



Towards a Platform Age: Strategies for Openness and Quality Control in Digital Platforms

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Abstract

Title: Towards a Platform Age: Strategies for Openness and Control in Digital Platforms

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Digital platforms and the underlying platform business models have become increasingly important for business and innovation in the past years. The world's most valuable companies (e.g., Apple, Meta, Google and Amazon) are primarily digital platforms facilitating interactions and transactions among various user groups. While comprehensive research exists on platform strategies and their impact, the balance between platform openness and control to leverage network effects remains an underexplored.

This study utilizes a qualitative research approach including 11 expert interviews to analyze the effects of platform openness and control. The research finds key strategies for platforms to manage the tension between openness and control. The key themes that emerged from the analysis relate to leveraging platform architecture through APIs, aligning openness with business models, implementing adaptive competitive strategies, enforcing quality assurance policies, optimizing network effects, pursuing innovative monetization approaches, and managing strategic risks.

The study provides valuable insights into the strategic decisions that digital platforms must make to balance openness and control. Furthermore, it provides a strategic framework for managing openness in digital platforms, significantly contributing to the existing literature.

Keywords: Digital Platforms, Platform Openness, Quality Control, Network Effects, Platform Strategy, Platform Governance, Competitive Advantage, Platform Ecosystem

Sumário

Título: Para uma era das plataformas: estratégias de abertura e controlo nas plataformas digitais

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Nos últimos anos, as plataformas digitais e os modelos de negócio subjacentes tornaram-se cada vez mais importantes para empresas e inovação. As empresas mais valiosas do mundo (Apple, Meta, Google, Amazon) são essencialmente plataformas digitais que facilitam interações e transações entre vários grupos de utilizadores. Embora exista investigação exaustiva sobre as estratégias das plataformas e o seu impacto, o equilíbrio entre a abertura e o controlo das plataformas para potenciar os efeitos de rede continua pouco explorado.

Este estudo utiliza uma abordagem qualitativa com 11 entrevistas a peritos para analisar os efeitos da abertura e do controlo das plataformas. A investigação revela estratégias-chave para as plataformas gerirem a tensão entre abertura e controlo. Os principais temas que emergiram incluem o aproveitamento da arquitetura da plataforma através de API, o alinhamento da abertura com os modelos de negócio, a implementação de estratégias competitivas adaptáveis, a aplicação de políticas de garantia de qualidade, a otimização dos efeitos de rede, a procura de abordagens inovadoras de monetização e a gestão de riscos estratégicos.

O estudo fornece informações valiosas sobre as decisões estratégicas que as plataformas digitais devem tomar para equilibrar a abertura e o controlo. Além disso, oferece um quadro estratégico para gerir a abertura nas plataformas digitais, contribuindo significativamente para a literatura existente.

Palavras-chave: Plataformas digitais, abertura da plataforma, efeitos de rede, estratégia da plataforma, governação da plataforma, ecossistema da plataforma

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Table of Contents

| | |
|---|-------------|
| <i>Abstract</i> | <i>II</i> |
| <i>Sumário</i> | <i>III</i> |
| <i>Acknowledgements</i> | <i>IV</i> |
| <i>List of Figures</i> | <i>VII</i> |
| <i>List of Abbreviations</i> | <i>VIII</i> |
| 1. Introduction | 1 |
| 2. Literature Review | 3 |
| 2.1 Fundamentals and Operations of Digital Platforms | 3 |
| 2.1.1 General Overview of the Platform Strategy and Types of Platforms..... | 3 |
| 2.1.2 The Lifecycle of Platforms | 8 |
| 2.1.3 Direct and Indirect Network Effects in Digital Platforms..... | 9 |
| 2.1.4 Reasons for Platform Failure | 12 |
| 2.2 Strategic and Economic Implications of Digital Platforms | 13 |
| 2.2.1 Governance and Quality Control in Digital Platforms | 14 |
| 2.2.2 Openness in Digital Platforms | 16 |
| 2.2.3 Value Capturing and Monetization Strategies | 20 |
| 2.2.4 Strategic Evolution and Competitive Dynamics in Digital Platforms | 22 |
| 2.2.5 Regulatory Boundaries for Digital Platforms..... | 24 |
| 2.3 Problemization and Research Question | 25 |
| 3. Research Design and Methodology | 27 |
| 3.1 Expert Interviews | 27 |
| 3.2 Selection of Interviewees | 28 |
| 3.3 Data Analysis..... | 29 |
| 4. Results | 30 |
| 4.1 Strategic and Adaptive Platform Architecture through APIs | 30 |
| 4.2 Business Model Alignment | 32 |
| 4.3 Adaptive Competitive Strategy | 33 |
| 4.4 Quality Assurance Policies | 36 |
| 4.5 Optimization of Network Effects..... | 37 |
| 4.6 Innovative Monetization Approaches..... | 38 |
| 4.7 Strategic Risk Management and Asset Control..... | 39 |
| 5. Discussion and Conclusion | 40 |
| 5.1 Theoretical Contributions and Managerial Implications..... | 40 |
| 5.2 Limitations | 43 |
| 5.3 Further Research | 44 |
| 5.4 Conclusion..... | 45 |
| References | 46 |

Affidavit..... 52
Appendix..... 53

List of Figures

| | |
|---|----|
| Figure 1: Platform Quality Management | 16 |
|---|----|

List of Abbreviations

API = Application Programming Interface

GDPR = General Data Protection Regulation

HR = Human Resources

KYC = Know Your Customer

SMB = Small and Medium-sized Business

LLM = Large Language Model

1. Introduction

Digital platforms and the underlying platform business models have become increasingly important for businesses and innovation in the past years. The world's most valuable companies (e.g., Apple, Meta, Google and Amazon) are mostly implementing platform business models (Kim, 2016; Cusumano et. al, 2019). These companies leverage the network effects of the platform strategy to create value for multiple groups of users and evolve their platforms into complex ecosystems with multi-sided markets. However, many companies struggle to stabilize and monetize these ecosystems. One reason for this is the level of openness of platforms, which is also one explanation for the failure of platform models (Van Alstyne et al., 2016).

Companies are increasingly leveraging the platform business model to facilitate interactions and transactions among various user groups and are thereby disrupting traditional business models (Reillier & Reillier; 2017). Platforms like eBay, Airbnb and Uber are key examples of this trend. Unlike traditional business models, platforms operate on network effects, where each additional user increases the overall value of the platform. Consequently, this leads to an overarching shift from a product-centric to a platform-centric approach, which allows companies to scale rapidly (Reillier & Reillier; 2017). The increasing popularity and success of platform businesses indicate a broader shift towards more open and interconnected business models (Reillier & Reillier; 2017). As digital technologies continue to evolve, platforms are becoming crucial for companies aiming to stay relevant in the digital age. Its success is driven by its ability to efficiently match supply with demand, reduce transaction- or search costs, and create ecosystems that deliver value to its user groups (Reillier & Reillier; 2017). As the digital economy continues to grow, understanding the complexities of platform dynamics will be paramount for companies pursuing growth in an increasingly interconnected world.

This study aims to explore the following research question: *How can digital platforms navigate the tension between openness and control to optimize network effects and maintain high-quality products or services, considering the evolving competitive dynamics?* While the platform strategy is new yet remarkably successful for many companies, it is important to remember the difficulties in establishing such strategy and the reasons for failure. To answer the research question, this study will analyze platform openness regarding quality management mechanisms, revenue models, and governance structures. The research will be based on primary data

collection through expert interviews as well as secondary data collection with a comprehensive literature review.

In the next chapter there will be a comprehensive literature review which will cover the types of platforms, theories around network effects, quality control, openness of platforms, established reasons for failures of platforms and ways for monetization on platforms. Chapter three explains the qualitative research design involving expert interviews for primary data collection and grounded theory building. Chapter four contains an in-depth analysis of the expert interviews. In chapter five, there will be a discussion of the key findings and their implications for theory and practice as well as an outline of research limitations and areas for future investigations.

2. Literature Review

Platform models have become central in today's economy by transforming industries and enabling interactions among various users. These multifaceted systems range from internal organizational tools to large ecosystems, each leveraging various types of network effects and governance models. The openness of platforms is a crucial factor in their design because it dictates their accessibility and user engagement. This introduction will give a general overview of platform models and their relative importance in current management strategies and business models.

2.1 Fundamentals and Operations of Digital Platforms

Before beginning with the data collection and the analysis, it is crucial to define the varied platform strategies and their progression over time. Therefore, this chapter will present a comprehensive overview of the existing literature on platform business models. It aims to establish a common understanding of what platform models are, the types of platforms existing, their general importance in the economy, and reasons for platform failures with an emphasis on the underlying research question regarding the openness of platforms.

2.1.1 General Overview of the Platform Strategy and Types of Platforms

Before analyzing platform business models more deeply, it is important to define the term itself more clearly and outline the major types of platforms. For this study, platforms will be broadly categorized as transaction platforms that connect different groups. Platforms and ecosystems emerge to solve specific externalities by creating an interorganizational architecture (Jacobides et al., 2023). In their role as “architects”, platforms leverage design rules and governance to address externalities linked to a specific systemic failure. Platform business models represent two-sided markets that can enable interactions between different groups (Kim, 2016). Kim (2016) highlights the importance of quality control policies and revenue structures which incentives both providers and other stakeholders. The main goal companies are aiming for when adopting a platform model is to leverage network effects (Kim, 2016). As more users participate on a platform, the value of the products or services increases (Katz & Shapiro, 1985). Network externalities can be differentiated between direct and indirect effects (Clements, 2004). Direct

network effects are based on growing number of users on the same side of a platform (e.g. more developers on iOS increases the value for other developers). Whereas indirect network effects occur across user groups (e.g. more developers on iOS increases the overall value for iPhone users through more available apps). Furthermore, Kim (2016) identifies that many platforms struggle to stabilize the ecosystem after establishing the initial marketplace. Thus, platforms need to find the balance between open participation of all user groups and quality control for its products and services.

Thomas et al. (2014) gives a more detailed definition of platforms by categorizing them. According to the study, there appear to be four main categories of platforms that can be distinguished. These platform types differ mainly in their focus area, the value they provide, and approaches to facilitate interactions between user groups. The four main types of platforms are (a) organizational platforms, (b) product family platforms, (c) market intermediary platforms and (d) platform ecosystems (Thomas et al., 2014).

- a. Organizational platforms are focused on the company's resources and capabilities. The main goal of these platforms is to optimize the internal use of assets, knowledge, and competencies. By implementing these types of platforms, organizations can streamline processes, enhance productivity and innovation (e.g., Salesforce's Customer Relationship Management platform, which can optimize internal sales, marketing, and customer service).
- b. Product family platforms involve a base product or service that can be adapted into a range of variants to meet the diverse customer needs. This concept allows for economies of scale and scope, reducing costs for new variants by reusing underlying components (e.g., Apple's iOS platform, which allows a range of iPhones, iPads, and other devices to be built on the same operating system and architecture source).
- c. Market intermediary platforms act as intermediaries within a marketplace, allowing transactions between different user groups (e.g., buyers and sellers; service providers and consumers). These types of platforms can reduce transaction costs and create a more efficient marketplace, thus providing added value for its users (e.g., the Uber App connects riders and drivers, or Airbnb connects hosts and guests for accommodations).
- d. Platform ecosystems have a set of shared technologies, standards, and a common infrastructure that supports a set of products or services. By leveraging this type of platform, companies enable different participants to co-create value on the platform

(e.g., Google’s Android ecosystem, which provides many devices with the same operating system, app store and development tools, which allow developers to build products and services).

Furthermore, building on the categorization of platform types by Thomas et al. (2014), Hein et al. (2019) proposes three core building blocks to further characterize, define, and analyze different digital platform ecosystems. The authors provide a comprehensive overview and definition of digital platforms and ecosystems by combining research from various disciplines. They further emphasize the current importance of digital platforms in the way they are changing how users consume and provide digital products and services (Hein et al., 2019). Moreover, the authors define digital platform ecosystems as: “A digital platform ecosystem comprises a platform owner that implements governance mechanisms to facilitate value-creating mechanisms on a digital platform between the platform owner and an ecosystem of autonomous complementors and consumers” (Hein et al., 2019). According to their study there are three core building blocks, which are essential for the analysis of digital platform ecosystems: (a) platform ownership, (b) value creating mechanisms and (c) complementor autonomy.

- a. Platform ownership is the first core building block and plays an important role in the governance of digital platforms. It differentiates the distribution of power within the ecosystem, which can either be centralized (controlled by a single owner) or decentralized (governed by a peer-to-peer community).
- b. Most of today’s successful platforms establish mechanisms which help the value creation process within the ecosystem. Most of the mechanisms are built to facilitate transactions between user groups and provide affordances which enable complementors to create innovative products and services.
- c. The last building block describes the degree of independence complementors have in co-creating value within the platform. Complementors can have high autonomy (loosely coupled) or low autonomy (strategic partnerships). This building block is also part of the research question of this study, how varying levels of openness can impact a platform’s success.

In addition, de Reuver et al. (2018) provides another notable definition of digital platforms, describing them as software-based systems that provide common interfaces through which complementary modules or applications can work together. According to the study, platforms are multi-sided markets that connect different user groups. As a result, they enable distributed innovation through their ability to recombine modular components. However, the authors name key aspects that make platforms challenging regarding further research (de Reuver et al., 2018): (1) their distributed nature with multiple actors and often without a single owner, (2) platform ecosystems are growing exponentially with apps and developers, (3) platforms are increasingly integrated into digital infrastructure and spreading into diverse industries.

Platforms are fundamentally changing the competitive landscape across various industries, by shifting from traditional pipeline business models to platform-based models (Reillier & Reillier; 2017). This shift is driven by the unique capabilities of platforms to leverage network effects, create value through ecosystems of users and operate with incomparable marginal economics. Platforms enjoy significant economic advantages over traditional business models due to their marginal costs of production and distribution. Consequently, platforms have led to significant changes in industries. Platforms have de-linked assets from value, allowing for efficient use of resources without the need for ownership. Furthermore, platforms have introduced new intermediaries that are more efficient than traditional middlemen by leveraging algorithms. According to the findings of Reillier & Reillier (2017) however, traditional firms are still able to compete with platforms, by leveraging their assets and networks to create their own platforms or by transforming their existing products or services into platform-based models. The shift towards platforms is not just a technological swift but requires rethinking of business models.

Due to their prominence and unique feature platforms have partly disrupted entire industries. Some researchers argue that the platform business model will be the dominant design in many industries and may even beat traditional pipeline business models in many ways (Parker et al., 2016). This is due to various factors of the platform design: First, platforms can scale more efficiently by eliminating gatekeepers and are unlocking new sources of value creation and supply (Parker et al., 2016). As more users join the platform, the value of the platform increases which creates a self-reinforcing cycle of growth and network effects. Whereas traditional businesses rely more on linear value chains with scalability constraints. Platforms create significant value through network effects, which can lead to rapid growth and market dominance. Moreover, by leveraging external contributors, they can facilitate a wide range of

innovations. Platforms can also evolve more quickly by leveraging the creativity and capabilities of a wide range of users. Traditional (pipeline) business models on the other hand are limited by the innovation capabilities of their internal resources. Lastly, platforms can operate with lower fixed costs compared to traditional businesses (i.e., due to low or no investments in production or inventory). Lower fixed costs allow platforms to offer more competitive prices and better value propositions. By leveraging external assets and resources they can operate with a higher efficiency (Parker et al., 2016).

Parker et al. (2016) also identifies key arguments why platforms beat traditional pipeline business models. Platforms are more flexible and can quickly adapt to market changes due to their vast network of external contributors and partners. Simultaneously, platforms have direct access to a large user base, and therefore to user behaviors, preferences, and feedback. Consequently, this allows platforms to personalize and adjust offerings to user preferences. Lastly, platforms enable transactions and interactions between different user groups, which reduces costs, increases market efficiency, and allows smaller producers to access a larger market.

Another important term when analyzing platforms is the “affiliation to the platform” which is discussed by Hagiu and Wright (2015). The “affiliation to the platform” refers to the decision and process through which a potential user decides whether to join the multi-sided platform. This decision involves platform-specific investments or commitments by the user to join. One key feature of multi-sided platforms is enabling direct interactions between two or more sides of the market (Hagiu & Wright, 2015). Therefore, affiliation implies that participants can directly engage with each other while using the platforms infrastructure. In many cases affiliation requires the user to make specific platform-related investments. These investments can be monetary (e.g., subscription fees or purchase of compatible device/software) and non-monetary (e.g., time investment of learning to use the platform). However, for many platforms – especially those allowing for direct interactions between the users (e.g., eBay, Airbnb or Uber) – the users retain some level of control over key factors of their interaction (e.g., price setting, service level definition, specific terms of service). The choice to join one specific platform can also involve opportunity costs for the participants, such as abstaining from involvement in rival platforms or dedicating specific resources which could have been used elsewhere. Before joining a platform, individuals and organizations face significant economic trade-offs regarding the potential profits or benefits (e.g., networking opportunities, access to products/services) of the platform (Hagiu & Wright, 2015).

In Summary, platforms are scalable, efficient, and innovative business models that use the power of network effects to create value. Coming back to the underlying research question, platforms rely on network effects for growth and consequently finding the right level of openness is essential to attract users and contributors. This study seeks to offer valuable insights into strategic decisions that determine the success of digital platforms, which makes this research both timely and significant for businesses and scholars. Moreover, many studies highlight that digital platforms present unique opportunities for further research due to their impact on organizations, business models, and entire industries (de Reuver et al., 2018). De Reuver et al. (2018) raise six key unanswered research questions and areas about the lifespan/persistence, design, industry impact, data analysis, theory development, and their impact on society.

Consequently, the research question of this study directly develops the research of platforms as described by de Reuver et al. (2018). The authors suggest further research on the design of successful digital platforms as well as their sustainability, which aligns well with the focus of this study on platform strategy, openness, and quality management. Overall, de Reuver et al. (2018) argues that platform openness is a key design choice, which can affect both the innovation and success of digital platforms.

This thesis contributes to the research field of platforms by providing empirical insights into the optimal balance between openness and quality control to enhance network effects, which currently remains an underexplored research gap in existing literature. In summary, this thesis will help to fill the research gap by (1) analyzing key design choices regarding the openness of platforms, (2) contributing to the literature with empirical evidence from expert interviews, and (3) gaining theoretical insights by focusing on an understudied characteristic of platforms.

2.1.2 The Lifecycle of Platforms

There are four main life stages of platforms: (a.) pre-launch, (b.) ignition, (c.) scaling-up and (d.) maturity. Each of them poses its own challenges and opportunities:

- a. During the pre-launch phase the provider is focused on designing the business architecture, identifying key stakeholders, and outlining the value propositions of the platform. Moreover, during the pre-launch there can be an initial model (prototype) of the platform to test the assumptions. Lastly, the key priorities for platform owners during

this phase should lay on identifying product-market fit and understanding the needs of all user groups (Reillier & Reillier; 2017).

- b. The next phase is the ignition phase, during which providers validate the platform's design and functionality with real users. Furthermore, the focus should be to attain a "critical mass" of users on both sides of the platform. Concluding, this phase allows platform providers to test and iterate different strategies for onboarding new users and building effective matching mechanisms (Reillier & Reillier; 2017).
- c. During the scaling-up phase, the platform aims for fast growth of users, producers/ developers, and the underlying transactions. It is crucial for platforms to build trust and loyalty among participants during this phase (Reillier & Reillier; 2017).
- d. The last phase is the maturity phase with the focus on expanding the business while improving profitability. The platform should enhance its power and influence in the market and ability to influence consumer behavior. Lastly, a platform's brand is another crucial factor to defend against competitors and new entrants (Reillier & Reillier; 2017).

2.1.3 Direct and Indirect Network Effects in Digital Platforms

One key concept commonly discussed in the literature on digital platforms is network effects. Network effects become increasingly important to understand how they enhance the value of platforms and increase their reach and influence. In addition, network effects can explain the dynamics that drive user engagement and platform growth. This chapter aims to connect the previous literature around the term and definition of platforms with their main advantage – network effects – which is crucial for the underlying research question.

Network effects occur when the value of a service or product increases with the number of users (Tucker, 2019). As a result, the utility and attractiveness of digital platforms grow with each additional user. Furthermore, network effects are crucial for understanding how digital platforms gain and sustain market power. However, it is important to differentiate between (a) direct and (b) indirect network effects:

- a. Direct network effects are also commonly referred to as same-side effects. This effect is seen when more users on the same side of a platform directly add value for other users

(Tucker, 2019; McIntyre & Srinivasan, 2016). One example would be social media platforms, which become more valuable to users with each additional user.

- b. Indirect network effects are also commonly referred to as cross-side effects and occur when more users on one side of the platform increase the value for users on the other side of the platform (Tucker, 2019; McIntyre & Srinivasan, 2016). For example, operating systems with an increasing number of end users lead to more developers creating apps which in turn attracts more users to the platform and vice versa. The main driver of indirect network effects is the level of interdependence between a platform and its underlying products or services (McIntyre & Srinivasan, 2016).

Consequently, both direct and indirect network effects can lead to platform dominance, however their intensity can vary according to the industry (McIntyre & Srinivasan, 2016). Furthermore, Tucker (2019) differentiates network effects from the economies of scale and scope. Network effects add value through increased number of users without necessary any changes in production costs, while economies of scale and scope are based on firm cost savings relative to an increased production level. Accordingly, network effects have significant consequences for the competition and market dynamics of a firm. It may influence how new entrants compete and maintain their market position. Moreover, network effects are crucial for the growth and sustainability of digital platforms (McIntyre & Srinivasan, 2016). In conclusion, firms need to carefully and strategically plan platform quality and management to gain a competitive advantage (McIntyre & Srinivasan, 2016). In order to be successful and sustainable platforms need to manage both direct and indirect network effects (Parker et al., 2016). Poor management and abrupt growth can also lead to negative network effects as the value for each user may decrease due to overcrowding or a decline in quality of interactions (Parker et al., 2016).

While traditional economies of scale are driven by production efficiencies, platforms benefit from demand economies of scale, which are driven by advancements in technology, increased efficiency of social networks, the ability to aggregate demand effectively, and enhancement in application development (Parker et al., 2016). Successful platforms enable easy and frictionless joining of new users which enables fast growth and scalability (Parker et al., 2016). Furthermore, as platforms grow, they may be able to collect vast amounts of user data, which can be used to improve user experiences and enhance interactions (Parker et al. 2016).

A pivotal milestone for any platform is achieving the “critical mass” of users, which marks the transition to a phase where its growth becomes self-sustaining (Reillier & Reillier; 2017).

Consequently, this underscores the importance of reaching a sufficient number of users on both sides of the market to foster network effects which are vital for a platform's survival. In many cases achieving this state of "critical mass" is considered to be the tipping point of a platform, shifting it from one state to another (Reillier & Reillier; 2017). Consequently, the tipping point can represent a shift towards a dominant market position, enabled by network effects and critical mass achievement.

While network effects can be considered as the main advantage of platforms over traditional business model, they also pose a significant risk during the launch phase of a platform. This risk is commonly referred to as the "chicken and egg" problem (Cusumano et. al, 2019). The "chicken and egg" problem refers to the challenge of building a significant user base when the value of the platform depends on the presence of a significant number of other participants (Cusumano et. al, 2019). Thus, platforms have a significant dependency on having users on both sides of the market (i.e., number of users on side A depends on number of users on side B and vice versa). Platforms can approach this dilemma with three main strategies: create stand-alone value for one side first, subsidize one or both sides or bring both sides on board simultaneously.

There are different strategies for solving the above mentioned "chicken and egg" problem depending on the type of platform at hand (Cusumano et. al, 2019). Cusumano et al. (2019) differentiates between two types of platforms – (1) innovation platform and (2) transaction platforms. Depending on the strategy of the platform owner a different type of platform will be appropriate.

- (1) If the platform creates value through the enablement of third parties to build their own products and services, an innovation platform would be most appropriate. These platforms rely on shared technological infrastructures to enable third parties within their ecosystem to create new products and services. Furthermore, they foster a creative and collaborative environment where users can innovate to enhance user experience (e.g., operating systems for smartphones). By encouraging the development of complementary products or services, innovation platforms can rapidly expand their ecosystem.

- (2) If the platform creates value by allowing various users from different market sides to interact, a transaction platform would be most appropriate. Transaction platforms are designed as intermediaries that allow for transactions between different user groups. Consequently, their main function is to enable information sharing and exchange of goods and services. Their main advantage is more efficient process of transactions (e.g., easier, faster, or cheaper to find and exchange products, services, and information). Typical examples include online marketplaces.

Innovation platforms may create stand-alone value for one market side first. They aim to produce a product/ service with inherent value (i.e., without the need of having users on the other side of the platform immediately). Trying to onboard users from both sides at the same time can be challenging and requires significant resources and effort. By building their own products or apps, innovation platforms can solve this problem and encourage third-party development on the platform.

Transaction platforms can leverage existing markets by identifying and attracting users and information from other platforms (e.g., Airbnb utilized Craigslist to identify and attract property owners and renters). Moreover, transaction platforms can also try to attract users one side of the market initially (e.g., by offering free or discounted services). Afterwards the platform may attract users and complementors from the other side of the market.

2.1.4 Reasons for Platform Failure

There are many upsides and opportunities of the platform business model, however there are also many risks and challenges that need to be considered. In their research Van Ayste et al. (2016) defined several reasons for platform failure:

The first one is the failure to optimize the platform openness. Being too open can lead to poor quality contributions and misbehavior by users. However, a platform which is too closed can prevent participants from joining the platform and hinder network effects (Van Ayste et al., 2016). One example named by the research is the case of Apple in the 1980s, which struggled by being too close and overcharging developers. Next, it is crucial that platforms are not only open but also actively engage developers (i.e., by providing them with resources, feedback, and rewards) to encourage participation. Not actively engage developers can also lead to platform failure (Van Ayste et al., 2016). Furthermore, it is important that all sides and stakeholders

receive value through the platform. Market sides that get insufficient value may not participate. Moreover, it is important to launch on the right side of the market (e.g., consumers vs providers). Platforms may also fail due to excessive focus on revenue generation before an established user base. This can prevent the sustainability and growth of a platform. Lastly, it is important to recognize the platform and ecosystem potential. Companies that are too focused on products may miss opportunities to build effective ecosystems. While there are many possible reasons for platform failure, this study will focus specifically on the design choice of platform openness.

Adding to the exploration of platform failure the study by Ozalp et al. (2018) provides further insightful observations into the unintended consequences of next-generation technological advancements on platform ecosystems. This research paper highlights the interplay between platform innovation and complementor engagement, which may shape the trajectory of platform success or failure. When platform owners introduce next-generation technologies with advanced capabilities, they may disrupt the complementor ecosystems which is crucial for the platform's success (i.e., by steepening their learning curve and increasing development challenges). These barriers can dissuade complementors from continuing to innovate on the platform, leading to a potential disruption of the ecosystem. The successful evolution of platforms requires a balance between technological advancement and maintaining an accessible and supportive environment for complementors (Ozalp et al., 2018). Recognizing the potential risks associated with next-generation platform technology enables platform owners to implement strategies that foster a healthy ecosystem.

2.2 Strategic and Economic Implications of Digital Platforms

The platform business model has fundamentally transformed how businesses operate and innovate. As platform models become increasingly popular, it is crucial to understand how platforms are governed and controlled, and the implications of their strategic importance within the economy.

2.2.1 Governance and Quality Control in Digital Platforms

The next key factors to analyze are governance and control mechanisms within digital platforms, which are implemented to capture the value and control the quality of products and services. Chen et al. (2021) defined a key framework for platform design and governance, which is categorized on three building blocks (i.e., value, governance, and design). Platforms create value by facilitating interactions and transactions between various user groups and leverage network effects (Chen et al., 2021). Prior research has identified multiple ways to capture the value generated, through direct sales, subscription models, advertising, transaction fees and more. Additionally, platforms implement governance structures that are mostly focused on incentive mechanisms and control mechanisms (Chen et al., 2021). Incentive mechanisms may include the sharing of resources (e.g., providing API's, development tools, etc.), sharing of information and market insights, as well as giving complementors autonomy to innovate on the platform and finally financial and non-financial rewards.

Furthermore, platform providers implement different control mechanisms. Some platforms have a vetting process before users can join the platform (i.e., access control). Platforms may also implement control mechanisms regarding output control (e.g., quality benchmarks, rating systems). Moreover, there can be behavioral control mechanisms in the form of guidelines, policies, and rules. Lastly, platforms may implement external relationship control in order to manage the relationship between complementors and third parties (Chen et al., 2021).

The last core building block – focused on design principles such as modularity, interoperability, scalability, and user experience – also needs to be considered. Platforms that are designed in a way that allows for frictionless interactions, scalability, and intuitive user engagement and experience have a higher chance of succeeding.

Tiwana et al. (2010) defines platform governance as the decision-making about the platform, including who has control over various factors. The main challenge platform providers must face is to ensure integrity while still fostering innovation. The authors also define this challenge to find the “right level of control” as the “Goldilocks Governance Problem” (Tiwana et al., 2010). Key aspects of governance include the distribution of decision-making rights between the platform owner and module developers. Decisions can include functionalities, design concepts and ecosystem interfaces. Furthermore, Tiwana et al. (2010) categorizes between (1) formal (i.e., output and process control) and (2) informal (i.e., guiding behavior of module developers) control mechanisms.

Apart from platform governance the architectural choices are equally significant. Architectural choices guide the interaction between the platform and modules (Tiwana et al., 2010). The authors also highlight the need for a platform's architecture that supports both variety and unforeseen changes in the future (Tiwana et al., 2010). These choices are often long-lasting and difficult to reverse, thus creating significant business implications. Additionally, Tiwana et al., (2010) categorize the properties of platform architecture into three critical aspects: (a.) decomposition, (b.) modularity and (b.) design rules.

- a. Decomposition explains how the platform's ecosystem and its subsystems can be broken down which determines the separability and functionality of the ecosystem.
- b. Modularity explains the degree to which subsystem changes affect other parts of the ecosystem, thus enabling the independent modification and transformation of individual components.
- c. Design rules should include consistent rules and assumptions for developers across the platform.

Research shows that the correlation between architecture and governance can both reinforce or reduce each other's effect on the ecosystem (Tiwana et al., 2010). A robust governance framework with clear rules and policies is crucial for managing interactions and transactions, ensuring fairness, and resolving disputes on the platform (Reillier & Reillier; 2017). Furthermore, it is crucial to build trust through transparency, user feedback and safety measures. Active community management and content moderation that aligns with the platform's principles are also essential. Platforms should incentive positive behaviors, manage risks and be able to adapt its governance as they evolve. Lastly, platforms can engage legal and policy challenges proactively by engaging with external stakeholders (Reillier & Reillier; 2017).

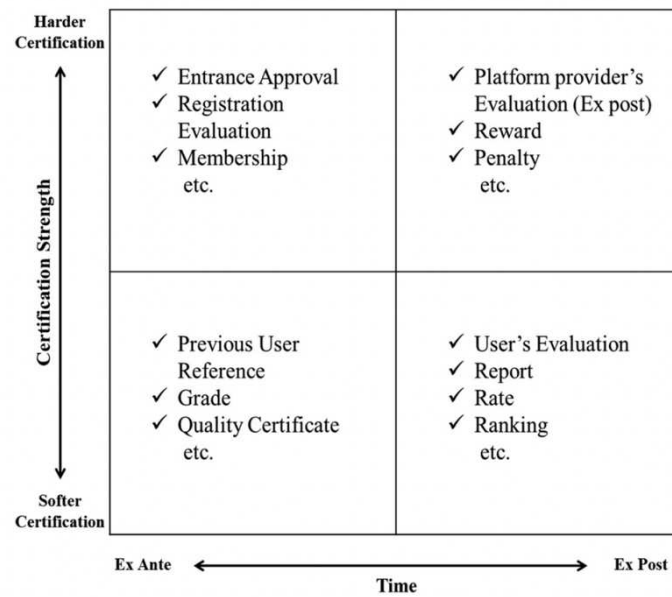


Figure 1: Platform Quality Management; Source: Kim (2016)

Hagiu (2009) introduced the framework for ‘quality certifications’ in platforms. Quality certifications confirm that products and services that are offered on a platform meet specific standards and rules set by platform owners. Furthermore, they can provide stakeholders with assurance of compliance and trust. According to this framework, one can differentiate between ‘hard’ and ‘soft’ certifications. Kim (2016) provides another framework based on ‘quality certifications’ from Haigiu (2009) for studying quality management on platforms (see Figure 1). This framework differentiates between stronger and weaker quality certifications, and the timing of certifications. ‘Hard certifications’ are stringent measures that limit certain activities (e.g., entrance approval, registration, and membership criteria). ‘Soft certifications’ involve measures such as previous user references, grades, and quality certificates that are less strict. These types of regulations can occur before the participants interactions or activity on the platform (i.e., ex-ante) or after the interactions (i.e., ex-post).

2.2.2 Openness in Digital Platforms

Platform openness has shown that it is a key strategic decision in platform design and evolution. This is due to the tension between closed and open-source approaches. This chapter reviews the current literature and research on strategies regarding platform openness. Consequently, it

analyzes how companies and industries have shifted towards a more open approach to foster innovation and broader adoption.

For firms in two-sided markets to decide on the degree of openness (i.e., whether to share a platform or fight for proprietary control) involves the balance of control and power over the platform with the potential for innovation and growth (Eisenmann et al., 2016). Platforms that are considered 'open' can attract a larger ecosystem of developers (complementors) but can also potentially give up on control over the user experience, quality of goods and services, and potential revenue streams. Thus, firms need to consider many trade-offs when designing platforms (Eisenmann et al., 2016). When deciding on the openness of a platform there are many strategic considerations to be made, such as guidelines for third-party developers, quality control mechanisms, and structures to incentives external contributions with platforms goals and mission (Eisenmann et al., 2016). These decisions depend on market context, competitors, and the platforms objectives. The ability to monetize its user base, network effects, and the need for differentiation also play a critical role (Eisenmann et al., 2016).

There are benefits to both open and closed platforms. Open platforms can encourage participation, increase network effects, and reduce rivalry costs, but also reduce the ability to monetize the platform (Eisenmann et al., 2016). Closed platforms allow for better value capture, premium pricing and more control but also risk market fragmentation (Eisenmann et al., 2016).

Many researchers have shown that companies are now creating hybrid strategies (West, 2003). In their study West (2003) analyses the strategic adaptations of proprietary platforms to the open-source movement. These vendors aim to combine the benefits of open-source software with some level of control and differentiation. The author explores three different case studies in his research. The case studies show that the rise of open-source has forced companies to reconsider their platform strategies. This shift towards more open platforms aims to grow innovation, reduce development costs, and increase the adoption of platforms (West, 2003).

Another important contribution to the research of platform openness is the analysis of Belian et al. (2015) on perceived platform openness. The authors present several key learnings from the perspective of third-party application developers. Furthermore, the perceived platform openness significantly directly and indirectly affects multiple outcomes, such as developer satisfaction, perceived usefulness, and contribution intentions (Benlian et al., 2015). Moreover, the study finds that increased openness can lead to higher developer engagement and

contributions. However, there is a trade-off, too much openness may dilute the quality of contributions. The authors propose future research directions regarding exploration into the understanding and operationalization of platform openness from the perspective of application developers, which aligns well with the research question of this study (Benlian et al., 2015).

The key challenge regarding openness for platform providers is the balance between innovation and control to protect the platforms integrity and value proposition (Schmeiss et al., 2019). In recent years the blockchain technology became increasingly popular and important and the authors presented this as a promising solution for platform governance (Schmeiss et al., 2019). It allows for decentralized control, transparency, and trust which are all key factors for managing platforms. Furthermore, the blockchain technology can also ensure clear rules for engagement by motivating users to participate and contribute innovative outputs. Concluding, the blockchain technology could address the problem of openness in platform ecosystems by automating and standardizing interactions to facilitate transparent, fair, and secure participation. While the current application of these technologies is only experimental and not yet widely adapted, they do offer valuable insights for designing future platform ecosystems that balance openness with control.

In order to analyze platform openness in detail, it is crucial to define platform openness and its scope within the current literature. Openness in digital platforms can be defined as the degree to which external groups (or users) can access and contribute to the platform (Broekhuizen et al., 2021). This may include suppliers, customers and service/ product providers or developers. Broekhuizen et al. (2021) have also identified five dimensions of platform openness: (a.) supplier openness, (b.) customer openness, (c.) complementary service provider openness, (d.) category openness and finally (e.) channel openness. The dimensions are defined as following:

- a. Supplier openness refers to the level of access and control suppliers have on the platform, which can influence the core product offerings and integration.
- b. Customer openness refers to the degree of customer access and involvement on the platform in relation to seeking and consuming products and services on the platform.
- c. Complementary service provider openness is the degree of access and authority on the platform of providers who offer non-core services (i.e., in addition to the platforms core product).

- d. Category openness is the range and types of product categories available on the platform (e.g., eBay offers high category openness by allowing the sale of many product categories).
- e. Channel openness is defined as the variety and accessibility of distribution and communication channels the platform provides for its users.

There are many drivers for platform openness which can also vary depending on the type of dimension considered (Broekhuizen et al., 2021). Key drivers include strategic objectives, technological, regulatory and market factors. In addition, competitive pressure, user needs for customization and integration, technology capacity for openness or closure and regulatory concerns are some of the most important factors that influence a platform openness (Broekhuizen et al., 2021).

Existing research has also shown how openness impacts platform performance, ecosystem vitality and innovation rates. The authors highlight both positive effects (e.g., enhanced innovation) and challenging effects (e.g., increased competition and complexity). Furthermore, Broekhuizen et al. (2021) outlines four main areas for future research directions which align well with the focus of this study, as the authors imply the need for a better understanding of how platform openness affects performance, user engagement and the quality of products and services.

Moreover, according to Eisenmann et al. (2008) there are two main strategies for managing openness in digital platforms (i.e., horizontal and vertical strategies).

One key horizontal strategy is to enable interoperability with established rivals. As platforms mature, they may reconsider compatibility policies and pursue interoperability agreements with competitors. This could involve developing converters or gateways to facilitate integration. However, this can be costly and involve technical or legal constraints. Furthermore, platforms must carefully assess impacts on market size, share and margins and thus balance the potential gains from increased network effects against the risk of lower prices. Another approach would be to license new providers. Proprietary platform owners may license additional platform providers to serve diverse user segments. By doing so, platform owners can broaden their platform adoption. This approach is most attractive when new providers can offer innovative platform variations. However, this approach can also increase competition and challenges in partner management. Another strategy is to broaden sponsorship by inviting other parties to co-

develop the core platform technology which can reduce R&D costs, increase innovation, and potentially lead to higher quality products and services.

Contrary to this, there are also vertical strategies to manage platform openness (Eisenmann et al., 2008). Platforms need to decide whether next-generation products should be engineered or developed to be compatible with complements from previous generations (i.e., ‘backward compatibility’). However, this approach needs to balance the benefits of creating a stable ecosystem against the need for users to adapt newer versions. Another vertical strategy is negotiating platform and category exclusivity agreements with complementors. Platform exclusivity restricts complements from being offered on rival platforms, while category exclusivity gives certain complementors exclusive right within their product category on the platform. While these exclusivity agreements can provide competitive advantages, they can also raise antitrust concerns.

Vertical as well as horizontal strategies aim to grow the overall platform ecosystem while maintaining appropriate incentives and control points which require careful consideration of tradeoffs around openness. Mature proprietary platforms face the challenge of leveraging their market dominance to capture the value from the ecosystem, while avoiding backlash and challenges from stakeholders and antitrust authorities (Eisenmann et al., 2008). Platforms must carefully balance incentives for innovation and competition against their own interests.

2.2.3 Value Capturing and Monetization Strategies

Adjacent to creating value for its user groups through network effects, the value capturing mechanisms remain another crucial issue for platform owners. Parker et al. (2016) defines three different monetization strategies for platforms: (a.) charging a transaction fee, (b.) charging for access and (c.) charging for enhanced access.

- a. Platforms can capture value by facilitating interactions between different user groups. These interactions often involve monetary transactions. Platform providers may charge a fee for these transactions (i.e., percentage of price or fixed fee). These fees only occur once a transaction is completed, thus allowing users to join the platform at no cost. Platforms must carefully set the fee level and ensure that all transactions remain on the platform without fee avoidance by users.

- b. Another way to monetize the network effects of the platform is to charge third parties for access to the community of users. This can be implemented when the community of users on the platform is valuable by itself (e.g., LinkedIn offers Recruiters and HR managers exclusive access to its community of professionals)
- c. Lastly, platforms can implement a freemium model which involves charging for premium services or enhanced access. This monetization strategy allows basic participation for free and sells enhanced access as an additional service.

Platforms that generate revenue through advertising, subscriptions, or referral fees rely in most cases on user-generated content (Subramanian et al., 2021). The value of the platform for an individual user increases exponentially as more users participate on the platform, thus many platforms initially focus on generating traffic on the platform and focus on profit generation at a later stage. However, many platform firms struggle to capture value from these user-generated inputs due to their intangible nature and difficulties in valuation (Subramanian et al., 2021). According to existing research, high valuations seem to be often justified by network effects and user-generated content (Subramanian et al., 2021). Content generated by platform users also has significant drawbacks due to the inability to mandate, contract or manage it through service-level agreements which leads to uncertainty regarding its valuation (Subramanian et al., 2021). Subramanian et al. (2021) conducted an empirical analysis of 160 acquisitions which reveals that additional platform usage increases firm value, but the relationship between platform usage is non-linear and decreases over time due to inherently low switching costs in the digital economy. The study finds that interaction platforms (i.e., platforms that foster direct user interactions within social or interest groups) demonstrate a significantly higher rate of valuation increase compared to platforms solely based on user-generated content (Subramanian et al., 2021). Platforms based on user-generated content have greater value uncertainty compared to those platforms with firm-generated content.

Furthermore, the ability to capture value is mostly influenced by switching costs. As a result strategies that increase switching costs (e.g., enabling user interaction and creating defined social and interest groups) are crucial for the monetization of the platform value. As increasing platform usage does not guarantee increased firm value, firms must implement strategies that enhance that enhance switching costs.

Moreover, research has shown that it can be risky for platforms to abruptly change the pricing structure of the core interactions (Reillier & Reillier; 2017). Changes in the pricing structure

(especially when transitioning from a free to a paid model) can decrease the trust of the users and value of the platform. Pricing models need to be designed to strengthen the network effects. The authors emphasize to use pricing as a strategic tool which is very important for the success of a platform (Reillier & Reillier; 2017). Accordingly, pricing models need to ensure good customer experience, support growth and scalability of the platform and maximize interaction quality. The strategies for pricing and value capturing can also differ vastly between proprietary and open-source digital platforms (Economides & Katsamakos, 2005). The optimal pricing strategies for two-sided markets involves not only setting prices for the direct users of the platform but also for the firms and developers offering applications (i.e., products or services) that are complementary to the platform. Under certain demand conditions and when the platform is proprietary it is possible for equilibrium prices for the platform to be set below marginal costs (Economides & Katsamakos, 2005). The authors also find that open-source platforms may be more profitable than proprietary platforms. However, when users prefer application variety, the profits of industries with proprietary platforms are larger than open-source industries.

2.2.4 Strategic Evolution and Competitive Dynamics in Digital Platforms

This chapter delves into the strategies platforms may employ exploring the structures of business model evolution and approaches platforms employ to outstrategize competition. By integrating insights from previous discussions on platform strategy, lifecycle and network effects, this chapter provides key drivers for success of digital platforms, highlighting the balance between innovation, imitation, and the strategic foresight required to maintain a competitive advantage.

Zhao et al. (2019) identifies four distinct patterns through which platform business models evolve. The author seeks to categorize the methodologies and strategies through which digital platforms refine, expand, and restructure their business model in order to gain a competitive advantage and respond to market demands, achievable through (1) simple innovation, (2) complex innovation, (3) simple imitation and (4) complex imitation (Zhao et al., 2019).

- (1) Simple innovation means that platforms can introduce stand-alone value that don't necessarily integrate with existing offerings or operations, often leading to quick but not necessarily sustainable competitive advantages (e.g., Instagrams introduction of the

“Stories”-feature in 2016. While it was innovative, it was a distinct new feature that didn’t initially require significant changes to Instagram’s core business model).

- (2) Complex innovation means that platforms can engage in complex innovation by continuously developing and integrating multiple new innovations and offerings into their core business model. These innovations are embedded in the platform’s ecosystem which enhances complexity and created barriers for new entrants and imitation (e.g., Amazons development of Amazon Web Services (AWS) started as a small infrastructure to its online retail operations but evolved into a cloud service platform. This innovation significantly expanded Amazon’s business model from e-commerce to cloud computing).
- (3) Simple imitation involves the imitation of specific offerings from comeptitors’ business models that are easily replicable, often without adding any significant value. This approach can lead to immediate, yet temporary competitive advantages due to superficial adaptations (e.g., Microsoft Bing’s introduction of a rewards program as a response to the success of similar programs like Google’s “Local Guides”. This was a direct response to the market dynamics without the need for significant innovation or changes to Bing’s core business model).
- (4) Complex imitation involves platforms not only imitating but also adapting and evolving innovations and offerings from competitors, thus integrating them deeply into their own business model. This approach creates a more competitive offering by combining imitation with original development (e.g., Spotify’s “Discover Weekly” personalized playlist feature, which was introduced as a response to personalized radio stations offered by Pandora. Spotify further developed this feature by creating complex algorithms that not only consider the user’s listening history but also incorporates what similar users are listening to. Spotify integratred deep learning and social networking aspects into its business model and further developed the imitation of a competitor).

From the above mentioned patterns there are several strategies that platforms can implement in order to stay competitive. On one hand, the notion of innovation-centered strategies describes the prioritization and integration of new features, services or offerings to stay ahead of the competition. Furthermore, the focus lays on differentiation through distinctive products and services unavailable from competitors. On the other hand, imitation-centered strategies characterize the close monitorization of competitors and rapidly adopting successful strategies, services or features identified in the market. However, the key is the selection of the right

features and the effective execution by finding a balance between copying and adapting to fit the platform's context. Lastly, there can also be a blend of innovation and imitation strategies, where platforms not only introduce new features but also adopt successful concepts from competitors.

Digitization has fundamentally transformed competition and the nature of competition has shifted from product-based to platform-based, where the value lies in the system of interconnected products and services rather than individual products (Cennamo, 2019). The competition dynamics within these digital markets is not just driven by the scale of a platform (network size) but also by the "platform's identity". The notion of "platform identity" is defined by a combination of a platform's technological attributes and its market position (Cennamo, 2019). Technological attributes refer to the platforms design, functionalities, capabilities, and the architecture that enables the connection between the two sides market. Market positioning, on the other hand, pertains to the specific customer needs a platform aims to fulfill, the value proposition it offers and its strategic focus. The competition in digital markets can lead to unique dynamics such as a 'winner-takes-all' scenario but it also allows for coexistence of multiple platforms through distinct identities. These dimensions help to understand the nature and intensity of competition among digital platforms (Cennamo, 2019).

2.2.5 Regulatory Boundaries for Digital Platforms

Strategic decisions of platform owners are not only driven by economic incentives but also by the complex regulatory frameworks, which may also influence platform openness and control. In particular, this chapter will focus on the "Know Your Customer" (hereinafter abbreviated as 'KYC') rule as a case study of compliance that possibly affects platform openness (Siller, n.d.). Most digital platforms operate in a many-sided regulatory environment across many jurisdictions and sectors. Therefore, data protection laws, competition laws and consumer protection laws are defining constraints regarding the openness of digital platforms (Parker et al., 2020). Firstly, comprehensive data protection regulations like the GDPR pose strict rules for digital platforms on how they can collect, store, process and safeguard personal information of customers. Moreover, platforms have to implement data governance structures and obtain explicit consent regarding personal user data. Secondly, platforms must balance the protection of intellectual property and still foster innovation for third-party developers and complementors

without infringing on copyrights (Hamza & Pradana, 2022). Lastly, there are many cases where digital platforms gain significant market power, which may raise concerns about anti-competitive practices. Traditional antitrust laws may be less effective because of the dynamic nature of digital markets and scalability due to network effects (Parker et al., 2020).

Another important regulatory boundary is the KYC principle, which is primarily recognized in the financial sector, but also has broader implications for digital platforms (i.e., especially platforms that allow transactions or exchanges between users). The KYC rule requires some platforms to verify the identity of their users to prevent fraud and other illicit activities (Siller, n.d.). The KYC rule can influence the platform design regarding user onboarding and its operational costs. Furthermore, the KYC rule requires extensive personal information and documentation during the sign-up and onboarding process of users. This additional layer may lead to less platform openness and could potentially hinder growth. Furthermore, adhering to the KYC rule may require substantial investments into verification systems, staff training and continuous compliance reviews. There are several platforms which have already integrated the KYC rule to comply with regulations and enhance trust within their ecosystem. Financial platforms (e.g., PayPal, Stripe) have implemented strict KYC processes to verify the identity of their users before joining the platform in order to ensure secure financial transactions. Similarly, cryptocurrency exchange platforms (e.g., Coinbase, Binance) are also adhering to KYC standards to prevent the misuse of their services for money laundering. Other platforms such as marketplaces (e.g., eBay, Airbnb) are also implementing identity verification to build higher trust and safety amongs its users.

While these regulatory requirements are essential for ensuring platform integrity and user safety, they can also restrict platforms on how to operate and innovate. Taking these insights into account, platforms need to be adaptive and responsive not only to the market dynamics but to the evolving regulatory environment. Regulatory boundaries significantly influence the strategies for digital platforms, especially regarding platform openness.

2.3 Problemization and Research Question

Previous research within this literature review has demonstrated the inherent tension that digital platforms face in attempting to balance openness and quality control. On one hand, fostering

openness by allowing broad participation from users and complementors is crucial for driving innovation, accelerating adoption and enhancing network effects that increase the platform's value (Eisenmann et al., 2008; West, 2003; Belian et al., 2015). However, too much openness can undermine the platform's ability to maintain high standards of quality for its products/services and may lead to challenges in monetizing the platform effectively (Cusumano et al., 2019). This creates a fundamental tension between encouraging open participation and ensuring the high quality offerings. This tension is intensified by the "chicken and egg" problem of building a critical mass of users to significantly realize network effects, while the value of joining depends on the existing user base (Cusumano et al., 2019). Platforms must carefully weigh openness strategies against quality control mechanisms when addressing this bootstrapping problem. Their architectural and governance choices in finding "the right level of control" can either enable or constraint effective management of openness (Tiwana et al., 2010).

Moreover as platforms grow and achieve market dominance, their strategic decisions regarding platform openness have significant implications for competitive dynamics. Considering, the problemization derived from the literature review, the research question of this study will be defined as following: *How can digital platforms navigate the tension between openness and control to optimize network effects and maintain high-quality products or services, considering the evolving competitive dynamics?* It addresses an important gap identified in the current literature, which emphasizes the strategic importance of managing the tension to foster network effects and maintain quality (Eisenmann et al., 2008). It also aligns with Parker et al. (2016), who advocate for additional research exploring how platforms can leverage network effects while ensuring high-quality products and services. Lastly, existing research falls short in analyzing governance challenges in digital platforms, specifically in identifying strategies to optimize innovation and ecosystem integrity (Tiwana et al. 2010). Resolving the problem of platform openness is therefore not just an operational issue, but one with vast strategic and academical implications. Building on this literature review, this study will introduce findings from primary research through expert interviews.

3. Research Design and Methodology

This study will utilize qualitative research methods to analyze the strategies for platforms to navigate the tension between openness and control. A qualitative approach was chosen because of the complex nature of digital platform strategies. The following will outline the research process, interviewee selection and data analysis conducted for this study.

3.1 Expert Interviews

To further complement the extensive literature review and secondary research part of this thesis, 11 expert interviews were conducted. These interviews serve to gather a deeper qualitative insight into the underlying research question. Qualitative research methods, such as expert interviews, allow for an in-depth exploration of concepts, opinions, and experiences beyond what is possible through quantitative methods (Corbin & Strauss, 2008). Moreover, they may facilitate the developments of concepts, generate new ideas and perspectives, and support flexible dialogue structures.

The structure of the expert interviews was semi-standardized guided by a flexible but directional interview guide (see Appendix A). This approach fosters an open dialogue while still ensuring that all relevant topics are covered. The interview guide was divided into four thematic blocks. Starting with a discussion on platform openness, it shifts to the management of products and services within a platform and its underlying governance structures. It then covers the platforms network effects and lastly, the revenue and monetization model of platforms. The interview questions were designed to gather detailed insights from the experts, building on the preliminary findings of the literature review. All interviews were conducted via Google Meet and recorded with the consent of the participants. By doing the interviews via video call, it allowed for flexible scheduling and access to a diverse group of experts across different geographical locations.

After the completion of the interviews, the data was systematically analyzed using thematic and qualitative analysis (Gioia et al., 2013). The expert interviews not only enhanced the theoretical foundations of the literature review but also helped to build new aggregated themes to answer the research question.

3.2 Selection of Interviewees

In order to ensure the quality and relevance of the insights obtained from the expert interviews, the selection of the interview participants was planned in detail. A total of 11 experts were chosen from various types of digital platforms, including e-commerce, social media, and ride-sharing platforms. Additionally, consultants who have not directly worked for platforms but have conducted consulting projects for startups and businesses operating with a platform model were also included. Lastly, experts from the academic and research sector specializing in platform strategies were also selected.

To qualify as an expert for this study, interviewees had to meet specific criteria. First, they were required to have significant professional experience either working directly for platform-based companies or by doing research or consulting projects with platform models. Candidates were selected from various industries to ensure a wide range of insights how digital platforms operate within different markets and sectors is covered. Furthermore, by including experts from the academic field the study was grounded in latest research and theoretical frameworks around platforms. Moreover, each expert was required to hold a senior management position or an equivalent role providing them with decision-making capabilities within their organizations.

To identify suitable interview partners, the primary approach involved leveraging the existing personal network. Additionally, potential interview partners were also identified through the social network LinkedIn. The alumni networks of the ESCP Business School in Paris, the Católica School of Business and Economics as well as the University of Cologne further facilitated access to diverse interview participants. Furthermore, additional interview partner were identified using the snowballing method and recommendations.

Due to sensitivity of the information discussed during the interviews, the names of the interview participants are kept anonymous and only their job positions are disclosed. This approach ensures the participation of high-caliber experts who might otherwise have been unable to contribute to this study and that the data collected is as detailed and open as possible without any reservations.

3.3 Data Analysis

As the data of the interviews was qualitatively analyzed, this chapter introduces the method of deductive content analysis, which is a structured and systematic approach used in qualitative research. This form of qualitative analysis is instrumental in analyzing how digital platforms manage openness to enhance their competitive advantage.

For this study, an inductive analysis is advantageous for several reasons. Inductive analysis is exploratory and aims to discover patterns and insights from the expert interviews without any predetermined hypotheses (Jebb et al., 2017). It helps to generate new concepts and themes that are grounded in empirical data and emerge directly from the perspectives and experiences of the expert interviewees (Thomas, 2006). An inductive qualitative analysis also allows for more flexibility as more and new data emerges. This is crucial for a field like digital platforms, where technological and market trends can change quickly. Lastly, this approach emphasizes depth of the insights and provides a deep understanding of fewer contexts rather than superficial insights across many.

For this study the ‘Gioia Methodology’ will be used for the qualitative analysis of the expert interviews (Gioia et al., 2013). The analysis using this method includes several key stages. The first step is the “open coding” in which direct quotations from the expert interview participants are categorized as ‘first-order concepts’ (Gioia et al., 2013). This keeps the analysis closely tied to the perspective of the participants. During this stage the data was also clustered within Excel to maintain an orderly flow analysis. During the second stage (i.e., ‘axial coding’) the first-order concepts were synthesized and summarized into second-order themes by identifying patterns, similarities and differences that reflect the researcher’s interpretation. These second-order themes are more conceptual than the first-order concepts. In the last step the second-order themes were integrated into aggregated dimensions. This step is the most critical as it actually builds overarching theories and concepts derived from the interviews to answer the research question. These abstract dimensions contribute significantly to the field of study (Gioia et al., 2013). With its inductive approach, the Gioia Methodology helps to build new theories that are not based on any pre-existing theories or studies.

4. Results

This chapter presents the results from a thematic analysis conducted on 11 semi-structured expert interviews exploring strategies to manage the tensions digital platforms face between openness and control (see Appendix B). The analysis revealed 7 aggregated themes that show how platforms can effectively balance openness and control to drive growth through network effects (see Appendix C).

The 7 key themes that emerged from the analysis relate to (1) leveraging platform architecture through APIs, (2) aligning openness with business models, (3) implementing adaptive competitive strategies, (4) enforcing quality assurance policies, (5) optimizing network effects, (6) pursuing innovative monetization approaches, and (7) managing strategic risks.

4.1 Strategic and Adaptive Platform Architecture through APIs

One of the key findings from the expert interviews was the critical role that platform architecture and APIs play in managing the balance between openness and control. The strategic use of APIs emerged as a significant factor to effectively manage external innovation while maintaining core standards and quality, as highlighted by Interviewee H regarding the capacities of the platform ChatGPT:

"And for instance, if you take the example of ChatGPT they have experts, engineers, researchers working on the LLM. But as an external company, you can connect to leverage the capacities of ChatGPT. You connect to the API. And this is very important. In order to be open, it is important to have a clear value proposition for people outside that want to leverage or benefit from your openness and technology." (Interviewee H)

There are several ways in which APIs can contribute to platform openness. By providing APIs, platforms allow external users or developers to access and build upon their core technology. This extends the platform functionality and democratizes the development process. Furthermore, APIs open platforms up to a global community of developers which encourages creative use and further integrations than the original platform vision. This may also foster a stronger ecosystem around the platform and enhance its image (Interviewee B). APIs can also

serve as a way for collaboration between other software systems. This allows for new partnerships and further business opportunities across different industries and use cases (Interviewee G). APIs can also be used strategically to increase network effects (Interviewee F). As more external developers or companies use the platforms services and offerings through APIs to create applications, the more valuable the platform becomes. Furthermore, this increases user engagement and attracts more developers which can also create a feedback loop that enhances the platform's growth. While APIs are one way platforms can open up to external contributions, they can also provide a framework for platform owners to control and monitor how their technologies are used (Interviewee I). This can be especially useful in the beginning stages of a platform, where the main focus lays on finding a product market fit. Once a platform identifies which features and services are most valuable, it can strategically restrict access and monetize on their own. One example of this is Facebooks open API strategy (Interviewee I). Initially external platforms (e.g., Google search engine) were able to index Facebook profile pictures and pages (i.e., users could find Facebook content directly through Google searches without needing to log into Facebook itself). Eventually, Facebook closed off these aspects of their API but gained valuable information about its core asset and how to protect it (Interviewee H). By doing so, Facebook started to create barriers to protect for its platform. These barriers increased the switching costs for users and developers which made it harder to switch to competing platforms (Interviewee I). Moreover, this shows that the platforms architecture must be flexible to adapt to changing markets, strategies, and customer needs.

In summary, APIs are a crucial and strategical way platforms can manage the tensions between openness and control while still encouraging innovation. This approach also shows that the optimal level of openness for platforms can change as a platform grows and its priorities shift. By carefully managing external access through APIs, platforms can ensure internal quality control while benefiting from external contributions and feedback.

While these findings were derived from inductive research methods through expert interviews, they also correlate with prior empirical research, which also emphasizes the strategic deployment of APIs to balance innovation with control (Karhu et al. (2018), Benzell et al. (2019a), Benzell et al. (2019b), Zhang & Cao (2015)). Karhu et al. (2018) further emphasizes how platforms can leverage boundary resources like APIs to allow external developers to build upon the platforms core technology, which is consistent with the results of the expert interviews.

4.2 Business Model Alignment

Platforms may adopt varying degrees of openness depending on their different strategic objectives and market positioning. It is crucial to align the platform design and architecture with the overarching strategy and revenue objectives (Li et al., 2016; Avison et al., 2004), as outlined by interviewee H:

"And if you don't have a clear business model, in fact, you just have people using your own service without paying for that. And then in fact, it costs a lot in terms of infrastructure, maintenance and product innovation without any revenues." (Interviewee H)

For platforms that prioritize rapid user acquisition and market penetration (i.e., especially during early launch phases of the platform) an open model can be effective. This can include third-party integrations and high accessibility for users (Interviewee K). However, platforms which are focused on premium segments should prioritize greater control to differentiate within the market and uphold quality standards (Interviewee K, H, F). Moreover, it is crucial to have a clear and adaptable business model in order for the platform to be sustainable in the long-term (Interviewee H, F, I). Consequently, platforms need to establish a clear understanding of how revenue is generated (e.g., through advertisements, in-app purchases or premium services) to maintain a balance between scaling and monetizing effectively. As Interviewee F pointed out the example of Facebook, which initially focused on growth through a high level of openness within their APIs and later monetized through advertising leveraging a more closed platform model. In addition, platforms should create built-in barriers that increase the switching costs for users on the platform:

"None of these delivery service platforms have built-in barriers on the platform, which is why they always have deficitary unit economics." (Interviewee I)

Without creating any barriers, users can easily switch between competitors which creates an economic risk for platforms. This illustrates that scaling and attracting users alone is not enough to guarantee success. While scaling is often seen as a key goal for digital platforms, platforms must have a profitable business model to be sustainable in the long term. This involves more than just having many users or transactions. It requires a strategy that converts users into actual

financial returns. Furthermore, many platforms lack built-in barriers which allows users (i.e., both service providers and customers) to switch between competing platforms. For example, Amazon has effectively created such barriers with its Prime program which makes it difficult for users to switch to other platforms. Without these barriers platforms cannot effectively retain users (Interviewee I).

Some platforms choose to be more open because they want to target a global market or aim to create a wide user base quickly (Interviewee E, I). However, without a clear business model platforms face challenges in sustaining innovation without consistent revenue streams (Interviewee H). Resulting from the expert interviews there were two main strategies platforms may adopt with regard to their business model. First, platforms targeting a premium segment usually choose a more controlled and closed environment to maintain high standards and differentiate their product offerings (Interviewee K, I). In some cases, it might be beneficial to use a modular design approach, that allows platforms to adapt features and controls according to user feedback (Interviewee E). Second, platforms that are aiming for mass adoption should design their platform to be highly scalable and accessible (e.g., simplifying the user interface, reducing barriers to entry and offering freemium models). The value of the platform increases as more users join and interact with it. While the individual value of products and services may be lower, platforms must have a clear and effective monetization strategy (Interviewee K, I).

In summary, this alignment strategy helps platform owners to strategically navigate the tension between openness and control.

4.3 Adaptive Competitive Strategy

Digital platforms should consistently evaluate the market dynamics and adjust their level of openness (Interviewee H, E). Therefore, platforms should systematically adapt to market conditions, competitive pressures, and technological advancements to optimize network effects. Moreover, platforms must implement an agile strategy by modifying their openness based on market dynamics, which allows them to capture new opportunities, address user demands more effectively, and differentiate themselves (Interviewee H, B). The decision on openness of a platform can depend on target market segments, the nature of the products and services offered, and regulatory environments (Interviewee A, G).

Furthermore, an adaptive competitive strategy requires platforms to continuously evaluate the trade-offs between being open which may increase user engagement and market penetration and closed which may enhance product quality, security, and user trust (Interviewee F, I). Consequently, platform owners must assess the risks and benefits of each approach (Interviewee B, E). By increasing the level of openness, platforms can enhance user engagement and market reach on a global scale. It enables a larger demographic to enter the platform (Interviewee H, B):

“Being widely open is a way to leverage network effects because the more features you offer, the more users will use your platform. And the more users will be on the platform, the more service providers, if they are relevant, would be willing to participate and to join your ecosystem. So the level of openness is important to kickstart or to sustain your network effects.”
(Interviewee H)

The decision regarding platform openness is also driven by the opportunity to create strong network effects on the platform. However, despite the advantages of an open platform, maintaining controlled access is crucial to protect the quality of services and products. Vetting users and service providers helps to reduce fraud and to maintain user trust. Controlled access mechanisms can include provider verification processes and continuous monitoring of users and transactions within a platform (Interviewee A, G, I). Interviewee H and B highlighted the importance of using openness strategically to kickstart network effects and scale quickly whereas Interviewee A discussed the necessity of maintaining a controlled ecosystem to separate undesirable merchants and products. Specifically, platforms are required to find an optimal balance between openness and control. Interviewee C and G noted the advantages of open platforms especially in reducing search and transaction costs for users but also stressed the need for strategic control to avoid issues like fraud and poor service quality.

These trade-offs are crucial for managing risks such as data breaches, service misuse, attracting investment by showing a robust governance structure, and building user trust through reliable service delivery (Interviewee F, E, C).

Another important factor regarding platform openness is the core value proposition of a platform. The level of openness is often aligned with what the platform aims to offer to its customers and how it positions itself in the market (Interviewee H, B):

"(...) When you have a closed platform, you really need to be very focused on the value proposition because it's not about transaction costs. It's really about the experience you may provide. In this case, you also want to enable a certain modularity in the way you design your platform. This is because when it comes to build experiences, the interesting thing is to add some specific features or services." (Interviewee C)

Furthermore, platforms need to find a strategic balance based on regulatory environments which also affect their openness and engagement with different market segments. Platforms need to adapt their strategies to comply with local and regional laws and regulations while still maximizing accessibility and user engagement (Interviewee A, G). Moreover, platforms operating in multiple jurisdictions may need to adapt their openness based on local data protection laws, regulatory frameworks, and consumer protection standards (Interviewee G, C). The level of platform openness can also be a competitive response to actions taken by a rival company. One example was mentioned by Interviewee H: The operating system iOS, developed by Apple, is known for its closed ecosystem which strictly controls everything from the software to the hardware and the apps that can be used on the devices. In contrast, Android chose an open system approach. Android was not just available on multiple devices from various manufacturers but the open ecosystems also permits a wider range of applications and modifications. The decision to remain open is a direct response to iOS's closed system. Instead of competing head-on with Apple, Android provides an alternative that is inherently different in its level of openness and accessibility. Conversely, a platform might increase control to create a premium, trusted and safe environment if competitors suffer from issues due to openness or low-quality products and services (Interviewee H).

Another important determinant for the level of openness of platforms is the underlying technology and infrastructure which can influence the ability to scale up or down its level of openness (Interviewee B, H, I, F). An adaptive competitive strategy also involves aligning platform design with the interest of all dependent stakeholders (e.g., users, service providers, developers, advertisers, and investors). These stakeholders must be included in all strategy decisions to maintain trust and support while pursuing strategic objectives (Interviewee G, H).

The qualitative insights of the expert interviews suggest that digital platforms need to find a balance between openness and control tailored to their unique financial objectives, competitive market dynamics, unique value proposition and local regulatory frameworks. Effective management of this balance can enable platforms to leverage network effects for growth, while

still ensuring financial profits and the delivery of high quality and secure products and services to their users. Implementing an adaptive competitive strategy will ensure the long-term success and relevance within the digital marketplace.

4.4 Quality Assurance Policies

To maintain high-quality products and offerings, digital platforms must implement quality assurance measures that respond to both external (e.g., data protection laws and regulatory requirements) and internal pressures (e.g., corporate integrity, customer trust, and brand protection). These quality assurance policies can integrate both technological solutions through automatic monitoring as well as human oversight.

Platforms must adhere to external regulations to ensure lawful operations and protect user data, such as GDPR or KYC rules (Interviewee B, H). As stated by interviewee H the main driver for this is external regulation: "A way to ensure quality is to be forced to do that by regulation." (Interviewee H). Consequently, platforms develop internal rules on policies to maintain quality control and user trust (Interviewee E, B). As noted by interviewee G, protecting the end consumers and customers is one main goal for the strategies of platforms:

"I do believe that it is very important to protect your end consumers and a platform can only achieve this through a certain 'closedness' and control over the products and services that are offered on the platform." (Interviewee G)

Platform can implement AI and machine learning technologies to automatically monitor and flag any violations of platform rules (Interviewee E, F). In addition to these automated systems, many platforms employ human teams to review flagged content to ensure accuracy and compliance (Interviewee E, F). Furthermore, it is crucial to regularly update policies and control mechanisms and involve various stakeholders in the policy development process (Interviewee B, F). Another important factor within platform operations is user trust and user feedback. Platforms need to ensure transparency in their operations which builds user trust (Interviewee H, I).

In summary, for digital platforms to manage its openness and control structure they have to find a balance between implementing technological solutions and human oversight to create quality

assurance measures that adhere to external regulations, protect user data and trust, and uphold corporate integrity and brand reputation.

4.5 Optimization of Network Effects

The main goal of digital platforms is to achieve significant network effects. As outlined in the literature review to provide value as a platform it is important to retain a critical mass of users, developers, and complementors within a platform. Platforms should carefully analyze user behavior, feedback, and dynamics to identify the optimal level of openness that allows for a self-enforcing cycle of growth and user engagement.

The user base of a platform is crucial to leverage network effects. Increased platform openness can lead to a larger user base, which in turn can benefit all participants of a multi-sided platform (Interviewee E, H). As the platform becomes increasingly populated, it offers greater potential for interactions and transactions among users, which can enhance user experience and satisfaction (Interviewee G). The presence of competitors on a particular platform also encourages continuous improvement and drives network effects. As noted by interviewee F:

"There is a network effect that comes from the 'fear of missing out'. If your competitor is on the platform and publishes the achievement of amazing results and incredible return on investment, that's going to trigger other competitors that want to advertise."

Therefore, network effects can also be driven by competitive pressures, as companies and potential customers strive not to miss out on potential market gains. During the expert interviews network effects were often described as a “snowball effect”, as more participants join the value increases, which in turn attracts even more participants:

"Network effects are like the snowball effect. The more people, the more products, the more people purchasing the products." (Interviewee H)

Creating strong network effects is paramount for digital platforms' success. The first phase of any platform should be focused on the achievement of a critical mass of users by carefully choosing the level of openness to maximize positive user dynamics and transactions across the

multi-sided platform. However, the results of this study show that scaling the user base alone is not sufficient (Interviewee I). Monetization strategies are crucial to translate the network effects into sustainable revenue streams and capture value. Therefore, the next chapter explores innovative monetization strategies beyond user growth and engagement.

4.6 Innovative Monetization Approaches

Platforms should develop revenue models that balance user accessibility (openness) with monetization (control) to enhance both network effects and the value captured. Interviewee I outlined a key strategy that is based in two phases: Initially, to lock users in and attract a critical mass, platforms often start by offering highly optimized, user-friendly experience. The results of this study also show that platforms tend to be more open during this phase (Interviewee H, I, E). As the platform grows, it may introduce premium features or additional fees, which adds a layer of control while still allowing for user engagement.

Furthermore, there are various mechanisms implemented by platforms to capture the value created. Platforms can earn directly through transactions that occur on the platform through transaction fees, which ties revenue directly to platform usage (Interviewee A). Moreover, platforms can leverage their large user base by generating revenue indirectly through ads and other placements from brands and companies (Interviewee F). Lastly, after establishing a critical mass of user base, platforms can implement enhanced or premium features, which adds additional value for the users and generates revenue (Interviewee F). As outlined by interviewee H, this strategy involves being open enough to maximize network effects and attract users and then gradually implementing control- and monetization mechanisms:

"As Jeff Bezos once said: 'Every time we win a Golden Globe, we sell more shoes.' (...) So in fact, with this example, you can understand that you can have an indirect business model. You can lose money on one side of your product, on one side of your business and earn money on another side. (...) This also shows that platforms first need to focus on gaining customers and users on the platform and then on its monetization strategy" (Interviewee H)

This approach ensures that the platform does not compromise on the quality for its products and services during the scaling phase while also using a profitable business model.

4.7 Strategic Risk Management and Asset Control

Platforms need to proactively manage the risks associated with its level of openness. Furthermore, they must define their level of openness to optimize the use of their core assets while considering the need for market expansion. This highlights the need for platforms to differentiate their strategies based on the type of core assets the platform owns (i.e., user data vs proprietary technology) and their desired market positioning (i.e., global reach vs niche markets). Platforms need to ensure that their user data which is often a key asset is not overly exposed. This could hurt both user trust and platform integrity. As discussed by interviewee H:

"Being too much open can be counterintuitive or counter-productive because as a platform, your asset is your database." (Interviewee H)

An example of a platform with user-centric assets are the Meta Platforms. Their major asset is the vast amount of user data they collect which makes it a core aspect of Meta's business model. However, there are also platforms with technology-centric assets (e.g., Android Operating System). These types of platforms may adopt an open approach to set industry standards and enhance market penetration, as outlined by interviewee I:

"If your main asset is your technology, be open so that this technology becomes a standard in the ecosystem". (Interviewee I)

Another determinant of the level of openness of platforms is the market reach. Platforms decide whether to reach a global market or focus on a premium, niche segment (Interviewee H). Consequently, this will influence the level of openness as platforms aiming for high volume might choose a higher level of openness and those focusing on high-value transactions might increase control (Interviewee C).

In summary, platforms need to manage the risks associated with openness effectively in order to better control and secure their strategic assets. By doing so, they can optimize network effects without compromising the quality of their products and services.

5. Discussion and Conclusion

The findings from this study provide valuable insights into the strategies digital platforms can implement to effectively manage openness and control to drive growth and network effects. The seven key dimensions that emerged from the expert interviews show the critical role of platform architecture and APIs, the importance of aligning openness with business models, the need for adaptive competitive strategies, implementing quality insurance policies, optimizing network effects, pursuing innovative monetization approaches, and managing strategic risks. By comparing prior research with the results of this study reveals both the reinforcement of existing findings and theories as well as new perspectives and strategies.

5.1 Theoretical Contributions and Managerial Implications

The first finding highlighted the strategic use of APIs as a critical factor for managing the tension between openness and control by enabling external innovation and usage while still maintaining control over core platform functionalities and quality of products and services. This concept confirms the existing literature of how APIs can be used for external innovation and as a strategy to manage platform openness (Eisenmann et al., 2008; Tiwana et al., 2010; West, 2003). While existing literature covers the strategic use of APIs it lacks a detailed analysis of how platforms adjust API architecture as they mature and priorities shift. The findings of this study show that many platforms start with more open APIs to attract developers and users, and gradually introduce controls and internalize innovation as they grow to protect core assets and monetize effectively (Interviewee H, I). Furthermore, the first dimension of this study identifies several novel strategies regarding platform API's. The thematic analysis highlighted the role of APIs in fostering a global community of developers and strategic partnerships. Moreover, the findings of this study show that APIs can also be used to create feedback loops where external contributions are used to refine and enhance platform offerings. Lastly, platforms can strategically close APIs after gathering valuable insights and creating switching costs for users and developers. While existing research discussed the strategic use of APIs, this study provides a more detailed understanding of how APIs can be used to balance openness and control.

The second finding of this study highlights that platforms must align their design and architecture with their overarching business model and revenue objectives. Platforms can adapt their level of openness to either support rapid user acquisition or focus on a premium market

position. While the literature review provides foundational insights into the business model alignment, they do not comprehensively address the dynamic strategies that align their business model with varying degrees of openness (Cusumano et al., 2019; Parker et al., 2016; Avison et al., 2004). The findings of this study particularly show the need for platform to iteratively adapt their business models over times in response to both market conditions (i.e., competitive landscape, regulatory environment) and platform maturity. The emphasis to optimize business models according to the different growth stages and strategic objectives is not covered in current literature. Furthermore, it is important for platforms to develop built-in barriers to create switching costs and enhance user retention.

The third finding highlights that platforms need to continuously adapt their level of openness based on market dynamics, technological advancements, and competitive pressures to optimize network effects. This strategy aligns with prior research around platform strategies (Cennamo, 2019; Economides & Katsamakos, 2005; Eisenmann et al., 2006, Haigu & Wright, 2015). By confirming prior results and theories, this finding strengthens the credibility and generalizability of this strategy.

The fourth aggregated dimension and finding of this study suggests how platforms can implement both technological solutions and human oversight in quality assurance policies to maintain high-quality standards. This framework is driven by both external drivers (e.g., data protection laws) and internal drivers (e.g., corporate integrity, sustaining customer trust and brand image). This finding confirms prior studies that highlight quality assurance policies for digital platforms (Avison et al., 2004; Belian et al., 2015; Benzell et al., 2019b). However, the results of this study give more detailed insights into the implementation and long-term sustainability of these strategies. Quality assurance measures should be constantly adapted according to stakeholder input, including users, developers, and regulatory bodies. Furthermore, platforms should place high emphasis on the role of transparency in operations to build and maintain user trust. Lastly, there needs to be a coherent strategy to balance internal quality control measures with external regulations (e.g., GDPR, KYC).

This fifth finding of this study shows that digital platforms can optimize network effects by finding a balance between openness and control that attracts and retains a critical mass of users, complementors, and developers. Platforms should carefully analyze user behavior, user feedback, and platform dynamics within its ecosystem to identify the optimal level of openness that allows for a self-enforcing cycle of growth and user engagement. This reinforces prior research, which highlights how platforms can manage their ecosystem to drive network effects (Hein et al., 2019). Furthermore, prior research also shows how APIs and platform governance

structures can enhance network effects (Benzell et al., 2019b; Chen et al., 2021). However, this study highlights the importance of analyzing user behavior to find the optimal level of openness and to adjust based on monitoring of market dynamics. Therefore, this study provides novel insights that are not comprehensively covered in the current literature.

The sixth aggregated dimension highlights that platforms can find a balance between openness and control by implementing a strategic revenue model that optimizes both network effects and quality of offerings. Most platforms allow for broad access initially to attract, growth and lock in a potential user base, which is gradually regulated with various revenue mechanisms (e.g., transaction fees, premium features and advertising). This phased approach ensures that customer retention is secured first by gaining trust and dependency and allowing for a transition into revenue-generating strategies without compromising quality or user experience. These novel insights provide a practical and phased approach for monetization strategy of platforms. The existing literature confirms that ecosystem governance and platform design support and sustain the adaptable monetization strategies (Hein et al., 2019; Chen et al., 2021).

The final finding of this study regarding strategic risk management and asset control is partly novel in its comprehensive approach to balance openness and control. The main finding highlights that platforms must optimize their level of openness in accordance with the use of their core assets (e.g., user data, proprietary technology). Platforms can implement this strategy by distinguishing between two asset types: User-centric assets should be treated with more exclusiveness to protect user privacy and create switching costs. However, platforms with technology-centric assets should aim for standardization and broader market adaptation. Prior research confirms that the strategic risk management is a key determinant of platform openness (Hein et al., 2019; Chen et al., 2021). However, there is an absence of the differentiation between the asset types. Therefore, this finding offers a valuable insight into the dynamics of platform strategies and an important addition to the current literature.

5.2 Limitations

Every research paper is bound by certain constraints and limitations that shape its scope and findings. Although this study offers valuable insights into the effects of platform openness on network effects and outlines several strategies for platforms to manage openness, there are some limitations that should be considered.

The primary focus of this study has been the analysis of platform openness and its relationship with network effects and the growth of platforms. While this represents a significant factor of platform architecture, previous research suggested that there are many other critical elements (e.g., modular design, integration capabilities, and data management policies) that can have a similar effect on the success of a platform (Tiwana et al., 2010). Consequently, the conclusions drawn from this study may not fully capture the interplay of various components that influence the dynamics of digital platforms. This implies that platform openness might be one of several independent variables that determine network effects and platform success. Consequently, there may be other confounding variables that affect both platform openness and network effects, which makes it difficult to isolate the effect of platform openness on network effects without accounting for other variables.

Another limitation is the reliance on expert interviews and qualitative data analysis, which may not cover the range of experience and diversity within the field of digital platforms. While these interviews provide qualitative and in-depth insights, they may not be statistically representative of the broader industry. The sample size was chosen to enable detailed narratives and understandings that may not be accessible through quantitative methods. This focused approach allows deep dives into specific themes of platform strategies and offers valuable insights that can generate further hypotheses guiding future research and allows for theory building. Despite the efforts to maintain objectivity throughout the research process, it is an inherent characteristic of qualitative analysis that subjective interpretations may influence the conclusions drawn from the interview data.

Lastly, the digital landscape is dynamic and constantly evolving, and technological advancements and market shifts can quickly reshape the industry of digital platforms. Consequently, the findings of this study are contextual to the current state of digital platforms at the time of data collection and analysis (i.e., up to 31. May 2024).

5.3 Further Research

While this study provides valuable insights into strategies for platforms to manage openness and control, there are still several gaps for future research.

First, future studies could fill a research gap by quantitatively introducing a larger sample size and more diverse group of participants to enhance the generalizability of these results. Quantitative techniques could measure the strength of relationships between the variables (i.e., platform openness, network effects, and architectural features). Cross-platform comparative studies analyzing the different types of platform models (e.g., transactional vs. innovation) would enable a better understanding of how platform strategies and their outcomes may vary depending on architectural and design choices.

Future studies should consider analyzing other platform features beyond openness, such as platform architecture (e.g., decomposition, modularity, and design rules) and platform governance (e.g., decision rights, control mechanisms, and proprietary vs shared) (Tiwana et al., 2010). Studying these features could provide a more comprehensive understanding of the success factors of platforms. Furthermore, there is also a significant research gap regarding the effectiveness of various governance models for managing platform ecosystems. Future research could improve the understanding of how decentralized or centralized governance structures affect innovation and user participation. Moreover, cross-disciplinary approaches, that integrate insights from fields such as behavioral economics and sociology could further enrich the understanding of user behavior on platforms.

There are potentially multiple variables that influence network effects and platform growth which encourages a more holistic approach for future research. This may involve considering the interdependencies among various platform architecture components rather than studying them in isolation. Furthermore, a comprehensive approach may blend qualitative insights, which provide depth and context, with quantitative insight, which can offer measurable and testable of the relationship. Quantitative methods (e.g., multivariate regression or structural equation modeling) may be effective for future research in controlling for confounders and distinguishing the effects of each variable. As a qualitative approach can only explain for a partial causality, a more holistic approach can lead to a better understanding of the drivers of successful platforms and ensure that future research is well supported by both data trends and contextual analysis.

5.4 Conclusion

This study provides comprehensive insights into the strategies digital platforms use to balance openness and control, which is crucial for leveraging network effects while maintaining high quality products and services. The findings from the qualitative analysis highlight several key dimensions which are essential for optimizing platform strategies. The overall results emphasize the importance of an adaptable and holistic approach to platform management. Existing literature offers broad insights that confirm the results of this study, however, this study fills a research gap by providing detailed strategies and frameworks specific to platform openness and control.

The qualitative analysis of 11 expert interviews identified seven aggregated dimension critical for successful platform management: (1) platform architecture and APIs, (2) the importance of aligning openness with business models, (3) the need for adaptive competitive strategies, (4) implementing quality insurance policies, (5) optimizing network effects, (6) pursuing innovative monetization approaches, and (7) managing strategic risks. When comparing with the existing literature the findings of this study underscore both the confirmation of existing theories and a significant contribution to the field of study. In summary, successful platform strategies regarding openness and control are based on strategically leveraging APIs to balance openness and external innovation with control over core standards, aligning platform design with clear business models and revenue objectives that adapt to market conditions, leveraging innovative monetization approaches that foster accessibility and growth before introducing premium features or other controls for monetization, and managing risks by differentiating strategies based on whether the core assets are user- or technology-centric.

This study provides valuable insights into platform strategies and platform openness and serves as a foundation for future research and guide for practical implementation.

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Affidavit

ESCP Business School

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Appendix

Appendix A: Structured Interview Questionnaire

| Topic | Questions |
|----------------------|--|
| 1. Introduction | <ol style="list-style-type: none">1. What is your background, current role and company?2. What are the products/services offered on your platform?3. Who are the users vs. developers (e.g., buyers vs. sellers, riders vs. drivers, developers vs. end users etc.) on your platform? |
| 2. Platform Openness | <ol style="list-style-type: none">4. How would you characterize the level of openness of your company's platform (very open, somewhat open, closed)?5. What are the key factors that determine the level of openness your company has chosen?6. What are the main benefits you see from having an open vs closed platform model?7. What are the key challenges or risks with operating a more open platform?8. Could you provide examples of platforms that have successfully found the right level of openness? |

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| | 9. What makes these platforms successful in your view? |
| 3. Managing Quality | 10. How does your company ensure high quality and consistency across products/services offered on the platform? 11. What quality control mechanisms or policies do you have in place for third-party contributors/developers? 12. In your experience, how does the level of openness affect the network effects of a digital platform? |
| 4. Network Effects | 13. How would you categorize the strength of network effects for your platform's core product/service (see categories below) a) Strong network effects (value increases exponentially with new users) b) Moderate network effects (value increases but moderately with new users) c) Weak network effects (user value relatively unchanged by new users) d) No/Negative network effects (added users diminish value) 14. Can you provide some examples that illustrate the network effects driving value on your platform? (i.e., how does the value of your platform increase as more users join the platform?) |
| 5. Monetization | 15. What is your platform's core revenue model (e.g., transaction fees, subscriptions, advertising etc.)? 16. How does your level of platform openness impact your company's ability to monetize and capture value from the users? |
| 6. Closing | 17. Do you have any additional questions or remarks regarding platform openness? 18. Do you know anyone else in the field of digital platforms who might have more insights to share on this topic? |

Appendix B: Interview participants

| # | Company | Position | Location | Identification |
|----------|--|--|-----------------|-----------------------|
| 1 | Leading Ride-sharing Platform | Transformation Project Management Officer | Amsterdam | Interviewee A |
| 2 | Major Data Storage and Cloud Solutions Provider | Customer Success Manager - Cloud Services | Paris | Interviewee B |
| 3 | Consulting | Research and Development Advisor at Consulting Firm / Doctoral Candidate at ESCP and MIT | Paris | Interviewee C |
| 4 | Global Engineering and Technology Corporation | Head of Global Digital E-Commerce Initiatives | Zurich | Interviewee D |
| 5 | Leading Social Media Platform | SMB Account Manager | Dublin | Interviewee E |
| 6 | Leading Social Media Platform | Client Solutions Manager | London | Interviewee F |
| 7 | Leading E-commerce Platform | Sales Manager for New Accounts | Berlin | Interviewee G |
| 8 | Entrepreneurial Investment Firm / Venture Capital Fund | Partner in Digital and Innovation within the Platform Industry | Paris | Interviewee H |
| 9 | Leading E-commerce Platform | Senior E-Commerce Consultant | Paris | Interviewee I |
| 10 | Global technology Company | Platform Specialist / Software Developer | Berlin | Interviewee K |
| 11 | Leading Social Media Platform | Data Science Analyst | Paris | Interviewee L |

Appendix C: Qualitative Analysis of the expert interviews (Own illustration based on Gioia et al., 2013)

| First-Order Concepts – Direct Quotation | Second-Order Themes | Aggregate Dimensions |
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| "The first thing that's come into my mind is API. It's the basic for a platform to connect to another device or software." (Interviewee H) | External integrations and interoperability through API's as core strategy for platform connectivity | 1. Strategic and Adaptive API Platform Architecture: Digital platforms can navigate the tension between openness and control by implementing strategic API platform architecture that allow for external integrations and use by third parties while maintaining internal quality control. API's enable platforms to open selected functionalities or data to third-party developers. This approach can foster network effects and strengthen the ecosystem. |
| "If you spend all your time as a company to connect to external partners, in fact, you will lose time for your products. So you need to work on your product. And one of your products is your interfaces and also your APIs." (Interviewee H) | | |
| "Meta was not open initially; they open their APIs for a while when they launch new services and then close them again, which is a strategic way to control and capture the maximum economic value." (Interviewee I) | | |
| "And for instance, if you take the example of ChatGPT they have experts, engineers, researchers working on the LLM. But as an external company, you can connect to leverage the capacities of ChatGPT. You connect to the API. And this is very important. In order to be open it is important to have a clear value proposition for people outside that want to leverage or benefit from your openness and technology." (Interviewee H) | | |
| "It's fully self-service, which means they can do everything on their own. They can launch the ads, they can create the ads." (Interviewee E) | APIs and Developer portals as catalyst for developer ecosystem engagement | |
| "It is very important to have a clear value proposition for developers so that they can connect, interact and build with your product and services." (Interviewee H) | Managing External Partnerships to enhance visibility and platform performance | |
| "They have complete visibility on the performance that their investment in ads is generating in our platform" (Interviewee E) | | |
| "It is important to have a clear value proposition for people that want to leverage or benefit from your openness." (Interviewee H) | Strategic Openness for Enhanced Market Penetration | 2. Business Model Alignment: Digital platforms can optimize network effects by |

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| <p>"There are many other platforms in e-commerce, but very few are relevant because Amazon manages to build traction by focusing exclusively on the customer." (Interviewee I)</p> | | <p>aligning their business model with the degree of openness that fits their revenue goals and market demands. Platforms aiming for mass adoption can benefit from an open approach to attract more users, while other platforms focused on premium segments should prioritize greater control to differentiate within the market and uphold quality standards. This strategy should involve modular design elements that allow for easy adaption between more open, user-acquisition focused models and more controlled, revenue-optimization models.</p> |
| <p>"The journey of building a company can be divided into two parts: finding and verifying product-market fit, and then focusing on growth to attract more participants on both sides of the platform." (Interviewee I)</p> | <p>Critical Role of Business Model Clarity in Platform Sustainability</p> | |
| <p>"For example, by allowing selected third-party apps that meet our rigorous standards, we can offer a variety of services without compromising on security or user experience." (Interviewee K)</p> | | |
| <p>"(...) By design, platforms are open, because they are accessible to any person in the market." (Interviewee H)</p> | | |
| <p>"The business model of platforms can also be based on various other factors (e.g., in-app purchases instead of in-app advertising). For example there were no odds at the beginning on Facebook 10 years ago. And then they created the monopoly within the market and gained immense market power and then started to monetize and adding adds" (Interviewee F)</p> | | |
| <p>"You need to generate economic value, and then secure that value." (Interviewee I)</p> | | |
| <p>"None of the delivery services like Gorillas and Flink have a product-market fit, which is why they failed in Germany." (Interviewee I)</p> | | |
| <p>"And if you don't have a clear business model, in fact, you just have people using your own service without paying for that. And then in fact, it costs a lot in terms of infrastructure, maintenance and product innovation without any revenues." (Interviewee H)</p> | | |
| <p>"Other companies think that being open and being available by the masses is better because they want to reach a global market" (Interviewee H)</p> | | <p>Strategic platform accessibility to leverage openness for global market reach. Platform can leverage openness to enhance user engagement and expand their market reach globally</p> |
| <p>"Being widely open is a way to leverage network effects because the more features you offer, the more users will use your platform. And the more users will be on the platform, the more service providers, if they are relevant, would be willing to participate and to join your ecosystem. So the level of openness is important to kickstart or to sustain your network effects" (Interviewee H)</p> | | |
| <p>"For the user side [our social media platform] is the most open possible as anyone can just download the app if the app is available in your country. They will be able both to look at and to create content within seconds. Therefore the only barrier would be the internet connection and that availability of the app in the country." (Interviewee F)</p> | | |
| <p>"[Our food delivery platform] is somewhat open. But to a certain extent, it is tightly controlled ecosystem in the sense that we are capable of like discarding the merchants that we don't want." (Interviewee A)</p> | <p>Maintaining controlled access to ensure quality and security. It is crucial for platforms to maintain some level of control even within an</p> | |
| <p>"Disadvantages of an open platform are that there can also be a lot of fraud and low-quality products within the marketplace." (Interviewee G)</p> | | |

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| <p>"If you look at all these delivery services like Lieferando and Delivery Hero, there are no built-in barriers on the platform." (Interviewee I)</p> | <p>open platform to ensure the quality of services and products which is crucial for sustaining a reputable and reliable platform</p> | | |
| <p>"Platforms like Lyft and Uber are very open, which means anyone can register on either side. This makes the platform itself have no real protective mechanism." (Interviewee I)</p> | | | |
| <p>"For the platform it's important to regulate the platform but at the same time it is important make sure there are as many vendors as possible." (Interviewee B)</p> | | | |
| <p>"It's important to have checks for violations despite being an open platform." (Interviewee E)</p> | | | |
| <p>"Apple is known to be a very closed company (...) And Apple is not very keen to open its services, to open its operating system or open its APIs that anyone can just personalize, customize the interfaces on their iPhones, for instance (...). At the opposite, you have Android. Android is open because it is like a white label operating system. (...)" (Interviewee H)</p> | <p>Platforms must make trade-offs between openness and control to manage risk, attract investments, and build trust with their users and partners</p> | | |
| <p>"When you've got your proof of concept in the business model, what stops someone else from doing exactly the same thing? Because you don't have inherent protection as a platform." (Interviewee I)</p> | | | |
| <p>"If you launch a closed platform model you have an entry. The entry is creating both for the provider of good services and both for the user. In this case, it would more be something like a thematic platform. A platform designed to build an experience about a specific topic. The main drawback is that you cannot attract so many users because you are using on a tiny specific segment of the market and the same thing for the provider side." (Interviewee C)</p> | | | |
| <p>"All the startups are focusing on getting more participants on both sides of the platform, but they are not thinking enough about barriers to keep users on the platform without switching." (Interviewee I)</p> | | | |
| <p>"Some platforms want to be closed because they want to be exclusive and they think that the product or the service is attractive enough in order to be used by the users (...)" (Interviewee H)</p> | | | |
| <p>"For instance, seeing a competitor open up a bit more and gain traction with developers, we might explore a similar openness" (Interviewee K)</p> | | | |
| <p>"From what I understood, they have very strong control mechanism before registering. But once a customer is on the marketplace, it's open." (Interviewee B)</p> | | | |
| <p>"As for the benefits of being more open, it makes it more appealing for clients to join and better for business as the user base grows." (Interviewee E)</p> | | | |

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| <p>"But what they can offer the customer is a reduction in the search costs and transaction costs and this is really the main advantage of an open platform." (Interviewee C)</p> | | |
| <p>"(...) it's very open on the hyperscaler side and they are looking for more vendors every time to be able to open and to give the most services possible for their customers. (...) they want to take a commission on what ever they buy." (Interviewee B)</p> | | |
| <p>"I would consider social media platforms relatively open platform because it's quite easy for ad developers, for content creators, and for users to join and to put out content." (Interviewee E)</p> | | |
| <p>"From a provider's or sellers perspective, the advantages of an open marketplace are of course that you can launch and offer faster on the platform, so sell faster." (Interviewee G)</p> | | |
| <p>"There is a benefit to being more closed. It is an overarching long-term approach where you're building more trust and creating a platform that is more trusted by brands. On the other end you would have the benefit of having a more open platform, more open to receiving short-term investments by companies. Therefore, it is a trade-off." (Interviewee F)</p> | | |
| <p>"Platform openness has a huge impact! From a sales perspective, some rules and policies really don't allow us to sell to some clients. This restricts our revenues from customers that fall under these restricted industries" (Interviewee F)</p> | | |
| <p>"So most of banking platforms are completely designed in silos (...) It does mean that everything they have, they try to keep it inside the data, the customer information, the customer. The fundamental value proposition of banking platforms is different compared to other more open platforms" (Interviewee C)</p> | <p>Value Proposition drives openness: Platform strategically choose to be open or closed through strategic modularity, partner integration or accessibility based on their core value proposition.</p> | |
| <p>"(...) when you have a closed platform, you really need to be very focused on the value proposition because it's not about transaction costs. It's really about the experience you may provide. In this case, you also want to enable a certain modularity in the way you design your platform. This is because when it comes to build experiences, the interesting thing is to add some specific features or services." (Interviewee C)</p> | | |
| <p>"Amazon does it very well because they really focus on one side of the platform (...) they focus exclusively on the customer, which leads to very competitive pricing." (Interviewee I)</p> | | |
| <p>"And what they really tried is that they were open on the other side, meaning that they really tried to partner with different providers and third party developers, but it was not sufficient. They only put a focus on how to get the best product, but put no focus on the value proposition of the platform and just assumed that the other side with customers would follow." (Interviewee C)</p> | | |
| <p>"We can take the example of Android versus iOS for that. Apple is known to be a very closed company with a closed ecosystem (...) But in fact, the ecosystem of Apple's products or services is very open to anyone. But you can't interfere with Apple's ecosystem. You need to be a very closed partner of Apple in order to be on the iPhone (...) At the opposite, you have Android. Android is open</p> | | |

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| <p>because it is like a white label operating system. You can use Android on a Samsung, on a Huawei, on a Google phone, for instance. So it is open to any hardware companies, any smartphone makers (...). This decision is mainly driven by your value proposition" (Interviewee H)</p> | | |
| <p>"It's going to be mostly controlled by the state and regulations within the food market. Not by [our food delivery platform] itself" (Interviewee A)</p> | <p>Navigating market entry through regulatory adaptability: Platforms need to find a strategic balance based on regulatory environments and market conditions which affects their openness and engagement with different market segments.</p> | |
| <p>"The level of openness affects how businesses perceive the ease of advertising and engaging with the platform." (Interviewee E)</p> | | |
| <p>"Control over its platform is very important, but it must not turn into too much bureaucracy." (Interviewee G)</p> | | |
| <p>"This was a strategic decision that was taken as not a leader, but a follower in the industry. We had to set us apart in terms of advertising placement, not in terms of platform itself. We are a different platform, different logistics and variables. As an advertising platform, the decision made by higher management was to create a very brand-safe environment with very strict policies" (Interviewee F)</p> | <p>Balancing Exclusivity with industry leadership: Platforms need to find a strategic balance by maintaining an exclusive, controlled environment or ecosystem to ensure brand safety and the need to compete more aggressively in the market by differentiating.</p> | |
| <p>"Amazon has started creating competitive barriers that would make it very hard for a second platform to enter the market." (Interviewee I)</p> | | |
| <p>"It really depends on your strategy. It depends on the approach that you're going to have in the market. Let's say you open a new market then you want to have as many offerings as possible, but when you're entering a more mature market, then you're going to tend to want to have just quality for your offerings and products. Those are different approaches on how to tackle a market entry" (Interviewee A)</p> | | |
| <p>"Amazon has captured a significant share of the market by building barriers, unlike Delivery Hero which focuses solely on expansion." (Interviewee I)</p> | | |
| <p>"Some platforms want to be closed because they want to be exclusive." (Interviewee H)</p> | | |
| <p>"In order to compete with iOS, you needed an open operating system because otherwise, it is just a confrontation against the market leader." (Interviewee H)</p> | | |
| <p>"A way to ensure quality is to be forced to do that by regulation." (Interviewee H)</p> | <p>Regulatory frameworks and policies for quality assurance: Platforms need</p> | <p>4. Quality and Trust: To maintain high quality-products and offerings, digital</p> |
| <p>"The mass of checks and regulations makes it very difficult for a seller to sell on the marketplace." (Interviewee G)</p> | | |

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| <p>"Nowadays they are co-responsible (...) if they display or highlight a product on their platform or marketplace that is bad for health (...) people will say it is a bad product, a bad brand." (Interviewee H)</p> | <p>to adhere to external regulatory requirements and also need to include internal rules and policies to uphold the quality of its products and services. Decision on quality assurance of platforms is therefore based both on internal and external factors.</p> | <p>platforms must implement quality assurance policies and quality frameworks that respond to both external drivers such as data protection laws or other regulatory requirements and internal drivers such as corporate integrity, sustaining customer trust and brand protection. Consequently, platforms should establish clear policies, guidelines and rules to ensure adherence to regulations, data protections laws, and ethical standards. This framework integrates technological solutions for monitoring and compliance and human oversight. Such a structure ensures that platform operations remain transparent, secure, and focused on delivering high-quality products and services.</p> |
| <p>"It's a fine line between using data effectively and respecting user privacy. It's about earning and keeping our users' trust, while also delivering results for our advertisers." (Interviewee L)</p> | | |
| <p>"Furthermore, you want to make sure it's compliant and you want to make sure as a customer that there's no malware in it and that the platform offerings are only from serious providers." (Interviewee B)</p> | | |
| <p>"I do believe that it is very important to protect your end consumers and a platform can only achieve this through a certain 'closedness' and control over the products and services that are offered on the platform." (Interviewee G)</p> | | |
| <p>"Especially for large customers, it's very, very important to have this type of regulation." (Interviewee B)</p> | | |
| <p>"If you're asking the businesses themselves they would prefer if there were less regulations and rules in some cases because it's easier for them to place ads if there would be less restrictions. But at the same time we do want to have some type of regulations in in these platforms." (Interviewee E)</p> | | |
| <p>"There are some controls that are done by the marketplace on that point to make sure that its like a real solution. But it's not 100% control of the platform because it's not their product. Basically, they want to make sure it's a great good offering." (Interviewee B)</p> | <p>Enhancing platform integrity through automated and human monitoring: Platforms employ both technological solutions (i.e., AI) and human oversight to monitor and manage the products and services offered on the platform.</p> | |
| <p>"There's actually a very active AI system on our that's detecting any violations on the content (...) if any violation ever happens, then the system automatically flags it." (Interviewee E)</p> | | |
| <p>"There is some layers of screening for the content, but that is in a second moment. So, there is a first layer of screening that is AI and then two human layers of checking the content." (Interviewee F)</p> | | |
| <p>"(...) in cloud marketplaces (...) it's highly important to have some control measures because it is a very critical product." (Interviewee B)</p> | <p>Continuous policy evolution and adaptation: platforms need to continuously evolve their internal policies and control measures to meet market demands and customer trust.</p> | |
| <p>"Another interesting point is that these policies are continuously evolving. And the sales team itself usually is the one that tries to make them evolve in a way that it will benefit their business" (Interviewee F)</p> | | |
| <p>" (...) we've got KPI's that we need to make sure to comply with. Our restaurants need to deliver at a specific time, at a specific location. If they're not complying with our KPI's, then they're being discarded." (Interviewee A)</p> | | |
| <p>"(...) continuously. It's an algorithm that continuously controls shops and products." (Interviewee G)</p> | | |

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| <p>"At [leading marketplace platform and e-commerce platform], there's simply a principle that is very much in focus: 'Customer Obsession' means the customer is king. Amazon does everything to retain the customer and to create the best possible buying experience for them. And this creates the necessity for quality measures." (Interviewee G)</p> | | |
| <p>"(...) you also need a certain level of control. Because you, if we look at it from the lens of the customer, you also go on our food delivery platform, because you want to have a certain level of like reliability" (Interviewee A)</p> | | |
| <p>"Research shows that usually people do open a new online bank account. But since they do not entirely trust their online banking platform, they generally add a new account in an online bank and do not transfer." (Interviewee C)</p> | <p>Importance of transparency in operations and active use of user feedback to build and maintain trust among customers and users.</p> | |
| <p>"It's not just about complying with laws—it's about staying true to what our users expect from us." (Interviewee K)</p> | | |
| <p>"And the customer benefits very much from the fact that [leading marketplace platform and e-commerce platform] chooses its shops very carefully and consciously because he gets better products and can place higher trust in the marketplace." (Interviewee G)</p> | | |
| <p>"You can use people feedback (...) with this, you bring transparency so people can trust the platform." (Interviewee H)</p> | | |
| <p>"I would say that it is quite new that platforms consider that having a high quality product base is important because, in fact, when platforms started to exist in the 90s or in the beginning of this century, there was no regulations. The regulations were for, in fact, it was for hosts. So as a host, you were not responsible for what is on the platform. It's the users that are responsible for that. So the seller was responsible of the he needs to be compliant" (Interviewee H)</p> | <p>Platforms need to adapt their governance structures in response to changing regulatory environments and user expectations to remain compliant and competitive.</p> | |
| <p>"If you take the business model of Facebook, the most viral posts are the most heinous and also the the fake news. So making a fake news viral is a good way to generate money as Facebook. So it is not an economic reason that drives Facebook to hide or delete fake news. It's just because it is forbidden now by regulation." (Interviewee H)</p> | | |
| <p>"The level of openness is important to kickstart or to sustain your network effects." (Interviewee H)</p> | <p>Leveraging User Base: Increased platform openness can benefit all participant of multi-sided markets.</p> | <p>5. Optimization of Network Effects: Digital platforms can optimize network effects by finding a balance between openness and control that attracts and retains a critical mass of users, developers, and complementors.</p> |
| <p>"The user base grows, which is better for business as it attracts more clients." (Interviewee E)</p> | | |
| <p>"From the provider side definitely more revenue. If more other sellers are on [leading marketplace platform and e-commerce platform], then that attracts more customers who might potentially come to your product." (Interviewee G)</p> | | |
| <p>"(...) because the more users you're going to have in one location, the more restaurants we are going to have to open as well. And therefore, you're going to have more availability. So there are also indirect network effects" (Interviewee A)</p> | | |
| <p>"There is a network effect that comes from the 'fear of missing out'. If your competitor is on the platform and publishes the achievement of amazing results and incredible return on investment, that's going to trigger other competitors that want to advertise." (Interviewee F)</p> | <p>Competitive pressures and incentives can be driven by network effects. Network effects not only contribute to</p> | <p>Platforms should carefully analyze user behavior, feedback, and dynamics within the ecosystem to identify the optimal</p> |

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| <p>"There is still quite a strong network effect from two main perspectives. The first one is that any auction platform for digital ads is based on how many people are interested in buying and obviously the cost per view, the cost per PPM, per thousand impressions, cost per click etc.. And these costs will increase with more bidders. And this is actually driving in the other direction because imagine you're the only one bidding, the cost will be lower, so you are more prone to bidding. So in this case, on the side of ad buyer on our platform one might say there is actually a negative effect" (Interviewee F)</p> | <p>growth but also intensify competition and strategic decisions</p> | <p>level of openness that allows for a self-enforcing cycle of growth and user engagement.</p> |
| <p>"A business model makes sense only when it can quickly reach a critical mass of users on the platform and then capture that economic value." (Interviewee I)</p> | <p>Platforms can create exponential growth via snowballing effects.</p> | |
| <p>"Network effects is like the snowball effect. The more people, the more products, the more people purchasing the products." (Interviewee H)</p> | <p>Network effects can be self-enforcing as more users and transactions occur on the platform</p> | |
| <p>"As Jeff Bezos once said: 'Every time we win a Golden Globe, we sell more shoes.' (...) So in fact, with this example, you can understand that you can have an indirect business model. You can lose money on one side of your product, on one side of your business and earn money on another side. (...) This also shows that platforms first need to focus on gaining customers and users on the platform and then on its monetization strategy" (Interviewee H)</p> | <p>Platforms utilize their large user bases to generate revenue indirectly through ads and other placements.</p> | <p>6. Innovative Monetization Approaches: Platforms find a balance between openness and control through a strategic revenue model that optimizes both network effects and quality of products and offerings. Most platforms allow for broad access initially to attract, grow and lock in a substantial user base, which is gradually regulated with monetization mechanisms (e.g., transaction fees, premium features and advertising). This</p> |
| <p>"It's not just about adding features or services; it's about enhancing the experience in a way that makes users willing to pay for that added value" (Interviewee K)</p> | | <p>phased approach ensures that customer retention is secured first by gaining trust and user dependency and then allowing for a smoother transition into revenue-generating strategies without compromising quality or user experience.</p> |
| <p>"Each additional user provides so much more value for the platforms as our core revenue model is based on ad placements on the platform." (Interviewee E)</p> | | |
| <p>"The business model of social media platforms is mostly based on ads. Companies and brands that place ads on our platform." (Interviewee F)</p> | | |
| <p>"This level of openness that your platform chose impacts the ability to monetize" (Interviewee F)</p> | | |
| <p>"Between 8 and 15 percent of a provider or seller's revenue on the [leading marketplace platform and e-commerce platform] is paid to us" (Interviewee G)</p> | <p>Platforms can also directly earn from each transaction or service through commission fees, which ties revenue directly to platform usage.</p> | |
| <p>"Platforms are a gatekeeper. If you want to access this ecosystem, you need to pay. And the way you pay, it can be through subscriptions, through your data, a direct payment, a commission. It doesn't matter" (Interviewee H)</p> | | |
| <p>"Most major food delivery platforms take a small commission fee from the customer and from the restaurant. And then the delivery employee gets paid by Uber for each ride he makes unless the restaurant delivers itself" (Interviewee A)</p> | | |

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| <p>"When implementing a closed platform, you are not expecting to grow through volume, but you can expect to impose a large premium on the user side. What you expect here is that you build the best possible experience so you can lock in your users and your providers on to the platform" (Interviewee C)</p> | <p>Optimization of user experience for higher value transactions: Monetization strategy used by platforms where they enhance user experience initially to attract users and then capitalize on its user base by introducing premium features or additional fees.</p> | |
| <p>" (...) it's about understanding what makes our users tick. This insight helps us tweak our features so that both users and advertisers find more value (...)" (Interviewee L)</p> | | |
| <p>"Every new platform tends to do that. Platforms tend to create a very pleasant and user-friendly experience in the beginning and then make it slightly worse by adding ads or pay walls. This can also be done by using a freemium model." (Interviewee F)</p> | | |
| <p>"Being too much open can be counterintuitive or counter-productive because as a platform, your asset is your database." (Interviewee H)</p> | <p>Open platforms need to cautiously manage the exposure of proprietary assets: Platforms need to carefully consider how much of their core assets (e.g., user data, proprietary technologies) they expose to third-parties.</p> | <p>7. Strategic Risk Management and Asset Control: Platforms must proactively manage the risks associated with openness. They must strategically define their level of openness to optimize the use of their core assets (i.e., user data or proprietary technology) while considering the need for market expansion. Platforms achieve this by distinguishing between two asset types - treating user-centric assets with more exclusiveness to protect user privacy and using technology-centric assets for standardization and broader market adoption.</p> |
| <p>"You need to think about which unique asset you have and how you protect it. Minimizing transaction costs doesn't help if your platform is so open that switching to another platform costs nothing." (Interviewee I)</p> | | |
| <p>"if your users are your main asset, don't be too much open. If your main asset is your technology, be open so that this technology becomes a standard in the ecosystem" (Interviewee H)</p> | | |
| <p>"(...) you can have like two types of platform. The first one is you could be a marketplace trying to compare all the products referenced on a single platform. And they would enable the customer or the user to identify, categorize, evaluate and assess the product. And the main goal of these platforms is to to attract volume." (Interviewee C)</p> | <p>Optimizing Platform design for global reach and strategic market positioning: digital platforms strategically design their systems and offerings to align with their strategic objectives. Platforms manage their degree of openness to either maximize user engagement or to be in a a more exclusive, niche market positioning.</p> | |
| <p>"Amazon has become the world's largest airline in terms of shipping logistics, which shows how they've vertically integrated upstream to capture more of the value chain." (Interviewee I)</p> | | |
| <p>"Other companies think that being open and being available by the masses is better because they want to reach a global market." (Interviewee H)</p> | | |

