Report from the EU H2020 Research Project Ps2Share:
Participation, Privacy, and Power in the Sharing Economy

Platforms and the Sharing Economy: An Analysis

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Executive Summary

This document represents deliverable D5.1 of the project Ps2Share and contains the results of Task 5.1, i.e., the results of the platform analysis. The goal of Work Package 5 is the identification of design guidelines for sharing platforms.

To develop a first version of design guidelines, three complementary analyses were conducted: An in-depth literature analysis, a user expectation analysis with focus groups, and an in-depth analysis of a diverse sample of 124 sharing economy platforms (SEP) and 130 sharing Facebook groups operating in Europe. The literature analysis considered the themes sharing, sharing economy, and platforms in the sharing economy and resulted in a first version of design guidelines for sharing economy platforms.

The first version of design guidelines for SEP consists of five design areas: Business models, market transaction, governance structure, and culture of SEP, which are all impacted by the fifth design area of SEP, the regulatory environment in which a SEP operates. The analysis of user attitudes, experiences, and expectations towards SEP was analysed during several focus groups. This analysis revealed that participants make a clear distinction between "community-oriented sharing" and "commercial sharing" and therefore have elevated expectations about the safety and quality of service towards SEP. Furthermore, the insights from user experiences and their expectations towards SEP confirmed the core design aspects of the first version of SEP design principles developed based on literature.

The identified SEP design aspects were applied for a broad analysis of a sample of 124 SEP operating in Europe and 130 Facebook groups. The analysis revealed that there are 12 global SEP platforms active in Europe that, in many industries, dominate the market. The European platforms are smaller and try to position themselves in market niches around the big players. Many new platforms were founded in the period from 2010 to 2015 in diverse sharing categories such as sharing of financial resources, sharing of diverse spaces as gardens and parking places, or sharing of diverse forms of vehicles as campers and bicycles as well as sharing of food in different forms. Since 2015 the foundation of new SEP in Europe seems to be decreasing. Interesting is the fact that there are also many sharing communities emerging on Facebook, which operate without having a legal entity as an intermediary. Global and local SEP have a similar design, which confirms the identified design guidelines. The platform analysis revealed that the identified design principles can be applied for analysis of SEP and for identification of improvement potential. Overall, the platform analysis revealed the 3Ps paradoxes of SEP:

- The Participation Paradox: Despite opposite expectations, participation in sharing is based on strict rules and not open for everyone;
- The Privacy Paradox: Despite knowing that many personal data are collected by SEP, participation in sharing is high;
- The Power Paradox: Even though expected to be neutral, SEP are the most powerful player in the sharing economy after regulation.

Even though there are some fixed points in the design of SEP, there are also some degrees of design freedoms and design choices around the 3Ps paradoxes which shape the character and personality of a sharing economy platform.

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1 Introduction

The deliverable at hand is the first deliverable of Work Package 5 (WP5) of the Project Ps2Share. Overall, WP5 pursues two objectives:

1. To provide an overview of current practices with reference to participation, privacy, and power (3Ps) at established Sharing Economy Platforms (SEPs), and
2. To synthesize the results of the project in design principles and guidelines for implementation of the 3Ps in SEPs.

In order to achieve the first goal, the research plan of the project foresees that current practices in participation, privacy, and power (3P practices) should be analysed from two perspectives: 1) How are they communicated in legal documents (i.e., the privacy policies of the companies) and further official communication of the platform to potential users (providers and consumers); and 2) How they are implemented in existing processes and practices of the companies.

For achieving the second objective of WP5 and to ensure broad applicability and impact of expected research results, findings from this deliverable and the findings from the other WPs relevant for platform design will be summarized in design principles and guidelines for the implementation of the 3Ps in SEPs. The final version of design principles for SEPs will be summarized in the second deliverable of WP5, D5.2.

The overarching methodology applied for both deliverables in WP5 is “Design Science” according to Hevner et al. (2004). To enable an early inclusion of first results from the literature analysis in the design principles and guidelines, the originally planned analysis as well as the division of activities among Task 5.1 and Task 5.2 were adjusted. Two design cycles were performed: First, based on a literature review, results of the focus group analysis related to the requirements of users upon SEPs and an in depth analysis of the functionality of both existing SEPs and Facebook sharing communities was performed. The findings were summarized in a first version of design principles and guidelines for sharing platforms in the deliverable at hand (D5.1). In the second design cycle the first version of design principles of sharing platforms will be evaluated against existing terms and conditions and privacy policies of platforms and with experts from active SEPs. The results of the first design cycle are summarized in D5.1.

The content of D5.1 is structured as follows: Chapter 2 explains the overall methodology, chapter 3 contains the results of the literature analysis, chapter 4 contains the results of the focus group analysis, and chapter 5 the result of the platforms analysis. Chapter 6 concludes the deliverable with a summary of results and a first version of design principles and guidelines for platforms.

2 Methodology

The overarching methodology applied in WP5 is design science. According to Hevner et al. (2004, p. 77) "*Design science […] creates and evaluates IT artifacts intended to solve identified organizational problems*". Whereas natural science and social science try to understand reality, design science attempts to create things that serve human purpose (Simon, 1996, p. 55). In our case the goal of WP5 is the development of design principles and guidelines with particular focus on the 3Ps for existing and emerging SEPs. The goal is the identification of a minimum set of design principles and guidelines for SEPs that can enable a broad and legal participation of participants on the platform, a fair application of privacy policies and principles, as well as a fair execution of power positions of sharing platforms.

The focus of the research presented in WP5 is the development and design of SEPs. Given this, the research problem considered in WP5 is situated in the Information Systems research discipline. In the Information Systems research discipline, design science attempts to build novel and useful IT meta-artifacts rather than concrete IT applications (Iivari, 2007). In the Information Systems community, there have been several attempts to define an IT artifact (Benbasat & Zmud, 2003; Orlikowski & Iacono, 2001; Venable, 2006). One widely recognized and built upon suggestion in context of design science research goes back to March and Smith (1995). In their understanding, design science research must ultimately lead to one of the following types of IT artifacts:

- **Construct:** Constructs are vocabulary and conceptualizations in which the problem and solution in the domain is described and communicated. Evaluation criteria of constructs are completeness, simplicity, elegance, understand ability, and ease of use.
- **Model:** A model is a set of propositions to express the relationships among constructs. In this sense, a model uses these constructs to represent a problem and its solution space. In the notion of design science, the concern of models is utility, not truth. According to March and Smith (1995), a high quality model is characterized by fidelity with real world phenomena, completeness, level of detail, robustness, and internal consistency.
- **Method:** A method is a set of steps (an algorithm or guideline) used to search the solution space in order to solve a problem and to enable the construction of instantiations. A model is evaluated with respect to their efficiency, generality, ease of use, and operationality (ability to perform the intended task or the ability of humans to effectively use the method if it is algorithmic).
- **Instantiation:** Instantiations demonstrate the feasibility of utilizing those information technology artifacts (construct, model, or method) in a working system within an organization. They are evaluated with respect to their effectiveness and efficiency in the performance of the given task as well as its impacts on the environment and users.

The planned design principles and guidelines for SEPs can be considered as method artifacts, as they will define the solution steps for the design of SEPs with focus on fair conditions for participation, privacy, and power. According to Preece, Rogers, and Sharp (2014) design principles *"… are generalizable abstractions intended to orient designers toward thinking about different aspects of their designs. A well-known example is feedback: products should be designed to provide*

adequate feedback to the users to ensure they know what to expect to do next in their task. …". Preece, Rogers, and Sharp (2014) consider furthermore a mix of theory-based knowledge, experience, and common sense to be a sound foundation for deriving design principles. Overall design principles tend to be written in a prescriptive manner, suggesting to designers what to provide and what to avoid while they are creating a platform (Preece, Rogers & Sharp, 2014). While design principles are of a more abstract and general nature, design guidelines are more detailed and provide step-by-step guidance how specific design principles can be implemented in a specific context.

To structure the analysis in this deliverable, we draw upon Peffers et al. (2008), who aligned with the three cycle view of Hevner (2007) to specify the following phases of a design process:

- **Problem Identification and Motivation.** First, the specific research problem has to be defined and the value of the solution has to be justified. Resources required for this activity include knowledge of the state-of-the-art and the importance of the solution (practical relevance) at the interaction of people, organizational systems, and technical systems. The output of this process step is the problem scope representing the "desired situations", "the present situation", and "differences between the desired and the present" (Simon, 1996, p. 141).
- **Define the Objectives of the Solution.** From the problem definition and the knowledge base of current solutions and approaches, the objectives of the solution are inferred. This phase includes the definition of the key variables and to set the boundaries of the research. Boundaries include issues like level(s) of analysis, temporal and contextual limitations, the scope of the research, and the implicit values. Resources required for this include knowledge of the state of the problem and current solutions, if any and their efficacy.
- **Design and Development.** The core of design science deals with the actual creation of the artefact. As discussed before, such artefacts are potentially constructs, models, methods, instantiations, or theories. They should be constructed by reference to the existing knowledge base.
- **Demonstration.** The use of the designed artefact is demonstrated in one or more instances of the problem. Prototype artefacts demonstrate the feasibility of addressing the problem (Markus et al., 2002, Walls et al., 1992). In reference to the three-cycle view of Hevner (2007), the artefact has to be introduced into the application environment.
- **Evaluation.** The evaluation observes and measures how well the artefact supports a solution of the problem. This activity involves comparing the objectives of a solution to actual observed results form use of the artefact in the demonstration.
- **Communication.** Continuously, the problem and its importance, the artefact, its utility and novelty, the rigors of its design, and its effectiveness are communicated to researchers and other relevant audience such as practicing professionals.

Figure 1 summarizes the design science approach applied for the research presented in D5.1 and 5.2.

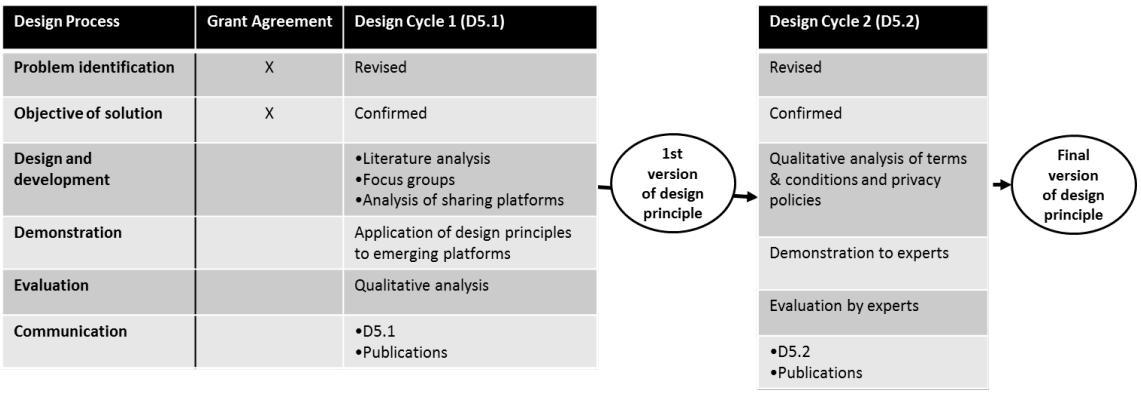

Figure 1: Overview of the Design Science Research Process

The content of the first two phases "Problem identification" and "Objective of solution" were defined in the project proposal. The deliverable at hand contains the results of step "Design and Development". To get to the initial set of design principles for sharing platforms, a literature analysis, focus group analysis, and an extensive analysis of sharing platforms was performed. The specific methodologies and results of these three activities are described in the next section in detail and are summarized in a first set of design principles in the last section of this deliverable.

3 Literature Analysis

3.1 Goals of the Literature Analysis and Methodology

The goal of the literature analysis was:

- To define the important phenomena relevant for developing design principles for SEPs. These are in particular the terms “sharing”, “sharing economy”, and “SEPs”. The results regarding this goal are summarized in section 3.2.
- To collect already published design principles and guidelines about sharing platforms. The results of this part of the literature analysis are summarized in section 3.3.

The literature analysis was conducted as suggested by vom Brocke et al. (2009). The keywords “sharing economy”, “sharing platforms”, and “Sharing Economy platforms” were used to search for literature in the following databases: EBSCO, ScienceDirect, and Google scholar. All searches resulted in a high number of results. By analysing of the abstracts of papers that included any of the three keywords, a selection of 160 journal papers were chosen from the three mentioned data sources. In addition, the same keywords were used to search the Association of Information Systems (AIS) database on Information systems conferences and 16 additional conference articles were added to the selected papers. The search for books resulted in 11 references relevant for the topic. In total, the keyword based research in literature databases and conferences and books resulted in 187 potential references. Further items were added to this list by forward and backward search of literature cited in these articles.

Out of this literature list, 56 articles were identified, which are case studies of platforms or are dedicated to the analysis of specific features of platforms. These 56 references were the core literature used in the analysis presented in this deliverable. In the subsequent sections first the results related to definition and classification of platforms are presented and then the findings related to platform features.

3.2 Definitions and Classification

In this chapter the core terms and concepts that are under consideration in this deliverable are defined and classified. The definitions are then used to clearly delimit the subject of research of the detailed analysis of SEPs.

A defining and differentiating aspect in the terms economy and SEPs is “sharing”. Thus, the understanding of these two terms depends on the meaning which social actions and phenomena are considered to be “sharing” (John, 2017). According to John (2017) the notion and meaning of the term “sharing” have experienced a remarkable change over time. According to the first entries for “sharing” in the Oxford English Dictionary in the mid-sixteenth century, sharing was associated with dividing or splitting (John, 2017), i.e., division and distribution of material resources. This meaning of sharing implies the question of fair division, change of the physical good subject of sharing, and gives importance to the one who is responsible for how the sharing, i.e., division takes place. Over time, the meaning of the term sharing was rather associated with a social action of conjoined using, or “the act of distributing what is ours to others for their use”,

or “taking something from others for our own use” (Belk, 2007). This meaning of sharing defines it as a social process of “sharing for free” or “sharing is caring” (John, 2017) and implies social bonds and involves values such as generosity, openness, equality, mutuality, trust, and commonality (John, 2017). Grounded in this new meaning, “sharing” is closer to ”partaking of” (John, 2017) and is different compared to other modes of resource management such as buying, barter, or gift-giving (John, 2017).

With the emergence of Internet, and in particular social media, the meaning of the term “sharing” was extended to communication and sharing of non-physical goods (John, 2017). By participating in social media, users share their thoughts, pictures, and other content. In this context, John (2017) considers sharing to be “telling” and “communication”. “*Sharing has emerged as one of the core cultural values native to the networked environment*” (Stadler & Stülzl, 2011). Sharing of digital goods, for example music, differs compared to sharing of physical goods. While sharing of physical goods entails sacrifice, sharing of digital objects entails, due to their immateriality, no sacrifice (John, 2017). However, when sharing as communication refers to sharing of knowledge and ideas, it can involve ethical questions similar to questions related to sharing of intellectual property.

All meanings of the term “sharing” considered up till now do not involve payment transaction as part of sharing. Sharing is rather a social act of mutual consumption of something that belongs to others. In the last ten years, besides “sharing as communication” also the meaning of “sharing for pay” or “sharing as commercial transaction” or as “economy” has emerged. This is the most controversial meaning of the term as it contradicts the meaning of sharing as generosity and partaking (John, 2017). Thus, some authors suggest that the “sharing economy” cannot be considered as true sharing.

Table 1 contains an overview of definitions of “sharing economy”. Common elements of the definitions are the following:

- Sharing economy is peer-to-peer (P2P) sharing, i.e., sharing among private persons (consumers);
- It is based on providing (temporary) access to underutilized goods and services (such as space, money, goods, skills, and services), increased utilization and efficiency of goods and services, recirculation of goods, and exchange of services;
- It is facilitated by intermediates such as online marketplaces, social networking technologies, or community-based online services;
- It might involve sharing of private goods for payment or without payment (John, 2017).

Reference	Definition of "sharing economy"
Schor & Fitzmaurice, 2015	"(…) peer to peer sharing of access to underutilized goods and services, which prioritizes utilization and accessibility over ownership."
Schor, 2016	"Sharing economy activities fall into four broad categories: recirculation of goods, increased utilization of durable assets, exchange of services, and sharing of productive assets."

Martin, Upham, & Budd (2015)	"(…) group of online platforms facilitating peer-to-peer forms of economic activity."
Barnes & Mattsson, 2016	"The use of online market places and social networking technologies to facilitate peer-to-peer sharing of resources (such as space, money, goods, skills and services) between individuals, who may be both suppliers and consumers."
Hamari Sjöklint, & Ukkonen (2016)	"(…) the peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services."
European Commission, 2016	"… "collaborative economy" refers to business models where activities are facilitated by collaborative platforms that create an open marketplace for the temporary usage of goods or services often provided by private individuals."
Muñoz & Cohen, 2017	"a socioeconomic system enabling an intermediated set of exchanges of goods and services between individuals and organizations which aim to increase efficiency and optimization of under-utilized resources in society."
Frenken & Schor, 2017	"(…) consumers granting each other temporary access to under-utilized physical assets ("idle capacity"), possibly for money."

Table 1: Overview of "Sharing Economy" Definitions

Overall, the sharing economy is a specific commercial activity, or a new type of business model (OECD, 2016). Belk (2007) considers "sharing" in this context as a "fundamental consumer behavior" and a "third form of distribution" (Belk, 2007). It reflects the emerging of new values where instead of buying and owning goods, consumers want access to goods and want to pay for the experience of temporarily accessing them (Bardhi & Eckhard, 2012). The distinguishing feature of the sharing economy (or "collaborative economy" as the same phenomenon is named by the European Commission 2016) compared to other commercial digital activities is the provision of P2P access to goods and services without change of ownership, in for-profit or non-profit manner and intermediated by digital platforms (European Commission, 2016). Even though there is still no agreement in the literature about the definition of "sharing economy", these features of the "sharing economy" provide a basis to conceptually distinguishing it from other established or emerging phenomena such as mesh economy (Gansky, 2010), P2P markets, gig economy, and similar. Each of these terms highlights different facets of the phenomenon (OECD, 2016). Gansky (2010) defines with the term mesh economy emerging new businesses with a broader scope than the sharing economy. Mesh economy involves not only sharing of private peer goods but also access based consumption of goods owned by companies. Bardhi and Eckhardt (2012) define access based consumption as providing access to pooled resources, products, and services offered from companies to consumers for shared consumption.

The fact that one major feature of the "sharing economy", as understood in this deliverable, is based on no change of ownership but only temporary access to goods and services differentiates it from P2P marketplaces (i.e., eBay) enabling re-selling and change of ownership of private goods.

Furthermore, the peer to peer character of the sharing economy distinguishes the "sharing economy" from the so called gig economy. According to De Stefano (2015), the term gig economy mainly refers to crowdsourcing or so called on-demand crowd work, where companies are the main customers and consumers of the services. In the "sharing economy" services are offered, in a similar way as goods, from peers to peers. Picture 2 summarizes the different P2P economies and their conceptual differences.

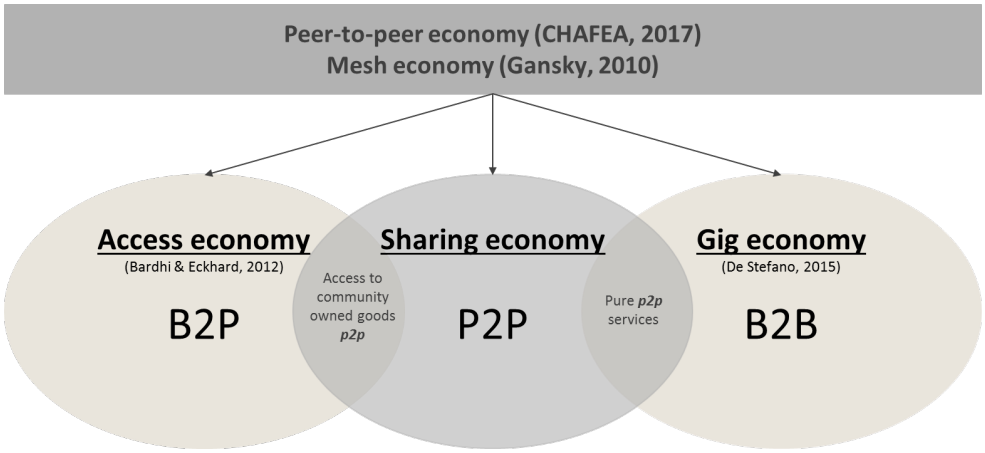

Figure 2: Overview of Sharing Economy Terms and their Relationship

In this deliverable, the term "sharing economy" refers to emerging business models that involve P2P transactions of various kinds, but generally do not involve a change of ownership among peers and can be carried out for-profit or not-for-profit.

According to the European Commission, the sharing economy involves three categories of actors (European Commission, 2016; OECD, 2016): providers, consumers, and SEPs (or collaborative platforms). Providers share assets, resources, time and/or skills. Initially, the sharing economy was targeting private individuals as providers that share private goods and services on an occasional basis. However, the sharing economy has quickly proven to be interesting also for professional providers and the number of professional sharing providers or private providers that share goods not only occasionally but more often or as main occupation is constantly growing.

This has initiated a broad discussion about what point a peer provider becomes a professional service provider in the sharing economy (European Commission, 2016). One emerging practice in some European Member States is the introduction of sector specific thresholds. Below this thresholds, providers are usually subject to less restrictive requirements. For example, certain European Member States, such as the Netherlands or Denmark, impose earning thresholds: In the Netherlands peer providers earning over EUR 6,000 need to register as self-employed and to pay taxes. This threshold is set at about EUR 6,700 in Denmark (CHAFEA, 2017-1). In the short-term accommodation rental sector, some cities permit short-term rentals and home-sharing services - for example less than 60 days per year in Amsterdam (OECD, 2016) - without prior authorization or registration requirements (European Commission, 2016). Providers that exceed the set thresholds and that act "*for purposes relating to their trade, business, craft or profession*" as well as providers that offer services with greater frequency than on an occasional basis and for-profit-seeking motive qualify as traders (European Commission, 2016).

The second peer actor in the sharing economy are consumers. The OECD (2016) defines peer consumers as those purchasing, acquiring, or renting goods and services from peer providers. The fact that sharing economy consumers get access to goods and services owned by peer providers over platforms makes them consumers with different characteristics. Thus, one important question related to peer consumers is whether existing legislation for consumer protection applies to sharing economy consumers (European Commission, 2016; OECD, 2016). One important mechanism of consumer protection, besides regulation, is the provision of a transparent and trustful sharing environment. Self-regulation mechanisms of SEPs involving and relying also on peer regulation are considered of higher importance than administrative regulations (OECD, 2016). Important to mention is also that peer providers may at the same time be peer consumers and play both roles in the sharing economy (Schor, 2016).

The definition of the term sharing economy provides a foundation for the definition and classification of SEP. As the definition of the "sharing economy" also points out, the third player in the sharing economy and one major constitutional element of sharing is the SEPs. The platform acts as intermediary and matchmaker, brings together provider and consumer, and sets the governance conditions under which sharing takes place. SEPs raised a great interest in research and Table 2 provides an overview of definitions for SEPs.

Reference	Definition of "Sharing Economy Platform"
Andersson, Hjalmarsson, & Avital, 2013	"(…) an alternative mechanism of exchange to complement traditional commercial companies. In this alternative mechanism of exchange, the seller as a corporation and the buyer as a customer, are replaced with peers, selling, buying and sharing."
European Commission, 2016	"… intermediaries that connect – via an online platform – providers with users and that facilitate transactions between them ("collaborative platforms")"
OECD, 2016	"The Internet businesses providing the platforms to facilitate, organize and mediate the interactions between peer providers and peer consumers are called "peer platforms" "
Huhtamäki et al., 2017	"(...) a platform can be broadly considered an enabler of value-creating interactions between external producers and consumers. [...] a platform provides an open, participative infrastructure and sets governance conditions."
de Rivera et al., 2017	"(…) (websites and apps) [*that*] enable, facilitate and mediate exchanges and sharing between peers to create alternate and stable marketplaces (…)"
(CHAFEA 2017-1)	"…P2P platforms, which act as intermediary between peer providers and peer consumers and facilitate the transaction among peers in various ways. With this they help to substantially reduce transaction and coordination costs."

Table 2: Overview of SEPs Definitions

Based on the above definitions, the basic features of a SEP can be summarized as follows:

- SEPs are ***digital platforms***, i.e., online platforms and/or apps, or social network communities (i.e., Facebook groups) that enable, facilitate, and mediate exchanges and sharing between peers (de Rivera et al., 2017).
- SEPs act as ***intermediaries (matchmakers)*** between peer providers and peer consumers (CHAFEA 2017-1) (See for example (CHAFEA, AirBnB)) and as such enable value–creating interactions (Huhtamäki et al., 2017) and facilitate P2P transactions and exchanges (de Rivera et al., 2017) in various ways. With this they help to substantially reduce transaction and coordination costs (CHAFEA 2017-1) as well as geographical and situational constraints to P2P exchanges. This makes them a viable, affordable and convenient alternative to conventional services (Hamari, Sjöklint & Ukkonen, 2015). Matchmaking is one of the core SEP functionalities and is based on digital algorithms that consider user data as well as additional data such as location, price, and time. These matchmaking algorithms make SEP highly scalable and more commercially viable (Schor, 2016).
- SEPs act either as ***digital marketplace platforms or as sharing communities*** which are open participative infrastructures (de Rivera et al., 2017), on which the seller as corporation and the buyer as a customer are replaced with peers and selling and buying is performed in a new way as sharing.
- SEP ***set governance conditions*** that guide transactions and sharing on the platform or community (see for example CHAFEA 2 AirBnB), (Andersson, Hjalmarsson, & Avital, 2013).
- SEPs can be ***for-profit or non-profit***. For-profit SEP are ***internet businesses*** (CHAFEA 2017-1) that apply specific intermediary and marketplace business models. These type of business models are ***platform based, at least two-sided*** business models that depend strongly on network externalities and establishment of a win-win situation among involved parties (see for example Evans, 2011).
- Besides providing basic market and matchmaking services, SEPs can ***integrate additional value adding services*** from third parties (CHAFEA 2017-1) such as insurance or payment services.
- SEPs that are market-based are ***usually registered legal entities*** and the European Commission (2016) classifies P2P sharing platforms as "***traders***".

Against the background of these features, ***SEPs are defined as digital platforms organized as intermediaries i.e., marketplaces or communities that enable shared use of peers' goods and services in for-profit or non-profit manner through intermediation and matchmaking as well as additional value-adding services***.

SEPs have been classified in literature based on different criteria. Cadagone and Martens (2016) classify SEP in true sharing platforms that pursue non-profit business models, and for-profit SEP; Frenken, Meelen, Arets, and van de Glind (2015) as well as Marton, Constantio, and Lagoudakos, (2017) distinguish between platforms facilitating access to physical assets, and platforms allowing peers to access intangible assets (e.g., manual and knowledge extensive skills); and several authors classify platforms depending on the object of sharing (i.e., housing, transportation, and

others). For example, OECD (2016) differentiates SEPs dedicated to short-term accommodation, shared workspaces, short and long-distance transportation options, monetary loans and capital funding, variety of staffing services, health, beauty and wellness, education and learning, food delivery and meal sharing, logistics and storage, as well as utilities.

3.3 Initial Identification of Design Guidelines Based on Literature Review

The literature review revealed that SEPs are complex platforms with broad sets of functionalities that can be designed in different ways. Figure 3 provides an overview of the design areas of SEPs. These are: the SEP business models, the SEP market transaction, the SEP governance, and the SEP culture. Besides these internal factors, also external regulation has an impact on the platform design.

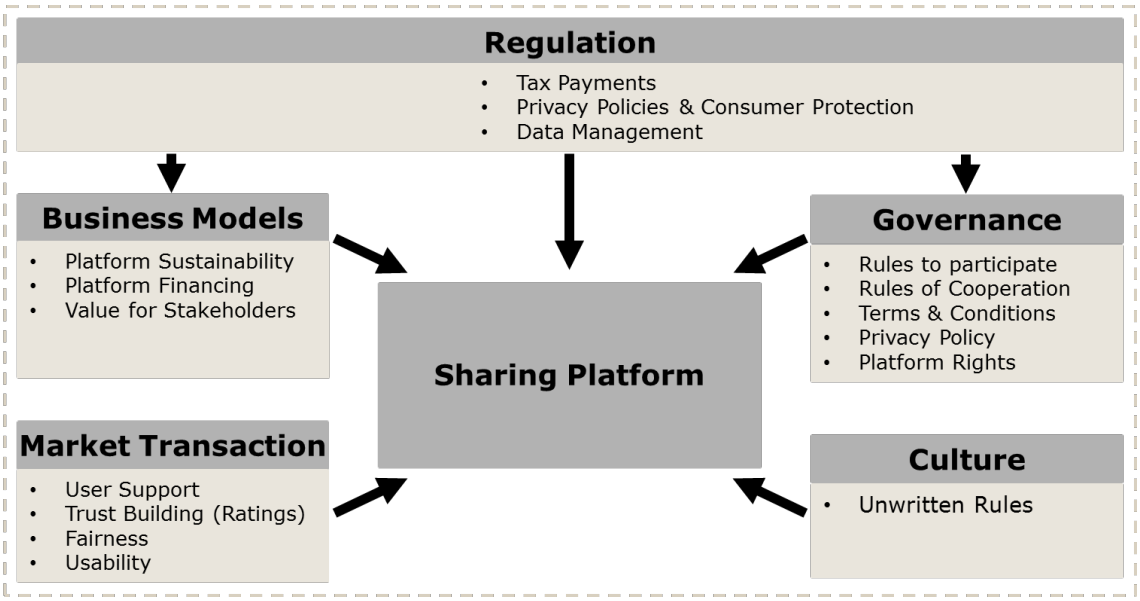

Figure 3: Overview of Design Aspects of a Platform

In the following subsections, each of the design areas is described in more detail. Furthermore, for each design area a specific table is provided with a summary of relevant design guidelines that have been mentioned in literature.

3.3.1 Design of Business Models of SEPs

In the previous section, SEPs were designed as intermediaries, i.e., marketplaces or communities that enable matchmaking among peer providers and consumers. While this definition identifies marketplaces and communities and related n-sided business models as major organizational forms of SEP, there are still different approaches how the specific business model of a SEP is designed. The different instances of market-based SEP business models differ how they regulate participation, deal with privacy, and exercise power in the sharing process.

One major distinction of business models of SEPs is in for-profit and non-profit business models (CHAFEA 2017-1). The design of a SEP differs, depending on this overall goal.

Active SEPs require a sustainable business model. One major risk for SEPs is the potential by-passing behavior of participating peer providers and consumers (see for example Huet, 2015; Madden, 2015). Even platforms that are non-profit platforms have to be designed in a way to be able to ensure platform operation in the long run. For example, AirBnB prohibits and runs software to prevent hosts and guests from sharing email addresses or phone numbers before a booking is made (Edelman & Luca, 2014).

The business models of platforms vary in the depth of intermediation and matchmaking services they offer (see for example the in-depth case studies CHAFEA 2017-3 to 2017-19). The specific design of the business model of a platform has implication for the industry classification of a platform. In this context, the level of control or influence that SEPs exert over peer providers is of significant importance: According to the European Commission (2016), when the platform sets the final price to be paid by the user or when the platform sets additional terms and conditions, which determine the contractual relationship between the peer provider and consumer, the platform can be considered as providing the service itself. When SEPs are considered to provide the service themselves, they can be subject to industry specific (i.e., tourism or transportation) market access requirements (European Commission, 2016). Otherwise the platform falls in the category of companies that provide information society services. Such platforms have different access and tax regulation than the industry specific regulations. These rules might vary in different European countries. Thus, platforms operating in several European countries might have to vary their business models.

Another design aspect with respect to the business model is the monetization approach of SEP. In this context, relevant options are (see for example OECD, 2016, and CHAFEA 2017-1): transaction fees, matchmaking fees, subscription or membership fees, add-on service fees (i.e., fees for insurance services or merchant commissions), advertising, data use/reuse, as well as fines, cancelation fees, consumer hotline fees, and vouchers (see also case studies CHAFEA 2017-3 to 2017-10). Platforms that are founded with the intrinsic idea of sharing might not use any kind of fees but are for free for peer providers and consumers. Such platforms rely on sponsoring and investment money (see for example the case study of Peerby (CHAFEA 2017-7)).

The application of the different monetization models is connected with different combinations of the basic functionalities and services of SEPs (CHAFEA 2017-1): SEPs that apply the transaction fee monetization model offer a wide range of functionalities focusing on pre-transaction services, i.e., catalog services and in particular trust-building services in order to encourage a high number of transactions. Sophisticated matching algorithms and offers as well as support in the fulfillment phase of sharing transactions are other characteristics of SEPs using transaction-fee as monetization approach. An important feature of these platforms is also the transaction monitoring processes to prevent fault behavior and loss of trust along the entire sharing process. Overall, SEPs applying the transaction-fee monetization approach have to offer sophisticated support for entire sharing transactions from the electronic catalogue over matchmaking to after-sharing support. SEPs using the subscription fee based monetization model concentrate on the pre-transaction services and less on the actual sharing transaction and after sharing support

(CHAFEA 2017-1). The advertising/data re-use monetization model is used by SEPs that try to generate as much as possible data about users and because of that try to impose low entrance barriers for interested peers. Thus, they focus less on trust-building and other pre sharing transactions and concentrate on reactive approaches for transaction support (CHAFEA 2017-1).

The different monetization models imply a different level of intrusion in the privacy sphere of peers. Compared to transaction fees, subscription fees require for example a less intensive tracing of transactions. While transaction and subscription fees might be considered as related to the direct sharing service, data use/reuse monetization strategies imply monetization of user data. This can be considered as high intrusion of peers' privacy. This in particular, when use and re-use of user data is applied as a monetization strategy in addition to core strategies as transaction and subscription fees.

Overall the major design dimensions with respect to SEP business models are (see Table 3): overall business goal of SEP, legal form of SEP, user and transaction controls assuring sustainable business models, the scope of the provided added value for participating peers, and the level of platform involvement in the sharing transaction.

No.	Short name	Description	References
BM1	Business goal	SEP might pursue a non-profit or for-profit business goal. The design and design choices for SEP differ depending on this overall goal.	(CHAFEA 2017-1); see for non-profit CHAFEA, 2017-7), for profit other case studies (CHAFEA, 2017-3 to 2017-6 and 2017-8 to 2017-10.
BM2	Legal form	SEPs are usually registered as legal entities and according to (European Commission 2016) they are either classified as companies providing information society services or as "traders" in case they involve transactions with consumers directly. The different legal forms are PLC, Ltd., unincorporated association, charitable trust, cooperative society.	(European Commission, 2017-1); (CHAFEA, 2017-1)
BM3	User bypassing control	In order to support creation of trust, most of SEPs provide several options for direct communication among peer providers and consumers. This channels as well as other communication means can be used for direct peer transactions that bypasses SEPs. Thus, platforms need to establish algorithms for bypassing detection and control.	(Wang & Heng, 2017); (CHAFEA, 2017-1)
BM4	Scope of key value proposition activities	Platforms create value because they control the exchange of three fundamental resources: information, goods and services, or currency (Choudary, 2015). Platforms can focus on either one of the resources or	(CHAFEA, 2017-1); (CHAFEA 2017 – 3 to 2017-10)

		combine several of them. Thus, the following different manifestation of this design aspect are of relevance: "Information only business model", "information plus money", "information plus goods/services plus money" (CHAFEA, 2017-1). In the first business model SEPs only control the transfer of information which is difficult to monetize and SEPs have to go for other options in order to create revenues such as monetization through advertising or reusing user data. This type of business model is usually applied by non-profit or community based SEPs, where monetizing might happen by sponsoring or other similar means. In the second business model - "information plus money" – the platform is able to transfer information, has the money flow under control, and is capable of directly charging platform peers for its services in the form of a transaction fee (CHAFEA, 2017-3). The exchange of goods or services between peers, however, takes place outside the platform. In the third business model, besides information and payment, also the exchange of goods and services takes place over the platform. This is the case with certain types of crowdfunding P2P platforms. In this case the platform has the highest control.	
BM5	Level of involvement in the sharing transaction	The level of involvement in the sharing transaction defines to which extent the platform determines the sharing connection. The platform can exercise power and influence pricing and other terms and conditions of the sharing transaction. The design options can be summarized as follows: - support to peers related to price setting (i.e., price recommendation) (i.e., the standard and smart pricing option of Airbnb (CHAFEA)) vice versa price determination - support in setting the contract of the peer transaction vice versa defining concrete terms and condition	(European Commission, 2016)
BM6	Monetization models	This design aspect refers to the way how platforms capture monetary value from P2P transactions. The design options can be summarized as follows: transaction fees, subscription fees, add-on service fees, advertising, data use/reuse as well as fines, cancelation fees, consumer hotline fees, vouchers, and ad-on services. Additional monetization models are possible based on business model diversification. Airbnb for example diversifies towards travel experiences, business travel, or co-hosting.	(CAFEA, 2017-1); (CHAFEA 2017-3 to 2017-10)

Table 3: Overview of Design Aspects Related to Business Models of SEPs

This design elements also affect the 3Ps of SEPs: User and transaction control algorithms require detailed data about peers' behavior on the platform and raise privacy issues. This can also affect participation as peer providers and consumers that are bypassing platforms might be excluded from the platform. Finally, the level of SEPs' involvement in the sharing transaction is directly related to the power a platform can entail upon peers by influencing peers' potential income and participation options.

3.3.2 Design of the Market Transaction of SEPs

In prevailing literature, SEPs are described as intermediaries that facilitate sharing transactions among peers by providing a marketplace environment (see Table 2). The sharing intermediation follows the logic of a typical market transaction. In accordance with CHAFEA (2017-1) and the reference model for electronic markets suggested by Schmid and Lindemann (1997), the core activities of a sharing market transaction are (OECD, 2016): 1) provision of an electronic catalog of goods or services provided on the market, 2) matching algorithms and concrete offers, 3) support for contracting among provider and consumer, and 4) support for the settlement of the transaction. The adaptation of the four market transactions to the specific characteristics of market (sharing) transactions of SEP is illustrated in Figure 4:

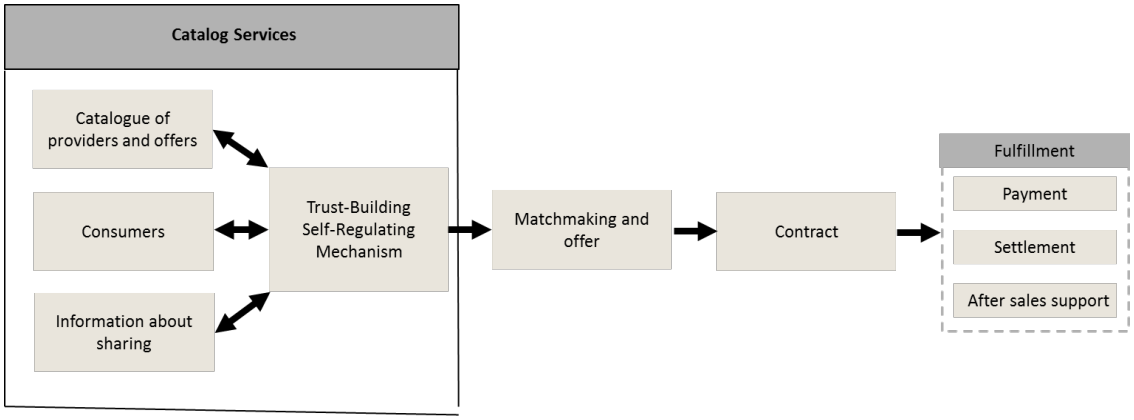

Figure 4: Overview of the Components of a Market Transaction on SEPs

Electronic Catalog of SEPs: The electronic catalog of SEPs is complex and involves: 1) information about providers and the goods and services offered by them for sharing on the platform, 2) information about consumers, 3) additional information supporting the sharing transaction, and 4) trust-building and self-regulating mechanisms.

1. Peer Providers and goods and services offered: Peer providers are private persons offering their private goods or services over the platform to other peers. In order to create trust in providers, SEPs collect much more personal data compared to other platforms. Besides the usual data that is collected by online platforms, such as name and demographical data, SEP require also: personal ID to be able to identify the providers, proof about the qualification and experience of the providers in case they offer specific services, contact information, social login and linking SEP profiles to social media profiles (CHAFEA 2017-1; Edelman & Luca, 2014; Gut-

tentag, 2015). According to prevailing literature, peer profiles including a personal picture increases trust (Fagerstrom et al., 2017; Guttentag, 2015). As a consequence, many SEPs require also a personal picture of peers.

Besides presenting themselves, peer providers have to present also the goods and services they offer on the platform in an attractive and authentic form. For example, Airbnb offers peer providers access to free professional photographers, whose pictures are verified with an Airbnb watermark (CHAFEA, 2017-3; Festila & Mueller, 2017).

To support peer providers, SEPs provide templates for profile and offer descriptions. Besides providing clear rules and templates, SEPs also continuously revise, restrict, or deactivate distrustful profiles that are conspicuous or block users that commit misconduct (Mittendorf, 2016).

Platforms should provide also clear rules regarding participation of professional providers and their representation on the platform. According to CHAFEA (2017-1), SEPs handle the participation of professional providers differently: "*Accommodation sharing platforms like Airbnb allow professional traders to advertise their services on the platform and leave it up to the provider to voluntarily identify themselves as such. Transportation sharing platforms like Taxify in Estonia allow drivers operating in their private capacity as well as those representing professional cab operators to list their services on the platform. Other platforms like BlaBlaCar in the ride-sharing market actively discourage and exclude such pricing using, for instance price caps. The increased participation of professional providers on platforms is called by some authors "uberisation" of traditional models of business and refer to platform-facilitated transactions."* (CHAFEA 2017-1). Airbnb, for example, allows professional providers, but it does not require professional providers to identify as such. However, Airbnb offerings from professional providers have to obey special hosting standards (CHAFEA, 2017-3).

2. Peer Consumers: are users that consume goods and services offered by peer provides. Before providers accept peer consumers, they have to be able to take a closer look at them. Thus, consumers also have to provide detailed information about themselves. SEPs support also peer consumers with templates. Often the same peer can at the same time be consumer and provider at the same SEP (Schor, 2016). SEPs have to carefully handle information of peers that pursue a dual role on the platform.

3. Information about sharing: As peers active on SEPs are private persons, they usually have no experience in presenting and setting prices for their goods and services. Thus, an important task of SEP is to provide various information and advice for peer providers in order to help them in price setting and presentation of goods and services. Such information are: market information and pricing suggestions or imposition, information about applicable tax and other regulation (i.e., threshold regulation), and advice rules on safety (CHAFEA 2017-1). For example Airbnb recommends hosts who list their space for the first time to price "less aggressively" (Gutt & Herrmann, 2015) or added warnings on its website that accommodation providers have to pay tax in Amsterdam, when this regulation became effective (Guttentag, 2015). This type of information has to be provided in a personalized way, as regulation differs in European countries and they can even differ in regions and towns of a country.

4. Trust-building and self-regulating mechanisms: Sharing transactions impose specific requirements on the electronic catalog functionality of SEPs, because the peer providers are private persons that provide access to private property and services. Compared to market places that provide branded goods or are operated by known retailers, SEPs have to create a trustful sharing environment in which peer consumers and providers can build trust with each other. As a consequence, one major competence of SEPs has to be the usage of digital trust and self-regulation mechanisms (CHAFEA 2017-1; European Commission, 2016). Some authors even consider self-regulating mechanisms more important than government regulation (see for example PWC, 2015). Case studies of platforms that do not apply self-regulating mechanisms as for example peer ratings and reviews show lower consumer satisfaction (see for example CHAFEA, 2017-7). The main components of trust and self-regulation mechanisms are:

- *Binding "terms and conditions"* of participating on the platform provide a common ground for sharing transaction and participation on SEPs (Mittendorf, 2016). They have to be accepted by all peer providers and consumers before they start to use the platform and set the bases for further trust-building functionalities such as provider and consumer ratings as well as involve peers' permission for identity and background checks by the platform.

- *Provider and consumer ratings* that, according to Neumann and Gutt (2017), are exclusive information provided by SEP and are critical for their success (Fradkin, Grewal, & Holtz, 2015). In contrast to conventional offerings, for example for housing or transportation, for which rating and review information is available through more sources, the only information to evaluate private peer offerings are the ratings on SEPs. Ratings are thus an important feature for SEP as a quality signal for peer consumers. Rating and reputational systems or other mechanisms to discourage harmful behavior by market participants mitigate the moral hazard of transacting with strangers (Marton, Constantinou, & Lagoudakos, 2017) and reduce risks for consumers stemming from information asymmetries (European Commission, 2016).

Ratings are related to and impact prices on the platform (Teubner, Hawlitschek, & Dann, 2017). For example research of pricing practices on Airbnb shows that peer providers who receive high ratings or star-rating-visibility tend to increase prices (Gutt & Herrmann, 2015; Neumann & Gutt, 2017). High prices might than result in lower ratings.

Existing research furthermore shows that in general ratings at SEPs tend to be inflated, i.e., on average substantially higher than ratings on other platforms (Zervas et al., 2015). As a consequence, prevailing literature recommends the use of a combination of several different peer evaluation methods on SEP: the minimum combination being a combination of ratings and comments. Additional rating approaches are for example ratings of different features of the offering such as price, value, and others (see for example Gutt & Kundisch, 2016) as well as various reputation mechanisms as star-ratings, badges (Liang et al., 2017) to name a few. Not only the value of the ratings is of importance for success of providers, but also the overall number of ratings a provider gets has impact on sales and revenues. Peer providers that are more active on the platform have a clear advantage compared to peers that are entering the platform the first time.

According to Fadkin, Grewal, and Holtz (2015), rating and review systems tend to be biased as they are voluntarily enforced mainly through incentives than sanctions (CHEFAS, 2017-1) and

providers and consumers might chose not to rate or do not rate publicly or review without disclosing the whole information. Thus, design choices for rating, review, and reputation systems should facilitate the prevention or diminishment of bias and have an impact on the bias of rating and reviews.

- *Verification of peers' data and information* is the second important trust-building function of SEPs. The range of verification services SEPs can offer is broad and involves the following (CHAFEA, 2017-1; Frey, Trenz & Veit, 2017; Guttentag, 2015; Mittendorf, 2016): verification of peers' identity, verification of peers' contact information, verification of peers' qualifications in case they offer services, verification of references, and criminal record checks.

- *Background check of offered private property* that is shared on the platform.

- *Control of illegal content:* SEPs rely on user generated content. According to the European Commission (2016) it is recommended for platforms to take voluntary action against illegal content online and to increase trust by that. This is even though under certain conditions platforms are exempted from liability for the information they store.

- *Functionality to exclude users* from the platform and sharing transactions (Frey, Trenz, & Veit, 2017).

Summary of SEP catalog functions: Table 4 summarizes the design aspects of the catalog function of SEPs:

No	Short name	Description	References
		Catalogue of Providers, Offers, and Consumers	
C1	Provider Profiles	For trust-building purposes, SEPs are collecting detailed information about providers: personal ID to be able to identify the providers, picture, proof about the qualification and experience of the providers in case they offer specific services, contact information, social login and linking SEM profiles to social media profiles. For certain sharing transactions further information such as location information are required by SEPs.	i.e. (Edelman & Luca, 2014), (Guttentag 2015), (CHAFEA 2017-1), (Fagerstrom et al., 2017); (CHAFEA, 2017-3 to 2017-10)
C2	Peer goods and services	To support peer providers, SEPs should provide templates and instructions for the presentation of goods and services.	(Festila & Mueller, 2017); (CHAFEA, 2017-3 to 2017-10)
C3	Professional providers	Some SEPs admit, besides peers, also professional providers of goods and services. This changes the functioning of several services, thus it is a design aspect that impacts design of other services and functions on the platform. Design options are: professional providers are allowed or not.	(CHAFEA, 2017-1); (CHAFEA, 2017-3 to 2017-10)

C4	Consumer profiles	To enable trust-building, peer consumers have to provide personal information in the same way as peer providers	i.e. (Edelman & Luca, 2014), (Guttentag, 2015), (CHAFEA, 2017-1), (Fagerstrom et al., 2017); (CHAFEA, 2017-3 to 2017-10)
C5	Verification of peers' data	The range of identification services on SEPs differs and includes: verification of peers' identity, verification of peers' contact information, verification of peers' qualifications in case they offer services, verification of references and criminal record checks.	(Guttentag, 2015), (Mittendorf, 2016); (Mittendorf 2017), (Frey, Trenz, & Veit, 2017), (CHAFEA 2017-1)
C6	Background check of offered goods	Besides peers, also offered private property might be verified by platforms.	(CHAFEA 2017-1), (Festila & Mueller, 2017)
C7	Control of illegal content	SEPs rely on user generated content. According to the European Commission (2016) it is recommended for platforms to take voluntary action against illegal content online and to increase trust by that. This is even though under certain conditions platforms are exempted from liability for the information they store.	(European Commission, 2016)
C8	Exclusion of participant	Based on compliance, background and identity checks, SEPs should provide functionality to block or exclude users that do not comply with the participation rules of the platform.	(European Commission, 2016)
		Information About Sharing	
C9	Information relevant for sharing	The SEP should provide relevant information for the sharing transaction: - Information about applicable regulation and taxes and their implication for peer providers and consumers - Safety rules and advice	Available at 45% of 485 analyzed platforms, (CHAFEA 2017-1)
C10	Pricing guidance/imposition	As providers on SEPs are private persons that offer private goods and services they lack the knowledge how to define prices for their offerings, in particular when they enlist private property the first time. Thus, platforms can help with information and pricing suggestions. The potential values of this design aspect are: providing price setting tips, imposing a certain price / price range / maximum price, or setting prices automatically.	(Neumann & Gutt, 2017); Available at 22% of 485 analyzed platforms, (CHAFEA 2017-1)

C11	Terms & conditions	Terms & conditions including: clear rules about who can participate as peer providers and consumers; clear rules about using the platform, description of rights and liabilities. The status of peer providers is one of the most discussed aspects of sharing economy. Important questions are: are providers acting on their private capacity or on business capacity, can they be considered as traders, can also SMEs participate, are they employees of the platform, are professional service providers allowed or not?	(Marton, Constantinou, & Lagoudakos, 2017); Available at 45% of 485 analyzed platforms, (CHAFEA, 2017-1); (CHAFEA, 2017-3 to 2017-10)
C12	Privacy Policy	The privacy policy is obligatory and defines how SEPs are protecting peers' privacy and is handling users' data.	(CHAFEA, 2017-1); (CHAFEA, 2017-3 to 2017-10)
C13	Add-on services	Payment infrastructure, insurance, delivery, review systems and others. Advice on presenting listings, enhanced promotion features of listings, options to further verify identity, invoicing service. These add-on services are provided as B2C transactions and entail commercial liability.	(CHAFEA 2017-1); (CHAFEA, 2017-3 to 2017-10)
		Trust-Building Mechanisms	
C14	Provider rating and review	Ratings of peer providers are exclusive quality signals for private goods and services and of great importance to create a trustful environment on SEPs. The availability of a rating and review functionality is important. The value of this design aspects is: no ratings, ratings, ratings and comments, reputation systems.	(Neumann & Gutt, 2017); (European Commission, 2016); (CHAFEA, 2017-1);
C15	Consumer rating, review, and reputation	Rating, review, and reputation systems should be available for peer consumers in a similar way as for peer providers.	(CHAFEA, 2017-1)
C16	Identity verification	Verification of identity documents provided by users.	(CHAFEA, 2017-1)
C17	User information checks	Verification on peers' info and identity based on the info they provide and/or background checks. Opportunity to confirm user information and identity through automated email or phone and links to social media accounts and /or a background check.	(CHAFEA, 2017-1)
C18	Criminal records check	Verification of the peer's previous criminal history check based on a background check	Provided by only 1% of 485 analyzed platforms, (CHAFEA, 2017-1)

Table 4: Overview of Design Aspects of the Catalog Services of SEPs

The above summary of design aspects of SEPs in the matchmaking phase of the sharing transaction reveals that the specific characteristics of commercial sharing impose high requirements upon the design of SEPs. In order to enable a trustful sharing environment, SEPs have to implement functionalities, services, and algorithms that enable SEPs to set clear rules for participation, a powerful position of the platforms in the sharing process, and deep intrusion into privacy of peers. Participation is first delimited and defined with the rules part of the terms and condition of the platform. Then several features of the trust and self-regulation mechanisms might impact the possible scope of peers' participation in sharing transactions: if peers do not provide all necessary personal information or receive bad ratings and reviews, than they might be excluded or will never make it into the matchmaking process of the platform. Also execution of compliance controls as well as various verification procedures might result in exclusion of potential participants. Not only the potential peer providers have to pass the verification and compliance check procedures, but also the private property and services that they want to offer.

The impact of SEPs on participation is also one expression of the power of the platforms. Another expression of power is the influence the platforms can have on price setting of offers. Even the light form of price intermediation in form of pricing suggestions impacts providers.

To cope with the specific requirements of P2P sharing of private goods and services on trust-building and self-regulation, SEPs have to request most sensitive personal information about peers. Additional information resulting from ratings and reputation mechanisms increase the privacy intrusion of SEPs. Even though the ratings are mechanisms that require input from peers, it also regulates their participation: Peers who perform bad and get low ratings are automatically excluded from the service. Ratings thus disclose personal information about peers that are highly sensitive and have a decisive impact on the outcome of matching and sharing transactions as well as on participation opportunities of peers.

Matchmaking and Presentation of Offers is a core functionality of SEPs and entails algorithms for matching offers of peer providers with consumers. The rules according to which matching takes place affect the ranking of potential offers presented to the customer. In the literature two types of matching mechanisms are distinguished for SEPs: centralized and decentralized markets. In centralized markets, all orders are routed to one central exchange with no other competing market. This type of matchmaking is applied for example by Uber and similar on-demand services (Einav, Farronato & Levin, 2016). In contrast, decentralized markets facilitate individual product choice and are suitable for SEPs where providers are diverse and offer a wide array of products and services and where the main challenge is to create a streamlined and informative search process (Einav, Farronato & Levin, 2016). With decentralized matchmaking, consumers get a list of possible matches and can subsequently refine the received selection. This type of matchmaking is applied by Airbnb and similar SEPs (Einav, Farronato & Levin, 2016). An important prerequisite for both matchmaking mechanisms are powerful search algorithms that keep search friction low (Einav, Farronato & Levin, 2016) and can group together relevant information for a concrete offer.

Beside the matchmaking approach, also the presentation of search results has impact on the decision of the consumer (Fradkin, 2015). Research reveals that consumers start with the first

placed offer and might not see other offers that are placed further down on the result list. Therefore, the matchmaking algorithms of SEPs influence considerably the potential income of providers and the scope of their participation. Also, which information about the offer is presented is of importance (see case studies CHAFEA, 2017-3 to 2017-10). For example, Airbnb (CHAFEA, 2017-3) and Wimdu (CHAFEA, 2017-9) show the rental price of the accommodation, the transaction (service fee), and if any the cleaning charge. However, the platform transaction fee is not shown by Airbnb nor by Wimdu, which often leads to complains by consumers as the total price is not visible (CHAFEA, 2017-7).

For SEPs such as Airbnb, where many different choices are available for consumers, an important service during matchmaking is also the availability of various direct communication channels enabling a bilateral communication among peer providers and consumers (Guttentag, 2015).

Another question often considered in the context of matchmaking is racial or any kind of discrimination (Gutt & Kundisch, 2016) that might appear during the matching process (Edelmann & Luca, 2014). For example, hosts can decline a potential consumer that has chosen the specific offer resulting from matchmaking.

No	Short name	Description	References
		Matchmaking and Presentation of Offers	
M1	Search support	Powerful search algorithms that keep search friction low can group together relevant information for a concrete offer.	(Einav, Farronato, & Levin, 2016)
M2	Matchmaking mechanism	Centralised or decentralised market mechanisms	(Einav, Farronato, & Levin, 2016)
M3	Listing of offers	The list of matching results should be provided in a fair way	(Einav, Farronato, & Levin, 2016)
M4	Direct communication channels	To enable trust-building, matchmaking is accompanied with diverse bilateral communication options among potential peer provider and consumer.	(Guttentag, 2015)
M5	Prevention of any discrimination	Peer providers and consumers are at the end free to accept a certain sharing option provided through SEP. Literature has found proof that some decisions of peer providers and consumers are discriminatory in nature. SEPs should try to prevent any kind of discrimination.	

Table 5: Overview of Design Aspects for Matchmaking and Presentation of Offers

As the description of matchmaking services provided by SEP reveals, the provision of the matchmaking services increases the power of SEPs and has an impact on the final sharing decisions of consumers.

Contract: The result of matchmaking on SEPs is a deal among a peer provider and consumer, and both need a "contract" as confirmation of the agreement. Depending on the characteristics of the goods and services that are exchanged over the platform and when consumption takes

place, the form of the contract might vary on different SEPs. While on platforms for on-demand services such as Uber, the contract is digitally stored in the App, Airbnb might provide a "contract" that is suitable to be stored for a longer period as the time of matchmaking and consuming are usually apart (see CHAFEA, 2017-3). Thus, designs for contracts differ, depending on the time difference between the time point of matching and the time point of consumption (CHAFEA, 2017-1).

No	Short name	Description	References
CO1	Type of consumption	Depending on the time of consumption, sharing transactions can be divided into: simultaneous sharing when consumptions takes place immediately after matching or postponed sharing, when the actual consumption takes place later than the matchmaking	(CHAFEA, 2017-1)
CO2	Contract	Availability of a sharing contract is important trust building feature.	

Table 6: Overview of Design Aspects for Contracting of Offers

Fulfilment: refers to the execution of the sharing transaction after matching has taken place. Fulfilment involves payment services, consumption of the shared goods and services, and after sales support. SEPs employ different payment services for peers such as bank transfer, PayPal and PayPal like services, and e-wallet services (CHAFEA, 2017-1). Some platforms offer also escrow services (CHAFEA, 2017-1). Besides providing payment services, SEPs also distribute payment to peer providers. The support of peers during the consumption of the shared goods and services varies from platform to platform. In general, the bigger and more successful a platform is, the more support services are offered. For example Airbnb has established a 24-hour hotline as support for consumers and providers during consumption (Guttentag, 2015). Important support in this context is dispute resolution and compliance handling (see also the case studies CHAFEA, 2017). Some SEPs also assist peer providers with tax declaration by providing data and guidance and even collect taxes, in particular when explicitly required by regulators (CHAFEA 2017-1, see also CHAFEA, 2017-7). Additional functions in this area are also user and transaction monitoring. SEPs should be aware of active sharing transactions and of the users' behaviour. In addition to support addressing the peer provider and consumer relationship during consumption of the shared goods and services, also support of users towards third parties is of relevance. For example, Airbnb supports accused peer providers with lawyer (Guttentag, 2015).

No	Short name	Description	References
F1	Payment	SEPs support sharing transactions by providing different payment systems: bank transfer, PayPal and PayPal like services, e-wallet services. Some SEP also offer escrow services.	(CHAFEA 2017-1)
F2	Additional third party servicers	SEPs might offer additional third party services that support safety and trust-building during consumption of the sharing services. Examples of such services are: insurance, marketing or currency exchange services.	(CHAFEA 2017-1)

F3	Support services	SEPs might provide support services during sharing. The list of potential support services varies: - Diverse services supporting the consumption of the service as for example hotline and similar - Complaints handling - Compliance monitoring services (with platform usage rules and regulation) through user and transaction monitoring - Dispute resolution support and mechanisms - Community Services	(CHAFEA Airbnb), (CHAFEA 2017-1)
F4	Support with taxes	If the sharing transaction is subject to taxes, SEPs can provide support for peer providers to handle taxes: - Tax assistance by providing data to peer providers and instruction how to declare sharing services in tax forms - Tax collection from peer providers on behalf of authorities	(CHAFEA, 2017-1), (CHAFEA – 2017-7)

Table 7: Overview of Design Aspects for Fulfilment

The fulfilment section of the sharing transaction is again a design area where the platform can strengthen its power position and has several possibilities to impact participation and privacy. The power position is extended with functionalities for user and transaction tracking as well as compliance monitoring services. This adds additional transactional data to the already comprehensive data collection about participating peers. SEPs have detailed information that are relevant for tax regulation of peers. The compliance control can also lead to exclusion of peers in case anomalies are detected.

But, the fulfilment phase of the sharing transaction is also the part of a sharing transaction that offers the opportunities for platforms to give back to peers. This can be achieved with diverse services for supporting the sharing consumption: sophisticated complaint management process, support with damage control and reporting as well as support with taxes and various authorities if this becomes necessary.

3.3.3 Design of the Governance of SEP

The definition of "commercial sharing" and of SEPs, as well as the identification of the various design aspects related to the core processes of SEPs, revealed that SEPs are complex environments with complex functionalities. Such complex environments can function in a good form and can coordinate the activities and requirements of various stakeholders only with a clear governance structure. The governance of SEPs has to be also communicated in a transparent way.

The major components of a governance structure of a SEP can be summarized as follows:

Comprehensive "Terms & Conditions of platform use and sharing" (TC). The terms and conditions should define clear rules for:

1) Who is allowed to participate as a peer provider and consumer on the platform? For example, Uber only allows drivers that have a valid driving license (CHAFEA, 2017-8) and a registered car

or Airbnb allows hosts that have the right to rent the offered housing (CHAFEA, 2017-3). This section of TC should also include a clear description of situations in which the platform is allowed to expel participants that do not act according to the TC and rules defined by the platform.

2) What are the rules of matchmaking? How do sharing transactions happen and what are potential biases?

3) How a prices being set? (See also the cases CHAFEA, 2017-3 to 2017-10)

4) What are the rights and liabilities of each stakeholder involved in sharing, including the platform?

5) How does the platform support sharing transactions?

6) How are disputes resolved and when does legal action against peers apply? In which situations does the platform have sole power to decide upon a dispute?

7) How are relationships with regulation authorities handled?

Besides clear rules of participation and acting on the platform, as well as clear description of rights and liabilities of involved stakeholders in the TC, further rules might be relevant that define more informal rules of interpersonal communications as well as review writing might be necessary. For example, even if a peer wants to write a negative review, this can be done without using bad words as well as insulting other peers.

Privacy Policy: The second governance document of SEPs is the privacy policy. SEPs collect a lot of personal data and have to communicate in a transparent way:

1) Which data they collect and why they collect them? This also refers to transactional data that are generated by peers on the platform and that are collected by the platform during the sharing process. It should also involve data resulting from rating, review, and reputation mechanisms available on the platform.
2) How long are collected data stored by the platform?
3) What happens with the data when a peer leaves the platform? Does a right of deletion of the data exist?
4) Does the platform intend to use the data for other purposes than the sharing process?

Participants should be aware of data that is collected about them and should be provided with an opt-in and opt-out option.

3.3.4 Design of the SEP Culture

The above findings from literature reveal that there are blatant power asymmetries between SEPs and participating peers (Marton, Constantiou, & Lagoudakos, 2017). The way how platforms take advantage of their power position and how they define the relationships to peer providers and consumers create the platform specific culture and platform personality. For example, Uber's relationship to drivers is usually negatively commented. For example, Marton, Constantiou, and Lagoudakos (2017) describe it like this: *"… such as between Uber (as the owner and operator of the ride-sharing platform) setting all the rules and reaping most of the benefits*

of their drivers (as the quasi self-employed users of the service) providing the actual services and also bearing most of the risks. ". Compared to this, Festila and Mueller (2017) have found out in interviews with Airbnb users that "*… Airbnb consumption may be perceived as an expression of deeper values, and the act of hosting is still social in nature even though payment is involved. Because hosts invite people into their private homes and personal spaces, they display trust in total strangers, which some guests perceive as an act of kindness that cannot be price-tagged.*" (Festila & Mueller, 2017).

Thus, platforms create a different culture depending on how they define their relationships towards peers, regulatory and local authorities, as well as other SEPs.

Design aspects that define the culture of a SEP are:

1) *Peer friendliness:* Are the relationships to peers designed as supportive, friendly, and cooperative or as hierarchical, non-personal, and hierarchical? Does the platform take responsibilities for peers and unpleasant outcomes of sharing? Does the platform pursue a skimming strategy and optimizes its own income on behalf of the peers?

2) *Regulation friendliness:* Is the SEP cooperative and open to regulatory authorities trying to establish a dialog with them, or is the platform rather pursuing a course of resistance?

3) Cooperation in the relationship with other platforms: Does the platform participate in common lobbying activities with similar platforms, even if they are competitors (Guttentag, 2015)?

3.3.5 Summary of First Findings Related to SEP Design Guidelines

Based on the literature, four major SEP design areas were identified: business models, market transaction, governance, and culture. For each design guideline, different design options are possible. The scope of SEP functionality is also influenced by regulation. For example emerging "threshold regulations" regarding tax obligation of peer providers can result in obligation of platforms to track income of providers and provide the information to tax authorities. This function can at the same time be useful for providers as they do not have to track income information themselves. It can help them to better plan their activities, for example by postponing activities on the platform to the next tax period, when they are close to reach the threshold. These kind of functions can also balance participation on the platform, as the pausing of successful providers might increase the chances of new providers in particular on platforms with decentralized market mechanisms.

A common design element of SEPs is the high demand for peer providers' personal data from the very beginning of their participation on SEPs. In order to create a trustful environment, SEPs have to collect personal data, data about the qualifications of providers, and data about the private offerings (i.e., car or housing). While peer providers are active on the platform, their personal data is enhanced with ratings and reviews. As a result, SEPs create an exclusive pool of personal data about private persons that is seldom available so quickly and in such a scope on other platforms. This imposes high responsibility on platforms for how they deal with these data. SEPs have to carefully design the processes of data disclosure on the platform towards peer

consumers and outside the platform. Only data necessary for the sharing transaction should be disclosed and only at that point of time in the market transaction when necessary. The same holds for peer consumer data. At the same time SEPs have to carefully decide whether data can be used to extend the sharing business model with data reuse, for example for providing advertising or by reusing data. Reusing data in order to increase profit might diminish trust towards the platform.

At the centre of SEP platform design is the market transaction. The design decisions related to the market transaction are determined by the characteristics of the shared goods and services. For example, on-demand services such as Uber require a centralized market model, in which consumer requests from one location are centralized to drivers available at that location. Decentralized market designs are rather suitable where many different offers are available at the same time. The choice of the specific market model determines other design choices related to involvement of SEPs in the price determination processes, rating procedures, tracking procedures of different kinds, and the relationship of the SEP to peer providers and consumers.

Further important design aspects of platforms are the platform governance and culture. Given the powerful intermediary role of SEPs on the one side and the complexity of the sharing process as well as the high stakes that all sharing stakeholders have in the sharing process on the other side, SEPs are responsible for defining clear and reasonable governance structures. This includes also fair self-regulating mechanisms. As mentioned above, the design choices of platforms may result in different platform cultures. The platform culture differs depending on the level of friendliness that it can create towards the diverse sharing stakeholders: peers, regulators, and other SEPs. For example, in particular in the fulfilment and after sharing phase SEP can give back to peers by providing insurance for involved private property, providing support for complaint handling or supporting peers with regulatory authorities.

4 Input from Focus Groups

In the previous chapter of this deliverable, a first comprehensive list of design aspects and a first set of related design guidelines for SEPs were extracted from the literature. The goal of this section is an exploration of users' perspectives on SEPs and the identified design aspects. Based on both an in-depth qualitative analysis of data from three focus groups conducted in Switzerland and by considering the focus group analysis presented by Ranzini et al. (2017), user expectations about SEPs are identified.

The three focus groups that are analysed in depth were conducted at the University of St. Gallen in the period from June to August, 2017. In total seven female and eight male individuals participated in the focus groups. Participants in the focus groups were 23 to 52 years old. The younger participants were employed at the post-doc level or were in the process of finalizing their PhD. The older participants were employees from the university or from associated research labs. The focus groups were recorded and transcribed. The data was analysed deductively from the perspective of the identified designed aspects and guidelines for SEPs in the previous chapter.

The main questions guiding the analysis of the focus groups can be summarized as follows:

- What is the participants' perception of "sharing", "sharing economy", and "sharing platforms"?
- What are the participants' perceptions about the role of SEP?
- What kind of experiences did participants make with platforms?
- What are the participants' opinions regarding the platform features and how did they experience them?

The users' perspectives, expectations, and experiences with SEPs provide valuable additional input to the design of SEP functionality in particular with respect to their importance for peers. The aim is to either verify identified design aspects and guidelines summarized in Tables 3, 4, 5, 6, and 7 or to extend the existing tables with new design aspects.

4.1 User Perspectives on "Sharing"

The participants' perceptions of "sharing" is considered to be the ground upon which users' expectations about sharing and SEPs are formed. Thus, the first topic of interest for the in-depth analysis of the focus groups was the user perceptions of sharing.

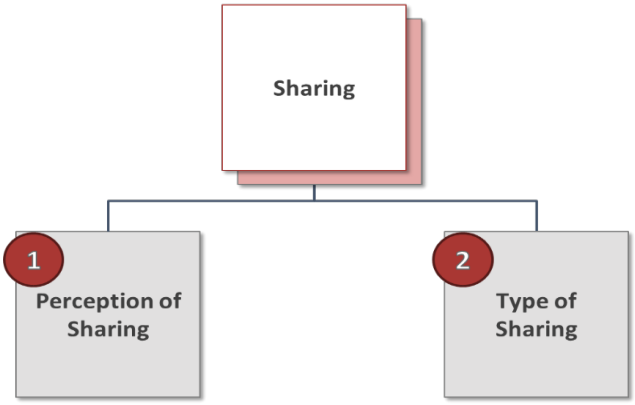

Figure 5: Perception of Sharing – Main Code Structure

The focus group participants had a differentiated perception of sharing as a phenomenon (see Figure 5) and made a distinction among different sharing activities with different characteristics. They also had clear opinions about what they do not consider as sharing but rather as a new type of business model.

The participants' perceptions and the different types of sharing experienced by the focus group participants are explained in the next section.

4.1.1 Perceptions of "Sharing"

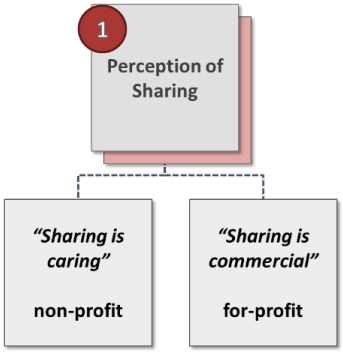

Figure 6: Code Structure for Users' Perception of Sharing

According to the participants, sharing in its pure form is intrinsically motivated and is "caring". Further characteristics that are annotated to "sharing as caring" is that it is good-natured, social, and related to friendship. It enables one to behave in a sustainable way and concerns private goods. With other words, it is connoted with positive activities and outcomes. As such, it should not be related to professional activities and qualifications of sharing participants and it certainly should not be the core business of sharing participants.

> *"There I would like to agree (…) I associate sharing with something private that will be shared. (…) And of course it has a positive connotation. When you share something, it is always something good. It sounds better than other terms. "*[1] *(M, 25, Switzerland)*

This pure form of sharing was compared by some focus group participants with the early days of BlaBlaCar, Couchsurfing, or Airbnb.

> *"I know this as a very old word when it started, about 20 years ago, with CouchSurfing. At that time it was still a real sharing economy. You can stay at my place, when I can stay at yours when I have holidays. Or house-sharing and similar. It came from there. And then Airbnb and Uber entered."*[2]

> *"I remember the beginning of the Airbnb story, when I read a newspaper article and was fascinated by the idea and it still sounded so private. It was about a space where people who were interested could offer their apartment, meet people, cook and take part in other touristic activities. And it sounded like something fun, selfless, and which happened to also have the benefit of being able to make a little bit of money."*[3] *(F, 23, Switzerland)*

Another differentiating characteristic of "sharing" mentioned by the focus group participants is the focus on private property as a subject of sharing. Sharing is considered as a form of using underutilized private resources that are made accessible for others.

> *"It's about sharing unutilized resources. "*[4] *(M, 24, Switzerland)*

In cases when sharing is pursued in commercial ways or includes a commercial component, the participants had different opinions ranging from considering commercialization of sharing as a negative development to opinions that consider it as a new type of business model.

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[1] „Da würde ich gerne mit einstimmen, weil für mich (…) ich verbinde mit sharing und dem Teilen eigentlich das etwas Privates geteilt wird. (…) Und natürlich hat es klar eine positive Konnotation. Wenn man etwas teilt, ist das immer etwas Gutes. Es klingt besser als andere Begriffe."

[2] „Ich kenne das noch als ganz alten Begriff als das anfing, vor 20 Jahren ungefähr, mit dem CouchSurfing. Damals war es wirklich noch sharing Economy. Du kannst bei mir wohnen, wenn ich dann bei dir wohnen kann im Urlaub. Oder Haus-Sharing und solche Dinge. Von daher kommt das ja. Und dann sind eben AirBnB und Uber miteingestiegen.»

[3] „Am Anfang der Airbnb-Geschichte und ich erinnere mich, dass ich da mal einen Zeitungsartikel darüber gelesen habe und voll fasziniert war von der Idee und es klang dann auch noch sehr privat. Da machen einfach Leute, die ein Interesse haben andere Leute kennenzulernen ihre eigene Wohnung auf und dann kann man auch mit denen kochen und kann eine andere Form des Tourismus mal machen. Und das klang dann sehr (…) auf Spass bezogen, dass dahinter ein uneigennützigeres Interesse steht, wo man dann noch den leichten Benefit hat, vielleicht ein bisschen Geld zu verdienen."

[4] „Indem man Ressourcen, die sonst leer stehen, nicht genutzt sind, teilt."

> *It's ..."I also think that sharing has something to do with benevolence, friendliness, and still something private. But we also have a small part of the economy there also. So I think it is an interesting combination, this sharing economy, and also the economic aspect. That it's not only selfless sharing but that there also is the monetary-materially aspect there. "[5] (F, 23, Switzerland)*

However, commercial sharing is still a different business model. It opens a new dimension by opening private property to commercial activities. Space that was previously considered as private becomes public and is part of the commercial ecosystems.

Overall, participants made a clear distinction between "sharing as caring" and "commercial sharing". However, compared to conventional offerings, most of them consider "sharing economy" as a cheaper and convenient opportunity (i.e., taxi or hotel), often available where conventional commercial offerings are missing, and a new offer that opens the door for private property to enter the market. Beside Uber and Airbnb, participants also mentioned crowdfunding as one type of sharing.

4.1.2 Types of "Sharing"

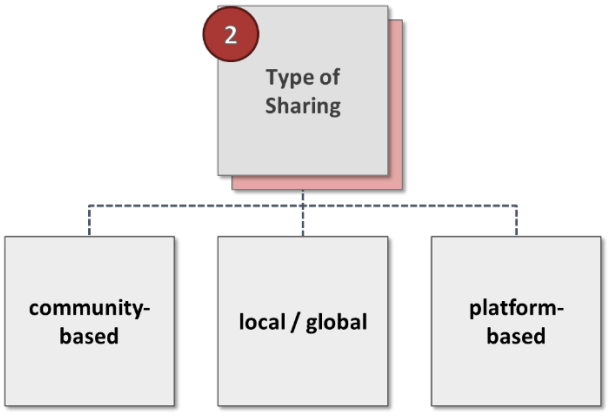

Figure 7: Code Structure for Users' Perception on Types of Sharing

In general, consumers perceive a continuous development of the sharing economy. There has been a shift from the personal touch of the early sharing services to institutional sharing services. Respondents' data from the focus groups show three stages of sharing: the local sharing

[5] „Ich finde auch, dass sharing eher was von Gutmütigkeit hat, von etwas Freundschaftlichem, von etwas eher Privatem noch. Aber da haben wir ja noch den kleinen Teil von Economy mit drin. Insofern, finde ich das eine ganz interessante Kombination eigentlich dieses Sharing Economy und da scheint dann ja doch noch der ökonomische Aspekt durch, dass es ist nicht nur alleine das uneigennützige Teilen ist, sondern da schon auch der monetäre oder was auch immer für ein Aspekt (…) also Richtung monetär-materieller Aspekt drin ist."

with friends and neighbours, the global sharing with caring (e.g., Couchsurfing), and the global commercial sharing (e.g., Airbnb and Uber).

> *"Something where the monetary aspect is absent, for example, there are these 'neighbourhood stickers' that you can stick on your mailbox and tell your neighbours what you want to share, like a screwdriver or smoothie maker (…)."*[6] *(F, 23, Switzerland)*

The second stage of sharing, global sharing, is already on the one hand global "sharing is caring" and about sharing skills and resources with persons on a global scale.

> *„Absolutely. Microfinancing is for example the selfless offering of money so that others can build something and then pay you back. That made a strong impression on me 20 years ago when I read it (…) about all of the opportunities there are out there. In crowdfunding also, also in the financial domain, there are many opportunities."*[7] *(M, 23, Switzerland)*

On the other hand, global sharing is commercial and participants felt that as such it loses the intrinsic values and personal touch.

> *„Yes staying with Airbnb, as I said, for me it's a very clear business that wants to make money. If they want to expand then they will have to create some sort of security, like an insurance. Then more people will use it and they will make more profit."*[8] *(M, 41, Switzerland))*

To summarize, participants made a clear distinction among "sharing is caring" and "commercial sharing". As a result, also their expectation towards the different types of sharing is different. While sharing within communities in a local context still follows the intrinsic motivation for sharing, platform-based sharing is for-profit and provokes rather commercial expectations on the services they offer. Still some of the platforms, as for example Airbnb are considered as still having some intrinsic sharing flair. Airbnb explicitly tries to support this by defining a special

[6] "Aber etwas, wo der monetäre Aspekt ausbleibt, zum Beispiel gibt es so Nachbarschaftssticker, die man auf seinen Briefkasten kleben kann was man hat und was man den Nachbarn zur Verfügung stellen möchte. Eben irgendwie Bohrmaschine oder meinetwegen Smoothiemaker (…) irgendwas."

[7] „Absolut. Microfinancing ist zum Beispiel auch selbstloses Bereitstellen von Geld. Damit andere sich etwas aufbauen können und das dann zurückzahlen. Das hat mich unheimlich beeindruckt vor 20 Jahren als ich das gelesen habe (…) was es für Möglichkeiten gibt. Crowdfunding auch, auch im Finanzbereich gibt es viele Möglichkeiten."

[8] „Ja wie gesagt, für mich ist es, wenn wir jetzt bei Airbnb bleiben, ist das ein ganz klares Unternehmen das Geld verdienen will. Damit sie sich weiter auf dem Markt ausbreiten können, müssen sie eine Sicherheit anbieten wie eine Versicherung. Dadurch werden es mehr Leute machen und das Business mit Geld wird funktionieren und sie generieren mehr Gewinne."

"Hosting Standard" for professional providers. These standards also require professionally managed properties to offer "*unique spaces and personal hospitality to the Airbnb community*". (CHAFEA, 2017-3)

4.2 User Perspectives on "Sharing Platforms"

Most of the participants in the focus groups were peer consumers of Uber, Airbnb, CouchSurfing, and some local sharing platforms. Only few have been using sharing platforms as providers. Nevertheless, the focus groups provided some interesting insights about the role of SEPs, their functions, and regarding ethical aspects related to SEP.

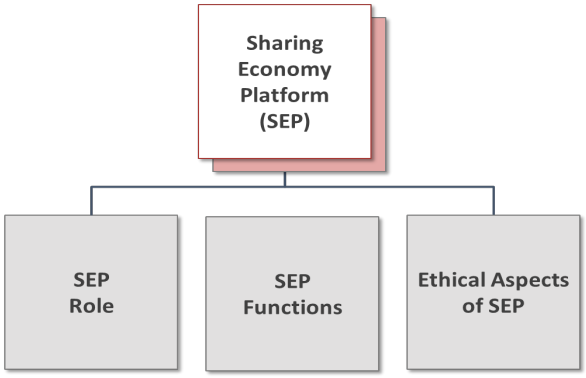

Figure 8: Perception on Sharing Economy Platforms – Main Code Structure

4.2.1 Perception of the Role of Sharing Economy Platforms

According to focus group participants, online sharing platforms play several roles ranging from: a mediator between private persons, a global manager and organizer of supply and demand, a facilitator to overcome language barriers, and a facilitator for easy and quick access to what you are looking for. Respondents also see online platforms as more secure due to the rating and review system which gives greater transparency on the providers and consumers of platforms.

> *"There is a mediator. The platform is the mediator and private persons offer something and share it with a wider audience. That is for me sharing. "*[9]*(M, 24, Switzerland)*

[9] "Also es gibt einen Vermittler, die Plattform ist der Vermittler und Privatleute bieten etwas an und teilen es mit einer weiteren Masse. Das ist für mich Sharing."

> *"The term platform can be understood in many ways, technical platform providers, operational, i.e. business, or it can be used as a metaphor to say: I can manage as globally as possible a large number of inquiries and demand. "[10] (M, 28, Switzerland)*

> *"In Russia it was a bit different. There was the language barrier. We didn't know Russian and the drivers didn't know English but we tried a little and it (Uber) was convenient. You click, he comes to get you right where you are. You are not talking on the phone where there may be background noise and where you say something in Russian or an address and then he doesn't understand you. You just click and he comes right there. You select where you want to go and it all works, it was very very cool. "[11] (F, 32, Switzerland)*

4.2.2 Perception of the Platform Functionality

Based on their experiences, focus group participants provided insights into their practices with SEPs and expectations towards them. Some aspects were explicitly mentioned by several participants: the different user expectations depending on the business goal of a SEP (for-profit and non-profit), bypassing as one realistic behaviour, personal data collected by SEPs from providers and consumers, the importance of ratings, reviews and pictures, as well as direct communication channels. Table 8 summarizes the features of SEP that were directly mentioned by participants.

No.	Short name	Description
BM1	Business goal	Participants clearly distinguish between for-profit and non-profit SEPs and adjust their expectations in terms of expected professionalism of the platform service.
BM3	User bypassing control	Several statements impose the assumption that bypassing is rather possible for sharing transactions that are not on-demand services (i.e. Uber) but for sharing transaction where consumption might take longer time. For example longer stays initiated over Airbnb might tempt users to bypass the platform.
BM4	Scope of key value proposition activities	Participants were aware of the different scope of services provided by platforms.
BM5	Level of involvement in the sharing transaction	Several times the practice of Uber to interfere in price setting has been mentioned and the power of SEPs with this respect was seen rather negatively.

[10] "Das Wort Plattform ist ja vielseitig belegt, technischer Plattformanbieter, operativ, also betriebswirtschaftlich oder die Plattform überhaupt als Metapher für sozusagen: Ich schaffe es möglichst global eine grosse Anzahl von Anfragen und Nachfrage zu steuern."

[11] "In Russland, da war es ein bisschen anders. Da war natürlich die Sprachbarriere. Wir konnten nicht wirklich Russisch und die Fahrer konnten nicht wirklich Englisch, aber ab und zu hat man es trotzdem ein bisschen probiert und es war halt wirklich convenient. Du klickst da drauf, er holt dich genau da ab, du bist nicht am Telefon, wo irgendwelche Störgeräusche sind und dann sagst du was auf Russisch oder eine russische Adresse und dann versteht die das da falsch. Dann klickst du einfach und dann kommt der da hin, du gibst ein, wo du hinwillst und dann passt es dann auch und es war schon sehr, sehr cool."

BM6	Monetization models	Participants appreciated the added value provided by functionalities of SEPs and were willing to pay a share to the platform. However, they are also aware of platform possibilities to monetize also user data. Participants were very sceptical with respect to selling of user data or advertising based monetization.
C1	Provider Profiles	Detailed personal information about providers including pictures are considered as key for creating trust in the sharing environment. However, participants are also concerned regarding data use and reuse by the platform.
C2	Peer goods and services	The importance of having a good description of the goods that are shared has been stressed by several participants. Nicer pictures and descriptions increase the probability of booking the specific site.
C3	Professional providers	Participants were rather sceptical regarding professional providers as they usually do not care for social aspects of sharing.
C4	Consumer profiles	Several participants pointed out that less personal data should be collected for peer consumers than from peer providers. A majority of the participants were reluctant to provide the same data as providers.
C5, 12, 13, 14	Verification processes	Verification processes of platforms are considered necessary to increase security and trust. To know that peer providers are verified identities for example, increases confidence of peers to take part in sharing
C7	Terms & conditions	Even though participants admit to seldom read terms & conditions of platforms, they still consider their availability important
C8	Privacy Policy	Even though privacy policies were not explicitly mentioned, most of the focus group participants expressed strong concerns regarding how much data is required by platforms and how this data is handled by platforms. Thereby several participants stated that they feel more confident with providing data to European platforms. This means that SEPs need to be transparent regarding their data policies.
C9	Add-on Services	In particular, in context of space sharing, add-on services such as insurance are considered important, as there the risk of high volume damages is high.
C10	Provider rating and review	Provider ratings are considered as crucial features of SEP. According to participants they are necessary for trust-building. Several participants mentioned that sharing platforms without provider ratings and reviews are a no-go. One participants mentioned that when the early platform “Mitfahrgelegenheit” didn’t apply provider ratings, some strange things happened. Participants started to consider both ratings and reviews. There were also several remarks that ratings are considered to be quite high and that slightly lower ratings already create suspicion. Given the high ratings participants were glad to have reviews as a second reputation mechanism. Several participants elaborated on potential rating bias. The reciprocal rating mechanisms provided by Uber are considered as convenient.
C11	Consumer rating and reviews	Consumer ratings were discussed less, probably as there were only few providers among the focus group participants in Switzerland.

		However, the few statements related to them were rather confirmatory that they are useful as well.
M4	Direct communication channels	Direct contact and communication channels towards peer providers were used by participants and are considered as very useful for trust-building
M5	Prevention of discrimination	Participants were aware that discrimination is possible on sharing platforms and considered it unethical
F3	Support services	In particular, support for complaints handling, dispute resolution and community services such as direct communication channels with other peers were considered as very important by focus group participants. The availability of such services improves security and trust in the platform
Ethics	SEP Culture	Participants were quite critical regarding several practices of SEPs that they consider as unethical. For example, on the one side SEPs earn high profits, but the share of providers is kept low.

Table 8: Overview of Statements from Focus Group Participants Regarding SEP Functionality and their Relation to Design Guidelines

4.2.3 Perception of Platform Ethics

Participants expressed several important ethical concerns with respect to SEP operations, which include: pressure from ratings, not knowing how personal information is being used, discrimination on sharing platforms, low payment for providers, encountering sexism behind the scenes on some online platforms, determining the effect of online platforms on society and other businesses.

> *"They know, they will be evaluated every time and the system knows that and they get more points or are called faster. They were in average friendlier and helpful."*[12] *(M, 25, Switzerland)*

> *"Why do they need to know my complete home address? In addition to my phone number and Email. I'm also talking about the things that are tracked behind the*

[12] „Die wissen, sie werden jedes Mal benotet und das weiss das System und sie kriegen dann mehr Punkte oder werden schneller gerufen. Die waren im Durchschnitt gegenüber Taxi freundlicher und hilfsbereiter.."

> *scenes, which you don't hear or know about. But this happens with all platforms (…) or many. "[13] (M, 25, Switzerland)*

> *"But I have strong concerns when others are strongly disadvantaged. It is what I see on these professional sites (…) for example Airbnb or Uber damage the whole industry, not only the whole industry but also the destinations themselves."[14] (M, 25, Switzerland)*

> *"I think it is not beneficial when you find out that behind Uber there are relatively sexist company politics. "[15] (M, 31, Switzerland)*

> *To destroy the taxi business. Or, that there drivers (Uber) are payed very little "[16] (M, 31, Switzerland)*

4.2.4 Summary of Focus Group Analysis

The focus groups provided insights on users' perspectives of SEPs and their functionalities. Users seem to make clear distinctions between "sharing is caring", i.e., intrinsically motivated sharing where no money transfer takes place and "commercial sharing". This distinction impacts their expectations and requirements upon sharing transactions. The requirements towards a sharing intermediary as well as regarding quality of service are lower when users get involved in non-commercial sharing.

Compared to that, sharing over commercial platforms such as Airbnb and Uber is considered rather as a new business model, i.e., special commercial offering that brings the opportunity for private property to enter the market. Commercial sharing is experienced by users as a new, convenient, and cheaper offering that, depending on the specific case, still has a flair of "sharing is caring" as long as peer providers are involved. It is also considered as an offering that in many cases fills market niches where other commercial offerings are not available or are too expensive. The consideration of sharing as a commercial activity results in higher requirements upon quality of service, safety of the sharing transaction, and raises higher privacy concerns.

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[13] „Wozu müssen die meine komplette Wohnadresse wissen? Mit Telefonnummer und E-Mail-Adresse. Ich rede auch über die Sachen, die im Hintergrund getrackt werden, von denen du nichts mitbekommst. Aber das machen ja alle Plattformen (…) oder viele."

[14] „Aber für mich bestehen wirklich Bedenken, sobald dadurch Andere stark benachteiligt werden. Das sehe ich bei diesen professionellen Seiten, (…) zum Beispiel Airbnb oder Uber, dass es einer ganzen Industrie im Grunde schadet und nicht nur der Industrie, sondern bei Airbnb der kompletten Destination gross schadet."

[15] "Ich glaube nicht, dass es besonders förderlich ist, wenn bei Uber herauskommt, dass eine relativ sexistische Unternehmenspolitik besteht."

[16] Das man das Taxigeschäft so kaputt macht. Oder auch, dass dort den Taxifahrern extrem wenig bezahlt wird."

Users consider sharing platforms as important mediators that make sharing among private peers on a global scale possible. Providing functionalities such as ratings and reviews, as well as payment and booking facilities, platforms provide a transparent and trustful sharing environment. For participants, the added value of platforms in the sharing process seems to be clear and they accept the need to pay transaction fees for it. However, users have also a critical eye on platform activities in particular with respect to privacy and execution of platform power in the sharing process. Participants in the focus groups in particular criticise the extensive collection of personal data from providers and consumers, inappropriate disclosure of data, data re-use for additional businesses as advertising, or selling of user data. Focus group participants are also aware that platforms as intermediators have a powerful position in the sharing process and that such a powerful position might be necessary. However, several participants expressed ethical concerns regarding the extent to which platforms exercise power in terms of determination of prices, revenue shares of peer providers, participation on the platform, and the collection and handling of user data.

Focus group participants provided also insights into their practices with SEPs and expectations towards them. Table 8 clusters and summarizes the participants' statements that are related to SEP design aspects and guidelines. The participants' statements provide a valuable feedback and confirmation for the first version of design aspects and guidelines.

5 Platform Analysis

5.1 Methodology

After providing feedback on the initial set of design aspects and guidelines by assessing users' perspectives on "sharing" and "sharing economy platforms", they were further evaluated by using them for the analysis of existing SEPs operating in Europe. The evaluation of SEPs was performed in three steps: First a code book was defined based on the identified design aspects and guidelines. Than suitable SEPs were selected and their functionality was coded and analyzed.

Development of a code book: Grounded in the identified design aspects and guidelines, a code book was developed consisting of 17 major themes and 238 subthemes accompanied by descriptions and sample quotations illustrating those themes. The analysis results of 13 of the codes are presented in the subsequent sections and are illustrated in Appendix III (see Figure 36):

- General Focus (business goal BM1) (see Figure 37)
- Sharing Category (see Figure 38)
- Corporate Form (see Figure 39)
- Territory (see Figure 40)
- Founding Year (see Figure 41)
- Number of Consumers (see Figure 42)
- Number of Providers (see Figure 43)
- Terms & Conditions as well as Privacy Policy availability (see Figure 44)
- Added- Services Offered (see Figure 45)
- Data Required for User Registration (see Figure 46)
- Available Consumer Rating (see Figure 47)
- Available Provider Rating (see Figure 48)
- Provided Community Support (see Figure 49)

Platform Selection: By considering the definition developed in section 3.2 of this deliverable, the platform analysis concentrated on SEPs where this definition applies (marketplaces and communities). The second important criterion for platform selection was that platforms have to be active in Europe.

By considering the above two criteria, the further selection of concrete SEPs followed the same approach as already applied by (Muñoz & Cohen, 2017). Muñoz & Cohen (2017) used as a basis for platform selection the so called Collaborative Economy Honeycomb model (Owyang, 2015). *"The Honeycomb model seeks to depict a holistic representation of the different sectors of the economy being disrupted by startups and established firms utilizing sharing economy approaches."* (Muñoz & Cohen, 2017). Depending on what is shared on a platform, the Honeycomb model divides platforms in the following sharing categories: corporate, food, goods, learning, logistics, money, municipal, services transportation, and utilities, as well as wellness and health.

The category corporate sharing platforms involves instead B2P platforms that are operated by companies using corporate platforms to offer sharing of resources to their own employees. As this category of platforms does not fit to one of the two basic criteria, namely the criteria to be a P2P platform, this category of platforms were not considered in the platform analysis. Because of the same reasons also platforms in the category municipal were excluded as they are dedicated to sharing of social goods and not private property. It was also not possible to find examples of platforms in the wellness & health as well as utility categories. Thus, also these two categories of platforms were excluded from the analysis. Finally, only platforms falling in the categories of the Honeycomb mode listed in Table 8 were considered:

Category	Description
Food	SEPs that offer food sharing in different forms: e.g., hosts who prepare meals to share with peers or platforms that enable the distribution of surplus fruit and vegetables.
Goods	Includes SEPs renting or borrowing of all kinds of objects, usually consumer goods such as books, clothes, garden tools etc.
Learning	SEPs that enable students or teachers to share learning materials as well as online instructions led by peers.
Logistics	SEPs supporting crowdsourced delivery services usually enabling last mile delivery
Money	SEPs facilitating crowdfunding of consumer loans, business loans, or equity. Also comprises crowdfunding of creative projects or P2P insurance models.
Services	Includes a varied range of on-demand services for household chores, design or computer programming work and administrative tasks.
Space	Refers to SEPs intermediating sharing of space, e.g., storage and office space, vacation rentals and even gardening plots.
Transportation	SEP supporting car sharing and ride hailing services built to transport people.

Table 9: Overview of Categories of SEPs Considered in the Platform Analysis

In total, 124 online sharing platforms and 130 community-based SEPs were selected, distributed over the categories presented in Table 8. A detailed list of platforms considered in the analysis is available in Annex I and Annex II. The aim of the selected sample of SEPs is not to have a representative picture of SEPs in Europe, but to capture the diversity in business models and services and to provide an overview about all sectors.

Platform Analysis: The functionality of the selected platforms was analyzed and coded independently by two coders that applied the above described code book. The coders analyzed the available functionality of the platforms in detail. To evaluate the login and registration of the platform the coders also registered on all platforms for which this was possible.

A sample platform was independently coded to determine inter-rater reliability across the two coders, and Cohen's kappa coefficient (k) was determined to be at least 0.81. The kappa coefficient is a statistic used to measure inter-rater agreement for qualitative or categorical items

(Kuckartz, 2016). The level of agreement between the two raters across all categories achieved an overall kappa coefficient of 0.857. Within categories, coefficients of agreement ranged from 0.673 to 1, with the categories of code 6 “payment”, code 15 “service”, and code 16 “community” achieving the lowest coefficients (0.679, 0.696, and 0.673, respectively). Categories of code 4 “sector”, code 7 “terms and conditions”, code 8 “privacy policy”, code 9 “number of users” as well as code 10 “number of providers” attained the highest coefficients of agreement (1.000, respectively) (see appendix IV).

The results of the marketplace and Facebook groups’ analysis are summarized in detail in the next two chapters.

5.3 Platform Analysis Results

5.3.1 Territorial distribution of SEP activities

99 of the considered SEPs are local European platforms founded in Europe and are active only in the country in which they were founded or in several countries in Europe (see Figure 9). Two of these 99 platforms are active in more than 10 European countries. 13 of the considered SEPs originate outside Europe, but have European branches and are active in Europe. These are: 9flats (Singapore), AirBnB (USA), Eatwith (USA), Freelancer (Australia), Gett (Israel), HomeExchange (USA), Liquidspace (USA), Mealsharing (USA), sharedesk (Canada), Spinlister (USA), and Uber (USA). The remaining 12 SEPs are European platforms that are active not only in Europe, but also globally. These platforms are: 3D Hubs (Netherlands), BlaBlaCar (France), CrowdCube (UK), FundedByMe (Sweden), Goboony (Netherlands), Helpling (Germany), HouseTrip (UK), KissKissbank (France), lendahand (Netherlands), TransferWise (UK), Viedit (Netherlands), Wimdu (Germany).

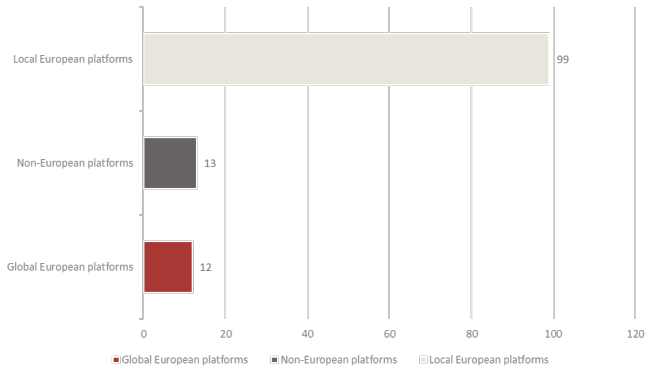

Figure 9: Share of Local European, Global European and Non-European Platforms (n=124)

Most of the 124 sample SEPs are active in large Western European countries such as the United Kingdom, Germany, Spain, and France (see Figure 10). 14 of the considered SEPs are active in Switzerland. Between 5 and 9 platforms are active in Italy, the Netherlands, Belgium, Austria, Sweden, Denmark, and Poland and only one platform was found to be active in each of the

following countries: Estonia, Latvia, and Romania. Two platforms are active in more than ten Europe countries and 21 platforms operate globally.

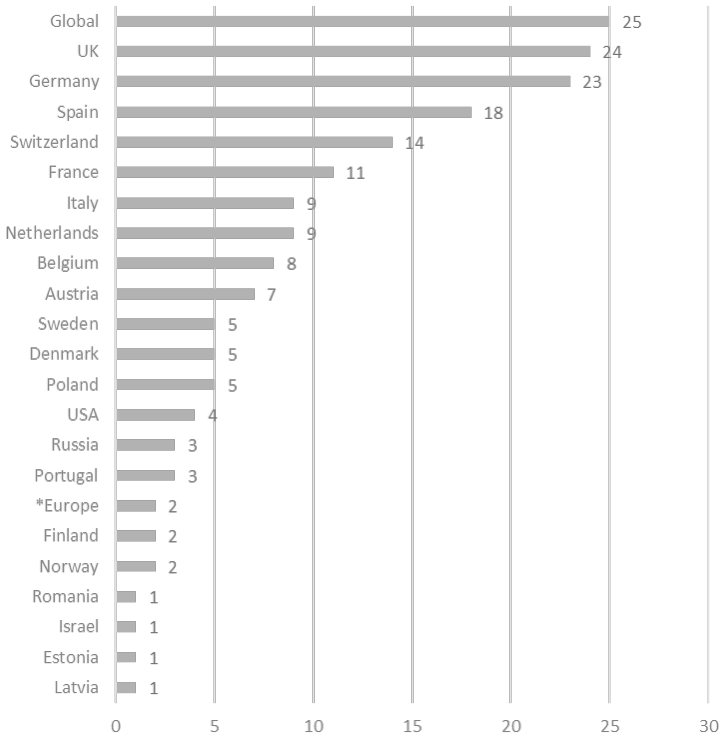

Figure 10: Territorial Range of Activities of Platforms (n=124, multiple entries possible)
*EU: platforms that operate in more than ten European countries

5.3.2 Legal Form of SEP

SEPs can chose different legal forms. Table 9 provides an overview of legal structures in Swiss and German law and their approximate counterparts in British and French law:

Swiss	British	French
GmbH	private company limited by shares (Ltd.)	société anonyme de responsabilité limitée (S.A.R.L.)
AG	public company limited by shares (PLC)	société anonyme (S.A.)
Stiftung	trust / charitable trust	fondation
Verein	unincorporated association	association
Kommanditgesellschaft	limited partnership	société en commandite par actions (S.C.A.)
einfache Gesellschaft	partnership	société civil (S.C.)

Table 10: Overview of company legal forms

The most frequent legal form applied by the analyzed SEPs is “Private Company Limited by Shares (Ltd.)” and “Public company Limited by Shares” (see Figure 11), which indicates that most of the SEPs are for-profit companies.

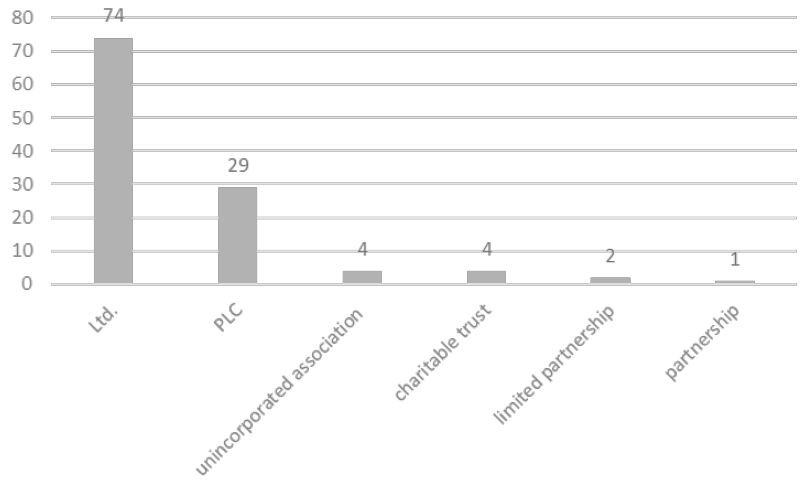

Figure 11: Type and Frequency of Legal Structures of Platforms (n=114)

The identified legal form of SEPs provided the basis for their classification in a for-profit or a non-profit organization. In theory this distinction seems unproblematic to make for any given case; however, in practice platforms rarely explicitly state whether or not they pursue profitability objectives. Therefore, two assumptions guided the decision of how to classify a platform: First, if a platform has as a legal structure commonly associated with for-profit motives (e.g. Ltd., PLC, limited partnership or any of their equivalents in a European jurisdiction) and does not otherwise state that the platform is run as a non-profit organization, the platform is classified as for-profit. Second, if a platform is incorporated as a trust, charity or another corporate form that commonly assumes non-profit goals and does not otherwise declare any for-profit goals, it is classified as non-profit. Applying this heuristic resulted in 110 for-profit and 14 non-profit platforms (see Figure 12).

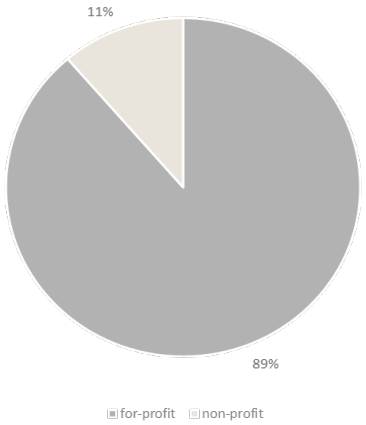

Figure 12: Share of Non-profit and For-profit Platforms (n=124)

As Figure 13 shows, both types of SEPs that operate globally are for-profit platforms, while local European platforms are non-profit.

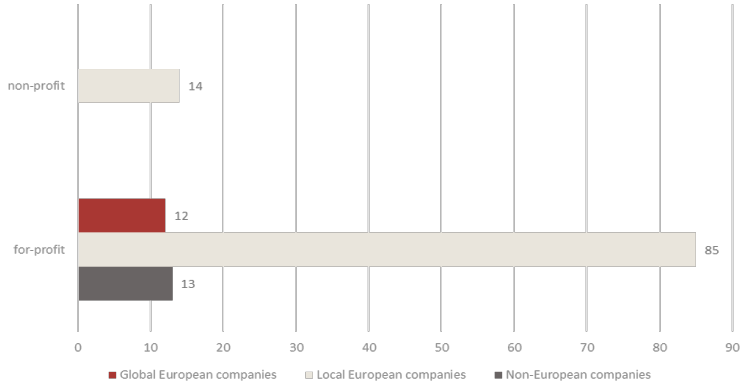

Figure 13: Share of Non-profit and For-profit Global European, Local European, and Non-European Platforms (n=124)

In the SEP sample, there are three platforms that are non-profit but do not apply associations or charitable trusts as the legal form (see Figure 14). These platforms are:

- *Mundraub:* incorporated as a «GmbH». The founders aim at generating revenue from selling services to become self-funded. However, so far it has been funded by the German government (by the Federal Environmental Foundation and the Federal Ministry of Education and Research).[17]
- *Skillharbour:* incorporated as «GmbH», nonetheless registered in our sample as non-profit because it is run by volunteers. The founders say it's been a social project so far. In the future, however, they want to turn it into a for-profit business[18].
- *Gartenpaten:* incorporated as «einfache Gesellschaft», according to the founders Gartenpaten is a non-commercial project that doesn't generate revenue from its daily operations. It is financed by crowdfunding and donations[19].

[17] http://www.zeit.de/2015/26/mundraub-org-website-obstbaeume-ernte

[18] http://www.skillharbour.com/media/filer_public/2017/09/03/17_08_24_hz_startup_skillharbour.pdf

[19] https://www.unitednetworker.com/gartenpaten-bringt-menschen-mit-und-ohne-gaerten-zusammen/

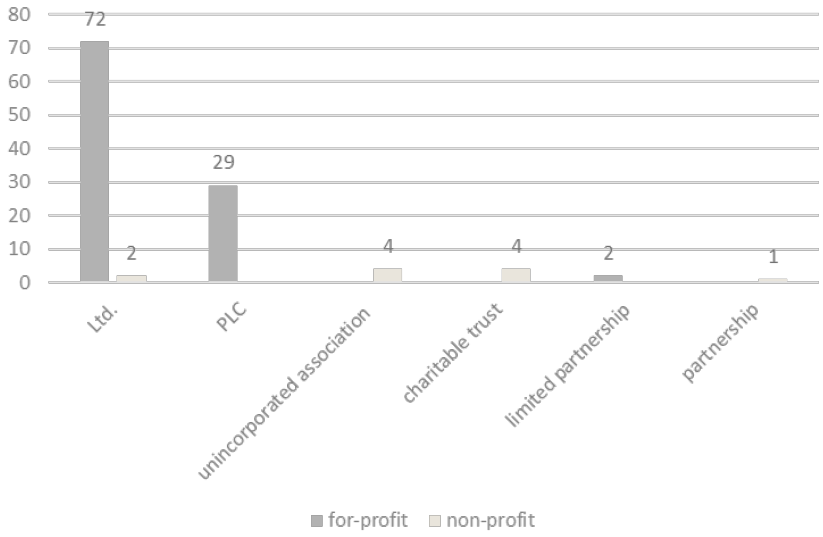

Figure 14: For-profit and Non-profit Platforms Distributed by Legal Structure (n=114)

5.3.3 Classification of SEPs According to Founding Year

Out of the sample of 124 SEPs, it was possible to verify the founding year for 102 SEPs (see Figure 15). For 22 SEPs the founding year remained undetermined. The oldest platforms were founded as far back as 2004 and the youngest as recently as 2017. Among the older platforms is also the global European company BlaBlaCar that was founded in 2006. AirBnB was founded in 2008 and Uber in 2009. 71 platforms or 57% of the sample were established during a 5 year period starting in 2010 up to and including 2014 (as pictured in Figure 15). Out of the 71 platforms 55 or 43% were founded in Europe as local platforms.

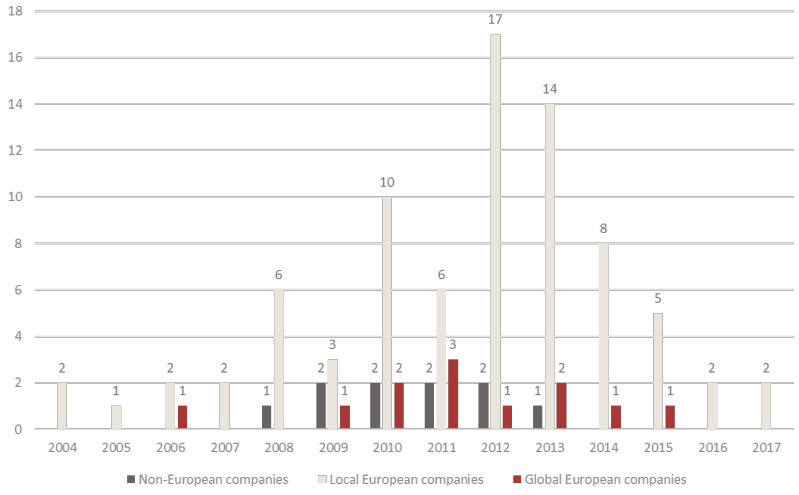

Figure 15: Global European, local European and non-European platforms by founding year (n=102)

Even though the sample includes also four platforms that were founded, 3 each in 2016 and 2017, the number of new platforms has been decreasing steadily starting from 2014. In the last

four years there have been also no new global non-European platforms. Only few of the European platforms were able to establish a global operation.

5.3.4 Distribution of SEPs According to Sharing Category

Figure 16 illustrates the distribution of the considered SEP according to the subject of sharing, i.e., the categories of the Honeycomb model:

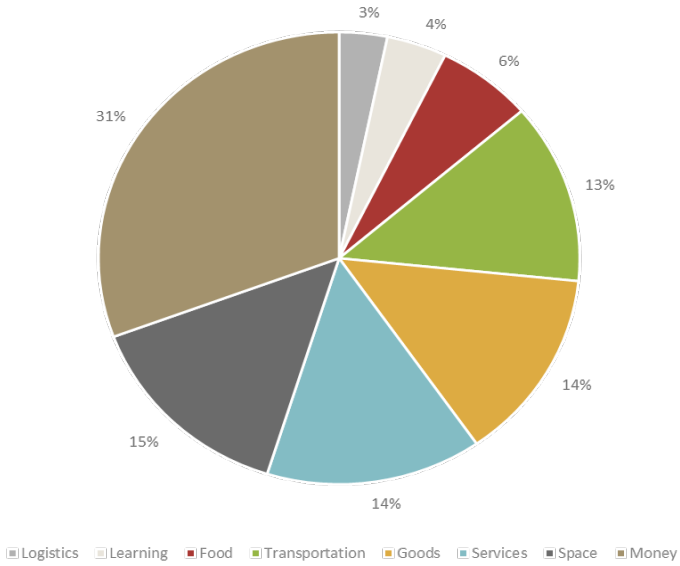

Figure 16: Distribution of SEPs According to Subject of Sharing (Category) (n=124)

The category with the highest number of platforms in the sample is "Money" with n=38 or 31%. This type of platform is dedicated to different forms of sharing of monetary resources and funds among peers. The category "Space" is the second largest group of platforms and involves 18 platforms. These SEPs enable the sharing of different forms of "space", such as flats, houses or gardens. Just with one platform less are the categories "Goods" (sharing of various goods) and "Services" (sharing of time and services). The sharing category "Transportation" involves 16 (13%) platforms and is dedicated to various forms of ride sharing. The sharing categories "Food" (8 platforms, 6%), "Learning" (5 platforms, 4%) and "Logistics" (4 platforms, 3%) are only marginally represented. A detailed overview of the specific sharing subjects and the distribution of platforms among the sharing categories is provided in appendix II.

Figure 17 provides an overview of platforms per sharing category from the perspective of global and local European platforms. Even though the sample of platforms analyzed in this deliverable is not representative, the data indicates that the number of local Europe platforms in the money sharing category has been growing faster than platforms in other sharing categories. This can probably be explained with the fact that money lending requires higher trust and trust is increasing when money is shared among peers under the laws of one countries. This might also be the reason that the portion of global non-European platforms in the sharing category "Money" is lower compared to other sharing categories. The competition with global non-European companies seems to be higher in the sharing category "Space" and "Transportation". Both sharing

categories involve major global players as AirBnB and Uber respectively. Despite the high competition, several European players were able to establish a global business.

Due to the local anchorage, the emerging sharing categories “Learning” and “Logistics” seem to be less attractive for non-European companies.

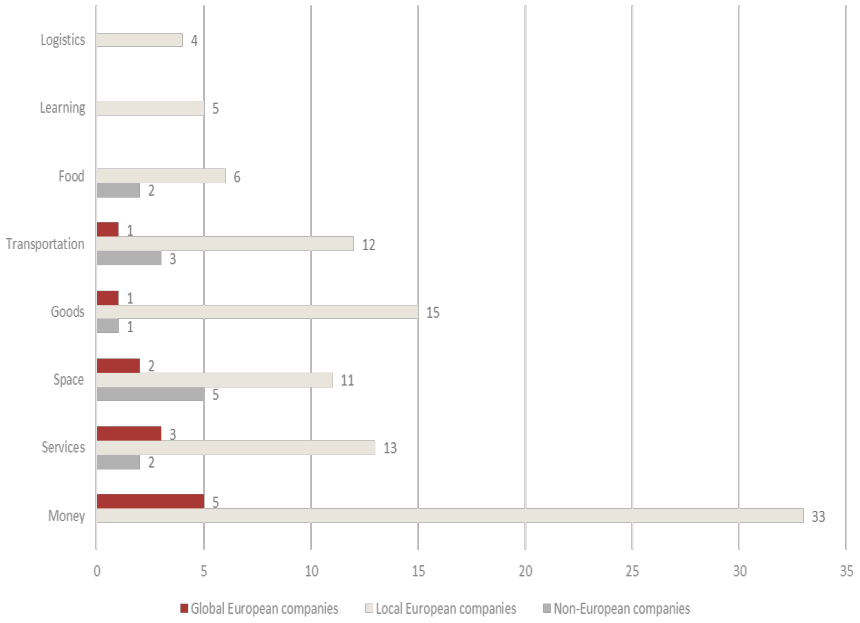

Figure 17: Distribution of Global European, Local European and Non-European Platforms According to Sharing Category (n=124)

5.3.5 Classification of SEPs According to Number of Providers and Consumers

When it comes to size in terms of provider or consumer count, only a handful of platforms make precise figures public and most keep this information ambiguous or do not disclose it at all. For 25 platforms the provider count is available while consumer counts are on hand for 33 platforms. As Figure 18 shows, twelve platforms have a provider count ranging from less than 100 to 10,000. The cluster including platforms with 1,000 to 4,999 providers is the largest, containing four specimens. Ten platforms have between 10,000 and 100,000 providers and a further two between 100,000 and 200,000. A single platform counts between 1 million and 5 million providers.

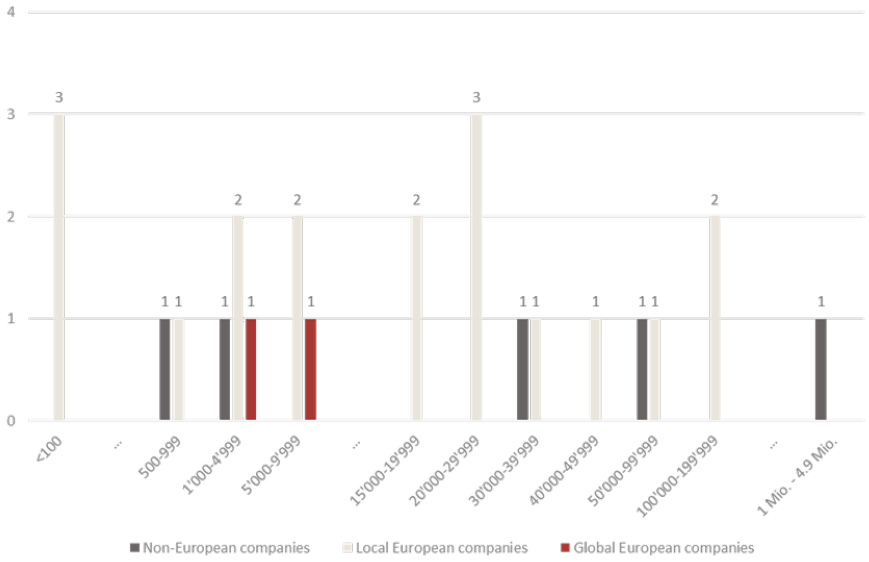

Figure 18: Global European, Local European, and Non-European Platforms by Provider Count, Clustered (n=33)

As for consumers (see Figure 19), six platforms have up to 10,000 consumers, ten between 10,000 and 100,000, and nine between 100,000 and 1 million. The clusters aggregating platforms with one to five million includes six platforms while the clusters 50 to 100 million and more than 100 million consumers have one sampling unit each. The three largest clusters together make up eight out of the 33 platforms in question.

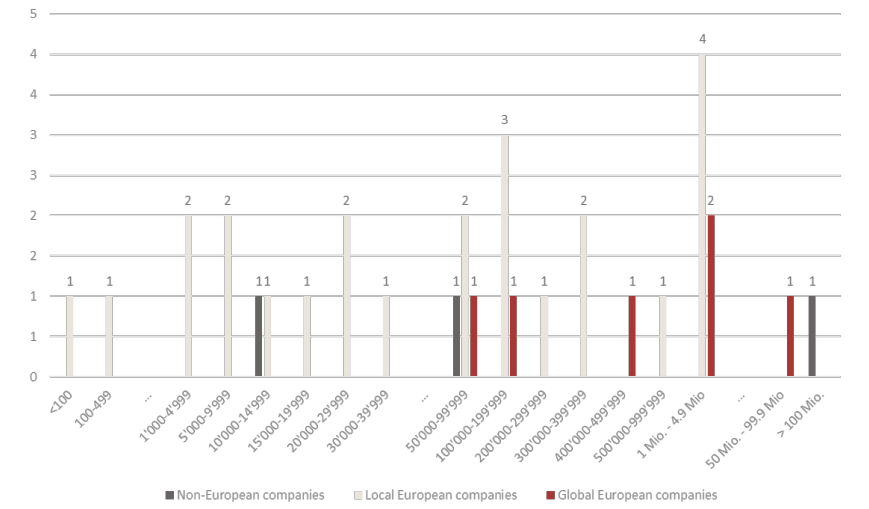

Figure 19: Global European, Local European, and Non-European Platforms by Consumer Count, Clustered (n=33)

Figure 20 shows the distribution of SEPs according to founding year and number of consumers. It is difficult to get reliable statistics for the number of consumers for the biggest SEPs such as

AirBnB and Uber, but also for the small SEPs. Thus, Figure 20 provides just an indication and illustrates that the currently biggest SEP on the European market were founded in the period from 2008 to 2010.

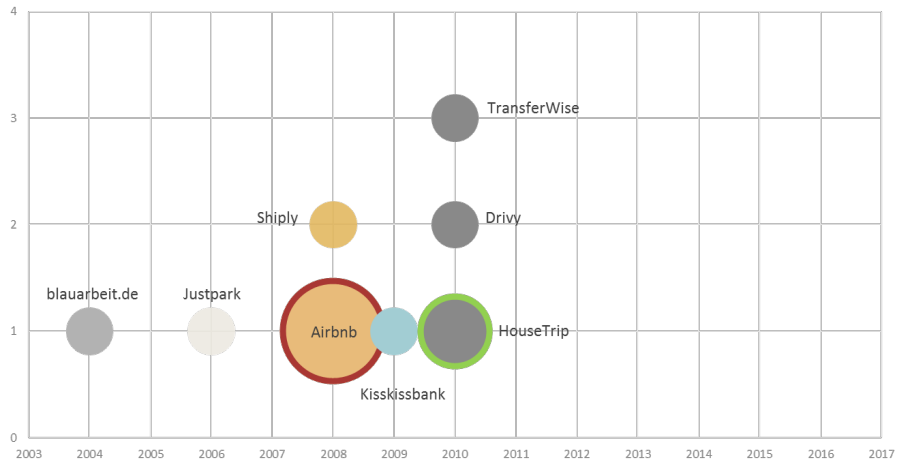

Figure 20: Platforms by Consumer Count and Founding year (>= 1,000,000), (n=25)

* off-scale: value shown: 5'000'000, actual value: 100'000'000
* off-scale: value shown: 2'500'000, actual value: 50'000'000

Compared to that, all platforms that have been founded after 2010 are considerably smaller, locally oriented, and belong to different sharing categories such as "Food" and "Money" (see Figure 21).

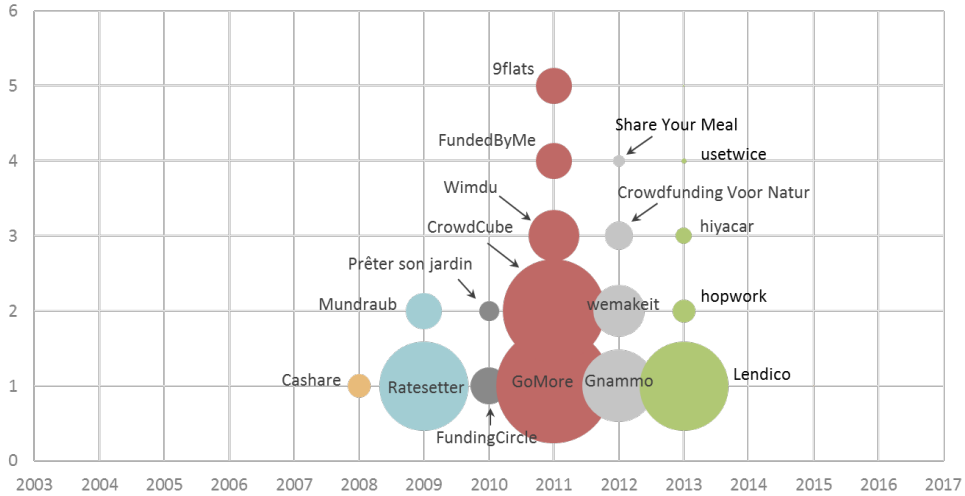

Figure 21: Platforms by Consumer Count and Founding Year (<1,000,000), (n=25)

5.3.6 Information Required by SEP for Registration of Consumers

Among the 124 platforms reviewed, 111 platforms require an e-mail address and 99 a name in order for customers to create a new account. This information is typically required to establish the first contact with the platform and to make registration an easy process. Typically the effort of platforms to authenticate this information for consumers does not go beyond the automated confirmation of an e-mail address or checks through social media accounts. At a later stage of user involvement more detailed queries are performed such as queries about phone numbers, postal addresses, and birth dates. This type of information is usually requested when the user for the first time either tries to provide an offer over the platform or wants to consume on the platform. At that stage most platforms also offer extensive verification services that are usually offered as additional services for pay. Most common extensive verification services are a characteristic of SEPs in the sharing category "Money", where information such as for example official identity documents or bank account statements is required from the beginning. Figure 22 provides an overview.

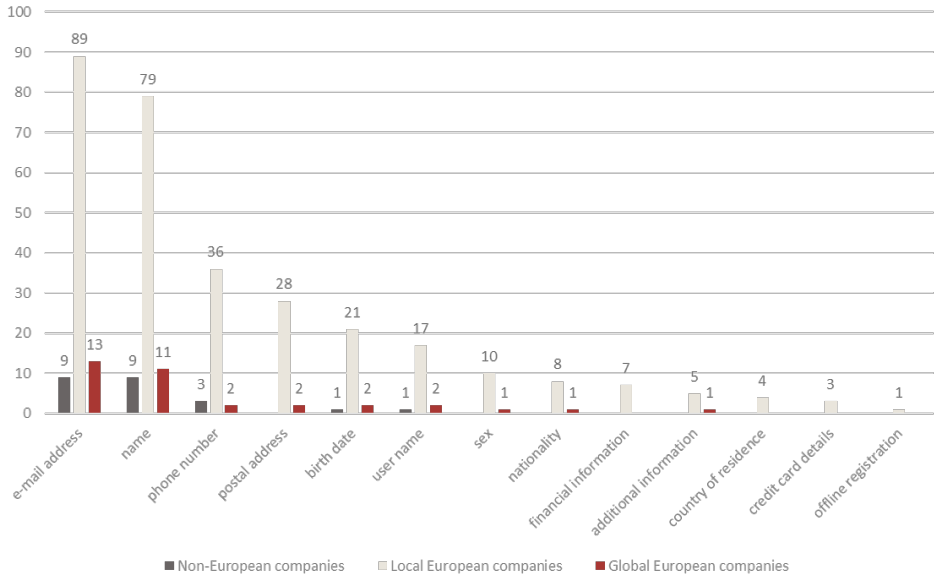

Figure 22: Requested Information upon Platform Registration by Consumers (n=124, multiple entries possible)

During regular registration processes, the customer enters all required information manually; however, some platforms offer social sign-ins. These let customers use their social media accounts to login to platforms with the intention to simplify the registration process and to give the platform operators access to at least some of the customers' data stored on social networking services. In the present sample 58 platforms offer social sign-ins using Facebook accounts and 27 allow Google+ accounts (see Figure 23.). Very few platforms present customers with the possibility to login via LinkedIn or PayPal.

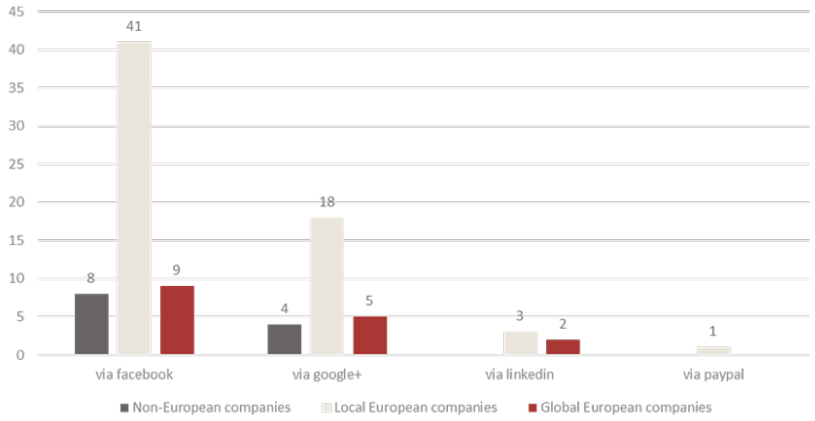

Figure 23: Number of Platforms that Allow Registration with Social Sign-ins (out of n=124)

5.3.7 Provider and Consumer Rating Systems Employed by SEPs

Peer rating and review systems are a well-known feature of platforms, necessary for trust building. The prominence of the topic is somewhat surprising when looked at through the present sample in which relatively few platforms actually make use of rating systems. 62 platforms don't let consumers rate providers at all (see Figure 24) while the opposite, providers rating consumers, is yet much more unlikely (see Figure 25). However, in both cases rating stars, usually a five point scale, and rating comments are the rating tools of choice, even if to a disparate degree for providers and consumers.

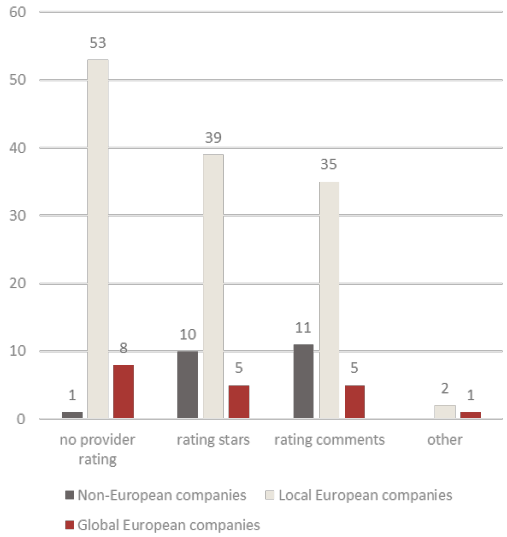

Figure 24: Type of Provider Rating Systems (n=124, multiple entries possible)

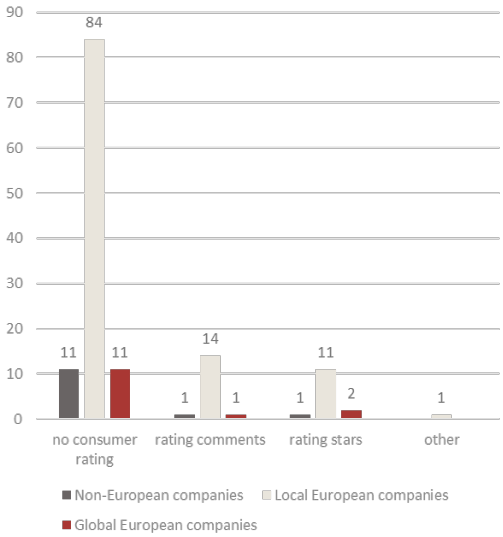

Figure 25: Type of Consumer Rating Systems (n=124, multiple entries possible)

5.3.8 Overview of Customer Services SEP Employ

In case something goes wrong or clients have questions, most platforms provide some sort of customer service. In fact, as Figure 26 shows, only 6 platforms do not provide any customer service whatsoever. The most widespread channel for attending to customer inquiries is e-mail support which is used by 107 platforms. Frequently asked questions (FAQs) are slightly less prevalent as are how to guides. These guides are akin to FAQs but they tend to be more informal, simplified, and serve to introduce new customers to the most basic concepts. Types of support that allow for real-time assistance, such as phone support and live chat, are still less frequent.

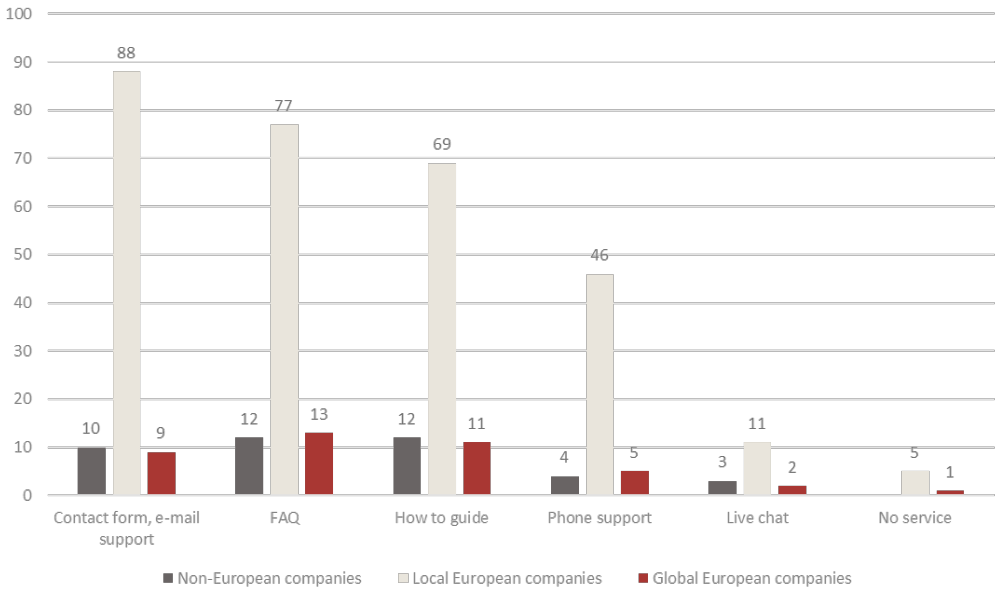

Figure 26: Types of Customer Service Platforms Employ (n=124, multiple entries possible)

5.3.9 Overview of Community Elements Employed by Platforms

In order to facilitate transactions between consumers and providers, platforms employ means to engage and grow their customer base and foster a sense of community. These means, so called community elements, range from running social media accounts dedicated to a platform's brand to real world events taking place outside the online space. As shown in Figure 27, by far most platforms use social media accounts to engage with customers followed consecutively and with decreasing popularity by blogs, newsletters, the possibility for customers to write one another messages, and the option to share personal information with others. More sporadic are gamification like elements such as rankings, badges, or other virtual rewards for completed tasks and the use of discussion panels and community events.

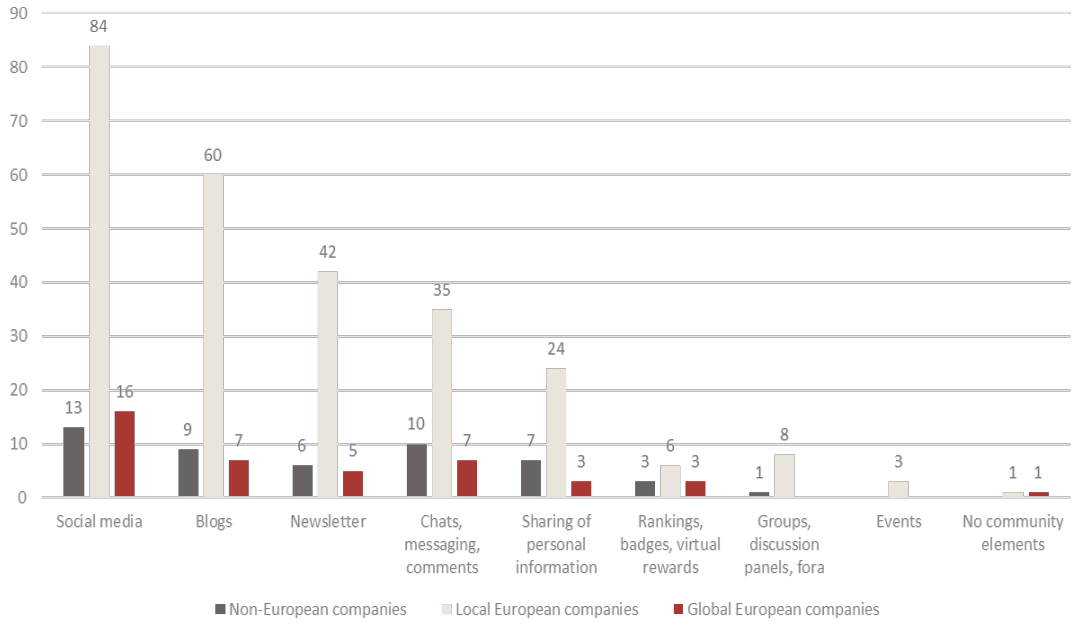

Figure 27: Type and Frequency of Community Elements Employed by Platforms (n=124, multiple entries possible)

5.3.10 Availability of Terms and Conditions and Privacy Policies

Most of the SEPs in the analyzed sample, 106 platforms, provide terms and conditions on their websites. Ideally, terms take the form of a document that defines key expressions or phrases, user rights and duties, appropriate and anticipated usage of the platform, the parties' legal liabilities in case of damages and so on. However, not all of the considered SEPs are as comprehensive as that. As Figure 28 shows, only a minority of the examined platforms offer no terms and conditions of any kind.

A similar distribution applies concerning privacy policies (see Figure 29). Privacy policies conventionally state what user data the platform collects, how that data is processed, if and for what purpose it is passed on to others. Some platforms include their privacy policy as part of their terms and conditions while others provide them through a separate document or website. As illustrated, 84% or 104 platforms do have such policies in place. Again, as is the case for terms and conditions, in this analysis no assumptions are made about the comprehensiveness of these policies.

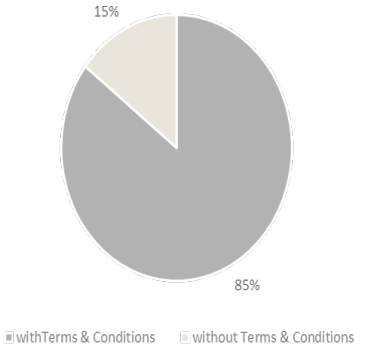

Figure 28: Share of Platforms with and without Terms & Conditions (n=124)

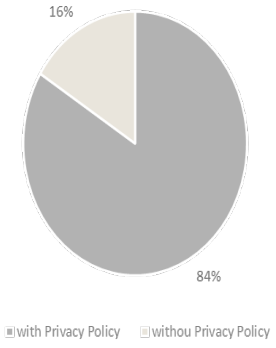

Figure 29: Share of Platforms with and without a Privacy Policy (n=124)

Figure 30 and Figure 31 reveal that SEPs without terms and conditions are local European platforms and one global European platform. An analysis of local and global SEPs with respect to availability of privacy policies shows a similar picture, even though the number of platforms without privacy policies has increased by 2 compared to the number of SEPs without terms and conditions. Again 17 local European platforms have no privacy policies. These are the same SEPs that also do not provide terms and conditions.

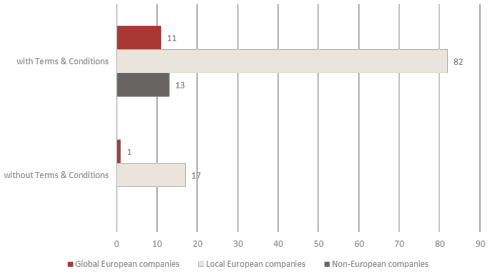

Figure 30: Share of Global European, Local European, and Non-European SEPs with and without Terms & Conditions (n=124)

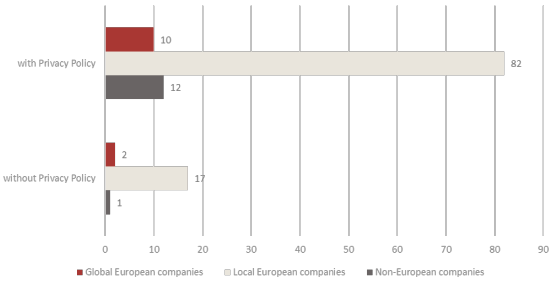

Figure 31: Share of Global European, Local European, and Non-European SEPs with and without a Privacy Policy (n=124)

There is one case of a globally operating platform that does not have terms and conditions and another case of a globally operating platform that does not have a privacy policy. It turns out that both cases concern the same platform: lendahand, a platform that crowdfunds loans for entrepreneurs in developing countries. Baffled that a platform operating at a global scale and in an ethically delicate industry discloses no legal framework at all, the case was further examined. As it became clear, lendahand does have terms & conditions and a data usage policy, however, these documents cannot be found on www.lendahand.com, the website continental European surfers are likely to browse. Rather both policies are made available on the British site www.lendahand.co.uk, an offshoot of the Dutch head company. However, these polices apply only to transactions made through lendahand.co.uk. What rules apply to lendahand.com exactly remains unclear. The site states merely that it is an authorized investment firm that follows the banking and securities regulations in the Netherlands.

Overall, about 14% of the analyzed platforms do not provide terms and conditions and privacy policies.

5.4 Results of SEP Based on Facebook Groups

The geographic distribution of Facebook groups indicates a predominant focus on German speaking countries. The vast majority, 87 groups, is from Germany, 18 groups are from Austria and 4 from Switzerland. In total, this amounts to an 84% share of Facebook groups. Beyond that, 4 groups allot to the United Kingdom, 3 to Spain, and 2 to a global audience. The remaining twelve groups are distributed between nine other European countries. For an unabridged outline of the geographic distribution see Figure 32.

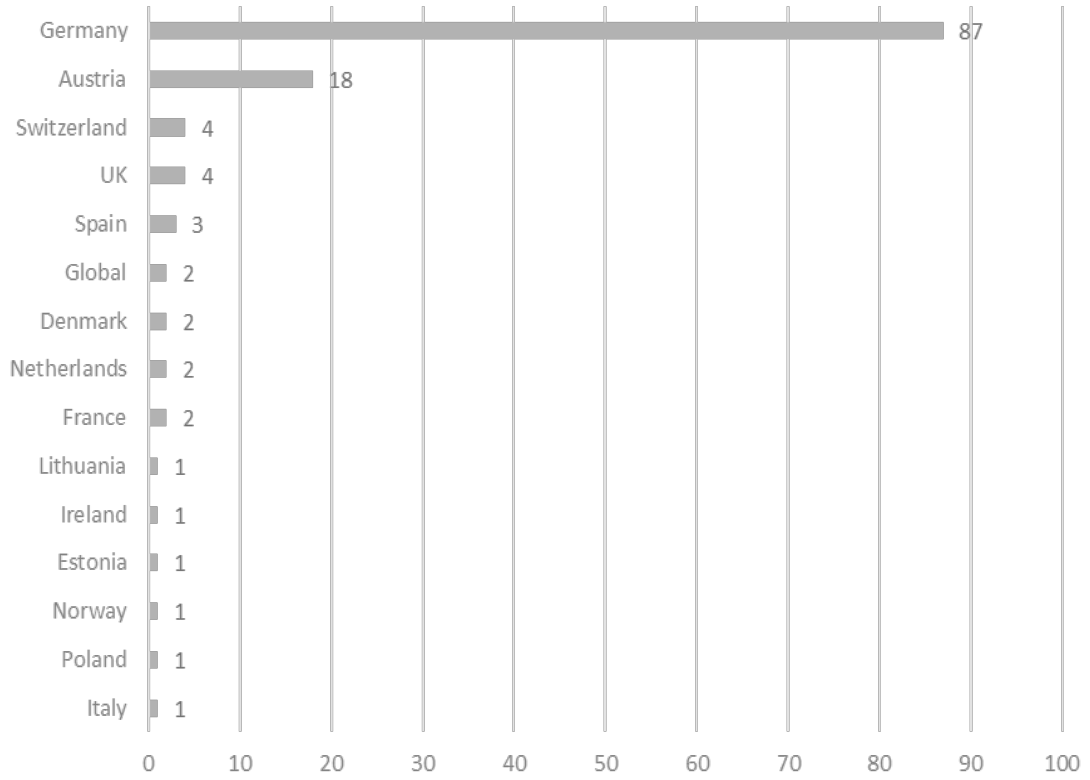

Figure 32: Geographical Distribution of Facebook Groups (n=130)

The set of Facebook groups includes two dominant sectors: “Food” with an overwhelming 79 groups and “Goods” with 36 groups. Together these sectors cover 89% of the Facebook set. The remaining groups fall to “Space” and “Services” with 6 groups each and “Learning and Logistics” with 2 and 1 group respectively. Noticeably and in contrast to platforms, the sectors “Money” and “Transportation” are absent. Figure 33 presents a complete overview.

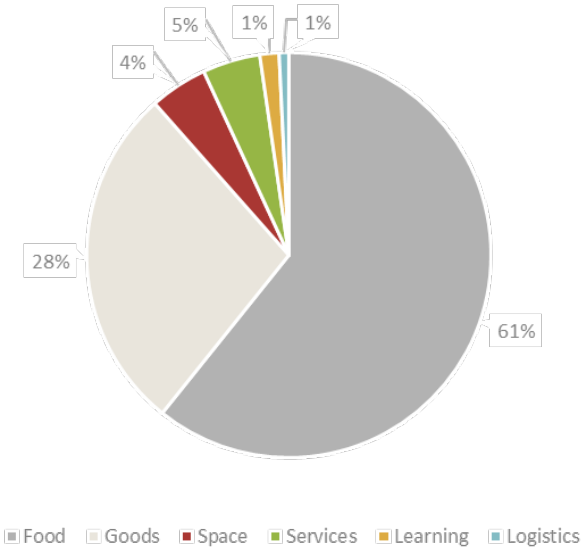

Figure 33: Sector Distribution of Facebook Groups (n=130)

Even though Facebook groups do not have terms and conditions in the strict sense, a majority does abide by some rudimentary rules. These generally include the group's purpose and a code of conduct that members are expected to adhere to. For example, rules might state what kind of goods and services are to be exchanged, under what conditions exchanges should take place, whether or not advertising is allowed and, usually, it entails an appeal to civilized discourse and good behavior. If members violate the rules, group administrators are able to block them, i.e., exclude them from the group. As Figure 34 illustrates 77 groups, or 59%, do have rules while 53 do not.

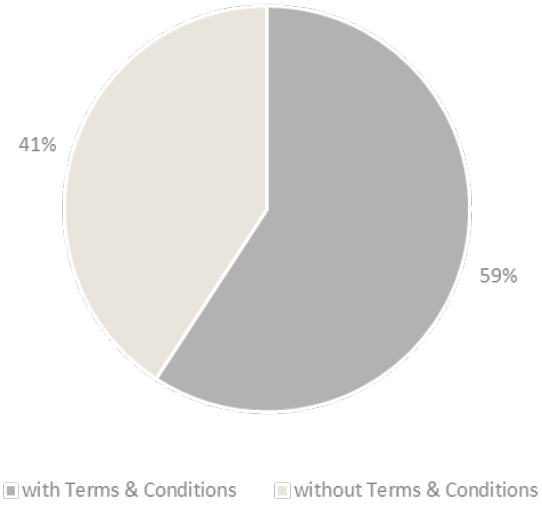

Figure 34: Share of Facebook Groups with and without Terms and Conditions (n=130)

Concerning member count, 41 groups are fairly small with less than 1,000 members and 59 groups include between 1,000 and 10,000 members, both of these clusters together make up to 75% of all groups. The remaining 17 groups go past the 10,000 member mark with the largest two falling into the 40,000 to 49,999 basket. Member counts for 13 groups remained unknown. A complete outline is presented in Figure 35.

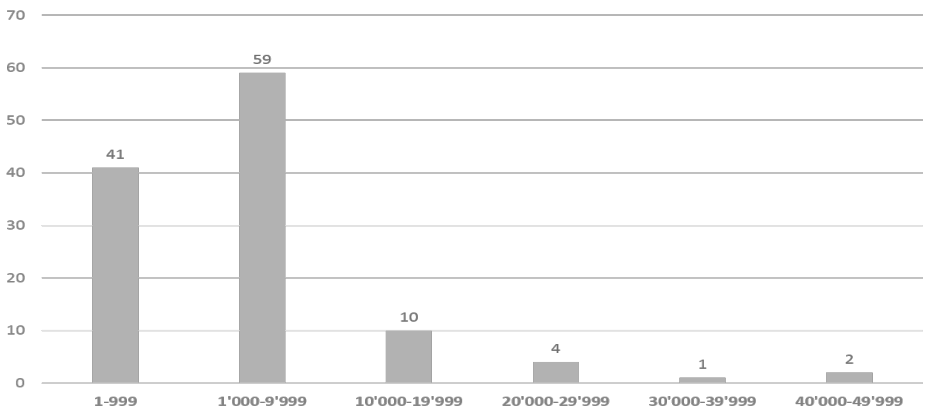

Figure 35: Facebook Group Size Based on Number of Members, Number of Groups in each Cluster (n=117)

5.5. Summary of Findings From Platform Analysis

The sample of SEPs considered in this study is not a representative one with respect to the sharing economy in Europe Member States. The platforms were selected in a way that a good distribution of SEPs over the sharing categories of the Honeycomb model was achieved. However the sample of SEPs cannot be considered as representative from this perspective as well. Given this, the findings of the analysis are only an indication.

The platform analysis showed that the sharing economy in Europe, at least in some sharing categories, seems to be dominated by non-European platforms that have global operations. Well-known examples of such platforms are Airbnb and Uber. There are also European platforms that are globally active, however these platforms appear to be smaller than the global non-European SEPs. The sample contained also 99 local SEPs that have been founded and operate in Europe. 14 of these platforms are non-profit platforms.

Most of the big globally active platforms were founded before 2010. The highest number of platforms has been founded in the period from 2010 to 2015. After 2015 the growth of SEP seems to decrease quickly. It is also evident that most of the new SEP were founded in sectors such as the “Money” sharing category where there is no external competition yet. In this sharing category seems to be less competition from global players than in other sharing categories.

The analysis showed that non-European global platforms and global European platforms employ similar practices with reference to required information for user registration, applied rating and review systems, and support and community services. However, the smaller the specific platform is, the less services are offed to peers. This is evident in particular for the smaller local

European platforms. The same holds also for availability of terms and conditions as well as privacy policies. While bigger platforms have very extensive terms and conditions and privacy policies, smaller platforms provide shorter, very simple, terms and conditions and privacy policies, or don't have any at all.

Besides SEPs that are based on online marketplaces, sharing communities are increasingly emerging as Facebook groups. They are typically formed in urban areas and can have from less than 1,000 members up to 50,000 members. Sharing Facebook groups emerge mainly in the sharing categories "Food" and "Goods". As Facebook groups are not legal entities, this kind of community based sharing environment is not subject to regulation and relies completely on self-regulation. However, the concentration on sharing of "food" might impose the question if additional regulation in this area is necessary.

6 Conclusion and Implications – The 3Ps Paradoxes of Sharing

The overall goal of this deliverable is the identification of design principles and guidelines for SEPs. To achieve this research goal the design science approach was applied. The analysis started with an in-depth literature analysis, which resulted in a first version of design guidelines for SEP. Then focus groups with SEP users were conducted. The focus groups provided insights on how users experience the features of SEPs and what their expectations towards SEPs are. These insights were compared to the identified design principles and several core design principles were confirmed and verified by the participants' insights. The analysis was rounded up with a broad analysis of SEPs active in Europe. The goal of this last part of the analysis was to explore whether and in which form the design principles might be applied in practice. Based on the first version of design principles a code book was developed that was applied on a sample of 124 SEPs. The sample of SEPs is not representative for European Member States, but provides a good distribution of platforms over different sharing categories. This analysis confirmed that the design guidelines can be applied for the assessment of existing SEPs and can guide the development or improvement of SEP.

Overall, the extensive analysis and the first version of design guidelines revealed that SEPs are complex platforms that have to serve at least three stakeholders: peer providers and consumers, regulators, and their own interests. With respect to the 3Ps, participation, privacy, and power, SEPs show a paradoxical nature:

The participation paradox in SEP: The sharing economy provides new opportunities by introducing private property to the market. Providers are able to share their private property or skills and consumers can have affordable access to private property that they do not own. In principle, it should be possible for any citizen of a society, when he or she wishes to, to take advantage of the sharing economy. However, the participation of peers as providers is limited from the very beginning. Only those that have adequate private property or skills can be peer providers. Participation on the consumer side is more open, but requires also possession of at least payment means such as for example credit cards. The platform has to clearly define the entry boundaries of participation. Further limits to participation appear along the sharing market process through the encoded self-regulating and matchmaking mechanisms. Who is not able to create a good presentation of himself and of his offerings and who does not get good ratings and reviews has less chances to be chosen and to participate. The matchmaking algorithms prefer the best ones, which leaves newcomers and those that develop slowly behind. Even when a match is there, one party of the match can refuse the other. Against overall expectations, participation is not open, but strongly regulated. However, platforms can be designed to act against this paradox by including features that prevent biases in matching and rating. For example, compared to the entry barriers that seem unsurmountable, the matchmaking and self-regulating mechanisms leave room for platforms designs that include functionality to cope with the diverse biases along the matchmaking process. The platform can be designed to cope with matchmaking biases in a peer and regulatory friendly way.

The privacy paradox of SEP: Platforms are intermediaries that enable global sharing among peers. A core competence of an intermediary is to build up and to provide a trustful environment. This can only be achieved if comprehensive personal data is collected and verified for

private identities participating on the platform. As a result, SEPs per design, have to require a high amount of personal data including personal ID, picture, and contact details. Furthermore, peer providers also disclose a lot of information about their private property. Even though less information might be required by peer consumers, consumers have to be verified as well. As a result, participation in sharing means a deep privacy intrusion of platforms on peers. However, the collection of personal data is necessary for creating a trustful sharing environment and peers consider the availability of data about other peers as a prerequisite for participating in sharing. Overall, there is a strong privacy paradox related to SEPs. But, similar as with the participation paradox, platforms can be designed to decrease the privacy dilemma of participating peers. There is no doubt that personal data is needed to enable sharing, but the decision of whether the collected data will be used also for other purposes than to create a trustful sharing environment (i.e., data reuse or selling) and when and how as well as to whom data is disclosed during sharing, is a design choice of SEPs.

The power paradox: Platforms should be neutral intermediaries in the sharing process. Against this expectation, SEPs are a powerful participant in sharing by design: SEPs define the rules of sharing, encode them in algorithms, and enforce them. This results in a strong power paradox: the expected neutral sharing intermediary is a very powerful party that sets prices, decides about who can participate, collects data, sets the matchmaking rules, and has the final decision in case of a dispute. This role of SEPs reflects the overall paradox among “sharing as caring” and “commercial sharing”. Again, by design, each platform can decide whether the power will be used to design a peer and regulatory friendly platform or only a platform friendly platform. These design choices determine the platform culture.

To conclude, even though there are some fixed points in the design of a platform, there are also some degrees of design freedoms and design choices at the end shape the character and personality of a sharing economy platform.

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List of Figures

List of Tables

Appendix I – List of Platforms, by Country

Austria

Platform	Link
Drivy	https://www.drivy.de
Leila Leihladen	http://www.leihladen.at
Oneplanetcrowd	https://www.oneplanetcrowd.com
Taskrookie	http://www.taskrookie.com
Use Twice	https://www.usetwice.at
Verumteilt	http://www.verumteilt.at
Willhaben	http://www.willhaben.at

Belgium

Platform	Link
Autodelen	http://www.autodelen.net
Bepark	https://www.bepark.eu
Hop work	https://www.hopwork.fr
Listminut'	https://listminut.be
Zen Car	https://www.zencar.eu

Denmark

Platform	Link
Closay	https://closay.dk
Hooves	http://www.hooves.dk
Yoowe	https://www.yooowe.com

France

Platform	Link
ColisWeb	http://colisweb.com
Hop work	https://www.hopwork.fr
Koolicar	https://www.koolicar.com
P Mobile	http://pmobile.paris.fr
Pêter son jardin	http://www.pretersonjardin.com
Prêt d'Union	https://www.younited-credit.com
Vélib'	http://www.velib.paris
Vélo'v	https://velov.grandlyon.com

Germany

Platform	Link
Artothek ZLB	https://www.zlb.de/fachinformation/spezialbereiche/artothek.html
Auxmoney	https://www.auxmoney.com
Blauarbeit	http://www.blauarbeit.de
Bringwasmit	https://www.bringwasmit.de
Frents	https://www.frents.com
Friendsurance	https://www.friendsurance.de
Gartenpaten	https://www.gartenpaten.org/
Gloverer	https://gloveler.de/
Kleiderkreisel	https://www.kleiderkreisel.de
Lebensgemeinschaft Dalborn	http://www.lebensgemeinschaft-dalborn.de/
Leihbar	https://leihbar.net
Leihdirwas	http://www.leihdirwas.de
Leih-ein-buch	https://www.leih-ein-buch.de
Lendico	https://www.lendico.de
Mamikreisel	https://www.mamikreisel.de
MeineSpielzeugkiste	https://www.meinespielzeugkiste.de
Shelfsailor	http://www.shelfsailor.com
StadtRAD	https://stadtrad.hamburg.de/kundenbuchung/process.php?proc=bikesuche
Tauschticket	https://www.tauschticket.de
Wir	http://wir.de

Italy

Platform	Link
Assiteca Crowd	http://www.assitecacrowd.com
DeRev	https://www.derev.com
Ecomill	http://www.ecomill.it
Enjoy	https://enjoy.eni.com/it
Gnammo	https://gnammo.com
Prestiamoci	https://www.prestiamoci.it
Smartika	https://www.smartika.it
Suppershare	http://www.suppershare.com

Netherlands

Platform	Link
Crowdfunding Voor Natur	http://www.crowdfundingvoornatuur.nl
Geldvoorelkaar	https://www.geldvoorelkaar.nl

Green Crowd	https://greencrowd.nl
Klusup	https://www.klusup.nl
Zorgfunder	https://www.zorgfunders.nl

Poland

Platform	Link
Finansowo.pl	https://www.finansowo.pl
Jade Zabiore	https://jadezabiore.pl
Kokos	https://kokos.pl
Polak Potrafi	https://polakpotrafi.pl
Sir Local	http://www.sirlocal.pl
Wspolnyprojekt	https://www.wspolnyprojekt.pl

Portugal

Platform	Link
MUB Cargo	https://www.mubcargo.com

Russia

Platform	Link
CityMobil	https://city-mobil.ru
YouDo	https://youdo.com

Spain

Platform	Link
Communitae	https://www.comunitae.com
Etece	https://etece.es
Floqq	http://www.floqq.com
Geniuzz	https://www.geniuzz.com
Hogar Soluciones	https://www.hogar-soluciones.es
Letmespace	https://www.letmespace.com/
Loanbook	https://www.loanbook.es
MyNbest	http://www.mynbest.com
Socialcar	https://www.socialcar.com

Sweden

Platform	Link
Sunfleet	https://www.sunfleet.com
TaskRunner	https://www.taskrunner.se

Switzerland

Platform	Link
Cashare	https://www.cashare.ch
Cook Eat	https://www.cookeat.ch
CreditGate	https://www.creditgate24.com
Diplomero	https://www.diplomero.com
Juwo	http://www.juwo.ch/
Mobility	https://www.mobility.ch
Pumpipumpe	http://www.pumpipumpe.ch
Rent a Rentner	https://www.rentarentner.ch
Sharoo	https://www.sharoo.com
Skillharbour	http://skillharbour.ch
Sprachtandem	http://sprach-tandem.ch
Tauschen am Fluss	http://www.tauschenamfluss.ch
Tauschobst	http://www.tauschobst.ch
Unterrichtsmaterial	https://www.unterrichtsmaterial.ch
Wemakeit	https://wemakeit.com
Zurich tauscht	http://www.zuerichtauscht.ch
100 Days	https://www.100-days.net

United Kingdom

Platform	Link
Casserole Club	https://www.casseroleclub.com
Easy Car Club	https://carclub.easycar.com
Edinburgh Garden Partners	http://www.edinburghgardenpartners.org.uk
Haus	https://www.haus.me.uk
Hiyacar	https://www.hiyacar.co.uk
Justpark	https://www.justpark.com
Nimber	https://www.nimber.com
RateSetter	https://www.ratesetter.com
RentaCarlo	https://www.rentecarlo.com
Shiply	https://www.shiply.com
Stashbee	http://www.stashbee.com
Streetbank	https://www.streetbank.com
Zopa	https://www.zopa.com

EU < 4 countries

Platform	Link
Alvearechedicesi	https://alvearechedicesi.it

DogBuddy	https://uk.dogbuddy.com
Drive Now	https://www.drive-now.com
Flixbus	https://www.flixbus.de
Fritiden	http://www.fritiden.se
GoMore	https://gomore.dk
MeinFernbus	https://meinfernbus.de/
Mintos	https://www.mintos.com
Mundraub	https://www.mundraub.org
Onfinestay	https://www.onefinestay.com
RideLink	https://ridelink.com

EU > 4 countries

Platform	Link
Foodsharing	https://www.foodsharingschweiz.ch
Glovo	https://glovoapp.com
Gudog	https://gudog.com
Kurzzeitwohnen	https://www.kurzzeitwohnen.com
Lendix	https://lendix.com
Peerby	www.peerby.com
Share Your Meal	https://www.shareyourmeal.net
Snappcar	https://www.snappcar.nl
Urb-it	https://urb-it.com
ZipJet	https://www.zipjet.de

Global

Platform	Link
3D Hubs	https://www.3dhubs.com
9flats	https://www.9flats.com/de
Airbnb	https://www.airbnb.ch
BlaBlaCar	https://www.blablacar.com
CrowdCube	https://www.crowdcube.com
Deliveroo	https://deliveroo.de
Eatwith	https://www.eatwith.com
FLOOW2	http://www.floow2.com
Foodora	https://www.foodora.com
Freelancer	https://www.freelancer.es
Funded By Me	https://www.fundedbyme.com
Funding Circle	https://www.fundingcircle.com
Gett	https://gett.com/ru
Goboony	https://www.goboony.com
Helping	https://www.helpling.co.uk

HomeExchange	https://www.homeexchange.com
HouseTrip	https://www.housetrip.com/
Interhome	https://www.interhome.ch
Just-Eat	https://www.just-eat.com
Kisskissbankbank	https://www.kisskissbankbank.com
Lendahand	https://www.lendahand.com
LiquidSpace	https://liquidspace.com/
Mealsharing	https://www.mealsharing.com
Sharedesk	https://www.sharedesk.net
Spinlister	https://www.spinlister.com
Spotify	https://www.spotify.com
TransferWise	https://transferwise.com
Uber	https://www.uber.com
Viedit	https://www.viedit.com
Wimdu	https://www.wimdu.com

Appendix II – List of Platforms by Sector

What is exchanged?	Platforms	Sector
Surplus fruit and vegetables	Mundraub Tauschobst	Food
Home cooked take-away meals	Menu Next Door	
Hosts cook meals and invite peers to their home	Share Your Meal Gnammo Cook Eat Eatwith Mealsharing	
Consumer goods (e.g., cycles, garden tools, rubber dinghies)	Pumpipumpe Tauschticket Frents Streetbank Peerby Use Twice Leila Leihladen Leih dir was	Goods
Books	leih-ein-buch	
Clothes	Kleiderkreisel	
Women's dresses	Closay	
Children's clothes	Mamikreisel	
Peers traveling abroad purchase and bring along products that cannot be bought at home	bringwasmit	
Motorhomes	Goboony	
Ski, surf and board gear	Yoowe Spinlister	
Marketplace for cars, real estate and jobs	Willhaben	
Knowledge and skills (e.g., skills about programming languages, finance, marketing, exercising, cooking, playing instruments)	Floqq Skillharbour Tauschen am Fluss Diplomero	Learning
Teaching material for teachers	Unterrichtsmaterial	
Crowdsourced delivery service	Jade Zabiore Shiply Nimber MUB cargo	Logistics

Crowdfunding of consumer and/or business loans	Fundingcircle LoanBook Communitae Lendico Lendix Lookandfin geldvoorelkaar.nl RateSetter Zopa Prêt d'Union Smartika Kokos Bondora Auxmoney Mintos Fixura Prestiamoci Finansowo.pl CreditGate24 Cashare	Money
Crowdfunding of equity	CrowdCube Assiteca Crowd Ecomill FundedByMe myNbest	
Crowdfunding of creative projects	100 Days We make it DeRev polakpotrafi.pl Kisskissbank Wspólnyprojekt.pl	
Crowdfunding of loans for businesses in developing countries	lendahand	
SEP insurance scheme	friendsurance	
Cash transfer service for foreign currencies	Transferwise	
Crowdfunding of projects supporting nature and ecological sustainability	Crowdfunding Voor Natur oneplanetcrowd Green Crowd	
Crowdfunding of projects in the nursing and health sector	Zorgfunders	
On-demand service for cleaners	Helpling	Services
On-demand service for household chores (e.g., simple repairs, cleaning, moving)	etece.es Taskrunner YouDo Klusup ListMinut	
Hire professional craftsmen (e.g., chimney sweeps, gardeners, plumbers)	Sir Local blauarbeit.de Hogar Soluciones	

Sharing platform that matches freelancers with jobs (e.g., administrative, IT and design work)	Hopwork Freelancer Geniuzz	
SEP that matches moviemaker freelancers (e.g., video editors, animators or videographers) with jobs	Viedit	
SEP for retirees to offer and accept tasks	Rent a Rentner	
SEP that matches horse riders with horse owners	Hooves	
SEP that enables access to local 3D printing technology	3D Hubs	
SEP that matches dog owners and dog sitters	Gudog DogBuddy	
Storage space	Shelfsailor Stashbee letmespace.com	Space
Vacation rentals	Airbnb 9flats Wimdu Gloverer HouseTrip onefinestay Fritiden HomeExchange	
Short-term accommodation for business travelers	Kurzzeitwohnen	
Office space	sharedesk Haus Liquidspace	
Garden space	Pêter son jardin Edinburgh Garden Part-ners Gartenpaten	
Ride hailing service	Uber city-mobil.ru Gett	Transportation
Long-distance ride sharing	Blablacar	
Car sharing	Drivy ridelink SnappCar socialcar GoMore Sharoo Rentecarlo Hiyacar easyCar Club Koolicar	
SEP that matches drivers with parking spots	Justpark Bepark	

Appendix III – List of Facebook Groups, by Country

Austria

Name	Link
Foodsharing Innsbruck und Umgebung	https://www.facebook.com/groups/209963912547107/
Foodsharing Stockerau	https://www.facebook.com/groups/623347237859822/
Help me - help you - Ried im Innkreis	https://www.facebook.com/groups/369107483225012/
Help me-help you Vöcklabruck	https://www.facebook.com/groups/358934054167921/
Share & Care - Baby & Kind Steiermark	https://www.facebook.com/groups/1539497386272111/
Share & Care - Bezirk Deutschlandsberg	https://www.facebook.com/groups/238453229498923/
Share & Care - Feldbach, Fürstenfeld, Gleisdorf und Umgebung	https://www.facebook.com/groups/314566575295378/
Share & care – graz	https://www.facebook.com/groups/sharecaregraz/
Share & care – tierwelt	https://www.facebook.com/groups/shareandcare.tierwelt/
Share & care – Vorarlberg	https://www.facebook.com/groups/215410461832815/
Share & care – wien	https://www.facebook.com/groups/shareandcare.vienna/
Share & care | Baby und Kind – Wien	https://www.facebook.com/groups/shareandcare.baby-kind.wien/
Share & Care Gramatneusiedl	https://www.facebook.com/groups/1078473805615666/
Share & care stp/lf und umgebung	https://www.facebook.com/groups/119037851552914/
Share & Care Weiz und Umgebung	https://www.facebook.com/groups/271298352965820/
Share & Care-Baby & Kind Steiermark	https://www.facebook.com/groups/1539497386272111/

Denmark

Name	Link
Accommodation in Copenhagen	https://www.facebook.com/groups/166820836821223/
Foodsharing Copenhagen	https://www.facebook.com/FoodsharingCopenhagen/

Estonia

Name	Link
Foodsharing Tallinn	https://www.facebook.com/groups/1843673475845828

Germany

Name	Link
Abendkleider Verkauf/Verleih/Tausch	https://www.facebook.com/groups/536559266375966/
Designer-Dirndl zu verleihen	https://www.facebook.com/groups/197478413758952/

Essen weitergeben statt wegwerfen	https://www.facebook.com/groups/1186093164803884/
Flats in Berlin	https://www.facebook.com/groups/393237407451209/
FoodSharing Aachen	https://www.facebook.com/Foodsharing.Aachen/
FoodSharing Ahlen / Dolberg / Vorheln	https://www.facebook.com/groups/896619277160394/
Foodsharing Aschaffenburg	https://www.facebook.com/groups/160892124075705/
Foodsharing Bayreuth	https://www.facebook.com/groups/640908262620333/
Foodsharing Bergstraße	https://www.facebook.com/groups/1439595192983847/
Foodsharing Berlin	https://www.facebook.com/groups/foodsharingBerlin/
Foodsharing Bielefeld	https://www.facebook.com/foodsharing.bielefeld/
Foodsharing Bocholt	https://www.facebook.com/groups/1766362290317056/
Foodsharing Bonn	https://www.facebook.com/groups/foodsharing.bonn/
Foodsharing Braunschweig	https://www.facebook.com/groups/foodsharing.bs/
Foodsharing Buchloe	https://www.facebook.com/groups/1633460446896061/
Foodsharing Darmstadt	https://www.facebook.com/groups/584835291556003/
Foodsharing Erftstadt	https://www.facebook.com/groups/1556703561247932/
Foodsharing Essen	https://www.facebook.com/foodsharing.Essen/
Foodsharing Esslingen	https://www.facebook.com/groups/103947809963157/
Foodsharing Euskirchen	https://www.facebook.com/groups/710809665655814/
Foodsharing Frankfurt	https://www.facebook.com/groups/foodsharing.ffm/
Foodsharing Fulda	https://www.facebook.com/groups/655010457940266/
Foodsharing Halle (Saale) – Die Essensretter	https://www.facebook.com/groups/568373749901216/
Foodsharing Hamburg	https://www.facebook.com/foodsharing.hamburg/
Foodsharing Hildesheim	https://www.facebook.com/groups/197286033759482/
Foodsharing Ingolstadt	https://www.facebook.com/groups/1435934319993711/
Foodsharing Itzehoe & Umgebung	https://www.facebook.com/groups/277231582658111/
Foodsharing Jena	https://www.facebook.com/groups/735340819826782/
Foodsharing Karlsruhe - Essen teilen & verschenken	https://www.facebook.com/groups/158407244311319/
Foodsharing Köln Ehrenfeld	https://www.facebook.com/groups/1077316655718692/
Foodsharing Konstanz	https://www.facebook.com/FoodsharingKonstanz/
Foodsharing Krefeld	https://www.facebook.com/foodsharingkrefeld/
Foodsharing Lebensmittelretter Flensburg	https://www.facebook.com/groups/536065306427275/
Foodsharing Leipzig	https://www.facebook.com/groups/443121132402475/
Foodsharing Lüdenscheid	https://www.facebook.com/groups/189367464860079/?ref

Foodsharing Ludwigshafen & Region	https://www.facebook.com/groups/1578283942422297/
Foodsharing Mainz	https://www.facebook.com/groups/FoodsharingMainz/
Foodsharing Mannheim	https://www.facebook.com/groups/600855786620359/
Foodsharing Marburg	https://www.facebook.com/Lebensmittelretten.Marburg/
Foodsharing Marl	https://www.facebook.com/groups/FoodsharingMarl/
Foodsharing Memmingen und Umgebung	https://www.facebook.com/groups/1441453586076652/
Foodsharing Minden	https://www.facebook.com/groups/380365408737364/
Foodsharing Münster	https://www.facebook.com/groups/607791439294335/
FoodSharing Nürnberg	https://www.facebook.com/groups/574638695981137/
Foodsharing Odenwaldkreis	https://www.facebook.com/groups/1600733320207095/
Foodsharing Passau	https://www.facebook.com/groups/156233277886754/
Foodsharing Pforzheim Enzkreis	https://www.facebook.com/groups/foodsharing.pforz-heim.enzkreis
Foodsharing Regensburg	https://www.facebook.com/groups/FoodsharingRegensburg
Foodsharing Reutlingen	https://www.facebook.com/groups/1532901543616357/
Foodsharing Rheingau	https://www.facebook.com/groups/536185759860228/
Foodsharing Rhein-Sieg-Kreis	https://www.facebook.com/groups/855203001230807/
Foodsharing Salzgitter	https://www.facebook.com/groups/1202851623095516/
Foodsharing Solingen	https://www.facebook.com/groups/foodsharing.solingen/
Foodsharing Spandau	https://www.facebook.com/groups/226507994534153/?-ref=br_rs
Foodsharing Trier	https://www.facebook.com/groups/foodsharing.trier/
Foodsharing Tübingen	https://www.facebook.com/groups/240287349505286/
Foodsharing Wangerooge	https://www.facebook.com/groups/1324813214263603/
Foodsharing Wolfenbüttel	https://www.facebook.com/groups/1893706397579311/
Foodsharing Wuppertal	https://www.facebook.com/foodsharingwuppertal/
Hallo Nachbar, kann ich Dir Helfen? Hallo Nachbar, hilfst Du mir?	https://www.facebook.com/groups/1239774652717433/
Hilfst du mir, helfe ich Dir! :)	https://www.facebook.com/groups/222327664554442/
Koizucht Crowdfunding	https://www.facebook.com/groups/1609471439304363/
Pflanzentausch und Flohmarkt	https://www.facebook.com/groups/164564787062869/
Schenken Tauschen Leihen	https://www.facebook.com/groups/SchenkenTauschenLei-hen/
Share & Care – Baden	https://www.facebook.com/groups/189574997756921/
Share & care – Dresden	https://www.facebook.com/groups/share.care.dresden/
Share & care – Düsseldorf	https://www.facebook.com/groups/share.care.Duesseldorf/
Share & Care – Kulmbach	https://www.facebook.com/groups/653871978027645/
Share & care - landkreis görlitz	https://www.facebook.com/groups/share.care.goerlitz/
Share & Care Pegnitz	https://www.facebook.com/groups/1437903179784372/
Share & care : Leibnitz & Umgebung	https://www.facebook.com/groups/283828608400892/

Share & care Cottbus	https://www.facebook.com/groups/shareandcare.cottbus/?ref=br_rs
Share & Care Himberg	https://www.facebook.com/groups/ShareCareHimberg/
Share & Care Witten/Herdecke	https://www.facebook.com/groups/sharencarewitten/
Share and Care Bamberg	https://www.facebook.com/groups/share.bamberg/
Share and Care Lichtenfels	https://www.facebook.com/groups/ShareandCareLIF/
Share&Care – Mödling	https://www.facebook.com/groups/190260457689161/
Sharing is Caring HWR Berlin	https://www.facebook.com/groups/105310079904431/
Tauschen, Verschenken, Verleihen Greifswald-Wolgast	https://www.facebook.com/groups/153914304803282/
Vegan food sharing Hamburg	https://www.facebook.com/groups/963810406978982/
Vegan foodsharing – Wien	https://www.facebook.com/groups/464524787042472/
Vegan Foodsharing Berlin	https://www.facebook.com/groups/1559544747395210/
Vegan Foodsharing Düsseldorf	https://www.facebook.com/groups/253731544809144/
Vegan Foodsharing Hamm	https://www.facebook.com/groups/699081083553922/
Vegan Foodsharing Leipzig	https://www.facebook.com/groups/1408874719413143/
Veganes Foodsharing Köln	https://www.facebook.com/groups/156087284550171/
Veganes Foodsharing Tönisvorst	https://www.facebook.com/groups/kempeneressensretter/
Wochenendhäuser, Ferienwohnungen, Almhütten: sharen, vermieten, verkaufen	https://www.facebook.com/groups/freizeitimmobilien/

Ireland

Name	Link
Help Me Im Getting Married – Ireland	https://www.facebook.com/groups/helpmeimgettingmarriedireland/

Italy

Name	Link
CONDIVISIONE GRATIS DI CIBO ITALIA Food Sharing Italy	https://www.facebook.com/groups/444363672355149/

Lithuania

Name	Link
Foodsharing Klaipeda	https://www.facebook.com/groups/1644169262550755/

Netherlands

Name	Link
Ijsselmonde	https://www.facebook.com/groups/fsijsselmonde/
Sharing is Caring - Maastricht University	https://www.facebook.com/groups/sharingiscaringeu/

Norway

Name	Link
Rooms/apartments for rent in Oslo	https://www.facebook.com/groups/519006134803968/

Poland

Name	Link
Foodsharing Poznań	https://www.facebook.com/groups/843766092344418/

Spain

Name	Link
Barcelona rent a room/flat/apartment	https://www.facebook.com/groups/558757407534549/
Compartir Comida El Medano	https://www.facebook.com/groups/1807561882805424/
Mi Comida, Mis recetas para compartir!	https://www.facebook.com/groups/746013908843617/

Switzerland

Name	Link
Sharing is Caring UNILU/HSLU/PHLU	https://www.facebook.com/groups/1421163711536-028/?ref=br_rs
Sharing is Caring Universities of Zurich/ETH (UZH/ETH)	https://www.facebook.com/groups/sharingiscaringuniszuich
Sharing Is Caring University of St. Gallen (HSG)	https://www.facebook.com/groups/sharingiscaringunisg/
Sharing is Caring ZHAW	https://www.facebook.com/groups/sharingiscaringzhaw/

Appendix III – Codebook

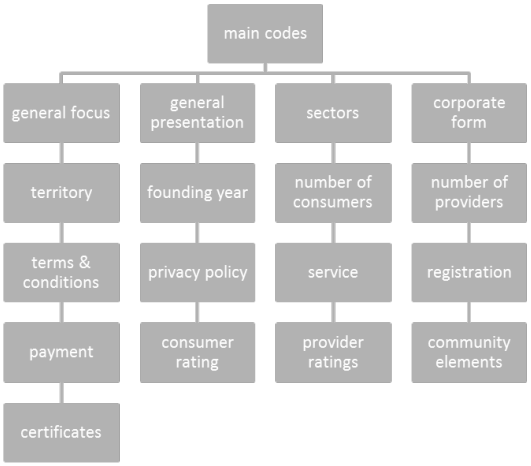

Figure 36: The 17 Main Coding Themes

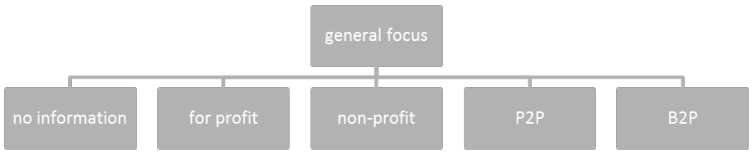

Figure 37: The 5 Subthemes of the Code «General Focus»

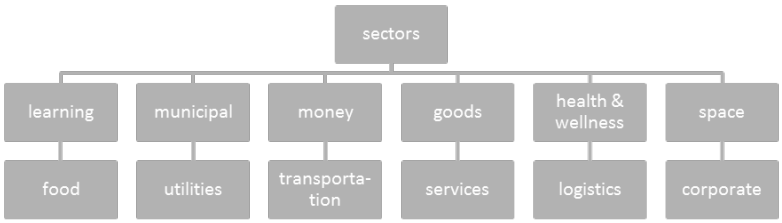

Figure 38: The 12 Subthemes of the Code «Sectors»

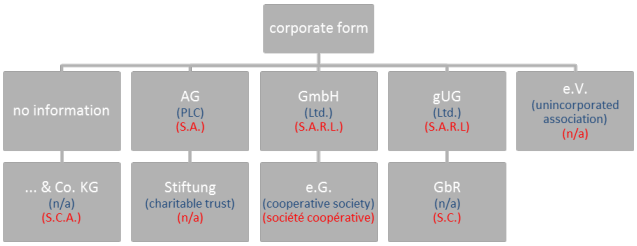

Figure 39: The 9 Subthemes of the Code «Corporate Form»

Closest ***British*** and ***French*** counterparts to German corporate form.

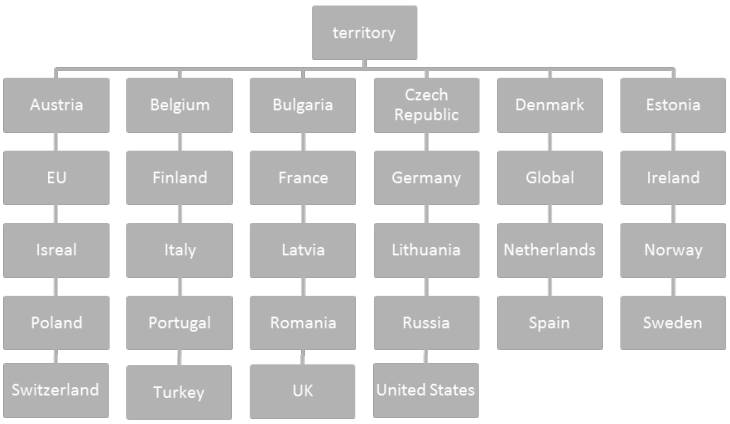

Figure 40: The 28 Subthemes of the Code «Territory»

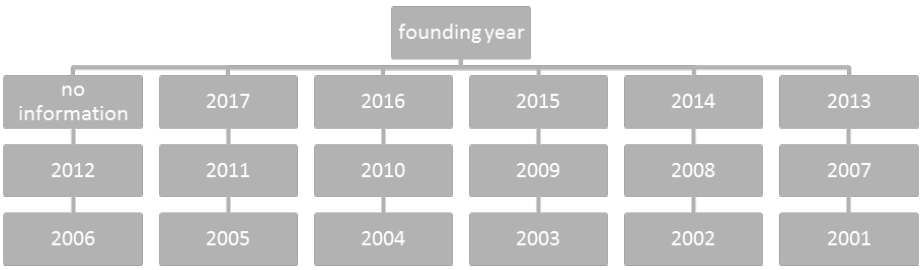

Figure 41: The 18 Subthemes of the Code «Founding Year»

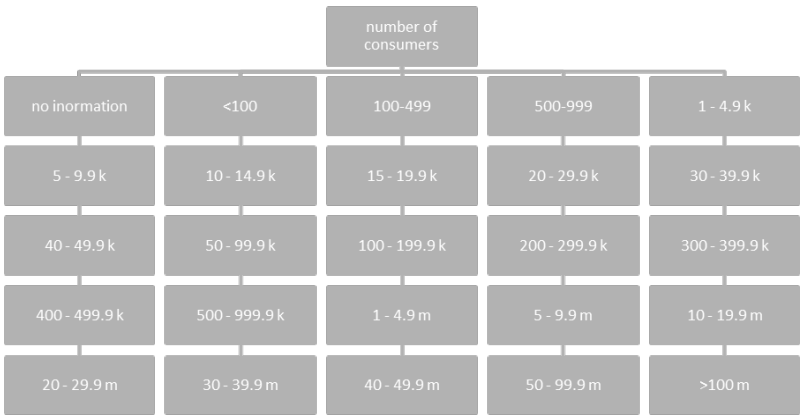

Figure 42: The 25 Subthemes of the Code «Numbers of Consumers»

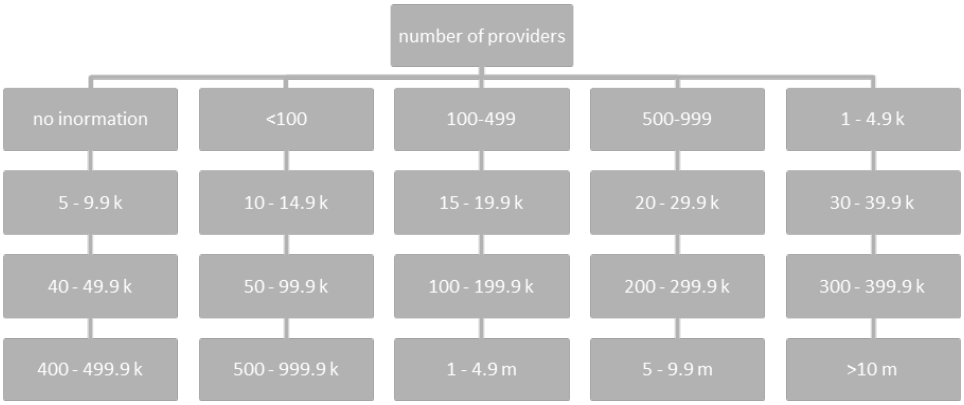

Figure 43: The 20 Subthemes of the Code «Number of Providers»

Figure 44: The Subthemes of the Codes «Terms & Conditions» and «Privacy Policy»

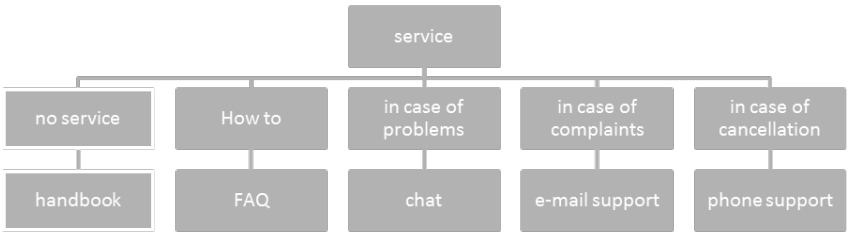

Figure 45: The 10 Subthemes of the Code «Service»

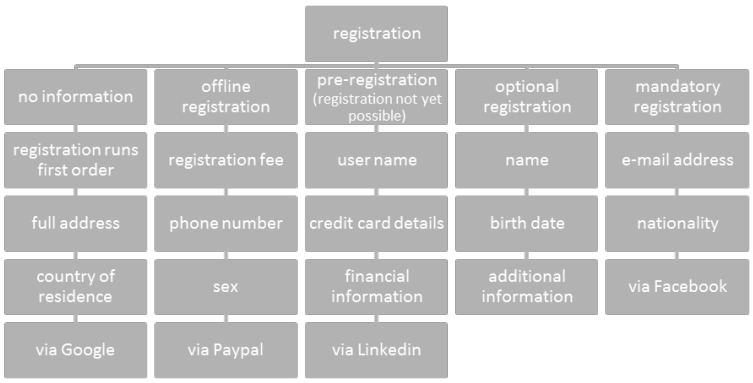

Figure 46: The 23 Subthemes of the Code «Registration»

Figure 47: The 5 Subthemes of the Code «Consumer Rating»

Figure 48: The 12 Subthemes of the Code «Provider Rating»

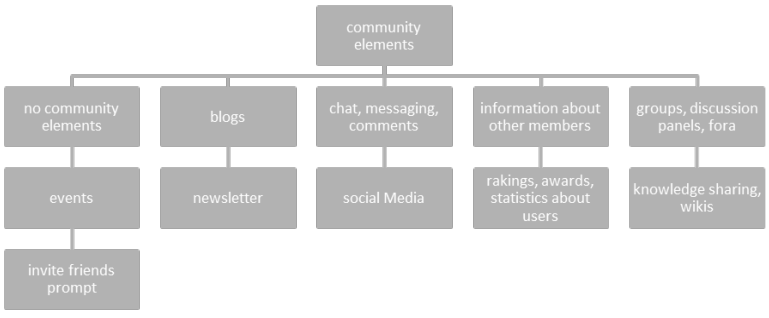

Figure 49: The 11 Subthemes of the Code «Community Elements»

Appendix IV – Kappa values

Code	Kappa 1	Kappa 2
Code 1 General Focus	0.748	0.829
Code 2 General Presentation	0.904	0.978
Code 3 Territorial Range of Activities	0.759	0.783
Code 4 Sectors	0.920	1.000
Code 5 Commercial	0.712	0.812
Code 6 Payment	0.544	0.679
Code 7 Terms and Conditions	0.848	1.000
Code 8 Privacy Policy	0.880	1.000
Code 9 Number of Users	0.866	1.000
Code 10 Number of Providers	0.829	1.000
Code 11 Registration	0.570	0.818
Code 12 Rating Demand	0.738	0.758
Code 13 Rating Providers	0.756	0.880
Code 14 Certificates	0.805	0.919
Code 15 Service	0.664	0.696
Code 16 Community	0.673	0.673

kappa < 0 = „poor agreement 0.21 – 0.40 = „fair agreement“ 0.61 – 0.80 = „substantial agreement“

0 – 0.20 = „slight agreement“ 0.41 – 0.60 = „moderate agreement“ 0.81 – 1.00 = „almost perfect agreement“