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How To Understand Digital Transformation III

Digital business ecosystems: opportunities and challenges for leaders

by SKOLKOVO x MTS

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Bulat Nureev

Director, MBA and Master Programs Moscow School of Management SKOLKOVO

Hello, friends!

A strong piece of research devoted to the nature of one of the most prominent phenomena of modern business is important by definition. Indeed, though we can watch the fast forming and expansion of business ecosystems and participate in it both as consumers and as managers, it is essential to have a critical look on them, especially if we plan to make profit out of the phenomenon.

For me the present research report is especially important as it was created by a team that included the alumni of the first stream of MOOVE program by Moscow School of Management SKOLKOVO – Maxim Belousko, Naala Oleynikova, Polina Sintyurikhina and Alina Fateeva.

When we envisioned the MOOVE program together with our partner MTS we targeted the Generation Z who are at the entry level of their business carrier. A popular theory of generations claims that the economic cycles make unique impact on the values and behavior of the people during the formative years of their life. Thus, the Millennial Generation is often called "network generation", as it was formed on the background of impetuous development of the Internet that defined the lifestyle of the representatives of that generation across the globe.

The Generation Z, which has already become the biggest consumer segment and is bound to become the biggest participant of the labor market, can be called the generation of the ecosystems, as the emerging phenomenon is forming its economic paradigm. The digital ecosystems strive to research the Generation Z, to offer targeted services based on its consumption scenarios with the help of big data and artificial intelligence.

The project on digital business ecosystems launched by the Moscow School of Management, which I am happy to present to your attention, has created a reverse situation: the representative of Generation Z were researching the digital ecosystems. This generational lens can be sensed both in the selection of cases and in the evaluation of effectiveness of different business strategies.

I am sure that the report will be useful not only to the business managers who seek the ways to adapt their operations to the new era of digital ecosystems, but also to the students of the MBA and MOOVE programs, who develop new ecosystem-native start-up projects.

Alexander Ivlev

Managing Partner for CIS countries, EY

Dear Friends!

It would not be much of an overstatement if I say that we live in the era of ecosystems. More and more companies explore the potential of ecosystem business models experimenting with different scenarios of applying them to gain stronger position on the market. It is important that the approach is followed by the companies from very diverse industries — from oil and gas to retail and consumer goods.

In almost thirty years of its existence the concept of a business ecosystem has evolved from an interesting theoretical metaphor into an expanded strategic route which is gaining popularity among the leading companies of the world. This route promises new opportunities, yet it requires a radical reinvention of organizational structures, business processes, value chains and the instruments of client acquisition and retention. Obviously, transforming mature and successful companies brings in considerable risks. In which cases taking them is justified? How one can minimize them? Which specific model of an ecosystem should be pursued? These questions are of paramount importance to the business practitioners of today.

We are glad to present the research report by the Institute for Emerging Markets Studies SKOLKOVO which is dedicated to the strategies of the leaders of the digital business ecosystems. In our opinion the authors are suggesting a convincing conceptual framework for the analysis of the nature of the ecosystem business models that sheds light on the similarities and differences of the strategies of major players in a number of industries.

We are also glad to be a long-term partner of the Moscow School of Management SKOLKOVO. It is strategically important for our company to support the relevant research and the development of thinking that leads to the deeper understanding of business and management processes.

Executive Summary

More and more entrepreneurs and managers around the world agree with the idea that to remain competitive in the modern world, it is necessary to reinvent your business, going beyond its traditional definitions. «Business ecosystem» is a short phrase used to denote this concept, usually accompanied by the word «digital». What is the essence of the ecosystem approach to business strategy? How does it differ from the traditional strategic paradigms? What benefits does it bring and what difficulties are associated with its implementation? And most importantly — what is the necessary business transformation program that allows for effective work within the ecosystem? Within this report, we set ourselves the goal of analyzing a broad scope of academic and applied research and building a structured, versatile understanding of the phenomenon of business ecosystems, as well as formulating practical ideas for applying this understanding in business.

Appearing in literature in the early 1990s, the notion of business ecosystem was at first more of a theoretical metaphor than a guide to action. Its transformation into a full-fledged, stand-alone business strategy coincided with the rapid rise of digital platforms — such as Amazon, Alibaba and Uber — which offered a new vision of the models for the joint creation of market value by independent players. This report examines two types of ecosystems — solution ecosystems and transaction ecosystems (conditionally correlated with the approaches of incumbents and new, digitally native enterprises) — and analyzes the trajectories of their development and the necessary technological enablers that allow for new strategic opportunities.

The business ecosystem concept is rapidly developing before us. Therefore, it is likely that many of its features and limitations have not yet been tested in practice. In order to properly reflect this emergence, it is necessary to describe it in depth from the point of view of theory and, at the same time, in a way that would be consistent with the observed market reality. Within this study, the proposed conceptual framework is tested on a number of successful and unsuccessful cases of creating ecosystems of both types. They are taken from various industries and countries; the framework also takes into account opinions of Russian business practitioners.

The proposed report covers the strategies of ecosystem leaders. In the future, it will be supplemented with studies of the strategies of their participants and an analysis of the necessary regulatory measures. As a result, the planned series should give a fairly complete overview of one of the key strategic business phenomena of the 2020s.

«We cannot carry on being just a bank, we cannot stay within the old paradigm. The society will be buying the cheapest and highest quality service. It will be possible to provide it in the new world only when you have a huge amount of data, knowledge about the client and the ability to provide any universal service that the client needs.»

Herman Gref, Sberbank[1]

[1] https://www.rbc.ru/finances/14/12/2017/5a3298649a79479b6882a13a

The age of ecosystems?

More and more business leaders around the world are ready to agree with the statement made by the head of Sberbank, Herman Gref, presented in the epigraph. The idea that in order to remain competitive it is necessary to reinvent your business, going beyond its traditional definitions, is becoming mainstream in business circles. «Business ecosystem» is a short phrase used to denote this concept, usually accompanied by the word «digital». What is the essence of the ecosystem approach to business strategy? How does it differ from the traditional strategic paradigms? What benefits does it bring and what difficulties are associated with its implementation? And most importantly — what is the necessary business transformation program that allows for effective work within the ecosystem? The number of works containing answers to these questions is growing daily. For business managers this creates an additional challenge: definitions, frames, road maps and cases are layered on top of each other, drawing a confusing and somewhat contradictory picture. Within this report, we set ourselves the goal of analyzing a broad scope of academic and applied research and building a structured, versatile understanding of the phenomenon of business ecosystems and formulating practical ideas for applying this understanding in business.

The business ecosystem concept is rapidly developing before us — it is likely that many of its features and limitations have not yet been tested in practice. In most cases, we are far from a final verdict on whether a particular strategic approach will be successful or a failure. This creates considerable difficulties for researchers: many of the strategies proposed to the market may be among the bad examples, despite looking rather convincing. On the other hand, the speed of development of ecosystem processes does not allow us to take the position of a patient observer who waits for several years in order to study only cases with a known result. The only possible way out is a description that heavily relies on theory and, at the same time, is consistent with the observed market reality. In our research, this is the approach we applied: assuming the general logic of ecosystem development, we tested our concept on cases from different industries and geographical regions.

This report focuses on the problems of ecosystem leaders — companies that create and develop ecosystems to solve their long-term strategic tasks. Our future plans include studying the prospects of participants — companies choosing for one reason or another the path of joining existing ecosystems — and state regulators, who are increasingly facing serious challenges everywhere in the world due to the desire of ecosystems to take a dominant position in many markets at once. We hope that together the three studies, united by a common conceptual framework, will allow us to fully describe the problems of digital business ecosystems in a multidimensional way.

Without a doubt, we do not know for sure what the future will bring. We can only assume that certain actions will probably lead to market success, while others will create serious difficulties. Based on our typology, in some cases we have taken a critical position in relation to large and well-known market players, believing that their current actions are not the most effective possible. Only the future can show whether we were right. However, the value of any research is ultimately determined not by how logically it describes the past, but by how successfully it predicts development, giving business practitioners management tools in a rapidly changing environment characterized by a high degree of uncertainty. Perhaps one thing can be said with a high degree of confidence: working with ecosystems — creating them or participating in them — will become one of the main strategic tasks of businesses in the coming decades.

A little history

"A capitalist economy can best be comprehended as a living ecosystem... Information is the essence of both [biological and economic] systems. In the biologic environment, genetic information, recorded in the DNA molecule, is the basis of all life. In the economic environment, technological information... is the ultimate source of all economic life," Michael Rothschild declared in 1990.[2] The view based on analogies from living nature, however, offered only a new way of understanding the already existing economic reality, and not the construction of new business models.

Three years later, James Moore clarified the notion of ecosystem in business, applying it to the company level: "... I suggest that a company be viewed not as a member of a single industry but as part of a business ecosystem that crosses a variety of industries. In a business ecosystem, companies **coevolve** capabilities around a new innovation: they work cooperatively and competitively to support new products, satisfy customer needs, and eventually incorporate the next round of innovations."[3] In his article, Moore relied on examples from the rapidly developing personal computer industry (Apple, IBM, Tandy), but also referred to such companies as Ford, Merck, Walmart and Kmart as ecosystem leaders. The key characteristic was the participation of financially independent companies, for example, software manufacturers or suppliers of automotive components. Moore hinted that the development of the ecosystem approach will require managers to form a new vision of the nature of management and what this task implies, but did not specify what exactly this new vision would consist in.

Moore developed his ideas in the book that predicted "the death of competition in the age of business ecosystems".[4] The creation of a new ecosystem was described in great detail, the key to success was an innovation that could quickly attract allies and partners joining the network or stimulate their emergence. Obviously, the innovative idea was not just supposed to offer a new way of generating revenue — it was supposed to change life. Actually, with all the developments on the topic in the next 25 years, the main characteristics of an ecosystem given by Moore remain important: a big bold idea, the association of independent participants to create consumer value, their joint development and learning to work with each other, making the ecosystem more cohesive and competitive over time.

Moore correctly noted that the ecosystem is especially effective for companies associated with the emerging digital economy. However, the Internet business itself, which was rapidly emerging in the mid-1990s, did not attract his attention. Even in his later work[5], he focused on researching the ecosystem of Arm Holdings, the processor manufacturer for mobile devices. For most theorists and practitioners, the concept of a business ecosystem has been steadily linked in recent years primarily with the digital economy and business models based on Internet platforms: Google, Facebook, Apple (far removed from the predominantly hardcore company of the early 1990s), Amazon, Alibaba, etc. These are what companies from traditional sectors of the economy, for example, banking or telecom, have in mind now when they announce the transition to an ecosystem strategy.

An important milestone in the conceptualization of digital ecosystems was the memorandum written in 2002 by Francesco Nachira within the framework of the European Union project on the development of the use of information technologies by small and medium-sized businesses. There, 6 stages of the development of the

[2] Michael Rothschild. Bionomics: Economy As Ecosystem. Henry Holt. 1992 (the first edition of the book was published in 1990 with a slightly different name: Bionomics. The Inevitability of Capitalism)

[3] Moore, J. (1993) Predators and Prey: A New Ecology of Competition. Harvard Business Review. Moore did not refer to Rothschild in his article: from the text it can be assumed that he arrived at the idea of ecosystems independently, based on the work of anthropologist Gregory Bateson and biologist Stephen Jay Gould

[4] Moore, J. (1996) Death of Competition: Leadership and Strategy in the Age of Business Ecosystems, 1996, Harpers Business

[5] Moore, J. (2013). Shared Purpose: A Thousand Business Ecosystems, a Connected Community, and the Future. Createspace

FIG. 1. THE EVOLUTION OF THE USE OF ICT IN BUSINESS (NACHIRA, 2002)

use of digital technologies in business were proposed, starting with the simple introduction of e-mail (see Fig. 1), and digital ecosystems are considered the highest level, having the following characteristics[6]:

- dynamic aggregation of other [market players];
- training and sharing knowledge;
- natural selection and evolution of services and solutions.

Still in 2002, in the book "Platform Leadership: How Intel, Microsoft, and Cisco Drive Industry Innovation" its authors Annabelle Gower and Michael Cusumano described ecosystem effects in business using the concept of business platforms.[7] In the modern interpretation, these two concepts are usually closely related.[8] Viktor Orlovsky and Vladimir Korovkin in their book[9] illustrate this connection using the example of a coral reef — one of the most vivid and diverse biological ecosystems that unites thousands of species of living organisms. The ecosystem has as its center a pile of dead and fossilized corals — a reef — which slows down the circulation of water, making it warm and slow. The water becomes rich in plankton, which serves as food for many species of fish. The abundance of small fish attracts predators, such as barracudas or moray eels. When predators die, their corpses are eaten by crabs... And so it goes on. Each biological species lives by itself, pursuing the goal of its own survival and reproduction, but at the same time it helps the existence of all other inhabitants of the reef. In this metaphor, the reef that allows for the emergence of an ecosystem is equivalent to a business platform.

The most prominent platforms in modern business are basically digital systems — a more or less complex set of computer artifacts (program code, data and necessary infrastructure): Google, iTunes, Facebook, AirBnB, etc. These systems perform four important functions that determine their relevence for heterogeneous independent participants: they allow for finding and making profitable deals, providing the necessary tools and services for this; they establish uniform rules, and, finally, they are engaged in a constant expansion, increasing the number of participants, which enhances network effects (see Figure 2). It is not difficult to see that platforms with such functions existed in the pre-digital era and continue to exist now in the offline world. Markets of medieval cities, seaports, railways with train stations, and finally the largest shopping streets in the world, like Fifth Avenue in New York — all of these are platforms that give rise to diverse ecosystems.

However, creating digital platforms is much easier, cheaper and faster than creating physical ones. They also have no limitations in scaling and are often indifferent to geography, bringing together participants from all over the world.[10] In the digital world, the cost of transactions is much lower and there are no information asymmetries: approximately the same amount of information is available to all participants of the platform. These features have determined the dominant position of digital platforms in modern business. Contrary to the favorable prediction by J. Moore, they also make competition extraordinarily fierce: in the pre-digital business, the small number of platforms resulted in few cases of direct competition for resources and participants among ecosystems based on these platforms.

[6] At the same time, Nachira creatively reworked the concept of the Digital Transformation Ladder, first proposed by Cisco, replacing the 5th level (networked organizations instead of transformed organizations) and adding the 6th level of ecosystems. Nachira, F. (2002). Towards a Network of Digital Business Ecosystems Fostering the Local Development Bruxelles: European Commission; Martin, L., & Matlay, H. (2001). "Blanket" approaches to promoting ICT in small firms: some lessons from the DTI ladder adoption model in the UK . Internet Research, 11(5), 399—410

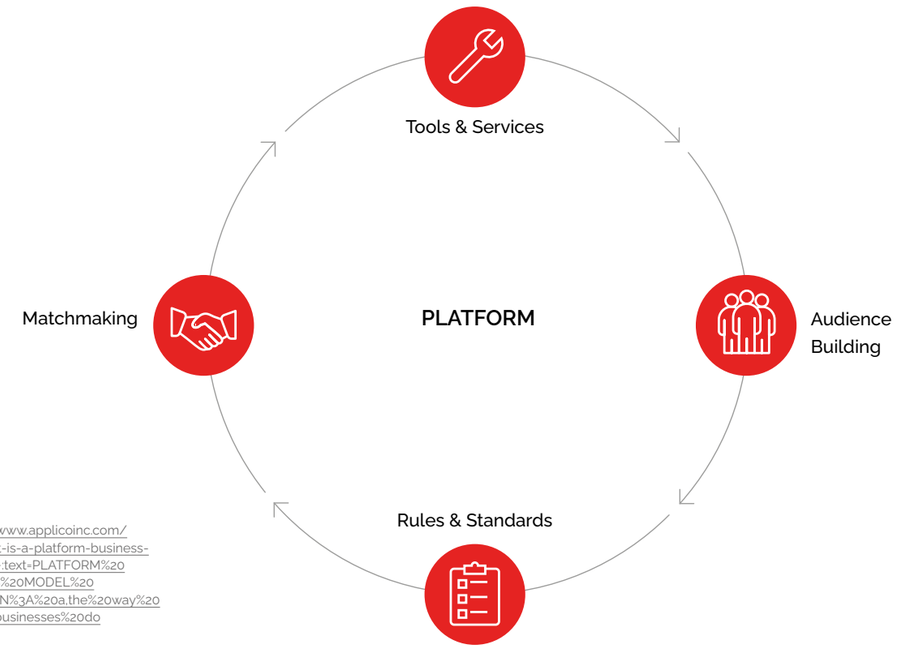
[7] Gower, A., & Cusumano, M. (2002). Platform Leadership. How Intel, Microsoft, and Cisco Drive Industry Innovation. Harvard Business Press

[8] Although there are also authors who claim that an ecosystem is quite possible without a platform — however, this view is based on a very broad interpretation of the concept of a business ecosystem https://www.linkedin.com/pulse/how-define-ecosystem-why-does-need-platform-yiannos-theodoridis/

[9] Orlovsky, V., Korovkin, V. (2020). Ot nosoroga k edinorogu. Kak provesti kompaniyu cherez transformaciyu v cifrovuyu epohu i izbezhat' smertel'nyh lovushek. [From Rhinos to Unicorns. How to lead a company through transformation in the digital age and avoid deadly traps.] (in Russian) Moscow: Bombora

[10] Although, as Malecki and Moriset rightly noted, the Internet, for all its global nature, does not cancel the geographical aspect, it only modifies it. Malecki, E. J., & Moriset, B. (2008). The Digital Economy. Business organization, production process and regional developments. London and New York: Routhledge

FIG. 2. FUNCTIONS OF BUSINESS PLATFORMS[11]



[11] https://www.applicoinc.com/blog/what-is-a-platform-business-model/#:~:text=PLATFORM%20BUSINESS%20MODEL%20DEFINITION%3A%20a,the%20way%20linear%20businesses%20do

So, what shall we imply when speaking about digital business ecosystems in the framework of this report? Ecosystem is a strategy in which independent business units, operating at their own risk, create joint value for consumers using common rules, tools and knowledge. There are several fundamental points in our definition:

1. We are talking about ecosystems as a separate business strategy. From a certain angle, almost any business activity will somehow correspond to the ecosystem metaphor — in fact, this was the original idea of M. Rothschild. This approach can create an interesting space for theoretical interpretations, but it is not very fruitful for practicing businessmen — like Molière's character, they discover that they have been speaking in prose all their lives. Our definition implies a conscious choice of the path to jointly create market value with other market participants.

2. Ecosystem participants are independent to a significant degree. This requirement does not exclude the so-called "closed" ecosystems, in which the leader has a certain degree of financial participation in ecosystem entities, provided that this participation does not imply daily operational control. In itself, the division of a business into a set of legal entities does not yet make it an ecosystem. Only when participants act on the market at their own risk, there is a possibility of joint evolution of the market solutions offered by them.

3. The presence of a common space of rules, tools and knowledge realized by the participants is a requirement arising from the condition of seeing an ecosystem as a separate strategy.

This definition allows us to take a step in turning the ecosystem from an interesting metaphor, for which a certain vagueness and ambiguity is quite acceptable, into a working concept leading to a set of strategic consequences and giving guidance to the actions of entrepreneurs and managers looking for new ways to develop their business.

Types of business ecosystems

Around us we see an ever-growing variety of configurations of business ecosystems, which gives all the more opportunities for participants. However, how can it be navigated if one is looking for approaches to an effective ecosystem strategy of their own? How do the existing examples correlate? Which benchmarks should be followed? Which ones may turn out to be wrong to follow? To answer these questions, it is necessary to keep in mind two dimensions that determine the typology of modern ecosystems in business: the structure of value creation and the degree of the system's maturity.

Boston Consulting Group noted in its research[12] that ecosystems can be divided into two large categories, which the company defined as solution ecosystems and transaction ecosystems. The key difference is determined by the leading company of the ecosystem.

The transaction model is based on digital platforms: the leader only creates a tool that organizes the ecosystem and does not carry out any other significant activity. In such an ecosystem, a large number of more or less identical transactions take place, its value is in a huge number of potential suppliers (offering products or services of the same type) and buyers who are fairly homogeneous in their demand. Such ecosystems are often called marketplaces — in fact, this is the modern reading of the classic market square, perhaps the first business platform known to mankind.

Solution ecosystems may not be as large in terms of the number of participants, but they are much more complex in terms of the value they create for consumers. The leading company of such an ecosystem produces products or services that have independent value; the joining of independent suppliers and related parties allows it to strengthen its customer offer. An ordinary car dealership can serve as a basic example here: you can buy a car, a variety of accessories, necessary insurance products and obtain a bank loan for the purchase. Thus, several suppliers from completely different industries (mechanical engineering, radio electronics, finance) are united in a single value proposition for the client. It is obvious that ecosystems of this kind also appeared as a result of the smooth evolutionary development of business: their ancient prototypes were the first seaports that provided opportunities to buy or sell goods in one place, hire a qualified team, repair a ship, relax after a tedious and dangerous journey, obtain the necessary information, etc. Since such ecosystems are much more compact in terms of the number of participants than transaction ones, they are often built through direct investment. In particular, many corporate venture funds operate in the logic of solution ecosystems.

In the modern world, solution ecosystems are more often created by companies from traditional industries seeking to diversify their business and manage the risks of digital disruption posed by aggressive newcomers seeking to capture new markets with the help of transaction ecosystems. In many industries, we see competition both within each model and between the two models (the hospitality industry is a clear example of this, as discussed below). At the same time, developed large-scale ecosystems of both types inevitably collide sooner or later in an increasing number of markets. The map of the development of key Russian ecosystems gives a clear picture of the constantly growing density of competition.

[12] Pidun, U., Reeves, M., & Schüssler, M. (2019a). Do you need a Business Ecosystem? Obtained from BCG. com: https://www.bcg.com/publications/2019/do-you-need-business-ecosystem

Ecosystems of different types have different development trajectories, using a different set of enabling tools (enablers) on their path from birth to maturity. Only at a later stage — market dominance — do they become almost indistinguishably similar. The concept of stages of ecosystem development was proposed by J. Moore in his first article. At that time, however, almost all the ecosystems he studied were far from complete maturity — the picture of two late stages in his model was rather the result of speculation than observation. The rapid development of digital network technologies has also caused changes. The realities of almost 30 years that have passed since Moore's article was written allow us to somewhat clarify the stages of ecosystem development:

- **Birth:** the ecosystem exists, rather, in potential, but there are already resources for its creation; this stage can last indefinitely; to move to the next one, a combination of market success and management's strategic vision is necessary, with daring to go beyond a simple and manageable business model and make significant investments in its expansion;

- **Expansion:** the motto at this stage is "speed over quality"; the ecosystem is unstoppably growing outwards, creating new services and acquiring new members, but for the customers, this process may not create any additional value; suppliers in the ecosystem feel in-demand, their participation is often directly or indirectly sponsored; the rapid expansion of the market or creating new markets ensures a win-win situation for all participants;

- **Integration:** the huge, loosely connected and rather chaotic ecosystem created at the previous stage begins the process of internal structuring; quality comes to the fore, customers begin to receive tangible additional benefits; at this stage, suppliers begin to feel a certain pressure — rules and tools are imposed on them that may not always be convenient and profitable;

- **Leadership:** the ecosystem takes a strong position in the market, seeking to capture the maximum share in client transactions and therefore displace all possible competitors, direct and indirect; suppliers find themselves in a subordinate position — their business is too integrated into the ecosystem to enable them to exit it, but in the framework of the ecosystem they have a very small space for an independent business strategy; ecosystem ceases to quickly develop the market and for some the guaranteed win-win is no longer an option.

How do the leading companies in the two types of ecosystems go through these stages? In the transaction ecosystem, **birth** occurs with a relatively simple platform that performs one service function, which is enabling sellers and buyers of certain goods and services to find each other.[14]

The idea, it seems, lies on the surface and the implementation is not technically challenging. How can such an approach be successful at alll? Probably, transaction ecosystems became a success in industries with traditionally less thick markets[15]: only a few transactions were available for implementation at any given time, and for this reason one of the parties (usually buyers) found themselves at a disadvantage. A classic example is the story of how Uber appeared — the idea was triggered by vain attempts to catch a taxi on a rainy day in New York. Theoretically, there were enough taxi drivers in any major city for the full functioning of the market, but for some reason they all turned out to be in a different place than a particular person needed them. In less thick markets, one of the parties finds itself in a position where it must either accept a bad deal or risk a long wait for the next opportunity. Another unpleasant attribute of such markets is information asymmetry, when one side has much more knowledge and can use this knowledge as a negotiating lever. Anyone who has dealt with a negligent car service provider, travel agency or law firm knows well what we are implying. The only way for a layman to take an effective position in markets with a large amount of specialized knowledge is to receive a lot of competing offers, but if the market thickness is low, this will prove to be difficult. Platform solutions that make the market much thicker by increasing the number of offers (or requests) "here and now" are warmly welcomed by the side that has traditionally been disadvantaged by the market.[16]

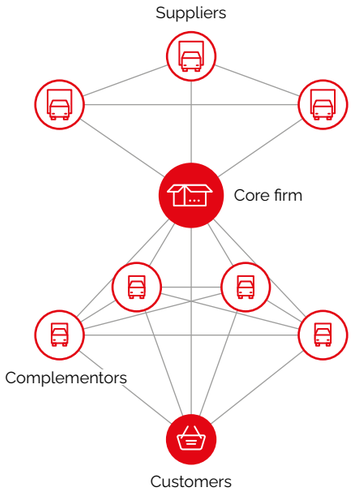
In the solution ecosystem, the birth stage is a smooth continuation of the company's traditional business. Any large business is to some extent a conglomerate of divisions that sell several product lines and a number of related services. This range can be very wide. The idea of investing in divisions that develop new market sectors is at least a century old. For example, in the 1910s, General Electric founded Radio Corporation of America, and in the 1920s, General Motors served as an investor in companies such as Hertz and Yellow Cab. However, until recently, this kind of diversification rarely went far enough. Economists and stock markets disapproved of the companies' expanding their range of activities: the concept of holding discount was in use, implying that a corporation uniting a number of loosely connected businesses usually cost less than these businesses individually[17]. Only in the last decade, companies from traditional sectors of the economy have begun to systematically look at a set of heterogeneous assets as a basis for large-scale business expansion that can give a new impetus to the development of established, slow-growing markets.

The main task at **the expansion stage** for transaction ecosystems is not only to ensure a rapid growth in the number of participants, but also to create the most diverse offer. Here Amazon can serve as example: it has consistently expanded its range from offering only books by adding music media, electronics, clothing, household goods and, finally, even food to the portfolio. Such a multi-dimensionality of the product ecosystem is an important factor in competing with other companies that follow a platform model, which in itself is quite easy to copy. In a traditional economy, the operational complexity of such an expansion usually began to grow at a faster pace in relation to revenue, eating up profit. Digital technologies have simplified and reduced the cost of operational management, with respect to many expenses — marketing, logistics, IT infrastructure — with an increase in the scale of operations. This resulted in significant savings that increased the financial efficiency of the company.

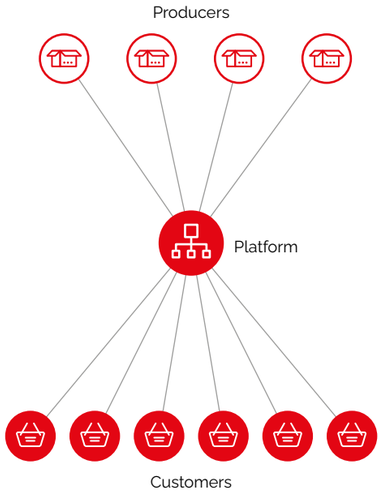
The tasks of the solution ecosystem at the stage of expansion are somewhat opposite: it is necessary to quickly turn several separate non-core businesses into a large-scale set of diverse offers that are attractive to all new groups of consumers. Attracting partners or making investment decisions may seem hasty or inconsistent from the outside. Sometimes there is a situation of unexpected internal competition; at some point the interests of independent partners and businesses which the ecosystem leader invests in may enter into a serious conflict. Such excesses are almost inevitable — this is the price to pay for the opportunity to quickly grow muscle, which is necessary, among other things, to resist the rapidly developing digital platform newcomers who are aggressively trying to capture shares of traditional markets.

FIG. 3. TWO TYPES OF ECOSYSTEMS[13]

Solution Ecosystem



Transaction Ecosystem



[13] Pidun, U., Reeves, M., & Schüssler, M. (2019a). Do you need a Business Ecosystem? Received from BCG.com: https://www.bcg.com/publications/2019/do-you-need-business-ecosystem

[14] With social media platforms being based on content, it can be considered a commodity in this context

[15] The notion of thickness as one of the key characteristics of an effective market was proposed by Alvin E. Roth (Roth, A. The Art of Designing Markets. Harvard Business Review, October 2007)

[16] Competition theory tends to consider buyers as the weaker side of the market, suffering from information asymmetry. However, the opposite situation is also widespread in B2B markets: many small sellers depend on a few large buyers. The situation is typical, for example, for agriculture, where for decades marketers in large companies have been honing tactics that do not allow small farmers to coordinate prices and force them to make a tough choice: to sell at an underselling price or risk not being able to sell at all (see the life example in Ogilvy, D. Confessions of an Advertising Man, 1963). In such markets, platforms like the Indian e-Choupal take the side of sellers, giving them a previously inaccessible amount of information about the market and possible transactions

[17] The situation was radically different in emerging markets like India or Turkey, where very widely diversified holdings, such as Tata or Zorlu, successfully operated. Perhaps there were not enough financial resources in these markets to create independent companies, and businessmen who had free cash flow would have an advantage in any new enterprise

At **the integration stage**, the main task of the ecosystem is to lock in the participants: both customers and suppliers. By this point, ecosystems are already so wide that they inevitably compete almost along the entire perimeter of the business with many alternative — ecosystem or independent — solutions. How to ensure a consistently high share of a particular ecosystem in the transactions of participants?

For transaction leaders, this stage presents a serious strategic challenge: they do not have so many tools for creating additional value. An important success factor is subtle adjustments of pricing — dynamic pricing that takes into account fluctuations in supply and demand and gives participants a sense of the optimal deal for them (see below for an example of various pricing strategies of the leading taxi platforms in Moscow). Another area of development is the use of data on completed transactions to form recommendations for future purchases, especially in categories with impulse demand.

In solution ecosystems — despite the expansion of solutions that are still more compact in terms of the number of participants, but more diverse in terms of the type of customer value provided — the key integration strategy is usually to create a set of unified offers for different customer segments. For example, telecom companies that have been actively developing Internet access services in the last decade have begun to form content packages sponsored by subscription fees (or, sometimes, on the contrary, sponsoring the cost of connecting to the network for customers).

Finally, at the final stage of development, the trajectories of the two types of ecosystems are similar — at this point, there is usually a kind of hybrid type, where the business model of the leader includes both a platform for transactions and the provision of products and/or services with independent value added. The period of rapid growth of the ecosystem is coming to an end and the key task is to maximize the monetization of the participant base. The management of the client lifetime value becomes an instrument within the ecosystem with a wide range of marketing and technical tools. The ecosystem's leader seeks to turn itself into a kind of super-app, a single point of access for consumers to all market segments represented in it. As it was said, at this stage, some participants may begin to feel like they are at a disadvantage, which may apply to both sellers and buyers. For sellers' being at a disadvantage, the recent statement by Pavel Durov can serve as example: he called iPhone users "digital slaves".[18] The second case can be illustrated by Epic Games' lawsuit against Apple, challenging the rules for placing applications in AppStore.[19]

[18] https://meduza.io/news/2021/05/20/pavel-durov-nazval-ayfony-srednevekovymi-ustroystvami-a-ih-polzovateley-tsifrovymi-rabami-apple

[19] https://en.wikipedia.org/wiki/Epic_Games_v._Apple

Creating an ecosystem: three key questions

What practical take-aways does the proposed concept of ecosystem types and stages of their development bring? How should companies that consider the possibility of creating a digital business ecosystem as the next step in their strategic development act? First of all, they need to provide a detailed and reasonable answer to three questions.

What type of ecosystem can be successfully created by this company in a particular market?

Most of the discussions about the ecosystem business model are based on the experience of transaction platforms, so very often companies take the idea of a marketplace almost for granted. However, transaction ecosystems are not equally effective in all markets, and not every company can succeed using this model. The largest players of traditional markets are experiencing particular difficulties in launching marketplaces — in addition to the studied case of Accord, we can recall the example of Walmart, the largest physical retailer in the world, chronically losing the fight for the e-commerce market.[20]

An attempt to combine the two models — to create a platform that is largely filled with its own products and services — has two pitfalls. First, as it was shown, at a certain stage, a conflict of interests between the platform and the supplier develops. If a company acts as a supplier to its own platform, it is highly likely that it will sacrifice the development of the ecosystem, but will zealously protect the profitability of its sales. However, the world of platform competition makes a constant aggressive pricing policy an imperative — without it, the chances of winning are very small. Secondly, independent market participants have a natural distrust towards projects of their major competitors, fearing, often not unreasonably, that the creation of an ecosystem is aimed at further consolidating the positions of its leader. They are much more comfortable participating in ecosystems created from scratch by new players in the industry.

Recommendation: Traditional market players developing an ecosystem approach should start with exploring the possibility of creating a solution ecosystem that uses the existing asset and sustainable partnership base. At the first stage, management should focus not on technologies (digital platforms), but on the possibility of creating a complex, multidimensional client offer, which opens up new opportunities for growth in the company.

[20] his example is presented in sufficient detail in the book by Orlovsky, V., Korovkin, V. (2020). Ot nosoroga k edinorogu. Kak provesti kompaniyu cherez transformaciyu v cifrovuyu epohu i izbezhat' smertel'nyh lovushek. [From Rhinos to Unicorns. How to lead a company through transformation in the digital age and avoid deadly traps.] (in Russian) Moscow: Bombora

What will the customer value of the ecosystem be?

For transaction ecosystems, the answer usually looks simple: the lowest possible prices and a large volume of supply. The reduction of transaction risks can present significant value, both for the buyer and for the seller. For example, in some countries where traditional taxis can be dangerous for the passenger (or, on the contrary, a respectable taxi driver faces a risk of being robbed), Uber, which records all trips and has personal data of both parties to the transaction, is the preferred option precisely because of the guaranteed safety. The information provided by the platform can also be an important component of customer value (see the Discogs case in this report).

In solution ecosystems, creating value for consumers is associated with finding an answer to the question "What is the additional benefit from receiving heterogeneous products and services from related suppliers?" It is not enough just to combine high-quality offers in adjacent market segments, since in the modern digital world, the consumer will always be able to find no less effective options offered by independent suppliers, even if this incurs some costs in the process. The role of the leader in a solution ecosystem is to make the right "bets" by forming complex products and services for key market segments that build an ideal customer experience.

At the same time, in both cases, it is important to remember that consumer value exists only "in the moment", here and now. The competitive environment in the world of digital ecosystems is constantly changing, all participants simultaneously copy each other's successful steps and develop their new products and services, and it is necessary to constantly achieve success in this race.

Recommendation: one of the common mistakes, even for very large and well-known leaders of digital ecosystems, is the focus on bringing more and more new products to the market while losing quality in previously created services (see the Go-Jek case). In the ecosystem world, customers are extremely sensitive to negative experiences, functional deficiencies and business process disruptions. For successful competition in the ecosystem world, constant attention to operational activities and non-stop monitoring of its effectiveness from the point of view of customers are no less important than the flow of innovations.

Do I have the resources for an ecosystem strategy?

An astonishingly large number of companies catastrophically underestimate the difficulties of creating and developing a modern digital business ecosystem in the face of ever-increasing market competition. "Now our company is number 7-8-9 in the segment, but we will launch a digital platform and become leaders!" — this is how the ecosystem strategy is seen. The question of how an average market player will be able to win the fight for the dominance of his platform in such cases is not even raised.

In reality, an ecosystem strategy requires enormous resources, both financial and human, as well as unanimous consent from the company's stakeholders. The examples given in this report show that for many years the task of developing an ecosystem can look like a financial black hole that requires more and more new investments. Constant responses to competitive challenges and expansion into new market segments will absorb not only the operating profit created by the ecosystem, but also require infusions of resources taken from traditional business areas. This situation will inevitably provide abundant food for criticism from both outside and inside the company and will unnerve shareholders and managers. At the same time, the final success is by no means guaranteed even with a constant flow of investments, but without them it is definitely impossible. The strategy of the leader of the digital business ecosystem is a huge and risky bet. Be sure that it is not made thoughtlessly.

Recommendation: the strategy of participation in other people's digital ecosystems is not "second-rate" in terms of possible business results. There are enough examples of companies in the world that have followed this path and achieved efficiency that Google or Amazon can envy (we will look at their strategies in detail in the next report). There are many reverse examples: in unsuccessful attempts to launch large-scale ecosystems, companies wasted financial resources and time, worsening rather than improving their competitive position as a result. Vanity is a bad adviser in building business strategies; be ambitious realists and seriously evaluate the arguments not only for, but also against.

Price competition of platforms[21]

The world of digital technologies has opened up new opportunities in pricing. On transaction platforms, transactions are carried out in real time, there is a large number of sellers and buyers, there is no information asymmetry (the parties have the same amount of information) and the price should theoretically be determined by the balance of supply and demand — i.e. be the same on all platforms. However, often this is not the case. The most obvious example of the complexity of platform pricing strategies is taxi services.

Services such as Yandex Go, Uber, City Mobil, etc. allow passengers and drivers to make a mutually beneficial transaction: the first can quickly, safely and fairly cheaply make a trip, the second do not need to travel around the city or stand waiting. However, their economic interests are opposite: the passenger wants the cheapest possible trip, the driver strives to sell his time for as much as possible. For both sides, time is a key factor that complicates the decision on price. A passenger usually wants to make a trip as soon as possible, and sometimes this is critically important for him. The driver does not want to stand idle without being paid. As a result, both sides may, under certain conditions, agree to a deal that is not the most profitable. The situation is further complicated by the fact that the demand for taxis in general has a wave-like nature: at some moments (rush hour) it may exceed the supply, then the buyer's market turns into the seller's market.

What does this mean for platforms that integrate taxi services? They determine the pricing policy in the system, making an offer to both a potential passenger and a potential driver at the same time. Both parties can accept the deal or reject it, finding a more profitable option on another platform. The higher the price, the more likely it is that the driver will accept the offer, but the passenger will not accept it — and vice versa.

The graphs below clearly show the difference in the approach to pricing of City Mobil on the one hand and Yandex Go and Uber on the other[22] (these services are in an alliance and their prices have a high degree of correlation). On one day (Saturday), the median price of City Mobil turned out to be noticeably higher than that of competitors, on the other two days (Sunday and Monday) it was notably lower. At the same time, even on "cheap" days, there were periods when City Mobil prices exceeded competitive offers. In general, the company is characterized by a broad spread of prices (indicators of variance and standard deviation) — that is, it reacts more sensitively to fluctuations in demand in the market. Theoretically, the result should be a shorter waiting time for the ordered car during peak hours.

On the one hand, such a strategy can be more profitable (since the platform's remuneration is proportional to the sum of the prices of all completed transactions). However, there may be a downside here: a systematic excess of the price over the competitive offer at times of peak demand can give consumers the impression that the company's services are, in principle, more expensive. Despite the fact that this impression as a whole will be objectively incorrect, some consumers may stop comparing prices for each transaction and fully switch to competitors' platforms. However, another share of consumers may start seeing this service as more stable and fast. Since the information about operating profitability remains nontransparent for both competing platforms, they cannot determine which of the strategies is more advantageous.

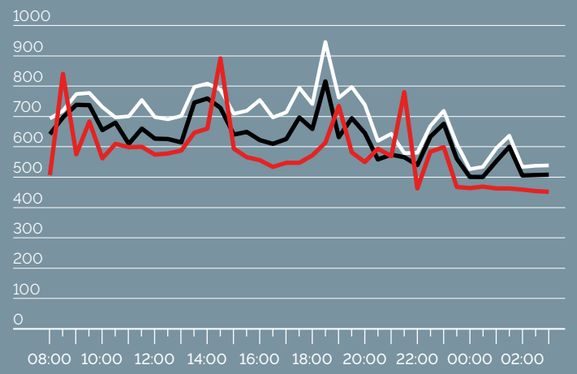
[21] The price study presented in the section was carried out by RANEPA student Gleb Markov, to whom the authors express their deep gratitude

[22] The prices for a trip in the same direction were compared with an interval of 15 minutes

DAILY PRICE DYNAMICS ON DIFFERENT TAXI PLATFORMS ON DIFFERENT DAYS OF THE WEEK

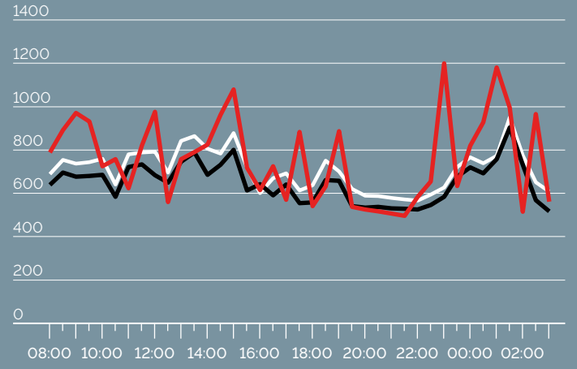
Yandex.Taxi Uber Citymobil

Saturday



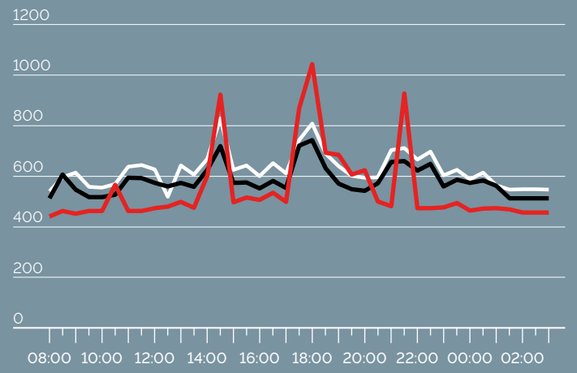
	Median price	Dispersion	Standard deviation
Yandex.Taxi	719	9018.38	78.98
Uber	658	8319.33	74.27
Citymobil	757	38,437.79	164.61

Sunday



	Median price	Dispersion	Standard deviation
Yandex.Taxi	614	4797.31	51.38
Uber	573	3433.57	43.37
Citymobil	480	22,168.64	105.55

Monday



	Median price	Dispersion	Standard deviation
Yandex.Taxi	707	8755.72	72.17
Uber	637	6062.07	60.12
Citymobil	579	10,315.23	69.25

What do platform ecosystems provide?

An interesting case of competition between transaction and solution ecosystems can be observed in the music industry. In this industry, the consequences of digital transformation were extremely dramatic: in constant prices, it went from a peak in sales estimated at $ 21 billion to less than $ 7 billion in 2015 (both figures are presented in 2017 dollars)[23]. Growing revenues from digital music did not cover the decline in the sales of physical media. A significant part of the value was captured by transaction platforms that deliver digital music directly to listeners, either in the form of downloadable tracks (iTunes) or in the form of streaming (Spotify).

Let us compare the business indicators of the largest representatives of the "old" and "new" music industry: Universal Music Group and Spotify. The former had a revenue of $ 7.7 billion in 2019 and a solid net profit of $ 1.7 billion. The company's key production asset was a huge library of rights to the works of the most popular artists of various genres — from Paul McCartney to Justin Bieber, from Stevie Wonder to Eminem. The group's capitalization in the spring of 2020 amounted to € 30 billion[24]. UMG is not a public company, the estimate was obtained when selling a stake to the consortium of investors led by Tencent. According to analysts, in the case of going public, the market capitalization will amount to about $ 50 billion.

Spotify had a capitalization of $ 46.8 billion at the end of May 2021[25] (at its peak, in February 2021, the company was worth almost $ 70 billion). At the same time, its financial results looked much less convincing: a turnover of about $ 6 billion with a net loss of $ 186 million. The company did not own an impressive library of "star" music: in most cases it acted only as an intermediary between the labels that owned the rights and the listeners. What determined the investors' faith in this business? Perhaps, the customer base of 300 million monthly users (growing by 30% per year) and the huge stream of data obtained on its basis, which allows to constantly improve the performance of recommendation services, i.e. sell more music. The direct ownership of client data is usually the key advantage of transaction ecosystems.

[23] https://www.visualcapitalist.com/music-industry-sales/

[24] UMG is not a public company, the estimate was obtained when selling a stake to the consortium of investors led by Tencent https://www.musicbusinessworldwide.com/confirmed-universal-to-float-60-of-its-company-on-euronext-amsterdam-stock-exchange-this-year/

[25] Bid opening 28.05.2021

Technological enablers of ecosystems

With all the seeming diversity of existing business ecosystems, we can say that the idea itself lies on the surface. The emergence of multiple offers competing directly (say, Uber and Lyft) or indirectly (taxi services and car-sharing services) is inevitable, and competition often develops on two fronts at once: it is competition for buyers and for sellers. The influence of ecosystem leaders on the cost price — and, consequently, on the final price — is limited due to the independence of suppliers (see the taxi case). The main battleground is network effects (i.e., the scale and variety of interactions in the system). The tool for managing them is an increasingly complex data analysis that allows you to form offers for buyers and sellers that will be more profitable at the moment than those of competing ecosystems.

Data analytics capabilities are determined by their quality in three dimensions: volume, velocity and versatility (3Vs). The technological struggle of ecosystems is aimed at obtaining a competitive advantage in each of the three, but the third factor plays a key role: the more multidimensional data about participants can be obtained and analyzed, the more opportunities there are to predict their behavior.

It is obvious that the first stage of technological development of ecosystems for both types is to provide the basic infrastructure for working with data, collecting, storing and analyzing it. At the same time, the data storage architectures of digital platforms differ from traditional corporate systems, as a rule, designed for a predictable amount of relational data[26]. Digital ecosystem repositories provide for rapid scaling and the availability of a variety of information that does not fit into a relational form — for example, using the Apache Hadoop architecture, which emerged from Google's analytical tasks. In addition to technical means, the human capital market is becoming an arena of fierce competition — the demand for high-quality data specialists in most markets exceeds the supply, the established experienced teams of analysts and technicians are one of the key strategic resources of ecosystems at the stages of integration and leadership.

[26] Relational data is those that can be presented in tabular form, primarily numeric and symbolic information. Non-relational data — videos, data streams from sensors, information about geographical routes, etc. — cannot be presented in the form of tables.

Single ID. The presence of many disparate products in the ecosystem raises a serious question of working effectively with the consumer and his data. It is necessary to spare consumers the problem of multiple authentication in the ecosystem products and to combine all their digital traces in the ecosystem in one centralized storage. The problem is solved by creating a single user ID that allows you to combine data about behavior and transactions in a single analytical perimeter. By developing a single ID mechanism, a kind of user passport, companies are trying to bring together different formats of identity recognition. The most advanced approach is identification based on biometric data (voice and video images) but it requires special attention to data security issues. Two-factor identification, which is easier to implement, is sufficient to solve the vast majority of business tasks, while it effectively protects against unauthorized actions.

Natural interfaces. At the dawn of the computer era, special knowledge was required in order to simply enter information into computers and obtain the results of its processing. Since then, user interfaces have made tremendous progress. However, a device controlled with the voice using natural language is an ideal yet to be achieved. In recent years, the spread of quite effective voice assistants has marked the beginning of the exploration of this realm of interfaces. Voice assistants — as well as devices that allow you to understand sign language — are not just a new milestone in simplifying the dialogue between man and machine. From the business point of view, they will open up radically new opportunities for understanding consumer behavior: reading emotions and acting based on them. Experiments have shown, for example, that when advertising matches the person's psychotype (introverted or extroverted), it increases its effectiveness manifold[27]. It is no accident that the Sber ecosystem (see the specific case) has taken the path of creating a family of voice assistants with different "characters" (as far as this word is applicable to a computer program).

[27] S. C. Matz, M. Kosinski, G. Nave, and D. J. Stillwell (2017) Psychological targeting as an effective approach to digital mass persuasion. https://www.pnas.org/content/114/48/12714

Superapps. The so-called superapp (usually in a mobile phone), which serves as a single point of access to all ecosystem services, is becoming an increasingly popular technological enabler of ecosystems in the world. For the company leading the ecosystem, it allows to reduce technological and marketing costs, try to lock in the client, encouraging them to stay with the ecosystem products and services and start managing the total revenue that he or she will bring throughout the client lifetime value (CLV). This approach is typical for the final stage of ecosystem development: leadership on the market. Superapps have become especially popular with Asian digital giants, such as WeChat or Go-Jek (see the specific case). Recently, Russian companies have been experimenting with them more and more actively. For example, Yandex has combined all services related to mobility — taxi, car-sharing, food and parcels delivery, public transport schedules — in the Yandex.Go app.

However, the situation may be ambiguous in the eyes of consumers. On the one hand, reducing the number of applications allows you to quickly find the one that is needed at the moment. On the other hand, the multiplying heterogeneous services in the application complicate the interface. Transactions that were previously made "in one click" may require more actions. Persistent promotion of a superapp may turn out to be a strategic mistake: instead of boosting the total revenue from a client, it may push the customer to use the specialized applications of competitors — simple, fast and intuitive. It is possible that the real heyday of superapps is yet to come. It might come in an era when voice assistants will become the dominant everyday interface between a person and a computer.

Speaking about the technological enablers of digital ecosystems, it is impossible not to touch on the topic of ethical and regulatory aspects of working with data. At the heart of all digital business models, without exception, lies the constant increase in the amount of data collected and analyzed in all three areas: volume, velocity and versatility. On the one hand, this process allows, at least in theory, to give consumers more value in products and services due to increasing customization and increased marketing efficiency (the corresponding reduction in costs is reflected in lower prices due to constant competitive pressure). On the other hand, the presence of numerous private actors that act outside the realm of serious public control, increasingly large opportunities for predicting people's behavior and managing it cannot but cause concern.

Cases of attempts to manipulate public opinion based on data analysis for political interests[28] — regardless of their real effectiveness — have made the protection of personal information collected one of the priority items on the public agenda in many countries of the world. In the upcoming third report on ecosystem regulation, we will take a closer look at the legislative aspects of working with big data in digital business models.

[28] The most high-profile public scandal was the case of Cambridge Analytics. It has been repeatedly described in the media, an interesting academic analysis is provided in Hu, M. (2020). Cambridge Analytica's black box. Big Data & Society. https://doi.org/10.1177/2053951720938091

However, in addition to regulatory restrictions, ecosystem leaders are also experiencing growing pressure from consumers who do not want to become objects of opaque manipulation, even in everyday business transactions. Here there is a dilemma (not obvious, however, to most ordinary users of the digital economy): creating new value requires an increasingly large-scale and effective use of analytical systems, but collecting the data necessary for them is a source of concern and irritation. It should be noted that the real quality of product customization in most cases is still low. Objectively, the value received by consumers rarely outweighs their potential losses (for example, from unauthorized access to personal data). Approaches and models of the era of mass marketing, based on a statistical description of the average representative of the target audience and not on working with each specific consumer separately, are still strong in business thinking. Companies that serve as leaders of digital ecosystems need to make a qualitative breakthrough in creating market value based on data. Otherwise, regulatory pressure, fully endorsed by society, can cut off many important ways of technological development for them.

Digital ecosystems: ubiquitous competition

Expansion, the necessary stage of development for both types of ecosystems, inevitably leads to a situation where large ecosystems that emerged in completely unrelated industries start competing in many markets. This map illustrates the development of the leading Russian transaction and solution ecosystems, which are increasingly competing with each other.

DIGITAL CONTENT	FINANCE	TELECOMMU-NICATIONS	E-COMMERCE	HEALTH
Almost completely free Mail.ru (starting position)	Sber (starting position)	MTS (starting position)		
Yandex search (starting position)				
VKontakte (Mail.ru – 2014)	VK Pay (Mail.ru 2018)	ICQ (Mail.ru 2010)	AliExpress Russia (Mail.ru 2019, 15%)	Vse Apteki (Mail.ru, 2018)
Odnoklassniki (Mail.ru – 2010)	MTS Bank (2012)	SberMobile (2019)	VK Market (mail.ru 2020)	SberHealth (2017)
MyGames (Mail.ru, 2017)	MTS Cashback (2019)		Youla (Mail.ru 2015)	Sber EAPTEKA, online pharmacy (2019)
MTS Media (Kion, 2019)	MTS Investment (2019)		MTS Live (2020)	
MTS Music (2019)	MTS Cashdesk (2020)		Sbermarket (2019)	
MTS Library (2019) WASD.tv (MTS, 2019)	NUUM (MTS, 2020)		DomClick (Sber 2016)	
Okko (Sber, 2019)	Yoomoney (2020)		Kassa Rambler (Sber 2019)	
Rambler Media (Sber 2019)			Yandex.Market (2000)	
Kinopoisk (Yandex 2013)				

HUMAN CAPITAL	TECHNOLOGIES	FOOD	MOBILITY	PHYSICAL RETAIL
Skillbox (Mail.ru 2019)	Cloud Mail.ru (2013)	Delivery Club (Mail.ru 2016, Сбер 2019)	City Mobil (Mail.ru 2018, Sber 2019)	RTC (MTS Retail)
GeekBrain (Mail.ru 2016)	#CloudMTS (MTS 2019)	Samokat (Sber 2019)	YouDrive (Mail.ru 2019, Sber 2019)	Azbuka Vkusa (Yandex, purchase offer 2021)
Rabota.ru (Sber 2019)	MTS Digital	Local Kitchen (Sber 2019)	Yandex.Taxi (2011, 2018 jointly with Uber)	
Youdo (MTS, 2018)	STC group of companies (Sber 2019)	Eda.Yandex (2018)	Yandex.Drive (2018)	
	Cognitive Pilot (Sber 2019)	Lavka.Yandex (2019)		
	SberCloud VisionLabs (Sber)			

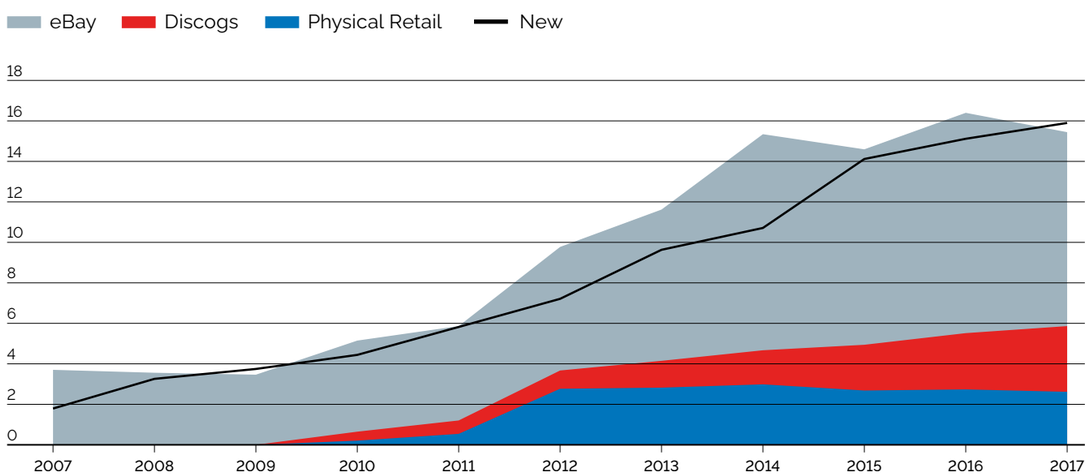
Can a small platform win in the world of giants?

Many people think that the mass collecting of physical music media (vinyls or CDs) is a phenomenon that was gone with the pre-digital era. However, music business professionals have been discussing the unexpected "vinyl renaissance" for several years. In 2019, more than 40 million vinyl records were sold worldwide; the market is divided approximately in half between new releases and resale of old discs[29]. This is an order of magnitude less than the 300 million copies sold in the mid-1980s (when the CD heyday began), but more than 10 times more than in 2007. The growth rate of revenue from vinyls is also breaking records: in 2020, it amounted to almost 30% despite the fact that the COVID-19 pandemic significantly complicated trade in physical stores.

Resale of old physical music media is a global market worth more than $ 500 million. The development of online sales played a huge role in its globalization; records from the USA, Europe and Japan — the main producers of music in the 20th century — became available to collectors all over the world. In turn, fans of exotic music from developed countries were able to purchase rare editions (for example, early reggae from Jamaica or Afrobeat from Nigeria, Zaire and Ethiopia). At the same time, the business remains very fragmented: thousands of small merchants and tens of thousands of collectors make individual transactions. Trust between the parties is a very important issue: music carriers are easily damaged, dishonest merchants may also try to pass off a cheaper edition for a more expensive one. Such a market is ideal for creating a digital platform that will allow you to make transactions, set rules, and provide the necessary information. Indeed, most of the market belongs to eBay and Amazon. However, Discogs, a small specialized player, recently managed to put competitive pressure on these giants (see the graph).

[29] https://www.forbes.com/sites/billrosenblatt/2018/09/18/vinyl-is-bigger-than-we-thought-much-bigger/#dc80ac01c9cd

SALES OF BOTH NEW VINYL RECORDS AND ONES SOLD ON THE SECONDARY MARKET IN 2007–2017 (MLN UNITS)



Information on sales on the Amazon platform is not disclosed

Discogs was launched in 2000 as an information service. It is a crowdsourcing catalog of discs that includes "master releases" of music albums and all well-known editions (the price depends greatly on the specific edition; as a rule, the first editions are most valued, but there are exceptions when collectors hunt for rare reissues). Initially, the service was monetized through a subscription, but in 2009, a platform for buying and selling was launched on its basis. In 2020, almost 12 million vinyl discs and almost 3.5 million CDs were sold on this platform (annual sales growth was 40.8% and 37.2%, respectively), the sales volume can be estimated at about $ 150 million[30]. In 2017, Discogs overtook eBay in sales of physical music media.

What allowed for the success of a small platform that came to the market much later than global giants? Answer: specialization and customization. Focusing on one industry allowed to create a very valuable information service — a catalog that lured buyers (and then sellers) from larger platforms. From a certain point of view, we can consider Discogs' investments in this service, available now for free, as a form of sponsoring buyers. They can be more confident that they are buying the release they sought for. In addition, the platform publishes data on the minimum, median and maximum sales price for each release, which allows customers to better navigate among the available offers. Thanks to its specialization and information service, Discogs allows for large-scale network effects for customers: the more purchases are made on the platform, the more accurate the price information and seller ratings are; the indirect effect is that participants continue to adjust the catalog, improving its quality. The effect for sellers is not as straightforward: the transparency of price information can push down the prices of many transactions. However, this effect is by far outweighed by the presence of an increasing number of potential buyers.

The example of Discogs shows that even in markets where global ecosystem giants are firmly established, there is space for a successful strategy of relatively small players: specific niches that allow creating additional services that have high value for buyers.

[30] https://blog.discogs.com/en/discogs-end-of-year-report-2020/

What do practitioners have to say?

How do managers responsible for the development of large Russian companies view business ecosystems? To find this out, we conducted a series of interviews with top managers of a number of leading players in the field of retail, telecom, banking and media, as well as with managers of large investment companies. Despite the expected diversity of opinions regarding the ecosystem phenomenon, several areas of unanimity have been identified.

In most cases, our respondents are transitioning from the birth stage to the expansion stage in the ecosystem's development. The managers are focused on solution ecosystems (many called them "closed ecosystems"), which is logical for companies coming from traditional business sectors. Accordingly, the main issue is the area of investment and the assessment of possible effects from various alternative options. For many, Sber's strategy served as a kind of benchmark (see the case about ecosystems in banking), but there is a widespread sentiment that it requires an exceptional amount of financial resources. In other companies, such large-scale investments in business expansion beyond the scope of key competencies will not be supported by stakeholders (see the Alfa Bank and Beeline case).

The trigger for transitioning to the stage of ecosystem expansion is usually a kind of "proactive reaction" — that is, the realization that the industry is threatened by large-scale changes caused by the actions of new digital players, and for a successful response to these challenges it is necessary to start playing on someone else's field. One of the respondents made a joke that "one does not create an ecosystem when everything is going well", and it seems that there is a significant amount of truth to it. However, many companies are still not internally sure that their strategy implies leadership in a large-scale ecosystem of their own; many pointed out that a different vocabulary is used in internal discussions: for them it is simply about strategic business expansion.

It turns out that in Russian business practice, the very concept of ecosystem triggers an ambiguous reaction: for many managers (note that we are talking about successful modern companies, leaders in their industries), the term sounds too hyped, perhaps suitable for attracting retail investors, but too vague for use by professionals in strategic decision-making. According to the manager of a large investment fund, "we look at the financial results, ignoring the media hype."

From the point of view of many Russian business practitioners, the ecosystem approach is just being formed as a way of strategic management of large companies from traditional industries. However, the concept is increasingly penetrating into the everyday business vocabulary; this is facilitated by the active actions and corporate communication of a number of Russian companies, primarily Sber. The views of many stakeholders are likely to change in the coming years, which will lead to a more active study of the ecosystem approach by Russian corporations. There will inevitably be successes and failures along this path. In order for the latter to happen less often and lead to less serious consequences, business professionals need to pay attention to the study of the developing theory of the business ecosystem phenomenon.

Instead of a conclusion: Roadmap for the development of ecosystems

	SOLUTION ECOSYSTEMS	TRANSACTION ECOSYSTEMS
BIRTH		
Company's actions	Understanding the portfolio of non-core businesses	Creating a platform with basic functionality
Technological enablers		Online platform
Opportunities	Obtaining additional financial income, economies of scale in some areas of expenses	Getting a share of the established market with low initial investments
Challenges	The costs of managing heterogeneous assets are growing faster than income	High competition, the need to create value for consumers compared to traditional market players
EXPANSION		
Company's actions	Aggressive venture capital investment	Formation of a multi-product offer
Technological enablers	Data exchange interfaces	Data exchange interfaces
Opportunities	Strengthening the market position by providing customers with more value compared to competitors	Consolidation of the market position, exponential growth of cash flows
Challenges	Further complication of management, internal competition within the ecosystem, the complexity of selecting effective solutions	Gaps between income and investment needs

	SOLUTION ECOSYSTEMS	TRANSACTION ECOSYSTEMS
INTEGRATION		
Company's actions	Creating integrated offers for different consumer segments	Combining data to create effective price offers
Technological enablers	Single ID	Analytical data storage
Opportunities	Unique position in the market due to the satisfaction of a variety of complex user requests	Lock-in of consumers, an increase in the share of total consumer spending
Challenges	The need to fight on an increasing number of market fronts, resource-intensive competition with the largest players in the digital market	Equal quality of digital and physical customer experience in all elements of the ecosystem
LEADERSHIP		
Company's actions	Managing the consolidated total value of the client	
Technological enablers	Superapp, natural interfaces for consumers	
Opportunities	Obtaining superprofits due to a dominant position in the consumer value chain	
Challenges	Consumers' natural distrust of monopolies, competition with numerous specialized companies that are more effective in their market niches, and growing regulatory pressure	

CASE

Does the transaction ecosystem have boundaries?

A peculiar feature of transaction ecosystems is the relative cheapness of expansion into new market segments. The digital platform underlying the operating model can be easily adapted to any goods and services, an increase in financial flows creates additional opportunities (without increasing risks), the effects of scale in marketing strengthen the brand, which attracts more and more new participants. Perhaps the only serious constraint is the company's ability to quickly build up management resources. A decacorn company (a unicorn with a valuation of more than $ 10 billion) from Indonesia, Go-Jek, is a vivid example of rapid business expansion.

The company was founded in 2010 and was a call center that allowed calling a motorcycle taxi (more popular in Indonesia than a car taxi due to chronic traffic jams) — a kind of hybrid "semi-digital" platform that is effective in a market with low penetration of smartphones and mobile Internet.

The company was building up the muscle for several years, and a radical acceleration of development occurred in 2014 after receiving the first major external financing. The company launched a mobile application and began a rapid expansion of the number of services provided. The key task was to increase the load for drivers, since in the Indonesian reality, motorcycle taxi drivers barely made ends meet. Go-Send courier services and Go-Food delivery service were offered to the market.

An additional impetus to the development was given by the entry into the Indonesian market of Grab, a competitor from Malaysia, which was younger (founded in 2012), but very ambitious. Go-Jek was faced with the urgent task of protecting the domestic market. By the end of 2015, Go-Jek became one of the most downloaded apps in Indonesia with 300 thousand orders daily[31]. Soon, GoMart grocery delivery services, Go-Clean cleaning service and Go-Massage, a service for booking spa treatments, were added.

In 2016, Go-Jek moved to the stage of ecosystem integration. A common data warehouse was put into operation and a unified loyalty program was launched. The key element of the ecosystem was the Go-Pay payment system, the fourth largest electronic wallet in Indonesia, second only to the services of two major banks and a leading telecom operator. On its basis, the Go-Pulsa lending program and the Go-Bills utility bill payment service were launched.

At some point, it seemed that there were simply no limits to the expansion of the Go-Jek ecosystem. However, in the winter of 2019-2020, the company was forced to close down a number of projects: GoLaundry (laundries), GoDaily, GoFix (repair services) and GoGlam (hairdressing and beauty salon services). Breaking out soon after this, the pandemic caused additional adjustments to the strategy: the GoClean (house cleaning) and GoMassage services were discontinued, as a result, the GoLife application, which combined many services to improve the quality of life, was completely withdrawn from the market. It turned out that there is a limit to the horizontal business development.

On May 17, 2021, Go-Jek announced a merger with the technology company Tokopedia, specializing in electronic commerce, as well as the establishment of the GoTo Group with a total turnover of $ 20 billion.

[31] Postprint_GoJek Effect.pdf (usyd.edu.au)

KEY STAGES OF GO-JEK DEVELOPMENT

	Stage	Enablers	Results
2010	**Call center for calling a motorcycle taxi**	High-quality technological service	The company started with 20 drivers[32]
2015	**Mobile application with 3 services: Go-Jek, Go-Send and Go-Food**	Simple and user-friendly interface for customers and drivers	10 million mobile app installations, 200 thousand drivers
2016	**A new mobile app with 12 services and GoPay finances**	Combining data in data warehouse, loyalty program	20 million downloads (7% of the Indonesian population), 50% of users use GoPay
2019	**Creating a superapp with 25+ services**	Development of the analytical system	+155 million installations, +500 thousand stores, +2 million drivers, +60 thousand service providers
2021	**Merger with Tokopedia**		

[32] https://www.gojek.io/about

CASE

Sber is the Russian benchmark of the solution ecosystem

During each interview with Russian top managers on the topic of ecosystems (see above), at some point Sber would be inevitably mentioned. Not all of our interlocutors were completely enthusiastic about this company's strategy, but even pessimists and critics recognized it as a kind of "number one ecosystem" in Russian business. This recognition is not accidental: the official rebranding, which consolidated the idea of "not a bank, but an ecosystem" in the fall of 2020, became a milestone in the long path of transformation that began in 2007 with H. Gref taking the position of chairman of the executive board of Sberbank.

The idea of transformation into an ecosystem began to take shape as a key direction of the bank's development in 2017, when the Development Strategy for the period 2018-2020 was approved. The rapid development of the financial technology sector in the world and the aggressive entry of leading digital players into the financial segment — Amazon, Apple, Alibaba, WeChat — served as the trigger for the transition to an ecosystem strategy.

According to the bank, the key principle in building the ecosystem was openness — in addition to services that were fully or partially owned by the company, it should also include completely independent offers. As Herman Gref said in November 2019: "There are key businesses for us that we want to control, this is everything related to financial services. There are services in which we want to partake: we do not need to be controlling shareholders, but to participate with a minority stake. And finally, there are services that we consider potentially very important for our customers. They will also be part of our ecosystem, but we will not participate in them — we will only check the reliability of our partners and the quality of their services before offering them to our customers.[33]"

Sber started an active expansion of the ecosystem: in 2017, the bank acquired the medical service DocDoc.ru and the service for the search and support of real estate transactions called Dom.Click, while also expanding the partnership with Yandex[34] and Mail.ru (the first, however, ended in 2020 with a memorable breakup). Currently, the Sber ecosystem includes three dozen companies, many of them are not related to the financial business. For example, Sberbank has 55% of Rambler, 51% of Speech Technology Center and owns 100% of Rabota.ru. To a certain extent, we can say that the company has revised its approach to the formation of the ecosystem, focusing on the financial and managerial control of its member companies.

In 2019, simultaneously with its ongoing expansion, the company began integrating ecosystem members with a set of marketing and technological enablers. First of all, a single cloud platform for the development of the Sber Cloud ecosystem was launched, independently developed by the company (which took about 2 years). The second enabler was the unified customer support center. An important technological step that makes it easier for customers to use the services of the Sber ecosystem was Sber ID, launched in March 2019.

Further improvement of the quality of interfaces is associated with the development of the Salut family of voice assistants, which consists of three "personalities" — Sber, Athena and Joy. According to the company's idea, Sber is young, well-rounded and has a soft sense of humor, Athena is composed, scrupulous and has read a lot, and Joy is cheerful and has a high emotional intelligence.[35]

Another important enabler of the ecosystem integration was the SberPay service, launched in July 2020. The company decided to transfer its customers from using Apple Pay and Google Pay in order not to pay part of the acquiring commission to American corporations. At the same time, the user of the banking application receives all payment instruments in a single interface. Owners of Honor and Huawei smartphones could enjoy an additional benefit, since American wallets had not been available for them. Since the launch of SberPay, the number of transactions has been increasing by 10-15% every month. In February 2012, users made 1 million transactions, the number of sites that enabled payment via SberPay increased from 300 to 56,000.[36]

A kind of culmination of the growing efforts to unite the ecosystem was the rebranding: it was decided to remove the word "bank" from the company's name (previously, its marketers closely monitored that the common abbreviation Sber was not used in official sources). The process of brand transformation took 3 years and turned out to be fraught with serious organizational challenges: 4 people were appointed as marketing and communications directors during this time. During the rebranding, many services in the ecosystem received the prefix "Sber" (SberMarket, SberFood, SberLogistics, SberSound, SberEApteka, SberHealth, etc.), although a number of important services remained under their traditional names (Okko, Rambler, Samokat, Rabota.ru, 2GIS). The time of rebranding coincided with the restructuring of ecosystem partnerships, in particular, with the "divorce" from Yandex and closer integration with Mail.ru and the Rambler Group.

In May 2012, Sber returned to the idea of developing a wide-open ecosystem by launching SmartMarket, a platform that will allow any third-party developers to get access to Sber technologies and tools. Companies will be able to use the technological platform, Platform V, the SberCloud service, smart device technologies of SberDevices and machine learning models to create applications that will be offered to Sber's customers.

It follows from Sber's annual report for 2020 that at the moment the ecosystem has 36 technological unifying elements that carry out the seamless integration of Sber's ecosystem services. In addition to the ones discussed above, these include the Sberbank loyalty program, and the technological tools SberBank, SberAI, SberSecurity, SberBusinessAPI, SberProfile and others. The company has created the SberX directorate, which will coordinate the development of the ecosystem together with other business and functional blocks of the bank, companies belonging to the Sberbank group.

Currently, Sber's non-financial business is represented in such major segments as e-commerce, entertainment, Foodtech & Mobility, Health and B2B services, as well as other non-financial services. In 2020, the revenue from ecosystem companies amounted to 78.9 billion rubles. Compared to the previous year, the amount had increased threefold[37]. More than 60 million people use non-financial services of Sber monthly. The total volume of Sber's investments in non-financial assets of the ecosystem at the end of 2020 amounted to around 150 billion rubles.

Sber's example shows a possible approach to building a large-scale solution ecosystem in the presence of a significant amount of resources — financial, technological, and managerial. At the same time, in a certain sense, the company is at two stages at once, trying to simultaneously expand and integrate. Such a strategy is associated with significant risks: it may be difficult to bring the quality of products and services throughout the ecosystem to the same level, and it is needed to demonstrate to consumers significant added value from using a set of ecosystem services. Critics point out that at this stage, the costs of the ecosystem are growing faster than the profits it brings[38]; this situation inevitably creates nervousness among stakeholders, especially given the unspoken status of the "state social bank".

The head of Sber, Herman Gref, expects to reach the state of a working digital ecosystem by 2024. "This is probably the most ambitious task that you can think of — not just the digital transformation of the bank, but the construction of a digital ecosystem. And it is extremely difficult to implement <...> Let's hope that by 2024, when my contract ends, we will see a more or less working ecosystem," he said[39].

[33] https://www.forbes.ru/biznes/387895-german-gref-transformaciya-sberbanka-eto-vechnyy-process

[34] The companies first announced a strategic partnership in 2012, when Sberbank acquired a stake in the Yandex.Money project https://yoomoney.ru/page?id=525674

[35] https://www.forbes.ru/tehnologii/415909-semeystvo-virtualnyh-pomoshchnikov-sbera-popalo-v-podannyy-pravitelstvu-spisok

[36] https://v102.ru/news/95172.html

[37] https://lenta.ru/news/2021/04/29/ekosber/

[38] https://expert.ru/2021/04/19/ekosistemniy-eksperiment-vyshel-iz-pod-kontrolya/?fbclid=IwAR3REARDsnsoh_rXRU7mXJIf5z037mMtCn8TVjm0XZtn8SuDGgbLwRLlBrE

[39] https://tass.ru/ekonomika/6466214?ref=vc.ru

KEY DEVELOPMENT STAGES OF SBER

	Stage	Enablers	Results
2019	**Creating a single technological platform**	SberCloud	According to the results of the annual report 2020, the growth of SberCloud in that year was 8 times faster than the growth of the Russian cloud market, the market share amounting to 6.2%[40]
December 2019	**Creating a single support center**	Unified contact center	Guidance on all Sber products
September 2020	**Combining all non-core businesses under a single umbrella brand for the entire ecosystem**	Rebranding	More than 50 companies in the perimeter of Sber's ecosystem at the end of 2020
March 2020	**Creating a single point of access to ecosystem services**	SberID	According to the results of the annual report 2020, 16 million customers have a single SberID customer profile
July 2020	**Creating a payment service**	SberPay	According to the results of the annual report 2020, the number of active
September 2020	**Formation of a new interaction channel**	Series of voice assistants	According to the results of the annual report 2020, 2 million users have Salut virtual assistants, two months after the launch
April 2021	**Creating a single subscription**	SberPrime+	According to the results of the annual report 2020, the subscription had 407 thousand active users
May 2021	**Creating an open platform for developing apps**	SmartMarket	About 3000 developers have registered on the platform — they have already created more than 2500 draft applications and uploaded almost 150 ready-made smartups[41]

[40] https://www.forbes.ru/newsroom/tehnologii/416905-kompaniya-sbercloud-voshla-v-pyaterku-krupneyshih-oblachnyh-provayderov

[41] https://vc.ru/dev/195861-smartmarket-sbera-kak-rabotaet-nash-marketpleys-prilozheniy-i-pochemu-my-uvereny-chto-on-ponravitsya-razrabotchika

CASE

Telecommunications companies are becoming ecosystem leaders

Today, the telecommunications industry occupies a central place in the formation of a digital, technologically connected world, providing uninterrupted global data transmission. Telecom operators find themselves in a unique position: they own the basic infrastructure — a mobile network that provides access to the Internet and technological services of the largest IT companies — and at the same time act as independent players in the market with their own multi-million subscriber bases that use the services offered by the operator on a daily basis. According to the GSMA data, in 2019, revenues from the activities of mobile operators in the world amounted to $ 4.1 trillion, or 4.7% of the total global GDP.

By 2025, the number of mobile subscribers in the world will reach 5.8 billion people, the level of global mobile penetration will be at 70% (GSMA). However, despite the noticeable growth in the number of subscribers, operators are forced to transform their own business models to survive in highly competitive markets. The development of technologies and the cheapening of mobile communications over the past decade has led to a sharp drop in the income of operators from the provision of such basic services as voice communication and data transmission. The global telecom market has managed to reach the stage of oversaturation, when the model of expansive growth due to an increase in the subscriber base has exhausted itself: as a rule, most users use service packages provided by one mobile operator for a long time, and a significant increase in the base is observed only in the case of luring subscribers with more attractive offers or as a result of price wars among operators.

At the same time, telecom operators are forced to compete with such IT giants as Facebook, WeChat, WhatsApp and Skype, which directly affect the decline in the use of fixed mobile communications and the migration of voice traffic to social networks and messengers. Meanwhile, eMarketer analysts note that the average time of using a smartphone in the United States has reached 3 hours 43 minutes , which is an unprecedented increase compared to previous periods. Such statistics on the use of mobile devices emphasize the strategic role of the operator as a «holder» of key information about its users. As a result, in order to avoid merely supplying OTT players with mobile raw materials, operators themselves must turn into a new generation of technological players providing their subscribers with additional services — Value Added Services (VAS) in the form of personalized customer experience and unique content. Operators are striving to diversify their business and provide subscribers not only with basic communication services, but also to look for opportunities to retain and engage customers with the help of additional digital products in new areas.

The transformation of operators' business models is based on an ecosystem approach, which involves combining the company's services and business processes on the basis of a single marketplace, in which all components are interconnected and seamless data exchange is provided. By analyzing the received data, the operator knows the needs of its client and provides them with all the necessary digital services on demand independently or through partnerships with other players. Such a model contributes to the growth of key metrics in the telecom market, such as ARPU (average revenue per user) and LTV (life-time value): the large number of services provided brings maximum profit from each subscriber, while frequent use of services of the same ecosystem firmly locks in the client with the operator. It is important to note that the key difference between a mobile operator and similar ecosystem players is the continuous receipt of information about the user's location, his daily routes, solvency, preferences and social circle using a built-in SIM card, regardless of whether the subscriber uses a specific application or not. The ability to fully analyze the obtained Big Data about its subscribers is an important factor in building an effective digital ecosystem, it allows for developing personalized offers and plans for each client. In the past, cellular communications was the only product provided by the operator, but today players in the telecom market are entering new niches:

[42] https://www.emarketer.com/content/us-time-spent-with-mobile-2019

- finance and banking services (Orange Polska, MTS, Turkcell)
- media (NTT Docomo, Xfinity Comcast, Verizon, AT&T)
- entertainment (Turkcell, Megafon)
- gaming (Megafon, Tele2, MTS)
- cloud storage (Verizon, Centurylink, Deutsche Telekom)
- voice assistants (Yoigo, Deutsche Telekom)
- anti-virus protection of devices & ensuring digital hygiene (Yoigo, 3 Mobile)
- IoT trackers (Vodafone, AT&T, O2)
- telemedicine (Comcast NBCUniversal)
- smart home services (Xfinity Comcast, Telefonica, Telecom Plus)
- augmented and altered reality (Sintgel)
- semi-public administrative services (Turkcell)
- education (LG Uplus, MTN South Africa)

The decision to develop services under its own brand or enter into strategic partnerships with other technology companies is largely predetermined by the time the operator adopts a strategy for transition to ecosystem development. One of the first operators to announce the formation of their own ecosystem was the American operator AT&T: back in 2007, the company noted in their annual strategy a key trend for the growth of the use of data generated by wireless smartphones. Already then, the operator singled out watching videos on Youtube, listening to music and reading news publications as necessary functions for smartphone users. The slogan «Transforming AT&T to meet customer trends in a unique way» formed the basis for the entire subsequent transformation of the company. In 2008, AT&T's management, in its appeal to investors, emphasized its commitment to the development of additional services, including entertainment, navigation systems, gaming, and its own U-verse video service. Today, AT&T is one of the most advanced mobile operators that has developed its own ecosystem of services that offers solutions for the Internet of Things (IoT), its own video service AT&T TV, Wi-Fi for the car, antivirus, etc.

The largest Turkish mobile operator Turkcell started implementing ecosystem services in 2010, as soon as 3G communication became available on the national market. The company's development was based on the analysis and use of mobile data, as well as the development of services based on customer requests. Already at that point, Turkcell invested in the development of its own platform for creating digital services, which included compass, TV, a travel service, sports analytics and a service for football fans, a music service with the possibility of unlimited streaming, an application for using the subway, educational services, a payment service with the possibility of contactless payment using a Visa card, and others. Over the past 10 years, Turkcell has become an example of a sustainable ecosystem business model with its own numerous services: an educational platform, public-related services (data from the judicial system on request, payment of taxes and fees, appeals to state authorities), online games, the Paycell payment system that provides a service for paying for goods and services, carrying out monetary transactions using a phone number or a special card, the possibility of combining cards of various banks into a single electronic wallet, etc.

Other operators preferred to choose an open ecosystem model based on revenue sharing, in which the mobile operator does not develop services independently, but invests in the purchase of ready-made solutions or provides its platform as a showcase for third-party services. For example, since 2013, the Russian operator MTS has been developing its own mobile banking based on the infrastructure received from the previously operating Moscow Bank for Reconstruction and Development (IBRD). Gartner analysts emphasize that the implementation of partner solutions is possible if the three components of the «win-win» principle are observed:

- The partnership is aimed at achieving a significant business value that minimizes all the risks and costs associated with such a partnership.
- The partnership creates unique opportunities that would be difficult, more expensive or unprofitable to implement outside the framework of such cooperation.
- The relationship between the participants of the partnership is trusting, each of the members determines the value it receives.

Turkcell (Turkey, more than 33 million subscribers). A national digital operator in Turkey that provides its customers with a unique portfolio of digital services, as well as voice data transmission, messaging and IPTV services based on mobile and fixed networks. Turkcell Group's subsidiaries are represented in 8 countries: Turkey, Ukraine, Belarus, Northern Cyprus, Germany, Azerbaijan, Kazakhstan and Moldova.

Since 2010, the operator has publicly positioned itself as a digital service provider, choosing a strategy for building a digital ecosystem based on the development of its own services. The adopted DO1440 strategy is aimed at increasing the operator's interaction time with its customers from an average of 30 minutes to 1440 minutes per day (24 hours/day) and providing a better digital experience for customers through digital services. When developing services, the company focused on supporting national content, which favourably distinguished the operator from international players offering universal services in all markets. Today, the Turkcell ecosystem includes such local offers as:

- BIP National Messenger
- radio for street vendors
- football match predictions
- Fizy music streaming
- video streaming service TV+
- top-ups and money transfers from a fixed connection to a mobile connection Turkcell Superonline

In addition, the operator protects its own services by introducing an additional fee for the traffic consumed when using WhatsApp and Spotify applications, the analogues of which are offered by Turkcell for free.

MTS (Russia, more than 78 million subscribers). According to the company's updated strategy for 2020-2022 , Customer Lifetime Value 2.0, MTS is focused on creating a product ecosystem with a seamless transition between services based on the core telecommunications business. The development of the ecosystem is based on artificial intelligence, big data analytics, a single client ID, a technological platform for effective interaction with partners and the best customer experience.

The main enabler of the ecosystem is a single point of access to the operator's services — the My MTS application, through which the user transfers funds to the account, manages their plan and connects to various services. It also has a support chat, expense statistics and widgets on the main screen that direct the user to other applications of the ecosystem.

A special feature of the application is that subscribers of other operators can also access the app. This way, MTS strives to reach a larger number of users and lure the audience of competitors.

However, at the moment it is difficult to say that the MTS ecosystem has fully formed, since, despite the single point of access, there are still numerous applications of the operator requesting passwords and confirmations when logging in, which does not correspond to the concept of a seamless transition.

The operator is developing entertainment services in different areas: music, books, media, television, billboard with the opportunity to buy tickets and get cashback. The company cooperates with Apple Music, Spotify, ivi and cloud gaming platforms. In the future, Facebook, Twitch, TInder, AliExpress and Yandex.Taxi services should appear in My MTS.

The operator's own services include:

- MTS Music — music streaming service with over 50 million tunes, podcasts and audio books
- MTS Cashback — cashback service
- MTS Library — an app with access to a catalogue of e-books, audio books and podcasts
- KION — online cinema
- MTS Live — all-Russian online service for purchasing tickets to all sorts of cultural events
- WASD.tv — multimedia platform for streamers and gamers
- MTS Marketer — targeted advertising for business
- MTS Your Business — digital services for entrepreneurs that enable online operations
- MTS Insurance — online insurance
- Mobile personnel — an instrument for managing the mobile workforce like sales reps, couriers, drivers, service engineers, etc.

To date, MTS is the only Russian operator that directly states its commitment to transforming the company based on the ecosystem business model. As a result of implementing this strategy, the company expects to increase the number of customers using converged products, increase ARPU, as well as increase the lifetime value of subscribers and reduce the cost of customer acquisition.

CASE

Two types of ecosystems at war: hotel chains vs. digital platforms

The 2010s will probably go down in history as the Golden Age of the tourism business[42]. The number of international trips reached a peak of 1.4 billion in 2018; the growth rate of this indicator in 2010-2018 was noticeably higher than in previous decades[43]. The key factors were the decline in the real cost of air travel[44], which stimulated tourism and the rapid growth of the economy, increasing the frequency of business trips[45]. Hotels became the main beneficiary of the industry's growth. Their economic indicators — room occupancy, average price per night and revenue for an average room — grew steadily, which was especially noticeable in Europe and the USA[46]. The revenue and profit of the leading hotel groups, such as Marriott, IHG and others, increased manyfold in the first 8 years of the decade. Marriott's market capitalization in 2020 was almost 5 times higher than in 2010.

In parallel with hotels, digital travel platforms were rapidly developing. By the end of the decade, about 95% of the online booking market was in the hands of two super-players — Booking Holdings and Expedia, who spent significant funds on acquiring independent booking platforms for hotels, air tickets, car rental, etc. Expedia's revenue in 2010-2019 increased almost fourfold and fivefold for Booking Holdings. Already in 2011, the market capitalization of Booking Holdings was higher than that of the largest hotel group Marriott ($ 21.73 and $ 14.98 billion, respectively), while in 2019 the gap was almost twice as great ($ 85.76 billion and $ 48.89 billion, respectively)[47]. It is also important that the digital player surpassed the traditional industry leader in terms of operating profit (in 2018, $ 3.99 billion versus $ 1.9 billion), although it was inferior in terms of revenue (in 2018, $ 14.53 billion versus $ 20.7 billion). At the same time, the industry as a whole was characterized by a fairly low level of digital technology penetration. According to McKinsey in 2016, it was among the three least digitalized industries, along with construction and agriculture.[48]

It is important that over the past decade, the relations between traditional and digital players in the industry have changed dramatically, from the feeling of cooperation developing the market to serve the common interests to the "war of hotels against online agencies" (OTA wars). Hotels have launched a large-scale campaign for direct booking[49], however, without evident success. What happened?

At the beginning of the decade, online platforms were a convenient channel for hotels to increase occupancy. Even in high season, about 20% of hotel rooms remain empty, while during low season this figure reaches 50%[50]. Since the variable costs of servicing guests are relatively small, it is advantageous for hotels to increase the occupancy even at the expense of a significant price reduction. At first, online platforms worked mainly with impulse demand, allowing hotels to give large discounts to indecisive tourists, while at the same

[42] «The golden age of travel is now». https://www.travelandleisure.com/airlines-airports/history-of-flight-costs

[43] In 2018, the number of arrivals was 1.47 times higher than in 2010. For comparison, the growth rate from 2000 to 2008 was 1.35, 1.4 times from 1990 to 1998 and 1.38 times from 1980 to 1988. Source: https://ourworldindata.org/tourism#:~:text=Arrivals%20by%20world%20region,-This%20visualization%20shows&text=The%20United%20Nations%20World%20Tourism,is%20a%2056%2Dfold%20increase. As for the market volume, the picture was not as clear: after the growth observed in 2010–2014 (up to $ 1.6 trillion), there was a drop ($ 1.52 trillion) in 2015, then the market accelerated and in 2018 reached $ 1.71 trillion, slightly decreasing in 2019 ($1.69 trillion). https://www.statista.com/statistics/1220218/tourism-industry-market-size-global/. The relative size of the market (share in GDP) recovered after a fall in 2010 (when it was 2.9% and 9.3%, taking into account indirect economic effects), but in 2019 it was still lower (3.3% and 10.4%) than at the beginning of the century (3.5% and 10.9% in 2000). https://www.statista.com/statistics/1099933/travel-and-tourism-share-of-gdp/

[44] The cost of one mile of air travel fell approximately twofold in the period 1980–2010 (adjusted for inflation). https://www.theatlantic.com/business/archive/2013/02/how-airline-ticket-prices-fell-50-in-30-years-and-why-nobody-noticed/273506/

[45] https://www.ihgplc.com/-/media/FF2DB7BB29C54FF2824393006F15A08F.ashx

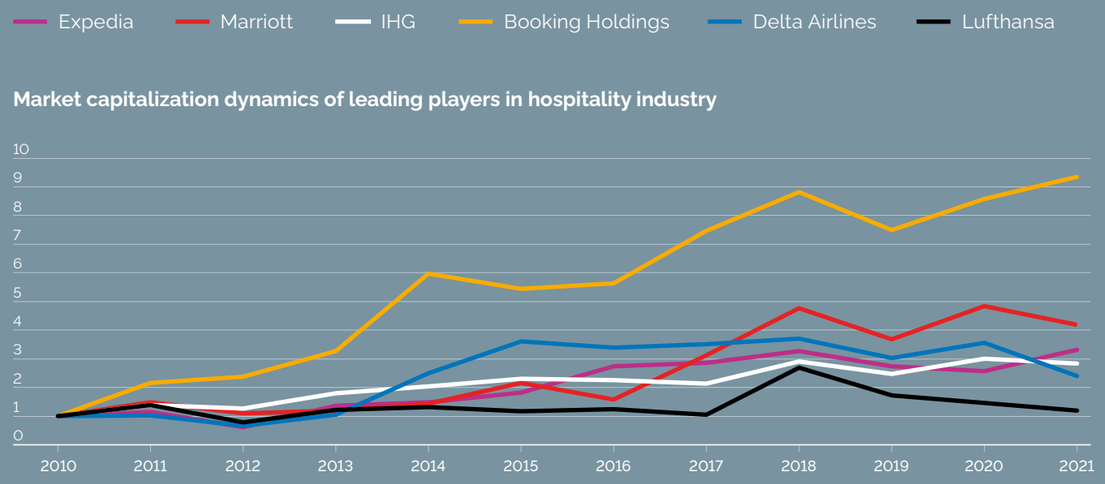
[46] Țîțu, Răuleaa, & Țîțu, 2016, Horwath HTL, 2020. https://www.statista.com/statistics/206546/us-hotels-occupancy-rate-by-month/#:~:text=The%20occupancy%20rate%20of%20hotels,pandemic%20in%20the%20hotel%20industry.

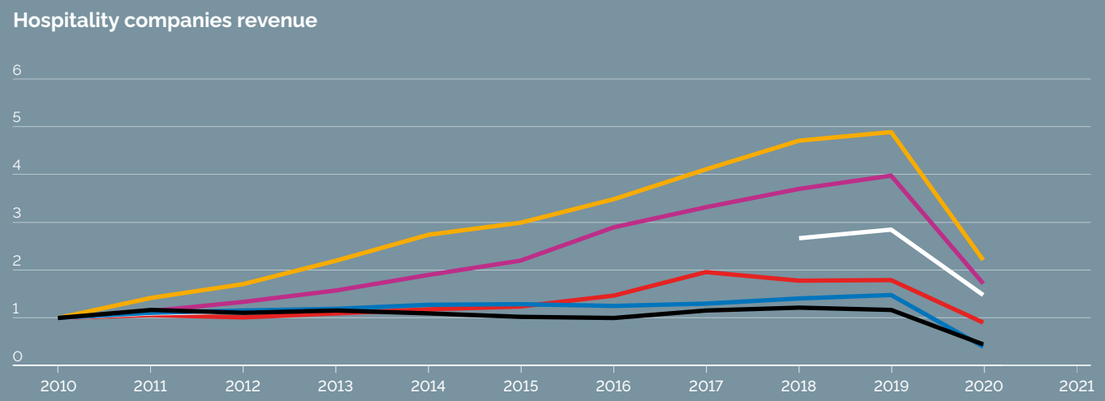
[47] The market capitalization figures are given as of the first trading day of the corresponding year, unless otherwise indicated

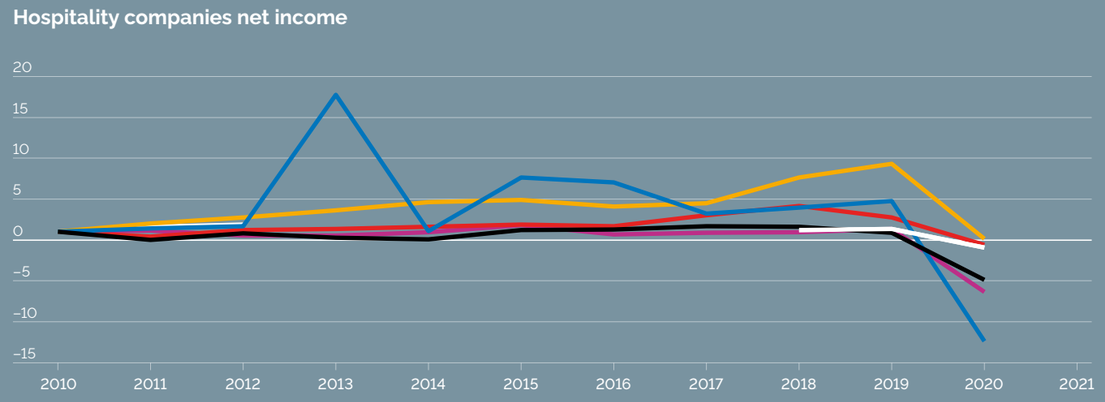
[48] https://hbr.org/2016/04/a-chart-that-shows-which-industries-are-the-most-digital-and-why

[49] The page titled Search Smarter on the website of the American Hotel Association is rather characteristic: it warns tourists stating the fact that almost a quarter of transactions made through intermediaries were "misleading" tourists. https://www.ahla.com/searchsmarter

[50] https://www.statista.com/statistics/206546/us-hotels-occupancy-rate-by-month/#:~:text=The%20occupancy%20rate%20of%20hotels,pandemic%20in%20the%20hotel%20industry







time maintaining the price level for the core of the target audience, primarily for business travelers. In 2010, digital players accounted for about a third of online bookings, the rest were made directly on hotel websites[51]. Hoteliers found this situation quite comfortable.

By the middle of the decade, the proportion had reversed: more than two thirds of bookings were now made on digital platforms, and the share of direct bookings was steadily declining[52]. The increased market power, reinforced by the online booking market being in the hands of two players[53], allowed the platforms to begin to exert price pressure on hotels. Now, additional marketing budget was required to take a favorable position in the recommendations. Perhaps the most unpleasant thing for large chains was the realization that their long-term investments in the brand image were largely devalued in the era of consumer ratings and reviews. For travelers, the choice of a well-known hotel chain had traditionally served as a guarantee of the high quality of service. With the help of ratings, it was now possible to choose a lesser known and therefore cheaper hotel without a risk. This situation gave new opportunities to independent hotels at the expense of major players[54]. The rapid growth in the popularity of short-term rental of private apartments through AirBnB was another challenge. At first, the AirBnB offer was almost entirely aimed at low-budget tourists and did not affect the major market players in any way. By the mid-2010s, the premium segment, luxury apartments and villas, which offered not only a better price, but also a higher level of comfort in comparison to hotels, became widely represented on the site.

The market has entered a phase of struggle for dominance. The idea of the management of traditional hotel groups that all players can win at the same time has been replaced by a sense of the need for urgent actions to preserve market power. The French Accor group, the largest in Europe, can be viewed as an example of a proactive market strategy. In 2013, it adopted the "asset light" strategy and transferred ownership of its hotels to a separate company, gradually reducing its share in it[55]. It made hotel management its new core business; to strengthen it, significant investments were made in digital technologies (more than 200 million euros over 5 years). In particular, a private platform for booking rooms was created and in 2015 it was open to all market participants. However, it was not possible to create a strong competitor to fully digital players like Booking or Expedia: the Accor platform offered only about 10,000 hotels (about half of them belonging to the group), while Booking's offer was about 60 times greater. Apparently, independent market participants saw large hotel chains as a greater threat than digital platforms, and were in no hurry to put their rooms on the sites of direct competitors.

The group considered the possibility of switching to the exclusive sale of its rooms on its own platform, but did not dare to take this step, only providing the best price for travelers who booked directly on its website. It is easy to see how this strategy failed by comparing the offers by Booking.com and Accor.com. For example, let us take Istanbul, a popular tourist destination: there are more than 2500 options against 28. All Accor hotels in this city are also available on Booking.com, and even for regular customers, members of the Accor loyalty program, the price gain via direct booking is not very noticeable.[56] As a result, the company shifted the focus to a digital B2B strategy: creating a platform for operational management of hotels under the d-edge brand[57].

The COVID-19 pandemic hit all market participants hard, but digital players survived it more easily than traditional actors. The market capitalization of Booking Holdings and Expedia increased by the end of 2020, while the largest hotel chains and airlines lost a lot in value.

[51] (Pilepić, Šimunić, & Car, 2015), in 2007, the share of bookings through digital platforms was less than 25%.

[52] In 2017, digital platforms accounted for about 72% of bookings in Europe and the Asia-Pacific region. https://www.d-edge.com/the-rise-of-direct-bookings-over-otas/

[53] The dominance of Booking Holdings and Expedia in the market attracted the attention of regulators and lawmakers of the European Union, in particular according to the report of the Committee on online platforms of the UK House of Lords. https://publications.parliament.uk/pa/ld201516/ldselect/ldeucom/129/12902.htm

[54] In the mid-2010s, independent hotels began to significantly outpace large chains in terms of the growth rates of key economic indicators. https://revenue-hub.com/independent-hotels-higher-adr/

[55] https://www.ft.com/content/099d270c-0f23-11e3-ae66-00144feabdc0, in 2020, it was announced that the transition to the new model was completed. https://press.accor.com/successful-completion-of-the-asset-light-roadmap/?lang=en/
See description of the strategy in https://www.imd.org/research-knowledge/articles/a-strategic-response-to-digital-disruption-the-case-of-accorhotels/

[56] An offer for two nights from May 6 to 8, 2021 in Raffles Istanbul for a single room is 69,251 rubles and 73,000 rubles, respectively; for those who do not participate in the Accor program, it is more profitable to book via Booking.com (price on accor.com is 76,946 rubles)

[57] https://www.d-edge.com/

CASE

To the ecosystem — and back?

As mentioned above, not all companies are ready to accept the ecosystem approach as the basis of their strategy. Moreover, there are already cases when large market players first declared themselves adherents of the idea of building an ecosystem and then took a more traditional stance regarding their strategic development. In Russia, Alfa Group and VimpelCom (Beeline brand) affiliated with each other can serve as examples[58].

The Russian mobile operator PJSC VimpelCom is one of the oldest telecom operators in Russia. In over 30 years, the company has undergone many changes: the first cellular network of the AMPS standard in Moscow in 1993, regional expansion with a GSM-1800 license in the early 2000s, the first launch of MMS services together with Ericsson in 2002, introduction of the country's first integrated access to corporate email from a mobile phone in 2005 and voice SMS messages in 2007, development of new digital entertainment services together with Google in 2012, launch of a multimedia service for communication and the VEON marketplace at the same time in 2017, among multiple other events.[59] In the early 2000s, Beeline was the second largest operator in Russia with a client base of more than 50 million users. According to the results of 2020, the operator was in 4th place in terms of the number of users.[60]

In its Strategy for 2019-2021, Beeline announced plans to develop its own digital ecosystem with the participation of partners with appropriate digital competencies.[61] The development of an ecosystem was confirmed by the appearance of the following non-core products in the operator's portfolio:

- Co-branded credit and debit cards in partnership with Alfa Bank
- mWellness, a lifestyle service for sports and a healthy lifestyle
- Beeline Magazines, online access to popular magazines of leading publishers
- Music Beeline music streaming
- Beeline TV, online TV
- Beeline Gaming, a cloud gaming service with access to more than 2.5 thousand games found in popular gaming marketplaces
- The Cyber Threat Protection Service is a partner solution with the participation of Group IB, which allows protecting the IT infrastructure of customers from complex targeted attacks and APT threats[62]

The key enabler that unites all the operator's products was the mobile user ID, Mobile ID, which, being connected to the subscriber's phone number, provided simplified access to digital services and ensured a low probability of hacking due to the closed interaction of the SIM card with the platform.

However, the development of the market and aggressive strategies of competitors to attract subscribers have made the tasks of retaining the subscriber base and updating the infrastructure

[58] Via Letter One, Alfa Group controls 47.9% of Veon's shares, which is the parent company of Beeline.

[59] https://moskva.beeline.ru/about/about-beeline/beeline-history/

[60] https://www.comnews.ru/content/212159/2020-12-14/2020-w51/vzyali-kolichestvom-bilayn-ustupil-tele2-trete-mesto-rynke

[61] https://moskva.beeline.ru/about/about-beeline/strategy/

[62] https://moskva.beeline.ru/about/press-center-new/press-releases/details/1560659/

a priority for Beeline. Despite the previously announced plans and successful partnership in the field of financial services, Beeline became the first Russian operator to declare its refusal to further build the ecosystem. Today the company's management decided to focus on the development of a "customer-centric strategy", improving its key services of uninterrupted mobile data transmission.[63] At the same time, the introduction of complementary telecom areas remains an option: TV, cyber security, adtech (smart advertising technologies), primarily through partnerships with already recognized players in other niches.

VimpelCom's discarding an explicit ecosystem strategy coincided with the new strategic approach of its key partner in providing fintech services, Alfa Bank. In its updated growth strategy until 2024, the company announced the development of the Superservice system, a technological platform that will be built on the principles of effective partnerships and integration with external players.[64] The basis of the Superservice is, first of all, the improvement of the customer experience and the bank's desire to improve the quality of its core business, without going into the development of additional ecosystem products that will eventually not become competitive relative to other companies with similar products that have already established themselves on the market.

Today, Alfa Bank's partners include more than 300 companies, including Yandex, Beeline, X5Retail Group, AlfaStrakhovanie, JustAI, Microsoft and others.[65] Partnerships are built on one of the three principles:

1. Partnerships with players who are part of the parent company's perimeter (Alfa Group)

2. Partnerships with external players that are leaders in various industries, aimed at attracting and exchanging the customer base

3. Technological partnerships with startups and tech companies

The bank's management recognizes that building its own ecosystem requires attracting significant resources aimed at M&A or long-term development of non-financial products from scratch, while the quality of service is often reduced and the role of the client in the core business is blurred. At the same time, partnerships with independent players allow you to choose the best partner solutions and quickly integrate them into your own platform. As a result of such synergy, both companies benefit from the influx of new customers and the exchange of big data, while maintaining the core business as a priority.

It is not difficult to see that the described strategy carries many features of the ecosystem approach. However, the company chooses a different term in principle. Most likely, this step is designed to give a certain signal to the company's stakeholders (for example, to show that management strives to "do business and not create hype"). It is possible that other market players will also try to apply a "trend-breaking" strategy to ecosystems in the coming years, clearly working against what looks like an increasing market trend. It is difficult to say which of the two parties will win the fight for investors' trust. Probably, as a result of indirect discussions of those who, like Sber, proclaim the ecosystem as the basis of their strategy and those who, following Beeline and Alfa Bank, choose a fundamentally different strategic language, the meaning of the term will become clearer and narrower. Most likely, however, it will turn out that terminological discussions are not as important and it is possible to create a completely effective ecosystem while calling it something else.

[63] https://www.rbc.ru/interview/technology_and_media/06/08/2020/5f2a77709a79472bc4c63dc8

[64] https://alfabank.ru/about/strategy/

[65] https://tass.ru/interviews/11571699

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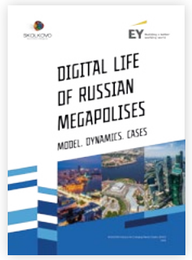

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