3-5-2015

The Law: The Boon and Bane of IT-enabled Peer-to-Peer Sharing and Collaborative Consumption Services

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Abstract. IT-enabled peer-to-peer (P2P) sharing and collaborative consumption services (SCCS) allow private persons to provide access for others to their cars, accommodation and other physical assets. Together they constitute the so called Share Economy. These services often operate in a legal gray area. The relationship between the law and SCCS is bidirectional. On the one hand, the development of new SCCS offerings has to comply with a broad body of existing regulations. On the other hand, new P2P SCCS businesses often discover legislative loopholes, thereby forcing the law to react. This article conceptualizes the complex relationship between the law and IT-enabled P2P SCCS by means of a framework. The applicability of the framework is demonstrated by analyzing a specific SCCS in the electric vehicle charging infrastructure domain. The framework should constitute an effective tool in the design of new and legal P2P SCCS offerings.

Keywords: service, peer-to-peer, sharing and collaborative consumption, law, relationship, share economy

1 Peer-to-Peer Services in a Uncertain Legal Environment

In the last decade, business ecosystems that facilitate access to otherwise idle physical assets owned by private persons via Internet platforms have emerged and proliferated. We refer to them as "peer-to-peer (P2P) sharing and collaborative consumption services" (SCCS) [1, 2]. Early SCCS platforms received great interest inform the general public, causing an initial 'buzz' regarding the potential benefits of the idea [3, 4], including claims of it being a "world-changing status" [5]. Several players have been able to establish viable and profitable business models since then. The range of assets shared via such platforms is wide, ranging from joint access to cars (Lyft) and ac-

12th International Conference on Wirtschaftsinformatik,
March 4-6 2015, Osnabrück, Germany

Chasin, F.; Matzner, M.; Löchte, M.; Wiget, V.; Becker, J. (2015): The Law: The Boon and Bane of IT-enabled Peer-to-Peer Sharing and Collaborative Consumption Services, in: Thomas. O.; Teuteberg, F. (Hrsg.): Proceedings der 12. Internationalen Tagung Wirtschaftsinformatik (WI 2015), Osnabrück, S. 332-347

commodation (Airbnb) or sharing of food (LeftoverSwap) and clothes (Share Closet). What all the SCCS have in common is that they operate in a legal gray area.

The Uber.com platform offers a smartphone app that enables passengers to request a taxi service from private drivers. The traditional taxi companies and professional drivers have perceived the new service as an open provocation and threat to their very existence. London's taxi drivers initiated a word-wide storm of protest, claiming that their own strict market regulations also need to apply to the Uber drivers [6]. These regulations require cabbies to have a credit card reader installed in the car, pass a city-mandated English proficiency exam and a written test on local geography, have liability insurance, an annual criminal background check, yearly vehicle inspections and a mandatory physical exam, to mention but a few [7]. In stark contrast the Uber driver just provides the ride.

This example demonstrates the significant tensions within the relationship between the law and P2P SCCS. This tension prevails in-both directions, from the law to SCCS and from SCCS to the law. In the first direction, regulations and authorities may influence businesses that often need to operate in a legal limbo. The media have discussed the phenomenon intensively and beyond the Uber case [8, 9], for instance related to platforms for publicly sharing private accommodation [10], private Wi-Fi [11] and private cars [12, 13]. The judiciary and executive authorities were required to react to the SCCS phenomenon, and their responses tended to be restrictive on the activities of the various providers and users. The need to protect citizens [7] and to avoid tax losses through undeclared revenues [14] were offered as arguments for opposing and constraining emerging P2P practices. Local governments issued fines and ordered platforms to stop operations [12]. For instance, a New York judge's decision that offering a private taxi service without a license is illegal, led to the immediate shutdown of the P2P car rental service SideCar [15]. With regard to the second direction, SCCS challenge authorities, because they require new or modified regulations, and accordingly the lack of prevailing market regulation creates a pressing need for new legislation. For instance, the Colorado State [16, 17] in the USA was only recently one of the first to sign a legal proposal subjecting SCCS to the state's regulations.

Against this backdrop, many Information Systems (IS) researchers, in the context of the emerging field of Service Science Management and Engineering (SSME) [18], are striving to develop and evaluate IT artifacts for the service economy. We argue that the described tensions pose challenges for the design and operation of IT, and that a systematic approach to capturing the legal environment surrounding a particular P2P SCCS will improve the design of IT artifacts for service systems of this kind. An improved understanding of the tensions will help prevent service failure and termination, due to legal issues. Furthermore, actions will be encouraged from platform operators to help the platforms' peer suppliers avoid legal complications resulting from their use of the service platforms. Conversely, from the legal perspective, a greater understanding is needed by the various players as to how the relevant laws should be modified and extended locally and internationally, as thy are not appropriate in their current form for the regulation of P2P SCCS [14, 19]. However, conceptualizations for describing this multifaceted relationship are lacking. Therefore, the present paper answers the following question: *How can the mutual influence of law and P2P SCCS*

be conceptualized in order to provide an instrument for improving the design of new services?

The contribution of this paper lies in the development of a framework for studying the mutual influence of P2P SCCS and the law for a specific business. It builds on previous work from Knackstedt et al. [20]. We demonstrate the framework's application in an analysis of a specific P2P SCCS, in which an IT-solution enables private people to provide public access to their own electric vehicle charging stations.

This paper proceeds as follows. Section 2 provides research background on P2P SCCS and on related legal challenges. Section 3 describes our methodology. Section 4 explains the initial and the adapted framework. Section 5 demonstrates the application of our framework. Section 6 discusses the research results, limitations, and direction for future research. Section 7 contains some conclusions.

2 Research Background and Related Work

2.1 Services

Service Science was a highly active research area within the IS community in recent years. Service Science Management and Engineering (SSME) is the design-oriented, "normative" [18], sub-discipline of Service Science, which maintains a particular focus on designing and delivering services in service systems.

Service is defined as the application of specialized competences, through deeds, processes, and performances for the benefit of another entity or the entity itself [18]. The service system is a dynamic configuration of resources, including people, organizations, shared information, and technology, all connected internally and externally to other service systems through value propositions [18]. Accordingly, building and evaluating IT artifacts of utility for the service economy is an important aspect of SSME [21]. Below we consider a specific type of such service systems.

2.2 P2P Sharing and Collaborative Consumption Services

IT-enabled peer-to-peer sharing and collaborative consumption services are services that are based on a subset of consumer practices, in which a) mere access is preferred to ownership and a function instead of the product itself that enables this function [22–26], b) the owner of the resource is a private person [27–32] and c) environmentally driven resource utilization [33–35] [36–38] is an underlying paradigm.

Although different and often incompatible definitions of sharing and collaborative consumption prevail in public and academic discourse [39–42], both can be seen as two subsets of access-based consumption [26]. Both phenomena represent a shift in consumer behavior towards alternative forms of consumption for reasons such as the prospect of financial benefits [26, 43], confronting overconsumption [40, 44] and addressing the degradation of the natural environment [45, 46]. However, they are different with regard to whether or not there is financial compensation involved in the provision of access to a privately owned resource. Sharing forms a qualitative rela-

tionship between involved peers, does not involve money [47, 48] and is associated with values such as "equality, mutuality, honesty, openness, empathy, and an ethic of care" [42]. Therefore, it must be distinguished from pseudo-sharing [49] such as traditional car sharing, which typically involves monetary compensation for the mobility service. Collaborative consumption, on the other hand, forms a quantitative relationship between participants through monetary or any other quantitative compensations [26, 40, 50]. In the case of IT-based P2P SCCS, the technology plays an enabling role, facilitating communication and transactions between peers that would otherwise be impossible [1, 2, 51].

While there is a significant body of research on sharing of digital goods [52–55], IS research is silent with regard to the sharing and collaborative consumption of tangible assets. This is especially true for its peer-to-peer-based subset in which conceptualizations and calls for further research are still in their infancy [31, 56].

2.3 P2P SCC Services and Law – Related Work

Given the lack of research on P2P SCCS itself, the mutual influence of law and P2P SCC services has not yet been the focus of Information Systems research. The legal challenges associated with P2P SCCS are mentioned in passing, if at all [40, 57–60]. This is different for the legal domain, where researchers and practitioners have indeed acknowledged the challenges posed by P2P SCCS to the law and called for the legal loopholes to be closed [41, 61–65]. However, the legal perspective on the issue is one-sided and does not address the implications for the design and operation of P2P SCC services as such. This creates the research gap that we address in this work.

3 Research Design

The research comprises two phases, namely the framework development (described in Section 4) and the framework application (Section 5). In the first phase, we build on the existing framework for the mutual influence of law and IS [20, 66] and adapt it in order to capture the specifics of P2P SCCS. Existing SCCS conceptualizations and descriptions of legal tensions in the extant literature inform this step.

In the second phase, we demonstrate the value of the framework for our purposes, by applying it in a real-world P2P SCCS case. Fig. 1 depicts our approach. First, over the period from December 2013 to June 2014, a team of researchers from industry and universities (Table 1) *identified* legal issues related to the business model (Table 2). We used the framework as an analytical "lens", while collecting data through interviews with legal experts, workshops and expert panels, as well as from the related academic literature and through law reviews. The identified issues were *refined* jointly by a team of two researchers to the level of single influence effects imposed by the law or the P2P SCCS on its opposing party. Finally, we *merged* common aspects into groups and *mapped* them into to the framework.

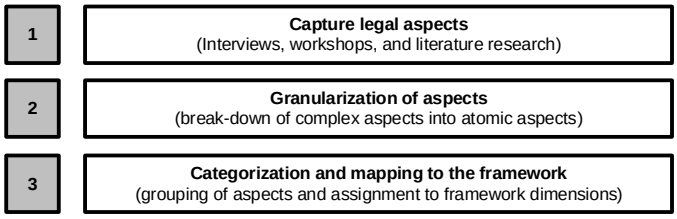

Fig. 1. Steps in the framework application

Table 1. Involved researchers from industry and universities

Participant	*Role*	*Background*
1	Project manager at energy supplier	IT Management
2	Technician at energy supplier	Test Management
3-4	Researchers	Marketing
5-7	Researcher	IS
8	Project manager at energy supplier	IT Management
9-10	Lawyers	Energy supply
11	Lawyer and Researcher	Electric mobility
12	Lawyer	Energy supply
13	Lawyer	Public law
14	Researcher	Energy law
15-19	Domain experts at energy supplier	IT Management, taxation, real estate
20	Researcher	Public law, IT law
21	Domain expert at energy supplier	Data protection

Table 2. Sequence of meetings executed

Label	*Date*	*Participants*	*Main focus*
Workshop 1	2013-12-11	1- 7	Initial identification of problem areas
Workshop 2	2014-06-30	2, 6, 7, 8	Identification of fields for framework
Workshop 3	2014-09-03	8,9, 12, 15	Core requirements by energy law
Expert consultations (EC) 1 - 5	2014-02–2014-06	8, 9	Energy law: customer unit, energy supply net, private and public charging spots; Insurance law
EC 6	2014-07-01	2, 8, 19	Tax law/ trade law: peer providers
EC 7 - 9	2014-07–2014-09	8, 9, 10	European law, tax trade law, contract law
EC 10 - 11	2014-09 –2014-11	8, 11	Energy law: role of intermediary
EC 12	2014-09-09	12, 13	Rights of neighbors, right of way, administrative law
EC 13	2014-05-26	8, 14	Energy system sui generis
EC 14	2014-05-13	8, 16	Business registration peer providers
EC 15	2014-04-17	8, 17, 18	Right of way, entries land register
EC 16	2014-08-25	8, 31	Data protection, right to information
Discussion	2014-03-26	3, 7, 8, 20	Data protection, right to information

4 Mutual Influence of Law and P2P SCC Services

4.1 Initial Framework

By means of a systematic and rigorous literature review, Knackstedt et al. [20, 66] developed a framework that uses an IS research perspective to study the reciprocal influence between IS and the law. Fig. 2 contains a diagram of the framework.

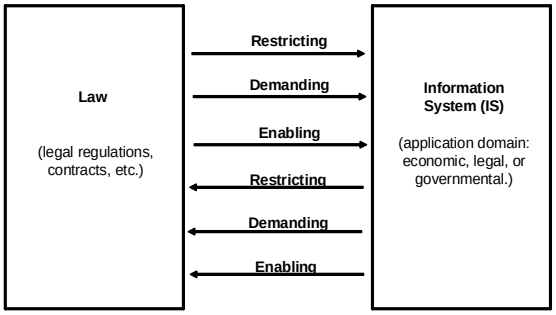

Fig. 2. Framework for depicting the mutual influence of IS and law [20]

It comprises the two dimensions of *perceived influence direction* and *perceived influence impact* (we excluded the dimension "influence character" that is used in the original publication). *Perceived influence direction* can assume the following attributes: '*Law influences IS'*, '*IS influences law*' and '*mutual influence*' (represented by the direction of the arrows). This means that either the law is perceived as given and IS has to adopt the given legal environment (Law → IS) or, vice versa, that IS force a modification of the law (IS → Law). If both are the case, a "mutual influence" [66, p.6] between the law and IS prevails (Law ↔ IS).

The dimension *perceived influence impact* further characterizes each influence in terms of one of three different influence types: *restricting*, *demanding* and *enabling* (annotated next to arrows). Firstly, in case of a *restricting* impact, a certain behavior is constrained or prohibited. Both law and IS can exercise a restrictive influence on each other. For instance, data protection requirements restrict the design of IS. Likewise, technological aspects may restrict the scope of a regulation, such as in the case of a German regulation on obligatory TV and radio license fees on an individual basis. Specifically, the authorities modified the regulation because it was impossible for them to control every desktop device for its capability to receive a television signal. Secondly, both the law and IS may *enable* certain design options of the counterpart. For instance, the contract law is an enabler for setting up legally binding relationships within a particular IS. From the law perspective, certain IS may offer technologies that improve or innovate legal operations. Thirdly, both the law and IS could in principle *demand* actions from the opposing side. In the previous discussion of SCCS business, we outlined several examples of businesses operating in a legal limbo with subsequent demand for both IS (to comply with existing regulations) and for the law (to create new or revise old regulations).

4.2 Adapted Framework

We adapted the framework of Knackstedt et al. for our purposes. Notably, we made modifications to account for two specifics of P2P SCCS, namely the existence of two different service provider roles (the intermediary and the peer supplier) (S1), and in order to separate the influences of law and IS that are specific to the shared resource type, from those influences that are resource-independent (S2). Fig. 3 exhibits the adapted framework. Notably, when we talk about SCCS, we mean services that are delivered by peer-suppliers to peer-consumers through intermediaries. This delivery is enabled by IT supporting the activities required for the service to be delivered.

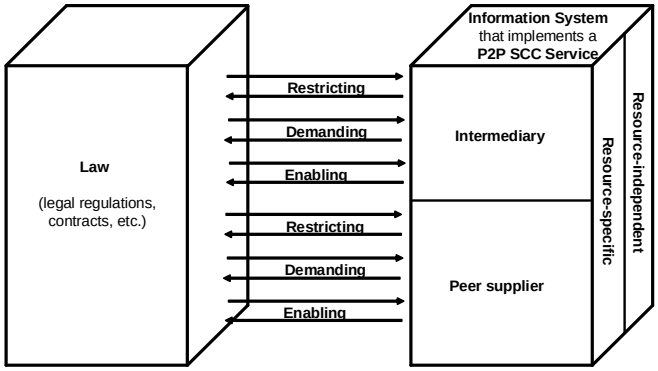

Fig. 3. Framework for depicting the mutual influence of law and P2P SCCS

S1. To distinguish the peer providers from the intermediary. IT-enabled peer-to-peer sharing and collaborative consumption services represent a special case of an Information System. As we have already outlined, one of the most important features of a P2P SCCS is that the resource owner is a private person [31, 43]. Accordingly, actors in P2P SCCS can take the roles of peer suppliers and of the intermediary, the latter representing the platform provider. Against this backdrop, the relationship between the law and IS in a P2P SCCS scenario can be refined into the relationships between the law and the role of the intermediary and the relationship between the law and the role of the peer suppliers. For example, the relationship of the Uber smartphone app provider with the law is different from the relationship of the law and the drivers as peer suppliers. Platforms such as Airbnb explicitly state that their customers who provide private accommodations for the public are independent from the platform in their legal obligations [68].

S2. To separate resource-specific and resource-independent aspects. The second characteristic of P2P SCCS is that certain aspects of the relationship between the law and IS are linked to the actual resource that is shared (such as accommodation or cars), while others are not. We refer to the first group of aspects as "resource-specific" and the second as "resource-independent". For example, by offering access to resources, private persons as peer suppliers may turn into business entities and therefore be subject to regulations typically applied to businesses, regardless of the

type of the shared resource. At the same time, peer suppliers may violate terms and conditions of building insurances – an aspect that is specific to sharing accommodation.

5 Framework Application: Designing a P2P SCCS for Electric Vehicle Charging

5.1 Project Setting

In Germany, the Federal Government announced a policy goal of putting one million electric vehicles on the country's roads by 2020 [69]. According to the experts of the German National Platform for Electric Mobility (NPE), a total of 950,000 public and non-public charging points would be needed by 2020, in order to achieve a sufficient nation-wide charging infrastructure [70]. Obviously, implementing a charging infrastructure on such a scale requires colossal investments. Given the currently small number of electric vehicle owners, these investments imply a high risk for potential investors. A typical "chicken-and-egg situation" occurs, with potential users waiting for the infrastructure and investors waiting for a substantial number of electric vehicles to be on the roads.

The development of the framework was part of CrowdStrom – a large publicly funded research project. CrowdStrom aims at designing and implementing an innovative P2P SCCS business model in order to resolve this dilemma. The project aims to empower the many owners of small and private charging points for electric vehicles to make their assets available to public users. This would result in a lower need for central investment, and the CrowdStrom network would extend rapidly while the number of electric vehicles grows. Notably, CrowdStrom will develop an Internet-based platform in order to network the peer suppliers, their charging stations and the CrowdStrom customers. This platform will provide services such as authentication and payment in the near feature.

In the process of designing this innovative P2P SCCS according to the law, we systematically assessed the legal environment, for the reasons described earlier. We structured the analytical process in the following way (Fig. 4). First, a list of legal questions and uncertainties was prepared, based on our naïve understanding of the problem domain (Step 1). We then further structured and categorized our questions in order to identify the relevant fields of law relating to these issues (2). We subsequently reviewed the literature in the identified fields of law, so as to obtain an overview of the legal situation and to estimate the potential impact on the CrowdStrom SCCS (3). We discussed the findings of this review with experts from the various identified legal fields (from both academics and businesspeople) in order to identify the most relevant aspects (see again Table 2 for an exhaustive list) (4). Throughout this process, we identified further legal issues, which we then added to the list and to the discussions. Finally, we documented all the identified issues in a report (5).

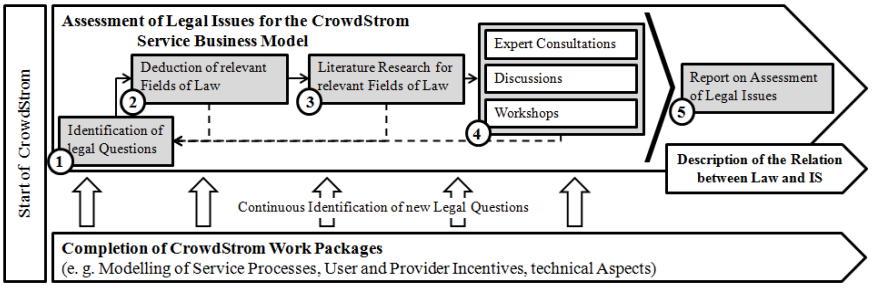

Fig. 4. Process of assessing legal issues related to CrowdStrom

In order to describe the relationship between the law and the P2P SCCS CrowdStrom, we used the information from the report to derive a consolidated list of granular legal aspects within the framework. This corresponds to the second step in our methodological approach (cf. Sec. 3). In the following, we present the application of the "framework for depicting the mutual influence between law and P2P SCCS" to the relationship between law and the CrowdStrom P2P SCCS.

5.2 Resource-specific Aspects of the Relationship

The major influence of the CrowdStrom intermediary on the law is of the type demanding. More precisely, the intermediary *demands* a clarification of the general legal conditions that are applied to the electric vehicle sector, in order to comply with the law in the context of its operations. Furthermore, the intermediary *demands* clarification of the requirements for operating a private charging station. While there are technical standards for public charging stations, as yet, there are none for private offerings. Due to the specifics of the scenario, there were no cases identified in which an intermediary *restricted* the law or where the intermediary *enabled* legal actions.

Likewise, the major influence of the CrowdStrom peer suppliers on the law also have a demanding character. The peer suppliers *demand* legal regulation of the status of a private charging point. The classification of private charging stations in terms of the German energy law is unclear at present. It is conceivable that they fall either into the class of customer units or into the class of energy supply nets, although neither conforms perfectly to the CrowdStrom case. This is because the German energy law aims at regulating the very large energy supplying companies and networks operators. Consequently, it does not explicitly address entities that offer energy supply on small scale to single end users. Thus, the peer suppliers *demand* adaptations of the law in order to clarify their legal situation. For the same reasons, the peer supplier *demand* legal clarification of insurance issues for commercial, private charging points.

The influence of the law on the intermediary is mainly *demanding* and *enabling*. The law *demands* compliance with the product safety act from the intermediary and the 'CE mark' be assigned to the charging stations. The intermediary has to ensure the application of these standards within the entire system. The law further *demands* a guarantee that all the charging station are used in the way intended by the products'

engineers and for the intermediary to provide the necessary operating resources and measuring equipment. Apart from this, the law *enables* the intermediary to operate its business by securing the right to use third party property. The intermediary can enter liabilities in the land charge register in order to minimize the risk of operating assets on property owned by a third party. Additionally, the law *enables* the intermediary to develop an online application to promote its offer without being liable for the content.

The influence from the law to the peer suppliers includes demanding, restricting and enabling relationships. The commercial law *demands* four characteristics for a consumer unit, namely spatial coherence, connection to an energy supply net, no serious violation of competition regulations, and installation free of charge. If peer suppliers together fulfill these requirements, the law *enables* the operators of customer units to neglect certain regulations that apply only to larger companies. Although the CrowdStrom charging points do not fall into the category of a customer unit, because they are not free of charge, they have to comply with the energy law if classified as energy supply networks. In this case, the German energy law *demands* compliance with certain principles including security of supply, low cost, convenience, sustainability and efficiency. Furthermore, the law *restricts* the freedom of an electricity net operator to deny access to its electricity network to an electricity supplier (discrimination policy). Yet, by this means, the law *enables* energy suppliers to claim network access from (other) energy net operators. Nevertheless, the status of a CrowdStrom charging point as an energy supply network is not evident, because the German energy law aims at regulating larger companies and not private persons.

The law *enables* an easier handling of the discrimination policy, by stating that discrimination must not occur within a spatially coherent group of assets. Thus, one charging point can have one fixed supplier, while another company could supply a different charging point in the neighborhood, allowing latitude for competition. Further, if electricity supply is a secondary service the law does not classify the company as electric provider – such as a camping place that allows its customers to use its electricity connections for a fixed price per camping slot. Analogously, if the charging of an electric vehicle is a secondary service, while parking is the primary service, the law can waive the obligation of peer suppliers to comply with the energy law.

5.3 Resource-independent Aspects of the Relationship

The resource independent relationships between the law and the CrowdStrom intermediary, as well as between the law and the CrowdStrom peer suppliers are of an essentially routine nature, for they do not cover the exceptional case of private charging infrastructure. Neither intermediaries nor peer suppliers *demand* any new legal regulations, but are influenced by the existing laws. Accordingly, the commercial law *demands* sustainable behavior, the aim of making a profit, and participation in the overall economic traffic from a commercial business operator. If one of these factors is absent, an intermediary or a peer supplier cannot operate a business in accordance with the law. Yet if all the requirements are met, the law *enables* the intermediary and the peer suppliers to claim the status of a business operator, which gives them both benefits and obligations. For instance, with regard to the law of taxation, the law *de-*

mands (requires) the intermediary and commercial peers to satisfy certain obligations: I) declare type of income to the financial authorities, II) entrepreneurship, III) calculation of profit and loss, IV) accounting records. At the same time, the taxation law relieves the commercial peer supplier of the duty to pay sales taxes, if earnings do not exceed an annual limit of 17,500 Euro, and the law exempts them from paying commercial taxes up to an annual limit of 24,500 Euro. With reference to domiciliary rights, the law *enables* the peer supplier to implement his right to deny access to the charging station for users who fail to comply with his own house rules.

The law allows for a contractual prohibition on the reselling of electricity received via a private electricity contract. As a consequence, it *restricts* the actions of the intermediary (and the peer supplier), since every peer supplier needs to have the right to resell the electricity received. The data protection act *enables* the intermediary to act as a data processing agent. Consequentially, the intermediary may perform support activities, such as data processing, without the need to be included as an official party of the contracts made between peer supplier and users of the charging infrastructure.

6 Discussion

6.1 Contribution

This paper addresses the precarious relationship between the law and peer-to-peer sharing and collaborative consumption services. We have extended an existing framework for the study of the relationship between the law and IS, by augmenting it with concepts from the field of P2P SCC. More specifically, we differentiated the roles of the intermediary and the peer suppliers, and we separated issues that are specific to the shared resource from the issues that are not.

We believe that this paper contributes meaningfully to service research in the IS community, because it is one of the few articles to consider the general phenomenon of a shift in the consumer behavior towards sharing and collaborative consumption, and it assists in the actual development of P2P SCC services. While the extant IS literature emphasizes the impact of the legal environment in developing effective IT artifacts for immediate utility, our summary of the current public debate on legal premises and effects in the P2P SCCS context emphasizes that the topic has a particular high momentum in this field. To this end, the presented framework offers a conceptualization of the mutual influence of law and P2P SCCS that should help other researchers to study different P2P SCCS settings or to develop and evaluate innovative useful IT artifacts for sharing and collaborative consumption businesses.

Furthermore, by focusing on the dyad of law and P2P SCCS and the reciprocal effects between the two, this work is a call for interdisciplinary service research. While we concede that we do not oversee the related research in jurisprudence fully, we argue that the framework could be a useful tool for researchers in this field. For instance, we envision the application of the framework in several P2P SCCS scenarios and an analysis of the resource-independent issues impacting on the relationship across these scenarios. Such a study is likely to shed light on needs for new regula-

tions or for modifying existing regulations related to P2P SCCS, including issues relating to tax law, liability law, and corporate law. We acknowledge that such findings will always be bound to a specific judicial area.

The results presented in this paper yield further practical recommendations. We have explained that disregarding the legal environment of a P2P SCCS may jeopardize the continued existence of the business, and by means of public press reports, we have demonstrated that businesses in fact often fail for that very reason. In this vein, the presented framework aims at assisting managers in the design phase of new P2P SCCS offerings, because the framework is a means of making them aware of possible areas of conflict, so that, at an early stage, they can develop strategies for avoiding legal problems. The framework enables IT managers to conduct systematic analysis of law aspects related to any design choices occurring in the development of an innovative business model. Being applied at this early stage, it allows problem fields to be identified and critical aspects to be captured, both of which can become subjects of subsequent in-depth analyses by the legal experts. Because the framework distinguishes between issues related to the intermediary from those related to the peer-suppliers, the work may also encourage managers to carefully consider the situation of their peer-suppliers. This may lead to strategies that limit peer-supplier liability.

6.2 Research Limitations

This study and the presented results are subject to some limitations, which in turn suggest opportunities for future research. The development and application of the present framework was organized by IS researchers. Thus, the framework focuses the IS perspective on the relationship of law and P2P SCCS, thereby informing the design and evaluation of IT artifacts for a growing part of the economies that is based on sharing and collaborative consumption. Accordingly, it is very likely that researchers with a legal background would have a focus. Nevertheless, we regard the framework to be a promising starting point for stimulating further debate among the related disciplines, on topics and research approaches relevant to promoting our understanding of the interrelations between law and P2P SCCS. We have demonstrated the application of the framework in the context of one specific real-word P2P SCCS, and it proved to be of immediate use for our purposes. However, this is obviously just an initial indication of the general utility of the framework. Future studies therefore might directly take up the framework and test its application in other contexts, in order to increase external validity, or develop experiments to test its ease of use.

7 Conclusion

After some initial hype, several peer-to-peer sharing and collaborative consumption services (P2P SCCS) have been able to establish viable and profitable business models, in which private individuals provide public access to their physical assets, such as cars and accommodation. However, P2P SCCS often act in legal gray areas, because regulations are lacking or difficult to interpret in their context, resulting in a mutual

influence between the law and P2P SCCS. The aim of this paper was to conceptualize this reciprocal influence. Accordingly, we developed a framework based on extant work in order to provide an instrument for improving the design of new P2P SCCS. The framework includes the dimensions "influence direction" and "influence impact", and it further distinguishes between two provider roles – the intermediary and the peer-suppliers. Furthermore, it separates issues related to the shared resource from resource-independent issues. Some initial evidence from the application in an electric vehicle-charging scenario indicates that the framework is a useful instrument to improve the design of new P2P SCC services, because it enabled us to explore the reciprocal effects of law and IT in the complex problem domain electric vehicle charging and make design choices compliant with the German law.

Acknowledgement

This paper has been written in the context of the research project CrowdStrom. The project is founded by the German Federal Ministry of Education and Research (BMBF), promotion sign 01FK13019. We thank the project management agency German Aerospace Center (PT-DLR).

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