



The Value of Platform Strategy It's the Ecosystem, Stupid!

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The Value of Platform Strategy It's the Ecosystem, Stupid!

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Abstract

Despite an abundant literature on platforms, there have been surprisingly few quantitative studies on their adoption by established firms and their impact on performance. The unspoken assumption is that platforms increase companies' performance. This paper uses a global, cross-industry, sample of over 1300 firms to show that, while it seems adopting platform strategies is positively associated with firm performance, the effect is confounded by (1) the digital maturity of firms and (2) their ecosystem strategy. Our results refine our understanding of platform strategy's value by uncovering the importance of shifting to ecosystem approaches involving value co-creation. They suggest that success is not about the adoption of any platform technology, but rather about seizing integration opportunities brought by its underlying ecosystem.

1 Introduction

Despite the popularity of platform business models in the industry and scholarly research, very few studies have looked beyond the so-called disruptive power of such models, to instead look at the value of platform businesses to established firms. Is the adoption of a platform strategy always a dominant choice for incumbents? And is the quest to own the dominant industry platform the key to such strategies? Or are there specific conditions under which such transitions may prove innocuous at best? In this paper, we document the adoption of platform strategies by established firms and analyze specific patterns in their relationship to firm performance. Our results suggest that success today is not about the blind adoption of any platform technology, but rather about seizing integration opportunities brought by its underlying ecosystem.

The growing dominance of platform firms and its resulting threats and opportunities have raised researchers' attention for some years. Focusing mainly on platform leaders, researchers have sought to better understand the causes of platform dominance in

today’s world economy. These causes include self-reinforcing effects called network effects, whether direct [Eisenmann et al., 2009, Farrell and Saloner, 1985, Katz and Shapiro, 1986] or indirect [Boudreau and Jeppesen, 2015, Evans, 2003, Hagiu, 2013, Rochet and Tirole, 2003], that result in winner-takes-all outcomes. Consequently, it is sometimes assumed that the name of the platform game is to own or control the dominant platform. Moreover, the topic has been studied in various research settings and contexts, leading to a myriad of definitions and conceptions. There is currently a lack of unified perspective to quantitatively assess the value of a platform strategy, taking both firm specific and external factors into account, as we do in this paper.

After having reviewed the literature in Section 2, developed our conceptual framework in Section 3 and described our sample in detail in Section 4, we aim first at shedding light on the adoption of platform strategies. To do so, we document platforms strategies by classifying firms in different categories based on dimensions such as location, industry or digital maturity. Then, we strive to better understand sources of value creation in these platform strategies. We make the hypothesis that a platform is nothing more than a tool that can be valuable if and only if coupled with complementary changes in the firm’s strategy. More precisely, we suppose that the participation in a platform strategy must be coupled with a change from a linear value creation approach to an ecosystem value (co)-creation approach to be valuable. In order to test this central hypothesis, we use a unique dataset of cross-sectional survey data gathered in 2018 by Kantar-TNS on behalf of the McKinsey Global Institute. In total, 1,303 firms from all over the world are represented. These companies are from a wide range of sizes and industries.

Our main results suggest that the mere fact of participating to a platform does not correlate with revenue growth when properly controlling for firm-specific and external factors. We further observe that it is not the ownership of a platform (over the use of third-party platforms) that conditions its impact on performance. However, complementing the participation in a platform strategy with an ecosystem approach based on value co-creation correlates significantly with the expected future results. In other words, our results show that entering the platform play without adopting an ecosystem approach with a minimum of openness towards other firms may not have much influence on companies’ performance.

Based on these results, we conclude by suggesting that platforms must be considered as a tool to operate a profitable change in the business model of firms. Indeed, platforms enable companies to access an ecosystem of potential partners that must be considered as a source of value (co)-creation. It creates informational proximity that makes the development of joint offers easier, supposedly influencing performance. These results refine our current understanding and knowledge of success factors in platform strategies and create opportunities for future research at the frontier of platforms and ecosystems theories.

2 Theoretical background

Platforms represent a growing and important part of today’s world economy [Eisenmann et al., 2011]. Nowadays, world’s most valuable companies are platforms, partly

thanks to network effects and the resulting potential winner-takes-all outcomes ([Cusumano et al., 2019]). However, even though the success of global platform firms is recent, platform business models and markets have existed for many years [Van Alstyne and Parker, 2017]. For instance, newspapers have allowed companies to advertise their products to subscribers for decades. What has changed in recent times is that, by diminishing transaction costs, information technologies have profoundly reduced the need for companies to own physical assets [Van Alstyne and Parker, 2017]. The digital revolution has thus led to the emergence of global firms such as Airbnb or Uber that facilitate millions of transactions without owning any house or any car. In these platform strategies, resources orchestration becomes essential and the focus is put on relationships management rather than on assets ownership [Van Alstyne and Parker, 2017]. We see nowadays a rising number of new entrants or established firms adopting such platform strategies, complementing or replacing more traditional pipeline approaches, but the literature lacks quantitative and cross-industry analyses of the phenomenon.

2.1 Definitions and classifications

The term “platform” has been used in different overlapping research settings, resulting in various definitions. According to Baldwin and Woodard [2009] and Gawer [2009a], most definitions of platform put the emphasis on the “reuse or sharing of common elements across complex products or systems of production”. In other words, most researchers agree on the architecture behind a platform, and on the fact that a platform is composed by core components characterized by low variety, and possibly by a set of peripheral components, also called complementary products, that are characterized by high variety. These two main components of a platform can evolve together thanks to common interfaces. More recently, Baldwin, (forthcoming, Chap. 14) suggests that all platforms are similarly based on one key element: modularity. Indeed, all platforms are based on modularization between the core component and its potential complements.

Despite the attempt of some authors to propose a unified view on platforms, there exists no universal definition yet that encompasses the different perspectives found in the literature. The difficulty to agree on a common definition led researchers to organize knowledge using taxonomies and classifications. Gawer [2009b] proposed a taxonomy based on the operating scope of the platform i.e. firm, supply-chain or industry/ecosystem level. Next to that, there are two main perspectives of platforms in the current literature: the one based on the economic theory, and the one based on engineering design [Gawer, 2014]. While authors in the economic theory consider platforms as a type of market [Rochet and Tirole, 2003] or as a business model [Van Alstyne and Parker, 2017], authors in engineering design consider it as modular technological architectures [Baldwin and Woodard, 2009]. These two perspectives differentiate degrees of reliance on information technology and therefore distinguishes physical platforms such as shopping malls or product platforms from virtual ones, such as transaction and innovation platforms.¹

In this study, we focus on digital platforms as described by Cusumano et al. [2019]. We therefore consider platforms that are transactional, also called multi-sided [Evans,

¹A detailed taxonomy of platforms is proposed in appendix A.1.

2003], transaction [Cusumano et al., 2019] or exchange platforms [Baldwin, forthcoming, Chap. 14], innovational, also called industry platforms [Gawer, 2009b], or hybrid [Cusumano et al., 2019], which is a combination of transactional and innovational platforms.

2.2 Platform ecosystem

The literature is increasingly shifting from studying the platform itself towards better understanding strategies at play in the underlying ecosystem. Like platforms, the topic of ecosystems is currently on the rise among scholars as more and more firms shift from traditional and vertical single-firm approach based on assets control to an ecosystem approach based on a network of relationships and potential for value co-creation.

The term ecosystem refers to “a group of interacting firms that depend on each other’s activities” [Jacobides et al., 2018]. According to Iansiti and Levien [2004b], this group of interacting firms co-evolve their capabilities and roles and align with the direction given by one or more central firms. The concept of ecosystems has received significant attention from both academia and the industry over the past 20 years [Adner, 2017]. Illustrating the recent rising interest for the topic in the industry, Jacobides et al. [2018] points out that the word “ecosystem” appeared more than 160 times in Alibaba IPO’s announcement in 2014. In academia, the frequency of the word ecosystem in the titles or abstracts of strategy papers is seven times greater now than it was five years ago [Jacobides et al., 2018]. This concept has become so important that Teece [2016] suggests it might replace the traditional notion of industries when performing analyses. According to Jacobides et al. [2018], modularity enables the emergence of ecosystems. It allows indeed interdependent firms to coordinate, integrating their offerings, without a formal hierarchy in place. Based on their literature review, we identified three non-mutually exclusive views on ecosystems.

The first perspective focuses on platform ecosystems. It considers how the different actors organize around a platform [Jacobides et al., 2018]. Studies focus on the interdependence between a platform owner and its network of complementors. We observe three main streams of research around platform ecosystems [McIntyre and Srinivasan, 2017]. First, the industrial organization stream focuses on better understanding network effects [Parker and Van Alstyne, 2005, Shapiro and Varian, 1999], and their impact on the emergence of dominant platforms. Second, the technology management perspective puts emphasis on the platform architectures [Gawer, 2009b] and on how platform sponsors can attract third-party complementors. This stream therefore focuses on design strategies to generate indirect network effects [Eisenmann, 2006, Evans et al., 2008]. Lastly, the strategic management literature deals with the competitive advantage induced by platforms. Authors like Adner and Kapoor [2010] and Hein et al. [2019] have shown that competitive advantage in the platform play depends on the capacity of firms to stimulate value co-creation with the ecosystem.

Secondly, the business ecosystems stream focuses on a firm and its environment. Teece [2007] defined a business ecosystem as a “community of organizations, institutions, and individuals that impact the enterprise and the enterprise’s customers and supplies”. Still according to Teece [2007], the ecosystem is related to the environment

of the firm that affects its dynamic capabilities and competitive advantage. Others, such as Iansiti and Levien [2004a], focus on the performance of involved firms that is dependent on the overall performance of the ecosystem. Iansiti and Levien [2004a] and Dhanaraj and Parkhe [2006] also emphasize the crucial role of the central firm – called hub or keystone firm – in maintaining stability within the network.

The last stream, focusing on innovation ecosystems, concerns the development of new innovations or value propositions, and the latent players involved. This perspective focuses on groups of firms that interact and partner up to combine individual products or services to propose integrated offerings. We can associate this type of ecosystem to what Adner [2017] call “ecosystem-as-structure”, where the “configurations of activity are defined by a certain value proposition”. Earlier, in 2006, Adner defined an innovation ecosystem as “the collaborative arrangements through which firms combine their individual offerings into a coherent, customer-facing solution” [Adner, 2006]. In innovation ecosystems, an important driver of value creation for customers is the extent to which companies align thanks to different arrangements [Adner, 2017]. According to Jacobides et al. [2018], research in the field has notably studied the impact on collaborative arrangements between the innovator and its complementors on the ability to invest in and commercialize a new technology (e.g., Kapoor and Lee [2013]; Leten et al. [2013]), the positive effect of knowledge sharing on the strength of inter-organizational relationships and the ecosystem (e.g. Alexy et al. [2013]; Brusoni and Prencipe [2013]; Frankort [2013]) and the health and survival of the ecosystem (Leten et al. [2013]; West and Wood [2013]).

2.3 The value of platform strategies

The literature is scarce regarding the effects of the adoption of platform strategies on performance, and more specifically on revenue growth. Indeed, researchers mostly take cases of pure platform players, neglecting the potential impact of platform strategies adoption among established firms, even though successful examples exist (e.g. Schibsted in Norway, by Aris and Bughin [2012]). When studying the success of platform strategies, most researchers in the field take the perspective of global platform leaders such as those mentioned earlier. Van Alstyne et al. [2016] highlights for example the positive impact of adopting a platform strategy by taking the case of a company that was a purely product company beforehand: Apple. In a nutshell, the authors show that Apple outperformed previous market leaders by adopting a platform strategy and opening-up to external application developers. Many other studies highlight the performance effects of platform strategies taking the position of platform owners and pure platform players such as Facebook, Google or Amazon [e.g. Eisenmann, 2006, Gawer and Cusumano, 2008].

A few other studies though, such as Ceccagnoli et al. [2012], focus on the performance effects of platform play among complementors. This study is one of the only studies that assess the impact of adopting a platform strategy on performance, whether the firm was a born platform player or not. The authors studied the case of the enterprise software industry and found out that partnerships within an innovation platform ecosystem is associated with an increase in sales and a greater likelihood of an IPO

for firms taking part to it. More recently, Lee et al. [2015] have studied the impact of the use of Facebook as a transaction platform on sales. The authors found out that tools such as Facebook likes are associated with an increased traffic and sales for companies present on the network. These two studies illustrate the positive sales effects of participating to platforms.

To sum up, the three papers cited [Ceccagnoli et al., 2012, Lee et al., 2015, Van Alstyne et al., 2016] are good examples of the performance effects for existing firms to enter the platform play. However, papers assessing the performance effects of platform strategies for established firms are rare. Next to the fact that most studies in the field focuses on platform owners, they also focus on pure platform players, and less on established product or service firms that adopted a platform strategy in their way.

2.4 Contribution

The contribution of the present study is twofold. First, it aims at documenting the phenomenon of platform adoption among established firms. Until now, few empirical studies have been able to document it through such a wide range of industries, company sizes, locations, and other relevant characteristics such as digital maturity.

Second, adopting an integrated approach building up on platform and ecosystem theories advised by McIntyre and Srinivasan [2017], we aim at shedding light on the potential effect of adopting a platform strategy on firm performance. Based on our literature review, we consider three different strategies i.e. platform owner, platform user, or mixed player which is a combination of both owning and using a platform. After having assessed the performance effects of these three strategies, our objective is to refine our understanding of the actual value driver behind the adoption of a platform strategy. To do so, we complement the analyses with the notion of ecosystem strategy, defined here as the extent to which firms collaborate with others to build more integrated offerings. Our goal is to quantitatively show how modular (ecosystem) platform players differ from non-modular (non-ecosystem) ones in terms of performance.

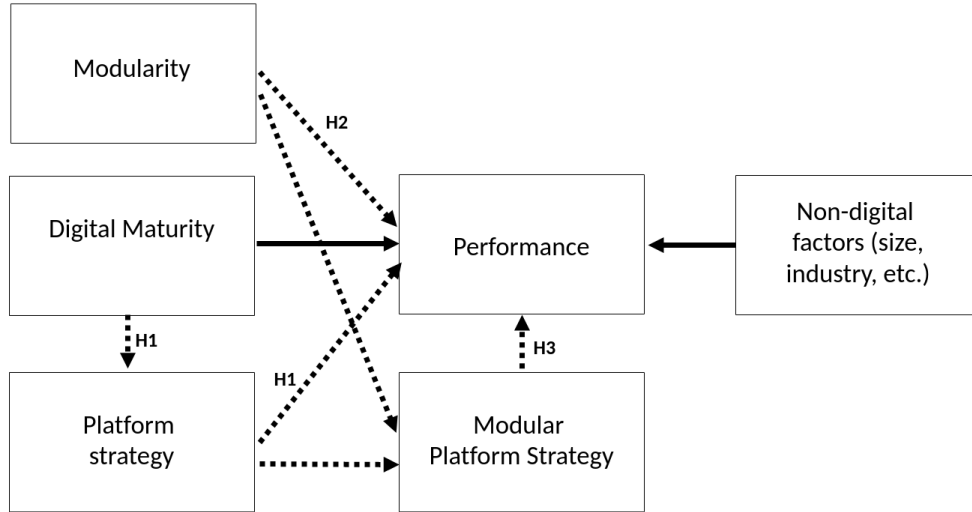
The following part aims at detailing the conceptual framework followed and the hypotheses developed to achieve the aforementioned objectives.

3 Conceptual framework and hypotheses development

In this article, we propose a theoretical model grounded in the literature presented above. The model considers business performance as dependent on elements related to the environment in which the firm operates (e.g.: its industry), its own characteristics (e.g.: size in terms of revenue) and its strategic choices such as those linked with digital transformation.

Figure 3.1 illustrates the theoretical model investigated. The plain arrows represent relations that were already found in the literature and empirically confirmed, mostly by the classical literature in strategy and strategic management. Among those are the one binding performance with the size and age of the company, its country of origin

Figure 3.1: Conceptual framework of the present article with hypotheses



and industry. This is not an exhaustive list of all factors influencing future revenue and other covariates were also considered but are left out of the representation of the model for clarity. Next to these established effects, our review of the literature inspires the three hypotheses below.

Hypothesis 1.1 - Importance of platform strategy for future growth – Owning a platform is associated with higher performance, compared with just using a platform or doing both.

The literature usually considers that having a platform strategy and, more than that, owning a platform, is indeed a determinant of future success. This literature, presented partially above, makes the claim that platforms can boost consumers reach and, through this channel, improve the firm’s top-line. Many studies consider the platform strategy itself as a determinant for performance. Therefore, a major part of these studies focuses on the owner of the platform and highlight the positive impacts of adopting this specific strategy. However, few studies consider the strategy to use an existing platform owned by another entity. Until now, no study has quantitatively explored the potential effect of each strategy on firm performance. The objective is thus to first assess whether owning a platform is indeed associated with better results than using one or adopting a mixed strategy composed by both options.

Hypothesis 1.2 - Hidden confounder in the platform strategy argument – The digital maturity of a firm influences both the platform strategy and its performance.

While it is a well-established fact that companies that are digitally mature are better prepared to face challenges, we argue that the effect of the platform strategy can be explained by the relative digital maturity of a company in its industry. Digitally mature companies are more likely to have a platform strategy or at least to use digital platforms to conduct their business and, therefore, trying to assess the effect of a platform strategy on the future growth of the company without correcting for the current digital advantage might contaminate the result of the regression and make it look like the choices made in platform strategy matter while they do not necessarily. Once we control for all the factors in our model (except for the ecosystem strategy and its interactions that will be left for the next hypothesis), we expect to find that the platform strategy will not play a significant role in assessing performance.

Hypothesis 2 - Importance of ecosystem strategy for future revenue – Companies looking to integrate their offering with other players in the industry expect higher performance.

As was discussed in the review of the literature, we observe a shift from a platform-centric view towards a broader, more inclusive view that favors the entire ecosystem of companies collaborating to serve the customer. The central hypothesis that we make in the present paper is therefore that the integration of offerings across several companies enables firms to better serve the market (e.g. through superior products and services, or through superior customer experience overall), leading to a higher expectation of future sales growth. We contend that such an ecosystem strategy is the real active component behind the success of many platform strategies. Indeed, participating or owning a platform implies collaborating with others to serve a set of customers. The platform, technological or not, is but a channel to instantiate such collaboration but it is not necessarily the source of value. We argue that, whether a company chooses a digital platform or not and, if it does, the way it does so (by owning or merely using) is not what matters. What matters is the search for the optimal bundle to serve consumers' needs and wants.

We expect a positive impact of ecosystem strategy on expected future performance. Indeed, this would be coherent with the literature and consistent with the fact that pursuing an ecosystem strategy is a choice and that, consequently, it is to be expected to rational actors will only make it if they are duly compensated.

Hypothesis 3 - Mediation of the platform strategy effect by ecosystem strategy – Platform players participating to ecosystems expect higher performance than non-participating ones.

After having explored the standalone effect of ecosystem strategy on future performance, we make the hypothesis that the ecosystem argument is an important dimension for an effective platform strategy. In other words, we posit that ecosystem players in platform strategies are associated with higher future expectations in terms of revenue growth than firms that would stick to a linear approach of their value chain. In practice, we are going to study the interaction between ecosystem strategy and platform strategy and their joint effect on performance. We expect to observe that ecosystem platform players show better results than non-ecosystem ones, consistent with the idea that the effect of platform strategies on performance is mediated by an ecosystem orientation.

4 Data and empirical implementation

The data used in this article comes from a survey conducted online by the McKinsey Global Institute between May 15 to May 25 2018. It was based on a closed sample of more than 15,000 companies with a skew towards large companies. In total, we have 1,303 responses from executives from all over the world and across a vast array of industries (the typical response rate was 8-12% in the country/industry pairs). The composition of the sample in each country was conceived to match the economic representation of each industry.

The answer were provided by officers in charge of at least a business unit in the company and was incentivized by the access to the aggregated results of the survey. Additional quality checks, such as questions randomization were performed. This dataset is similar in its conception to the one used in Bloom et al. [2015, 2012]. While other papers, such as Bughin et al. [2017] and Bughin and van Zeebroeck [2017] have used previous versions of the survey, it is the first time this version of the survey is used in the academic literature.

A full description of our sample is provided in Appendix A.2. It shows that the data on which our analysis is based is well-varied, in terms of industry, geography and type of business. As for any survey data, there are biases, but the econometric treatment given in the next sections makes sure those are accounted for when relevant. Moreover, the large cross-sectional nature of the data allows for statistically robust comparisons between different type of actors that will lend credit to the generality of the results presented here. Finally, we firmly believe that this data is as close as one can obtain to analyze such specific topics across a large number of countries and industries. As such, the present article contributes to the literature by generalizing local or industry-specific findings and bringing scale to the discovery in the field of platform and ecosystems strategy.

The present paper uses a series of variables to describe the adoption of platform

strategies among established firms and to assess the performance correlation with platform strategies and potential confounders, such as digital maturity and ecosystem strategies.

First, the performance variable is proxied by the Expected Revenue Growth. This variable is based on a survey question asking respondents their expectation in terms of revenue growth over the next 3 years. To answer this question, respondents had to select one category of revenue growth. Revenue growth perspectives are divided as follow:

1. -50 % or more
2. -25 to -49 %
3. -15 to -24 %
4. -10 to -14 %
5. -5 to -9 %
6. 0 to -4 %
7. 1 to 4 %
8. 5 to 9 %
9. 10 to 14 %
10. 15 to 24 %
11. 25 to 49 %
12. 50 % or more

Second, the platform strategy variable has been derived from a multiple choices question asking: “Which of the following statements best describe your organization’s use of digital platforms? (Select all that apply)”. Next to the “Other” and “Don’t know” options that were left out of our analyses, five main options were proposed:

1. We own at least one platform that is used by others.
2. We use a platform to gain access to customers/partners we otherwise would not reach.
3. We use a platform to improve (or maintain) access to our current customers/partners.
4. We use a platform to monetize our data.
5. Not applicable; we do not own or use any platforms.

This question allows to derive information on the three strategies present in the literature [Van Alstyne and Parker, 2017]. First, a firm may own its platform and therefore act as platform leader or ”sponsor”. Second, a firm may only use an existing platform owned by another entity, and therefore act as a complementor. Lastly, firms stating that they own and use one or several platform(s) are considered as mixed players. Used as dummy variable, the alternative option that will be left out of the regressions to come is ”having not adopted any of the platform strategy”.

Next to the platform strategy, we are also interested in assessing the potential role played by the ecosystem strategy of the firms represented. The "ecosystem strategy" variable is proxied by a survey question asking the extent to which the companies' respondents agree with the following statement: "We partner up with other organizations to propose more integrated offerings". Next to the "Don't know" options, respondents were proposed with the other options "Strongly disagree", "Disagree", "Neutral", "Agree" and "Strongly agree". Based on this question, we derive a measure of the level of ecosystem participation of respondent firms.

In order to account for other potential performance drivers, we include five control variables to our regression analyses. These controls are related to both external as well as firm specific characteristics.

First, Geography is based on the region in which the HQ and, supposedly, strategic decisions are located. All regions of the world are represented: Europe, North America, Asia-Pacific, India and Developing regions including China, Latin America, North-Africa and Middle East. Taking the geographic dimension into account allows to consider potential macro differences in firms' profiles, strategies and performances.

As strategic decisions and resulting performance may also be influenced by unobservable factors at the Industry level, we include a dummy variable for the industry to account for these potential effects. As already explained, a wide range of industries are represented, but three industries are pre-dominant in the sample. These three industries are composed by "Business, legal and professional services", "Financial services" and "High-tech".

Moving now to firms' characteristics, we also include a control of the size of the company. Size of the company is based on the revenues declared by respondents. It is a broad categorical variable with 12 levels ranging from "Less than \$10 Million per year" to "\$30 Billion or more".

As platforms considered in the context of this study are digital, and as digitization is expected to play a key role on firms' performance nowadays, we also take the Digital Maturity of firms into account in the analyses. We include two dimensions to capture the digital maturity effect. First, we use a measure of the internal digital maturity of firms, proxied by the share of organizations' core operations that are automated/digitized. Since the pace of digitization might differ from one industry to another, we build the control variable for internal digital maturity by subtracting the average share of operations that are digital in the industry (excluding the focal company) from the share of operations that are digital in the focal firm. By doing so, we obtain a measure of digital maturity inside the firm that takes the maturity of the peers into account.

In order to complete the Digital Maturity measure, we add a second dimension that takes both the incumbency and digital transformation status of firms into account. In this case, the dimension of digital maturity is oriented towards firms' output, and more precisely sales. The variable used distinguishes traditional established firms from digital established firms and digital natives. Traditional established firms are companies that are competing primarily in traditional ways (i.e. more than 80% of sales that are not digital). Digital established firms are established firms having operated a digital transformation and that are therefore competing substantially in new ways through

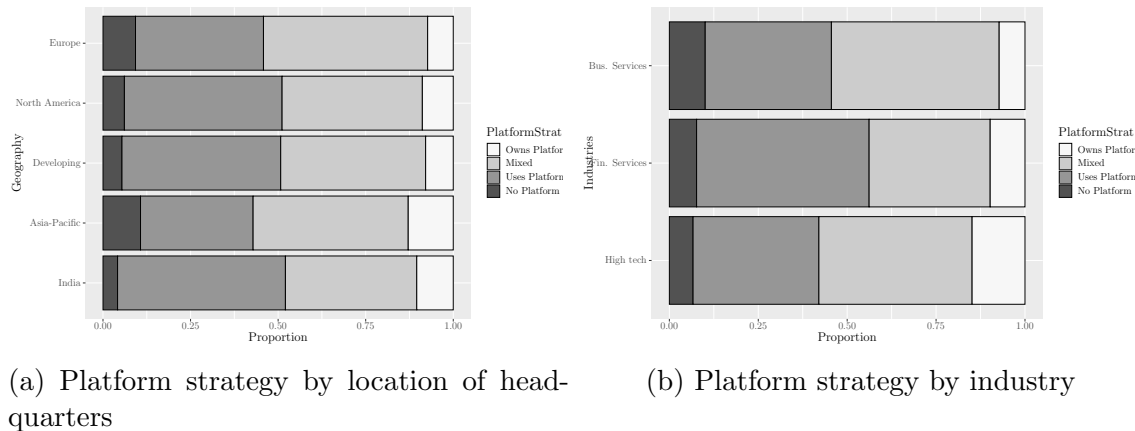


Figure 4.1: Type of platform strategy by geographical origin and for the main industries in the sample

digitization (i.e., more than 20 percent of sales consists of digital offerings and/or new digital businesses). Finally, digital natives are firms that are born digital, and that are therefore mostly competing through digitization.

4.1 Platform strategy

We now inquire into the difference in platform strategy for different types of companies. On Figure 4.1, we can see the spread between the different platform strategies by companies according to their geographical origin and according to their industry (for clarity, we only kept the three major industries in our sample).

This visual analysis seems to indicate a few trends. Indeed, European and, to a lesser extent, Asian companies tend to use or own less platforms than their North American counterparts². Moreover, companies active in the high-tech sector have a larger tendency to participate in some type of platform strategy than the firms active in finance³ or professional services⁴. This is consistent with the digitization of society that started, quite logically, through the consumer high-tech industry. An interesting feature of the dataset is that financial companies exhibit a higher tendency to use platforms (as opposed to owning them) than the high-tech⁵ or professional services⁶ companies.

It seems that companies that are digital natives or have operated a digital transformation are more likely to own one or several digital platforms⁷. However, one might wonder about the seemingly higher proportion of respondents that have not yet oper-

²for which the respective bootstrap p-values are 0.01 and 0.032 - for the detail of the statistical testing, see Appendix A.4.

³p-value: 0.10

⁴p-value: 0.01

⁵p-value: 0.02

⁶p-value: 0.01

⁷respectively with p-value 0.00 and 0.00

ated a digital transformation who declare to both own and use a platform⁸. A possible explanation to this puzzle might be that, as those companies are less likely to have an integrated business and digital strategy, they experiment with a bit of everything and end up both owning and using platforms in consequence. We do not, however, dig further into the riddle in this paper.

Finally, the sample enables to unearth another data oddity. It might seem intuitive to think that companies that are more likely to be first to experiment with digital technologies would also be the ones to own platforms. Indeed, when there is no platform available in a market, the first player to implement a platform strategy must necessarily start by owning a platform. A sensible assumption could then be that first movers on the front of technologies are more prone to own a platform rather than merely use them. This is true in our sample⁹, although not overwhelmingly so. It might be due to the cross-sectional nature of the survey. Indeed, we know from previous studies and from the mixed message sent to companies regarding their platform activities that we observe sometimes me-too strategies: some firms choose to launch a platform in a market that is already covered by one in hope of subverting part of the customers and complementors from the first one and, sometimes, to increase the market size altogether. As such, companies that do not describe themselves as likely to be the first to experiment with digital technologies might also own platform or engage in a mixed strategy, which is what we observe from our data.

4.2 Ecosystem strategy

Similarly, we can look at the eagerness of companies to integrate their offering with others (which we use as a proxy for the participation in ecosystems). This is done in Figures 4.3 and 4.4, here below.

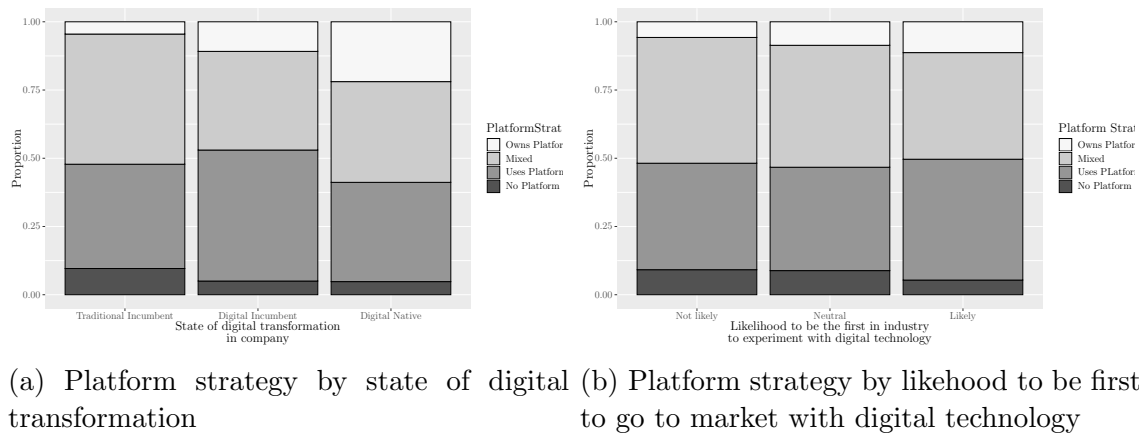


Figure 4.2: Type of platform strategy by digital technology and likelihood to be the first to market with new technologies

⁸p-value of 0.00 when compared to digital natives and 0.00 when compared to established firms that have operated a digital transformation

⁹p-value: 0.01

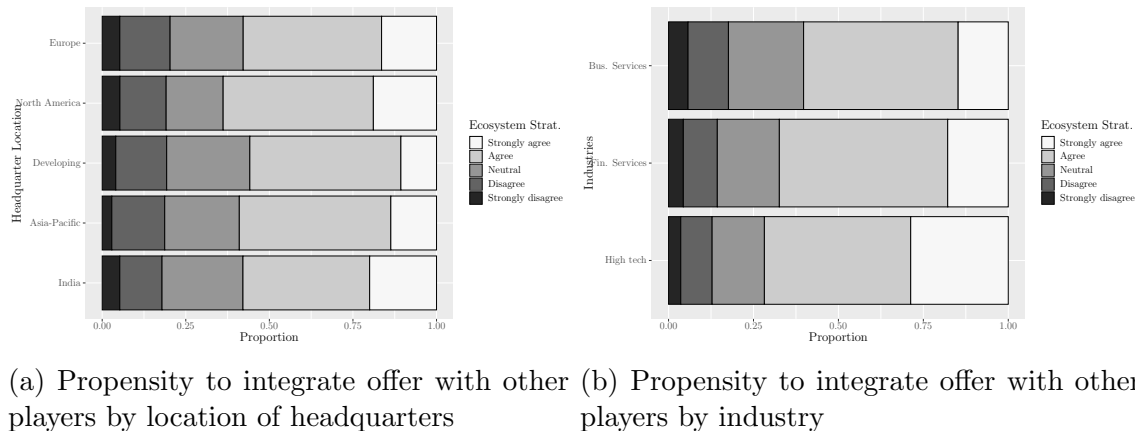


Figure 4.3: Measure of ecosystem strategy by geographical origin and for the main industries in the sample

(Question: We partner with other organizations to give customers more integrated offerings.)

We observe the same difference in the propensity to integrate offerings with other firms as the ones in platform strategies when segregating by the state of digital transformation. Moreover, as we can see, while similar conclusions hold for the difference in platform strategy and the propensity to integrate one’s offering with others’ when segregating by headquarter locations, the results for other cuts of the data give intuitively consistent information.

Ecosystem strategy is more prevalent in the high-tech industry than in the financial and business services ones¹⁰. This might be due to the ease of integrating digital offerings as opposed to physical goods bundling or services integration. On average, however, those three industries are among the ones that were most agreeable towards this question (as can be seen by comparing the proportions of negative answers between this subfigure and the other ones).

The differences are comparable with the conclusion on platform strategy when looking at the digital transformation status. While digital native companies and traditional companies that have operated a digital transition have approximately the same response pattern¹¹, we observe that traditional companies that have not yet gone through a digital transformation are much less likely to integrate their offering with other organizations¹². While not unexpected, this contrasts with the apparent similarity in the platform strategies patterns between these different categories observed above.

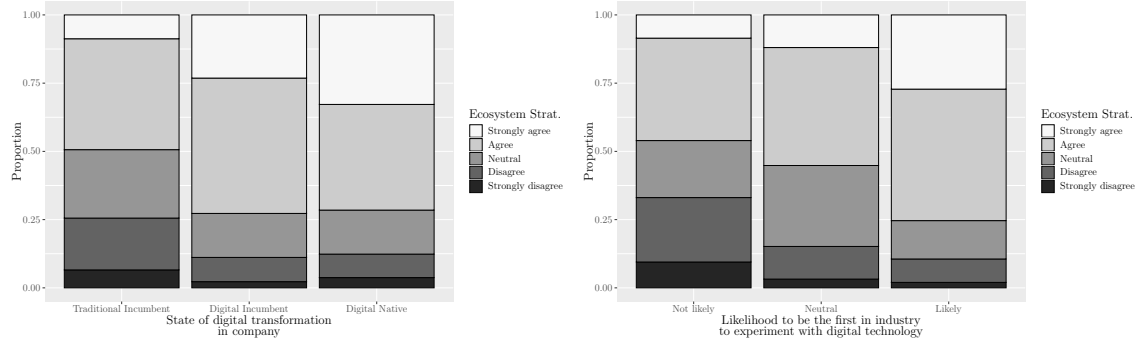
Moreover, the same conclusion holds for companies that are more likely to be the first to experiment with new digital technologies¹³. Pioneers tend to be much more collaborative in the conception of their offering than laggards. All those differences in

¹⁰with p-values of 0.10 and 0.00

¹¹we cannot reject the hypothesis that the means are the same, as the test p-value equals 0.39

¹²with a p-value of 0 when comparing to both digital natives and established firm who have operated a digital transformation

¹³with a bootstrap p-value of 0.00



(a) Propensity to integrate offer with other players by state of digital transformation (b) Propensity to integrate offer with other players by likelihood to be first to go to market with digital technology

Figure 4.4: Propensity to integrate offer with other players by state of digital transformation and likelihood to be the first to market with digital technology (Question: We partner with other organizations to give customers more integrated offerings.)

companies’ strategies will be exploited in the analysis later in this paper.

In conclusion, looking at the data highlights the fact that, while it appears that platform strategies are equally distributed across several dimensions in our sample, the propensity to integrate one company’s offering with other, (that is, its adoption of an ecosystem strategy), is much less uniform. While interesting as a standalone factoid, it does not answer the question of whether it has an impact on a company’s future earning perspective. In order to do so, we will now propose and test a model of the impact of platform and ecosystem strategies on the future revenue growth of a company.

4.3 On the interplay between platform and ecosystem strategies

Combining platform and ecosystem strategies, it can be observed here below that firms that have adopted one of the platform strategies defined earlier (Owner, User or Mixed) show a higher level of offerings integration with external partners¹⁴ (Figure 4.5). While the difference seems more striking for pure owners or users, it is also slightly observable for mixed players. Moreover, it is worth noting that owners seem more ecosystem oriented than any other category as the “Strongly agree” category represents more than 25% of firms. These descriptive results tend to show that platform players are more likely to participate in ecosystems than firms not having adopted a platform strategy (yet).

¹⁴p-value: 0.00

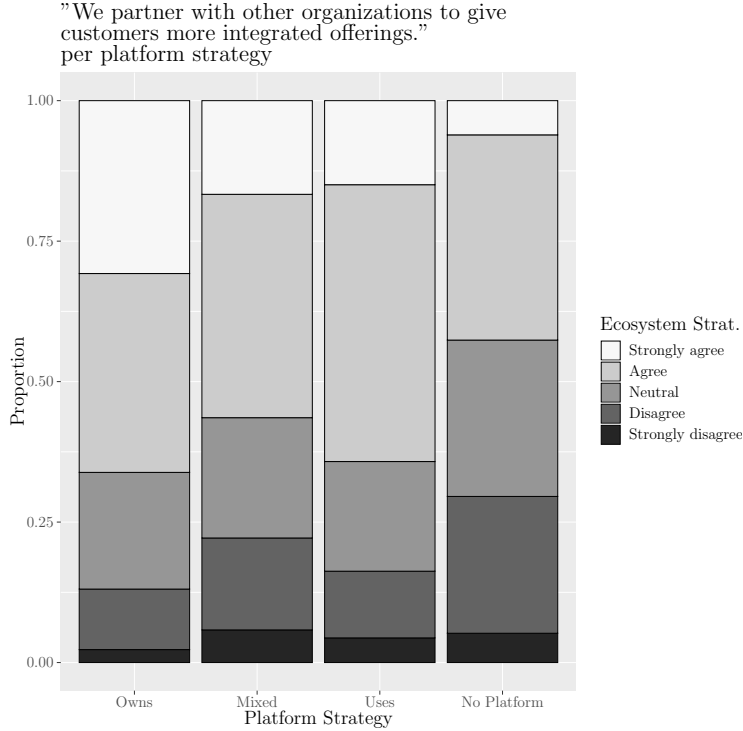


Figure 4.5: Propensity to integrate offer with other players by type of platform strategy followed

4.4 Regression model

The ordered categorical nature of the output variable turns the use of simple linear regression spurious as the variable is constrained to a set of discrete values. The most natural way of evaluating the data involves therefore using a member of the generalized linear models' family. In this case, we make the choice of using the ordered logit regression method. The model assumes proportional odds and is therefore a case of classical ordered logit application. This means that the coefficients are not directly interpretable as proportional effects. In the present econometric analysis, we are mainly concerned about the sign of the coefficient: a positive coefficient indicates that the variable is positively correlated to the outcome variable while a negative coefficient indicates the opposite.

The reader interested in interpreting the magnitude of coefficients should note that data was standardized. As such the coefficient represent the change in odds between two classes when we move a covariate by one standard deviation. This rescaling is fairly common in the literature when using logit models. This avoids oddities in the regression due to difference in scales between variables, although the data at hand is mostly on likert scales. The regressions were also estimated on the unscaled data with the same conclusions.

5 Results

5.1 The effect of platform strategy

Hypothesis 1.1 - Importance of the platform strategy

Until recently, literature seemed to indicate that the participation in a platform strategy correlates to higher performance. The rationale was based on the positive network effects and winner-takes-all industrial effects.

As it turns out, this is confirmed in our data (see Table 5.1). The fact of owning, using or owning and using a platform correlates positively with the prospect of future revenues growth when compared to the alternative of not participating in the platform game at all. As already mentioned in the description of the dataset, though, most of the respondents declared to be involved at some degree with platforms. It means that the base case in such regression is relatively small.

Table 5.1: Regression coefficients for models where only the platform strategy of the respondent is considered.

	<i>Dependent variable:</i>						
	Expected Future Sales Evolution						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Platform Ownership	0.230*** (0.070)	0.210*** (0.070)	0.222*** (0.070)	0.208*** (0.070)	0.190*** (0.070)	0.196*** (0.071)	0.101 (0.071)
Platform Use	0.244*** (0.095)	0.207** (0.095)	0.255*** (0.096)	0.227** (0.097)	0.207** (0.097)	0.191* (0.098)	0.135 (0.099)
Platform Ownership and Use	0.204** (0.094)	0.198** (0.094)	0.210** (0.096)	0.215** (0.096)	0.205** (0.096)	0.198** (0.097)	0.149 (0.098)
Geography	No	Yes	No	Yes	Yes	Yes	Yes
Industry	No	No	Yes	Yes	Yes	Yes	Yes
Digital Operations	No	No	No	No	Yes	Yes	Yes
Size	No	No	No	No	No	Yes	Yes
Digital Transformation	No	No	No	No	No	No	Yes
Observations	1,285	1,285	1,285	1,285	1,285	1,255	1,255

Note: *p<0.1; **p<0.05; ***p<0.01

In terms of difference between platform strategies, it seems that their effect is very similar (they are not significantly different from one another) when properly controlled for. This runs somewhat contrary to a part of the literature suggesting that owning the platform tends to reap higher rewards but it is important to note that there is currently no consensus on this topic. The comparison of different platform strategies being peripheral to the present enquiry, we will leave it for further study.

Hypothesis 1.2 – Hidden confounder in the platform strategy argument

The positive effect of using a platform persists even if we control for the industry, geography and the percentage of the operation that has been digitized. However, if we account for the fact that a company has or not operated a digital transformation (i.e.

Is it a digital native, a traditional player having adopted a clear digital strategy or, our base case, a traditional player that has not adapted to the ways of working brought about by the digital revolution), the correlation of all 3 forms of platform strategy on the prospect of future revenue growth loses relevance at traditional statistical significance levels (this can be seen in the last regression of Table 5.1).

It is worth noting that, in this analysis, the three types of strategies (owning platforms, using them or doing both) were considered as mutually exclusive. The conclusions remain essentially unchanged with the interaction term being assigned a negative weight indicating that the pure orchestrator strategy correlates more positively with the prospect of future result than the mixed or the pure complementor strategy.

5.2 Effect of ecosystem strategy

Hypothesis 2 - Importance of ecosystem strategy adoption for future revenue

While these results seem to confirm that companies which have a platform strategy tend to grow at faster rate and have better outlooks on their future growth, these conclusions fade as we control for the focal company's adoption of an ecosystem strategy. It appears that the willingness to integrate one's offer with other players and taking part to a broader ecosystem is a determinant indicator of performance (see Table 5.2).

Indeed, when we repeat the previous analysis while adding this intent to the set of factors correlating with expected future growth, it makes the relevance of using a platform or even participating in a mixed strategy weak. Owning a platform, on the other hand, seems to remain relevant if one disregards the general digital strategy of the company but, once this factor is added to the analysis, only the actual intent of being part of an ecosystem remains relevant as a covariate of the expected future revenue growth.

This might be understood as an indication that digital native companies or companies that have operated a digital transformation are expected to see their revenue grow faster than the rest of companies, no matter whether they pursue a platform strategy or not (i.e. a company that is digital from the start but sells through their own webshop has the same expected revenue growth as the same company which built a platform to sell the same wares). However, wanting to integrate its own offer with other companies and becoming, de facto, part of an innovation ecosystem as defined above, correlates with future growth even when accounting for the fact of having operated this transformation (i.e. knowing if the webshop in the previous example somehow sells its products as complements to the services or product of another company as part of a bundled offer, for example).

While this result seems to put in question part of the previous literature about the effects of adopting a platform strategy, it is important to mention that it is not antagonistic to it; indeed, this does not dismiss the effect of platform on revenue growth. Rather than that, it nuances it and helps highlight the mechanism through which platforms create value: by creating joint value through integrating value proposition rather than by just herding the consumer and decreasing search costs on both sides. Platforms are possibly one way to create this joint value but not exclusively. While it

Table 5.2: Regression coefficients with the addition of the ecosystem strategy factor. The different regressions were built with different sets of controls.

	<i>Dependent variable:</i>							
	Expected Future Sales Evolution							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Ecosystem Strategy	0.291*** (0.050)	0.273*** (0.051)	0.279*** (0.051)	0.249*** (0.052)	0.258*** (0.052)	0.236*** (0.052)	0.230*** (0.053)	0.198*** (0.054)
Platform Ownership		0.183*** (0.070)	0.166** (0.070)	0.186*** (0.071)	0.174** (0.071)	0.161** (0.071)	0.168** (0.071)	0.084 (0.072)
Platform Use		0.179* (0.095)	0.142 (0.096)	0.196** (0.097)	0.168* (0.097)	0.155 (0.097)	0.143 (0.098)	0.104 (0.099)
Platform Ownership and Use		0.158* (0.095)	0.154 (0.095)	0.165* (0.096)	0.171* (0.096)	0.167* (0.096)	0.162* (0.097)	0.122 (0.098)
Geography	No	No	Yes	No	Yes	Yes	Yes	Yes
Industry	No	No	No	Yes	Yes	Yes	Yes	Yes
Digital Operations	No	No	No	No	No	Yes	Yes	Yes
Size	No	No	No	No	No	No	Yes	Yes
Digital Transformation	No	No	No	No	No	No	No	Yes
Observations	1,285	1,285	1,285	1,285	1,285	1,285	1,255	1,255

Note:

*p<0.1; **p<0.05; ***p<0.01

can help reaching the critical mass by bringing customers or suppliers together, more value can still come from the creation of a common proposition from different players.

5.3 On the interplay between platform strategy and ecosystem strategy

Hypothesis 3 - Importance of ecosystem adoption in the success of platform strategy

Having analyzed the basic model, we now turn our attention towards interactions between the adoption of ecosystem and platform strategies. It is possible to use the data to query whether the willingness to integrate a company's offer with other players has an impact on the company's platform strategy performance. This is done in Table 5.3. From it, one can see that there is a difference between companies that use platform and state that they aim at integrating their offer with other and the ones that use or own platforms but do not intend on collaborating with other players to serve their customer in a more integrated fashion. The companies in the first category tend to have a better outlook on their revenue growth. It seems, therefore, that, when pursuing a platform strategy, it is less effective to want to retain control over the whole offer than to partner with others to propose the customer a more integrated offer, i.e. to adopt an ecosystem strategy.

This finding speaks both to the openness level an orchestrator might want to give its platform (more open seems currently to dominate less open) as to the strategy a complementor should adopt (seeking same-side synergies with other complementors seems currently more effective than fighting to come ahead as the prime player on one side of the market). Aggregated, these conclusions seems to imply that, while competition between platforms usually exhibit winner-takes-all dynamics, it might be

Table 5.3: Regression coefficients for models with the regressor set to the conjunction of both having a platform strategy and declaring the will to integrate one’s offering with others. Same controls as for the other regressions apply.

	<i>Dependent variable:</i>						
	Expected Future Sales Evolution						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Modular Platform Strategy	0.325*** (0.093)	0.303*** (0.094)	0.322*** (0.095)	0.311*** (0.095)	0.285*** (0.095)	0.275*** (0.096)	0.206** (0.098)
Not Modular Platform Strategy	0.112 (0.093)	0.092 (0.093)	0.133 (0.094)	0.122 (0.094)	0.122 (0.094)	0.115 (0.095)	0.072 (0.096)
Geography	No	Yes	No	Yes	Yes	Yes	Yes
industry	No	No	Yes	Yes	Yes	Yes	Yes
Digital Operations	No	No	No	No	Yes	Yes	Yes
Size	No	No	No	No	No	Yes	Yes
Digital Transformation	No	No	No	No	No	No	Yes
Observations	1,285	1,285	1,285	1,285	1,285	1,255	1,255

Note: *p<0.1; **p<0.05; ***p<0.01

counterproductive to keep this mindset as an individual player. As such, as platforms become important gateways, substituting or coalescing huge swaths of the market, they simultaneously force participants, both orchestrators and complementors, to open and, hence, to figure out ways to collaborate in what one can hope is a mutually beneficial way.

In an empirical analysis like ours, it might be useful and interesting to get an indication of the relative size of the groups. Among the firms surveyed by the McKinsey Global Institute, it seems a very large part of the companies have a platform strategy at some level. This is hardly surprising, considering the emphasis put today on the use and importance of adopting a platform thinking in both the academic and business literature as well as the prevalence of platforms at several levels in the modern business world.

When analyzing the size of groups of companies participating in any way in platforms while having adopted an ecosystem strategy as opposed to companies participating in platforms but having what can be described as a “linear model”, we remark that they are relatively similar. This result highlights the importance of the new strand of research about ecosystems and the necessity to define precisely its relationship with platforms. Indeed, they seem to be complementary rather than either antagonistic (meaning that it is not a question of either having a platform or being part of an ecosystem) or nested (meaning that platforms do not seem to be merely a part of the ecosystems but having some dimension that the notion of ecosystems do not entirely capture). Indeed, some firms might consider platforms as pure channels or tools while keeping control over their entire value proposition. These companies are the ones found above to be “leaving money on the table” as they seem to be growing less rapidly than the ones accepting to forego a part of their control in exchange for faster revenue growth.

In conclusion, the data analyzed here points towards a shift of focus from the actual way to create or participate into a platform towards the emphasis on joint value

creation that derives from integrating one’s offering of goods or services with complementors or even competitors (in a “frenemies” type of relationship). Although this article does not have vocation to bring about a new consistent theory, it aims at providing additional empirical evidence enabling to sort through existing complementary or conflicting theories. In this case, the general conclusion is that the literature on ecosystems is worth investigating as a (potentially more important) complement to the literature on platforms. Platforms are a tool but, as most tools, must be applied to the correct problem in order to be the most effective. The present analysis is therefore a cautionary tale against the blind setting up of platforms.

It is worth noting that these results are resilient to a range of changes in configuration perform to assess their robustness. Notably, the results remain unchanged when replacing the future revenue by past revenue or past of expected future profits. It seems also that the effect of the Ecosystem strategy remains even when taking into account potential interaction with the digital transformation status of the firm. Those results are presented in the Appendix in Section A.5.

6 Conclusion

Although the nature of data used may be subject to some bias (survey data) and prevent any causal analysis (cross-sectional data), we have presented evidences that tend to show that platform is merely a tool to operate a profitable change in firms’ strategy. This change corresponds to the transition from a worldview which states that, once a product or service has been delivered to its final consumer, the company’s job is done to the vision where each product or service a company offers is but one part of a bigger picture in the customer’s eye.

Platforms are a natural channel to operationalize such a change: by putting together larger groups of consumers through ubiquitous worldwide networks as well as bringing together several suppliers, they create an informational proximity that turn the conception, negotiation and delivery of joint offers easier. With hindsight, it might seem unsurprising that such coordinated offers have flourished more easily in such settings when compared to traditional distribution channels where retailers or middlemen had a direct interest in keeping their suppliers as independent as possible to increase their bargaining power. Since most platforms are mere matchmakers between the supply and the demand sides of the market rather than risktakers that have the means and incentives to try to profit as much as possible from each of those sides, it has less interest to try and prevent suppliers to collaborate and even has an incentive to do so as larger sales volumes will translate into more transaction fees.

It may also be one of the reasons why the literature has been so focused on platforms rather than on ecosystems: platforms often generate ecosystems, so that the effect of participating in a platform and in an ecosystem are often confused in analyses that do not distinguish between them and consciously ask the question of the finality of their platform play to their respondents. Somewhat ironically, the success of platform muddied the water of the cause of their own efficiency. The present article aimed at disentangling these causes and showed evidences that while it may seem at first that the platform strategy correlates with future revenue, at least part of it is due to letting

people on the same side of the platform coordinate and integrate their offerings.

The next steps in this analysis might be an analysis under the scope of transaction cost economics to model the reasons why this has happened with platforms and not with traditional channels or markets. Moreover, understanding how companies collaborate or the intensity of such collaborations around the platform and in ecosystems would be an interesting endeavor. As more research is done on the topic of ecosystems, it is likely that our understanding and therefore the need for empirical testing of the many theories around will be more important than ever.

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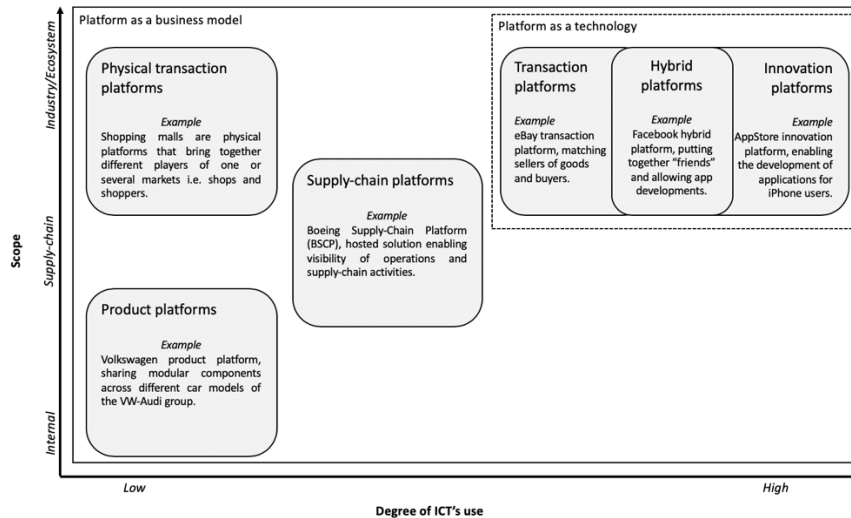
A Appendix

A.1 Taxonomy of platforms

Based on our literature review, the Figure 2.1 below proposes a classification of the different types of platforms. The first axis chosen is called “scope” and builds upon the classification proposed by Gawer [2009b]¹⁵. It is based on the level at which the platform operates, i.e. firm-level, supply-chain level or industry/ecosystem level.

The second axis reflects the degree of reliance of the platform on information technology to operate. This dimension helps distinguishing two main perspectives of platforms: the one based on the economic theory, and the one based on engineering design [Gawer, 2014]. Indeed, while some authors consider platform as a type of markets [Rochet and Tirole, 2003] or as a business model [Van Alstyne and Parker, 2017], others consider it as modular technological architectures [Baldwin and Woodard, 2009]. The degree of ICT’s use helps therefore to differentiate physical platforms from virtual ones and propose an exhaustive classification of platforms found in the literature. A visual representation of this literature review effort is presented in Figure A.1, which reveals four types of platforms.

Figure A.1: Classification of platforms according to existing literature



First, product platforms are defined as “products that meet the needs of a core group of customers but are designed for easy modification into derivatives through the addition, substitution or removal of features” [Wheelwright and Clark, 1992]. The main objectives of these internal platforms are to share modular components between different products or services in order to increase the productive efficiency of the firm, propose a higher variety of offerings at lower costs, reach mass customization [Pine, 1993] and ease the design of new products.

¹⁵Gawer [2009b] called this dimension “openness”, but we chose to rename it to avoid ambiguity with the concept of openness in platform strategy.

Close to product platforms, supply-chain platforms are defined as “a set of subsystems and interfaces that forms a common structure from which a stream of derivative products can be efficiently developed and produced by partners along a supply chain” [Gawer, 2009b]. These platforms share the same objectives as internal ones, but they involve other companies within the same supply-chain.

The third category focuses on innovation and is related to what Gawer [2009b] calls industry platforms. These platforms are not restricted to the supply-chain environment but extend to external players. We associate industry platforms to innovation platforms as it describes a situation in which one or several firms create a core product that will be complemented by other products or services developed by third-party firms. The objectives sought by participants in this type of platform depends on the position adopted within the platform. On the one hand, the owner will seek to stimulate and capture value from external and complementary innovations while, on the other hand, complementors will try to benefit from the installed base of the platform owner i.e. number of active users, as well as from network effects.

Multi-sided platforms (MSP) are also operating at the industry or ecosystem level. However, these platforms do not focus on innovation anymore, but rather on transactions. Like innovation platforms, MSP benefit from network effects, arising when users have to participate to the platform in order for a transaction to occur [Armstrong, 2006, Caillaud and Jullien, 2003, Evans, 2003, Hagiu, 2006, Rochet and Tirole, 2003, 2006]. The main purpose of MSP platforms is to facilitate transactions between these different sides and we therefore associate this category to what is now called “transaction platforms” [Cusumano et al., 2019], or “exchange platforms” [Baldwin, forthcoming, Chap. 14].

More recently, Cusumano et al. [2019] have dealt with innovation and transaction platforms, but also with platforms doing both. These platforms are called “hybrid platforms” and facilitate transactions while, at the same time, allowing complementor innovations to be developed. Cusumano et al. [2019] argue that the world is increasingly moving to this kind of platforms that operate at the ecosystem level and make a strong use of information and communication technologies.

The present paper focuses on digital platforms. It considers platforms that are in the upper-right part of the figure here above. Therefore, analyses performed in the context of the study will encompass transactional, innovation and hybrid platforms.

A.2 Sample

The empirical distributions are shown in Figures A.2-A.5. As one can see, the focus of the survey was on professional and legal services firms as well as financial services and high-tech companies. However, there were still hundreds of respondents from other industries. This broad array of business settings makes this dataset interesting as it involves many different realities. However, the differences might also induce different effects of several factors and we will usually control for it in the next development.

The geographic origin of both respondents and the headquarter of the company they work for (respectively, A.3a and A.3b) is somewhat biased towards Europe rather than North America and Asia. This might be something to account for in the analysis.

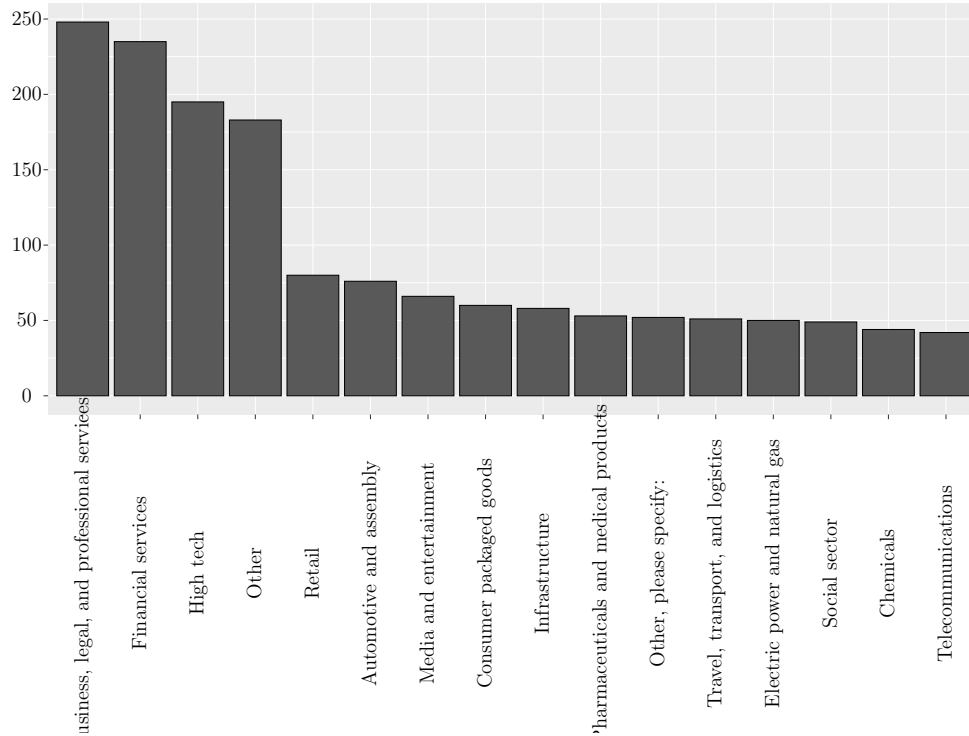
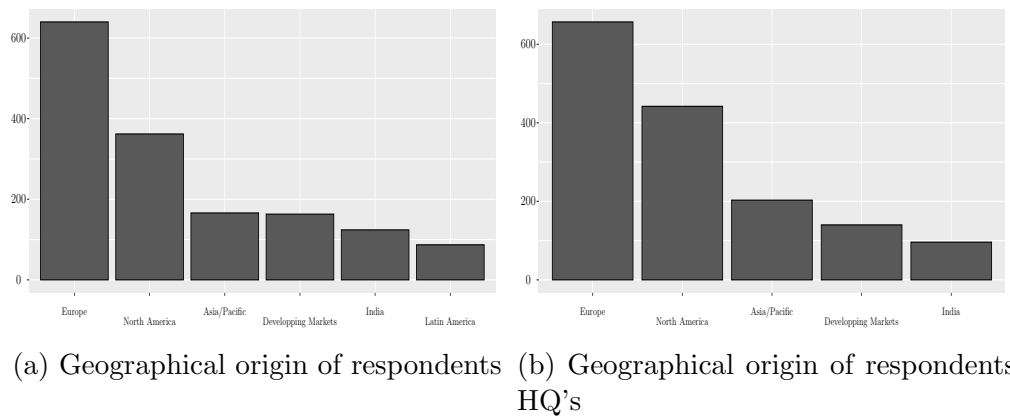


Figure A.2: Distribution of the sample by industries



(a) Geographical origin of respondents (b) Geographical origin of respondents HQ's

Figure A.3: Geographical distribution of respondents

However, we see that as a strength of the present study. Indeed, due to data availability or researchers' interests, the academic literature tends to use data on the US or North America in general while, maybe out of concern about privacy, the European side is less prevalent. We will however control for the geographical aspect of the dataset in most of our conclusions.

Finally, while there are more respondents working in business-to-business (B2B) companies than to business-to-consumers (B2C) ones (Figure A.4a), the numbers for

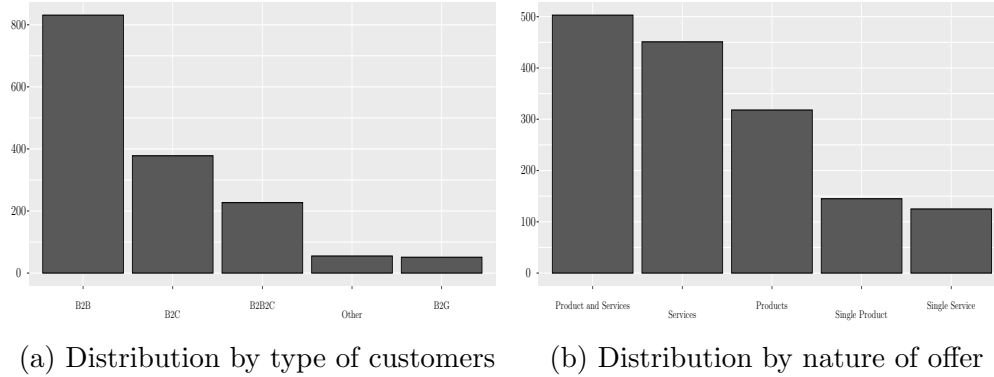


Figure A.4: Business model distribution of respondents

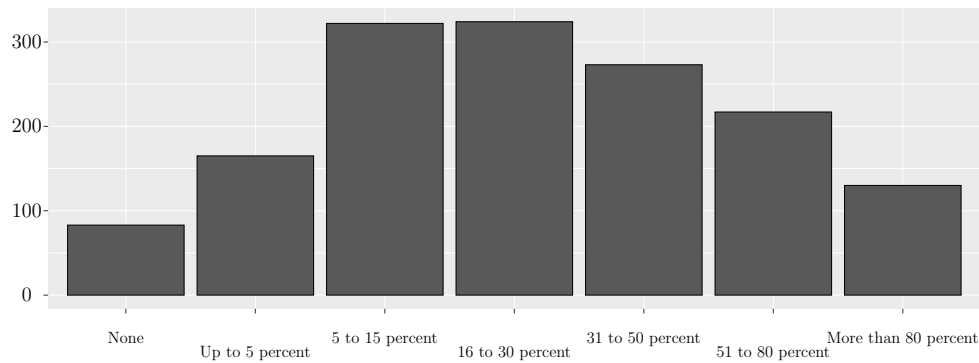


Figure A.5: Percentage of the core operations that are digitized

each of the first three categories (that also include business-to-business-to-customers (B2B2C)) are all high enough to ensure a broad variety of responses. The same observation holds for what they sell. Indeed, while most of the respondents work in companies that sell more than one product or service, the spread of respondents between products, services and a combination of the two is relatively homogeneous and there remain enough observations in each of those categories to draw conclusions holding for each of them.

Regarding the degree to which the respondents' companies are digitized in their core processes (Figure A.5), we observe what we would expect. Most of the respondents have less than 50% of their core operations that happen through digital means, while a little above a fifth of them have more than that. Finally, we have around 150 respondents who operate only through such channels. While this is certainly more than what would be observed in the economy, this is potentially due to the over-representation of high-tech and financial services in the sample rather than a systematic bias of this survey on that point in particular.

A.3 Questionnaire

The survey questionnaire is comprised of 26 questions. Some of them are about the type of company the respondent works for. A significant part of the questionnaire relates to the questions of (recent) mergers and acquisitions moves or intentions of the company.

In the present analysis, we will mainly work with the following questions and options from the questionnaire.

Q11: Which of the following statements best describe your organization’s use of digital platforms? (Select all that apply)

1. We own at least one platform that is used by others.
2. We use a platform to gain access to customers/partners we otherwise would not reach.
3. We use a platform to improve (or maintain) access to our current customers/partners.
4. We use a platform to monetize our data.
5. Other, please specify:
6. Not applicable; we do not own or use any platforms.
7. Don’t know

Out of this question, we will mostly drive a wedge between companies that select the first options, that will be considered as “owning a platform”, the ones answering one of the following three options as “using a platform”, we also consider companies to which the first option and at least one of the three following applies as having a “mixed strategy” and the ones that do not select any of the four first options as “not taking part in a platform strategy”.

Q14: To what extent do you agree that each of the following statements describes your organization? [options are: Strongly disagree, Disagree, Neutral, Agree, Strongly agree + Don’t know]

1. Within our primary industry, we are first to market with new innovations.
2. We lead our industry peers on productivity (i.e., we have the lowest operating-expenditure margins and/or administrative expenses as a proportion of sales).
3. Within our primary industry, we are first movers in experimenting with new digital technologies.
4. We are more advanced than our peers in our use of digital technologies in the business (i.e., using digital technologies, and using them at scale, before others do).
5. Our gross margins are higher than the average in our primary industry.
6. We invest more than our industry peers on digital-related capital expenditures.
7. Everyone in the organization has a clear understanding of the digital strategy.
8. We optimize our allocation of capital across investments in digitizing our core business and investments in new digital businesses.

9. We partner with other organizations to give customers more integrated offerings.

In the present paper, we use this question mainly through its last part. Indeed, we argue that the quest for integrated offerings is a strong indication that the company has an “ecosystem” or “modular” vision of its business rather than a “linear” one where the sole goal of the company is to provide a product a service to its customers independently of what other companies might be doing.

When using this variable in isolation, we consider it as an ordered factor (meaning that we do not assume any notion of distance between two subsequent options). When using an interaction term, though, we consider a dummified version of the variable where a value of 1 corresponds to either “Agree” or “Strongly Agree” and zero corresponds to any remaining option.

The control variables mainly come from two distinct sources: on the one hand, from secondary source data about the industry in which the company is active (retrieved by crossing McKinsey Global Institute data and the data from the survey company in a fashion preserving the anonymity of respondents). We also have access to the country where the corporate headquarters of the company is located and the country of the branch of the respondent.

On the other hand, the questionnaire also contains background questions about the companies, the following questions are used in the present study in order to serve as control variables in the analysis.

Q5: What share of your organization’s core operations is automated and/or digitized? (Select one)

1. None
2. Up to 5 percent
3. 5 to 15 percent
4. 16 to 30 percent
5. 31 to 50 percent
6. 51 to 80 percent
7. More than 80 percent
8. Don’t know

This question, considered as an ordered factor, gives us information about the state of automation and, indeed, digitization of the company as a whole. It is mostly used to control for the fact that online and offline companies might have different exposure to global markets, and that the shift of part of commerce from offline outlets to online stores and companies might provoke some disparity in revenue growth rates.

The last set of controls that is used comes from the following question:

Q8: Which of the following categories best describes your organization’s current position in its primary industry? (Select one)

1. A digital native

2. An incumbent competing substantially in new ways through digitization (i.e., more than 20 percent of sales consists of digital offerings and/or new digital businesses)
3. An incumbent competing primarily in traditional ways (i.e., more than 80 percent of sales are not digital)
4. An incumbent that is moving into other industries through digital moves or initiatives
5. Other, please specify:
6. Don't know

This question serves mainly to assess whether or not the company has gone through a digital transformation or if it was created to be digitized from the start. We use it as a non-ordered factor and do use options 3 and 4 as baseline cases (there are actually very few respondents who have chosen option 4 and adding it to the observed options do not modify the conclusions).

Finally, the outcome variable comes from the following question:

Q24: Over the next three years, what is your organization's projection for its annual rate of organic revenue growth (i.e., its compound annual growth rate)? (Select one)

1. -50 percent or more
2. -25 to -49 percent
3. -15 to -24 percent
4. -10 to -14 percent
5. -5 to -9 percent
6. 0 to -4 percent
7. 1 to 4 percent
8. 5 to 9 percent
9. 10 to 14 percent
10. 15 to 24 percent
11. 25 to 49 percent
12. 50 percent or more
13. Don't know/not applicable

This begs several remarks. The first one is that, as in many cases, this information about future incomes comes from a single respondent at the firm. It cannot be excluded that this induces a bias either because of lack of knowledge of the respondent (although this is not likely considering that respondents are mostly C-level executives or in the higher management), because the respondent chooses to misrepresent their true opinion (although this is also unlikely, given the anonymous character of the survey), or simply because they have an erroneous forecast of future growth (which is a limitation of all such survey). Moreover, the categorization of a continuous variable makes it necessary

to use non-linear models that make the interpretation of the coefficients harder than if we had the exact value. We will return to that topic when explaining the statistical model chosen to perform the regression but it is a fundamental limitation of the present survey and the authors agree that having the exact value of their expected revenue growth forecast for the next periods would make it easier to quantify the extent to which being part of an ecosystem have an impact on the expected future revenue growth.

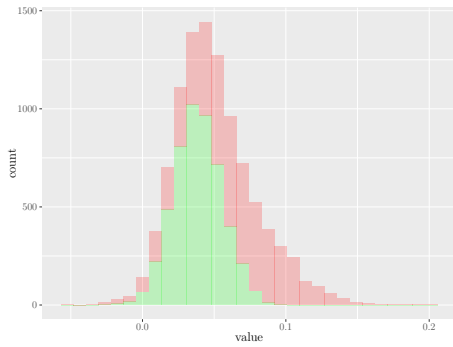
The choice of expected revenue rather than expect profit (which was also available, in the same categorical form in the survey) was made because platforms are often viewed as a way to generate business rather than to increase the efficiency of a company (with the notable exception of supply chain buying platforms). It seemed therefore that using profit rather the revenue would stack the deck against companies that use platform and would therefore increase the noise caused by different internal organizations in different companies to the detriment of the signal coming from the use of a platform or the participation in an ecosystem that can be retrieved in the future revenue growth.

A.4 Hypothesis testing procedure

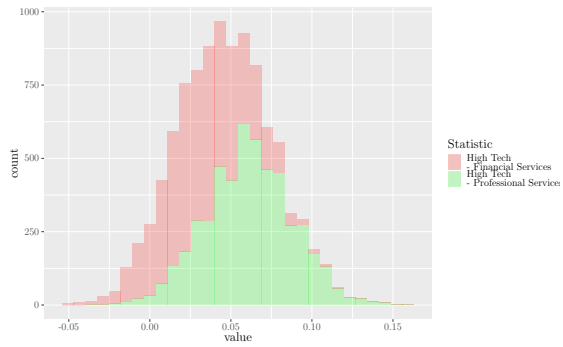
All the hypothesis testing on the difference of distributions in the data were done using resampling. The procedure consists in generating many alternate datasets by resampling with reposition in the subset of interest, compute the difference in the statistics that we want to test, recenter the mean of this artificial statistics distribution at 0 as under our null hypothesis and then assessing the proportion of artificial instances of this statistics that had a more extreme value than our observation.

Here are the distributions of the test statistics (the difference in means of two aspects, depending on the affirmation, between two subpopulations). Let's start with the tests on the difference of means in platform strategies.

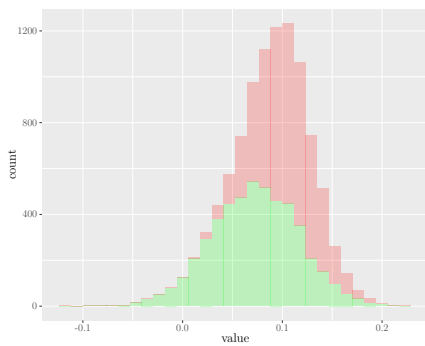
The information presented graphically is the bootstrap empirical distribution of the statistic described (usually the difference between two means). The intuition behind those graphs is that the further the bulk of the distribution is from zero, the lower the chance that the two means are equal. The p-values were produced by recentering those empirical distributions on 0 and computing the proportion of those resampled statistics observations that were more extreme than the observed value. The full code is available in the replication package made available by the authors.



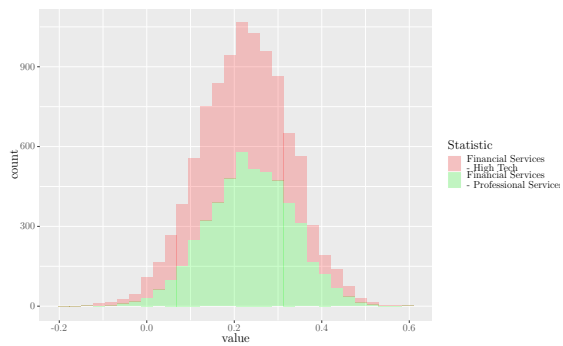
(a) Difference in participation in platform strategy (any type) by HQ location



(b) Difference in participation in platform strategy (any type) by industry



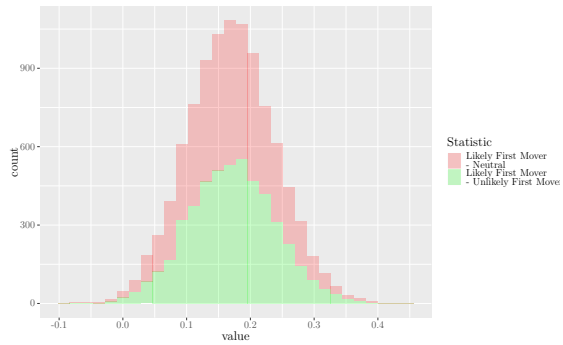
(c) Difference in prevalence of mixed platform strategy (any type) by status of digital use of platform transformation



(d) Difference in the prevalence of exclusive platform strategy (any type) by industry

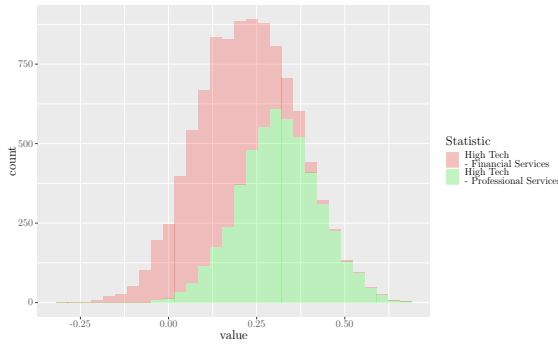


(e) Difference in use of platform strategy (any type) by status of digital transformation

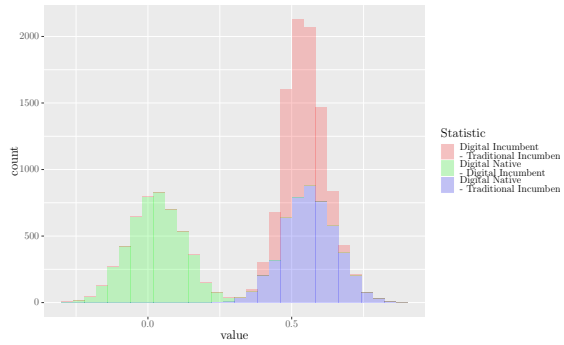


(f) Difference in platform ownership by likelihood to be the first mover

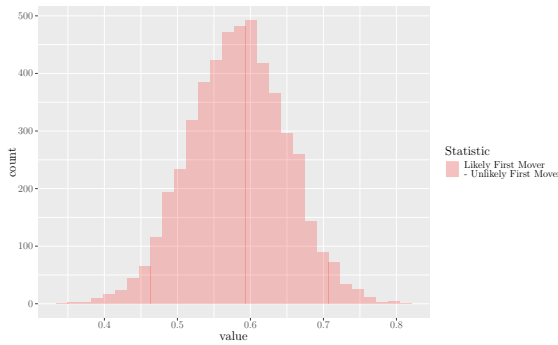
Figure A.6: Distributions of bootstrap statistics for test involving platform strategies. The statistics were built by resampling repetitively and building a distribution of differences of means. The presented graphs represent the empirical density distributions of such statistics.



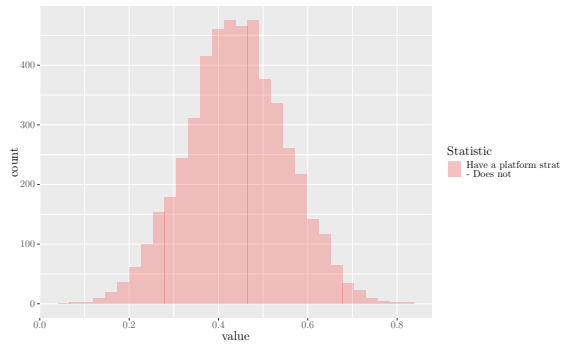
(a) Difference in average ecosystem strategy by industry



(b) Difference in average ecosystem strategy by state of digital transformation



(c) Difference in average ecosystem strategy by likelihood to be the first mover



(d) Difference in the average ecosystem strategy by type of platform strategy

Figure A.7: Distributions of bootstrap statistics for test involving ecosystem strategy. The statistics were built by resampling repetitively and building a distribution of differences of means of the answer to the question about likelihood to integrate offer with others (considered linearly: Disagree Strongly = 1 and Agree Strongly = 5). The presented graphs represent the empirical density distributions of such statistics.

A.5 Robustness checks

A.5.1 Results with other dependent variable (past results, profit growth, etc.)

One might wonder whether the previous results are not due more to choice of dependent variable rather than to a true connection between the indicator of ecosystems we have and the overall performance of the company. We therefore set out to test whether the results also hold for past revenues growth (in the last 3 years), future profit growth prediction and past profit growth (in the last 3 years). This is done in Table A.1.

Table A.1: Regression coefficients when using alternate dependent variables.

	<i>Dependent variable:</i>		
	Past Sales Evolution	Future Profits Evolution	Past Profits Evolution
	(1)	(2)	(3)
Ecosystem Strategy	0.176*** (0.055)	0.194*** (0.056)	0.198*** (0.054)
Platform Ownership	0.044 (0.071)	-0.019 (0.076)	0.084 (0.072)
Platform Use	0.113 (0.100)	0.043 (0.107)	0.104 (0.099)
Platform Ownership and Use	0.086 (0.098)	0.053 (0.107)	0.122 (0.098)
Geography	Yes	Yes	Yes
Industry	Yes	Yes	Yes
Digital Operations	Yes	Yes	Yes
Size	Yes	Yes	Yes
Digital Transformation	Yes	Yes	Yes
Observations	1,255	1,159	1,255

Note: *p<0.1; **p<0.05; ***p<0.01

Keeping the model in place and changing only the outcome yields essentially the same results as the ones found before. Indeed, for all of those alternate performance indicators, the ecosystem coefficient remains significant at a 1% level.

Beside the significance, the magnitude of the coefficients is comparable (and can be compared since the model is similar). This might attenuate the concerns about dependent variable cherry-picking but does not rule out the possibility of a hidden confounder. In the next sections, we assess several of those possible factors.

A.5.2 Varying effect of ecosystem strategy according to digital transformation status

The next step in our analysis is to inquire if, somehow, the correlation of ecosystem and future income growth is mitigated by the digital transformation status of the firm. Indeed, it could be expected that a company having transitioned to a digital model would face lower cost of operationalizing its ecosystem strategy and would therefore be more inclined to do so and reap the rewards in terms of future sales.

Table A.2: Regression coefficients for the model with interaction between the ecosystem strategy measure and the status of digital transformation of the respondent.

		<i>Dependent variable:</i>
		Expected Future Sales Evolution
Ecosystem Strategy		0.207*** (0.054)
Ecosystem Strategy:Digital Native		0.054 (0.056)
Ecosystem Strategy:Digital Established Firm		0.047 (0.057)
Geography		Yes
Industry		Yes
Digital Operations		Yes
Size		Yes
Digital Transformation		Yes
Observations		1,255
<i>Note:</i>		*p<0.1; **p<0.05; ***p<0.01

This is, however, not what we observe here. Indeed, a look at Table A.2 shows that the interaction between our measure of ecosystem adoption and the fact that a company is a digital native or a traditional company having operated a digital transformation cannot conclusively be distinguished from zero in our model.

This is only somewhat surprising; as was noted previously when reviewing previous works, the concept of platform and, consequently, of ecosystem, transcend the purely technological aspect. This result seems coherent with this decoupling and goes in the direction of considering ecosystems and consequently, platforms, as strategic artifacts rather than as technological ones.¹⁶

¹⁶Additional checks have been performed by reestimation of the full model for the three major industries of the sample. While the effect remains positive for all three main sectors of the sample, it is larger in size for High-Tech companies.



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