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Maximilian Schreieck

*Technical University of Munich, Germany, maximilian.schreieck@in.tum.de*

Manuel Wiesche

*Technical University of Munich, Germany, manuel.wiesche@tu-dortmund.de*

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# HOW ESTABLISHED COMPANIES LEVERAGE IT PLATFORMS FOR VALUE CO-CREATION – INSIGHTS FROM BANKING

*Research paper*

Maximilian Schreieck, Technical University of Munich, Germany,  
maximilian.schreieck@in.tum.de

Manuel Wiesche, Technical University of Munich, Germany, wiesche@in.tum.de

## Abstract

*Inspired by the success of digital-native companies such as Google or Salesforce, established companies such as car manufacturers, equipment manufacturers, or banks strive for value co-creation via open IT platforms. However, literature on value co-creation does not cater to the specific situation of established companies. Addressing this gap, we seek to improve our understanding of how established companies can co-create value through openness and collaboration with IT platforms. Based on an exploratory field study of a European bank that is introducing an IT platform, we show that openness and collaboration enable value co-creation while creating areas of conflict and potential benefit. For example, openness creates internal resistance and exposes technology while facilitating internal transparency and standardization. Collaboration entails conflicts with existing partners that are affected by the value co-creation strategy, but existing partners are also assets in incentivizing collaboration with third-party developers. Contributing to literature on value co-creation and openness of IT, we confirm that established companies can benefit from IT platforms but need to address specific areas of conflict and potential benefits related to balancing openness and control and governing collaboration. Our discussion provides first insights for established companies that consider implementing an IT platform strategy.*

*Keywords: IT platform, Multi-sided platform, Value co-creation, Established companies, Openness, Collaboration, Governance, Third-party developer, Digital business strategy, Exploratory case study.*

## 1 Introduction

Information technology (IT) has enabled companies to create value in a purely virtual environment (Rai & Tang, 2014). Through these technologies, “digital-native” companies such as Google, Facebook, or Salesforce offer digital services like mobile apps, communication and games or customer relationship management (CRM) to their customers. Those services are predominantly provided by third-party developers, i.e. actors that independently develop applications that are complementary extensions to the digital-native companies’ key offerings (Ceccagnoli, Forman, Huang, & Wu, 2014; Huntgeburth, Blaschke, & Hauff, 2015). The collaboration between the digital-native companies and the third-party developers enables co-creation of the digital services offered for customers. As value co-creation is enabled through the collaboration among different actors, it is only possible if access to company resources is given to the third-party developers (Tiwana, Konsynski, & Bush, 2010). Digital-native companies provide this access through openness of their IT systems, usually by designing IT platforms with open interfaces. Value co-creation through openness and collaboration has proven to be a promising path to success for many digital-native companies (see examples provided by Rai & Tang, 2014).

Triggered by the success of the digital-native companies, established companies in turn, strive for value co-creation through openness and collaboration. With the term “established”, we refer to companies whose key offering dates back to before the dotcom bubble (e.g., cars, TVs, washing machines) who are still active in this market. The goal of these companies is to enable open innovation through collaboration with third parties (Huff, Möslein, & Reichwald, 2013; Reichwald & Piller, 2006). For example, the car manufacturer BMW operates an IT platform “BMW Connected” that offers various digital in-car services. These services have been created in collaboration with numerous third-party developers who have been given access to the platform.

Established companies face particular challenges when they want to move the co-creation of digital services and as such, the collaboration with their third-party developers on designated IT platforms because these companies already have an established IT landscape that has been utilized for value creation. IS researchers have studied how IT-enabled openness triggers collaboration and, ultimately, can lead to value co-creation (Schlagwein, Schoder, & Fischbach, 2010). For example, the optimal degree of openness (Boudreau, 2010; Ondrus, Gannamaneni, & Lyytinen, 2015), or suitable governance mechanisms to manage collaboration with third parties on platforms (Tiwana, 2014; Tiwana et al., 2010) have been discussed. However, these results are, by vast majority, deduced from analyses of digital-native companies such as Google, Facebook or Salesforce. Consequently, it is unclear to what extent these findings are applicable to established companies and how the specific challenges of established companies are addressed by our existing understanding of value co-creation through openness and collaboration.

For example, established companies draw on their legacy systems when designing and implementing the IT platforms to be accessed by third parties (Lyytinen & Rose, 2003). However, the legacy systems are connected with other IT systems within the company and by opening them to external parties, the company risks to expose critical information and knowhow. Furthermore, openness of the IT platform may have a detrimental impact on employee’s motivation. Research on the *not-invented-here* and *not-shared-here* phenomena shows that openness can lead to internal resistance to collaboration with external parties (Burcharth, Knudsen, & Søndergaard, 2014). Consequently, it is unclear to what extent existing findings on value co-creation are applicable to established companies and how the specific challenges of established companies can be addressed by our existing understanding of value co-creation through openness and collaboration. Therefore, we strive to answer the following research question: *How can established companies successfully co-create value through IT platforms that utilize the concepts of openness and collaboration?*

To answer this question, we engage in an exploratory field study with a large European banking company that is introducing an open IT platform to spark value co-creation. The banking context is particularly interesting when analysing the transition towards a value co-creation strategy: First, digitization creates pressure on established banks to offer innovative digital services to their customers (Mention, Martovoy, & Torkkeli, 2014). Start-ups from the IT domain referred to as “fintechs” have come up with innovative solutions that target the core of the banking business, putting pressure on established banks to find appropriate responses. Second, due to the criticality of the data in banking and the need for security, banking companies have traditionally built up closed IT systems and have only collaborated in close strategic partnerships. Over the years, these IT systems have become highly complex and every structural change represents a huge challenge to the banking companies. Third, the European banking sector is affected by changes in regulation as for example triggered by the financial crisis in 2008. These changes need to be accommodated by the IT systems, which consumes valuable resources no longer available for innovative projects (Mention et al., 2014).

With this exploratory field study, our goal is not only to sketch the situation of that specific banking company striving for value co-creation but also to contribute to our theoretical understanding of value co-creation through openness and collaboration for established companies. To do so, we establish a theoretical pre-understanding of how openness leads to value creation through collaboration on IT

platforms and embark on an exploratory field study. We derive areas of conflict and potential benefits that established companies face when shifting to a value co-creation strategy.

## 2 Theoretical Background

As recommended for exploratory field studies (Walsham, 1995), we develop a theoretical pre-understanding of value co-creation, with openness and collaboration as main constructs that facilitate value co-creation (Figure 1). We present our theoretical pre-understanding along the three elements (1) value co-creation, (2) openness and (3) collaboration.

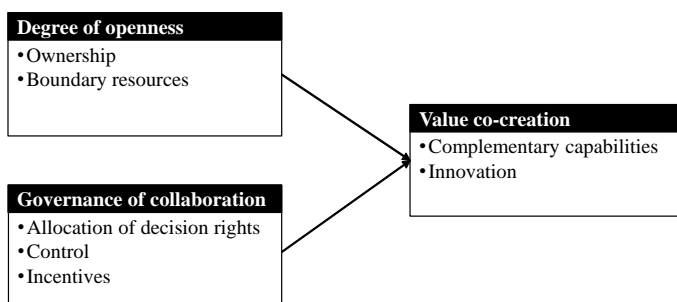


Figure 1. Theoretical pre-understanding of value co-creation through openness and collaboration.

The focus of value creation shifts from linear value creation in supply chains to **(1) value co-creation** within networks of companies, often facilitated by IT platforms (Fuentelsaz, Garrido, & Maicas, 2015; Huntgeburth et al., 2015; Sarker, Sarker, Sahaym, & Bjørn-Andersen, 2012). We define IT platforms as “[...] the extensible codebase of a software-based system that provides core functionality shared by the applications that interoperate with it and the interfaces through which they interoperate” (Baldwin & Woodard, 2008; Boudreau, 2007), allowing companies to collaborate with third-party developers in order to co-create value. Following a resource-based view, value co-creation is a result of combining complementary resources and capabilities in a process of collaboration (Lavie, 2006). Besides sharing knowledge and assets, governance structure that frames collaboration is prerequisite for value co-creation (Grover & Kohli, 2012). For many companies, a key goal of value co-creation is innovation, as they lack innovative capabilities and want to benefit from the creativity and impartiality of externals (Boudreau, 2010; Yoo, Boland, Lyytinen, & Majchrzak, 2012; Yoo, Henfridsson, & Lyytinen, 2010). To combine complementary capabilities and to realize joint innovation, openness on the technology level is required (Ceccagnoli, Forman, Huang, & Wu, 2012; Huff et al., 2013; Reichwald & Piller, 2006).

Through **(2) openness**, the focal firm grants third-party developers access to its IT. These third-party developers can then build complementary applications, which are consumed by the end-users (Benlian, Hilkert, & Hess, 2015). Usually, this process is mediated by an IT platform. Openness, in its most extreme form, can mean to give up ownership of the technology and make it accessible as a whole to everyone. Open source platforms such as Linux show that such a high degree of openness can lead to flourishing platform ecosystems (Economides & Tåg, 2012; Eisenmann, Parker, & Van Alstyne, 2009). However, in commercial platforms, the ownership of the technology in most cases lies with the focal firm, which acts as platform owner. Through boundary resources such as application programming interfaces (API) and associated tools and documentation, third-party developers are granted access to the technology (Eaton, 2015; Ghazawneh & Henfridsson, 2013). Depending on the characteristics of this access, different degrees of openness can be realized. Finding the right degree of openness is an important challenge (Schlagwein et al., 2010). A high degree of openness stimulates activity on the platform and, through positive network effects, can lead to a flourishing platform ecosystem (Parker & Van Alstyne, 2005). At the same time, with a high degree of openness, the focal

firm gives up its control of the relationship with the customers. Third parties intervene with potentially innovative solutions for the end-users while the focal firm is at risk to be reduced to a pure technology provider. IS literature has shown that openness on the technology level contributes to a platform's market potential while openness on the provider level can have a negative impact on the market potential (Ondrus et al., 2015).

While openness is prerequisite for enabling value co-creation via an IT platform, the focal firm will only be able to create value from the platform if it can successfully realize **(3) collaboration** with third-party developers. Governing collaboration on a platform is a challenging endeavour that has been discussed extensively in IS literature. Collaboration can be governed through the three mechanisms *allocation of decision rights, control, and incentives*, which are also referred to as governance mechanisms (Manner, Nienaber, & Schermann, 2013; Tiwana et al., 2010). By allocating decision rights to third-party developers, a decentralized governance structure is established that grants greater independence to third-party developers as compared to suppliers in a supply chain (Hein, Schreieck, Wiesche, & Krcmar, 2016; Schreieck, Wiesche, & Krcmar, 2016). For example, the third-party developer is free to come up with the specification of his complementary product, whereas a supplier has to fulfil the focal firm's specification. This autonomy creates space for innovation (Shi, Liang, Shao, & Shi, 2016; Yoo et al., 2012). At the same time, the platform owner needs to apply control mechanisms in order to ensure the integration and quality of complementary products. Both formal control mechanisms such as quality checks and informal control mechanisms such as clan control through a community of third-party developers have been shown to be effective (Boudreau, 2010; Goldbach & Benlian, 2014, 2015; Goldbach & Kemper, 2014). Furthermore, third-party developers need to be incentivized to collaborate on the platform, which is mainly done via revenue sharing. The optimal revenue sharing depends on many factors such as the end-users willingness to pay for quality (Lin, Li, & Whinston, 2011) or the position of the focal firm relative to competitors (Hagiu, 2006).

In sum, the theoretical pre-understanding shows that the current state of IS research can be condensed to a model explaining value co-creation through openness and collaboration. However, the current understanding is not sufficient to cater to the specific challenges of established companies that shift towards a value co-creation strategy. For example, the impact of legacy systems or the company's culture on openness, the influence of existing partners and customers on collaboration or the interplay of existing mechanisms of value creation and the to-be established mechanisms of value co-creation are not covered. This is illustrated by the fact that almost all case studies in the context of value co-creation focus on digital-native companies and start-ups such as Google, Facebook or Salesforce (e.g. Claussen, Kretschmer, & Mayrhofer, 2013) or other companies active in mobile payment (e.g. Gannamaneni, Ondrus, & Lyytinen, 2015; Ondrus et al., 2015), e-commerce (e.g. Avgerou & Li, 2013), and cloud computing (e.g. Huntgeburth et al., 2015).

### 3 Research Design

Based on the theoretical pre-understanding, we selected *APIbank* (anonymized) as a suitable case to improve our understanding of value co-creation for established companies. In this section, we describe the case and our methodological approach.

#### 3.1 Case Description

*APIbank* is a global banking and financial services company based in Europe. It runs offices in more than 70 countries and generates the lion's share of its revenue with investment banking. The company sees itself in a process of digital transformation with the goal to offer a seamless customer experience via multiple channels for both individual and business customers. The process of digital transformation is also the company's answer to the "fintechs", tech start-ups attacking the key business of established banking companies. One example of a fintech is Lending Club, a UK-based

platform for peer-to-peer money lending, excluding established banks from their core business of gathering money from customers to lend it to others. One important step in the digital transformation of *APIbank* is the creation of an open API platform. This platform makes some of the bank's data and functionalities accessible to third-party developers. Via APIs, the developers can integrate data or features into their applications. For example, a third-party developer could build a tool for small companies that integrates their transactions and invoicing with their account at *APIbank*.

We selected *APIbank* as company for the case study as the banking context represents a promising area of study. Banking is an industry in which the direct contact with the end-users regardless whether they are individuals or businesses has traditionally been the basis for conducting business. The direct contact builds trust, an essential factor in customer relationships, which is even more relevant in banking than in other industries. However, openness and collaboration with third parties brings additional actors in the customer relationship, creating areas of conflict as well as potential benefits.

### 3.2 Exploratory Field Study

To close the theory gap of value co-creation through openness and collaboration for established companies, we take on an interpretivist stance (Conboy, Fitzgerald, & Mathiassen, 2012; Goldkuhl, 2012) and conduct an exploratory field study with the company *APIbank* (Miles & Huberman, 1994; Walsham, 1995; Yin, 2013). In this setting, an exploratory field study is suitable for two reasons. First, the subject of our study, established companies that adopt a platform-enabled value co-creation strategy is complex and dynamically evolving. It is thus advisable to study this phenomenon in its context with an iterative interplay of data collection and analysis. Second, the theory gap we identified is worthwhile to be researched with an explorative, inductive approach. Due to the heterogeneous and young field of platform theories, developing a theoretical framework and formulating hypothesis upfront is hardly feasible (Creswell, 2013; Urquhart, Lehmann, & Myers, 2010).

ID	Role	Brief description
PM	Project manager	<ul style="list-style-type: none"> <li>Vice president of <i>APIbank</i> and project manager of the open API project</li> <li>6 years of experience in open innovation and open API projects</li> <li>Participation in various workshops on open innovation in the IT context</li> </ul>
PT_1	Project team member	<ul style="list-style-type: none"> <li>Architect head for digital transformation and innovation</li> <li>Several years of experience with projects in the context of innovation and openness of IT</li> </ul>
PT_2	Project team member	<ul style="list-style-type: none"> <li>Innovation manager with experience in open innovation at different companies</li> <li>First employee to push the open API idea</li> </ul>
PT_3	Project team member	<ul style="list-style-type: none"> <li>Product marketing and strategy</li> <li>Former researcher with a focus on innovation and open innovation in large companies</li> </ul>
PT_4	Project team member	<ul style="list-style-type: none"> <li>Lead digital solution architect</li> <li>Responsible for internal adherence to API standards</li> </ul>
PT_5	Project team member	<ul style="list-style-type: none"> <li>Solution architect</li> <li>Product owner of internal API that forms the basis of the open API</li> </ul>
RT_1	Member of related teams	<ul style="list-style-type: none"> <li>Solution architect in the investment department</li> <li>Designing the connection of IT services in the investment department and the open API</li> </ul>
RT_2	Member of related teams	<ul style="list-style-type: none"> <li>Technical specialist in the investment department</li> <li>Implementing the connection of IT services in the investment department and the open API</li> </ul>
TP_1	Third-party developer	<ul style="list-style-type: none"> <li>Experienced third-party developer</li> <li>19 years of experience in web development</li> </ul>
TP_2	Third-party developer	<ul style="list-style-type: none"> <li>Junior third-party developer</li> <li>Some experience in Java applications</li> </ul>
EX_1	External consultant	<ul style="list-style-type: none"> <li>Experienced external consultant with focus on open innovation projects</li> <li>Focus on operating mode for the bank with regard to the open API project</li> </ul>

Table 1. Profiles of the interviewees.

Conducting the exploratory field study, we iteratively collected interview data, as interview data provides access to the participants' interpretations of the phenomenon (Miles & Huberman, 1994; Walsham, 1995). We conducted semi-structured interviews with employees and externals involved in the open API project in different positions following the guidelines by Gläser and Laudel (2009). To embrace depth and richness of the data, we conducted the interviews inspired by grounded theory methodology (Glaser & Strauss, 1998; Mason, 2006; Urquhart, 2013). That is, we iteratively revised our interview guidelines based on the insights of interviews that we had already conducted. We chose subsequent interview partners based on the saturation of our constructs from the data that we had already collected. In total, 11 interviews were conducted between April and July 2016 (Table 1). Most of the interview partners have previous experience related to open innovation and value co-creation in IT. The interviews lasted 52 minutes on average. The interview questions covered the decision process that led to a co-creation strategy, the architecture of the open API, internal and external challenges as well as expectations associated with the value co-creation strategy.

Based on our interpretivist stance, we applied grounded theory based coding techniques following the Glaserian approach (Glaser & Strauss, 1998; Urquhart, 2013). We started with open coding and created more than 250 codes associated with more than 500 interview quotes. In axial coding, we identified 12 main categories of codes that included more than 40 subcategories. Subsequently, we conducted selective coding to relate the categories to our theoretical pre-understanding (Table 2). Following the principle of constant comparison (Urquhart et al., 2010), we returned to the data whenever a relationship emerged in the selective coding to verify its grounding in the data.

Interview statement and exemplary open codes (underlined)	Subcategories	Category
<p><u>"We have critical mass already.<sup>1)</sup> [...] compared to start-ups, something like the Solaris Bank who were also offering banking as a service to start-ups. But their problem is that they can only offer a backend but they cannot offer customers. On our platform, we have several million customers. The thing is that for our platform the external developers will be able to access [...] all our customers.<sup>2)</sup>"</u>(PM)</p>	<p>1) Advantage of established company</p> <p>2) Incentive for developer to participate in open IT platform</p> <p>2) Collaboration</p>	<p>Potential benefit (Collaboration → Value Co-creation)</p>

Table 2: Illustration of coding scheme.

## 4 Results and Interpretation

The analysis and interpretation of our interview data helped us to, first, understand how *APIbank* applies openness and collaboration to co-create value through an IT platform and, second, which areas of conflict and potential benefits result from the new value co-creation strategy.

### 4.1 Openness

The interviews we conducted at *APIbank* shed light on why the company strives for more openness on the technology level and what consequences might come along with increasing openness. While the bank keeps ownership of its technology, it grants access to banking functions via APIs accompanied with additional boundary resources. In particular, a developer portal, API documentation, sample code and sample applications support third-party developers in their development process. With open APIs and the associated resources, *APIbank* aims at attracting developers that build innovative third-party applications on top of the open API platform. As the project manager summarized,

*"Our plan is to support [the developers] in this activity by providing them with an easy to on-board and easy to use [...] environment that it is really effortless to use. And a comfortable set of developer tools around this API, good documentation, good sample code, basically we are aiming for developer convenience. This is what we are going for. And this is what is going to make it attractive for people to use and if that's the case then it will spark innovation."* (PM)

Also from the third-party developers' perspective, openness provided by APIs is a suitable tool to facilitate innovation. Easy access to the API and the possibility to try out the different features of the API motivates third-party developers to produce prototypes:

*"I think the great [thing] about APIs is that you can debug prototypes very easily faster. And that's related to innovation because I feel like there are lot of smart innovation methods to ideate things to define thinking but at the end it is to create something people can touch. And if you are able to create this fast." (TP\_1)*

**Area of conflict – Internal resistance.** The idea of an open API platform was generated bottom up by a small group of employees that recognized the trend of fintechs targeting *APIbank's* key markets. While the project was supported by top management early on, middle management and parts of the staff were opposed to the open API project. Middle management criticized that the considerable investment in the project came along with uncertainty about the financial outcome. Compared to digital-native companies that opened their systems from the beginning, established companies need to invest in a redesign of existing IT systems to make them ready for more openness. Therefore, middle management feared the negative impact of the open API on their key performance indicators and asked the project team for business cases of the open API project:

*"When I talk to managers on [...] managing director level, and they would ask me for business cases. That puts me in the situation to explain, that open innovation approaches do not work the pipeline way, in which in-house products are designed and produced and introduced to the bankers [...]. So, it is not always easy for me to supply them with business cases [...]" (PT\_3)*

Beside the reluctance of middle management, staff is concerned how openness affects their work and their role. Partnering with third parties through open IT such as an IT platform requires an open mind-set and the willingness to share not only knowhow and experiences but also potential revenue with third parties. As hypothesized by the *not-shared-here* phenomenon (Burcharth et al., 2014) personnel of *APIbank* in parts tends to be opposed to collaborate with externals.

*"The [concern] is that the understanding of partnering and that the business can change, is also a change in the mind-set. Probably you are afraid that in a future world your role might look different. All these things. Bottom line is, [...] understanding the API as well as what would it mean for the organization and the person who you are talking to." (PT\_2)*

This internal resistance poses a threat to the project as the open API project team relies on the support from middle management as well as from other teams that work on the provision of banking functionality through IT systems.

**Area of conflict – Criticality of technology.** A further area of conflict arises from the criticality of banking functions. As a result, the decision what features and data to make accessible via the API is coordinated through a long and circuitous process that includes both business and technology functions within *APIbank*.

*"The main thing is that before we go live with any new functionality, we have to go through legal obligations and all those business functions which verify if it's ok to go live and then still our business counterpart has to verify if this functionality or the data behind it fits into what people might do with it and therefore if it's okay for the business to provide the data to other people out there or not." (PT\_4)*

In the first step, *APIbank* decided to only provide read functionality for most functions via the API. Third-party developers, however, expect access to the functions that they associate with banking, i.e. *"the online banking functionality I am used to"* as one third-party developer (TP\_1) stated. This goes beyond read functionality and includes functions such as executing financial transactions. As the open API project does not fulfil that expectation yet, it remains questionable whether the degree of openness is sufficient to incentivize third-party developers to join the platform.



**Potential benefit – Internal transparency and standards.** Striving for openness in an established business with grown IT systems also entails potential benefits. Openness to the outside first requires transparency and standards on the inside. Existing data sets have to be reviewed, revised and structured consistently before they can be published via an API. Similarly, backend functionality has to adhere to internal standards in order to make it accessible via APIs. As the backend functionality has grown over years, *APIbank* had to reengineer parts of the backend or use an internal middle layer to standardize the functionality. In the long run, this leads to a cultural change within *APIbank*, reinforcing internal transparency and standards:

*“We have this approach that you have to create properly one pool of data because it is really interesting for others to work with the data. We have to simplify the structure via API functions to the backend [...] and then you have the organization who was used to work in silos and then you have a cultural change.” (PT\_2)*

The project manager is convinced that the open API project will be of formative character for internal culture and, henceforth, for the management of internal development projects.

*“[...] internally, API will become a philosophy, so it will be clear that access through any system happens only via API.” (PM)*

## 4.2 Collaboration

By establishing openness through the open API project, *APIbank* strives for collaboration with third-party developers to enable innovation. Both individual developers and other companies are encouraged to leverage the APIs for their own applications. As the third-party developers are not part of the company and often not even of the industry, they do not suffer from organizational blindness (Knudsen, 2011) and therefore are more likely to create innovative ideas and applications:

*“[...] the purpose of the banking API is to attract people, to attract businesses to use the API to enhance some offering that isn't obviously connected to banking but somehow profits from banking. So this is the objective.” (PM)*

Granting access to an API alone is unlikely to spark sustainable activity of third parties on the platform. A set of mechanisms referred to as governance mechanisms needs to be implemented to establish collaboration on platforms (Tiwana, 2014). By allocating decision rights among the actors on the platform, controlling the activities and products on the platform and incentivizing third parties to join the platform, a suitable governance strategy can be implemented (Tiwana, 2014; Tiwana et al., 2010). Regarding the allocation of decision rights, *APIbank* keeps all strategic and implementation-related decision rights on the platform level. Strategic and implementation-related decision rights on the application level are in large parts allocated to the third-party developers. However, some boundaries are defined by *APIbank* regarding for example the quality standards of the application. These boundaries are enforced with control mechanisms such as a formal input control of application that are created on the platform:

*„The third-party apps [...] have to fulfil some standards. There will be due diligence on the apps before they are allowed to start using the [...] API. So we will do a due diligence on the apps similar to what Apple does.” (PM)*

*APIbank* strives to gather early feedback of the third-party developers on how they perceive the governance strategy and to actively include them in the improvement of the governance.

*“[...] run a couple of hackathons and just get feedback. It is most important. [...] And just don't wait for years, just get started and ask for the feedback because [the third-party developers] tell exactly what is good and not. There's lot discussion about what's the best technology, what's the standard, how to design an API, technology wise that's quite important. [...] How to design a good API. But the main thing is asking for feedback, the users. That's the main thing.” (PT\_1)*

**Area of conflict – Migration of partners.** As *APIbank* has a long history of partnering with selected companies, these established partners will be affected by the new value co-creation strategy. The mode of collaboration is changed from close partnerships to standardized relationships on the platform. Thereby, the partners give up decision rights as *APIbank* defines how collaboration is organized and no individual agreements are negotiated. This is laid out by the project manager:

*“I think the biggest difference between partner approach and open [approach] is that in the partner approach you are entering a specific and individual business agreement with a specific partner where there is a lot more responsibility on the bank’s side, which is more the classical model where you have to do vendor risk management and other things which is all very expensive and very time consuming. Whereas in the open case most of the responsibility isn’t with the bank. It is a very, very clearly defined interface with generic conditions with no special terms regarding the API consumer.” (PM)*

This change may lead to conflicts with the existing partners who lose the status of being one of few exclusive partners.

**Area of conflict – Image of being inert.** Another area of conflict results from the inflexible, slow image, which is often attributed to established companies such as *APIbank*. The sheer size of many successful established companies along with the business processes that have been established over the years lead to long lead times of new projects and organizational changes (also referred to as organizational inertia, e.g. Hannan & Freeman, 1984). Established companies oftentimes are not perceived as frontrunners in the area of innovative digital solutions, in particular compared to digital-native companies such as Google, Facebook, Salesforce or fintech start-ups. One member of the project team at *APIbank* acknowledges:

*“We can’t build with what we want because they are lot of other internal operational processes which don’t allow going in that direction. We have limited access to some sources. Fintechs don’t have all these problems. [They] just can try, they can throw it away if it doesn’t work. And they are really fast. And this is the thing we have to change in our process [...]. They can just start to build from scratch, and they can whatever just produce something quickly, couple of weeks sometime. They can just try it and go to the market, see if it works and that’s it. [...] If we start a project it will take months sometimes more than a year to go to production. This is the big advantage of fintechs.” (PT\_1)*

This image can be harmful to *APIbank*’s open API project as the project is depending on collaboration with innovative developers.

**Potential benefit – Existing partners.** The existing partners of *APIbank* not only represent an area of conflict but also a potential benefit. Partners who used to work closely together with *APIbank* can promote or even sponsor the platform which helps to establish the platform on the market (Eisenmann et al., 2009). In particular, in the early phase of the platform, existing partners can test the platform, give valuable feedback, and develop first applications that showcase the potential of the APIs. Therefore, *APIbank* started with selected existing and new partners in the API project before making the APIs available to everyone:

*“For the very start we stuck with the partnering approach because this is a very early stage thing now. And we wanted simply to start with handful of selected partners, [...] it’s a development based planning approach.” (PT\_5)*

**Potential benefit – Existing customers.** The existing business relationships that *APIbank* has with end-users create a huge potential for the shift towards a value co-creation strategy. With one side of the platform being already present, the chicken-egg problem which is inherent to platform businesses (Caillaud & Jullien, 2003; Evans & Schmalensee, 2010) is basically solved. If third-party developers are allocated a share of the revenue that is created on the platform, the large customer base represents a huge incentive to participate in the platform. The project manager summarized this as follows:

*“We have critical mass already. [...] compared to start-ups, something like the Solaris Bank who were also offering banking as a service to start-ups. But their problem is that they can only offer a backend but they cannot offer customers. On our platform, we have several million customers. The thing is that for our platform the external developers will be able to access [...] all our customers. [...] So, from a development perspective there is a million or whatever pool of customers potentially who would be customers for the application.” (PM)*

### 4.3 Value Co-creation

Taken together, openness and collaboration lead to value co-creation on the API platform. The goal of *APIbank* is to co-create innovative solutions that the company would not be able to develop or that it would not have thought of. Access to complementary capabilities that third-party developers possess as well as the benefit from innovative ideas from outside of the company are the key reasons for *APIbank* to establish a value co-creation strategy:

*“[...] you cannot do everything yourself. As a big company, we are simply not fast enough to come up with new innovative ideas and then in addition to that you find [...] start-ups that just focus on one piece of the value chain, they do really good. And I think that’s also related to what customers perceive.” (PT\_2)*

In addition to the fact that *APIbank* would not be capable of “doing everything”, it would not always know what to do as the established structures and processes inhibit innovativeness. Relying on the crowd can yield many different ideas for complementary applications, some of them with great potential for success.

*“If we just go outside, outside of [APIbank], people have ideas; people don’t care about internal [APIbank] technology and how it gets managed and all. They just have ideas. So, I think there are so many people outside, crowd itself is innovative and let’s say, if 10 people have ideas, one of them will be a really good one. So, the crowd itself is the innovative part. Not [APIbank] here because we build our own processes. We decide what is important for the customers and some other ideas showing up, and users they have other thoughts about it. They are not really interested in [APIbank’s] processes.” (PT\_1)*

Emphasizing a value co-creation strategy brings along areas of conflict and potential benefits.

**Area of conflict – Threat to existing business.** As *APIbank* has existing mechanisms of value creation, conflicts between those mechanisms and the newly introduced mechanism of value co-creation can arise. A third-party developer who creates a financial manager that helps users keep an eye on expenditures would not pose a threat to *APIbank’s* key value propositions. It could even be a win-win situation as the financial manager could make the *APIbank’s* online and mobile banking more attractive. A third-party developer that creates a peer-to-peer lending platform such as Lending Club using the open API would exclude the bank from the transaction of lending money and could therefore harm *APIbank’s* existing mechanism of value creation.

*“When we are partnering with others, we would like to understand their business model. [...] we are looking for the business model if it is fine for [APIbank]. [...] So, these criteria need to be defined by us.” (PT\_1)*

This statement visualizes a tradeoff that *APIbank* faces when following a value co-creation strategy. On the one hand, openness should create a flourishing ecosystem of innovations while, on the other hand, potential harmful ideas should be avoided.

**Area of conflict – Loss of access to customer.** A second area of conflict arises from the fact that the applications based on the open API will most likely directly address customers, thus creating a competing channel to *APIbank’s* channels to the customer. However, losing the touch point with the

customer would make *APIbank* a pure technology provider that is not visible to the customer anymore and that is easily replaceable. The project team members have recognized this area of conflict:

*“So, there are some critical strategic points, for example, we do not want to lose the central touch point with the customer or we must not lose it, let us put this way.” (PT\_3)*

*“[...] the business side, they are always afraid of providing the assets we earn money with to the other people, to other third parties so we might just go into the background and be a just a platform which going to be white-label-wise used by others.” (PT\_4)*

**Potential benefit – Absorption of third-party developers.** Established companies such as *APIbank* have often built up experience in acquiring smaller companies and integrating them into their processes and mechanisms of value creation. This experience can prove useful when shifting towards a value co-creation strategy. With this experience, *APIbank* has the flexibility to observe the third-party developers while sharing revenue with them as long as promising acquisition options arise. These acquisitions not only strengthen *APIbank's* product portfolio but are also a way to find innovative and entrepreneurial employees (Fantasia, 2016).

*“And if there is a partner that delivers such a great value [...] successfully to our customers, it would be an interesting question if we should buy him. [...] we do have experts for that around. And I don't think that it should be a problem of not knowing of how to do that.” (PT\_3)*

This potential benefit can therefore mediate the threat that a value co-creation strategy poses to the established business of *APIbank*.

## 5 Discussion and Conclusion

In this section, we provide a summary of the areas of conflicts and potential benefits that established companies face when shifting towards a value co-creation strategy. Based on our insights from the exploratory case of *APIbank*, we enhance our theoretical pre-understanding.

### 5.1 Areas of Conflict and Potential Benefits for Established Companies

When defining the degree of openness for an IT platform, established companies need to consider that opening up might because internal resistance as these companies traditionally exhibit hierarchical structures. Granting access to critical parts of the company's technology is another risk for the companies' businesses. At the same time, internal structures will need to be made transparent and, to a certain degree, standardized. Both can enhance the company's competitiveness and innovativeness (Ebner, Leimeister, & Krcmar, 2009). When designing governance of collaboration on the platform, established companies might struggle to move their existing partners onto the platform and to convince innovative third-party developers to participate despite the established company's image of being too big and too slow. However, with the existing customers and partners, established companies have two assets that can have a major impact on the initial success of the platform. Existing customers incentivize third-party developers to join the platform and existing partners can act as sponsors that spread the platform. When constituting the mechanisms of value co-creation through the IT platform, established companies need to consider the impact of value co-creation on existing mechanisms of value creation and the threat of losing direct access to customers. However, the value co-creation also offers the opportunity to discover and absorb innovative complementary products or even the third-party developers themselves. The areas of conflicts and potential benefits enhance our understanding of how openness and collaboration facilitate value co-creation through IT platforms for established companies (Figure 2).

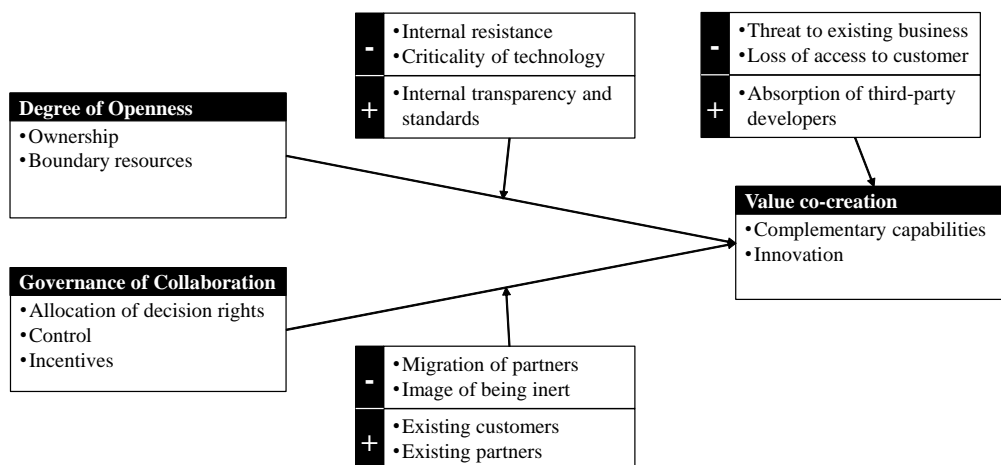


Figure 2. Revised theoretical understanding of value co-creation through openness and collaboration.

Our results provide first starting points on how to mediate the areas of conflict and realize the potential benefits. First, the areas of conflicts and potential benefits can be addressed individually. For openness, the area of conflict related to internal resistance could be addressed by “API evangelists” (PT\_2) that promote the API project internally and externally, and explain the potential benefits to doubters. For collaboration, a strategy needs to be developed how to manage existing partners, for example by providing them guidance on how to use the platform themselves or how to enhance the platform with additional APIs adhering to the same structures. To convince third-party developers to participate even though the platform is not initiated by a digital frontrunner, events such as hackathons can be organized (Leimeister, Huber, Bretschneider, & Krcmar, 2009).

Second, a fit between the degree of openness and the governance of collaboration contributes to solving the trade-offs related to value co-creation. In particular, to avoid the threat to the existing business and the loss of direct access to the customers, a careful alignment of openness and collaboration is necessary. While the case of Apple’s app store is referenced several times by different interview partners, our results suggest that a digital marketplace with millions of applications and standardized relationships with the third-party developers might not be the most suitable approach for established companies. Given the fact that established companies do not need a high number of complementary products from the start as customers are already on the platform, it makes sense to initiate value co-creation with selected partners and gradually open up to further third-party developers depending on their intentions.

## 5.2 Contribution to Theory and Practice

With our revised theoretical understanding, we contribute to recent IS literature that focuses on openness of IT and value co-creation through collaboration via IT platforms. The organizing logic of open platforms has been promoted in literature for a while now (Fuentelsaz et al., 2015; Sambamurthy & Zmud, 2000) but insights for established companies have been scarce so far.

Our results show that the tension between openness and control inherent to platforms (Eaton, 2015; Ghazawneh & Henfridsson, 2013) is particularly relevant for established companies that implement a value co-creation strategy. While boundary resources mediate this tension as shown by Eaton (2015) and Ghazawneh and Henfridsson (2013), they are not sufficient to deal with existing partners that need to be moved onto the platform or with internal resistance to openness. Platform governance as discussed by Tiwana (2014) has proven to be a useful tool to facilitate value co-creation through digital platforms. We confirm that incentives, allocation of decision rights and control are key to governing collaboration on the platform also for established companies and we provide first insights

on how governance can be implemented to cater to the specific situation of established companies. Our insights from one exploratory case need to be enhanced by more rigorous testing of, for example, the impact of different control modes in the context of established companies similar to the studies performed by Goldbach and Benlian (2014) or Goldbach and Kemper (2014) in the context of mobile app stores. By taking together our results on openness and collaboration for established companies, we contribute to an improved understanding of value co-creation via open IT platforms. We confirm that, following a resource-based view, established companies can benefit from open IT platforms by getting access to resources and capabilities of the third-party developers (Sarker et al., 2012; Thomas, Autio, & Gann, 2014). However, due to the impact of the value co-creation strategy on existing mechanisms of value creation and customer relationships, the resource-based view alone is not sufficient to evaluate value co-creation. Future research on established companies that implement a co-creation strategy could also consider the transaction cost perspective or the dynamic capabilities perspective (Drnevich & Croson, 2012). Finally, our results contribute to current IS literature on how the financial services industry is undergoing digital transformation and how it is responding to the trend of fintechs (Gaertner & Deutsche Bank AG, 2015; Kelly, 2014). Longitudinal studies of how fintechs interact with established banking companies that gradually open up would further increase our understanding.

In practice, our work firstly provides insights for banking companies that face specific challenges due to digitization, changes in customer preferences, and regulation (Mention et al., 2014). By showing potential benefits and areas of conflict deducted from a real case, we provide dimensions that need to be considered before engaging in open innovation activities with third parties. Not in every case, open innovation and co-creation will be the best solution nor does it provide answers to all challenges of the banking sector. Still, reflecting a banking company's situation in front of our findings helps to identify the right path. Secondly, numerous established companies from other domains consider a co-creation strategy or are in an early phase of implementing it. For example, the equipment manufacturer Trumpf has established a subsidiary, "Axiom" that is dedicated to creating a platform ecosystem around the machines Trumpf is manufacturing. For those companies, our work helps to evaluate the degree of openness on the technology level as well as governance strategies on the collaboration level. However, these companies need to consider that the findings are derived from the case of a banking company and need to be viewed in front of the own company's specific situation. Third, our findings can be adapted to further contexts where established organizations apply IT for collaboration, e.g. in e-government or non-profit work (Schreieck, Wiesche, Hein, & Krcmar, 2016).

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