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# GOVERNANCE FOR MOBILE SERVICE PLATFORMS: A LITERATURE REVIEW AND RESEARCH AGENDA

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# GOVERNANCE FOR MOBILE SERVICE PLATFORMS: A LITERATURE REVIEW AND RESEARCH AGENDA

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## Abstract

*Mobile service platforms are IT-based marketplaces that have become the source of competitive advantages. Aligning the interests of stakeholders by establishing effective governance mechanisms is central to the success of mobile service platforms. This phenomenon ignites research in many disciplines, which results in a fragmented understanding of mobile service platforms. This paper is a first step towards establishing a comprehensive understanding of the role of governance mechanisms in mobile service platforms. We review the literature and develop a theoretical modular framework which provides an outline for the analysis and conceptualization of mobile service platform governance. This also provides help to identify promising research avenues.*

Keywords: mobile services, mobile ecosystems, governance, control

# 1 Introduction

Successful platforms for mobile services like Apple's App Store serve as an important source of competitive advantage for the platform owner (Iyer *et al.*, 2007; Jansen *et al.*, 2009; Schlagwein *et al.*, 2010). Mobile service platforms address fast-changing markets by leveraging the capabilities of third-party service providers for offering innovative services (De Reuver and Bouwman, 2011; Querbes-Revier, 2011). Consequently, mobile service platforms are characterized through programming interfaces that allow third party developers to contribute services (Ballon *et al.*, 2008; Querbes-Revier, 2011).

The success of a mobile service platform is determined by the capability of the platform provider to align the interests of two dependent actors: service providers and service consumers (Evans and Schmalensee, 2007; Iyer *et al.*, 2007; Rochet and Tirole, 2003). Innovative services with fair conditions in pricing and digital rights management attract consumers. Third party service providers seek profitable opportunities with predictable and reliable platform functions. An effective platform governance enables providers to align the interests of all the stakeholders (De Reuver, 2009; Eaton *et al.*, 2011; Lerner *et al.*, 2006; West, 2003) and is defined as the direction, control, and coordination of platform resources. It consists of formal and informal rules (Ghazawneh and Henfridsson, 2010; Vandaele *et al.*, 2007).

The design of governance mechanisms and the subsequent effects ignite research in many disciplines, which results in a fragmented understanding of effective governance mechanisms for mobile service platforms (Kohlborn *et al.*, 2009; Tiwana *et al.*, 2010). For instance, the literature on platform governance studies governance mechanisms through different lenses (e.g. third-party developer or consumer), because they differ in relevance to the disciplines. At present, studies in the field of governance mechanisms lack an integrated perspective (Haaker *et al.*, 2006).

In this paper, we develop a theoretical framework for the conceptualization of governance in mobile service platforms as a first step towards establishing a comprehensive understanding of the role of governance mechanisms. The foundation of the framework is a review of the literature on governance mechanism in the discipline of Information Systems and its reference disciplines. We contribute to the discussion on effective governance mechanisms by consolidating critical issues of design choices when establishing governance mechanisms for mobile service platforms. In addition, this framework helps to identify promising avenues for further research.

The remainder of this paper is organized as follows: In the next section we define mobile service platform governance and describe its elements. Following this, we outline our research design. Then, we examine the elements and aspects of platform governance as discussed in literature. Based on this, we present and discuss our framework. The paper concludes with a summary of our findings and research opportunities.

## 2 Definition of Mobile Service Platform Governance

### 2.1 Elements of a Mobile Platform Governance Concept

Several authors have published definitions of platform governance. Brousseau & Penard (2007) conclude that “[g]overnance structures are built to manage conflict, reach consensus and constitutionally minimize this danger”. However, de Reuver and Bouwman (2011) extend this view. They recognize platform governance not only as structures, but also as “power and process to organize collective action” and refer to governance as “the mechanisms that are used to safeguard, coordinate and adapt the exchange of resources” (De Reuver and Bouwman, 2011). Another definition is given by Ghazawneh & Henfridsson (2010): “direction, control, and coordination of third-party developers

through the common resources of a platform". Finally, Tiwana et al. (2010) determine platform governance as a concept that regulates "who makes what decisions about a platform".

We conclude that there is no established definition of platform governance as the topic emerged just recently. Comparing the definitions shows that platform governance is a multi-dimensional concept, which firstly controls the decision-making process in a platform (Tiwana *et al.*, 2010). Second, platform governance is the structure, power, processes, and control mechanisms that are applied by the platform owner to achieve his aims. We further conclude that governance has to be dynamically managed and implemented to flexibly react to changing conditions in the ecosystem (Busquets, 2010; Rudmark and Ghazawneh, 2011). This includes control-concepts as a subset of platform governance (Tiwana *et al.*, 2010). Hence, we argue that controls are vital elements of platform governance.

## **2.2 Elements of a Mobile Service Platform Governance Concept**

To review and evaluate the literature on mobile service platform governance, our study is based on the elements of a mobile platform and its ecosystem, as the value of a platform depends on its externalities (Basole and Karla, 2011; Haaker *et al.*, 2006). The major stakeholders which are revealed in literature are the platform owner, third-party developers and consumers. We focus on these, because the way they are influenced by governance is very important for platform success (Kohlborn *et al.*, 2009; Levina, 2002). As follows, we describe the three different governance levels derived from literature.

*Market structure:* Tiwana et al. (2010) emphasize on the particular relevance of the fit between platform design, platform governance and the environmental dynamics of the platform. The environmental dynamics result from competitive platforms and legislative, techno-economic, or socio-economic factors which are influencing the viability of the platform. A market structure contains all the rules for the exchange and value creation on the platform. Thus, it designates the business model of IT-based platforms (Neumann, 2007), which is an important element for the viability of the platform (Ballon *et al.*, 2008; Basole and Karla, 2011).

*Governance configuration:* It is directly derived from the formal and informal rules contained in the market structure. The platform owner has to exercise certain rights to implement the platform governance (Tiwana *et al.*, 2010). The successful implementation of these rights, i.e., the configuration of the platform is a function of the relative power of the platform owner (Ballon, 2009; De Reuver *et al.*, 2010; Gawer and Henderson, 2007). De Reuver (2011) suggests that the following, not mutually-exclusive core concepts govern activities in organizational networks: contract-based, power-based and trust-based. This approach was directly applied and empirically tested in a value network environment. We apply these concepts as classification scheme for the analysis of the literature on platform governance.

*Control mechanisms:* Furthermore, control is an important element of platform governance. On the one hand, control is an undeniable part of the platform governance definition. On the other hand, researchers suggest that the view of platform governance from the perspective of control might be valuable. It enables the measurement of the effects of governance decisions, which are made in the derivation of the governance configuration (Ballon, 2009; Bergman *et al.*, 2007; Eaton *et al.*, 2011; Rudmark and Ghazawneh, 2011). Thereby they give the opportunity to adjust the market- and or governance strategy (Eaton *et al.*, 2011; Jain, 2011; Rudmark and Ghazawneh, 2011).

In sum, five interesting questions can be raised to establish a comprehensive understanding of platform governance and to reveal research opportunities:

- To what extent is power involved in deriving a governance configuration from a market structure?
- How is a configuration implemented by the governance concepts contract, power and trust?
- To what extent is control involved in platform governance?
- What are the stakeholder relations with the biggest impact on platform success?

- Which governance mechanisms affect which stakeholder relationships the most?
- Do the elements of platform governance vary orthogonally or are they related?

Consequently the elements of a platform, with their individual connections, have to be analyzed to gather a complete picture of the internal processes of a platform.

### 3 Methodology of the Data Collection and Analysis

#### 3.1 Research Design

We followed the suggestions of Webster and Watson for conducting the literature review (Webster and Watson, 2002). Our first considerations applied to the approach of a keyword search. As Levy and Ellis (2006) state keywords in IS literature show a short lifespan caused by rapid progress in the research field. But, while some keywords are not sustainable, their underlying theories are (Levy and Ellis, 2006). Accordingly, to reduce the risk of missing important research contributions, we did not rely solely on a keyword search but also applied a forward and backward search.

First, we applied an unguided search by employing standard and extension phrases as presented by Vom Brocke et al. (Vom Brocke *et al.*, 2009). The terms for this search were derived from two sources. On the one hand, we derived keywords from the definition. On the other hand, we sought concepts, which are interchangeably applied to the term "platform" in literature. The concepts "electronic market", "multi-sided platform", "two-sided market", "two-sided platform" and "service ecosystem" are considered as standard phrases with the terms "mobile", "business model", "control", "governance" and "management" as extension phrases. Papers had to include at least one standard phrase. By searching through the databases EBSCO and Google Scholar with these phrases, we identified 27 papers. We omitted literature outside the mobile world as its applicability to mobile platform governance poses an unsolved topic.

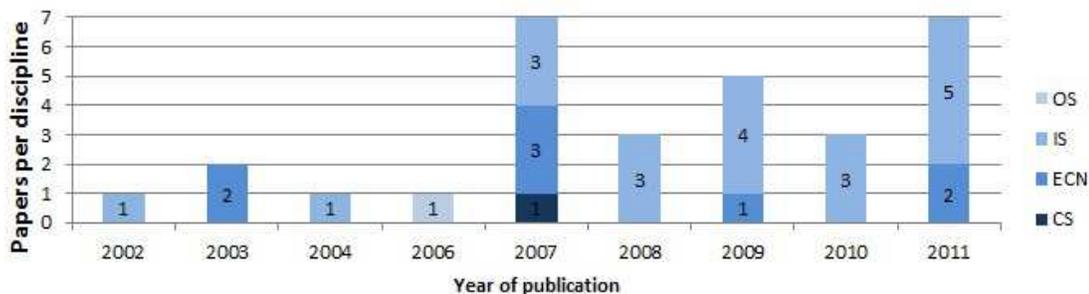


Figure 1. Occurrences of the relevant papers according to IS reference disciplines

In order to capture not only the broad spectrum of research in this area, but also to reach a deeper understanding, a forward and backward search is applied (Webster and Watson, 2002). We ranked our findings by topic relevance and outlet quality as stated by VHB-JOURQUAL. Further, the five papers with the highest relevance and publication quality were defined as core papers. The core papers then formed the starting point of our forward and backward search. We identified 8 additional papers, of which we omitted five paper based on content analysis. A listing of the final 30 publications is depicted in figure 3.

#### 3.2 Final Set of Analysed Papers

Grover et al. (2006) identified four reference disciplines to the Information Systems discipline: Organizational Science (OS), Economics (ECN), Computer Science (CS) and Marketing (MKT). To make a first analysis, we assign our findings to these disciplines and the year of publication (see fig. 1).

The results show that Information Systems literature is at present the dominant outlet for research on platform governance. However this dominance emerged only five years ago. In previous years, we can report multiple publications in the field of Economics and one in Computer Science and Organizational Science. This shows that research on mobile service platforms turns towards the underlying IT artifact (Robey *et al.*, 2008). Furthermore, since 2007 a stable and rising interest can be identified with a peak in 2011. In sum, the high amount of papers published recently combined with the fact that there are multiple conference papers (6) among the analyzed articles, as recommended by Webster and Watson (Webster and Watson, 2002), reveals that latest research results are included in our reflection. Furthermore, the quality of our findings is appropriate. Significant numbers of publications are from the Journal “Information System Research” and the International Conference on Information Systems as well as other major conferences and journals. We encounter a great variety of authors researching in this topic and yet four core scientists can be identified: De Reuver, Ghazawneh, Bouwman, and Tiwana. Finally we find that research in this field is mainly done through qualitative interpretative and mainly non-empirical methods (cf. table 2). Only two research papers applied also a quantitative method (De Reuver and Bouwman, 2011; Tiwana, 2009). Still, generalizable and empirically tested insights on platform governance are not derived. Empirical studies are rare in research on platform performance (Methlie and Pedersen, 2007).

## 4 Mobile Platform Governance – State of the Art

### 4.1 Covered Elements of Mobile Platform Governance in Literature

We analysed the literature for the appearances of market structure, governance configurations, and control mechanisms. Results are depicted in figure 2. Management literature focuses on strategic aspects, which are referenced to governance aspects five out of eleven times. In contrast, IS literature focuses more on governance configurations and control aspects. All in all, the market structure is dominating the scene, because it is a prerequisite for the derivation of a governance concept. In summary, only six out of the 30 papers omit the embedding of governance. These publications refer to the market structure itself.

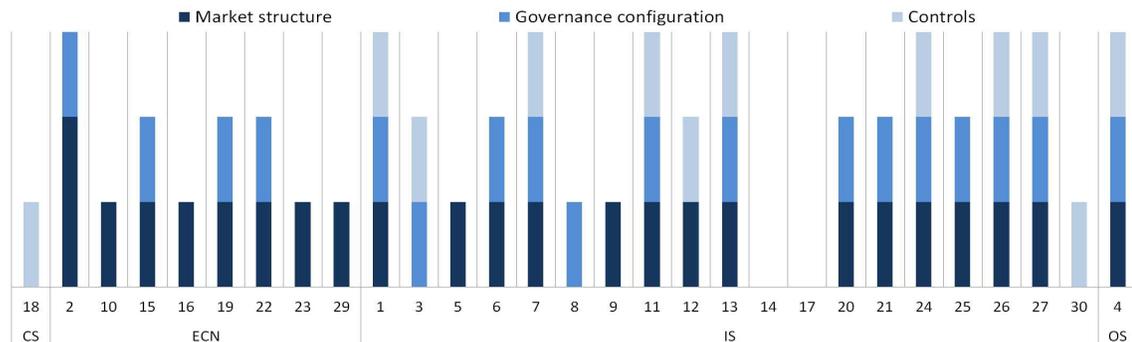


Figure 2. Occurrence of platform governance elements sorted by number of paper (cf. table 2, descending order) and discipline

In a next step, we focus on the different stakeholders mentioned in literature. Third-party providers are neglected because these strategic partners are merely integrated into the infrastructure of the platform (Barros and Dumas, 2006). The definition of the platform owner refers to any kind of subject that has the power of decision-making, control and guidance, as these are the common rights one has concerning his property. This involves that the owner provides the infrastructure for development on the one hand and the distribution of the software and services on the other (Jansen *et al.*, 2009). As a developer, literature regards anyone who creates value through contributing applications and software, may it be that they are performing a complete new service or just an aggregation of existing services.

In this manner the developers are the creators of the value. At last the term customer is defined. We define it as the people or organizations who make use of the platform distribution channels to access value adding software and services (Ballon, 2009; Riedl *et al.*, 2009).

Examining the intensity of research on governance in respect to the relationships between the stakeholders we find a serious cluster in publications regarding the owner to developer relation. Following at great distance, the owner to customer relation is researched. The rest is but a mixture of other relations yet not well understood (see Table 1).

*Table 1. Analysis of research on the stakeholder relations*

Measure	Owner to Developer	Owner to Consumer	Owner to Other
Percentage of overall analyzed publications	96,8%	25,8%	19,4%

Furthermore, we focus on the core concepts, which are used in governance configurations on the different relations. Approaching power-based governance at first, we notice that the term power is rather vague. It can be further conceptualized by introducing the terms authority and hierarchy. Taking these expressions in combination power resembles how an organization can decide on actions over others (De Reuver and Bouwman, 2011). One manifestation of power-based governance is for example the application of strict development rules, which can be directly implemented by contracts. In general contracts are a form of legal binding between parties concerned with their collaboration. As collaboration is a quite loose notion, it includes aspects such as financial aspects, management concerns, outcome agreements, property rights, external relations and conflict resolution (De Reuver and Bouwman, 2011). Trust-based governance is related to reliability and benevolence aspects. Reliability is the ability of a subject to act as agreed under any circumstances. Benevolence is understood as an act of charity in general and can be seen as an action including goodwill towards the other party. Thereby, trust-based governance refers to the strictness of an informal contract on an inter-organizational sphere, which leads to a measure of the closeness of collaboration (De Reuver and Bouwman, 2011).

In sum, we find all core concepts of governance configuration in every stakeholder relation (De Reuver and Bouwman 2011). The dominant configuration is authority-based governance where the owner is involved (owner to developer: 54%, owner to customer: 62%). Contract- and trust-based governance mechanisms appear in equal amounts. Additionally our analysis reveals that within all papers, authority as the stand-alone configuration appears 10 times, contractual configurations only once. In contrast, trust configurations are always paired with contracts or authority or both. Therefore, we support De Reuvers and Bouwmans (2011) results that a mixture of these configurations characterizes governance, even across different groups of stakeholders.

We conclude that the lack of concretization of research on governance has to be criticized. Only eight of the 30 papers which are surveyed have intensively discussed the issue of governance and platforms. We define intensity in the context as the extent to which the paper contributes to the topic. This abstract discussion hampers the process of the maturation of the topic and consequently leads to a fragmentation of knowledge and irritation of new researchers. Figure 3 summarizes our analysis.

Legend

I = Intensity (low=1, high=3)      O to Oth = Owner to Other      AB = Authority-based      CB= Contract-based      GC= Governance Configuration  
 O to Dev= Owner to developer      O to Con = Owner to Consumer      TB= Trust-based      MS = Market Structure      Co = Control

Author	Discipline	Year	Method	I	O to Dev	O to Con	O to Oth	AB	TB	CB	MS	GC	Co
Levina, 2002	IS	2002	Qualitative	1	●			●					●
West, 2003	ECN	2003	Qualitative	1	●			●		●	●		
Rochet and Tirole, 2003	ECN	2003	Qualitative	2	●	●	●	●		●	●		
Van Grembergen, 2004	IS	2004	Qualitative	2	●				●	●	●	●	●
Demil and Lecocq, 2006	OS	2006	Qualitative	2	●					●	●	●	●
Bergman et al., 2007	IS	2007	Qualitative	2	●			●		●		●	
Evans and Schmalensee, 2007	ECN	2007	Qualitative	2	●	●	●	●	●	●	●		
Methlie and Pedersen, 2007	IS	2007	Qualitative	1	●			●	●	●	●	●	●
Brousseau and Penard, 2007	ECN	2007	Qualitative	1	●			●	●		●	●	
Iyer et al., 2007	CS	2007	Qualitative	1	●			●	●				●
Gawer and Henderson, 2007	ECN	2007	Qualitative	3	●			●	●		●		
Markus, 2007	IS	2007	Qualitative	3	●				●	●	●	●	●
Tiwana, 2009	IS	2009	Quantitative	2	●			●				●	●
Robey et al., 2008	IS	2008	Qualitative	3		●	●	●	●		●	●	●
Parker and Van Alstyne, 2008	IS	2008	Qualitative	1	●	●	●	●		●	●		
De Reuver, 2009	IS	2009	Quantitative	3	●			●	●	●	●		
Jansen et al., 2009	IS	2009	Qualitative	1	●			●			●		●
Holzer and Ondrus, 2009	IS	2009	Qualitative	3	●			●			●	●	
Tee and Gawer, 2009	ECN	2009	Qualitative	1	●			●			●	●	
Ballon, 2009	IS	2009	Mixed	3	●			●	●		●	●	●
Ghazawneh & Henfridsson, 2010	IS	2010	Qualitative	3	●			●	●		●	●	
Schlagwein et al., 2010	IS	2010	Qualitative	2	●			●		●	●	●	
Tiwana et al., 2010 *	IS	2010	Qualitative	2	●			●			●	●	●
De Reuver et al., 2011 *	ECN	2011	Qualitative	2	●	●	●	●			●	●	●
Müller et al., 2011	IS	2011	Qualitative	3	●			●		●	●	●	●
Eaton et al., 2011	IS	2011	Qualitative	2	●			●					
Jain, 2011	IS	2011	Qualitative	1	●	●	●	●					
Querbes-Revier, 2011	ECN	2011	Qualitative	1	●			●			●	●	
Rudmark and Ghazawneh, 2011	IS	2011	Qualitative	3	●			●	●	●	●	●	
Basole and Karla, 2011*	IS	2011	Qualitative	1	●		●	●					

Table 2. Overview of the analysed literature

## 5 A Framework for Mobile Platform Governance

### 5.1 Derived Framework of Mobile Platform Governance

We identified many different but closely connected concepts, derived in the research streams, which have been researched and have to be analyzed. Thus, we do now reflect our findings to build up mature knowledge. The framework can serve as a base for the investigation of the internal relationships between the elements, a guide for the analysis of existing platform governance and a basis for the establishment of new governance.

Figure 3 shows our modularly built framework. It consists out of the main elements needed for a mobile service platform governance concept which is discussed in the latter. We regard platform governance as a process with different levels. The framework starts at the level of market structure. We assume changes in the market structure are triggered by several influencing factors like legal or technical changes. Resulting modifications in market structure further require changes in the governance configuration. These configuration changes have to be enforced by governance mechanisms and controlled by control mechanisms. In result one or more stakeholders are affected. If their behavior changes negatively the circle may begin and a new configuration of the governance has to be

developed. During our research we learned that knowledge on the relations between the different governance levels and elements is sparse. The remainder of this chapter sums up our findings.

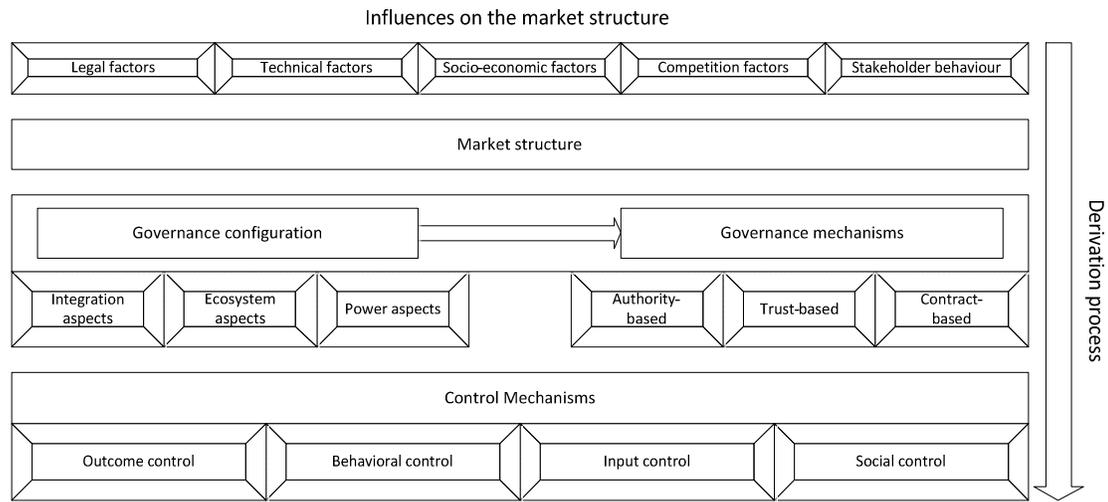


Figure 3. Framework for the analysis and implementation of platform governance

## 5.2 Market Structure

At the top of the framework, the market structure consists of many different aspects (e.g. economics of scale, quality assurance, openness, distribution mode, TCE, etc.) (Brousseau and Penard, 2007; Müller *et al.*, 2011). Furthermore, we identify implications on technology aspects dealing with the question where to settle for computational power or how the architecture for application development should be established (e.g. by using SDKs, APIs, etc.) (De Reuver *et al.*, 2010; Tee and Gawer, 2009). This seems to be reasonable as market structures like the pricing model have to be aligned with the governance configuration and mechanisms. Going along, we define market structure as a business model for mobile platform, which includes all the formal and informal rules for the exchange and value creation on the platform, set up by the owner.

Therefore, we determine the market structure as a link to our strategic level of the platform. Take the platform by RIM as an example. RIM provides a high level of security to their customers, since confidentiality is critical in corporate settings. To implement this strategy the owner must configure the platform accordingly. For that reason it is of great importance to the owner to acquire the right policy of power division to retain control over the platform on the one hand and to avoid hampering the innovation process on the other (De Reuver and Bouwman, 2011; Jansen *et al.*, 2009; Parker and Van Alstyne, 2008; Rudmark and Ghazawneh, 2011; Sarkar *et al.*, 1998). Derived from table 2, the owner uses his power over the platform in 89,9 percent of the cases to implement the decisions made in these areas, according to literature. Hence, we conclude that the governance configuration has to be derived from the market structure.

## 5.3 Governance Configuration

The constituted governance configuration must be implemented to manage consumer experience (Jain, 2011). Methlie and Pederson (2007) state that platform governance is a sub form of the market structure. We define governance configuration as an organizing logic derived from the market structure (Chesbrough, 2003), implementing the formal and informal rules by tangible governance mechanisms. For better illustration we divide it into three abstract areas. The integration aspects area deals with the implementation of decisions using the architecture resources of the platform (e.g. security restrictions on coding, standardization, etc.) (De Reuver *et al.*, 2010; Tee and Gawer, 2009).

Furthermore governance focuses on the relationships between the stakeholders, the network externalities and the external factors, which we determine as ecosystem aspects. At last power aspects provide the means to implement the owner's power strategy. All areas have to be perfectly aligned to the market (Tee and Gawer, 2009; Tiwana *et al.*, 2010). Hence, a set of numerous, different mechanisms is derived from the configuration (Demil and Lecocq, 2006). We refer to the design and implementation of this configuration as a process. In this context mechanisms resemble tangible manifestations of the market structure. De Reuver and Bowman (2011) classify three, not mutually exclusive mechanisms. While the division into the abstract core items Contract-based, Power-based and Trust-based is reasonable (De Reuver and Bouwman, 2011), no indications could be found on how to mix and implement the analysed governance mechanisms to enforce the aspects of a governance configuration.

## **5.4 Control Mechanisms**

Finally we find that the importance of means to measure impacts of governance has yet been overlooked by most of the researchers. There is a great need to be able to flexibly align the platform with its ecosystem in order to achieve success (De Reuver *et al.*, 2010; Van Grembergen, 2004). Control mechanisms provide the means for this approach. In the literature, only few proposals for palpable controls are made. Besides controls are the major toll to manifest the power of the platform owner (Ballon, 2009). We define control mechanisms as the means to monitor the ecosystem, take action on changes in the platform's ecosystem and to retain the owner's predominance.

In general their implementation depends on the degree of desired measurement. If you want to know the effect of one governance configuration, you have to derive a set of controls to fully grasp its impact. As we cope with a non-linear ecosystem an empirical analysis of this approach extends far beyond legible time and effort. In consequence the establishment of means to measure the outcome of the set of governance mechanisms is a far better approach. Take for example an original equipment manufacturer who wants to increase the sales quantity of his devices. He would want to raise the value of his devices perceived by the customers and is therefore mainly focused on consumer acceptance which can easily be measured by purchase surveys or other approaches. This resembles a form of outcome control. In accordance with Ouchi (1979), Wiesche *et al.* (2011) further differentiate between behavioural-, input- and social control. We exemplarily assigned some of the controls mentioned in the literature to our framework. Incentives as named by Parker and Van Alstyne (2008) are classified as behavioural control, SDK's as mentioned by Ghazawneh and Henfridson (2010) and Tiwana *et al.* (2010) as outcome control. Input control refers to access control of developers in a platform (Markus, 2007). At last, social control in the manner of for example boards are mentioned by Ghazawneh and Henfridson (2010).

All in all the embedding of governance in this surrounding brings up a new view on platform governance as it reveals a process in the form of a circle. Starting, governance can be analysed by control mechanisms which provide feedback to be able to adjust the owner's market structure and the governance configuration. This in turn will affect the platforms ecosystem which must be measured again. Thereby the ability to flexibly adjust to changes in the ecosystem is implemented. In sum, this leads to a framework, which enables the creation of effective governance for a mobile platforms, as presented in figure 3.

## **6 Conclusion and further research opportunities**

In this paper we provide an overview of the current knowledge on platform governance. Our descriptive analysis identifies in which disciplines the topic emerged and which areas of research currently treat the topic of platform governance. This knowledge allows future researchers to restrict their research and thereby to apply an in-depth analysis in these fields. We conclude that, although research significance of the publications in the reference discipline economics is declining, researchers

should not neglect the previous findings. Furthermore, some limitations apply to our study: the comprehensiveness of the results is strongly associated with our choice of keywords. A second limitation arises from the focus of the forward and backward search on the five most important papers.

We combined results from different research streams and derived a conceptualization of platform governance. Our conceptualization as a modular framework assists in better understanding the composition and implementation of governance and possible implications. Thus, we extend the framework proposed by Tiwana et al. (2010). In line with Basole and Karla (2011) and Haaker et al. (2006) we add customers as critical stakeholders. Additionally, we examined and detailed the topic “control” in the context of platform governance, as it was generally mentioned only by Tiwana et al. (2010). Derived from our findings, we finally propose four research issues in the context of platform governance: Although several authors consider governance mechanisms like SDKs to be directly influencing developers, there is no understanding about the consequences of their implementation. The impacts of these mechanisms on the willingness of developers to participate are yet unclear. We could only identify one qualitative interpretive study about motivational factors for participating in a platform. Holzer and Ondrus (2009) consider market size and accessibility, career opportunities, and creative freedom as motivation factors for third party platform developers. However, there is no insight on how market size affects the perception or acceptance of creative freedom. Consequently, the impact of governance on participant’s motivation as an important factor of platform success needs to be further researched.

Additionally, as only three of thirty papers did not discuss authority-based governance, we identified this governance mechanism as predominant in governing platforms. In contrast, authority is presumed to be an obstacle for innovation and the lifespan of an ecosystem (Eaton *et al.*, 2011; Jansen *et al.*, 2009). As innovation should be enhanced by platform provision, this relationship should be examined critically. Our analysis illustrates that governance is often applied as a mixture of trust-, contract- and authority-based mechanisms which are also often multidimensional. Studying how the analysed governance configuration influences the success of platforms would enable a more proactive development of mobile service platforms.

Our framework illustrates a fully integrated view of platform governance. After our analysis, we consider controls as a monitoring tool to evaluate the effectiveness of governance mechanisms which typify the governance configuration and are consequently aligned to the market structure. Although controls are recognized as an important factor for the monitoring of governance mechanisms, it is unknown which controls have to be applied for which governance mechanism or mechanism mix. We found only one intangible, not empirically evaluated approach by Ghazahweh and Henfridsson (2010) which considers the adaption of governance mechanisms by monitoring. Since, only correctly employed controls allow a proactive management of the platform elements, we suggest further analysis in this field.

The usage of our framework for conducting case studies, which examines how control mechanisms are aligned to governance configurations and market structure, seems to be a promising approach. Especially platform owners could provide valuable insights. Further case studies allow contributing to the knowledge on the gaps between the levels of the framework. Therefore, as a research agenda, we propose to conduct several empirical case studies to obtain evidence on how governance and control mechanisms should be selected and used for aligning them to the overall platform.

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