SKOLKOVO
Moscow School
of Management

How to Read Digital Transformation

Digital Ecosystems. Part 2. The Underdogs of the Ecosystems: How Participants Earn and Lose Money

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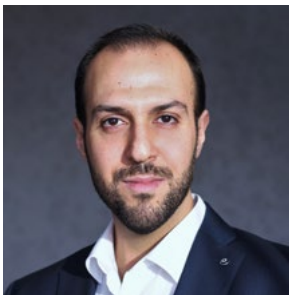

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Hello, Friends!

In a year that followed the publication of the first volume of our research of digital business ecosystems the topic became ever more important for business practitioners while business theoreticians have dedicated to it dozens more books, hundreds of papers, and thousands of social network posts. Yet all the discussions – whether practical or theoretical – were focused on the strategies of creation and development of ecosystems. The issue of participation in them continued to be overlooked. That's very strange. First, by the very definition, the participants should outnumber the creators by orders of magnitude. Second, participation in the ecosystems offers opportunities for businesses of every size, industry and geography, while creating them requires significant resources, not just in finance but also in know how. It seems than this diversity of forms should attract researchers and be talked about by business owners and managers. Yet no, the exceptions can be literally counted on fingers.

The present report makes an effort to close this lacune. It offers an original theory of participation in the ecosystems, which, I think, is an important contribution to the global business science. It is highly important that this theory is based on the study of real-life cases of businesses of various scale from a number of industries. The authors managed to find interesting examples both from Russia and from across the globe to suggest answers to the key question: "How to earn effectively through participation in the digital business ecosystems?"

I am happy that the second volume was authored by the same team with participation of graduates of the first cohort of our Moove program. We see that their enthusiasm did not wane, their business competencies are developing, allowing them to solve ever more complex research tasks.

Again, like presenting the first volume of the research, I am sure that the report will be useful not only to business practitioners, but also to the students of our MBA, EMBA and MOOVE programs who create new entrepreneurial projects in the space of digital ecosystems.

Executive Summary

The choice of an ecosystem strategy is one of the key issues for modern business. Very often, companies want to become leaders by creating proprietary platforms and attracting third-party participants, although this approach is associated with high costs and risks. At the same time, the possibility participation in existing digital ecosystems is typically overlooked in strategic planning.

Perhaps the reason is that the opportunities for ecosystem participants are very rarely discussed in business literature. When preparing this report, we found that publications on this topic are scarce, especially compared to the huge number of papers devoted to ecosystem leadership. As a result, the authors had to create a theory of participation in third-party ecosystems practically from scratch, based on the study of real-life cases.

Our research demonstrates that there is a wide variety of participants in digital ecosystems, from individual entrepreneurs to international companies, from those earning extra personal income to multi-billion-dollar corporations. Contrary to the common notion that platforms and businesses operating on them represent two radically different "leagues" in terms of financial flows and market power, we observed a smooth continuum of participants from micro-businesses to global corporations that can compete with ecosystem leaders for a decisive vote in key strategic issues.

The strategic decision to run an independent business on a third-party digital platform means delegating many business routines to the planform owner. This decision obviously imposes certain, sometimes significant, restrictions on operations, although it also opens new opportunities that are unavailable to businesses that rely only on their own. Digital business ecosystems become an environment for both fierce competition and mutually beneficial cooperation. They open a new page in the development of organizational management systems – the era of distributed polycentric business management, where even the most insignificant participants ultimately contribute to the formation of a common strategy and operational decisions.

Participation in third-party ecosystems provides for rapid success with a minimum of capital expenditures through access to an established audience that trusts the platform. However, the ease of creating new businesses creates a boomerang effect: growing and evolving competition is the main challenge for ecosystem participants. In business literature, such markets are referred to as the "red ocean". Competition in the red ocean requires serious efforts — excellence in key operations, along with flexibility in marketing and pricing, which allows achieving a local advantage and finding a window of opportunity for a profitable sale. Compared to a traditional business, marketing becomes much more dynamic, with management cycles that last hours, rather than months or weeks. Successful sellers alternate periods of sharp price cuts, massive advertising, and cream skimming, i.e., getting a higher profit on a smaller turnover. Such management requires careful attention, and this is where various specialized service companies provide significant assistance.

The cases we have studied reveal the presence of "hidden layers" in ecosystems. It turns out that in addition to the platform and sellers, numerous services that assist with sales, and in some cases, purchases, are also ecosystem participants. We call these layers "hidden" because these services are practically invisible to an outsider. As a result, even structurally simple transaction ecosystems become more complex and begin to resemble solution ecosystems. Two types of services offered on hidden layers can be distinguished, namely, those facilitating and integrating participation in ecosystems. Facilitators help individual businesses within the ecosystem to be more successful, in particular, to avoid direct price competition. Integrators help individual participants create joint offers, as well as operate on several platforms at the same time, thus creating sort of "sub-ecosystems".

Companies that operate within hidden layers play a significant role in balancing the power within the ecosystem. As a rule, platform owners are significantly larger in size than any of the participants, and they do their best to maintain this ratio that allows them to dictate the key rules to strengthen their own competitive position. Companies in hidden layers, in turn, tend to be larger than individual sellers, to whom they are valuable because they enable the latter to develop more independent strategies. As a result, there is space for a kind of collective opposition of sellers (sometimes buyers) to the platforms' dominance. From a certain point of view, managing digital ecosystems is like public

administration: it implies coordination of actions of independent actors with diverging interests using a rather limited set of tools of coercion and punishment. This allows applying certain elements of "polycentric governance" theory to them, designed to describe the phenomena that "lies in the middle between classical markets and the state"[1]. This theory has been successfully applied to the distribution of "public good" that has value for all participants and helps them realize their goals. In the case of business ecosystems, such public goods are, first and foremost, the existence of efficient markets created by platforms, and secondly, the trust in these markets, especially from end customers. By joining the digital ecosystem, one automatically receives the credit of trust accumulated by it and further contributes to its creation.

What are the strategic opportunities for ecosystem participants? It is largely determined by the stage of development of the ecosystem[1] . The optimal strategy at the **stage of conception** for both sellers and solution providers is the MVP (Minimal Viable Product) strategy, selling of small batches of products without significant investments in promotion, creation of fast and relatively cheap solutions. It is important to experimentally determine the strengths and weaknesses of the new ecosystem and the rules of the game, making the most of the subsidies and preferences provided by the platform. The **expansion stage** is the time of big stakes for participants, as the competition on the platform takes on the features of a "red ocean". Large players solve the problem with increased marketing budgets, small ones have to constantly look for emerging new niches, trying to skim the cream before these niches are filled by competitors. For solution providers in "hidden layers", it is the time to heavily invest in the quality of technologies that give customers effective and hassle-free systems. At the **integration stage**, both sellers and technology solution providers are dealing with a full-fledged "red ocean". In addition, pressure increases from the platform, which begins to pursue its competitive objectives at the expense of the participants. The seller's primary goal is to achieve leadership in their most profitable products by investing in the brand and creating a group of loyal buyers. An effective tool is a multiplatform strategy that allows using the growing competition between ecosystem leaders for one's own purposes. This opens niches for service providers in "hidden layers": there is demand for tools that allow managing the product range, price, logistics and marketing on many platforms at the same time. The single **platform dominance** stage is still a hypothetical scenario. However, if realized, it will drastically reduce the participants' space for strategic actions, since it will make multi-platform strategies ineffective. A victory in the competition will be achieved through efficiency in all operations. The strategy of successful participants in the ecosystem will be determined by the well-known Toyota motto: "Looking for a Better Way Every Day"[2].

[1] The model of these stages was described in the report by Skolkovo School of Management Skolkovo called Digital business ecosystems. Opportunities and Challenges for Leaders available at https://www.skolkovo.ru/researches/cifrovye-biznes-ekosistemy-vozmozhnosti-i-vyzovy-dlya-liderov/

[2] According to Kaizen philosophy, "you can always make or do things better, even if they seem to work well in a particular moment" https://global.toyota/en/company/vision-and-philosophy/global-vision/

Introduction

In 2013, a group of leading researchers in digital business ecosystems stated that the ever-expanding literature on the phenomenon is written almost entirely from the perspective of dominant companies — platforms owners — and ignores the problems and strategies of contributing firms[II]. Over the past 10 years, the situation changed little, with just a few publications in business[3] and academic media. This is surprising, as for the effective functioning of network-effects-based ecosystems the number of their participants must exceed the number of leaders by orders of magnitude. The only possible explanation for the lack of interest in the issue is the a priori belief that only leading companies have room for independent strategic actions, while the contributors must dutifully follow the rules set by others. Looking ahead, we may say that this belief is far from reality. Ecosystem participants have a similarly wide and multidimensional space for strategic and tactical choices. Moreover, the very notion of "participation" conceals the complex hierarchies and interactions that take place behind the front ends of the platforms. The goal of this report prepared by the Moscow School of Management SKOLKOVO, the second in a series on digital business ecosystems, is to reveal the diverse and rich inner world of business ecosystems, providing businessmen and managers with conceptual approaches and examples of effective participation in them.

The relative novelty of the topic led to a somewhat unusual approach of the research team to the report. The previous publications of the "How to Read Digital Transformation?" series were largely based on the already existing theoretical frameworks, expanding and illustrating them with specific Russian material. This report is, on the contrary, based on the inductive approach. Firstly, researchers searched for interesting cases of contribution to ecosystems. Then they generalized the information received (this is when the concepts of "hidden layers" and "polycentric governance" surfaced). This was followed by a new focused search for illustrative cases. Thus, the theoretical ideas proposed by the research team are original developments, possibly debatable. In fact, the authors believe that their main goal is to provide practitioners — company owners and managers — with the opportunity to reasonably make an important strategic choice in the digital age: should they try to create their own ecosystem or join the existing ones? As can be seen from some of the cases presented in two research publications, the fate of any modern business may literally depend on the answer to this question.

[3] Important exception is a very interesting report called How Do You Succeed as a Business Ecosystem Contributor? by Boston Consulting Group https://www.bcg.com/publications/2021/how-to-succeed-as-a-business-ecosystem-contributor

What is a business ecosystem?

The concept of a "business ecosystem" appeared in literature in the early 1990s and was more of a theoretical metaphor than a practical guide. Its transformation into a full-fledged stand-alone business strategy has coincided with the rapid rise of digital platforms such as Amazon, Alibaba, Uber that offered a new perspective on models of market value co-creation by independent players. According to the description proposed by Francesco Nachira, "digital ecosystems" are the highest stage of the use of information technology in business and have the following characteristics[4]: (1) dynamic aggregation of other [market players]; (2) learning and sharing of knowledge; (3) natural selection and evolution of services and solutions.

The previous report by Moscow School of Management SKOLKOVO[III] examined the process of ecosystem creation through the perspective of leading companies, analyzed their development trajectories and the necessary technological triggers allowing to realize new strategic opportunities.

Researches also introduced an important distinction between transaction ecosystems and solution ecosystems based on the study of Boston Consulting Group[IV]. Transaction ecosystems are structurally simpler. They comprise only sellers, buyers and a platform that connects them. The scale that allows network effects to manifest themselves is fundamentally important for their successful operation. Such ecosystems, for example, well-known Amazon, AliExpress, Wildberries, engage from tens of thousands to millions of sellers and up to hundreds of millions of buyers. Solution ecosystems try to maximize the total customer value in relevant areas. There may be relatively few sellers therein (hundreds, sometimes dozens), but the leader of the ecosystem tries to build a complete client offer based on them, e.g., Russian Sber.

[4] Nachira creatively re-worked the "digital ladder" concept first proposed by Cisco by adding a sixth layer of an ecosystem. Nachira, F. (2002). Towards a Network of Digital Business Ecosystems Fostering the Local Development. Bruxelles: European Commission.

Ecosystem participants: who are they?

First, here are a few stories demonstrating how diverse the participants of digital business ecosystems can be.

The fall in the economy and the weakening of the ruble at the end of 2014 forced Nikolai to close the newly opened agency, although owning an advertising business has been his dream for almost twenty years. It was impossible to find a job that matched his qualification in the rapidly shrinking market. The family's only earning assets turned out to be a new premium car. Nikolai became an Uber "partner driver". His earnings allowed his family to survive the difficult times until a relevant job offer appeared.

Zemfira, a young mother, decided to leave her office job and start a business. She found a factory in Kyrgyzstan that manufactured children's clothing, bought a batch of their goods and placed it on Wildberries. After a number of trials and errors, she learned how to effectively promote her product and reached a turnover of hundreds of thousands of rubles a month. The business is gradually growing and Zemfira is thinking about launching sales on other platforms.

Alex Vasiliev, an e-commerce professional with close ties in the Chinese market, decided to sell European food products online in China. He started with olive oil and later developed the Healthy Eva baby food brand, investing a million dollars in it. He orders food products in Belarus and buys ingredients all over the world. He promotes his products in China and the Middle East through the leading marketplaces like Tmall Global, Taobao Live, Amazon.ae, etc.

Plaid's solution is used in 7,000 applications and generated $300 million revenue in 2021. In April 2021, the company held another investment round, which delivered $425 million and a valuation of $13.4 billion[V].

Chinese Pinduoduo is a platform that connects farmers, distributors and buyers of agricultural products. It has a revenue of $17.9 billion[5] and more than 800 million active users[VI]. However, it uses a WeChat-based social commerce model and is a part of its giant ecosystem.

The above examples show that the world of digital ecosystems participants is extremely diverse: from individual entrepreneurs to international companies, from those earning extra income to corporations with a billion-dollar turnovers. Contrary to the common notion that platforms and businesses running on them represent two radically different "leagues" in terms of financial flows and market power, we see a smooth continuum of participants — from micro-businesses to global corporations that can compete with ecosystem leaders for a decisive vote in key strategic issues. All the above cases have something in common, and something that distinguishes them from traditional business cases.

Those companies and many other similar businesses around the world have made a strategic decision to operate on a third-party digital platform, thereby delegating a number of "classic" business decisions to the platform owner. This decision obviously imposes certain, sometimes significant restrictions on operations, although, as we will demonstrate below, even the most rigid platform frameworks offer room for independent strategies and tactics. It also opens up new opportunities unavailable to businesses that rely only on their own efforts. Digital business ecosystems become an environment for both fierce competition and mutually beneficial cooperation. They open a new page in the development of organizational management systems — the era of distributed polycentric business management, where even the most insignificant participants ultimately make a certain contribution to the formation of a common strategy and operational decisions.

[5] 12 months from October 2021 to September 2022

Opportunities and challenges of digital ecosystems for participants

Opportunities

Platforms as the basis of digital business ecosystems perform four functions[VII]: they offer their participants a chance to find and make profitable deals; provide relevant tools and necessary services; establish uniform rules; and, finally, constantly expand the number of participants, increasing the network effects. This opens up new opportunities for participants, making business projects within ecosystems more attractive than traditional independent businesses.

First of all, this refers to launching a business, a period associated with the highest costs and risks. The usual business model assumed a significant gap in cash flows even with a good start: the costs of manufacturing products and establishing distribution channels arose long before the first receipts. First-year operation costs of a new small business with no employees in the United States is estimated at $30–40,000, with 5 employees — $185,000[VIII]. In most cases, participation in ecosystems allows taking advantage of a set of important marketing and logistics services that reduce labor costs and, therefore, eliminate the need to attract employees at an early stage.

Alignment of purchases and sales using the so-called dropshipping model is also an important opportunity. In this case, the seller does not manufacture products, but is purchased — typically on other digital platforms. The offer is placed online, products are purchased against orders. Although there is a cash gap (most platforms transfer money to the seller with a delay), the seller does not take on the risks of insufficient demand, which is inevitable for the traditional intermediary model. Often, dropshippers perform price arbitrage between retail and wholesale digital ecosystems, buying, for example, on Ali Baba and selling on Shopify. The site blogs tell numerous success stories about how high-end tea resale delivered almost $1,000 in the first three days[IX], or selling original printed T-shirts for dog owners delivered $1,200 in the three weeks after the launch[X].

The rapid success of this kind is based on the fact that digital platforms do not merely unite big audiences that an individual start-up business would not be able to attract, but also gain the trust of these audiences. Yet at the dawn of online commerce, in the late 1990s, it was noted that consumer distrust is the main barrier to online shopping[XI]. Trust is perhaps the only asset that cannot be simply purchased; it requires long time and hard work to build it. By joining a successful ecosystem, start-ups or little-known businesses successfully overcome this limitation by "buying a share" in the trust previously built by a large number of other participants. Later we will address the question of how this valuable common ecosystem resource can be managed jointly.

Challenges

However, the ease of building new businesses creates a boomerang effect: growing and evolving competition poses the main challenge for ecosystem participants. For example, Wildberries offers 10,000 SKUs of kids' overalls, a product sold by the protagonist from the story above. Classical marketing recommends building a brand to differentiate a product from multiple other products offered by competitors. However, it's not an easy thing to do with an extensive ecosystem. There may be literally thousands of brands in popular categories[6]. At the same time, it is difficult to "inflate" reputation on digital platforms: sellers provide standardized information about their products, while customer reviews do not allow manipulating the information. Economists would call this a "perfect competition", when a large number of sellers of similar products are gathered in one place and are forced to follow the general rules of informing potential consumers. In business literature, such markets are referred to as the "red ocean". Economic theory states that the price is the main instrument of competition in such markets. This price must inevitably reach a level that excludes a profit sufficient for serious business development.

[6] For example, on Indian Flipcart, more than 4,000 brands compete in the women's western clothing category. Source: Korovkin, V. (2018). The Vanca Case Analysis. On the Importance of Holistic Approach to Digital Marketing in Medium-Size Business. . Available at SSRN: https://ssrn.com/abstract=3217084

Red Ocean Competition

Red ocean competition means that "industry boundaries are defined and accepted by participants, the rules of competition are well-known, and companies strive to be more efficient than rivals", while "as the market becomes more saturated, the prospects for profit and growth shrinks" . The authors of the Blue Ocean Strategy, Chan Kim and Rene Mauborgne, say that companies should avoid this competition at all costs[7], the "correct" strategic alternative is to seek "blue oceans," that is, new markets that are practically free from direct competition, but allow for high profits.

Since the publication of the book, practically no researchers have become interested in the question whether there is an effective strategy of competing in the "red ocean". According to the authors, the only reason for participating in it is the "mental traps" that prevent unimaginative businessmen from inventing ways to create new markets[XIII 8].

However, for many businessmen globally, red oceans are the fact of life. Traditional grocery retailing is a perfect example: most of the turnover is generated by a limited product range that competitors can usually offer to customers on the same terms. Manufacturers provide discounts based on sales volume, which creates a positive feedback loop, with big players getting stronger and smaller players getting weaker. The only advantage is the convenience of the store location, although modern means of transportation make it less important as evidenced by the rise of hypermarkets on the outskirts of large cities. The development of delivery services, boosted by COVID-19, undermines the importance of a convenient store location even more significantly. Somewhat paradoxically, the era of digital platforms (often cited as successful cases of blue ocean strategies) is making "red ocean" competition even more intense, virtually removing the location factor from consideration.

Look at the following figures: Amazon.com offers 10,000 SKUs in the "women's casual wear" category, 7,000 "quilts and throws" and over 10,000 baking pans, hardly leaving sellers much room for differentiation.

However, the very fact that businesses choose to dive into a notoriously "red" competitive environment on Amazon, AliExpress, Uber, or the AppStore suggests that modern management theory may be missing certain strategic opportunities to compete in the domain of quality-price ratio. The case studies described in this report show that hard work on improving one's operational efficiency and the creative use of various marketing tools can create quite a sustainable business that generates a satisfactory level of ROI.

[7] This concept is based on an extensive economic literature corpus, including the so-called "resource-based view" strategy for a competitive advantage. In academic terms, if resources are homogeneously distributed among market participants, none of them is able to create a competitive advantage and the company that, for one reason or another, had a large initial amount of resources will inevitably win. Barney, J. (1991). Firm Resources and Sustained Competitive Advantage. Journal of Management, 17 (1), 99-120.

[8] Perhaps the only case when this view was called into question was the book by E. Shchepin Diving into the Red Ocean. Alpina Publisher

Price management: a zone of conflict of interest between the ecosystem and participants

Indeed, platforms has ushered in a new price era in many market segments. Competition presses the companies to pass the reduction in costs that they achieve through platform tools to end consumers. Most ecosystem leaders directly encourage a constant low-price policy because it helps them attract more customers and transact more in order to achieve their own competitive goals. The situation is especially difficult for ecosystem participants that use multi-channel sales strategies and try to develop their own channels — the requirements of the ecosystem often mean that the prices for goods and services offered in them are significantly lower than in the manufacturer's own sales channels, which reduces the attractiveness of these channels for consumers[9].

At the same time, the situation is fundamentally different from common retail, where a store owner — the analogue of a platform leader — completely forms the assortment and controls prices, trying to offer suppliers "take it or leave it" deals (which only very large manufacturers can resist). All price decisions are made by ecosystem participants independently based on a dynamically developing competitive situation, and in many cases, price can go both up and down. Even in the case of platforms that set their own prices (such as Uber and similar taxi services), the seller is free to reject transactions that do not suit him, which limits the price game space for the platform. The attempt of platforms to tank the price below the level acceptable for an average seller will lead to a sharp excess of demand over supply. A large number of customer requests will be unsatisfied, which will undermine consumer confidence.

An essential feature of the ecosystem model is that, as a rule, participants may work in several competing ecosystems. While ecosystem leaders often attempt to limit this overlap — for example, by demanding a best price guarantee — they are unable to completely ban it. However, for participants, the benefits of a multi-ecosystem strategy can be offset by an increase in technological, logistical and marketing costs. Often, they are intentionally loyal to one platform. For example, Pinduoduo's business model is so tightly tied to the capabilities of WeChat that expanding it to other ecosystems would probably require a complete re-creation of all operations. However, the very possibility of a multi-platform strategy, as well as the risk of a full transition of the supplier to another platform, have a deterrent effect on the pricing strategies of ecosystem leaders.

So, what space for competition, apart from constant price reduction, do digital platforms offer for sellers? As our cases show, the main focus is on marketing. Compared to a traditional business, marketing activities are becoming much more dynamic, with management cycles that last literally hours, rather than months or weeks. Successful sellers alternate periods of sharp price cuts, massive advertising, and cream skimming, thus getting a higher profit on a smaller turnover. Such management requires careful attention, which is where various specialized service companies provide significant assistance.

[9] Medium-sized brand of women's clothing is discussed in detail in Korovkin, V. (2018). The Vanca Case Analysis. On the Importance of Holistic Approach to Digital Marketing in Medium-Size Business. Available at SSRN: https://ssrn.com/abstract=3217084.

Opportunities and challenges at different stages of maturity of digital ecosystems

In the first volume of the report, we examined the four stages of digital ecosystem maturity: conception, expansion, integration, and domination, having analyzed their opportunities and challenges for leaders. The relationship between opportunities and challenges for different contributors also varies at different stages.

During **its conception**, an ecosystem tries to attract sellers and buyers at the same time. To attract the latter, it usually tends to implement price dumping relative to alternatives already available on the market, both digital and traditional. At first glance, such a policy should repel sellers who already have a certain volume of sales in other channels. The dilemma is usually resolved by new market players attracted by the possibility of additional earnings. This is how Uber or Airbnb entered the market, dumping against ordinary taxis and hotels. In some cases, even large established companies may find it attractive to participate in emerging ecosystems if they have an overproduction problem. For example, hotels that had a large number of unoccupied rooms for most of the year were happy to list them on Booking.com, etc., at a significant discount.

At the **expansion stage**, ecosystems are interested in diversifying their offer as much as possible and thereby expand their customer base. They can subsidize the entry of new suppliers, especially the large companies with established brands.

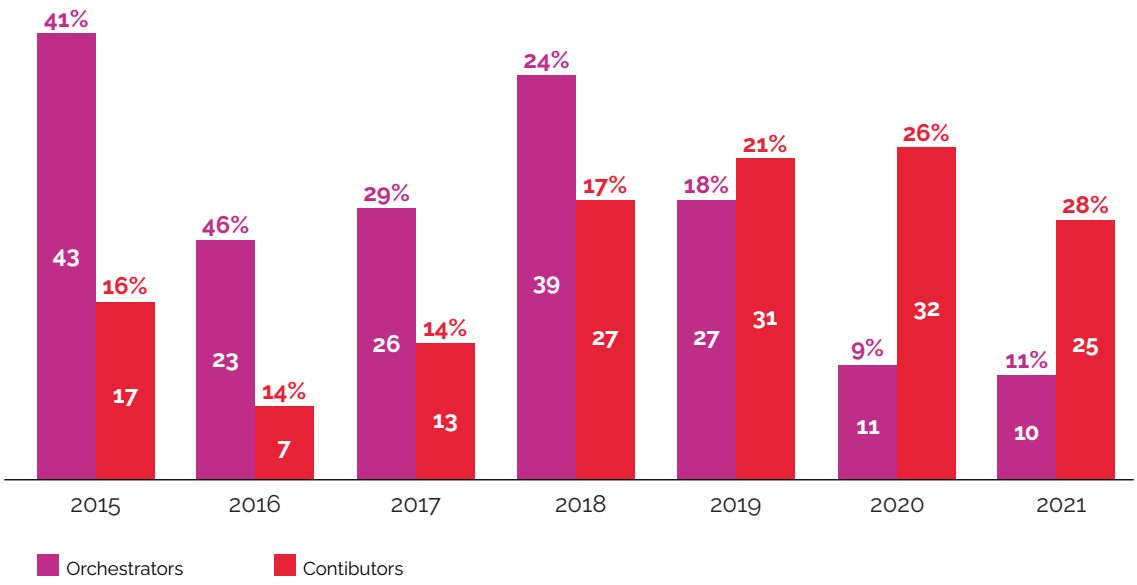
At the **integration stage**, ecosystems strive to "lock-in" customers and actively create appropriate

tools, such as recommendation services, a single customer ID and related loyalty programs. Ecosystem leaders begin to implicitly redistribute income among participants, providing more favorable conditions for some and exerting price pressure on others.

Finally, at the dominance stage, ecosystem leaders are almost entirely focused on their own interests and management of the profitability generated by the platform. The interests of small participants are sometimes ignored ("take it or leave it"). Even large players may be forced to make strategic compromises or develop alternative sales channels at their own peril and risk (see the Zynga case).

For many businesses, the "create or participate" dilemma is one of the key strategic forks in the digital transformation journey. The same is also faced by many digitally native companies aspiring to the coveted "unicorn" status[10] . According to Boston Consulting Group, the solution to this dilemma has changed dramatically over the past few years. In 2015, 41% of unicorns sought to create their own ecosystems and only 16% participated in third-party ecosystems. In 2021, their share was 11%and 28%[11] respectively. Leadership in ecosystems is an extremely resource-intensive business with global competition of everyone with everyone. Its window of opportunity is gradually closing, risks are growing, and management is becoming increasingly more difficult. This increases the chances for the participants, opening up new strategies, sometimes not envisaged by the creators of the platforms themselves: operation on "hidden layers".

Chart 1
SHARE OF ECOSYSTEM FOUNDERS AND PARTICIPANTS AMONG UNICORN COMPANIES[XIV]



[10] Start-up that has reached a market capitalization of $1 billion, metaphor was first suggested by Eileen Lee in 2013 in Welcome To The Unicorn Club: Learning From Billion-Dollar Startups, https://techcrunch.com/2013/11/02/welcome-to-the-unicorn-club/?guccounter=1&guce_referrer=aHR0cHM6Ly93d3cuZ29vZ2xlLmNvbS8&guce_referrer_sig=AQAAAFN-ycJqxop g21thlxgW8tM8-7E9JJgQ4Y3x7yMleJOKv0HfJ16tN7Y__wW0BvgCrC31DlF9EKXrwwiRov2uLaZLj99g -WtjQwFtwPxlrnwE5-3ZHj6lzdHW-3yVMgtOlFS7VpYudsWEjPEf0brjfeKEi5SJcKvHtpdQcJuZe5bl

[11] It's worth noting an overall decline in the share of ecosystem business models from 57% in 2015 to 37% in 2021.

Hidden ecosystem layers

The cases we've studied (see in particular Zemfira's case) reveal the presence of "hidden layers" in ecosystems. It turns out that in addition to the platform and sellers, ecosystem participants include numerous services that help make sales, and in some cases — purchases (such as applications for comparing taxi prices for a given trip). Sometimes these solutions seek ways to get around the rules set by the platform, up to the direct cheating, as in the case of some applications for taxi drivers that change the car's coordinates in the system, increasing the chances of getting an order, e. g., at airports[XV]. We call these layers "hidden" because for an outsider these services are almost invisible, especially in transaction ecosystems, which have traditionally been described by the three-part structure "sellers — platform — buyers". As a result, even structurally simple transaction ecosystems become more complex and begin to resemble solution ecosystems.

Two types of services are offered on hidden layers: facilitating and integrating participation in ecosystems. Facilitators help individual businesses within an ecosystem to be more successful, in particular, to avoid direct price competition. Integrators help individual participants create joint offers, as well as operate on several platforms at the same time, thus, creating de facto "sub-ecosystems".

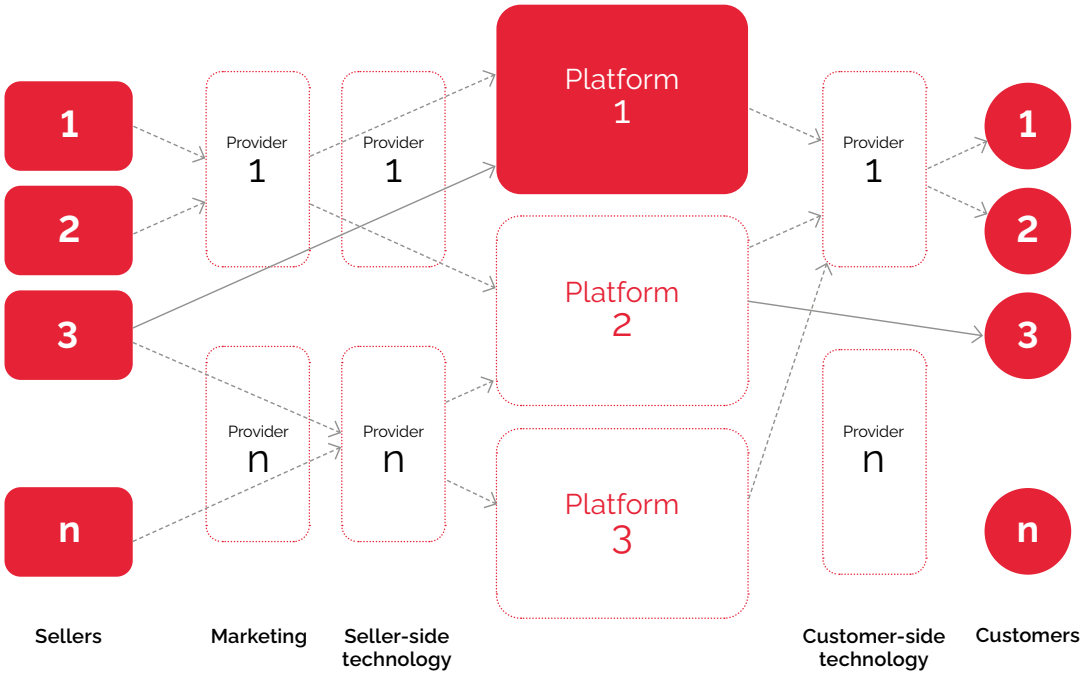


Fig. 1
Structure of the digital business ecosystem with hidden layers. The shaded elements correspond to the traditional description of the structure[XVI]. The shapes with dotted outlines show the structural elements and relationships identified by our research. Ecosystem participants on both the supply and demand sides can choose to work with one or several platforms. In the latter case, they can act directly or through integrators.

Ecosystem management: conflicts and the "public good" of platforms and sellers

Companies that operate in the hidden layers of the ecosystem play a significant role in balancing the power within it. As a rule, platform owners are significantly larger in size than any of the participants and, as the Zynga case shows, they do their best to maintain the ratio that allows them to dictate key rules so to strengthen their competitive position. Companies in hidden layers, in turn, tend to be larger than individual sellers, for whom they are valuable in that they enable them to develop more independent strategies. As a result, there is space for a kind of collective opposition of sellers (sometimes buyers) to the dominance of platforms.

It can be argued that the ecosystem leaders — platform owners — do not end up with the usual degree of control over the business. This is most clearly manifested in pricing, which classical management theory refers to as one of the key strategic choices. In a traditional business, "price positioning" (price relative to competitors) is an essential component of a marketing strategy. In the platform business, maintaining that position all the time is counterproductive. In the first report, we showed price charts of the leading taxi services, clearly demonstrating how one or another becomes more expensive on certain days and at specific times. The reason for this dynamic is the need for coordination between independent participants: the lower price offered by the platform attracts customers, but many drivers may choose not to take a cheap ride, resulting in a shortage of suppliers in the system and increased waiting times, which are also an important part of the customer offer. Attempts to balance the price and time force platforms to dynamically overture for the optimal price. In mathematical terms, we can say that the competition moves to the higher level of abstraction: the company that better manages the price dispersion wins.

From a certain point of view, managing digital ecosystems is like public administration: it implies coordination of moves by independent actors with diverging interests using a rather limited set of tools of coercion and punishment. This allows applying some elements of the "polycentric governance" theory to them, designed to describe the phenomena that "lies in the middle between classical markets and the state"[XVII12]. This theory has been successfully applied to the distribution of «public goods» that have value for all participants and help them realize their goals. The classic example in academic literature is water resources.

What is a public good for business ecosystems participants? First, it is the very existence of efficient markets created by platforms. Secondly, it is the trust in these markets, especially on the part of end buyers. Lack of trust in online merchants was a key barrier to the development of e-commerce until the mid-2000s, when platforms emerged. An individual website may have to spend years trying to convince customers that it is safe and secure to buy on it. By joining a digital ecosystem, a seller automatically receives the accumulated credit of trust and further contributes to it. It can also destroy trust in case of dishonest actions receiving certain short-term advantages over other participants. Combating such practices sometimes with a certain brute force[13] becomes one of the main focuses of ecosystem management (which makes it resemble public administration even more). However, it is important for leading companies to realize that most services in the hidden layers help the ecosystem as a whole by increasing the efficiency of individual participants. Specific challenges and strategies for managing digital platforms in the face of growing government regulation will be discussed in our next research report.

[12] It can even be assumed that the ubiquitous "jealousy" of authorities towards digital platforms is based precisely on the fear of the emergence of players using similar management tools in relation to the same subjects. This jealousy manifests itself both in the increasingly persistent attempts to legally restrict the activities of digital platforms, and in the active experiments of governments with their own digital ecosystems.

[13] For example, Yandex takes into account the integrity of the seller when determining its search results ranking. https://webmasteryandex.ru/blog/utm-source-wmblog-utm-medium-post-utm-campaign-new-ranging-yandeks-uchtet-signaly-o-nedobrosovestnosti-organizatsiy-pri-ranzhirovanii-ikh- saytov

Ecosystem participation strategies

As the case studies in this report show, businesses of all sizes can participate in ecosystems, from individual entrepreneurs to public companies with billions in turnover and global market coverage. Of course, their strategic capabilities differ significantly, but the analysis reveals certain patterns that are largely determined by the stage of development of the ecosystem.

At the conception, the leader of the ecosystem is extremely interested in attracting participants as soon as possible and is ready to directly or indirectly sponsor them. Large, well-known vendors are especially welcome. Newly created ecosystems use their reputation to gain credibility with buyers. This period opens up significant windows of opportunity for both vendors and providers in various "hidden layers", creating services for rapid migration to a new platform and promotion.

The problem is that participants are completely unaware of the potential success of the new ecosystem. They see an ambitious, but inexperienced player, cooperation with which will require a diversion of resources from current operations. They are also well aware that a significant part of ecosystem projects fails, in which case not only the leader, but the participants can suffer serious losses. For providers of "hidden layers" it is about investments in the development of new technologies, the return on which is not at all guaranteed.

The optimal strategy at the stage of emergence for both sellers and solution providers is the MVP (Minimal Viable Product) strategy, which means delivery of small batches of products without significant investments in promotion, creation of fast and relatively cheap solutions. It is important to experimentally determine the strengths and weaknesses of the new ecosystem and the rules of the game: the segments from which it attracts customers, the most in-demand products, the "life hacks" of successful promotion, etc. At the same time, it makes sense to use the subsidies provided by the platform to the maximum, bargain for special conditions and preferences, compensating for the risks associated with unsuccessful strategy with a high profit.

The expansion stage is the stage of big stakes for participants. The leader is still interested in attracting new entrants quickly, but they begin to pay close attention to the balance of power, seeking to avoid a situation of dependence on a few large suppliers. New entrants have the opportunity to learn from the mistakes of early adopters who invested time and money in finding effective solutions and invest right in the most winning products and services. However, competition on the platform takes on the features of "red ocean", consumers are constantly looking for the best price-quality ratio, product promotion becomes more expensive. Large players solve the problem by increasing marketing budgets, small ones have to constantly look for emerging new niches, trying to skim the cream off them before they are filled by competitors. For solution providers in "hidden layers", it's time to heavily invest in the quality of technologies that provide customers with effective seamless systems.

At the integration stage, both sellers and solution providers are dealing with a full-fledged "red ocean". There are established rules, a large number of similar offers, increasing price pressure from the platform, which begins to solve its competitive objectives at the expense of participants and seeks to cut off parallel management tools, giving them space for independent action. Theoretically, it is possible to expand the range by creating more new niches, but in practice this may be met with resistance on the part of the platform, which seeks to avoid unnecessary functional complexity.

The main goal of the seller is to achieve a leadership position in the most profitable products. Here is where strategic marketing tools come to the fore. In addition to the ongoing tactical struggle (discounts — promotions — skimming), sellers start to invest in brand development and create loyal groups of buyers. An effective tool is a multiplatform strategy that allows using the growing competition of ecosystem leaders for one's own purpose. This opens up niches for service providers in "hidden layers": tools for managing the product range, price, logistics and

[15] Minimal Viable Product – Минимальный работающий продукт

marketing become popular on many platforms at the same time. A kind of "virtual ecosystems" emerges around such cross-platform solutions.

The dominance stage is still a hypothetical scenario. It is resisted by both market forces and external regulators, who are paying increasing attention to online markets. However, if any platform takes the position of an absolute leader in one or more product categories, it will drastically reduce the space for strategic actions for participants since it will make multi-platform strategies ineffective. The positive side for strong players will be the gradual consolidation of markets, the departure of weak players that could not withstand intense competition. The remaining participants will probably be able to count on a stable cash flow and a certain degree of symbiosis with the platform, which will be interested in maintaining an attractive product for buyers. Winning the competition will be determined by efficiency of operations. The strategy of successful participants in the ecosystem will be determined by the well-known Toyota motto: "Looking for a Better Way Every Day"[14].

[14] According to Kaizen philosophy, "you can always make or do things better, even if they seem to work well in a particular moment" https://global.toyota/en/company/vision-and-philosophy/global-vision/

Ecosystem conception

	Sellers	Solutions from “hidden layers”
Possibilities	Rapid product launch in an environment with low competition and subsidies from the platform	Creation of services for efficient migration to the platform
Challenges	Unsettled rules of the game: audience, effective promotion methods, approaches to monetization Uncertainty about the future of the platform: if it fails, investments will be lost	
Strategy	Quick launch of relatively cheap products and solutions, experiments with different customer segments, gaining maximum preferences from the platform, cream skimming	

Ecosystem expansion

Possibilities	«Преимущество позднего входа»: учет ошибок ранних участников экосистемы и предложение более эффективных продуктов и решений Консолидация рыночной позиции, экспоненциальный рост денежных потоков	
Challenges	Increasing competition, transition to the “Red Ocean”	Increasing technological complexity, increasing customer demands
Strategy	Big stakes: big investment in value for money and promotion techniques	Development of technically advanced solutions offering the best customer experience

Ecosystem integration

Possibilities	Becoming a category leader Creating new product categories[15]	Mediation between ecosystems
Challenges	"Red Ocean" competition: oversaturation of product categories with all possible product offerings The reluctance of the platform to introduce new categories due to the complexity of management and logistics	Competition with native ecosystem services
Strategy	Multi-platform strategy, creating effective marketing channels that promote products regardless of platform, investment in brands	Creation of own "virtual ecosystems" that combines technologies from several platforms[16]

Ecosystem leader dominance

Possibilities	Stable cash flow from the established client base
Challenges	Ever-increasing pressure from other participants, platform, regulators
Strategy	Steadily improving operational efficiency, competition in all areas: product, user experience, price, promotion. "Finding a Better Way Every Day."

[15] According to BCG, 60% of successful participants in the https://www.bcg.com/publications/2021/how-to-succeed-as-a-business-ecosystem-contributor

[16] According to BCG, this strategy is followed by 35% of successful ecosystem participants https://www.bcg.com/publications/2021/how-to-succeed-as-a-business-ecosystem-contributor

Conclusion

The choice of an ecosystem strategy is one of the key issues for modern business. Very often, companies want to lead by creating proprietary platforms and attracting third-party participants, although this is associated with high costs and risks. As a rule, this fact is well understood by business owners and managers. Guided by this knowledge, they often abandon the idea claiming that "we cannot compete with giants like Ali Baba, Amazon or Yandex".

This report is an attempt to demonstrate that leadership in the digital business ecosystem is not the only strategic path. On the contrary, the strategy of participation in it can be effective for a wide variety of businesses, from individual entrepreneurs to global corporations. It is important that participation in the ecosystem is fundamentally different from the traditional "sales channel": both sellers and providers of integrating and facilitating solutions have a much greater choice in terms of prices, product range and various marketing activities. This free space inevitably follows from the "co-creation of value for the client" principle that is key for ecosystems.

This freedom also implies serious conflict in the struggle for power. As the cases we've studied show, platforms usually win in direct confrontation. However, this does not mean that their power over the participants is unlimited because the ecosystem without high-quality, successful sellers does not make any sense. Successful ecosystems do the fine work of setting the rules, educating the participants, and building the services that support them. No wonder leadership in business ecosystems is sometimes compared to public administration.

Does this mean that digital business ecosystems are completely self-regulating and do not require external intervention from the government or society? This is a difficult question that we are planning to answer in our third research report. It should summarize the existing global ecosystem management practices and demonstrate possible directions for their development, creating opportunities and risks for existing and future leaders and participants.

CASE

Uber Driver: Solution in Times of Economic Depression

In January 2014, Nikolai fulfilled his old dream. After two decades of work in large advertising company, he launched his own agency. His main asset was a few clients, comparatively small in market size, but generating a sufficient income to run an office with several employees. The economy grew rapidly after the 2009 crisis. The Winter Olympics in Sochi attracted the attention of investors from all over the world to Russia, and business prospects looked quite optimistic. However, by the summer the situation changed dramatically. The Ukrainian crisis and related sanctions provoked investment outflow, markets began to shrink, and the advertising sector was hit significantly. It was not about development, but about survival. However, the fight was lost. In September, after several months of losses that had burnt most of the family savings, Nikolai shut down his business. It was impossible to quickly find a good job. The layoffs affected almost the entire advertising market. Nikolai needed to find a way to generate enough income to support his family.

Uber, which had just entered the Russian market, was a solution. Nikolai's personal car allowed him to qualify for Uber Black, but after several trips he realized that Uber X brings more income. Participation in the system was unofficial and was carried out through intermediaries: small companies that established relations with the platform connected drivers and paid out the money for a certain fee.

Nikolay took it seriously, analyzing earnings statistics in search of the most profitable job schedule. He chose three 12-hour shifts a week, from 5pm to 5am on Wednesdays, Fridays and Saturdays[17]. These days delivered maximum demand, while work at other times brought significantly less income. Net earnings after deducting the cost of gasoline and car maintenance ranged from 60,000 to 80,000 rubles per month, which was surely significantly below the habitual salary of a top manager, but enough to satisfy basic needs.

Work brought Nikolai certain pleasure. Since Uber was a young and trendy brand on the market, its audience included representatives of the middle class, celebrities, e. g., writers, politicians, well-known personas from show business. Nikolai's experience in customer service helped him tactfully conduct conversations with interesting clients who treated him not as an ordinary taxi driver but as an independent entrepreneur. Some acquaintances were useful in business terms. Nikolai's affairs with Uber lasted about a year, then the improvement of the economic situation allowed him to become a private business consultant.

[17] In general, more than half of the drivers on the system worked up to 30 hours a week, according to international Uber data (Landier, Szomoru, & Thesm, 2016).

CASE

On the Way to a Successful Business: Children's Clothing on Wildberries

Zemfira, a 27-year-old woman, was a successful marketing manager in a large company, but she always wanted to run her own business. The turning point was the birth of her child, which not only changed her daily routine, but also prompted a business idea. Zemfira decided to sell children's outerwear, especially winterwear. She visited several fairs in Moscow in search of a quality manufacturer and made contact with a private factory from Kyrgyzstan. She also chose Wildberries as a distribution platform, which, unlike some of its competitors, does not impose high initial requirements on sellers.

Zemfira selects products from the factory catalogue and is responsible for the logistics to the Wildberries warehouse, which, for a certain fee, stores, packs and ships the goods to the addressee. She considered it too time-consuming to independently manage logistics up to the client's door.

Zemfira needs time to manage marketing; this process requires careful attention. Her key operations involve creating product descriptions (including pictures), advertising and pricing. To strengthen their competitive position, marketplaces strive to offer consumers the cheapest products possible, following the deep discounting strategy. Since they do not determine the price level on their own, unlike classical retail, they encourage sellers to form profitable offers by ranking the goods with deep discounts higher. Sellers willingly accept the game, setting initially high prices and offering 70–80% discounts[18].

The main concern of all sellers on the platform is to increase the position of their product in the search results. The competition in the children's outerwear segment is extremely high. Wildberries offers more than 30,000 SKUs[19]. Various filters can narrow down a consumer's choice to a few hundred options, but products on the first search page have more chances to be sold. Search result ranking is determined by the platform algorithms, which are generally opaque for sellers. Presumably, the key characteristics that they take into account are the level of discount and the number of sales in recent days.

It would seem that the last parameter creates a vicious circle: well-selling products are higher in the search and sell better, leaving no chance for newcomers. However, there is a tool that allows breaking this circle. It is called "buy-back". Manufacturers pay specialized intermediary companies that buy their goods on the platform and return them for a certain commission. This practice is not welcomed by the platforms; however, they do not have the effective tools to stop it[20]. As a rule, buy-back is used by novice participants in the ecosystem to reach relatively high positions in the search and a stable level of organic sales.

Prices also require constant attention as the competitive offer is highly volatile. Each seller has their own pricing "secrets", including the days and times when additional discounts are most effective. Of course, the pricing policy of large brands is much more stable, but for many small participants, daily adjustments in search of the optimal turnover-to-profit ratio are common practice.

Finally, the third important component of success is promotion, which is a combination of paid (search advertising) and free (social networks) tools. To manage her presence in key social networks more effectively, Zemfira hired a small specialized agency. She works independently with search advertising.

Buy-back or advertising management are clear examples of the services provided by facilitators operating in the "hidden layers" of ecosystems. These companies allow new sellers on marketplaces to reach a sufficient level of goods turnover in a relatively short time and keep it competitive.

[18] Platforms have tools to limit the offered price to some extent (products with unrealistically high price tags will be removed), the sellers of each group of goods experimentally find a certain consensus on officially indicated prices.

[19] Data as of 15 August 2022.

[20] Examples of intermediaries are swinner.ru or mpboost.pro

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Table 1.
VALUE CHAIN WHEN SELLING ON WILDBERRIES.

Cost of manufacturing	800 rubles per pc.	
Logistics (receipt of goods)	500 rubles (for a batch)	
Storage	Volume of up to 1 cubic meter — 7 kopecks per day per pc.	
Advertising and marketing	500 rubles for 2000 views and more	300 rubles per 1 pc. buy-back. The number of buy-backs depends on the target competitor, with which it is necessary to maintain at least parity in search positions. For example, if a competitor has 10 sales per day, then one needs to make at least 10 buy-backs every day during a week to outdo the competitor
Platform %	15% per pc.	12% of goods are stored outside the platform warehouse
Logistics (shipping)	Logistics from the warehouse to the pickup point - 120 rubles, return to the warehouse in case of refusal - 30 rubles	With independent logistics to the client's door: about 70 rubles per pc. with delivery to Wildberries warehouse, free of charge with delivery to the pick-up point chosen by the client
Final selling price	1600 rubles per pc.	
Seller's profit	200 rubles per pc.	

CASE

From the Top Manager of a Platform to the Owner of a Participating Company: Elixir Fine Foods

Alex Vasiliev was a top manager in the Russian representative offices of JD.com and Alibaba Group. He knew from the inside how the platform business is managed. His participation in the Bringly project[21] led him to the idea that the window of opportunity for creating new platforms was probably closing, and participation in third-party ecosystems was a more attractive strategy. In early 2020, he launched his own business with an eye on the rapidly growing Chinese market.

The first product he decided to sell was olive oil. Alex was well aware that Chinese consumers are looking for quality food increasingly more often and are willing to pay a price premium for imported goods[22]. At the same time, consumers in the food market were ill-informed of foreign brands and focused on the country of origin. Products from Southern Europe were in high demand, and Alex registered his company Elixir Fine Foods in Portugal, opting to add fortified sweet wine to the range (Chinese consumers didn't really like the classic dry wines).

However, the main product was baby food delivered under the Eva brand. Vasiliev produced baby food at a factory in Belarus from high-quality raw materials, which were sourced all over the world, and sold it on TMall, TMall Global and Taobao using social marketing tools. Kuaishou social network played a key role in the promotion. It allows users to exchange short videos. In early 2022, the brand became the top-selling one on Alibaba's platforms in China[XVIII]. At the same time, Vasilyev took a new step in international expansion and approached the Persian Gulf markets. Healthy Eva brand appeared on Amazon.ae.

Elixir Fine Foods shows that marketplaces open up great opportunities to enter the global market. It is unlikely that a $1 million investment[XIX] would be enough to launch a brand from scratch in traditional retail, even in a limited geography, not to mention two distant and dissimilar regions, such as China and the Middle East.

[21] Russian marketplace for Chinese goods launched by Yandex. The project failed and was closed in December 2019.

[22] The phenomenon of the explosive growth of consumer imports to China through online platforms was called Haitao. In 2019 the volume of this market was estimated at $1.8 billion https://www.voguebusiness.com/consumers/china-cross-border-ecommerce-haitao-exclusivity -thrift

CASE

Zynga: Race for Power with the Platform

Zynga's success story began in 2007 when the rapidly growing social network Facebook opened its platform to third-party developers. Mark Pincus saw this move as a great market opportunity to offer his games to an audience of 100 million people around the world without any intermediaries. The company's first product, Texas Hold'Em Poker (aka Zynga Poker), released on Facebook on 1 July 2007, is the first social online version of the popular card game, where players compete not with slot machines, but with other users. In November 2007, when Zynga underwent a $10-million round A[XX], the number of regular players was 400,000. Eventually it reached 25 million.

In June 2009, Zynga acquired MyMiniLife, which owned FarmVille. The idea of building virtual farms and developing them through social networks proved to be incredibly popular. Within a week after the launch, the daily number of users reached 1 million people. A month later, FarmVille became the most popular game on Facebook. By February 2010, it was played by approximately 20% of the platform's users (80 million people)[XXI]. The game required daily participation, otherwise the virtual "harvest" be lost. FarmVille and further FishVille and CityVille became part of many people's everyday life. The built-in viral marketing tools — requests for help from Facebook friends — annoyed many users, although they allowed to quickly increase the audience without large advertising expenses. New game pieces added on average twice a week made the daily gaming routine less boring. Monetization was carried out by offering the most impatient "farmers" options to accelerate the growth of their virtual economy through purchasing additional tools. Zynga's revenue grew from $121 million in 2009 to $597 million in 2010. At its peak, FarmVille had 85 million players worldwide, of which 32 million logged in at least once a day.

In early 2010, Zynga became Facebook's biggest source of revenue thanks to the platform's share in game monetization and its ever-increasing advertising budget. Zynga games (FarmVille, Café World, FishVille, Texas Hold'Em Poker and MafiaWars) occupied 5 positions among the top 10 Facebook apps[XXII].

However, in the same period, the relationship between the companies began to deteriorate. In February 2010, the platform launched its "currency", Facebook Credits, to purchase virtual goods in apps, with a 30% commission. A few weeks later, the spam policy was changed[23], drastically reducing the number of messages from games appearing in users' feeds. This decision, met with a bang by the Facebook audience, hit the social mechanisms that ensured the constant growth of traffic in Zynga games[XXIII]. In December, Zynga launched CityVille, building on the success of FarmVille (at its peak, the game had 61 million monthly users, 16 million of whom played daily). The combined monthly audience of Zynga games was 230 million, almost half of Facebook's user base. In December 2011, the company went public with a market capitalization of $7 billion. By that time, it had revenues of over $1 billion, 81% of which came from Facebook[XXIV], although the company made efforts to release games on other platforms.

Facebook depended on Zynga less heavily. Only about 19% of Facebook's revenue came from Zynga[XXV XXVI]. The latter, however, saw a problem in such a high concentration of income from a single ecosystem participant and continued to change the rules of the game. At the beginning of 2012, the algorithm for displaying game messages was changed again and they almost disappeared from users' feeds. Zynga's earnings on the platform fell by 20%. In response, it launched its own gaming site, which gave players certain advantages over Facebook apps. In May, the platform prioritized new applications on the main page. To find old ones, users had to make extra clicks[XXVII]. In June, Zynga launched its own Zynga with Friends platform, which allowed gaming on several platforms at the same time, Zynga.com, Facebook, Google+, Android and iOS, while competing with each other[XXVIII]. In November, the "special relationship" between Zynga and Facebook officially ended. After the announcement of the termination of the partnership, Zynga's capitalization fell to $2 billion, despite the fact that revenue in 2012 increased to $1.3 billion[XXIX].

[25] Unsolicited messaging for users

The race for power with the platform has diverted Zynga's attention from important changes in the market: users were rapidly switching to smartphones games that were not tied to social networks. Zynga's investment in its own platform did nothing to strengthen its position in the new market. Two years of falling revenues, office closures and staff cuts followed. By spring 2016, the monthly user base had dropped to 61 million. However, the company managed to make a surprising turnaround. Franck Gibault, who took over as CEO in February 2016, consolidated the company's old assets and launched a massive program of acquisitions and partnerships. The new hits, Empires & Puzzles and Merge Dragons, have given the company a strong foothold in the ever-growing mobile gaming market. As early as in 2017, revenue already showed significant growth, in 2019 it surpassed the figure for 2012, and in 2021 it exceeded $2.5 billion[XXX].

It turned out to be more difficult to restore market capitalization. The company's shares did not reach the peak of early 2012. Moreover, in 2021, history repeated itself. This time, the problem was a change in Apple's policy that made it harder for third-party apps to track iPhone users. Zynga's capitalization was reduced by almost a third. At the end of the year, the company entered into merger talks with Take-Two Interactive, an old video game market participant (founded in 1993) who was looking for new market opportunities by adapting its classic hits for the mobile market. On 19 May 2022, the shareholders of the two companies approved the merger, and on 23 May it was officially finalized[XXXI].

Chart 2
ZYNGA'S REVENUE[XXXII]

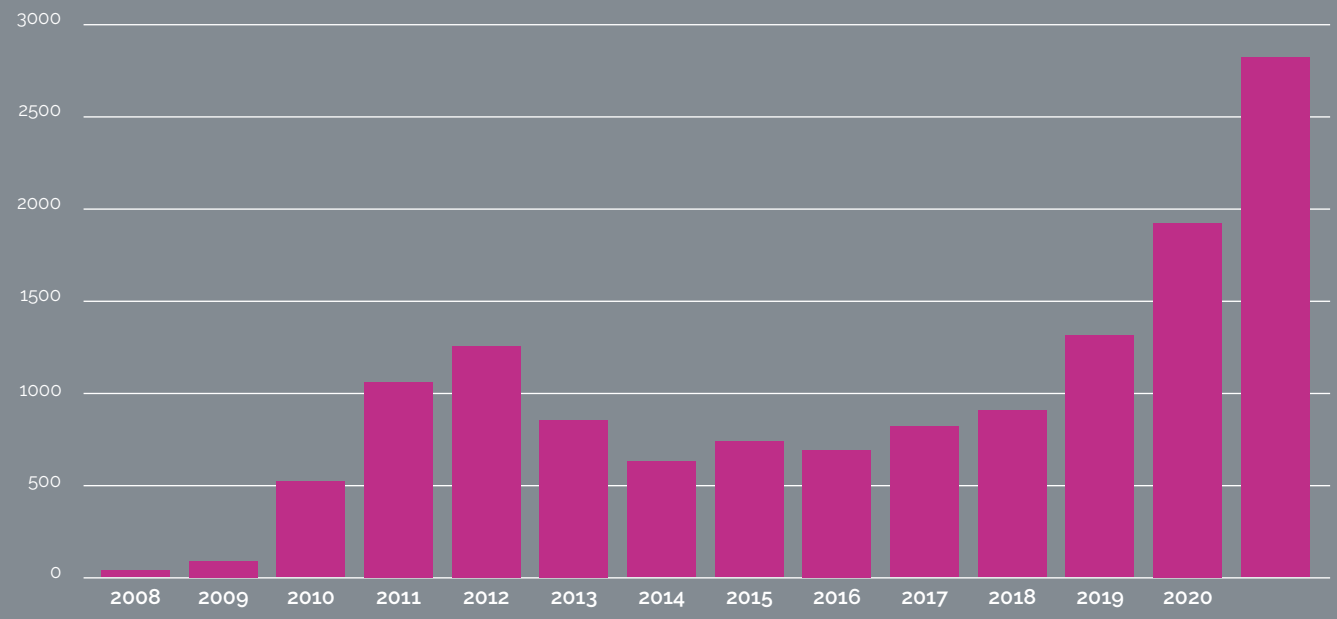


Chart 3
ZYNGA'S STOCK PRICE[XXXIII]

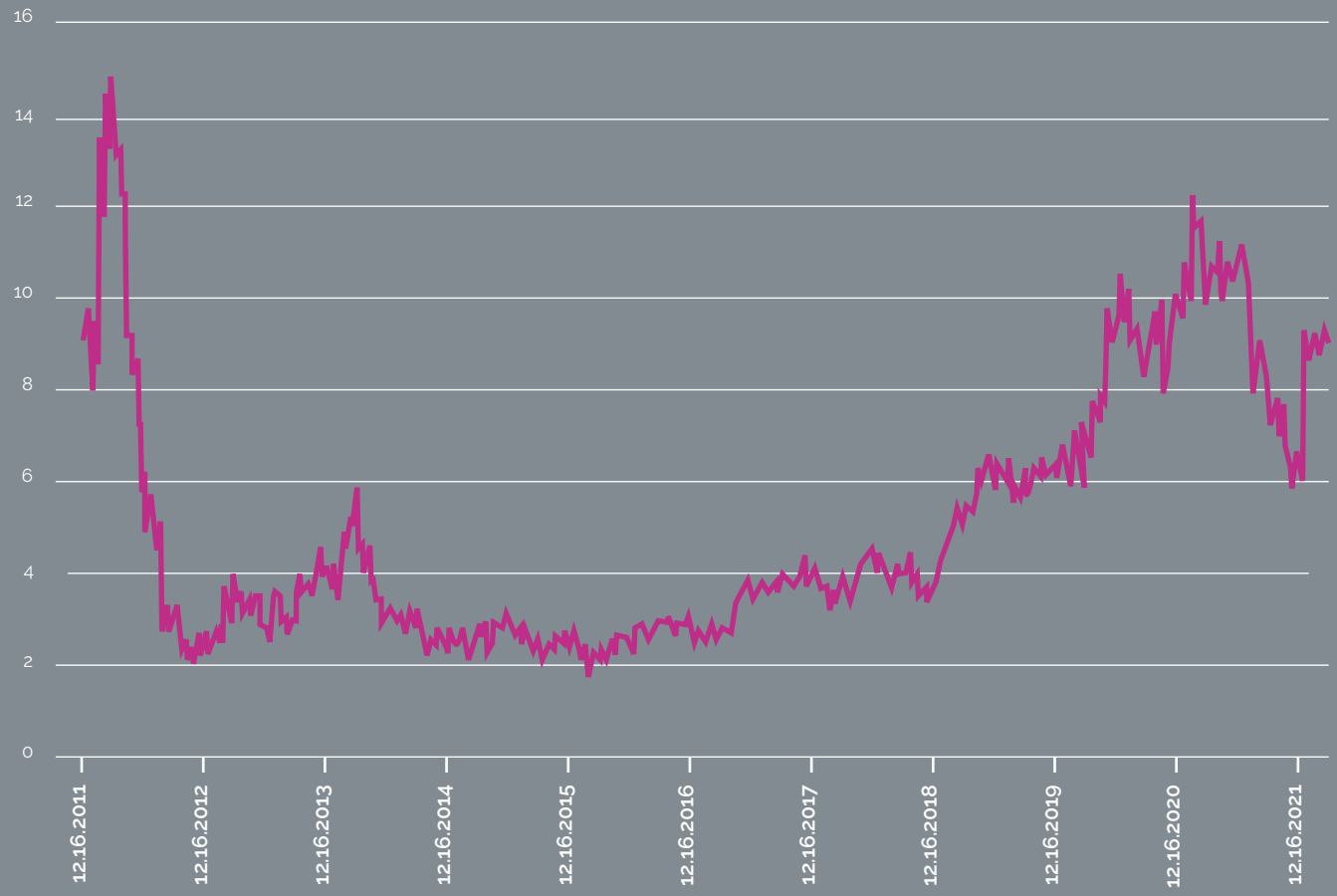
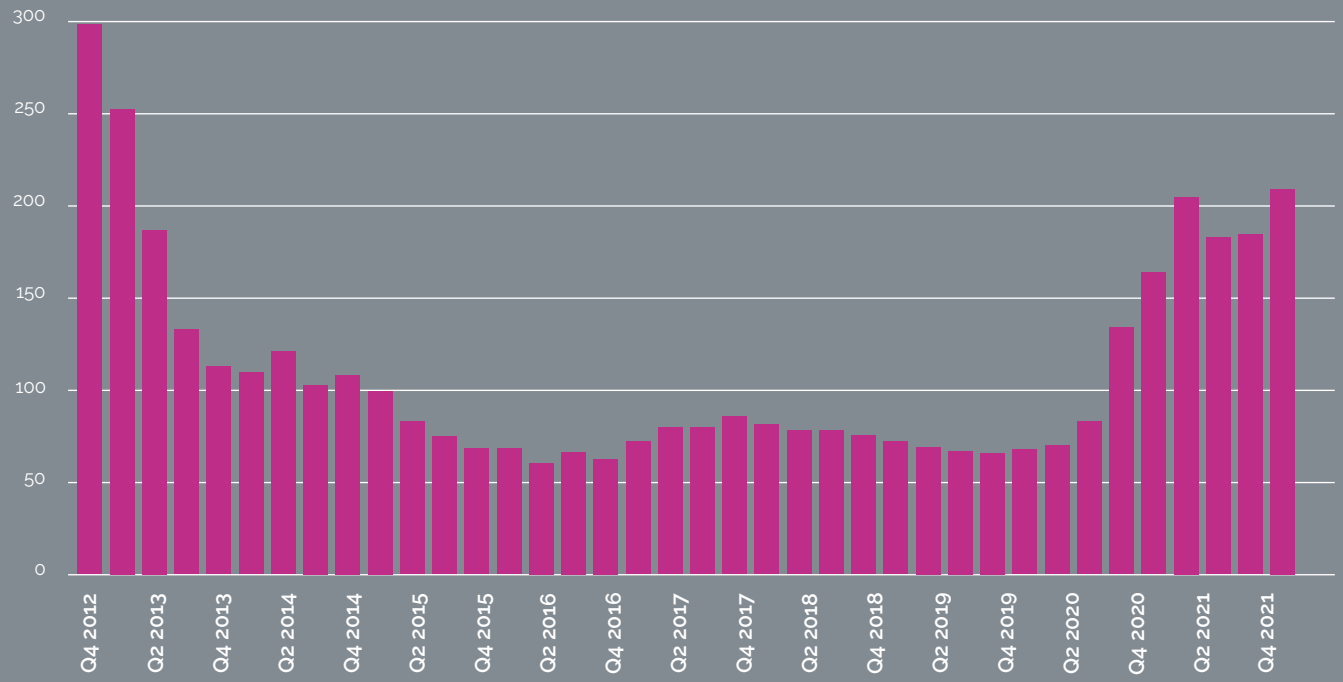


Chart 4
ZYNGA'S MAUs [XXXIV]



CASE

Pinduoduo: Become a Giant Through Symbiosis with the Platform

Chinese WeChat entered the market as a messaging service and constantly expanded its functionality, gradually turning into the main smartphone application for millions of users. With the launch of Mini Programs in 2017, the application has become a "platform of platforms". The service allows third-party developers to create and monetize applications that run in the WeChat shell. These applications have a limited size, less than 10 MB, and do not require installation, their download is much faster than traditional native applications for iOS or Android, and they do not occupy hard disk space[XXXV].

As a result, WeChat has become a "super app" or even a "social operating system" where over a billion users can shop, pay, and share recommendations with their friends. By the beginning of 2020, the number of mini programs reached 3.2 million, with a total of 840 million people using them. In 2021, partly in the wake of the COVID pandemic, mini programs' daily audience increased by 12.5% to 450 million users.

Pinduoduo has become one of the most successful mini apps. It was based on the "social e-commerce" concept. Its name can be translated as "together more (benefits), more (joy)[XXXVI]". It was launched in 2015 as an online store called Pinhaohuo (yqphh.com). It used a purchasing aggregation business model and was primarily focused on buying fruit in bulk from farmers. Already in September 2015, the corporate mobile app became the most popular free app in China with 100,000 installs per day. By the end of the year, the company had 10 million registered users making one million purchases a day[XXXVII]. It merged with Pinduoduo digital marketplace in 2016. Later, Tencent participated in the company's second round of funding and gave it privileged WeChat integrations inaccessible for rivals like Taobao[XXXVIII].

The target audience of the company is the low-income population that lives in small cities and rural areas. This allows to avoid direct competition with giants like Taobao and JD.com. These consumers are extremely price sensitive and are focused on quality cheap products, rather than brands. Pinduoduo offers them the opportunity to organize groups and buy discounted products together. To do this, users need to place a description of the desired product in a WeChat account and invite other users to also buy it. The larger the group, the higher the discount. In some cases, the initiator can even get the desired product for free. This model has allowed Pinduoduo to grow its business at an incredible pace. Just five years after its founding, in 2019, the company became the third largest e-commerce market in China (after Taobao and JD.com)[XXXIX].

In 2017, Pinduoduo launched a WeChat mini program, significantly accelerating the company's growth by lowering customer acquisition costs. According to some estimates, the company spent only $2 per new user, about 20 times less than JD.com or Taobao. Sales doubled every quarter and reached 100 billion yuan (nearly $15 billion) by the end of the year. By the first quarter of 2018, the company had 230 million monthly customers on WeChat, 57% of all mini program users. Another 166 million customers used the Pinduoduo app. In April 2018, the company raised another $3 billion in the next round (with a total capitalization of $15 billion), of which Tencent[XL] invested $1.4 billion.

Pinduoduo is now a virtual marketplace-based digital ecosystem with over a million independent sellers and nearly 700 million buyers. The company is also firmly embedded in the WeChat ecosystem, where the mini program generates about 60% of customers. The symbiotic relationship is backed by significant investments from Tencent, which happens to be both the owner of the super platform and a key shareholder in its participating company.

CASE

Adapter: Facilitating Company[XLI]

The Russian e-commerce market is dominated by five companies: AliExpress Russia, Ozon, Wildberries, SberMegaMarket, Yandex Market. Their combined share is almost 70% in terms of the number of orders and 44% in monetary terms. Each platform[XLII] unites tens of thousands of sellers with intense competition between them. Facilitators help to win competition, and Adapter is one of those facilitators.

The company was founded in 2018 by Mikhail Allahverdyan and Pavel Polishchuk. The company's first office was a rented apartment with bare concrete walls, but the founders had serious plans. Both had some experience in e-commerce: Polishchuk developed the BoomMarket project for 5 years (computers, peripherals, software), while Allahverdyan worked, among other things, at Yandex.Market, where he participated in the Beru[XLIII] project. To start the business, the founders invested about 10 million rubles of their own funds[XLIV].

Already in December 2018, Adapter became an official certified technology partner of two large platforms, Ozon and Yandex.Market. In mid-2019, a cooperation agreement was signed with AliExpress. At the time, the company worked with all 5 major marketplaces: AliExpress Russia, Ozon, Wildberries, SberMegaMarket, Yandex.Market.

The company helps newbies to connect to marketplaces, provides training, creates product cards and organizes their promotion. According to proprietary data, the result may be a several-fold increase in sales in 2–3 months[XLV].

In 5 years, Adapter connected about 4,478 sellers to marketplaces (in 2021, the total turnover was more than 3.5 billion rubles), 2,752 of them completed a special training program. The company created almost a million product cards. Its revenue in 2021 amounted to 152 million rubles (an increase of 25% compared to 2020). In 2022, it was awarded the Advertising Guru title by Ozon.

Table 2
NUMBER OF REGISTERED SELLER ACCOUNTS ON KEY RUSSIAN MARKETPLACES[24]

AliExpress Russia	Ozone	Wildberries	SberMegamarket	Yandex Market
102 500	120 000	840 000	8 000	48 000

[24] Source: Data insight. The number of active sellers can be several times less. For example, in July 2022, Wildberries announced 840 thousand registered accounts, however, according to Data Insight, the number of sellers who sold at least one product in the last 30 days was about 200,000.

CASE

Plaid: integrator intermediary between ecosystems.

Almost every ecosystem seeks to lock-in both consumers and suppliers to strengthen its competitive position. In some cases, a mono-platform strategy can be very attractive to participants, but they often seek to diversify their operations and work with several platforms at the same time. However, logistical and technological obstacles may emerge, while the solution to the problem may eat up a significant part of the profit. Integrators come to the rescue, providing services that facilitate the connection to ecosystems. They also act as mediators between several ecosystems.

Financial industry with its complicated market, payment systems, issuing banks, acquiring banks, retail outlets, etc., which share data online and impose special reliability requirements, offers interesting examples. At the same time, the demand for bank transfers is constantly growing due to the rapid development of cashless economy and the constant increase in the number of companies experimenting with business models in financial markets (the so-called fintech). The emerging niche is occupied by technology companies such as Plaid, Tink, or Truelayer, which create a separate layer in the ecosystem, enabling other products to run financial services with their help.

Plaid (founded in 2012, USA) solves the infrastructural problems of the financial industry by allowing a third party (e. g., a fintech company) to authorize users, initiate transactions, pass compliance procedures, aggregate balance data in different banks, conduct credit scoring, issue loans, or manage investments. Plaid focuses on security and a well-planned user experience when managing financial data. Plaid's success was due to the solution to a specific problem critical for start-ups — opening an account and onboarding a user. It also created a better experience for developers as compared to the solutions that were available on the market. Previously used common validation methods, such as debiting and crediting a small amount of money, could take days, causing user exodus. Plaid's solution increased the conversion to linking by 3.2 times. Subsequently, the service moved from a one-sided platform model, where banks were inactive participants providing their APIs, to a two-sided platform model, where banks refine and unify their APIs in order to facilitate access for fintech applications, as investments in API refinement pay off with an increase in the number of platform participants. Seven thousand financial services were created on the basis of Plaid, including well-known Venmo, Acorns and Expensify start-ups.

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