the competitive dynamics in the market forcing firms to find new ways to create and capture value (Frankenberger et al., 2014; Rumble and Mangematin, 2015; Smedlund, 2012). As one implication, we have witnessed increasing attention towards novel BM types, especially multisided platform BMs (e.g., Business model Zoo, 2022). This alternative archetype builds the idea of earning money by bringing two groups of users together, typically one group with a need and another with possible solutions (Ritter and Lettl, 2018; Tronvoll et al., 2020). C2C ecommerce is characterized by actors as individual consumers who are engaging in selling and/or buying, which makes it more complex due to changing expectations about the role of actors (Rumble and Mangematin, 2015). For example, C2C ecommerce changes what and where products are sold, and by who to whom (Hagberg et al., 2016), enabling firms to offer a scope of untraditional exchange mechanisms and transaction architectures, and thus presenting novel ways to design value creation (Nenonen and Storbacka, 2011; Van Alstyne et al., 2016; Zott, Amit and Massa, 2011). Accordingly, C2C ecommerce can be considered with the newcomer in the BM archetype family. Surprisingly, previous research in C2C ecommerce is centered mainly on the consumer, specifically, providing insights in consumer behavior, profile, and motivational factors (e.g., Abdul-Ghani et al., 2011; Chen et al., 2016; Saarijärvi et al., 2018). However, little attention has been given to BMs (Yrjölä et al., 2021).

Despite its nascent evolutionary stage, C2C ecommerce already provides an outlook to settings in which firms in the same industry can operate with very dissimilar BMs (Yrjölä et al., 2021). Consequently, new competitive dynamics have been introduced in the retail environment that were previously unseen. In cases where replicating BMs is easy, unless it involves considerably negative impacts (e.g., threatening existing sales, profits or important business relationships), incumbents in the industry have less barriers and risk to adopt (Teece, 2010). However, the design of value creation in multisided BMs makes

replication more difficult (Baden-Fuller and Mangematin, 2013). Positioning between the selling and buying actors (i.e., triadic relationships) and orchestrating value creation (Grönroos, 2011; Lusch and Vargo, 2011; Saarijärvi et al, 2013) are making traditional supply side driven business logic no longer viable leading to a more troubled response (see Teece, 2010). These evolvements impact on retail at large by opening new horizons to push industry boundaries (Mendelsson, 2000; Hagberg et al., 2016; Smedlund, 2012) resulting in new challenges facing both new goods trade and traditional retail models (Saarijärvi et al., 2018; Sorescu et al., 2011; Reinartz et al., 2019; Parente et al., 2018). Nevertheless, while theories of competition tend to take a macro-perspective (Bansal and Desjardine, 2014), less is known how multisided BMs, that are dependent on individual consumer motivation, engagement and actions are adopted in practice (Rumble and Mangematin, 2015).

The purpose of this explorative study is to identify and analyze business model value-creating activities in the context of C2C ecommerce. The aim is to provide a practical view on how C2C ecommerce firms design their value creating activities in BMs. To address the purpose and the aim of the study, the activity system perspective is adopted. Several reasons support this decision including: a) activities are building blocks serving as a basis for understanding what a business does in order to execute its strategy (Ritter and Lettl, 2018; Arend, 2013), b) activity systems identify the set of interdependent choices characterizing the architectural logic behind the value creation design (Casadesus-Masanell and Ricart, 2010; Zott and Amit, 2010), and c) activity systems provide a systemic and holistic understanding how a firm implements and performs its value creation through activities (Zott and Amit, 2010; Massa and Tucci, 2013; DaSilva and Trkman, 2014). Thus, adopting activity system perspective enables to identify operational trade-offs made by a firm, but also to gain understanding beyond the practical level connecting these selections with firm strategy and business logic. This multiple case study focuses on firms, that instead of having pre-existence in traditional markets (see Demil and Lecocq, 2015), were established in the online environment from the offset. Each of the 18 case examples serve multisided C2C ecommerce markets (i.e., unstructured consumer markets), enabling supply and demand of used goods. The data includes descriptions of 362 identified actions systematically performed by the firms analyzed through qualitative research methods (formal content analysis, categorization, and comparison) (see Abbott and McKinney, 2013; Reinartz et al., 2011). The findings are presented inductively to help understand the current design of C2C ecommerce BMs, and also to generate a broader view of how traditional retailing can be challenged in the future. First, from the data constituted ten key value creation activities (sourcing, productization, stocking, pricing, content creation, promoting, transacting, consumer service, data sharing and branding) are introduced as a content of activity system (Amit and Zott, 2010). Next, the case examples are categorized by using the sharing economy BM typology (Ritter and Schanz, 2019) providing identification of the characteristics (unlimited platform, commission-based platform and singular transaction model) of BM types in C2C market. Finally, by using these types, the comparison between choices how to activity system structure can be designed and how the alternatives can be governed providing different burden allocation between the actors are presented (Amit and Zott, 2010). The paper makes several theoretical contributions. First, by connecting activity systems with C2C ecommerce literature the paper opens a stream of BM research which has yet to be explored in this context. Second, by building on the activity systems, the

paper emphasizes the importance of operational BM design specifically in situations, in which various business logics compete in the market. And third, the abstraction of mostly conceptual BM literature is lowered by creating practical tools to compare dyadic and triadic BMs. For managers, the study provides strategic insights that help to understand the differences when selecting BM types, offers a practical checklist of current ways to compete by using BM design as a tool and presents one potential future view of evolvements in which new goods trade is challenged in the market.

The remainder of the paper proceeds as follows. First, previous research on C2C ecommerce, multisided BMs, and activity systems are briefly discussed. Second, the methodology is described in terms of generating the set of case examples and analytical procedures. Third, the findings are presented including the identified key value-creating activities, characterization of most commonly used BM types and their differences in designing value creation and delivery. Finally, I discuss the contributions, managerial implications, limitations, and conclude with future research suggestions.

2. Theory

2.1 C2C e-commerce and value creation

Following Leonard (2011) and Chu and Liao (2007), C2C ecommerce is defined as a BM where value is created by enabling consumers to sell or buy products from each other online, mainly for self-use. At present, C2C e-commerce businesses operate through different types of services and BM types that are centered around transacting used goods. However, the BMs follow different logics and have unique characteristics (Yrjölä et al., 2021). For example, through C2C ecommerce services, consumers can offer and/or sell, seek and/or buy nearly any product category available in the traditional retail market. Interestingly, the online environment allows new forms of value creation (e.g., Pierce, 2009; Van der Borgh et al., 2012) with focus on inverting the cooperation between actors including sellers, buyers, the focal firm, and its partners. Consequently, much control over value creation has been transitioned from firms to individual consumers, who eventually define what is sold, when it is sold, where it is sold, and at what price (see Hagberg et al., 2016). Contrary to traditional retailing maximizing sales of new goods, C2C ecommerce aims to extend product lifecycles by allowing them to be re-sold, re-owned and re-used (Yrjölä et al., 2021; Matzler et al., 2015; Ritter and Schanz, 2019). Hence, C2C ecommerce can considered to be even more dependent on individual consumers' motivation, engagement, and actions than incumbent retailing, setting up new challenges for designing BMs (Rumble and Mangematin, 2015). However, besides the vast majority of traditional C2C research (e.g., Belk et al., 1988; Sherry, 1990), the online context has gained interest among scholars in the past decade. This has resulted in increased number of explorations from various consumer factors, such as excitement (Vragov et al., 2010), satisfaction (Fan et al., 2013), motivations (Chang and Chen, 2015), impulse buying (Chen et al., 2016), loyalty (Chen et al., 2017), and consumer profiles (Saarijärvi et al., 2018). Nevertheless, the emerged research has left the business perspective largely unexplored. Consequently, the potential of BM, specifically BM design research in the context of C2C ecommerce is still in its infancy (Yrjölä et al., 2017).

From the value creation perspective, C2C ecommerce is characterized by two key features that must be considered when interacting with individual supply and demand. First, selling and buying actors are individual consumers, which means that multiple value dimensions are involved and need to be understood (Rintamäki, 2016; Sheth et al., 1991). For example, consumer motivation may be driven by gaining monetary advantages (economic value), receiving operational relief (functional value), to feel novelty or aroused curiosity (emotional value), or willingness to support alternative options serving higher meanings (symbolic value). In addition, sellers and buyers both subjectively compare the ratio between sacrifices (e.g., time, effort, money, risks) and benefits (e.g., savings, earnings, convenience) (Day, 1990; Gardial et al., 1996), with increased engagement if the perception is higher than the best observed option. In addition to evaluating the sacrifices versus benefits, both sides further evaluate interactions (other actors, products), the current situation, links with personal values, and previous experiences (Holbrook, 1999; Sanchez-Fernandez and Iniesta-Bonillo, 2007).

Second, as discussed by Hänninen, Smedlund and Mitronen (2018) multi-sided digital platforms are one example of new BMs and are regarded as the next phase of the retail BM evolution. To understand value creation taking place in these platforms and other online BMs (e.g., Timmers, 1998; Massa et al., 2016), it is critical to extend the perspective of value creation and address multiple stakeholders (Teece, 2010; Baden-Fuller and Mangematin, 2013). This means moving from dyadic (mutual) to triadic (more than two actors involved) relationships (Ritter and Lettl, 2018; Rumble and Mangematin, 2015). Despite the fact that BM literature provides a well-established basis for understanding value creation in diverse business settings, the background of those studies originated from traditional industrial settings (see Hagiu and Wright, 2015; Cusumano et al., 2019; Gawer, 2014). Therefore, they may lack the ability to fully capture the nuanced nature of value creation taking place, for example, in new online BMs (Demil and Lecocq 2015; Berends et al., 2014). And especially in models in which selling and buying actors are individual consumers. The closest answers research can provide come from Ritter and Schanz's (2019) comprehensive BM framework which is situated in the context of sharing economy. They stated that value creation in secondary markets is conducted through various BMs with no active intermediary (dyadic) and/or a firm acting as an active intermediary (triadic) between provider and customer. The authors identified four BM segments (singular transaction models, subscription-based models, commission-based platforms and unlimited platforms) varying in terms of value proposition (product or service focus), value creation (enable or employment focus) and value capture (bounded or unbounded focus). However, C2C ecommerce BMs have certain specifications regarding the threshold and outcome of value creation differentiating it from sharing economy (Yrjölä et al., 2021; Frenken and Schor, 2017; Kumar et al., 2018). For instance, the offering includes used products that are either owned by consumer sellers or the company/platform before the transaction. Additionally, the outcome is a permanent transfer of product ownership from seller to buyer or company/platform and then to buyer. Therefore, the new roles of actors, multisided market structure and the above-mentioned characteristics influence BM design, as well the requirements of activities and their linkages through which value is created (Sorescu et al., 2011; Amit and Zott., 2001). C2C ecommerce is one important implication and avant-garde for commercial product lifecycle extension, but especially in respect to BM development. Nevertheless, the contemporary level of the market

maturity underlines the importance of an in-depth exploration of the current practices and respective implications.

2.2 Multisided business models

Business models have been – and still are – a major construct in strategy research (Chesbrough, 2010; Christensen et al., 2016; Doganova and Eyquem-Renault, 2009). Although, as a construct it has remained easily misinterpreted (Da Silva and Trkman, 2014), as a concept, it has been used for multiple purposes over time, such as analyzing electronic businesses (Amit and Zott, 2001), in commercializing innovations (Doganova and Eyquem-Renault, 2009), or understanding organizational change (Teece, 2009; 2010). By taking a strategy lens, BMs can be considered as a management tool through which firms compete (Casadesus-Masanell and Ricart, 2007). In general, BM objective is to "exploit emerging business opportunities by creating value for the parties involved, fulfilling customer's needs, and creating customer surplus, while generating a profit to the firm itself and its partners" (Zott and Amit, 2010, p. 217). Value creation, as one key objective of a BM, is highlighted in multiple popularity gained studies (Chesbrough, 2010; Day and Moorman, 2010; Johnson et al., 2008; Osterwalder and Piqneur, 2010). Consequently, BM design is part of the business development and business strategy process.

Current advancements in technologies have increased the industry convergence and shaped competitive dynamics in the market resulting firms to find new ways to create and capture value (Baden-Fuller, and Haefliger, 2013; Frankenberger et al., 2014) introducing multisided BM in addition to existing BM archetypes (dyadic transactional product BM/ dyadic solution design BM/ matchmaking BM) (Business model zoo, 2022). Multisided BMs, in which C2C ecommerce belongs, is stated to be conceptually more complex than traditional single-sided models because the roles of the actors can be changeable (Rumble and Mangematin, 2015). In multisided market one actor or group of actors (i.e., buyer/s) have a need and another (i.e., seller/sellers) a potential solution (Ritter and Lettl, 2018). Consequently, multisided BMs are designed to serve unstructured supply and demand (Katz and Shapiro, 1985; Ritter and Lettl, 2018; Tronvoll et al. 2020; Economides, 1996) by employing technologies (Hagiu and Wright, 2015; Hedaa and Törnroos, 2008; Håkansson and Snehota, 1995) that connect and intermediate exchanges between actors (Cusumano et al., 2019; Gawer, 2014). Hence, in the retail sphere these models orchestrate value creation (Grönroos, 2011; Lusch and Vargo, 2011; Saarijärvi et al., 2013) in markets, in which consumers are spontaneously responding in spatial and temporal network structures (Amit and Zott, 2001; Lusch et al., 2010; Shafer et al., 2005; Gulati et al., 2000). Due to nature of temporality, especially, BM design in C2C ecommerce can be challenging to capture. Yet, activity systems can provide interesting research opportunities by setting a focus on the building blocks of business strategy implementation, value creation design logic and understanding how a firm organize and performs its value creation.

2.3 Activity systems perspective

As highlighted by Amit and Zott (2012, p. 37) "A business model is a bundle of specific activities, an activity system, conducted to satisfy the perceived needs of the market, along with the specifications of which parties (a firm or its partners) conduct which

activities, and how these activities are linked to each other". The activity system perspective takes a BM design approach, enabling to identify and evaluate how value is created, how specific activities accumulate the total value, and from where the value creating resources are engaged (Zott and Amit, 2010; Casadesus-Masanell and Ricart, 2010). The definition highlights three important value creation enablers in a BM. First, activities refer to someone doing something for somebody in a way that creates value for both. Sorescu et al. (2011) described, generally, that activities are anything needed to design, manage, and motivate for customer value creation. Zott and Amit (2010) stated more specifically that activities are defined, structured, and sequenced actions that engage resources (e.g., human, physical, or capital) of any party of the BM to serve a specific purpose that creates value in the system. Examples of activities may refer to budgeting, branding, development, data mining, logistics, manufacturing, planning, product displaying, purchasing, sales, or training (see Johnson et al., 2008; Yrjölä, 2014). In this study, an activity is understood as the interplay between processes, resources, and mechanisms targeting value creation.

Second, combining selected activities by ordering, sequencing, and designing value transitions from one activity to another constitutes an activity system. Amit and Zott (2001) explained an activity system as a structure of well-designed and bonded groups of selected activities, enabling an increase in the total value versus the value created independently by each activity. The activity system serves value creation from a more holistic view in a BM by focusing on interdependencies between activities and incentivizing determination as which party performs which activity (Amit and Zott, 2001). Consequently, an activity system enables a firm to span the boundaries beyond the existing premises, while remaining a BM that is firm centric and allows value appropriation (Zott and Amit, 2010; Ritter, and Lettl, 2018).

Third, referring to firm boundaries mentioned above, an activity system enables a firm to seek value creation from multiple directions (Zott and Amit, 2010; Shafer et al., 2005). Value creation may occur within and/or outside of a firm's control. The latter provides an opportunity for a firm to take a broader perspective when designing roles in activity systems (Massa and Tucci, 2013; Sorescu et al., 2011). A firm-controlled system focuses on governance managed by a firm itself. Thus, activities and activity systems may be designed to be resourced and executed by a firm itself, however, in this case, a firm's premises limit the boundaries in which the value is created (see DaSilva and Trkman, 2014; Hokkanen et al., 2020). To expand the boundaries but retain control, a firm can rely on strategic networks, i.e., partner networks (Amit and Zott, 2001; Gulati et al., 2000). These are a form of cooperation between businesses, based on "stable interorganizational ties that are strategically important to participating firms, such as strategic alliances, joint ventures, long-term buyer–supplier partnerships, and other ties" (Gulati et al., 2000, p. 203). If a firm is willing to relinquish control for expanding the boundaries, it can turn sight to value networks (Shafer et al., 2005; Lusch et al., 2010). Here, value networks are understood as "spontaneously sensing and responding spatial and temporal structures of largely loosely coupled values, proposing social and economic actors interacting through institutions and technology, to: (1) co-produce service offerings, (2) exchange service offerings, and (3) co-create value" (Lusch et al., 2010, p. 20). The traditional perspective on exchange is being superseded by contemporary forms of interaction taking place between customers, companies, and

other stakeholders (Grönroos, 2011; Lusch and Vargo, 2011; Saarijärvi et al., 2013). As discussed by Saarijärvi (2012), companies should no longer be considered as providers of goods, nor should customers be perceived merely as sources of money. Today's business landscape is characterized by both customers and companies initiating new ways to support each other's value-creating processes. As a result, activity systems' connecting role of activities in a firm's value creation has become an essential, even critical part of BM design (Nenonen and Storbacka, 2010). Therefore, multiple benefits of selecting activity systems in the field of C2C ecommerce emerge. First, activity systems enable to connect much needed business perspective into consumer oriented C2C ecommerce literature. Specifically, this helps to understand how such BMs create, deliver and capture value in action. Second, insights may turn valuable, not only in C2C ecommerce context, but also for BM research. Multisided markets are gaining increasing attention in BM research. C2C as a context provides one interesting platform to gain insights of how various BMs are designed, structured, and organized offering alternative options for firms. And third, as an industry level activity system enables exploration of the practical differences in BMs that challenge traditional value chain-oriented retailing selling new goods.

3. Methodology

To answer the research questions and the general aim to develop new ideas and constructs (Yadav, 2010), this study adopts an explorative approach. The qualitative methodology leans on actual case examples. However, the case examples themselves are not the focus, but they help to gather, illustrate (e.g., Reinartz et al., 2011), and gain a deeper understanding of the research phenomenon (Stake, 2005) at large. Consequently, the methodology is depicted by "discovery, description and meaning rather than prediction, control and measurement" (Laverty, 2003, p. 21).

3.1 Data generation

Data generation took place between 7 May 2018 and 6 August 2020 and was divided into three consecutive phases. First, a broad online search from generally popular search engines, such as Google, Bing, and Yahoo, was conducted to achieve a preliminary understanding and to identify the most suitable information sources, keywords, and search terms. This phase highlighted keywords, such as "C2C ecommerce", "secondhand goods", "online flea market" and "C-to-C business". During this phase, the keywords were refined according to what was learned (e.g., "peer-to-peer commerce", "C2C platforms"). After each potential match, the firm's websites were visited by the author to ensure their C2C ecommerce focus. The phase resulted in 50 examples that consisted of cases from various business fields, for example, rental, retail, social media platforms, as well as restaurant and hospitality services.

Second, a complementary search aimed to extend the understanding and to ensure the comprehensiveness of potential case examples regarding the research phenomenon. At the beginning of the procedure, the search focus was extended to review academic papers (e.g., Google scholar, publish or perish), consultant papers (e.g., CGE, McKinsey, Deloitte), blogs (e.g., Racked.com, WhereToSellOnline.com), and forums (e.g., Forbes; Fortune) for finding more suitable keywords. Next, the online search imitated phase one

as a process, including refined keywords learned from previous sources, such as, “C2C transaction platforms”, “re-commerce”, and “social shopping”. This resulted in 14 additional case examples, increasing the total number to 64.

Third, the aim was to collect detailed information related to activities, specifically, actions taken by actors during the service experience. The 64 identified firms’ websites were systemically scrutinized by setting a focus on identifying to whom and what value is proposed, which tasks actors take in operational models, which offerings are provided, who earns and how, how actors are supported by services, which technological outlines are used, and how critical C2C ecommerce is for the firm’s business. This resulted in the identification of 36 actions taken, on average, by various actors per each case example, although the amount varied between industries (e.g., hospitality, rental, retail services). This phase resulted in transcriptions of all identified 362 actions in total.

To ensure focus, required diversity, and case examples’ contribution to address the research purpose, the final data were narrowed by setting two additional criteria regarding offering and product ownership as follows:

- Criteria 1. The value source of a BM should be a product owned by an individual consumer
- Criteria 2. The BM should eventually lead to the transfer of product ownership to another individual consumer

By conforming to these criteria and excluding unnecessary overlaps (e.g., British Folksy marketplace for handcrafted products overlapping Etsy or the Australian Trademe marketplace overlapping eBay), 18 case examples were finally selected. The case examples are introduced in Appendix 1.

3.2 Data analyses

Data analyses included three distinct phases. At first, transcription of the identified actions was analyzed by using formal content analysis (Abbott and McKinney, 2013). The coding was conducted according to three main elements of activities, which were processes, resources, and mechanisms. In the beginning, the actions were coded by a processes’ aim for value creation in the services. For example, the action “The seller stocks the product until it is sold” highlighted a process referring to a contribution on category creation, aiming to hold the appearance of product quality and a capability to physically produce the transfer. Next, coding resources are presented by the same action example. The seller was an individual consumer, the place for product stocking was a privately owned location, and a product was owned or managed by a seller, leading to the identification of three resources: selling consumer, privately owned location, and a product possessed by a seller, respectively. When coding mechanisms, the example used above refers to co-creation including co-offering, co-warehousing, and co-transportation. Coding the data consisted of 362 actions from 18 case examples. In the final step, the resources and mechanisms were grouped through the identified value creation aims. This enabled group construction and key activities to focus on a certain objective in value creation. Grouping ended in ten key activities taken or provided by individual sellers, individual buyers, focal firms, or third-party service providers in each BM. In addition, the key activities contributed to the overall value, although they may have

been conducted in various ways. The ten key activities are presented in the results and findings section.

Second, separate from the first analysis phase, the case examples were categorized by their BM regarding value proposition, value creation and delivery, and value capture. To accomplish this aim, the framework from Ritter and Schanz (2019) was adopted. Whilst proposing and capturing value is not necessarily at the core of activity design, these are inarguably important elements of a BM, thus, imperative to understand as drivers of activity design. The analysis phase combined the "decisive dimensions of value proposition (product-oriented, use-oriented, or result-oriented), value creation and delivery (employ or enable), and value capture (bound or unbound), encompassing a variety of business models" (Ritter and Schanz, 2019, p. 326). The 18 case examples were categorized into three BM types named according to framework and are presented in the results and findings section.

Third, the identified BM groups from the second analysis phase were compared by using Zott and Amit's (2010) framework of activity system design elements i.e., structure, and governance. Previously constructed key activities (analysis phase 1) created a content for the C2C ecommerce activity system. The comparison enabled the illustration of various orientations (e.g., Shafer et al., 2005; Amit and Zott, 2001) in structuring and representing optional ways to resource activity systems in C2C ecommerce BMs.

4. Results and findings

This section is organized as follows: the first part represents the ten key activities constructed as the content of activity systems. Next, three groups of current C2C ecommerce BM types are identified and characterized. Then, ways of structuring activity systems are elaborated through BM types. And finally, the differences between how activities are resourced is discussed.

4.1 Key activities as the content of C2C ecommerce activity systems

Resulting from the data analysis process, ten key activities played a critical role in each scrutinized case example, focusing on value creation and delivery as a part of the activity system. The key activities were sourcing, productization, stocking, pricing, content creation, promoting, transacting, consumer service, data sharing, and branding. The weight in value creation and delivery may vary between the BM types, however, these activities were identified in each BM and are introduced in Table 1.

Selected activities create the content in an activity system (Zott and Amit, 2010). They are in a central focus when enabling value creation between individual consumers in an online environment, providing opportunity on used goods ownership transfer. Next, what type of BMs incorporate the identified ten value-creating activities are identified and characterized.

Key activity	General definition	Role in C2C ecommerce	Illustrative value related example
1. Sourcing	Finding and agreeing to terms when acquiring goods from an external source	Motivating consumer sellers to share their inventory	In C2C commerce services, pre-purchased products are an essential value source and a key factor in all value propositions as a need fulfiller or monetary source
2. Productization	To make something commercially suitable	Assortment and specific product selection	eBay leverages AI and GPS when placing seller selected products onto the web interface for reaching target users and to increase the changes for trade to be made
3. Stocking	Storing for later, sold, or distributed goods	Preserving a product before transaction and shipping	Swap receives and refurbish product during the stocking for creating more value by ensuring quality and usability
4. Pricing	To determine the value that the producer, seller, or disposer receives in the exchange	Setting the purchase, service, and customer price.	Seeking to maximize monetary receiving, Sell.com allows seller to set fixed or reserved customer prices based on an assumption and expectation of the best possible price
5. Content creation	To contribute by adding or enriching information for others in media	Product sales relating to content creation on a web interface	Letgo provides the seller the option to add a product description, information, photo, and sales text proposing trustworthiness by providing more product related data for reviewers
6. Promoting	To flourish something for increasing its attractiveness	Promoting a product, people, or firm	For proposing trust and reliability Craigslist allows buyers to promote sellers through a reviewing system in the platform
7. Transacting	Exchange of goods, transfer of product ownership, and physical possession	Making sales, collecting payments, and delivering the product	eCrater increases the probability of a transaction to be finalized by providing multiple payment methods, from cash on delivery to quick online payment
8. Consumer service	Provision of services to consumers before, during, and after a purchase	Providing service to an actor before the sale, during the transaction, and after the sale	Zadaa offers a product guarantee for used goods and proposes a value for buyer through the perception of riskless buying decisions
9. Data sharing	Making data or information used and available to others	Systematic refined information sharing	5miles proposes unexcepted opportunities by sending mobile phone notifications of interesting products available nearby when traveling
10. Branding	To differentiate from others	All actors brand their products, people, or business endeavors	Etsy proposes an entrepreneurial lifestyle by supporting individuals to establish a business and enable unique webstore interface creation on a platform

Table 1. Key activities in consumer-to-consumer (C2C) ecommerce business model

4.2 Unlimited platforms, commission-based platforms, and singular transaction models as C2C ecommerce business model types

According to the analysis, three business model types were identified. The 18 case examples were categorized by using the framework of Ritter and Schanz (2019). The evaluation contained three phases focusing on what kind of value was proposed, how it was created, and how it was captured. First, all value propositions centered around services to sell and buy products, referring to product-orientation. Second, facilitating value creation divided group in two sub-groups. BMs that positioned themselves in a triadic relationship enabled value creation between the actors (individual seller and buyer), and BMs in dyadic relationships, with consumers (e.g., firm as a seller and buyers), facilitating value creation by employing controllable activities. Finally, capturing value divided these two groups into three sub-groups: firms whose revenue streams are tied into utilities gained from leveraging existing structures (unbounded); firms whose revenue streams are being knitted on structures (unbounded) and consumer's received utility (bounded); and firms whose revenue streams are bounded. As a result, the three groups of C2C ecommerce BM types were identified as unlimited platforms, commission-based platforms, and singular transaction models. Figure 1. represents the grouping process. Next, the key characteristics of each group are discussed briefly.

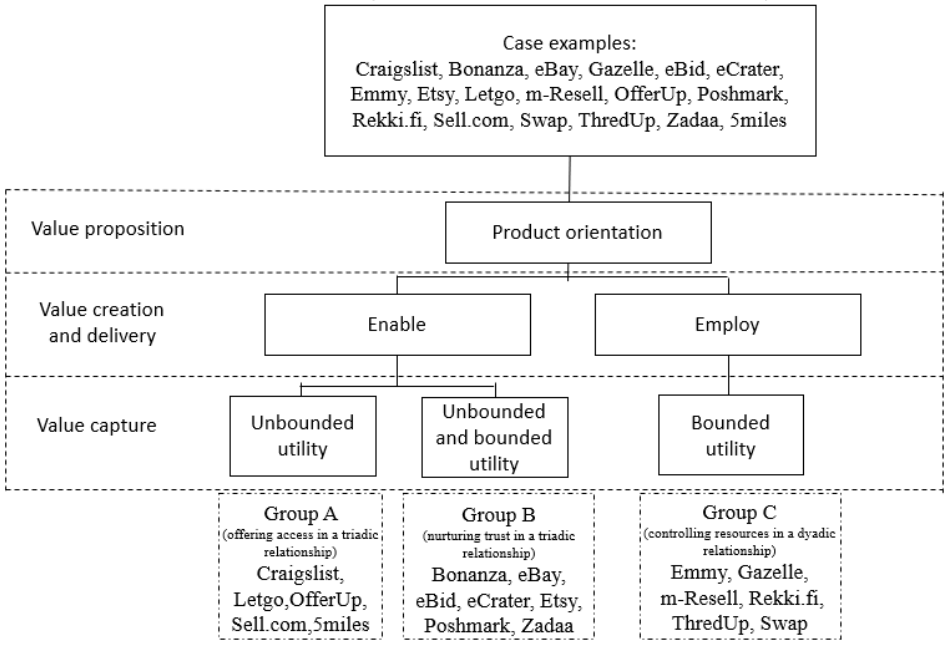

Figure 1. Grouping of C2C ecommerce business models

Unlimited platforms (Group A: Craigslist, Letgo, OfferUp, Sell.com, and 5miles) propose value by providing individual consumers an opportunity to offer and seek to buy used products online. They provide access to broad product offerings, and users are

encouraged to take a sellers' and buyers' role in service. However, the transaction (actual exchange and mechanisms) is mainly excluded from the firms' influence being negotiated and conducted by the seller and buyer themselves. This enables the BM to liberalize traditionally tied capital (e.g., products, stores, supply chain, partnerships, or personnel) and scale faster (e.g., geographically). Consequently, value capture includes revenue streams, such as selling online advertising space, data mining insights, and/or sponsorships. These BMs are positioned in triadic relationships operating between sellers and buyers as an information intermediary by using advertisement webpage technology.

Commission-based platforms (Group B: Bonanza, eBay, eBid, eCrater, Etsy, Poshmark, and Zadaa) value proposition provides individual consumers an opportunity to offer, sell, seek, and buy used products online. Additionally, value is selectively proposed to partners (business relationships). While providing access to broad or niche product offerings, BMs focus on support and ensure transaction experience. This special platform characteristic allows firms to control critical consumer activities and, at the same time, liberalize some capital elements (e.g., products, stores, or personnel), enabling scaling. Consequently, value capture is a combination of revenue streams, such as selling online advertising space, data mining insights, sponsorships, commissions, and/or a supportive service fee. These BMs, by using a two-sided platform technology, are service and information intermediaries in triadic relationships between consumers.

Singular transaction models (Group C: Emmy, Gazelle, m-Resell, Rekki.fi, ThredUp, and Swap) propose value by providing sellers an opportunity to offer a product to a focal firm, and buyers to seek and buy online. For partners, business value is proposed by taking part in certain activities as a resource. The access is provided as a limited offering, normed prices, and ensured product quality by secured processes. This characteristic enables firms to own and control unique or difficult-to-imitate value sources (e.g., products, personnel skills, or product collection networks). Consequently, received consumer utility is the base of revenue stream, such as commissions, margins, and/or a supportive service fee. These BMs, operating through webstore technology, are product and information intermediaries but positioned in dyadic seller/firm and firm/buyer relationships.

4.3 Structuring activity systems – value networks, firm control, and strategic networks as orientations

The activity system structure describes how activities are linked together for enabling value to be surpassed and enlarged in the activity system (Zott and Amit, 2010). According to analysis, various orientations emerged when structuring the activity system, but each activity emerged as well, as shown in Table 2.

It is not always necessarily clear which activity is performed first. This is the case in unlimited platforms (group A). The triggering activity may vary between stocking, productization, or content creation. Some may even notice that the activity system may be activated when a consumer buys a new product. Hence, the activity system is influenced even before a seller or a buyer enters the service. For example, when a potential seller is going through the used goods in their storage at home and is thinking of

the ability to sell a product and has a specific service (e.g., Craigslist) in their mind, stocking has started, even though no sign of a product has been seen online.

Key activities	Orientation of activity systems							
	Unlimited platforms		Commission-based platforms			Singular transaction models		
	Value networks	Firm control	Value networks	Firm control	Strategic networks	Value networks	Firm control	Strategic networks
Sourcing	x		x				x	
Productization	x		x Variation exists in category levels, offering a selection logic (e.g. eBay vs. Poshmark)				x	
Stocking	x		x				x	
Pricing	x		x				x	
Content creation	x		x				x	
Promotion	x		x				x	
Transaction	x				x			x
Consumer service	x				x			x
Data sharing		x		x			x	
Branding		x		x			x	

Table 2. Orientation of C2C ecommerce activity systems

In contrast, the activity system may be triggered by showing willingness to buy. For example, a potential buyer of 5miles may be adjusting personal preferences in the mobile application when planning to drive to a certain location knowing that better targeted push notifications may reach her on the road. This activates the activity system, even if nothing that fulfills her needs has yet been offered. The same logic seems to apply between other activities that are all dependent on the actor's motivation, reactions, and consecutive actions. Values surpass and enlarge when moving from one activity to another is designed to occur in a value network, where consumers co-create that value by co-producing offerings and exchanging services among themselves. Consequently, the activity system structure itself, with loose process control, aims to span a firm's boundaries over the online marketplace and motivates actors to contribute by offering guidelines and recommendations.

In the case of commission-based platforms (Group B), it is not necessarily clear which activity triggers the activity system; however, certain activities are planned to be controlled by a firm itself. For example, eBay and eCrater control transactions by providing a payment system and offering logistic partner services for delivering. By controlling monetary and product flow, firms support the actual exchange and, thus, create trust around the service. On the other hand, Etsy provides a marketplace that enables artists to sell handmade unique products to interested buyers around the world, uniquely connecting manufacturing into the C2C ecommerce BM. Thus, the activity system design is multi-oriented, connecting features from the value network, firm

control, and strategic networks, referring to a combination of mechanisms, such as co-producing offerings, firm coordinated and performed activities, and partnerships. Values surpass and enlarge when moving from one activity to another is dependent on the performance of the order of activities. Consequently, activity system design aims to enable extension from a firm's boundaries; however, at the same time, allowing a firm to concentrate on existing premises through selected key activities related mainly to transactions.

In singular transaction models (Group C), the triggering activity is well known, sourcing. For example, Swap's activity system is activated when a seller has sent a mobile phone to the firm. The upcoming receipt triggers the next activity, stocking, starting from the quality check and refurbishment process, leading to productization, content creation, and so forth. Thus, each activity is designed and managed by a firm itself. The firm's control in activity design leads to a strict process control, enabling a firm to concentrate and fully control the surpassing value between activities. This provides an opportunity to focus on efficiency and propose convenience. For example, secondhand designer clothes seller Emmy proposes a sales service model for an individual seller saying that, on average, 70% of received products are sold. Gazelle highlights convenience in selling with no need for additional contracts. Furthermore, these firms increase value through their activities, for example, by proposing competitively priced products, ensuring quality, refurbished technology, product availability, and delivery reliability. Consequently, firm-controlled activity system designs aim to "value chain" robustness through all key activities, and value creation occurs, more specifically, in the performance of the activities.

4.4 The governance of activity systems – The burden of performance

Activity system governance describes who performs the selected activities (Zott and Amit, 2010). According to analysis, significant variation on how activities are resourced emerges between the BMs, as shown in Table 3. It is important, because in addition to defining operational cost structure, the governance design defines the focal firm's and participating actor's role in the BM. Consequently, it specifies the firm's position between the selling and buying actors.

Key activities	**Key resources in each key activity**									
	Unlimited platforms			**Commission-based platforms**				**Singular transaction models**		
	Seller	Buyer	Firm	Seller	Buyer	Firm	Partner	Seller	Firm	Partner
Sourcing	x			x				x	x	x
Productization	x			x		x			x	
Stocking	x			x					x	x
Pricing	x	x		x	x				x	
Content creation	x	x		x	x				x	
Promotion	x	x	x	x	x	x			x	
Transaction	x	x		x			x		x	x
Consumer service	x			x			x		x	x
Data sharing	x	x	x	x	x	x	x		x	x
Branding	x	x	x	x		x			x	

Table 3. Key activity governance in C2C ecommerce business models

Unlimited platforms (group A) are uniquely characterized by a network-based activity design, highlighting value co-creation in multiple forms. Therefore, a seller's role is critical and occurs in every key activity. The following appoints a seller to multiple roles, such as, purchaser, assortment and product selector, preserver, dispatcher, price setter, negotiator, content creator, promoter, customer servant, service provider, and data source. However, the cornerstone of the activity system is trade negotiation between the seller and buyer. Focal firms may provide a myriad of supporting features, such communication aids (e.g., anonymous messaging or chat) or a network of physical meeting points, providing sellers and buyers with the opportunity to meet in a safe public location, for example, on lively street corners, malls, libraries, in store fronts, and metro stations. Still, value creation is constructed mainly by the seller and partly by the buyer themselves. In unlimited platforms, the activity system governance is centered around the selling actor.

Commission-based platforms (group B) are uniquely characterized by multidimensional activity design. Therefore, the burden of performing is divided between actors, referring to hybrid value creation, i.e., combining firm, partner, and seller efforts. The following appoints that the seller's role is still critical acting as a purchaser, assortment or product selector, preserver, dispatcher, price setter, content creator, promoter, customer servant, and data source. The focal firm may set restrictions on product assortment, take a role in promoting sellers or products, or support sellers on individual brand creation. However, the cornerstone of the activity system is on nurturing trust. C2C marketplaces have historically suffered from uncertainty, referring to buyers not receiving products, sellers not receiving payments, or safety issues on the actual exchange. Consequently, firms have taken control of certain activities that have been crucial influencers of decreased perceptions of trust. Therefore, as a case, eCrater pounced on the problem by integrating popularity gained modern payments systems (PayPal, Stripe, and collect on delivery by a partner, i.e., COD) distinctively with more traditional payment methods (e.g., money order, cashier's check, personal check). Similarly, firms have partnered with international logistic companies, such as USPS, UPS, or DHL, to increase services' trustworthiness and transparency. Additionally, one result of these partnerships is innovation. For instance, wardrobe connector Zadaa and logistic operator Matkahuolto have developed the "ease sending"-concept for sellers, including a non-queuing drop to convenience stores or kiosks by writing from a system received delivery code on the package. The previous examples appoint the partners' role as a payment collector, shipper and transporter, information distributor and regarding previous activities as a customer servant. Due to these observations, firms have taken an extensive role in consumer service by providing transparency through third-party partner's systems. This positions C2C firms as a mediator of service quality, as well as products or information. Indicating that used and shared information is not generated only from the interaction between seller, buyer, and firm but is strongly influenced and enriched by external data sources. As a result, commission-based platforms may be defined or at least are moving toward service ecosystems that center activity system governance around the selling and partnering actors.

Singular transaction models (group C) are uniquely characterized by the control-based activity design. Therefore, the seller role is to act as a value source and a focal firm drives the other activities in the system. Thus, a focal firm takes multiple roles, such as a

purchaser, assortment and product selector, preserver and dispatcher, price setter, content creator, promoter of product brands or seasonal campaigns, payment collector, shipping monitor, customer servant, brand creator, data collector, analyzer, and information distributor. However, the cornerstone of the model is controlling and owning assets considered as a source of competitive advantage, but a few exceptions exist. For example, Sweden-originated used Apple products reseller m-Resell have outsourced the refurbishing process to a partner in several counties. Another, secondhand clothes reseller Rekki.fi allows sellers to select a sales model between the options where a firm acquires the product with a fixed price, or the firm intermediates the product with a commission. One uniquely interesting development is integrated into the firm's need to have a product physically. It has led to the introduction of novel collecting solutions and partnerships that pursue to provide a seller to set a product for sales conveniently. For example, dropping points located in local grocery stores (Walmart / ecoATM by Gazelle), malls (ecoATM; Emmy collection boxes), or collection boxes at crossroads (Emmy) of popular lanes in cities and suburban areas. In addition, commercial cooperation with the location owner increases mutual value creation and offers, for instance, the ability for promotions from other local firms to sellers. As a result, in a singular transaction model's activity system, governance is centered around control by a focal firm and partnerships.

5. Discussion and conclusions

The purpose of this study was to identify and analyze value-creating activities in the context of C2C ecommerce BMs. The identification of activities enabled to increase understanding of how firms are pushing their boundaries, adapting novel exchange mechanisms, and orchestrating transactions. In other words, how firms are using activity systems for seeking competitive advantages in secondary markets. By integrating relevant literature from BMs, activity systems, and C2C ecommerce, this multi-case study characterized three currently popular BM types (unlimited platforms, commission-based platforms, and singular transaction models) that distinctively target the permanent transfer of used product ownership from one consumer to another. The comparison between them was formulated through the framework of activity system design elements: content, structure, and governance.

Ten key value-creating activities (sourcing, productization, stocking, pricing, content creation, promoting, transaction, consumer service, data sharing, and branding) included to all analyzed BMs and were identified (content). However, significant differences occurred in how activities were designed to link together and who performed which activity. The differentiation of interdependencies between the activities was illustrated by the variation in the selected orientation of value creation (structure), which were value networks, firm control, and strategic networks. Selected orientation in each activity heavily impacted an actors' role in activity systems (governance). Consequently, the findings suggested that: 1) designing individual seller's tasks is a central theme in unlimited platforms; 2) commission-based platforms are centered among the seller and partners for creating trust through the activity system; and 3) singular transaction models focus on firm-based value creation for reliability. Resulting from these findings, the theoretical and managerial contributions are discussed.

5.1 Theoretical contributions

This paper makes three theoretical contributions. First, while previous C2C ecommerce research focused mainly on consumers (Chu, 2013; Saarijärvi et al., 2018; Yrjölä et al., 2017), this study is among the first attempts taking a BM design, specifically, an activity system perspective in the field. In secondary markets, multiple firms exist that have managed to create a business between individual actors. The activity system perspective allowed to elaborate how these firms have positioned themselves between selling and buying consumers, such as a facilitator, intermediary, or full service, through the design of value-creating activities. This may interest BM researchers, who study markets with emerging variations in BMs and multiple actor groups in rapidly evolving environments.

Second, ten key value-creating activities were identified to provide a foundation of the C2C ecommerce activity system. This study supported BM theories (Chesbrough, 2010; Day and Moorman, 2010; Johnson et al. 2008; Sorescu et al., 2011) acknowledging that activities and activity systems (Zott and Amit, 2010; Amit and Zott, 2001) exist and are carefully designed as a critical part (Nenonen and Storbacka, 2010; Osterwalder, 2004) of C2C ecommerce BMs. However, the study emphasized differences occurring in designing activity systems through the adopted orientations, which may vary between BMs, as well as, between activities inside the BM. This may encourage scholars to dig deep to reveal the true influencers.

Third, activities as a research unit lowers the level of abstraction in the mostly conceptual BM literature. The methodological approach conducted may be beneficial for researchers interested in comparing linear -and network-based BMs. In multiple markets and branches, this is the current development. Thus, activities may be leverageable research tools, especially for retail focused scholars, who are interested in relationships. More specifically, adopting a multi-actor setting into more traditional environments, activities, and activity design, enabling the characterization and comparison of dyadic and triadic actor relationships settings occurring separately or even inside a BM.

5.2 Managerial contributions

From the managerial perspective, extending product lifecycles offers opportunities for individual consumers to receive benefits and execute higher consumption values. Focal firms have noticed rising markets and business opportunities, resulting in the emergence of new value creation forms. This study provides insights for firms that pursue, are, or refuse to enter the secondary market. First, to firms who are planning to enter the secondary market, the findings characterize BM types providing a choice for firms to select. Understanding the options offers a strategic view that may help in decisions when assessing a firm's role in the market, required assets, and possible integration to existing BMs. In addition, the key activities reveal the minimum to be covered when entering secondary markets as a set of basic requirements. Furthermore, understanding the activity system perspective helps to calculate the business case, identify necessary investments, assess resource needs, and plan future revenue streams.

Second, for firms who already are in the market, the study provides a valuable checklist. For example, are all the key activities covered? Are they covered in proper manners? Could resource allocation be more efficient? What should be considered concerning activity systems when changing or adjusting a BM? Which model is used by competitors

and how do they create value through the activity system? Additionally, it may open avenues for firms to spot new unique ways to design processes and mechanisms for additional value creation and to differentiate from competitors.

Third, for firms that are not interested in applying to secondary markets, the study provides a view of future competition. Amit and Zott (2012) found that competitive threats often come from outside of traditional industry boundaries. C2C ecommerce is rapidly growing and will inevitably influence new goods trade in one way or another. In this situation, firms should be aware of how second handers operate and what the cornerstones (e.g., seller motivation, perception of trust, strict control) of their value creation are. This enables firms to adjust their BMs into a set that let them compete with C2C ecommerce firms. For example, value co-creation is a strong consumer engagement mechanism, and in the secondary markets, there are firms that maximize, support, or minimize that in their activity systems.

5.3 Limitations and future research

The study set out to extend the understanding of activities in the C2C ecommerce, providing insights for scholars and practitioners by exploring the characteristics of BMs, activities, and activity systems. However, the study setting has inevitable limitations related to the used key constructs, research strategy, and data generation. First, it should be noted that BMs and activity systems are highly contextual strategic tools. As Teece (2010) stated, BMs are a firm management's best view of customers, competitors, and markets at that time. The same can be applied to activity systems. In the context of this study, due to the nascent phase of C2C ecommerce evolution in which the models most influential today, may not be in the future. Second, the situation described above is a fundamental influence that steered the direction of the research to employ an explorative research strategy and qualitative methodology. Qualitative research methods, especially using content analysis, includes a researcher's interpretation. This may increase bias, depending on the researchers' interests, background, and ambitions. Third, instead of interaction with actual firms, data was gathered from secondary sources. So forth, although the study leverages insights from multiple actual case examples, the data sample may lack certain nuances, experiences, and causal connections that could only be revealed in an interview setting. These limitations should be considered when interpreting the study findings.

While this study is among the first of the field, and despite the limitations, multiple interesting future research topics emerge. First, activity systems, such as BMs themselves, are contextual by nature, assuming that the interdependencies between the activities are highly dynamic and firm centric. One could be interested to conduct a study based on actual firm interviews to seize these opportunities and challenges that drive to change activity systems in this context. Second, examinations that identify the relationships between activity systems, system design, and firm profitability would be welcomed. Revenue models are dependent on BM characteristics; so forth, the activities constructed in this study may support revealing revenue streams with an actual impact on business. Consequently, future studies could focus on creating methods and measurement models for activity system key performance indicators (KPI.s). This would be useful particularly for firms that rely on value co-creation. Third, the study leveraged Ritter and Schanz (2019) sharing economy focused framework as a theoretical tool for

classifying C2C ecommerce BMs. Notably, the current BM literature offers fruitful avenues to combine or use analytical tools from other streams to increase existing knowledge and create new insights.

In conclusion, extending product lifecycles is a rapidly growing market that has gained attention from scholars, practitioners, and society. As one important outcome of this development, C2C ecommerce provides a rich template of ways to create and deliver value. From the BM perspective, it enables to combine new and traditional value creation mechanisms together uniquely.

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Appendix 1: Case examples

Case example	Originality	Firm founded	Number of markets	Service type	C2C offering
1. Bonanza	US	2007	9	Online marketplace	Broad (55 product categories)
2. Craiglist	US	1995	76	Online announcement service	Broad (45 product categories)
3. eBay	US	1995	190	Online marketplaces	Broad (61 product categories)
4. eBid	UK	1998	23	Auction website	Broad (33 product categories)
5. eCrater	US	2004	1	Online marketplace	Broad (32 product categories)
6. Emmy	Finland	2015	1	Webstore	Niche (used brand clothes)
7. Etsy	US	2005	36	Online marketplace	Niche (handcraft products)
8. Gazelle	US	2006	1	Webstore	Niche (used electronics)
9. Letgo	US	2015	35	Online announcement service	Broad (36 product categories)
10. m-Resell	Sweden	2012	8	Webstore	Niche (used mobile phones)
11. OfferUp	US	2011	1	Online announcement service	Broad (65 product categories)
12. Poshmark	US	2011	1	Online marketplace	Niche (used clothes)
13. Rekki.fi	Finland	2015	1	Webstore	Niche (used clothes)
14. Sell.com	US	1999	1	Online announcement service	Broad (44 product categories)
15. Swappie	Finland	2017	1	Multichannel firm	Niche (used mobile phones)
16. ThredUp	US	2009	26	Multichannel firm	Niche (used clothes)
17. Zadaa	Finland	2015	4	Online marketplace	Niche (used clothes)
18. 5miles	US	2014	1	Online announcement service	Broad (34 product categories)