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# Building a Business Ecosystem: Deriving a Framework and Testing It with Case Studies

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## Abstract

Ecosystem-based business models have received significant attention and praise in both business and research literature. Endeavours in building ecosystems sometimes prove successful, with firms transitioning to ecosystems enjoying valuation multiples significantly higher than their conventional peers. In practice, this entails firms expanding beyond their core offerings, such as a bank venturing into e-commerce. However, despite the evident interest in ecosystem-based business models, up to 85% of such ecosystems ultimately fail. Despite these notable failure rates, there has been limited discussion in research literature regarding the composition of businesses that yield reliable results within ecosystems. In this paper, we first propose a "Hook-Engage-Monetize (HEM)" framework for understanding ecosystem business composition. We apply this framework to nine case studies of successful and less successful ecosystems from nine different countries. Our analysis demonstrates the potential of HEM as a tool for selecting businesses for ecosystems and for guiding future quantitative financial research in this area.

**Keywords:** corporate performance, ecosystems, digital transformation

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## Introduction

Improving performance through innovations stands as a primary objective for firms' management and boards of directors. Crucial tools in pursuit of this goal are digitalization [1] and business model innovation capable of providing digital-enabled performance improvement [2]. The joint effect of digitalization-based business model innovations is clearly represented by ecosystems. While its overarching importance has been underscored [3], there remains debate regarding the efficiency of its various components. Researchers have pointed out shortcomings, such as those found in AI [4] and blockchain [5], as well as Agile ways of working [6].

Regarding ecosystems, some researchers assert, "You either become a platform, or you will be killed by one" [7]. This sentiment is echoed in the business community, as evidenced by a survey conducted by BCG, where up to a quarter of managers anticipate that about 60% of industry revenue will be generated by ecosystems [8].

From a practical standpoint, adopting an ecosystem model typically involves diversifying into business lines that are quite distinct from a firm's core operations [9]. For example, a bank may venture into e-commerce, or a telecom operator may expand into the travel business [10]. The primary objectives of such expansions include broadening the customer base [11], monetizing existing customer relationships and services [12; 13], enhancing business resilience [14], or simply increasing the valuation multiple using the ecosystem trend [15].

However, achieving the desired results with ecosystems remains a challenge. In fact, many firms attempting to construct ecosystems find themselves significantly pivoting, or even closing or selling non-core businesses altogether. While numerous factors contribute to this, including corporate governance choices, one of the primary reasons is a business composition that fails to yield the desired outcome [16].

Surprisingly, the topic of ecosystem business composition has received limited attention in research literature, with scholars often focusing more on corporate governance [17] and on the technological aspects of ecosystem functioning [18]. In this paper, we aim to address this gap by offering a framework for understanding the benefits and pitfalls of ecosystem models derived from actual experience.

We propose a framework for selecting products and tools to build a business ecosystem, consisting of three components: **Hook** the customer, **Engage** the customer, and **Monetize** the customer relationship (HEM). We verify this framework using nine case studies of firms that have successfully or less successfully built ecosystems in Argentina (Mercado Libre), Kazakhstan (Kaspi), South Korea (Kakao), Malaysia (Grab), France (Orange), Japan (Rakuten), India (SBI), UAE (Mashreq), and Spain (BBVA). Success was measured by benchmarking valuation multiples of ecosystems vs focused peer firms.

The rest of this paper is organized as follows. First part 1 presents a review of the literature on ecosystems and business composition. In second part 2, we propose a framework for business line selection for building ecosystems. Third part outlines our approach to case studies and presents the empirical evidence. The results of case analysis are summarized in fourth part. Finally, we offer conclusions, discuss limitations, and outline the steps for further research.

## Literature Overview

The research literature has shown an increasing interest in platform and ecosystem business models. For instance, there has been noted a sevenfold increase in the frequency of the keyword "ecosystem" in the title or abstract of top strategy journals over the five years [9]. However, there is still no universally accepted definition for these terms. Some authors, (e.g. [19]) distinguish between platforms and ecosystems, while others, (e.g. [20] do not. Researchers define platform businesses as companies that "leverage networked technologies to facilitate economic exchange, transfer information, and connect people" [17]. They emphasize that value is created for the platform owner by enabling interactions between value creators and value extractors. The fundamental feature of platforms lies in their ability to bring together dispersed agents to generate value. Well-known examples include Uber and Airbnb, which consolidate the services of drivers and rental properties, respectively. Other researchers (e.g. [21]) define a business ecosystem, following [22], as "the broader network of firms that influence how a focal firm creates and captures value". Prominent examples of ecosystems include Apple, Amazon, and WeChat. Platforms and ecosystems rely on a network of third-party entities to generate value for both direct customers and the partner network. This characteristic has led researchers to classify them as "open business models" following [2] and [23]. In the context of our research, we do not differentiate between these terms.

Research indicates that ecosystems present a concrete opportunity for improving business performance, while disregarding them can pose a tangible threat. A survey by BCG reveals that a quarter of executives anticipate that digital ecosystems will account for over 60% of sales in their industries within the next three years. The survey indicates that executives expect ecosystems to be particularly urgent and relevant in industries such as telecommunications, media and technology, finance, consumer goods, and healthcare, while industrials and energy sectors are seen as less urgent and relevant [8]. However, some authors [7] argue that the ecosystem trend is straightforward and applies to all industries.

Ecosystems are expected to generate additional value compared to more focused businesses in five key aspects of corporate performance. First, ecosystems should increase the size of the customer base [24; 25]. The logic is straightforward: the more products a firm offers, the larger the customer acquisition funnel becomes, especially if the firm's products are attractive to customers and have relatively low entry barriers, such as e-commerce, web search, or messaging (which will be discussed in more detail in the next section of the paper).

The second aspect is increased customer loyalty, resulting in higher customer retention. Research has consistently shown that the more products a customer buys and the more frequent touchpoints they have with a firm, the more value is generated, and the less likely they are to leave for a competitor [26; 27]. As a result, many firms prioritize increasing engagement with their customer base, with customer relationship management (CRM) being one of the most popular applications of Big Data tools [28]. One of the main goals of CRM systems is to increase the number of touchpoints with customers at relevant points in time. Since an ecosystem typically offers a broader product range than a traditional business, the chances for increased frequency of contact with a customer are expected to be higher as well [15]. However, to the best of our knowledge, there has been no direct empirical research on the topic of customer retention specifically for ecosystems.

Third, since an ecosystem offers a broader product range, it should create more opportunities for cross-selling and, consequently, generate more value per customer [29]. Moreover, by providing more data on a customer's consumption, an ecosystem generates more data, which further increases opportunities for cross-selling [30]. Given the increased lifetime of a customer and higher opportunities for cross-selling, an ecosystem should, on average, have a higher overall customer lifetime value (CLTV). However, as with frequency and increased retention, there has not been, to the best of our knowledge, a dedicated quantitative study on the impact of ecosystems specifically on CLTV or cross-selling ratios in firms.

Fourth, ecosystems should exhibit higher resilience in times of crisis due to the diversified nature of their businesses. While there hasn't been a systematic review specifically on ecosystems, business diversification has been shown to be a viable strategy for increasing resilience [31]. However, evidence also suggests that if a company becomes too diversified, akin to a conglomerate, it may limit its upside potential while still bearing the downsides of non-diversified firms [32]. Therefore, it is important to differentiate between ecosystems and conglomerates when analysing their resilience.

Last but not least, ecosystems may yield benefits in terms of valuation. Research has indicated that firms acquiring fintech startups experience higher valuations [33]. Additionally, it has been argued that firms operating as digital players achieve higher and faster-growing valuations compared to their more conventional counterparts [34]. Therefore, it is reasonable to expect that successful ecosystems would command higher multiples compared to their conventional peers [35]. However, to the best of our knowledge, there has been no empirical research specifically addressing this topic. This aspect of valuation may be viewed either as a standalone source of value or as a result of successful ecosystem development.

Despite the potential benefits of ecosystems, only a few firms successfully establish them. According to research by BCG, less than 15% of ecosystems are sustainable in the long run, with 85% of failures attributed to poor ecosystem design [16]. Therefore, providing business practitioners with more data and guidance on ecosystem design is crucial. While empirical and conceptual research on the specific topic of optimal service composition for ecosystems is limited, there is literature available on the adjacent topic of customer lifecycle management that can inform our understanding. Most papers on customer lifecycle management highlight three key steps: customer acquisition, engagement, and retention [36–38].

At the customer acquisition stage, a firm invests resources to expand its customer base. Marketing remains a primary method for attracting customers, with extensive research dedicated to optimizing marketing spend across channels and customer segments for different industries. Sophisticated budget allocation strategies are employed even within social media platforms, as seen in studies on influencer marketing optimization [39]. Additionally, researchers delve into the nuances of digital marketing within financial institutions [40], while some underscore the significance of physical location even for digital companies [41]. However, marketing is just one facet of customer acquisition. Equally crucial is the development of an attractive product offering that provides value to the customer. For instance, retailers may utilize loss-making products as a hook to draw in customers for subsequent cross-selling opportunities, a strategy known as "loss-leader pricing" [42; 43].

During the customer activation stage of the customer lifecycle, firms employ various strategies, including CRM campaigns, to enhance the effectiveness of interactions with customers [44]. Additionally, firms aim to capitalize on existing customer relationships by cross-selling other products [45]. Moreover, savvy firms structure their product offerings to encourage frequent usage by customers, potentially at the expense of competitors' products. Loyalty programs, such as points or miles attached to a credit card, are commonly utilized for this purpose [46].

Despite firms' efforts, every customer has a finite lifetime as a client, a metric that varies significantly by industry and may range from several days to several years [47]. Nevertheless, firms strive to extend this period, leading to the final stage of the customer lifecycle, often referred to as "customer retention" [48]. The tools applied at this stage are essentially the same as those used during the customer activation stage, but with a different purpose in mind.

As we observe, existing customer lifecycle frameworks lack a dedicated step for the monetization of customer relationships, assuming that a firm tries to maximize value at every step. However, from a business perspective, it is crucial to constantly consider not only how to expand and maintain the customer base but also how to extract maximum value from customer relationships. A popular framework that can complement the customer lifecycle is the RFM (Recency, Frequency, and Monetary value) of the customer relationship (see, for example, [49]). This framework demonstrates that three factors of customer relationships drive success: how recently, how frequently, and for how much money does the customer transact with the firm. While the RFM framework has primarily been used for focused firms, there is no reason why it cannot be applied to ecosystems.

In summary, the research literature demonstrates that ecosystems hold promise as a tool to enhance corporate performance by expanding the customer base, fostering loyalty, facilitating cross-selling, and enhancing business resilience and valuation. However, there is limited direct empirical evidence specifically focused on ecosystems, necessitating further dedicated research. Designing an ecosystem is a complex undertaking, and the majority of ecosystems fail due to poor design. Currently, there is no universally accepted framework for ecosystem design in the research literature. This paper aims to address this gap by proposing a framework and providing preliminary empirical evidence.

## Framework Description

To develop our framework for ecosystem design emphasizing optimal business combinations, we integrate the five objectives of ecosystem launch (customer base growth, customer activation, cross-selling, business resilience, and valuation growth) with the three stages of the customer lifecycle (customer acquisition, customer activation, and customer retention), complemented by the concept of monetizing the customer base derived from the RFM framework.

It is evident that three out of the five ecosystem goals closely align with the stages of the customer life cycle. Goals 4 and 5 emerge as outcomes of successful ecosystem development. Therefore, we propose that companies aiming to achieve at least three ecosystem creation goals should prioritize the entire customer lifecycle, with an added emphasis on monetizing the customer base.

First of all, a firm should offer a business line or a suite of products designed to attract customers, often referred to as "*hook products*" [50]. While these products may not always yield significant profits or could even operate at a loss (following the loss-leader strategy mentioned earlier), their primary function is to expand the customer base. Some companies may opt to offer these products for free. Examples of such products within an ecosystem context include free search engines like Google or Bing, or free apps available on platforms such as WeChat. It is crucial that these products have minimal barriers to initial usage. For instance, for a bank, a debit card or basic payment service represents a low-barrier product, requiring minimal customer analysis during onboarding and offering clients a swift introduction to the product. This explains why many fintech startups initially launch with such products (e.g., Revolut, PayPal, N26, etc.) [51]. Conversely, a mortgage would be an ill-suited hook product due to its complexity and higher associated risks.

Secondly, an ecosystem should incorporate a business line or product aimed at increasing the frequency of customer interaction. We refer to these products as "*engagement products*". Their purpose is to create regular touchpoints with ecosystem services. Examples of such products include e-commerce platforms or marketplaces, where customers frequently browse for new products. Even if customers don't make immediate purchases, their ongoing engagement with the service increases the likelihood of spontaneous purchases triggered by promotions or advertising. Another example is messaging apps like WeChat or Kakao, which customers use multiple times per hour, maintaining high levels of engagement. Conversely, services with relatively low levels of engagement include telecommunications and cell phone operators. Despite constant usage by customers, they involve minimal conscious interaction with the ecosystem, resulting in passive engagement.

Finally, once the ecosystem has acquired customers and engaged them with its products or services, it should focus on *monetizing* its customer base. There are various strategies to achieve this goal. One common approach involves cross-selling high-margin products. Many banks employ this strategy, initially attracting customers with low-margin products such as basic payment services and then cross-selling higher-margin products like credit cards or personal instalment loans [51]. In ecosystems comprising multiple business lines, this strategy can be even more effective, leveraging the large customer base acquired through "hook" products like messaging apps or search engines to monetize relationships with higher-value-added products such as banking and lending. Kakao Bank in South Korea, among others, has successfully implemented this approach [52]. We explore similar models in the next section of this paper.

To summarize, ecosystems represent new types of business groups. The latter are well known in corporate finance by their *internal capital markets* that may have "bright sides" (see e.g. [53] such as the ability to transfer capital between firms instead of private investors, to appropriate private benefits partially for themselves from several projects simultaneously, to create more incentives to transfer funds to better projects, leading to better capital allocation as well as greater capital expenditure capacity due to a lower volatility of cash flows, higher coverage of debts and lower financing risks, and finally to lower financial constraints. However, the specific structure and decision-making rules in business groups may generate a "dark side" of corporate decisions (see e.g. [54]) related to new nodes of agency conflicts when investment decisions and capital transfer are driven by the need to mitigate conflicts between power echelons inside the group. Ecosystems employ diverse strategies and service combinations to achieve the common goal of constructing an integrated portfolio of businesses catering to the diverse needs of their clients, thereby fostering resilient enterprises. Using new policies for improving the customer base and customer leverage, ecosystems gradually create specific "internal product markets". In these "markets" clients shop for diverse products of the ecosystem's business lines, while the business lines "pitch" their products to customers. Regulating these "markets" is not unlike regulating internal capital markets in holding structures. However, instead of managing capital, an ecosystem needs to manage clients and product distribution in order to maximize value. To this end ecosystems employ a diverse set of tools that we will discuss later in the paper.

The approaches to building ecosystems and these "internal markets" vary depending on the ecosystem's history and evolution. For instance, some ecosystems initially focus on low-margin businesses and later introduce monetization products, as seen with Mercado Libre [55]. Conversely, others add customer acquisition vehicles to existing high-margin businesses, exemplified by Kaspi in Kazakhstan [10].

Additionally, certain businesses can serve as both hook and engagement products simultaneously. E-commerce is a prime example of such a dual-function business. It not only presents a relatively low barrier for customers but also fosters ongoing engagement with them. This duality may explain why many ecosystems incorporate e-commerce in some form as one of their business lines.

Another crucial aspect to consider is that constructing an ecosystem entails more than just gathering a collection of businesses that, theoretically, fulfil all the steps outlined in the proposed framework. If these businesses lack interconnectedness or cater to disparate customer groups, one could contend that such a firm resembles *not an ecosystem* but rather a *conventional conglomerate*. In such cases, instead of commanding a valuation premium, the firm may suffer from what is known as a conglomerate discount – a widely acknowledged and enduring phenomenon [56; 57].

Achieving seamless integration between ecosystem services often requires the application of different tools, both internal and customer-facing. Customer-facing tools include unified identification processes across all services, a single loyalty program encompassing all products and services, and customer journeys designed to facilitate the seamless utilization of multiple ecosystem products within a single experience.

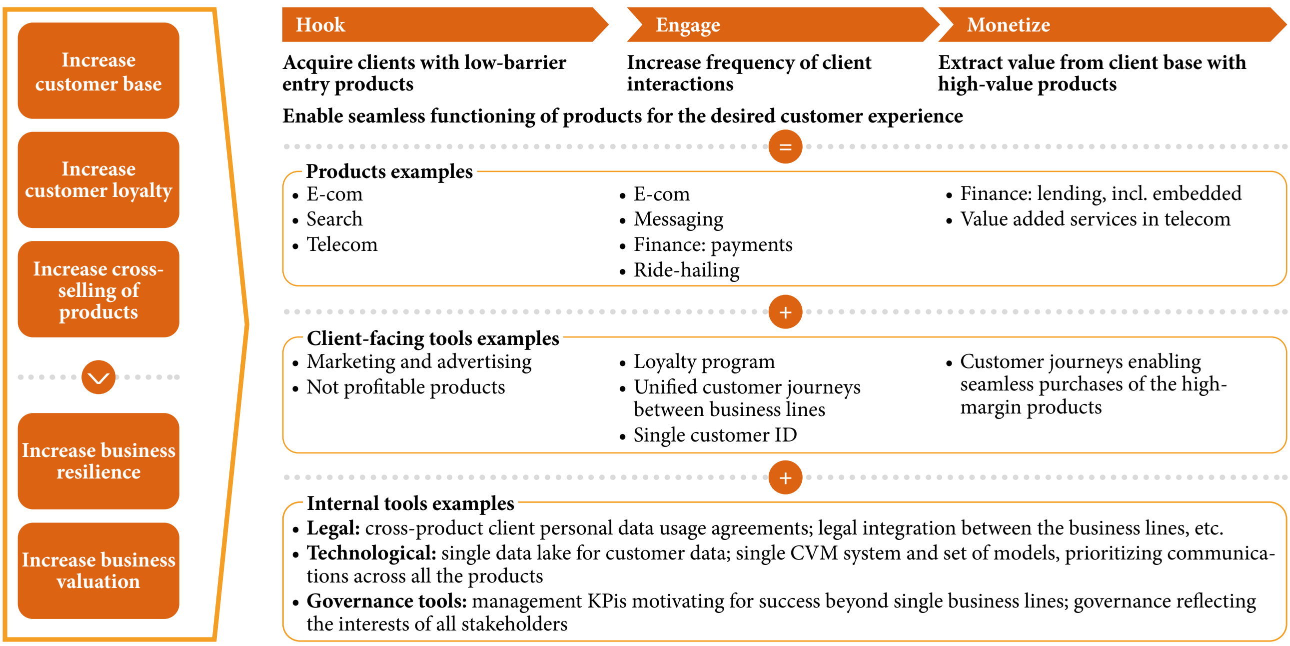
A crucial internal tool for the efficient functioning of a firm within an ecosystem is a unified Customer Relationship Management (CRM) or Customer Value Management (CVM) system, which relies on a single database encompassing all customer actions and transactions. Implementing such a system involves a complex constellation of legal agreements, requiring customer consent for data usage across all services, as well as technical integration, managerial oversight, and governance protocols. The complexity of developing such a system is compounded by the gradual evolution of ecosystems over time, often through a series of mergers and acquisitions. Additionally, many ecosystems operate as joint ventures with external vendors and partners that legally exist outside the perimeter of the core firm, further complicating the integration process.

In the diagram below, we outline the framework for an effective ecosystem and present both internal and external tools and mechanisms essential for success. At the top of the diagram, we reaffirm the five goals of ecosystem development. The framework consists of three layers corresponding to the suggested steps: Hook, Engage, and Monetize. The first layer represents the composition of businesses within the ecosystem; the second layer comprises customer-facing business tools; and the third layer encompasses internal corporate tools.

It is important to address another aspect of ecosystem performance, namely, how success is measured. A key distinction must be made between metrics used for internal management purposes and those accessible to external stakeholders such as investors or analysts. The first group of metrics primarily focuses on the direct impact of the

**Figure 1.** Proposed HEM framework for ecosystem analysis

**Overarching ecosystem goals break into stage goals achieved via combination products, client-facing and internal tools**



ecosystem on customers. These include the following metrics: customer acquisition cost by business line; customer activity level (measured by metrics such as the number of transactions per month); proportion of customers using products from multiple business lines; customer churn rate; and customer lifetime value. These metrics should be analysed for customers using one versus multiple products within the ecosystem, as well as tracked over time. Such analysis provides management with insights into whether the ecosystem is delivering tangible results.

The second group of metrics is accessible to a firm's external stakeholders. They tend to focus on outcomes and are therefore less direct. For example, the relative size of the business lines in terms of revenue or customer base. A more or less balanced distribution among business lines suggests the presence of an ecosystem, rather than a firm with a single business line with minor additions. However, it is important to note that reporting the breakdown of business segments is often at the discretion of the firm. While successful ecosystems may be more inclined to report such data, the decision to do so is typically guided by internal corporate policies rather than general accounting rules. Consequently, this reporting practice may introduce bias into studies examining ecosystem performance.

The third group of metrics involves market valuation. A higher valuation, indicated by conventional metrics such as the Market-to-Book Value of Equity, or the Price-to-EBITDA or Price-to-EBITDA-to-Sales ratio compared to similar firms focused on standalone business lines, suggests that investors are endorsing the ecosystem narrative of the firm. This can be interpreted as a measure of ecosystem success, as insiders and investors typically have more access to firm information than external analysts. An extension of this metric involves comparing the firm's overall valuation to a sum-of-parts valuation by business line, if such data is available. In this paper, we apply our framework to several case studies across different markets to ascertain whether firms adhering to our ecosystem design framework indeed achieve better results.

## Case Study Approach and Sample Selection

In this section of the paper, we outline the methodology employed to evaluate the effectiveness of the derived framework in analysing ecosystem design. We chose the case study approach for several reasons. First of all, ecosystems exhibit considerable diversity in business composition, influenced by factors such as local context, the unique developmental trajectory of individual firms, and the capabilities within each firm. Secondly, in most markets, the number of ecosystems is inherently limited because, by design, an ecosystem offering a diverse range of services utilized by numerous clients tends to be a major player. This is analogous to markets such as telecommunications, where it has been established that an optimal number of players is typically 3 or 4 [58]. However, we are not yet able to determine the optimal number of ecosystems per market. Consequently, conducting a quantitative study comparing ecosystems across diverse markets would be challenging due to potential significant differences in accounting rules and market contexts.

Thirdly, due to the absence of a single comprehensive data source on ecosystems and their business compositions, our analysis relies on parameters that may vary between firms to derive insights. Additionally, ecosystems may not always disclose the parameters required by researchers to conduct analysis on ecosystem efficiency.

Among the aspects of ecosystem operations outlined in the HEM framework in Part 2, our research primarily concentrates on the externally visible facets of operations, namely, the array of business lines within the ecosystem and the customer-facing attributes such as loyalty programs and customer journeys. Due to data constraints, we do not explore the internal operations of firms invisible to external stakeholders. However, any available data in this regard is catalogued for potential use in future research.

For each of the cases, we undertake a study of the existing business structure and the achieved results. Our analysis follows several steps. First, we examine the spectrum of products and services provided by the ecosystem, along with the historical context of business line launches, where applicable. Each business line is categorized according to its alignment with the framework: Hook, Engage, or Monetize. It is noteworthy that certain business lines, like e-commerce, may span across multiple parts of the framework. Our primary data sources include official reports for investors, such as investor days accessible on company websites. We complement this information with online research and insights collected from 20 unstructured expert interviews related to the ecosystems under study, where experts were available.

Second, we assess the client-facing tools utilized by the firms, including unified identification systems, cross-product customer journeys, and loyalty programs, to determine their presence or absence. To gather this data, we adopt a "mystery shopping" approach, engaging with the services offered by the firms under investigation. Additionally, we supplement our findings with information obtained through web searches and content available on the official websites of the firms. In this study, we refrain from evaluating the usability of these services, because such an assessment would require either an objective methodology or access to a single source of information. Therefore, our focus remains on acknowledging their presence or absence, leaving the assessment for potential future research endeavours.

Afterwards, we analyse the firm's performance in achieving the targets set for the ecosystem and assess whether it receives a market premium compared to standalone businesses. We gather data on valuation multiples from publicly available sources such as Yahoo Finance. In our sample, we find several ecosystems that attempted to develop adjacent business lines but ultimately closed them. Regardless of the comparative analysis of valuation multiples, we consider these cases as non-successful.

The analysed sample comprises nine cases of successful and less successful ecosystems from different countries, including Argentina (Mercado Libre), Kazakhstan (Kaspi), South Korea (Kakao), Malaysia (Grab), France (Orange), Japan (Rakuten), India (SBI), UAE (Mashreq), and Spain (BBVA).

We deliberately excluded some of the best-known ecosystems, such as Apple, Amazon, Uber, WeChat, Alibaba, and others. Additionally, we chose not to include the largest markets – the USA and China. There were several reasons for this decision. First of all, we aimed to broaden the understanding of global ecosystems, illustrating that, while Chinese firms often dominate discussions (see, e.g., [59]), the ecosystem phenomenon is much larger in scope. Secondly, including the largest global ecosystems could skew benchmarking, as their success may be influenced by international markets, whereas the ecosystems in our sample are more localized. The results of our analysis are provided in the next section of the paper.

# Framework Application Results

In this part, we summarize the results of the case studies. First, let us give some basic information about the firms in question (in alphabetical order).

**BBVA**, a major global bank originating from Spain, embarked on a strategic initiative to modernize its services and attract a younger clientele. Recognizing the rapid evolution of banking driven by fintech advancements, BBVA pursued a series of investments and mergers with startups to cultivate an ecosystem offering enhanced value propositions for customers [60]. For instance, BBVA launched Simple, a neobank in the USA, as well as establishing a $100 million in-house venture capital (VC) fund [61]. Despite the subsequent closure of both Simple and its VC fund, BBVA persisted in investing in new technologies and collaborating with venture capital firms to counteract market commoditization [62]. Notable apps introduced by BBVA include Valora, which provides augmented functionality for real estate transactions, and Boconomy, an innovative personal finance management tool [63]. These services feature integrated customer journeys within the main BBVA offering, albeit primarily serving as supplementary features within banking services rather than constituting major new business lines. While BBVA has numerous peers, banks Santander and CaixaBank, both from Spain, are arguably its closest competitors.

**Kaspi** is the leading retail bank in Kazakhstan in the number of customers. Initially operating as a traditional retail bank, Kaspi underwent a complete transformation by introducing several fintech innovations to the local market, which most notably led to a transition of the entire market from plastic cards and NFC payments to QR code payments. Subsequently, Kaspi expanded its offerings by incorporating a significant e-commerce business, which serves as both a client acquisition channel and a platform for deeper customer engagement. The monetization of customer relationships continues to rely heavily on unsecured lending. A notable strength of Kaspi's offering lies in its tightly integrated user experience, complemented by a cashback-based loyalty program. While Kaspi has several peer banks in the Kazakhstani market, the only publicly traded one is Halyk Bank. Another comparable institution is TBC Bank, a Georgian neobank operating across multiple post-Soviet states. Kaspi's valuation is not directly compared to other e-commerce players, as over 71% of its net income is still generated from financial services [64].

**Kakao**, originally established as a messenger platform in South Korea, gradually diversified its portfolio by incorporating multiple business lines, including money transfers, e-commerce, banking, and eventually ride-hailing services. While Kakao already boasts a sizable customer base, it continues to expand its reach, particularly targeting younger generations through successful media projects and engaging clients via its messenger platform and user-friendly e-commerce services. Monetization still occurs primarily through traditional banking products. Similar to Kaspi, Kakao offers a seamlessly integrated user experience with a single client ID and integrated customer journeys. Given Kakao's extensive diversification, it is challenging to identify a perfect match. However, since a significant portion of Kakao's business is driven by banking services, we compare it to the largest banks in the market, such as Shinhan and Hana.

**Mashreq**, a prominent bank in the UAE, has initiated a strategic shift to offer services beyond traditional banking, aiming to enhance customer value and streamline the customer acquisition process. Still in the early stages of this transition, Mashreq has many peers in the local market. We compare it to the largest bank in the country, First Abu Dhabi Bank (FAB), as well RAKBANK.

**Mercado Libre**, sometimes referred to as the "Amazon of Latin America" [65], is a prominent ecosystem based in Latin America, with its headquarters in Argentina. Unlike Amazon, which historically has focused on e-commerce, Mercado Libre expanded its offerings to a comprehensive suite of financial services, notably around its Buy Now Pay Later (BNPL) product available on the marketplace. This expansion has led to tightly integrated customer journeys and a unified loyalty program based on points earned through platform transactions. With two comparably sized business lines, Mercado Libre is compared to two distinct sets of firms: banks (Grupo Financiero Galicia and NU bank) and e-commerce platforms (Casas Bahia, Americanas on nm, and Magazine Luiza S.A.). It is important to note that while banks are typically evaluated based on the market to book value of equity, marketplaces are assessed using the price to total sales ratio.

**Orange**, one of the largest global telecommunication operators, encountered the common industry challenge of commoditization, where telecom companies risk becoming mere conduits for internet traffic, while internet giants reap the benefits [66]. In response, Orange sought to leverage its substantial customer base by entering the banking sector – a common strategy among telecoms aiming to diversify revenue streams. However, like many of its peers, Orange struggled to transition its customers to banking products and ultimately shuttered its banking venture [67; 68]. Orange's peers are telecom players such as Bouygues and Vodafone. The conventional benchmark metric for telecoms is the price to earnings ratio.

**Grab**, initially established as a ride-hailing service in Malaysia, rapidly expanded its presence across various Asian markets, transforming the ride-hailing industry in each country it entered. However, Grab's ambitions extended beyond ride-hailing, as it ventured into adjacent sectors such as food delivery and finance. In finance, Grab diversified its offerings by facilitating retail payments and extending lending services to SMEs through strategic partnerships. Notably, Grab acquired a 90% stake in OVO, a fintech-focused ecosystem that has been called the largest ecosystem in Indonesia [69]. Grab's customer journeys are seamlessly integrated within its superapp, supported by a comprehensive loyalty program. Given that the majority of Grab's business still revolves around ride-hailing, its closest peers are arguably Uber, Lyft, and DiDi.

**Rakuten**, a diversified ecosystem originating in Japan, initially established itself as an e-commerce platform before moving into financial services, with fintech contributing up to 40% of its revenue, notably through Rakuten Card, which is integrated with Rakuten's world-class loyalty program. Additionally, Rakuten operates as a telecom operator, further augmenting its ecosystem offerings. Rakuten's customer journeys are tightly integrated, with the loyalty program incentivizing usage across multiple services. While Rakuten does not have any direct peers, it is pertinent to compare it to large Japanese banks such as Mitsubishi, Sumitomo Mitsui, and Mizuho Financial Group, as well as marketplaces like Mercari and Zozo.

**State Bank of India** (SBI) stands as one of the largest banks in India. Similar to BBVA, it opted to diversify its operations beyond core banking to augment its customer base. Diverging from the predominant focus on B2C customers seen in many ecosystems analysed in this paper, SBI tailored its ecosystem around B2B clientele, particularly SMEs. Among its notable initiatives is Krishi Yono, which enables Indian farmers to vend their produce to large buyers. This platform not only offers farmers a practical means of selling goods but also provides access to valuable information such as pricing and weather forecasts. For the bank, Krishi Yono yields valuable transactional data that facilitates lending processes – a challenging endeavour, especially within the SME sector in emerging markets. SBI's peer banks include Axis Bank and ICICI.

A summary of our analysis is presented in Table 1. It should be noted that, in the assessment of monetization, our focus is exclusively on offerings explicitly designed for selling high-margin products, such as unsecured lending. Monetization avenues such as advertising space (digital or physical) or the sale of aggregated customer data are not included in the analysis.

Our analysis of the nine ecosystems shows that four of them outperform their peers (Kaspi, Kakao, Grab, Mercado Libre), three exhibit results that are comparable to that of their peers or mixed depending on the valuation metric used (BBVA, Mashreq, Rakuten), and two lag behind their peers (Orange and SBI). As Table 1 shows, almost all successful ecosystems have diversified business lines covering all three stages of the customer lifecycle, supported by dedicated services tailored to each stage. Additionally, the vast majority of successful ecosystems (with the exception of Mashreq) employ unifying tools such as a single ID, integrated loyalty programs, and/or unified customer journeys. These successful ecosystems boast valuation multiples up to nearly 8 times higher than their peers (Kaspi).

The less successful ecosystems exhibit quite different profiles. A notable observation is the absence of a viable engagement product among these ecosystems. All of the ecosystems that underperform their peers or show results on par rely (or relied) heavily on conventional products from their original line of business (e.g., payments) or lack a dedicated engagement product altogether (such as Orange).

It is plausible to suggest that ecosystems without a significant difference in valuation multiples compared to their peers have not developed additional business lines substantial enough to be distinctly noticeable alongside their main lines of business. In essence, these additional offerings may be perceived more as features rather than standalone business lines. It is important to acknowledge that the variations in valuation multiples may stem from different factors and would benefit from a quantitative study, such as event study methodology, which we plan to conduct in the future.

## Conclusions

In this paper, we explored digital-based business model transformation, focusing on ecosystem business models. Drawing insights from existing research in related fields such as the customer lifecycle and RFM approaches, we formulated a framework for analysing efficiency and selecting business lines and tools for ecosystem design. This contribution is particularly significant given that flawed design has been identified as a major factor contributing to ecosystem failure. To complement the framework, we also proposed methods for measuring ecosystem performance using open data sources. Our study applied this framework to analyse nine cases of ecosystems from nine different countries, aiming to determine whether its application facilitates differentiation between successful and unsuccessful ecosystem designs.

The derived framework suggests that, to be successful, an ecosystem should have three types of business lines: 1) Hook products with high attractiveness and low entry barriers that consistently bring significant numbers of customers to the firm; 2) Engagement products that increase the frequency of interactions with the firm's products and thus extend the time that a customer spends with the firm (the so-called "customer lifetime"); and 3) Monetization products that allow an ecosystem to extract maximum value from the existing customer base.

**Table 1.** Summary of case study results

Ecosystems that outperform their peers are highlighted in green, those with similar or mixed results (depending on the multiple) are shaded in grey, and those that underperform are marked in orange.

| General information on the ecosystem | | | | | Key business line composition | | | Customer-facing features | | | Ecosystem's results[17] | Peers' results |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| # | Ecosystem | Country of origin[1] | Original business line[2] | Key business lines[3] | Hook products[4] | Engagement products[5] | Monetization products[6] | Loyalty program[7] | Unified ID[8] | Unified CJs[9] | Valuation multiple[10] | Peer multiples[11] |
| 1 | BBVA | Spain | Fintech[12] | Fintech | Value-added services like AR for real estate | Fintech (payments)<br>PFM | Fintech (lending) | No | Yes | Yes | P/B[14] = 1.0 | P/B = 0.7 |
| 2 | Kaspi | Kazakhstan | Fintech | Fintech | E-commerce | E-commerce | Fintech (lending) | Yes | Yes | Yes | P/B = 8.3 | P/B = 1.0 |
| 3 | Kakao | South Korea | Messenger | Fintech<br>Entertainment<br>Ride hailing | Messenger<br>Media | Messenger<br>Ride hailing | Fintech (lending) | Yes | Yes | Yes | P/B = 2.1 | P/B = 0.4 |
| 4 | Mashreq | UAE | Fintech | Fintech | Value added services for corporate clients | Fintech (payments) | Fintech (lending) | No | No | Yes | P/B = 1.1 | P/B = 1.2 |
| 5 | Mercado Libre | Argentina | E-commerce[13] | E-commerce<br>Fintech | E-commerce | E-commerce | Fintech (lending) | Yes | Yes | Yes | P/B = 29.0<br>P/S[15] = 6.1 | P/B = 4.1<br>P/S = 2.0 |
| 6 | Orange | Spain | Telecom | Telecom | Telecom | - | Fintech (closed) | No | Yes | No | P/E[16] = 12.8 | P/E = 16.4 |
| 7 | Grab | Malaysia | Ride-hailing | Ride-hailing<br>Fintech | Ride-hailing<br>Delivery | Ride-hailing<br>Delivery<br>Fintech (payments) | Fintech (lending) | Yes | Yes | Yes | P/S = 3.8 | P/S = 0.9 |
| 8 | Rakuten | Japan | E-commerce | E-commerce<br>Fintech<br>Telecom | E-commerce<br>Telecom | E-commerce | Fintech (lending) | Yes | Yes | Yes | P/B = 1.4<br>P/S = 0.7 | P/B = 0.7<br>P/S = 3.5 |
| 9 | SBI | India | Fintech | Fintech | Value added services for corporate clients | Value added services for corporate clients | Fintech (lending) | No | Yes | Yes | P/B = 0.8 | P/B = 2.7 |

*Notes:* 1. Country of origin – country of initial ecosystem launch, possibly not the main country of business presently; 2. Original business line – business line that was the first for the ecosystem, possibly not the business line generating the most revenue or profit presently; 3. Key business lines – business lines generating most of the revenue; 4. Products with low barriers to enter the ecosystem, which are perceived as the customer acquisition vehicle; 5. Products that by their nature create substantial engagement with the customer base; 6. Products that generate high margins and allow to extract value from existing customer relationships; 7. Whether an ecosystem has a loyalty program integrated across the different lines of business; 8. Whether an ecosystem has a single identification tool used to log in to all the services; 9. Whether an ecosystem has customer journeys integrated across several products, possibly in the form of a superapp or a constellation of apps; 10. Suggested valuation multiples for the ecosystem and their values; 11. Average valuation multiple of the selected peer group. 12. Fintech – any financial service, including payments, lending, savings, insurance, etc. 13. E-commerce – any type of e-commerce, including sales of own goods or a marketplace for third party sellers; 14. P/B – Market Capitalization / Book Value of Equity; 15. P/S – Total Enterprise Value / LTM Total Revenue; 16. P/E – Normalized Price / Earnings Per Share; 17. Ecosystems that outperform their peers are highlighted in green, those with similar or mixed results in grey, and those that underperform in orange. Source of all data: S&P Capital IQ, except data on Rakuten, which is taken from Yahoo Finance (accessed on 2024-05-30); date: end of 2023.

In addition to these business lines, a firm should have a set of internal and client-facing tools that tie the business lines together. Client-facing tools include: 1) a single ID for ecosystem products; 2) unified customer journeys enabling seamless transitions between products; and 3) a single loyalty program for stimulating the usage of multiple products. Internal tools include 1) Unified Customer Relationship Management (CRM); 2) legal agreements between business lines; 3) technical integrations between business lines; and 4) proper managerial and governance set-up.

The case studies show that the framework developed in this study holds potential as a tool for assessing the efficiency of existing ecosystem designs. Moreover, it offers valuable insights for making strategic decisions regarding the launch of business lines when aiming to build an ecosystem. Several key findings emerge from the analysis.

First of all, the analysed cases suggest that, when constructing an ecosystem, firms with significant customer bases should prioritize launching or expanding business lines that encourage frequent and conscious interactions with the ecosystem. Neglecting this aspect and focusing solely on monetization tools and strategies often results in subpar outcomes.

Secondly, firms with established high-margin businesses may derive benefits from introducing a business line that serves as an acquisition vehicle, characterized by low entry barriers for customers ("hook product"). Ideally, this product should also serve as an engagement tool. E-commerce exemplifies such a service, being attractive both as a hook product and as an engagement product. This dual role may explain its presence in many ecosystems.

Thirdly, the development of tools that integrate various components of the ecosystem is a crucial factor for success. These tools, such as a single ID, seamless customer journeys, and loyalty programs, serve to unify diverse businesses within the ecosystem. Without such integration, the ecosystem may function more like a conglomerate of disconnected entities, leading to suboptimal performance.

Fourthly, when introducing a new business line to establish an ecosystem, it is important to ensure that this addition carries enough weight to be significant within the overall business framework. If the new business line is not substantial enough, it may be overlooked at the corporate level, leading to the risk of this new line shutting down as unsuccessful.

While we believe that the findings of this study offer valuable insights for business practitioners, it is important to acknowledge several limitations inherent in our research approach. First, in our case study methodology, we primarily synthesized publicly available information. Consequently, we could not directly assess the significance of internal ecosystem tools like unified CRM. Second, while the case study method allows for in-depth exploration of firms' experiences, it lacks the advantages of quantitative studies, such as the ability to draw more generalized conclusions and forecasts. Third, our analysis was limited to only nine ecosystems, whereas there are numerous others worthy of exploration. Our research would greatly benefit from selecting successful and less successful ecosystems from the same or similar markets and contrasting their experiences. Fourth, conducting robustness checks on the differences in valuation premiums using methodologies like event studies would enhance the credibility of our conclusions. Fifth, obtaining more detailed performance information through insider interviews, such as profitability by business line and customer churn rates, would undoubtedly enhance the depth of our study.

Acknowledging these limitations, we remain confident that this research will make a valuable contribution and are committed to addressing the identified gaps in subsequent studies.

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