

CATCHWORD

Sharing Economy

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1 Drivers and Potentials

1.1 IT as Enabler

The internet has seen many steps of evolution since the inception of the world wide web in 1992. They comprise various steps in electronic, mobile and social business (Wikipedia 2015). While all phases have spurred new business models, the recent social web also enables a paradigm change from owning to using goods and/or services. Contrary to the traditional market model, which is based on ownership, the “Sharing Economy” is built on using and sharing of products and services among others. The principle per se is not new: sharing resources is known in business-to-business (B2B) domains, such as the sharing of machinery in agriculture and forestry (e.g., Maschinenring in the German-speaking countries) as well as in business-to-consumer (B2C) domains (e.g., self-service laundries, ski/video and car rental, public libraries and

pools). It has recently received a proliferation to consumer-to-consumer (C2C) transactions and resulted in new business models. Three drivers may be identified for this development (Botsman 2014, p. 24; Hamari et al. 2015, pp. 5 ff.):

- *Changing consumer behavior* While ownership has been a predominant model for using goods (e.g., cars) in the past, temporary usage has recently become more attractive for many consumers (Matzler and Kathan 2015, p. 71; Rifkin 2014, pp. 32 ff.). Examples are car2go, a company owned by Daimler which offers access to shared mobility services as well as Nextbike and Green Bikes Barcelona, both companies offering bike rental services. Among the reasons for this shift are convenience, lower prices, and ecologic sustainability (Eckhardt and Bardhi 2015).
- *Social networks and electronic markets* The networking among peers is mainly enabled by social networks and community platforms. They link many consumers who are willing to share their goods among each other (the “crowd”). Additionally, electronic market platforms (e.g., InnoCentive) reduce the formerly high search and transaction costs. They create mechanisms for trust and reputation in anonymous markets (e.g., rating and feedback) and offer integrated fulfillment as well as payments functions (e.g., social media payment) which ensure easy and reliable compensation for using the shared services.
- *Mobile devices and electronic services* A strong enabler for accessing services in the “app economy” (MacMillan et al. 2009) conveniently has come with mobile smart devices, such as smartphones and tablets. For example, a solution for sharing cars is much simpler and more convenient for consumers based on intelligent

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hardware instead of physical gear. Companies, such as car2go or DriveNow in Germany, Sharoo in Switzerland, or Getaround and RelayRides in the USA, rely on a combination of an electronic service using smartphone apps and smartcards instead of physical keys.

2 Examples and Benefits

A recent survey among consumers in the USA indicated that the Sharing Economy in the sectors travel, car sharing, finance, staffing, as well as music and video streaming is supposed to increase its revenues from USD 15 billion today to USD 335 billion within the next years (Bothun et al. 2015, p. 14). In the USA, already 21 % of the consumers used shared services in 2014 and an increase to 45 % is expected in 2015. As shown in Table 1, the phenomenon of the Sharing Economy may be recognized in many industries which reflects their macro-economic importance (Geron 2013, p. 64; Koetsier 2015). The solutions differ from a micro-economic perspective regarding the providers (1 and 2) and the interaction types (3 and 4):

- Start-ups* A large proportion of innovation in the Sharing Economy stems from start-up companies, and the Sharing Economy already created ten so-called unicorns (Koetsier 2015). These are companies each worth more than one billion USD. Among them are Uber, Airbnb, Kuaidi Dache, and WeWork. Although many start-up companies concentrate on financial services, mobility, and travel, examples from other industries, such as education, music, or logistics, underpin the cross-industry nature of this phenomenon.
- Incumbents* Besides start-ups, established companies act as service providers in the field of the Sharing Economy as well (Botsman 2014). Ikea, for example, allows its customers to exchange used furniture over their website. On Wal-Mart's online platform, consumers may share used video games. A typical pattern is that incumbents collaborate with start-ups as illustrated by the example of General Motors who invested USD 3 million in RelayRides.
- B2C* Although the Sharing Economy concentrates on the exchange of goods and services among consumers, the access to these resources is disintermediated in many cases by companies providing value added services for consumers (Eckhardt and Bardhi 2015). A primary reason for this is missing trust among individuals, such as the lender's concern about damage of a shared item, which can be solved by an intermediary providing services, such as insurance services, to the lender (Weber 2014, p. 35).

Table 1 Examples of the Sharing Economy

Provider type	Interaction type	Industries										Others
Incumbents	B2C	Kuhleinen	Finpoint	Uber	Onefinestay	Instacart	Wework	Chegg	Peer 2 Peer University	Coursera (Stanford)	Demand (Marriott)	The collective
	C2C	Eat With Me	Lendico	Getaround	Airbnb	ShareMyStorage.com:	Freelancer.com	Peer 2 Peer University	Coursera (Stanford)	Demand (Marriott)	Demand (Marriott)	Sharen.nl
	B2C	WeFarm (Google, Telefonica and others)	openforum (Bank of America)	car2go (Daimler)	Tripping.com (Several)	DoorDash (FedEx)	Workspace on	Chegg	Peer 2 Peer University	Demand (Marriott)	Demand (Marriott)	Mud jeans (Mud Jeans)
C2C	P2P Food Lab (Sony CSL)	Crowdfunding (Volkswagen Bühl)	Parkatmyhouse (BMW)	TripAdvisor (Expedia)	MyWays (DHL)	TaskRabbit (Walgreen, Pepsi, GE)	TaskRabbit (Walgreen, Pepsi, GE)	Khan Academy (Google, B. & M. Gates Foundation)	Khan Academy (Google, B. & M. Gates Foundation)	Khan Academy (Google, B. & M. Gates Foundation)	Khan Academy (Google, B. & M. Gates Foundation)	Mila (Swisscom)

4. C2C The C2C perspective considers the simultaneous role of service producers and consumers: “single individuals and single organizations often take on both consumer and producer roles, [...] these roles are themselves porous, with actors participating in both as well as moving between them.” (Thomas et al. 2013, pp. 1017). This is reflected in the term “collaborative consumption”, which focuses on the peer-to-peer consumption of services without involving any intermediary.

Independent of the four generic patterns, the Sharing Economy creates benefits for consumers, providers, and intermediaries (Hamari et al. 2015). For consumers, it offers increased convenience because they can use a specific product (physical or immaterial) for a certain purpose instead of buying a “one size fits all” type of product. In addition, it also holds economic benefits as for example lower capital investments for using a good instead of buying it. From an ecological perspective, the Sharing Economy provides potentials for waste reduction due to reduced production of goods and services. Enjoyment and reputation are factors, which complement economic and ecological benefits and contribute to consumers’ social ambitions.

Providers and intermediaries can benefit from new business models and new services. They can either position themselves as platforms where consumers share goods and services or provide additional value added services as for example insurance or payment services. These new models can also generate positive reputation effects. For example if companies offer possibilities for consumers to re-sell their used products, such new communities can contribute to a positive brand image.

3 Definition and Existing Research

3.1 Sharing Economy

The term “Sharing Economy” was first mentioned in 2008 and denotes the “collaborative consumption made by the activities of sharing, exchanging, and rental of resources without owning the goods.” (Lessig 2008, pp. 143 ff.). In the context of economic transactions, it refers to the use of an object (a physical good or a service) whose consumption is split-up into single parts. These parts are collaboratively consumed in C2C networks coordinated through community-based online services or through intermediaries in B2C models (Hamari et al. 2015, p. 1).

The Sharing Economy links social network research, such as research on collective intelligence, with the domain of online social commerce as it is established in C2C interactions. Social commerce is a form of commerce that

is mediated by social media to support social interactions and user contributions to assist activities in the buying and selling of products and services (Liang and Turban 2011). Although the Sharing Economy does not focus on ownership transfer of products and services, it requires mechanisms for C2C transactions such as bookings (e.g., of a car) and payments (e.g., for using a car and additional services) which are a domain of social commerce.

4 Previous and Related Research

Literature provides definitions for the Sharing Economy from different disciplines. Examples come from economics, business administration, and law. A first major differentiation distinguishes a macro- and a micro-economic perspective. While the former focuses on market models, the latter investigates strategies, processes, and systems for companies and their interaction with consumers.

From a *macro-economic perspective*, the Sharing Economy follows a hybrid market model. Exchanging goods and services has predominantly been a domain of market-based models. These models focus on transferring ownership of economic resources between two parties. Depending on the involvement of money, two models may be identified. The first is the traditional market model where two actors exchange the ownership of a good or service for money. The second is gift giving where a good is donated to another actor without any money involved in the transaction process. Recent research identified so-called hybrid models as future forms of economic exchange. These models are based on the coexistence of different types of market and non-market models, such as the Sharing Economy (Scaraboto 2015). As part of the macro-economic perspective, economics aims to identify why consumers participate in the Sharing Economy and favor these hybrid market models over pure market-based ones (Hamari et al. 2015). Closely related to this are legal questions, such as taxes, regulation, etc. (Cusumano 2015, p. 34; Kassan and Orsi 2012), which often still await legislation and are part of research in the law discipline. For example, the professional rental of apartments via Airbnb, also calls for special insurances and licensing require tax payments and the like (Malhotra and Van Alstyne 2014). The same applies to crowdfunding in the financial services industry. Another research direction analyses the potential positive impact of the Sharing Economy on environmental sustainability and social equality (Heinrichs 2013).

From a *micro-economic perspective*, the Sharing Economy is part of the discussion in various disciplines. For example, marketing analyzes the relevance of brands which seem to become less relevant if consumers are able to

access for example different cars from different vendors (Eckhardt and Bardhi 2015). This vendor perspective is part of research in business administration which identifies new strategies for the Sharing Economy for both incumbents and start-ups (Cusumano 2015) as well as specifically for small and medium sized companies (Choi et al. 2014). Independent of the maturity and size of a company, the management literature identified different strategies for companies to succeed in the Sharing Economy: (1) Selling the use not the ownership, (2) supporting re-ownership of products by selling goods and services, (3) exploiting unused resources and capacities, (4) providing repair and maintenance services, (5) targeting new customers and (6) developing entirely new business models (Matzler and Kathan 2015, p. 72). In addition, intermediary models focus on how these actors can eliminate the moral hazard problem by providing insurance services to the lender (Weber 2014).

An *integrated perspective* is discussed in the area of service science which is closely linked with the concept of service-orientation (Bardhan et al. 2010). In this context, the term “service” is defined as “the application of competences for the benefit of another” (Vargo and Akaka 2009) or more precisely meaning that service is a kind of action, performance, or promise that’s exchanged for value between provider and client” (Spohrer et al. 2007). This value exchange also corresponds with the *macro-economic view* and relies on service systems as a major element of service science (Maglio et al. 2008). In these service systems, service consumers and providers exchange information and services (e.g., food, financial, mobility; see Table 1). For example, as part of service science, crowdsourcing is defined as “the act of taking a job traditionally performed by a designated agent (usually an employee) and outsourcing it to an undefined, generally large group of people in the form of an open call” (Howe 2006; Leimeister 2012, pp. 246 f.). The *micro-economic view* complements the macro-economic view and addresses strategic, process- as well as system-related aspects of service consumers, providers, and intermediaries (Alter 2009). For example, this involves the co-creation of services among service consumers and providers in a specific service system that jointly collaborate along the service lifecycle as well as the corresponding applications for their technical implementation, integration, and operation.

5 A Framework for the Sharing Economy

The Sharing Economy leads to hybrid forms of economic value exchange and thus extends existing models from the micro- and macro-economic perspective. A framework may serve to map the different approaches and provide guidance.

Such a framework distinguishes strategies, processes and systems as the three core layers (Brenner et al. 2014; Choi et al. 2014; Matzler and Kathan 2015; see Fig. 1).

On the *strategic layer*, the Sharing Economy either directly connects consumers through C2C models or provides access via an intermediary. The providers produce and distribute services for consumers, who in turn may also produce and distribute services for other consumers. In the Sharing Economy model, the line between consumers and producers is blurring because in a C2C scenario the provider would also be a consumer. An example is the lending of consumer credits by other consumers, an area which was formerly restricted to banks as financial service providers. However, the traditional service providers, such as banks, can also position themselves in the Sharing Economy. An example are banks which secure C2C lending scenarios (e.g., GoLend Internet Finance in Hong Kong).

On the *process layer*, consumers, providers and intermediaries are connected by different types of process categories. On the provider side, the “service lifecycle” differentiates the seven generic phases of identification, requirements analysis, conception, development, implementation, operation, and enhancement of services (Fischbach et al. 2013, p. 53). These lifecycle processes support providers’ strategies, such as the re-ownership of products, for which specific processes within the service lifecycle are relevant. For example, companies could provide specific repair services in the operations phase for second hand goods or offer refitting services in the enhancement phase to enrich those goods and services. On the intermediary side, these sharing processes need to be linked with service processes in the different service categories as for example food, logistics, etc. In a C2C model where only consumers are involved, the consumer offering a product or service to be shared would be the provider and thus owner of the service lifecycle process. For example he identifies opportunities to rent his apartment, analyze the requirements (e.g., insurance, regulation, etc.), etc.

The role of intermediaries is typically based on three generic process categories (Giaglis et al. 2002): achieving market transparency (listing of services), the use of services via a shared transaction infrastructure (service contracting, billing, and fulfillment), and regulation (service rating as a form of self-regulation; in addition governmental regulation rules could be part of contracting, billing, and fulfillment processes). These processes have to be adapted depending on the service context. For example, sharing a car requires different processes for service use (e.g., cleaning, parking, etc.) than the lending of money (e.g., interest rates, payback periods, etc.). On the consumer side, the specifics of consumers’ sharing processes have to be considered, which are not focused on the

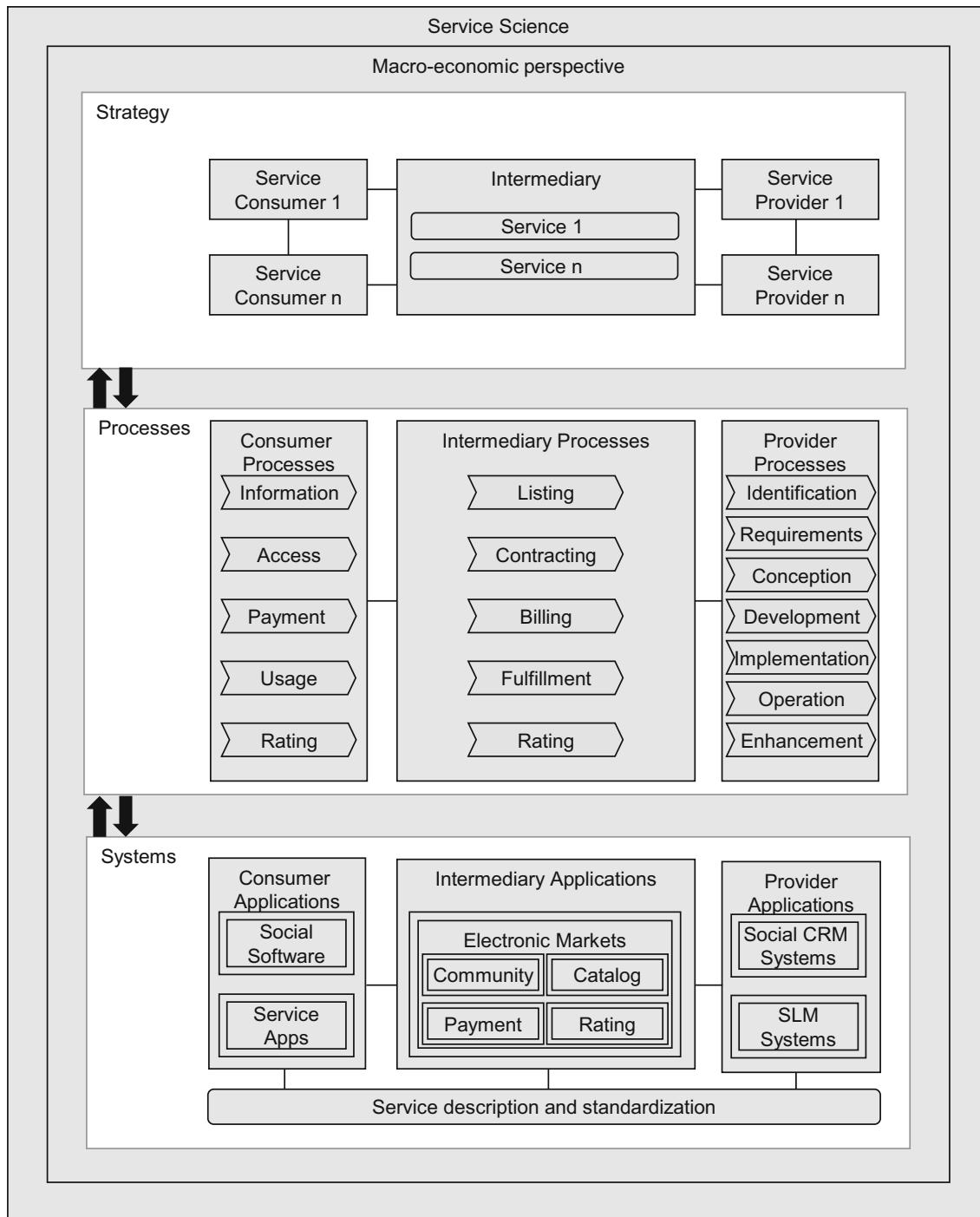


Fig. 1 Framework for the Sharing Economy

transfer of ownership and include transactions, such as payments. Five process categories are relevant from the consumer perspective. First, consumers inform themselves about services they need and compare them. Second, they obtain access to relevant offerings, such as electronic keys for car sharing. Third, consumers pay for the service use. If (micro) payment functionalities are available in the sharing platform frictions regarding the use of shared services are

reduced. Fourth, additional value added services support consumers in sharing resources. An example are insurance services, which reduce the providers' risks and thus improve trust. Finally, consumers rate the overall service quality based on criteria, such as convenience, which also serves as a trust mechanism (Hernaes 2015).

On the *systems layer* consumers typically use electronic market platforms to identify goods and services that they

would like to share. In a pure C2C model, they connect consumers and in B2C model businesses as well as consumers (Hernaes 2015). These platforms support the three generic process categories market transparency, transaction, and regulation from the process layer. For example, Airbnb offers a service catalog for providing market transparency and allows consumers to search for and compare different apartments (Gretzel et al. 2015). The transaction infrastructure enables them to book and pay the apartments and the community offers rating mechanisms and the like. On the provider side, Social CRM systems ensure the link to online communities. For this, Social CRM systems provide analysis and interaction functions, such as social search, social media monitoring, social network analysis, and social network management. The data from these systems can be integrated into the consumer processes along the entire service life-cycle, such as consumer ratings in the identification phase or complaint management in the enhancement phase (Alt and Reinhold 2012, p. 283). Additionally, SLM systems link the providers' service lifecycle processes to the shared goods and services (Fischbach et al. 2013). For this, systems for SLM (e.g., systems for service description such as IBM Web-sphere Service Repository & Registry or for service management such as Protégé) or provide functionalities for an integrated management of services from a technical and business point of view: a homogeneous service description, value orientation including costs and revenues of services, inter-organizational view and a service portfolio view. If, for example, a consumer bundles a car sharing service with a public transportation service, both services require a compatible semantic model to exchange data among each other. For that the services should rely on common standards, such as the Unified Service Description Language (USDL), which aims at business, operational, and technical aspects of services. An example for another standardization initiative are the World Wide Web consortium's (W3C) efforts to establish an online payment standard that enables a homogeneous payment infrastructure for service transactions and extends the semantic web with the possibility to exchange value among service consumers and providers.

6 Areas for Further Research

The growing Sharing Economy has implications for research in at least three areas. First, from a *macro-economic perspective*, the traditional differentiation of industries is blurring and points towards cross-industry ecosystems. Service systems might emerge where different services are bundled and exchanged in C2C and B2C Sharing Economy models depending on consumers' requirements (outside-in) instead of inside-out generated

goods and services which are based on providers' assumptions about consumer needs. In such an economy, traditional market- and non-market models converge to hybrid forms of value exchange. Research may contribute with a more detailed analysis of these ecosystems and advance the understanding of the impact of the Sharing Economy. Among the research questions are: Which sectors will emerge in the future? How would consumers for example combine a car sharing service with a traditional flight arrangement or a crowd investment service with a stock portfolio from their bank? What new forms of value exchange will support these evolving ecosystems? In such a scenario even money could become obsolete and be complemented by new forms of value transactions, such as time banks which record how much effort was invested in providing a certain service. Innovative distributed ledger technologies such as for example the blockchain could support this with transparent recording and value exchange mechanisms among the involved actors.

Second, from a *micro-economic perspective*, companies might disappear in certain areas as traditional forms for institutionalized service production. Instead, service and goods production facilities could be shared among single workers that co-create services, each of them focusing on single tasks in which one is specialized in, a development recently termed as hyperspecialization or crowdsourcing (Malone et al. 2011). Additionally, consumer processes and companies' service lifecycle processes need to be adapted to the context of the Sharing Economy. An example are maintenance processes that rely on location-based criteria in the case of car sharing, which might even be outsourced to consumers. Zipcar, for example, values the cleaning of cars with 15 USD. Another question in this regard refers to the organization of insurances of shared goods and services that compensate consumers for loss or damages. Among the research questions in the micro-economic domain are: What are new business models for the Sharing Economy? How can these new forms of work be organized and in which areas will the hierarchical organization still have its eligibility or where more decentralized forms might prevail? What is the role of intermediaries, such as electronic markets, in the context of the Sharing Economy? For example, how might consumers connect different identities on different sharing platforms towards a cross-platform identity management? Another question in this context refers to the organization of insurances of shared goods and services, which compensate consumers for loss or damages.

In order to integrate the different perspectives, *Service Science* could contribute with an overall link for the different disciplines. With services systems as primary research object, the discipline could describe how those different research areas might be inter-connected alongside

the different macro- and micro-economic dimensions. The information systems domain is well positioned to provide answers to these questions as it is interdisciplinary by nature and connects the expertise of various disciplines.

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