Extending Digital Platform Governance with Legal Context

Completed Research

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Abstract

While technological innovations are being introduced to different domains and markets, societal debates about this technology-driven attitude continue to grow. Digital platforms that connect content providers and users are in the focus of this debate, since some of them emerge on previously restricted markets breaking up or ignoring existent structures. This process is often accompanied by legal and sometimes moral uncertainty. To create socially and technically sustainable artifacts, it is crucial to consider legal and social aspects as early as in the artifact design phase. In this paper, the complex relationships between the platform actors are externalized as a role model and their legal dimension is explored and specified. It discusses the legal and ethical aspects of setting up a nonprofit information platform on the topic of electricity and mobility. In addition, this research lays out which concepts practitioners need to consider when designing and governing platform ecosystems.

Keywords

Digital infrastructures, digital platforms, governance, legal aspects.

Introduction

Digital platforms are playing an increasingly important role in the economy by enabling new entrants, including nonprofessional operators, to offer content, goods, services or capital to the users of the platform. By facilitating the match between numerous suppliers and users, platforms support market exchanges and create new market opportunities. This approach often has an alienating effect on existing markets and regulations, by e.g. constituting challenges for the existing laws. Moreover, they generate many legal disputes, especially when they operate at the margin of the existing laws and raise specific regulatory issues (Strowel and Vergote 2016). Hence, digital platforms are already subject to existing legal rules, such as in the European Union (EU), in areas such as competition, consumer protection, protection of personal data as well as single market freedoms that are essential to create a level playing field (Wiewiórowska-Domagalska 2017). These considerations are also crucial to ensure that their users are treated fairly to create and maintain a thriving ecosystem (Manner et al. 2013a). Nevertheless, the question from the Information System Research (ISR) point view remains focused on how and when these rules need to be implemented into the platform design.

In this paper, we argue that legal aspects that are addressing the legal compliance and legal issues in the platform-stakeholder relationships are part of the platform governance and as such of the platform design. Understanding these issues is crucial for the durability of the platform as a business model as well as an ecosystem. Here we show that the platform provider has the most extensive legal relationships with the different roles on the platform. As research projects in Design Science Research can involve platform design, operation or governance, it is crucial that the legal relations are clear in the design phase. It is therefore suggested that the presented role and legal obligation structures are integrated as a part of the platform design process to allow compliant and socially accepted artifacts. The roles and their legal
relations suggested here are then outlined using a nonprofit information platform for electricity and mobility that is being created and operated in the context of a research project (Levina 2017).

In this research, we will focus on the specific type of the digital platform, the nonprofit information platform. The specific aspect here is that information platforms do not have the same business model or goals as platform types that seek to change market structures by acting as an intermediary in an existing market. In our case, the content aggregation does not pursue any economic goals as it is part of a research project. The question under analysis here is, what relational structure between the platform actors exists, and how are these relations formalized in a binding or legal way. Although, we consider the legal environment for German nonprofit information platforms, the provided framework can be potentially used to be mapped to other countries. Thus, we derive a role structure of a digital information platform and analyze its governance under the lens of legal requirements. Therefore, this research addresses the governance aspects of digital platform design and provides a common ground for IS researchers and practitioners alike to position and design their artifact.

The purpose of this paper is to discuss the legal and ethical aspects of setting up a nonprofit information platform on the topic of electricity and mobility. The contribution of this research is therefore twofold. First, we provide intradisciplinary approach to a complex topic such as governance of the digital platforms. This approach allows a general view on the object of analysis that can be used as a framework for role-based security approaches as well as legal definitions. Furthermore, we enrich the Information Systems Research body of knowledge by a legal analysis that provides access points for artifact and interface designers. Therefore, the results are aimed at the research but also at the practice community. To derive our results, we rely on the method mix based on research of Information Systems (IS) literature for digital platform design and governance, as well as legal research on this topic. Since digital platform has yet to gain a strong place in the legal catalogue, we first conducted a systems analysis to identify the roles within platform design and operation as well as their interrelations. These are then further analyzed towards the need for legal consideration. Subsequently, a review of related legal documents is conducted that were identified as important for the issues at hand. A resulting structure of legal relations is therefore a usable artifact of this research. These results are important in the design and operation stages of the digital artefact. Thus, this research provides environmental-based evidence from technology use to complete the theoretical findings, as following the appeal of (Baskerville et al. 2018) for a better quality of design artifacts.

The paper is structured as follows. First the state of the art in research on platform governance as well as roles involved into interactions within the platform are outlined. We then present the suggested structure of potential legal relationships between the identified roles on a real-life digital platform instantiation. Outlook on future work finish the paper.

**Theoretical Background on Digital Platforms**

Digital platforms are not new to the Information Systems Research (ISR). (Tiwana et al. 2010) argued that digital platforms are a valid and important research topic for ISR. Their view was reinforced by the numerous and rising number of publications on this topic in the ISR community, e.g. (Reuver et al. 2018; Sun et al. 2015). Being a complex area of analysis that includes technical, societal and legal aspects among others, it provides multiple exploration facets for IS researchers. Here, platform design is in the scope of the research. It is argued that the design includes not only the technical part, i.e. the infrastructure as well as the connecting software modules, but goes beyond the governance as a mere rules setting and role definition. It is argued that considering the legal aspects early in the platform design is a mechanism for the platform to protect its core values, while fostering trust, transparency and ensuring fairness in the context of an open market.

Following the research in Information Systems discipline, we consider a platform as a digital marketplace, where digital goods can be exchanged and the relations between the parties are governed according to a certain rule framework. There are different types of platforms that are distinguished in research and practice. Their classification can be based on the content ownership structure or on the provided access to specific resources (Strowel and Vergote 2016). According to this classification, the information platform grants access to general information such as search engines, maps or more creative content (Strowel and Vergote 2016). In this context, the users may also act in the role of suppliers of the content that is
therefore known as user-generated content (UGC). This reversibility of the roles user and contributor, is one of the aspects that makes a closer look at the platform structure necessary.

The ecosystem that is generated by the platform consists of few major components: the digital infrastructure and the governance (Schreieck et al. 2018). The digital infrastructure encompasses the hardware systems, i.e. servers and databases, as well as the code basis that serves for the development and integration of the content presented on the platform. Such a content might be informational services such as widgets or applications, as well as mobile apps. The functional artifacts of a digital platform, also referred to as boundary resources, are connected via different interfaces such as APIs (application programming interfaces) or code documentation (Schreieck, Hakes, et al. 2017). Additionally to these technical connection of the platform elements, platform governance defines the rules and patterns to hold the platform stakeholders together and advance the ecosystem (Manner et al. 2013b). Due to this structure several roles can be distinguished in the platform context: platform owner, platform provider, application or content provider, i.e. contributor, as well as the user of the provided content.

Platforms are often the center of a business ecosystem built around one owner or vendor (Schreieck, Hakes, et al. 2017). The added value is provided by connecting two or more different parties who want to exchange products, services or information. Often, these parties are contributors and customers (Tiwana 2013). To enable value creation, a platform ecosystem needs to be accompanied by control mechanisms (Ghazawneh and Henfridsson 2012; Tiwana 2013). Such mechanisms can be informal, e.g. self-control, or formal, such as input or output control. Another form of control is through the resources that are provided by the platform to its stakeholders, i.e. APIs or tools (Ghazawneh and Henfridsson 2012). Commercial platforms also include pricing as an additional control mechanism (Caillaud and Jullien 2003; Schreieck, Wiesche, et al. 2017). Evidently, on the nonprofit platforms pricing cannot be used to enforce or establish centralized governance. Because nonprofit information platforms are highly dependent on the contributors not only for its reputation, but also as a prerequisite of its existence, they need to establish strong trust relationships with its stakeholders. Hence, adhering to legal compliance is one basic step in this direction. In the following, we will also show that an elaborated governance concept is essential to the formulation of the legal documents such as terms and conditions of use. The most relevant concepts of the platform governance have been identified as being: roles, pricing, boundary resources and openness (Schreieck et al. 2016). In this research, we focus on the roles aspect and analyze which of the identified interrelations have what (legal) consequences. We look at the design of a nonprofit information platform for third-party applications and content that is situated within the domains of mobility and energy in the European, more specifically German, legal context (Levina 2017). Nevertheless, the role structure and the interrelations can be matched to similar nonprofit information platforms. Since the European legislation currently provides a rather narrow framework for digital artifacts, the described legal issues and obligations can act as a baseline for related contexts in the near future.

**Role Structure for a Nonprofit Digital Information Platform**

The reasoning above shows that the definition of roles for the interactions on the platforms is an essential step towards establishing the interaction patterns and therefore the governance and security content. It helps to describe the number of connected sides (Gnyawali et al. 2010), the ownership mode (Bakos and Katsamakas 2008) as well as the power structures and distribution (Bullinger, A., Rass, M., & Moeslein 2012). Based on the cited literature, Figure 1 shows the role and relations structure for the nonprofit information platform under analysis. These are bi-directional relationships, since every actor interacts with the platform by providing to and retrieving information from the platform.

The governance, i.e. orchestration and management, of the platform ecosystem is one of the responsibilities of the platform owner (Tiwana 2013). This role defines the infrastructural control itself, the control mechanism as well as the (technical, legal and cooperation) environment for the contributors. Platform owner and platform provider may or may not be identical. E.g. the Wikipedia platform is owned and supported by the Wikimedia Foundation, a nonprofit organization. The platform owner usually finances the platform, s/he is the owner of the platform IP and can potentially control who can participate in the platform by specifying accessibility requirements.

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Platform provider then has to meet these requirements. Platform provider ensures the technical availability and accessibility of the platform. S/he is responsible for setting up and maintaining the digital infrastructure and the definition of the connections technology between the infrastructure components as well as between the external content and the infrastructure. The governance is also operationalized and enforced by the provider.

The contributor on the platform is a type of user who offers content at the platform. On an information platform it can be any basic service such as a GPS-embedding service, or an application, that is run on the contributor’s premises, or data or a piece of information. The user is an actor that addresses the platform in search for information or specific service.

![Figure 1. Role Structure of a nonprofit information platform](image)

The role structure as shown in Figure 1 and described above can now be used to define the types of interaction and restrictions for the technological infrastructure. It is also relevant for the evaluation of the legal compliance and potential socio-ethical considerations. From a legal perspective, an interesting pattern of the relations arises. There is a so-called triangular relationship between the provider of the platform, the contributor who offers information content, e.g. applications, via the platform and the user of the platform, who on the one hand wants to use the content and services of the platform and on the other hand can also provide new content to the platform. The owner, on the other hand, usually has only a contractual connection with the platform provider (see Figure 2).

In the following an initial overview of the legal relations between these roles is provided in addition to an outlook on the legal aspects that need to be heeded. This outline is supposed to support the platform design in its early stages and not to replace legal advice.

**Legal Relations within the Platform Role Structure**

Based on the basic role structure outlined above, the potential and actual legal obligations and their realizations are presented and discussed. Besides the contractual relationships there are other interaction potentials with the platform, i.e. communication interactions, that are out of focus in this research.

The actual legal obligations are realized as contracts between the roles. Possible legal issues might be valid in cases of a violation of a basic principle such as liability or availability.
Figure 2. Legal relations between the roles on a nonprofit information platform

Figure 2 depicts the (legal) relations between the roles on the platform. Table 1 summarizes the legal documents that are essential to constitute valid legal relations between the roles on the platform as well as the possible legal issues that can appear. Figure 2 illustrates that the platform provider is as expected the main point of legal contact for the parties involved. Nevertheless, since a digital platform is a multi-sided market, the relations between users and contributors need to be considered in more detail by the platform provider as his/her decisions in terms of platform governance, i.e. general decision about the run-time environment of the content, could also influence the legal relations between the contributor and the users.

The exact contractual relationship between the *owner* and the *platform provider* depends on the individual case and thus cannot be specified here.

By posting a certain item like data or an external link on the platform and confirming the publishing option, the legal relationship between the *platform provider* and the *contributor* is regularly concluded. In this relationship, the provider grants admission to the platform, specified by its terms and conditions. Essentially, a (financial) reimbursement could be demanded from the platform provider for this. To limit the liabilities of the platform provider, platform governance could constitute that the contributor is responsible for running the application or service on its premises. Thus, the platform would serve as an intermediary between the contributor and the user of the platform. Accordingly, the contributor is responsible for compliance with the relevant legal framework within the established relation with the user. This relation is initiated, when the provided content or service is accessed by the user. The fact of this new relation should be recognized between the platform provider and the contributor either in the specific contract between the two parties or, more general, in terms and conditions for contributors at the platform. In cases, where the platform is a strict intermediary between the users and contributors, e.g. applications are not run on the platform infrastructure, the general terms of use of the platform, should clarify that liability on the part of the platform provider for the provided extra services is generally excluded, at least for the cases when they have no knowledge of unlawful information or services. However, this also means the provider has to take immediate action to remove illegal information or services to disable access to it as soon as they have become aware of it. Since there is a similar problem in the relationship between platform provider and content providing user, we will explore this issue in the following.

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*Legal context within digital platform governance*
Table 1. A summary of the relationships on the platform and the accompanying legal issues

The most extensive relationship from the legal point of view is the one between the platform provider and the user. Generally, it is often possible for anyone interested to inform themselves passively about the platform without registering and without further ado. But when the user wants to become active, i.e. consume content provided on the platform, s/he usually has to register on the platform and thus create an account with a user name and often a password. This registration triggers the conclusion of a user contract that is specified by general terms and conditions of use.2 The exact mutual rights and obligations depend on the actual design of the terms of use, contract conditions and potentially content policies and guidelines on the platform. In addition, netiquettes can also be developed, which, however, may not be comparably legally binding. The contract and terms of use usually grant the usage of the platform under specific requirements and in return, the user agrees to the use of his or her data for at least the registration progress and may grant licences for uploaded content.

Two important issues should be highlighted here. First, it is important to clarify in the contract or terms of use and conditions the liability for (illegal) content, especially the liability for copyright infringements. In the case of a non-profit information platform, that is not also a running environment, the platform provider acts as an intermediary between the users and contributors by primarily providing the technical infrastructure. In this case it is perceptible, that the content in question is user generated content. However, if a host provider generates its own illegal content on the platform or if it adopts third-party

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2 E.g. Glossner, Münchener Anwaltshandbuch IT-Recht, Rn. 358-360
illegal content as its own, it shall itself be liable for injunctive relief, removal and damages (cf. BGH, 12.11.2009, Az. I ZR 166/07). Also, the platform provider should be aware, that if s/he does not respond to information about legal violations, s/he could still be held liable for injunctive relief. Therefore a procedure should possibly be defined for reporting infringements. Furthermore, the EU Parliament recently (as of February 2019) voted on a new copyright law. The regulations are considered highly controversial. Its Article 13 addresses the liability of Internet platforms for copyright infringements. However, all noncommercial services, online encyclopaedias, platforms in education and science, cloud storage services, open source software development and online marketplaces might get explicitly excluded from the regulation. The final version of the law has not been presented as at the time of writing (February 2019).

Second, the platform provider usually is in charge for the privacy and data policy of the platform. The European General Data Protection Regulation (GDPR) places strict requirements on data protection and data security. This regulation also applies beyond the borders of the EU and therefore requires worldwide compliance. A detailed privacy policy is therefore a mandatory document to be published on the platform, accessible for both users and contributors. Assuming the platform provider is responsible within the meaning of the GDPR, it is subject in particular to information obligations pursuant to Art. 13 and 14 GDPR. The main issue here is the definition of what data is collected, for what purposes and what rights the data subjects have. Also, in order to prevent unauthorized access to or disclosure of these data, to guarantee the accuracy of the data and to ensure the legitimate use of the data, the platform provider must establish appropriate technical and organizational measures, also referred to as TOM (Art. 32 GDPR). In any case of doubt, legal advice should be sought for this purpose.

In case when the user is actually using a provided service, e.g. an embedded app or information service on the platform, a legal relationship arises between the contributor and the user. As mentioned before, it should be made clear in the general terms and conditions of the platform, that this will be another legal relationship, regulated possibly by different terms of use of the contributor.

**Information Platform for Electricity and Mobility**

The described framework will now be applied using the ongoing project of the creation and operation of a nonprofit platform for collection of electricity and mobility content. This is a digital platform that acts as a content intermediary with the goal to combine information applications and services for the electricity and mobility domains, thus providing a marketplace for the accordant actors and a common ground for open innovation of information services. The platform is built and operated under the assumption that providing a digital space for combining the domains of electricity and mobility will benefit the development and sustainability of the resulting information services. The platform is designed to provide governed access and content curation for the users.

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5 Regulation (EU) 2016/679

6 Source (Levina 2017)
Figure 3 Roles and Interactions on the Mobility2Grid- platform (Source(Levina 2017))

Figure 3 shows the roles involved and their possible interaction with the platform. Here the role of the contributor is split into four different entities: data provider, service provider or developer, application (app) developer and application provider. The developer and provider roles on the contributor side can be identical depending on the individual circumstances. The user role is called “app user” here, since the platform is realized as a mobile application. The interactions on the platform are as followed: Data and service providers upload their content on the platform for the application provider to access. While the uploaded data by the data provider are hosted at the platform, the data provider has to confirm that s/he has the right to make the data public. The applications are not running on the platform itself. The platform presents the images or links to the applications, while they are run in software packages, i.e. containers, making the application provider responsible for user’s data protection and thus require their own terms of use. Nevertheless, the contractual obligations are summarized in the terms of use of the platform as well as in platform’s privacy policy, since both the application user as well as the contributor need to register to be able to provide or use content on the platform.

Application and service providers, i.e. contributors, can use the data generated by the user interacting with the application and process them to derive information to enhance the accordant software application, while the platform provider has no access to this user information. Therefore, the contributor needs to announce his/her terms of use and privacy policy as soon as the user starts interacting with the application that has been presented on the platform.

Conclusion and Outlook

Providing socially and legally usable digital artifacts is crucial not only from the product but especially from the research point of view. While the realization of the technical possibilities seems to prevail the current innovation landscape, it is essential that the innovations are integrated and accepted by the society as a whole.

This paper provided insights on how to integrate legal aspects into the design and operation of a digital nonprofit information platform. It was highlighted that the legal issues are an essential part of the platform governance and as such need to be considered early in the design phase. Their implementation can be crucial not only to the success but also to the legitimate existence of the platform. To derive the relevant legal issues the role and interaction structure on the platform was elaborated and presented. Building on the interaction structure, the relevance of each interaction in terms of legal regulation was analyzed and mapped accordingly to the relevant legal documents. Therefore, this work provides important insights for the practitioners that are implementing and operating nonprofit information platforms but also for researchers. This paper demonstrates, that using legal analysis in the context of
design research provides a valuable intradisciplinary approach that is crucial for the creation of usable and sustainable artifacts.

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