



Exploring the Value drivers for Platform Based Business: Scaling, Organizing, Financing, Controlling & Leveraging Networks among Multiple Parties

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Abstract

Platform-based business models have become increasingly popular in recent years. These models allow businesses to connect with customers in new and innovative ways, and they can offer several advantages over traditional channels. However, there is still a lack of understanding of the key value drivers that contribute to the success of platform-based business models. This study addresses this gap in the literature by conducting a two-step qualitative-empirical analysis to identify the value drivers of platform-based business models. In the first step, a systematic literature analysis (SLA) is conducted to outline the research landscape holistically and to identify existing value drivers. In the second step, data is collected from 15 expert interviews from Pakistani online platform-based companies to identify additional value drivers. The results of the study identify four categories of value drivers: Organization and scaling: the category includes factors such as the platform ecosystem, architecture, user acquisition, and willingness to participate. Financial performance: this category includes factors such as retention, performance-promise, resources, and abilities. Control mechanisms: the category includes factors such as pricing, performance measures, and behavioral control. Environment: This category includes factors such as technology and competition. The study also provides an overview of a large number of value drivers that have not been previously identified in the literature. These results can help platform operators in their strategic planning and can provide them with concrete measures for the successful implementation of a platform

Key words: Platform-based business models, value drivers, qualitative-empirical analysis, systematic literature analysis, expert interviews

1. Introduction

A platform-based business model means creating an open platform that allows third-parties to build on top of it, leveraging network effects to scale among multiple parties. It is also refers to a strategy where a company creates a digital or physical platform that enables interactions between producers and consumers, creating value

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through network effects among buyer, seller and third party service provider (McIntyre & Srinivasan, 2017; Arun et al., 2023). Platform-based is a powerful strategy for creating value for customers and businesses. By focusing on expanding the platform offering portfolio, co-creating customer value, and combinatorial innovation, companies can create new and innovative products and services that meet the needs of their customers and create value for their businesses. (McIntyre & Srinivasan, 2017). This can be done in several ways, including Expanding the platform offering portfolio: Adding new products and services to the platform, or developing new features and functionalities for existing products and services (Abbate et al., 2019). Co-creating customer value: Working with customers to develop new products and services that meet their specific needs (Hein et al., 2019). Most recently platform-centric business models (Arun et al., 2023) describe how value is co-created by collaborations of multiple actors, including platform owners, complements, and users but what are the Value Drivers for Platform-Based is lacking in the model. It lacks factors like financial performance pricing, performance measures, behavioral control, technology, and competition. The Platform Ecosystem Value Co-creation Model provides a valuable framework for understanding value co-creation in platform ecosystems, there are gaps in terms of empirical study, and consideration of value drivers to develop a more comprehensive and robust theory of platform-centric business models (Arun et al., 2023; Daradkeh, 2023).

Against this background, this article addresses the following research question: What are the value drivers of platform-based business models and how can they be achieved or implemented? The aim of this article is therefore to identify the most important value factors for platform-based business models. For this purpose, a qualitative-empirical analysis with a two-step approach was chosen. In the first step, a systematic literature analysis (SLA) outlines the research landscape holistically and records existing advertisers. In the second step, the value drivers identified in the SLA were reviewed based on 15 expert interviews and supplemented with new methods from practice. Furthermore, there is a need for more research on the specific challenges and opportunities related to platform business in developing countries (Akter et al., 2022).

2. Literature Review

Online platforms exist across various domains including two-sided markets (Rochet & Tirole 2003), industrial platforms (Gawer & Cusumano, 2014), IT platforms (Boudreau, 2007), platform ecosystems (Tiwana, 2013), the sharing economy (Kumar et al., 2018), and social networks. Platforms differ from linear value chains and business ecosystems in their modular structure and coordination of diverse users

(Adner 2017; Muegge, 2011; Steur, 2018). Key platform types are internet-of-things (IoT) platforms connecting devices via standards (Dorfer, 2016; Tiwana, 2014), and social media platforms enabling social relationships (Dorfer, 2016; Tiwana, 2014). Platform value stems from network effects as users provide value to each other (Katz & Shapiro, 1985; Rochet & Tirole, 2003; Tiwana 2013). Critical mass is needed which retrospective strategies can address (Evans & Schmalensee, 2016; Parker et al., 2016). Governance including decision rights and pricing also impacts value (Schrieck et al., 2016; Tiwana, 2013).

2.1. Platform-Based Business Model

A platform-based business model is a business model in which a company provides a platform that allows other companies or individuals to build and sell products or services (McIntyre & Srinivasan, 2017; Arun et al., 2023). The platform provider typically takes a cut of each transaction that takes place on the platform. It also refers to a strategy where a company creates a digital or physical platform that enables interactions between producers and consumers, creating value through network effects among buyer, seller and third party service provider (McIntyre & Srinivasan, 2017; Arun et al., 2023). Examples of Platform-Based Businesses are:

- **Amazon:** Amazon provides a platform that allows third-party sellers to sell products to consumers. Amazon takes a cut of each sale that is made on its platform (Molina, 2023).
- **eBay:** eBay provides a platform that allows individuals to sell items to other individuals. eBay takes a cut of each sale that is made on its platform (Molina, 2023).
- **Airbnb:** Airbnb provides a platform that allows people to rent out their homes or apartments to other people. Airbnb takes a cut of each booking that is made on its platform (Molina, 2023).
- **Uber:** Uber provides a platform that allows people to request rides from drivers. Uber takes a cut of each ride that is booked on its platform (Molina, 2023).
- Platforms that have been discussed by different scholar in past are mentioned below:

2.1.1. Platform Ecosystem

A platform ecosystem is a system of interconnected organizations, actors, and activities that are enabled by a shared platform. This platform can be a technology, a product, or a service. The platform ecosystem allows for the creation of value through

specialization and complementary offerings. (Jovanovic et al., 2022; Thomas et al., 2014; Arun et al., 2023). Famous example of platform ecosystem is Amazon where:

- **Platform:** Amazon's e-commerce platform
- **Organizations:** Amazon, third-party sellers, customers
- **Activities:** Buying and selling of goods and services

2.1.2. Organizational Platform

An organizational platform is a set of resources and capabilities that are used to develop and produce a stream of derivative products. This platform can be internal to a company or it can be external. (Thomas et al., 2014; Gawer & Cusumano, 2014). Example is Toyota company where:

- **Platform:** Toyota's manufacturing platform
- **Organization:** Toyota
- **Activities:** Design, development, and production of vehicles

2.1.3. Product Family Platform

A product family platform is a platform that enables the development of a family of related products. This platform can be used to create products that are tailored to different market niches. (Thomas et al., 2014). Volkswagen Group is an example of product family platform:

- **Platform:** Volkswagen Group's MQB platform
- **Products:** Volkswagen Golf, Audi A3, Škoda Octavia, SEAT León
- **Activities:** Design, development, and production of vehicles

2.1.4. Market Intermediary Platform

A market intermediary platform is a platform that connects buyers and sellers. This platform can be used to create market efficiencies and to establish and exploit market power. (Thomas et al., 2014). For Example eBay:

- **Platform:** eBay's online auction platform
- **Organizations:** eBay, buyers, sellers
- **Activities:** Buying and selling of goods and services

2.1.5. Internal (Company or Product) Platform

An internal platform is a platform that is used by a single company to develop and produce a stream of derivative products. This platform can be used to create products that are more efficient and effective than products that are developed without a platform. (Gawer & Cusumano, 2014). Apple is more likely a kind of Internal (Company or Product) Platform:

- **Platform:** Apple's iOS platform
- **Organization:** Apple
- **Activities:** Design, development, and production of iOS devices and software

2.1.6. External (Industry) Platform

An external platform is a platform that is used by multiple companies to develop and produce complementary products and services. This platform can be used to create an ecosystem of innovation and to accelerate the development of new products and services. (Gawer & Cusumano, 2014). For example Android:

- **Platform:** Google's Android platform
- **Organizations:** Google, smartphone manufacturers, app developers
- **Activities:** Design, development, and production of Android devices and apps

2.1.7. Technological Platform

A technological platform is a platform that is based on a set of shared technologies and standards. This platform can be used to develop a variety of products and services. (Gawer & Cusumano, 2014).

- **Platform:** The Internet
- **Organizations:** Internet service providers, websites, users
- **Activities:** Communication, information sharing, e-commerce

2.1.8. Industry Platform

An industry platform is a platform that is used by multiple companies in a particular industry. This platform can be used to create an ecosystem of innovation and to accelerate the development of new products and services. (Tee & Gawer, 2009). Society for Worldwide Interbank Financial Telecommunication (SWIFT) is most

suitable example of it:

- **Platform:** SWIFT's messaging platform
- **Organizations:** Banks, financial institutions
- **Activities:** Sending and receiving financial messages

2.1.9. Why is it Important to Understand Platform-Based Business Models?

Platform-based business models are important to understand because they are becoming increasingly common. In fact, some experts believe that platform-based businesses will eventually replace traditional businesses (Parker, Van Alstyne, & Choudary, 2016).

There are a number of reasons why platform-based business models are becoming so popular:

- **They are scalable:** Platform-based businesses can be scaled very quickly and easily. This is because the platform provider does not need to own or operate any of the assets that are used to produce the products or services that are sold on the platform (Molina, 2023).
- **They are efficient:** Platform-based businesses are also very efficient. This is because the platform provider can leverage the economies of scale that come with having a large number of users (Molina, 2023).
- **They are innovative:** Platform-based businesses are also very innovative. This is because the platform provider can attract a large number of developers and entrepreneurs who are eager to build new products and services on the platform (Molina, 2023).

2.1.10. Components of Platform-Based Business Models

Platform-based business models consist of a number of key components, including:

- **The platform:** The platform is the core of the business model. It is a digital infrastructure that allows users to interact with each other and exchange goods and services (Molina, 2023).
- **Users:** The users are the people or organizations that use the platform. They can be buyers, sellers, or both (Molina, 2023).
- **Products or services:** The products or services that are exchanged on the platform. These can be physical goods, digital goods, or services (Molina, 2023).

- **Transactions:** The transactions that take place on the platform. These can be purchases, sales, or other types of exchanges (Molina, 2023).
- **Fees:** The fees that the platform provider charges for the use of the platform. These fees can be a percentage of each transaction, a subscription fee, or a one-time fee (Molina, 2023).

2.1.11. Other important components of platform-based business models include:

- **Network effects:** Network effects occur when the value of the platform increases as more users join the platform. This is because the platform becomes more valuable to each user as the number of users increases (Parker, Van Alstyne, & Choudary, 2016).
- **Data:** Platform-based businesses collect a large amount of data about their users. This data can be used to improve the platform, develop new products and services, and target advertising (Molina, 2023).
- **Openness:** Platform-based businesses are often open to third-party developers and entrepreneurs who can build new products and services on the platform. This can help to drive innovation and growth (Parker, Van Alstyne, & Choudary, 2016).

2.2. Theories on platform-centric business models

The book written by Dave Chaffey and Fiona Ellis-Chadwick, *Digital Marketing: Strategy, Implementation and Practice* in its Chapter: 11 - Platform-Based Marketing they have mentioned that a marketing approach where businesses leverage digital platforms connect with and engage their target audience called Platform-Based Marketing. These platforms can be owned by the business itself or by third parties. Platform-based marketing enables businesses to reach a wider audience, deliver personalized marketing messages, and facilitate interactions and transactions between buyers and sellers (Chaffey & Ellis-Chadwick, 2020).

2.2.1 Platform Ecosystem Value Co-creation Model (Arun et al., 2023)

- Conceptualizes value co-creation mechanisms in platform ecosystems from a marketing perspective.
- Identifies three main value co-creation mechanisms: platform-to-user, user-to-user, and platform-to-third-party.

2.2.2. Platform Orchestration Theory (De Reuver et al., 2018)

- Emphasizes the role of platform owners in orchestrating interactions between

internal and external actors to create value.

- Highlights the importance of platform design, governance mechanisms, and resource allocation in platform orchestration.

2.2.3. Platform Governance (Gawer & Cusumano, 2014)

- Discusses the role of platform governance in platform-based marketing.
- Argues that platform owners need to strike a balance between control and openness to foster innovation and maintain platform stability.

2.2.4. Big Data Analytics in Platform-Based Marketing (Bharadwaj et al., 2013)

- Explores the use of big data analytics in platform-based marketing.
- Proposes a framework for data-driven marketing on platforms, emphasizing the importance of data collection, analysis, and insights generation to improve marketing decision-making.

2.2.5. Scaling and Financial Performance of Platform-Based Business Models

- Platform-based business models have the potential to outperform traditional pipeline businesses (Daniel et al., 2021).

Platform-based business models are a complex and dynamic phenomenon. The theories and research discussed in this section provide a foundation for understanding the key components, drivers, and success factors of these business models. Further research is needed to explore the specific drivers for the success of platform-centric business model. There are still gaps in our understanding of the specific drivers of success, the impact on financial performance, control mechanisms, and the role of the environment. Further research is needed to explore these areas and provide a more comprehensive understanding of platform-based business models and their implications (Yogesh et al., 2021; Daniel et al., 2021).

3. Methodology

In order to identify different value drivers of platform-based business models, the article follows a two-stage exploratory research approach, starting with an SLA, in order to examine the current research landscape and to better understand the specific research area with its conceptual and empirical basis (Easterby-Smith et al., 2012). This qualitative-exploratory research is advantageous in novel, rather little-studied research contexts (Marshall & Rossmann, 2006). If extensive preliminary work cannot be used to anticipate possible influencing factors or correlations, as is the case in this

research paper, inductive studies are a suitable first step towards building a knowledge base (Graebner et al., 2012).

The SLA follows the flow chart of Tranfield et al. (2003). For this purpose, the four different databases EBSCO, EconLit, ECONIS and Web of Science were first searched. The key terms shown in Table 1 have been used. The key terms represent possible synonyms for the term “platform” and the term minus “value driver”. Although at the beginning of the work a deliberate differentiation of the platform concept from similar and often simultaneously used terms, this distinction was deliberately eliminated for the choice of key terms in order to start the SLA with the broadest possible catalog of terms.

Based on 5175 publications, the relevant publications were selected according to the scheme shown in Figure 1. Initially, duplicates were removed and the search results were limited to journal articles in English published from the year 2000 onwards. In addition, publications whose title or core topic do not correspond to the purpose of the study were excluded. In the final step, the remaining 453 thematically appropriate full texts were checked with regard to the naming of value drivers. 214 publications were excluded, so that the final result is reduced to 239 articles. Since the analysis includes the topic of “digital platforms” and “Online platforms”, which are closely linked to the advent of the Internet, which dates back to around the year 2000 (Tiwana, 2013), contributions were used that were only published after this time. In addition, it was decided only use impact factor classified journal articles in the overall sample, since this approach would have significantly influenced or significantly reduced the final result.

Furthermore, a qualitative research approach was chosen (Yin, 2009), which is based on conducting expert interviews. With the help of the results of the SLA, a semi-structured interview guide with open and closed questions was created, which is divided into five categories (general information about the company, platform architecture, platform scaling, platform success and ecosystem environment). The interviews were conducted by telephone and lasted between 30 and 120 minutes (50 minutes on average). During the selection of the interviewees, care was taken to ensure that they meet the characteristics of digital platforms presented within the theoretical foundations. Furthermore, the selection has been limited to companies that are based on a platform and are based in Pakistan. In the process, 35 different companies were identified with their respective platforms to which a personalized interview request was sent. A total of 15 interview partners were won. The anonymized companies and platforms of the partners are shown in Table 2. The platforms include IoT platforms and social media platforms and are represented in a wide variety of industries such as mobility, the healthcare sector, telematics or the agricultural industry.

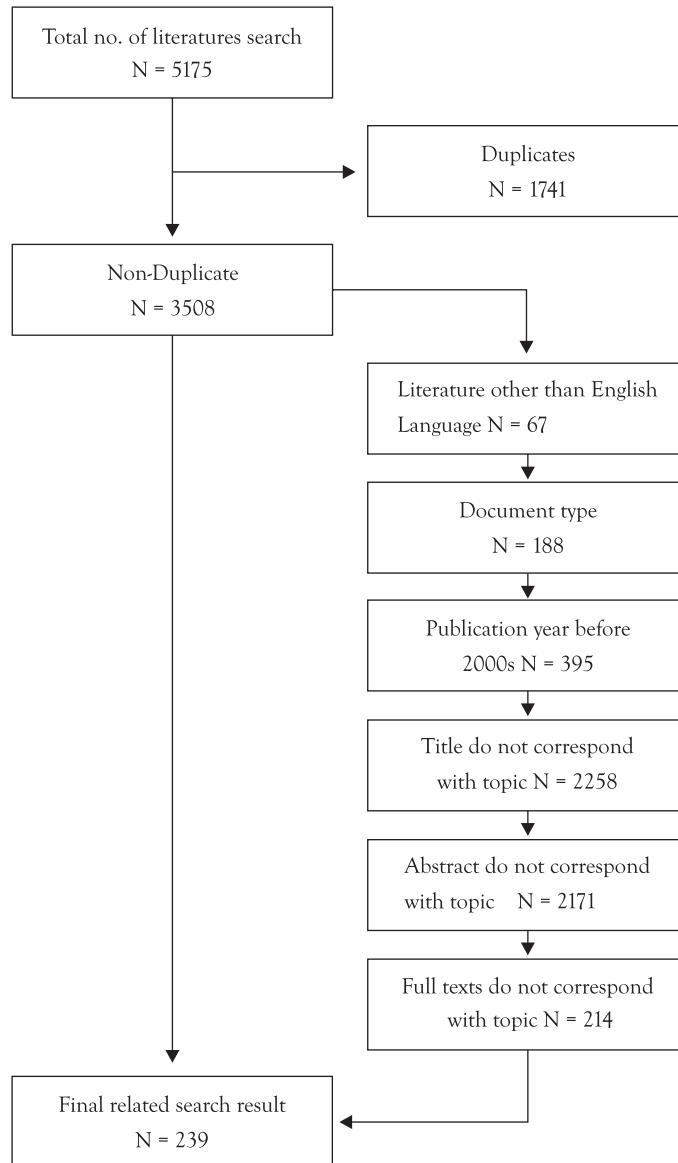


Figure 1: Individual Steps and Exclusion Criteria of the SLA

Table 1: Key Terms for SLA

Key terms for the term "Platform"	Key terms for the term "Value drivers"
"platform", "platform ecosystem", "platform business", "multi-sided market", "peer-to-peer", "platform business model", "Platform based business"	"success factor", "advantage", "value", "driver", "benefit", "firm perform", "business model", "business transform", "business change", "innovate"

To ensure a high level of reliability, two research assistants conducted the interviews and took notes during the interviews. For further analysis and synthesis of the data, the Gioia approach was chosen (Gioia et al., 2013). First, first-order categories were formed, which are derived from the notes and illustrate a variety of different terms and clusters. Subsequently, second-order categories were formed in order to theoretically and logically summarize the previous first-order categories. In the third step, value driver categories were formed. In addition to the formation of the value drivers, they were examined with regard to their differences between individual life cycle phases of online platforms. For this purpose, the interviewees divided their platform into the following phases: introduction, growth and maturity phase. The evaluation of the differences also related to the type of platform. Within the evaluation, all statements were considered in a consolidated manner. Frequencies were not explicitly taken into account.

4. Findings and Data Analysis

4.1. Findings through systematic literature review

The SLA identified six key determinants influencing a platform's performance (Table 2). Some determinants differ according to individual stages of development of a digital platform, others relate to the platform operator or the entire ecosystem (Tiwana, 2013; Van Alstyne et al., 2016; Yablonsky, 2018). The following sections present these determinants.

The development and success of a platform fundamentally depends on the based business model design, with platform operators focusing on architecture and governance (Fehrer et al., 2018). An adequate range of products and services is also essential for the platform architecture. In addition, it is important to equip the products with additional services in order to set the value-added process in motion and to offer added value in the offer of a complete solution. The modularization of design and production processes based on interacting business models is another category of value creation. The architecture should be able to deal with complexity through a modular design (Tiwana, 2013).

The ecosystem and governance are other determinants. Actors in an ecosystem can differ according to the type of platform. The value depends on the role of the user and the operator within the ecosystem (Van Alstyne et al., 2016; Yablonsky, 2018). However, the success of a platform depends on the simplicity of the user's connection. Within the ecosystem, external resources play a central role (Gawer & Cusumano, 2014; Yablonsky, 2018). The value of a platform is created through interactions and the coordination of the resources contributed by the users (Van Alstyne et al., 2016). The SLA showed that the operator should define decision-making rights and use control mechanisms.

Table 2: Overview of the Results of the SLA

Concept	Value drivers	Literatures studied
Architecture	Products and services	56
	Value addition through interactions	
	Modularity	
	Interface standards	
Business ecosystem and governance	External resources and innovations	66
	Entrepreneurship	
	Stakeholders	
	Decision-making rights	
	demand management	
	Pricing	
The internal factor	Employees and know-how	67
	Efficiency	
	Resources and technologies	
	Strategy	
	Leadership	
Scaling	Network effects	32
	Solving the problem of critical mass	
Customer retention	Lock-in effects	14
	User activity	
Environmental factors	Single vs. Multihoming	4
	Political restrictions	

In addition, the quality of the interaction as well as the services of the platform operator are relevant (Gawer & Cusumano, 2014; Parker et al., 2016). A distinction can be made between different models, such as transaction-based pricing or subscriptions, which may differ according to individual market pages (Wang et al., 2014; Yablonsky, 2018). In addition, there are internal value drivers such as the resources and capabilities of the operator. In addition to the employees, the essential resources can be used with the Leadership Factor (Oh et al., 2015) and the internally built know-how can also be attributed to knowledge management, a solid IT basis and the handling of data (Srnicsek, 2017).

Another factor is scaling. The success of a platform depends on the achievement of network effects, which are essentially due to the size of the network or its number of users (Muravskii & Yablonsky, 2015; Wang et al. 2014). Weak network effects are problematic (Cusumano, 2017). Customer loyalty was also listed as an important factor. On the one hand, the lock-in effect was to be created in order to integrate users and generate high switching costs (Parker et al., 2016). In addition, users should be activated, as the platform essentially depends on interactions and passive users do not add value (Gawer & Cusumano, 2014). In general, the platform business model can be understood as a response to the new requirements of the paradigm shift towards trend topics such as the digitalization of technologies, the globalization of markets, for example through corporate ecosystems, and the changing behavior of the economy (Raunio et al., 2018). In principle, it is important to know the external environmental conditions that affect the platform and to observe them regularly (Helfat & Raubitschek, 2018). A distinction should be made between single- and multi-homing platforms. Multihoming represents the competitive state when two-sided or multi-sided markets operate on several platforms, whereas single-homing is when the users of the respective market pages have exclusive access to the other market side of the platform (Belleflamme & Peitz, 2018). This is strongly related to the competitive environment and the degree of openness of the platform.

4.2. Interview results

Using the Gioia methodology, four value driver categories were identified based on the interviews. Table 3 shows these value drivers as well as the first- and second-order categories. (Anchor examples for the individual value driver categories can be found in Appendix A1). As part of the organization and scaling, the platform operator should take into account the design of the platform ecosystem, the implementation of the architecture, the acquisition of new users and the activation of existing users. The platform system differed in terms of openness. Platform argued, for example, that “a platform must be open in order to be competitive”. Furthermore, the respondents emphasized the establishment of decision-making rights for platform providers. These rights varied according to the degree of integration of the users or according to the individual market sites.

Table 3: Overview of Interview Results

	Category	Value Drivers
Open vs. closed platform.	Platform ecosystem	Organization & Scaling
Determination of the number and type of market pages (B2C / B2B).		
Legally independent choice of company and location.		
Determination of the decision-making rights of users.		
Enable virality and extensibility (via API: application programming interface).	Platform architecture	
High degree of modularity required to reduce complexity.		
Enable access to existing network and know-how.	User acquisition	
Attracting one or more relevant vendors/users.		
Spatial or industry-specific focus.		
Involvement of users in new and further developments.	Willingness to participate	
Carrying out marketing activities.		
Neutrality of the operator.		
Control of user behavior.		Financial performance
Industry and market knowledge is crucial.	Resources & Skills	
Involvement of external resources and innovation.		
Building up your own IT know-how.		
Sufficient financial resources are necessary.		
Enabling market access and interaction.	Value proposition	
Reduction of search and process costs and increase in productivity.		
Enabling self-selected user relationships.		
Offer of extensive additional services.		
Offer individual and holistic solutions.	Customer loyalty	
Ensure a sufficient number of users and a balance between market pages.		
Create lock-in effects through deep user integration.		
Ensuring user-friendliness, functionality and reliability.		

Subscription-based pricing model.	Pricing	Control mechanisms
Transaction-based pricing model.		
Subsidize within or between market sites.		
Interactions to measure functionality.	Performance Measures	
Implementation of user-based metrics.		
Implementation of a feedback mechanism and recommender system.		
Use of gatekeeping and monitoring.		
Implementation of procedural and relational control.		
Monitoring of digitization drivers.	Behavioral control	
Development of new technologies.		
Consider technical applicability.		
Monitoring industry and market development.	Technology	Environment
Pay attention to the possibility of niche platforms.		
Consideration of the winner-takes-it-all effect.		
Monitoring of industry and market development.	Competition	
Note the possibility of niche platforms.		
Taking into account the winner-takes-it-all effect.		

Platforms should be legally independent entities, regardless of whether they are an independent start-up or a spin-off from an existing company. This was particularly important in order to convince new customers or existing competitors to use the platform for interactions. The choice of location was just as important as the platform's activities. One of the pharmacy on online platform emphasized that "success is a question of location". This has the advantage, for example, that "the data remains secure". Overall, depending on the location in the country in which the platform is operated, there were different legal requirements that affected data processing, protection and security.

Likewise, architecture was an organizational issue that affected scaling and increasing platform value. Some respondents highlighted the virality of a platform as a "core competency". This has led to an expansion of the total number of users. This made it possible to maintain relationships between users across platforms. The architecture was designed in such a way that the platform could later be expanded to include additional market pages and services. For this purpose, the one food delivery business on online platform has, set up an application programming interface (API)

that can be used to “evaluate the data and use apps”. As a further requirement, the architecture had to be able to deal with complexity. One way to do this was to design individual modules that could be added as needed. To scale, it was necessary to attract new users. The interviews emphasized the importance of an existing network and know-how. This gave the platform operator access to the industry and technology know-how of an existing linear value network. In addition, the existing customer base or supplier network could be used and integrated into the platform. However, this was only possible unless the platform was founded as a new, independent start-up. In addition, it was necessary to win at least one relevant supplier in order to reach a critical mass of users. To this end, for example, the car buying and selling business on online platform initially concluded cooperation agreements with providers. As a result, however, mainly smaller providers could be acquired. The few large providers did not want to lose their customer relationship, so they did not bring their previous customers to the platform. “The purchase [of the providers] would have been more promising overall, as the providers did not want to lose the customer relationship.” However, this would entail a higher capital requirement, which is why online Platform originally opted for the variant of the cooperation agreements and against the acquisition. A geographical or industry-specific focus could help attract users. Business users in particular expected a complete solution. For this reason, the online platform initially focused on one region or industry and set a standard for the value proposition in order to become an industry solution. Subsequently, the funds were successively used for other regions or sectors. References and use cases can be helpful in setting a benchmark. Some platforms cited user recommendations as an important criterion.

Users should also be encouraged to interact. Inactive users increased the number of users in the ecosystem, but this did not affect the number of offers or demands, or the variety of offerings and thus the value of the online platform impacted. The major online platforms mentioned regular exchanges such as community or developer days as a way to activate users. The exchange of information with other users or the platform operator should primarily improve functionality and expand the value proposition, which in turn opens up new possibilities for use and promotes interaction. The new developed businesses on online platform also mentioned the identification of future developments in the form of a roadmap to create transparency for users. In addition, the activation and thus the interaction of the users presupposes the neutrality of the operator.

In addition, contextual determinants such as resources and capabilities came into focus. These were considered an effective lock-in medium that every platform-based company should take into account in order to retain current stakeholders and attract new users. In terms of performance, the results showed that industry and market

knowledge is important. Cash and carry online Platforms said that by understanding the respective market needs, a high and granular range of services is possible, as “the platform is at home in the industry.” Furthermore, IT know-how and the development of a solid IT infrastructure were important resources for the platform owner. R&D expenditure played a subordinate role. In terms of financial performance, the platforms had a strong impact on the overall performance of the company and were therefore able to make a significant contribution to the company’s value creation. Some interviewees stated that a double-digit million sum of around 20 to 40 million euros was needed to scale a platform. However, this was highly dependent on the type and structure of the platform.

Furthermore, the inherent value architecture played a decisive role. The interviewees cited the reduction of search, process and transaction costs as significant. In addition, it opened up market entry for the user and placed a wider range of services. The Daraz.pk online platform cited “strong personal support” as its core competence, which leads to a high level of customer satisfaction and therefore a high level of loyalty. Speed in the form of “time-to-market” was highlighted by another interviewee as particularly important. This design of the value architecture in turn leads to the category of customer loyalty. A high level of transparency, a large and at the same time high-quality range of products and services, and a tailor-made range of advantageous solutions from the perspective of customer loyalty. This, in turn, required the promotion of a balance between the sides of the market and the maintenance of sufficient users willing to participate in the network. The main advantage was the reduction of process costs through system integration. Nevertheless, the right level of functionality and reliability was important for a high level of customer loyalty. This is strongly linked to questions of trust, such as the user’s trust in the functionality of the platform and the belief that participation in a platform within the framework of an ecosystem idea is more valuable than without integration into an ecosystem architecture.

Respondents also mentioned governance mechanisms, such as pricing, performance measurement, and behavioral steering. Most of the interviewees used different pricing models. Many interviewees stated that they used either login-based models, transaction-based models, or both. The experts highlighted interaction-based performance measures that improve the measure functionality and user-related metrics. These measures included the number of apps, devices, trips, clicks, persisted data, or connected assets. Respondents said they use conversion rates. The number of exceptions or tickets indicated the functionality. User-related measures related to the number of partners or active connections in the ecosystem. In addition, platform-independent key figures were used. According to the experts, behavioral management was important for the development and value of a platform. Daraz.pk, for example,

checked “the user identity as well as the creditworthiness during registration to ensure a certain behavior”. The platform stated that “gatekeeping and clear monitoring are very important.” Some interviewees said that the importance of behavioral control would depend on the user’s interaction. Platform, for example, argued that “user reputation is not so crucial because the interacting users know each other.”

The interview results showed that the company representatives surveyed had implemented current environmental conditions in the strategic direction of the company at an early stage. Several of the respondents stated that current technological trends are a key driver for innovation efforts and should be taken into account for the company’s sustainable future. In addition, the associated access to data contributes to the fact that internal technological know-how has been built up independently, which in turn has led to increased flexibility.

Competition is another important environmental factor. First of all, the current market situation and a well-researched competitive analysis were necessary to position one’s own company in the industry. This is especially useful in an early stage of platform construction, as it can have a strong impact on the platform type. With the knowledge that a platform can achieve the winner-takes-it-all effect in an industry, the respective market sides and, if applicable, prevailing competitors should be consciously perceived and proactively identified. One interviewee stated that the platform “sets standards not only in the company, but for the entire industry”. However, other interviewees stated that niche platforms would continue to exist in the long term in addition to large platforms. The platform, which deliberately focuses on one industry and does not pursue a generic strategy, is an example of this.

The value driver categories of the interviews depended on the life cycle phase of the platform. At an early stage, appropriate resource management and consideration of architectural features were important. For growth-stage platforms, key value drivers included building user trust a high degree of modularity and adherence to platform-specific governance policies. The platforms surveyed during the introductory phase did not go into detail about the prevailing neuro-mobility of the operator and the management of user behavior. Self-selected user relationships were also not listed. These platforms chose transaction-based pricing models and connection fees. Subsidies from individual users were also relevant here. However, the platforms stated here that pricing is not important, but a hygiene factor. The technology dimension did not play a role in the introductory phase. For some platforms in the growth phase, the further development and the technology

Dimension of importance. However, the reduction of search costs and subsidies were not listed. However, most of the platforms surveyed used subscription-based

pricing. The same was true for platforms of the maturity phase. In the maturity phase, neither the reduction of search costs nor the reduction of process costs were listed. Niche platforms were not listed in either the growth or maturity phases. Furthermore, no individual solutions were important in the maturity phase. Subsidies also played no role in the ripening phase. In contrast to the introductory phase, the further development of the platforms and the technology dimension were relevant for platforms of the growth and maturity phase. However, there were no differences in the chosen scaling strategies with regard to the life cycle phases.

In contrast to marketplaces, data security is an essential factor for functionality in the context of IoT platforms. Pricing was also more important here and all pricing options were applied. Furthermore, the technology dimension was relevant for IoT platforms. For social media platforms, extensibility didn't matter. Recommendations were cited as a key factor in user acquisition. The involvement of users in the further development of the platform, the neutrality of the operator and the control of user behavior were not mentioned. Interviewees of this type did not cite lock-in effects, ensuring user-friendliness or functionality as a factor. Subsidies didn't play a role for social media platforms. The interviewees of this type of platform also did not mention the technology dimension or niche platforms.

5. Discussion

Some value drivers identified with the help of the SLA could be confirmed by the interviews. In addition, contradictions between practice and literature became apparent and even new value drivers could be identified. Table 4 summarizes the confirmed and the new value drivers of the individual categories.

Within the category of organization and scaling, previous statements on the significance of the platform ecosystem were confirmed. In addition, the interview partners highlighted the importance of the location of the platform as well as its legal independence. The modularity of the architecture was also relevant both in the previous literature and for the experts. The importance of the platform's virality and extensibility for scaling, on the other hand, was new. With regard to the acquisition of users, the analysis was able to identify individual strategies, such as those of Cusumano et al. (2019), Evans (2009), Evans and Schmalensee (2016) Parker et al. (2016) and Stummer et al. (2018). However, there were no differences in the use of the strategies within individual life cycle phases and platform types. This was not to be expected, as other strategies would have been conceivable, especially between social media platforms and IoT platforms, due to the fundamentally different users. In addition to the known strategies, the analysis of the interviews showed that cooperation with other users or their acquisition are opportunities for attracting users. In

Table 4: Differences between Value Drivers from the SLA and the Interviews (Implies a Newly Identified Factor)

Value drivers		Remark
Organization & Scaling	Platform-eco-system	The determination of the market sites and the decision-making rights have been confirmed.
		Legally independent company and location issue.
	Architecture	The modularity is known from literature and has been confirmed by interviews.
		Virality and extensibility.
	User acquisition	The problem of acquiring users to achieve network effects is known from the literature; confirmed by interviews
		Confirmation of individual scaling strategies from the literature
		Distinction between acquisition and cooperation.
	Willingness to participate	Measures
		The neutrality of the operator
Financial Achievement	Resources & Abilities	External resources and specific investments or innovations by users were confirmed through interviews.
		Industry and market knowledge
		Leadership has only been listed in the literature
	Performance-promise	Market access and interaction were confirmed
		Self-selected user relationships
		Reductions in search and process costs have been confirmed, but there are differences in individual life cycle phases and platform types.
		Data security as a hygiene factor for IoT platforms
	Retention	Offering a holistic solution
		The personal support of the users in the business-to-business context was different from the literature on platforms Important
		Deep integration
		Usability

Control-mechanisms	Pricing	Confirmation of various forms such as transaction and subscription-based pricing, as well as subsidization
		Pricing was just a hygiene factor
		Confirmation of the known key figures from the literature but there were no differences in terms of the life cycle phases.
	Performance Measures	Identification of concrete key figures and distinction between functionality and user-related key figures
	Behavioral-control	Monitoring and gatekeeping have been confirmed.
		Feedback mechanisms and recommender systems.
Environment	Technology	Further development of the platform and adaptation to new technological changes
	Competition	The winner-takes-it-all effect was well known in practice
		Differentiation between generic and niche market strategy

order to increase the willingness to participate, the experts emphasized the neutrality of the operator, which was not taken into account in the previous literature. The relevance of external resources for the functioning of a platform was demonstrated by both the previous literature and the experts. The literature continued to cite the leadership factor as a value driver, but this did not play a role for the experts. However, the experts emphasized industry and market knowledge as the value driver of a platform. The interviewees also confirmed previously known factors of the performance promise. In addition, the experts pointed out that self-selected user relationships are particularly important in the business-to-business context. This was surprising, as the potential transaction partners are very limited and the network effects that are central to a platform do not work. Consequently, this form of user relationships is only a kind of process optimization without exploiting the full potential of the ecosystem. Furthermore, the analysis showed that data security is a hygiene factor, especially for IoT platforms. Although this is new, it was to be expected, as IoT platforms are used to feed data, such as machine data, into a cloud for analysis purposes or services. In addition, the interview results indicate that the value proposition initially plays a more important role than the other two value elements value creation and value capture. This could be due to the fact that, according to the Pakwheels.pk online platform, company no longer want to be perceived as just product providers, but rather as solution providers. Within the value proposition, for example, additional services offered on the platform played a major role. In order to achieve this, it is necessary to provide users with a range of additional services, which can be implemented not only by creating an account, but also by promoting interactions, simplified payment or invoice consolidation. In contrast to the performance, the experts stated that per-

sonal support is important. This was to be expected for platforms in the introductory phase, as they first have to convince and integrate users of the platform (Evans & Schmalensee, 2016; Parker et al., 2016). For platforms in other life cycle phases, this was surprising, since a major advantage of platforms over other based business models lies in the network effects (Cusumano et al., 2019; Evans & Schmalensee, 2016; Parker et al., 2016; Tiwana, 2013). To do this, however, a platform needs many Users on the individual market pages. In addition, the results showed that the usability of the platform as well as deep integration are important for customer loyalty and thus the success of the platform.

By means of the interviews, various pricing mechanisms known in the literature could be confirmed. In particular, the use of transaction-based pricing in the introductory phase was consistent with the literature. What was new was that pricing was not intended to be a barrier to entry for users and merely served as a kind of hygiene factor. The interviewees also confirmed the well-known performance measures. In contrast to literature, such as Parker et al. (2016), these were not applied differently in the individual life cycles. The relevance of behavioral control was also confirmed by the interviewees. What was new, however, was that these are only important in the business-to-business environment if the users did not know each other before the interaction.

The technology dimension or the further development of the platform and the adaptation to technological changes was new in the platform context, but this is propagated in other research disciplines. The winner-takes-it-all effect, which is often mentioned in the literature, is also popular in practice, even if there has rarely been a monopoly. What was new here was the distinction between a generic and a niche market strategy.

6. Conclusion

Online platforms face dynamic challenges around scaling and competition. This study identified critical value drivers for platforms through a literature analysis and interviews. Findings confirmed the importance of networks and interactions through extensibility, virality and APIs. Platforms should refrain from interfering in customer relationships. Individual scaling strategies like acquisitions emerged as important, while pricing was secondary. Location also impacted success, as did a generic vs. industry approach. Openness, legal independence and strategic location selection supported success. Platform architecture must facilitate scaling, virality and adaptation. Building robust networks, acquiring industry knowledge and partnering with suppliers attracted users. Contextual factors like resources and performance also influenced outcomes. Value frameworks highlighted reducing costs and enhancing loyalty via

transparency and tailored solutions. Governance impacted success. Environmental trends and competition shaped strategies. Value drivers' importance varied across life cycles. Platform types like IoT and social media had unique considerations around data and recommendations. This provided valuable insights to guide strategic decisions and growth initiatives for sustainable competitive advantage.

7. Implication for Theory Development

7.1. Theoretical Aspects:

7.1.1. Systematic Literature Analysis (SLA): The study employed a comprehensive SLA to understand the research landscape and identify existing literature on platform-based business models. This provided a solid foundation for the subsequent empirical analysis.

7.1.2. Gioia Methodology: The study utilized the Gioia methodology, a well-established approach for qualitative data analysis, to identify and categorize the value drivers of platform-based business models. This rigorous methodology ensured the validity and reliability of the findings.

7.1.3. Identification of Value Drivers: The study identified four main categories of value drivers: organization and scaling, financial performance, control mechanisms, and the environment. These categories encompass a wide range of factors that influence the success of platform-based business models.

7.1.4. Sub-Categories of Value Drivers: Each main category was further divided into sub-categories, providing a more granular understanding of the specific factors that contribute to the success of platform-based business models.

7.2. Empirical Aspects

7.2.1. Expert Interviews: The study conducted 15 expert interviews with representatives from Pakistani online platform-based companies. These interviews provided valuable insights into the practical aspects of platform-based business models and allowed for the identification of key value drivers.

7.2.2. Data Collection: The expert interviews were conducted using a semi-structured interview guide, ensuring consistency while allowing for flexibility in exploring unique perspectives.

7.2.3. Data Analysis: The data from the expert interviews was analyzed using the Gioia methodology, following a rigorous process of coding, categorization, and

interpretation. This systematic approach ensured the validity and reliability of the findings.

7.2.4. Validation of Findings: The findings of the study were validated through feedback from industry experts and academic researchers, ensuring the accuracy and relevance of the identified value drivers.

8. Implication for Managerial Practice

In addition, the present results can help platform operators in their strategic planning and, in addition to the value drivers, show them concrete measures for a successful implementation of a platform. Scaling helps to monitor efficiency of platform models. As more users or participants join the platform, the value of the network increases, attracting even more participants. This network effect can lead to rapid growth and a strong competitive advantage. Financial drivers help managers in controlling costs associated with inventory, production, and logistics.

9. Limitations

Although the article provides new insights into the value drivers of platform-based business models, it also has limitations. For example, the analysis focuses only on platform companies based in Pakistan. The value drivers may well differ in other countries. Furthermore, the subdivision of the life cycle phases is based on the self-assessment of the authors. Within the analysis, all statements were weighted equally. There is no distinction between the individual value drivers in terms of their significance for the success of a platform, so this could be part of future research. A distinction could also be made between successful and unsuccessful platforms.

10. Future Recommendations

The existing literature on platform governance primarily focuses on explicitly addressing online platform based business models. As a result, there is a further research required related to platform design, architecture, contextual determinants, and inherent value architecture. Future research could address these gaps by:

- Exploring the value drivers in different contexts, such as different countries or regions.
- Employing other research methods, such as case studies or surveys, to further investigate the research gap.
- Exploring the categories of value drivers in more depth and identifying additional

value drivers that may be relevant.

- Exploring the value drivers from the perspective of other stakeholders, such as users, advertisers, and regulators.

By addressing these gaps, future research can contribute to a more comprehensive understanding of the value drivers of platform-based business models.

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