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Deconstructing the Sharing Economy: On the relevance for IS research

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Abstract

In the past few years, Sharing Economy (SE) has become increasingly popular mainly for consumer research. Past research focused on describing the phenomenon itself and its disrupting influences on current economic mechanisms. However, information systems (IS) research and scientific literature in general still lack a common understanding of SE and its underlying mechanisms. We therefore elaborate on this gap by conducting a literature review among contributions within IS scholarship that address SE in order to identify to what extent past IS research has covered the topic yet. We aimed to highlight interrelations to adjacent topics and illustrate potential research gaps. As a result, we identified the four perspectives on how the topic is addressed, namely business model, sharing service, sharing asset and exogenous influences. Furthermore, we identified the four principles of SE, which are multi-sided markets, crowdsourcing, trust and recommendation and consumption-based pricing. With this contribution, we aim to guide further investigation of the topic. Additionally, we aim to highlight potential research gaps, as we claim SE to become much more relevant for IS in near future.

1 Introduction

Founded in 2009 in San Francisco, the US car sharing company Uber is expected to generate revenue of 10 billion US dollars in 2015 as the world leading Person-to-Person (P2P) taxi service broker (Business Insider 2014). Uber benefits from car seats as spare resources, providing customers the opportunity to utilize them without the costs and effort of car ownership. The company receives a fee on every transaction via the Uber App, where customers can find de jure self-employed, private drivers nearby. Although Uber is successfully exploiting a position within a steadily growing two-sided market, recent lawsuits, strikes and demonstrations of ‘traditional’ taxi drivers against the company’s services indicate the disruptive character of sharing-based business models regarding traditional economy mechanisms. However, not only the car industry is eroded by innovative business models based on P2P sharing. More and more sectors are affected by disruptive sharing solutions, such as finance (Crowdfunding and P2P lending), tourism (private accommodation offerings) or engineering (e.g. lending or sharing of unused tools). While the count

of sharing-focused companies is steadily growing, also more criticism comes up, mostly about exploitation of the sharing participants' workforce (e.g. Uber) or the contamination of these actually P2P based networks by commercial parties (e.g. Airbnb); In Berlin, already 0.4 % of flats are offered via Airbnb. About 10% of Airbnb property owners offer more than one apartment with the maximum of one property owner offering 44 apartments in Berlin Mitte (airbnbvsberlin 2015). These examples show that sharing economy platforms easily enable users to commercialize resources by bypassing legal regulations, taxes and other norms. Contrasted to professional service providers that have to comply with these normative aspects, this can be seen as 'unfair' advantage of SE business over 'traditional' ways of service provision.

However, these two controversial facets of SE, namely new opportunities to unleash hidden potential but also new ways to bypass established regulations and norms, indicate that sharing changes consumer behavior and thus may reflect a new paradigm with which companies have to provide their products and services. Since Sharing Economy is an interdisciplinary topic, it is inevitable to tackle its underlying mechanisms to structure this concept for future IS research. In the past, SE has mainly been focused by Consumer Research, attempting to explore the phenomenon of sharing as an alternative or complement to traditional ownership-based consumption (e.g. Bardhi and Eckhardt 2012; Belk 1988, 2014b; Botsman and Rogers 2011.; Gansky 2010; Weber 2015). Although these contributions help to build an understanding of the characteristics and mechanisms of SE, they mostly tackle the topic from a pure economic level and do not further elaborate on technical aspects nor do they show detailed interconnections to topics in IS research. However, since today's understanding of SE contains the notion of IT as an enabler (Belk 2014a), IS research may be path-leading for both empirically investigating existing SE cases of application and providing guidance on how to conceptualize, build and implement useful SE approaches. Surprisingly, the amount of IS contributions that cover SE is relatively scarce yet.

Within this research paper, we aim to position IS research as a key discipline to foster the investigation of SE and encourage IS researchers to dedicate their work to this topic. To do so, we conduct a literature review on prior IS research that address SE. By first describing possible perspectives and second elaborating on respective business mechanisms highlighting adjacent IS research topics, we provide a first overview of the fundamental principles of the topic. This paper proceeds as follows: In chapter 2, we establish a common understanding of SE by outlining basic principles and definitions of the concept. In chapter 3, we introduce how we conducted the literature review and display our findings based on good practice described by vom Brocke et al. (2009) and Webster and Watson (2002). Chapter 4 is dedicated to the findings of the review, categorized in research perspectives and basic principles of SE business. In chapter 5, we discuss our findings based on the initial situation described in the introduction and mention limitations as well as contributions to theory and practice of this review. Finally, we conclude our research in chapter 6 where we also provide an outlook to future research.

2 Theoretical Background

The term Sharing Economy (also: Share Economy or Shareconomy) describes the socio-economic phenomenon of temporary, not ownership but access-based utilization of consumer goods or services (Belk 2014b). These products or services are usually provided over Internet platforms by intermediaries, which serve as brokers who connect and link seekers and suppliers of information and knowledge (Howells 2006). They thereby reduce uncertainty in a multi-entity relationship,

facilitate negotiations and manage respective networks (Zogaj et al. 2014). This approach aims at the use of spare resources by a community to obtain a specific value and thus contrasts with the ‘traditional’ notion of obtaining a good’s value by possession. Belk (2014) distinguishes two kinds of sharing in the digital age: internet-facilitated sharing and Collaborative Consumption. Internet-facilitated sharing describes the free transfer or use of goods, which applies for e.g. Open Source Software, free bicycle sharing and also legal and illegal file sharing. Collaborative Consumption however refers to compensated acquisition of resources and coordinated distribution within a group. The Sharing Economy has originally been described by Weitzman (1984), who introduced sharing as an alternative to purchasing. Since then, the meaning of the term has been subject to change, not least due to the rise of the Internet. Today, the bidirectional communication and collaboration opportunities of Web 2.0 enable sharing to be facilitated mostly via virtual contact (Belk 2014b). This turn started with the 1999 founded music sharing platform Napster, which unleashed many discussions and lawsuits about Intellectual Property Rights, causing some authors to call this time the ‘war on sharing’ (Aigrain 2012). Both the examples of Napster and Uber show that IT-enabled sharing obtains characteristics of disruptive innovation. However, in the existing literature Sharing Economy has mostly been described as a new form of consumer behavior in marketing and consumer research (e.g. Bardhi and Eckhardt 2012; Belk 1988, 2010; Belk 2013; Giesler 2006; Lamberton and Rose 2012; Ozanne and Ballantine 2010). As opposed to numerous considerations in consumer research and marketing, existing IS research has not sufficiently tackled the topic yet. In the following, we will provide a closer look on the extent of prior IS research covering the concept Sharing Economy.

3 Methodology

To explore Sharing Economy for IS research, we conducted a Literature Review based on the recommendations of vom Brocke et al. (2009) and Webster and Watson (2002). Following the taxonomy of Cooper (1988) for describing the purpose of a literature review, our focus lies on extracting research outcomes in order to identify in which areas and to which extent IS research has covered the topic yet. Our goal is to summarize the main findings to identify ‘blank spots’ of SE coverage in IS research. However, we espouse the position that SE will become a relevant topic for the IS discipline in the near future and past research has not covered the topic sufficiently yet. Aiming at presenting our findings to both specialized (i.e. researchers dealing with SE) and general scholars in IS, we do so by conducting an exhaustive literature review of SE contributions which, however, is selective in a manner that only contributions in the IS discipline are regarded. The literature search was conducted in August 2015, using the search string (“sharing economy” OR “share economy” OR “shareconomy” OR “collaborative consumption”). Although we focused on searching in titles, abstracts and keywords of peer-reviewed, scientific papers only, no limitations were set regarding publication dates. The databases used for investigation are *AISel*, *IEEE Xplore*, *ACM DL*, *EBSCO Business Source Premier*, *ScienceDirect* and *SpringerLink*. Although the open database search revealed numerous hits, most of the contributions treat the subject from a consumer research or marketing perspective. As the main goal of our review is to identify contributions made for IS research in order to show potential research gaps or shortcomings, we excluded consumer research contributions from deeper investigation. Although we are sure, that consumer and marketing research on SE is relevant for understanding the concept as a whole, we narrowed our search down to IS scholarship in order to display the status-quo of SE coverage in IS. By reading titles, abstracts and keywords first, we could find 22 contributions most probably relevant to our

purpose. After an in-depth analysis, we identified 14 papers relevant for our review. Contributions that cover the phenomenon of SE on an abstract level and in which the authors either do not obtain an IS-relevant research perspective or do not elaborate on working mechanisms of SE were sorted out. In addition, we conducted a backward and a forward search but did not reveal any further results. Table 1 lists the contributions taken into account for our review.

Database	Contribution/s
AISel	(Abramova et al. 2015; Andersson et al. 2013; Chasin and Scholta 2015; Chasin et al. 2015; Gutt and Herrmann 2015; Kim et al. 2015; Matzner et al. 2015; Rickenberg et al. 2014; Sach 2015; Trang et al. 2015)
IEEE Xplore	-
ACM DL	(Cusumano 2015; Malhotra and van Alstyne 2014)
EBSCO Business Source Premier	(Weber 2014)
Science Direct	-
SpringerLink	(Teubner and Flath 2015)

Table 1 Selected Sharing Economy literature in IS

Surprisingly, all of the identified papers have been published within the last 3 years. In contrast to literature in consumer research about Sharing Economy, which arose around the 1980s, this indicates that IS scholars just discovered the topic to be relevant for this field, too. In the following we will further elaborate on our findings, highlighting research perspectives as well as work principles of Sharing Economy and thus display touchpoints to adjacent scholarship in IS research.

4 Findings

4.1 Research perspectives

The literature revealed different perspectives on SE business:

Coming from a *business model perspective*, firms must react fast to emerging technologies and changing consumer needs. Therefore, Sach (2015) describes IT-user aligned business model innovation to be one of the most important dynamic capabilities of a sharing-based company. This approach should help to constantly integrate new technologies while not deviating too heavily from existing mechanisms. Apart from this view, no literature could have been identified that obtains a comprehensive view on sharing-based business models, e.g. including cost and revenue structures, customers, partners and value proposed through sharing activities.

From a *service perspective*, sharing services can be differed based on how sharing proceeds, depending on what is subject to share. This includes peer-to-peer file sharing, peer-to-peer trading, peer-to-peer goods sharing and peer-to-peer service sharing (Andersson et al. 2013). However, usually not a product or a service only, but bundles of complementary product and service elements (product-service systems) are shared. Although some papers clearly posit contributions to adjacent Service (Design) Research (e.g. Trang et al. 2015), few publications apply established service research concepts, such as service systems, to sharing activities.

Cusumano (2015) describes current Internet Start-ups in the Sharing Economy from a *sharing asset perspective* and sections them into four categories: spare time (e.g. TaskRabbit, Fiverr), spare time

and cars to drive customers around (e.g. Uber, Lyft), extra rooms (e.g. Airbnb, Flipkey) and occasionally used tools and household items (e.g. Streetbank, Snap-Goods). Although many authors speculate which assets may be shared in the future, no research could be found that aims at holistically describing specifications of a product or service that is ‘shareable’.

Furthermore, several contributions exist that investigate exogenous influences on Sharing Economy business. Chasin et al. (2015) displays the interplay between regulatory procedures and sharing mechanisms, highlighting the relationship to be bidirectional as new offerings have to comply with existing regulations but also discover holes in regulation, thereby forcing the law to act. On the other hand, Chasin and Scholta (2015) investigate how to exploit Collaborative Consumption for E-Government. Additionally, Sharing Economy may contribute to build a better world with the help of IS by working towards the ‘Millennium Development Goals’ (Rickenberg et al. 2014).

4.2 Principles of Sharing Economy

From an IS research perspective, we identified four main principles of how Sharing Economy business works:

1. *Multi-sided markets*: P2P offerings are enabled by intermediary platforms that provide sufficient matchmaking services between resource providers and demanders, often in exchange for a service or brokerage fee (Seamans and Zhu 2013). Multi-sided market business models bring many new challenges but also opportunities for actors within a sharing network. Dynamics of peer-to-peer, peer-to-platform and peer-to-platform-to-peer interaction must be regarded when investigating the provisioning of sharing services. As usually offerings have the notion of IT-enabled peer-to-peer exchanges, the distinction between customers being consumers or providers diminish (Gutt and Herrmann 2015; Kim et al. 2015). Therefore, the mechanisms of value co-creation may have a severe impact on service provision. However, peer-to-peer offerings also contain a major weakness compared to traditional business-to-consumer service provision: there is usually neither a service agreement between the peers nor external control over service provision nor legal foundations to govern it. For example, a lag in confirming reservations via Airbnb makes it difficult for consumers to make definite travel plans and drivers for Uber are able to decline service provision when they do not like the requested destination or the rating of their potential passengers (Cusumano 2015). Taking these risks, some contributions try to shed light on the motivation of people to participate at sharing networks, both as providers and consumers (Gutt and Herrmann 2015; Kim et al. 2015). Furthermore, non-intended peer-to-peer sharing (e.g. if someone who buys a Netflix account and rents films for a monthly fee makes profit by renting these films out to others in return of daily fees) may harm producing companies, although it is still in a legal gray zone (Malhotra and van Alstyne 2014). More principles of multi-sided market scenarios can be discovered by obtaining the intermediary’s perspective. The intermediary’s main tasks are to synchronize demands, balance conflicting needs and provide sufficient matchmaking between providers and consumers. Under the spotlight of value creation mechanisms, the intermediary is in duty to steadily enhance the value for all parties of the ecosystem. Therefore, Malhotra and van Alstyne (2014) mention the empowerment of customers as one important way to do so. This may include to train skills, deliver knowledge or to design tools for value creation, because better-trained freelancers will deliver higher quality and charge more for their work. However, sharing-based companies have often been criticized to enjoy the profits while offloading the risks of their services to the peers. For example, in 2013 an Uber

driver killed a pedestrian in the US, but Uber would not compensate the victim's family because the driver is not an employee, but only a contractor (Malhotra and van Alstyne 2014).

2. *Crowdsourcing*: shareable resources are offered by members for members of a mostly undefined group (the crowd) over the internet (Howe 2006). This means, that Crowdsourcing mechanisms may be examined for their appliance to the Sharing Economy. In fact, peer-to-peer sharing activities such as Uber's driving services, can be seen as microtasks (Malhotra and van Alstyne 2014). From this point of view, not only the work mechanisms but also ethical and legal aspects become very important subjects for future research, as for example a sharing service provider's income only covers marginal costs. Furthermore, Malhotra and van Alstyne (2014) describe sharing platforms as self-regulating ecosystems, which also applies to crowdsourcing platforms in certain ways. Teubner and Flath (2015) display the opportunities to make use of mass data from the crowd to improve the actual sharing service, using the case of multi hop ride optimization problems for car sharing services. Hence prior crowdsourcing research may be appropriate to guide future research regarding Sharing Economy.
3. *Trust and recommendation*: Business models in the Sharing Economy also often provide rating and recommendation systems to foster trust based on reputations and build social networks among users (Belk 2014a; Abramova et al. 2015). One major challenge for IS research is to investigate how IT can help to build trust among peers and in the intermediary to foster acceptance of the sharing services (Malhotra and van Alstyne 2014; Trang et al. 2015). Rating and review systems are one of the most important features to foster trust building between the peers and the intermediary in sharing networks. Malhotra and van Alstyne (2014) even argue that the viability of sharing offers hinges on the quality of the respective review system. This is especially due to network effects, which lead to positive feedback loops (Cusumano 2015). However, many rating mechanisms provide reply functionalities especially relevant to protect reputation in case of negative criticism (Abramova et al. 2015; Malhotra and van Alstyne 2014). Therefore, IS research recently started to investigate the influence of rating systems' characteristics to sharing behavior and to suppliers' intent to change service parameters such as pricing (Gutt and Herrmann 2015). Malhotra and van Alstyne (2014) mention the effects of rating mechanisms to parties outside the sharing network, alleging the example of health inspectors using Yelp ratings to identify restaurants that may be sources for food poisoning. Besides rating and review systems, there are other mechanisms for intermediaries to foster trust building. Malhotra and van Alstyne (2014) argue that it is a platform provider's duty to spot stalkers, run background checks on sharing providers and respond quickly to conflicts among members. One way to do so is to adapt and implement insurance mechanisms to e.g. help the lender against the concern of damage at the item he shares (Weber 2014). Furthermore, fair reporting, fraud protection mechanisms and trust networks may be regarded when investigating trust in the Sharing Economy (Malhotra and van Alstyne 2014). Adjacencies for investigating trust building may be found in other multi-sided market constellations and e-business, whereas research on social networks may contribute to the understanding of peer-to-peer and peer-to-intermediary behavior in sharing ecosystems (Cusumano 2015). Another topic of interest is the degree of human interaction for trust building and service acceptance, as Trang et al. (2015) found reduced human interaction to negatively influence these measures.
4. *Consumption-based pricing*: As in related concepts such as cloud computing or software-as-a-service, the customer only pays for the actual use of the resource but not directly for its ownership or maintenance. Thus, the sharing economy may create access-based real options for

individuals (Saya et al. 2010). In case of Internet technology facilitated sharing services, peer-to-peer synchronization can be offered for low transaction costs. Sufficiently managing the service pricing is crucial for sharing intermediaries to develop a profitable provision model. Therefore, some companies such as the German car sharing provider BlaBlaCar make use of price suggestion as a pricing strategy (Teubner and Flath 2015). Underlying calculation methods are especially interesting to investigate in case service offerings become more complex, as it is the case in (crowd) data driven calculation of multi hop ride sharing offers.

5 Discussion

Due to the fact that in today's world the mechanisms of SE are based on Internet (i.e. Web 2.0) technologies, the phenomenon has to be considered under the spotlight of digitalization and, thus, IS research should take a leading role in investigating it. Therefore, current IS literature tackles the topic on several levels, including the business model, the service and the sharing asset perspective as well as legal, ethical and governmental issues. Within these perspectives, many opportunities for IS research exist. On the business model level, future research should investigate sharing business models using existing concepts in this field, such as the business model or value proposition canvas (Osterwalder et al. 2010; Osterwalder et al. 2014). This includes but is not limited to a sharing business' (potential) cost structure and revenue streams, partners and resources necessary to perform sharing activities and value creation within these business models. Sharing activities and value propositions are also promising topics for investigation in service research in IS, focusing on the roles of the participants and the role of IT within P2P sharing exchanges. Regarding the sharing asset, IS research may first condense 'shareable' products and services described in prior (not only IS) research and derive specifications that characterize a 'shareable' asset with regard to technological possibilities and limitations. Future research approaches on all these levels should further address the four main principles of Sharing Economy identified within this review. Considering multi-sided market mechanisms, research may focus on peer-to-peer interactions and value co-creation, peer-to-intermediary relation and user empowerment to create greater value as well as matchmaking mechanisms. Using the relation to Crowdsourcing, future IS scholarship may address the nature of sharing activities compared to other microtask activities, ecosystem mechanisms and data elicitation, analysis and exploitation for service configuration. As trust building is crucial for sharing activities, IS research may investigate the design of trust fostering IT, such as rating and review systems, the influence of (negative/positive) ratings on user behavior and service configuration, the dynamics of social networking and community building as well as the influence of trust in the acceptance of sharing platforms and offers. Finally yet importantly, consumption-based pricing may also be a promising research area. This includes but is not limited to investigating price suggestion strategies and mechanisms for respective application contexts (e.g. accommodation sharing), effects of pricing variations to user behavior and the conception of compliant and legal pricing mechanisms with regard to future regulatory changes (e.g. tax regulation). However, prior research within all these fields in reverse may contribute to the understanding of the respective principles in the context of Sharing Economy.

6 Conclusion

Sharing Economy has the potential of manifesting a paradigm shift in economy and social life. As this implies a shift in both economic principles for value creation and appropriation and user behavior on the Internet, IS research may lay the foundation for research in many related fields. With this central role in mind, we accomplished to identify research perspectives on the topic in IS scholarship as well as the principles of how SE business works. With our results, we hope to provide the state-of-the-art of how the concept Sharing Economy has been addressed in IS research yet. By structuring the field and providing an overview of adjacent research topics in IS, we hope our contribution to guide future research in bridging the gaps between anticipated knowledge of the respective IS research fields and the peculiarities of SE. Besides the proposed theoretical contributions of condensing existing knowledge, providing a research structure and pointing out future research opportunities, our paper also contributes to practice by introducing sharing as an alternative to ownership-based consumption and highlighting challenges and opportunities for both startups and incumbent firms when participating in the SE. However, our research is not free of limitations. Since we focused on reviewing prior IS scholarship only, we accomplished to condense existing knowledge to structure the field but neglected the creation of new knowledge. However, we believe that this condensation will be an important fundament for future empirical or design knowledge creating research in IS. Next steps would be to find SE peculiarities and investigating them with reference to adjacent research topics. This approach may be path leading to establish a common and deeper understanding of the structure and effects of the concept, which in turn allows to elaborate on how to conceptualize, build and implement SE structures within diverse contexts. However, with this contribution we could only lay the foundation of research covering this topic. We could show that this research stream is just at the beginning and contains many facets that interrelate with existing concepts with high relevance to IS. As the economic importance of IT-enabled sharing as an alternative or complement to traditional forms of consumption rises, the research topic is going to emerge and gain relevance within the IS community, too. We therefore appreciate all prior research within this field and encourage scholars to tackle the issues we condensed for the Sharing Economy in information systems research.

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