The business models’ adaptive evolution in digitalization

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Abstract. The article reveals the new strategic priority areas in the field of engineering. The advantages of digitalization and service are determined, and the main results of the adaptive evolution of business models are presented.

Introduction
The theoretical foundations of the digital economy appeared in the last decade of the last century. One of the first to formulate the digital economy concept was Nicholas Negroponte, an IT specialist, head of the multimedia technology laboratory at the Massachusetts Institute of Technology. Back in 1995, he pointed out the disadvantages of traditional goods (weight, raw materials, transport) and the advantages of electronic commerce (virtuality, lack of the goods’ physical properties, instant movement in real time) [1].

In his book “Business at the Speed of Thought”, Bill Gates elaborated on the concept of digital calling. According to him, the information and communication technologies’ development turns the humanity’s ideas about various opportunities and has an incomparable effect on all life spheres. At the same time, modern business is obliged to immediately respond to the acceleration of economic development caused by the technological initiatives’ introduction. According to him, “In the future, two types of companies will remain on the market: those which are on the Internet, and those which have gone out of business” [2].

The time for economic singularity has come, which was determined by a rapid technological breakthrough in the fields of management, business modeling, accounting, control and analysis. This is the period when the economy laws’ work is disrupted and the market develops according to the previously unknown rules. [3]

Main part
James Dale Davidson and William Rees-Mogg in their work “The Great Reckoning” write about “erroneous conclusions implanted in our minds, similar to software viruses.” The authors are convinced that the concept of humanity about the world for centuries has been based on the Newton’s reality perception, where development is portrayed as linear, constant and to some extent predictable.

As the processes taking place on our planet become more complicated, the relations become more interdependent, the transformations lose their evolutionary development principle, acquire a discrete, non-linear, and difficult to predict course, and prospects and retrospectives become less and less similar.

According to Michael Crichton: “The Chaos Theory” convinces us that the usual strict linearity that we perceive as natural in all life areas, does not exist. Linearity it is just a synthetic way of understanding reality. Reality is a complex self-developing system, consisting of many interdependent processes (a...
series of collisions, a series of spasmodic transformations), in which a change in one subsystem or element of a subsystem will pull a change in the whole structure in a completely unpredictable way. Linear thinking is utopian in a nonlinear world. Non-linear flow is interesting in that it opens up an unexpected potential, reveals the new possibilities. And only by changing the changes perception paradigm, rethinking and transforming the established methods, mechanisms, paradigms, rules of strategic planning, we can get a probable opportunity to preserve property and achieve prosperity in the near future.

In the very near future we will see an incredible acceleration of scientific and technological progress. All leading fields of science and technology will be the subject to dynamic development. A singular surge will affect all commercial and non-profit structures in the world. The twenty-first century will not be just a century of intensive innovative development, it will become a time of accelerated progress.

The famous futurologist Ray Kurzweil declares that this century will contain twenty thousand years of scientific development.

Accelerating scientific and technological progress opens a time in which the intelligence of self-learning computers can compete with the human. This historical moment, when for the further expansion of knowledge, people’s participation will cease to be a necessity is determined by the singularity.

Improving information and communication technologies (ICT) is the main driving force for bringing society closer to the singularity. [4]

The emergence of digital innovation started in the 60s of the last century in the economically developed countries of Europe and the United States with the transition from analog to discrete data signals that arrive without interference and transmit information without additional semantic load. Acceleration of digital services growth occurred in the 1990s with the advent of search engines, e-business portals and e-commerce sites. Around 2010, a period of digital collaboration began, digital models and platforms appeared with their business networks and ecosystems.

Many established, successful and even leading companies in their industry improve the interior of their business model in terms of the development possibility in the long term. In order to correspond to the external environment dynamics, already established models are constantly being adjusted, but few change their type radically. However, the adaptive methodological editing today does not always meet the demands of the times.

Digitalization is not a reboot of the business through the installation of more advanced software or the supply chain modernization. This is the implementation of a project digital strike on a functioning system that requires focusing on the business processes’ strategic modeling at all levels.

Digitalization and servicization are increasingly putting pressure on the established business models. The priorities in the field of engineering have changed, the competition has shifted from improving the technologies and organization forms to business models. Changes occur not only in the formation of modern value propositions, the formation of fundamentally new relationships with customers, the rules of competition are changing, due to more efficient models, the approach to the market is changing.

The fundamental result of digitalization is that the proposed range of physical assets is replaced or supplemented by the intangible digital data. [5]

According to Jean Tirole, in market competition, along with physical capital, other types of capital are of no small importance.:
- accumulated managerial experience of functioning in the market;
- customer base;
- set of exclusive privileges;
- the presence of information capital [6] Tirole, J. Markets and market power: theory of industrial organization / J. Tirole; - St. Petersburg; School of Economics, 1996. - 745.

Due to the fact that the digital revolution has no limits and breaks the established order, the new firms are created around the world with incredible speed, changing the entire industries. The initiators of breakthrough decisions are often the startups which have made bold bets against the familiar business models. Small and medium-sized enterprises, newcomers to business can challenge the large
competitors who have been using the traditional success recipes for years if they entered the market with a fundamentally new breakthrough business model.

Old-timers, who have been the undisputed leaders for many years, dominated the market for decades, are at risk of losing the strategic freedom in planning their future. [7]

Digital innovations are reflected in efficiency, as a rule, in those firms where investments and sound risk appetite are present. Unsuccessful organizations are more likely to be ready for digital reforms because they are in search of breakthrough technologies. Successful companies are more wary of changes, since radical restructuring is a labor-intensive, expensive, and risky process.

The main strategic priorities in designing a business model for many enterprises today are such trends as digitalization and service orientation.

The advantages of switching to digital technologies are known: instant reaction to market conditions; expanding the range of offered goods, works, services; the possibility of large-scale customer management. Ideas for introducing the promising services may arise from the information obtained through an innovative business model. But to transform a business model into a digital one in many cases means a revolutionary transformation of the organization’s DNA, which made it successful.

At the same time, the result from any activity is ultimately determined by the potential increase in market share, revenue growth, as well as the indicators characterizing the preservation or increase of ownership, that is, net assets and net liabilities of the organization. Digitalization cannot grow into an end in itself. It is necessary to create the electro modelling processes for the assertion that the key processes as a result of the transition to digital technologies will be greatly simplified.

At the same time, the use of the latest technologies cannot diminish the use of proven traditional tactical and strategic tools.

Servicization makes the key changes in the field of value proposition for counterparties, due to this there is a process of value and individualization joint formation.

Under the conditions of exponential economic growth, thanks to the accelerated innovations’ development, the goods market is saturated, which leads to an increase in the need for service companies. This trend creates additional opportunities to increase the range of goods with services for its promotion, i.e. to service.

With the goal of increasing the marginal revenue of the company, servicization is transforming business models by switching to a higher share of services.

Services are subject to organizations that, as a rule, produce some products and provide the related additional services. Certain services are provided at dumping prices, sometimes even for free, in order to stand out, to attract the buyers’ attention to the product that brings the main income.

The response to these trends should be adaptive, it is necessary to think through the ways to manage the changes and development, as well as the modification risks. For implementation, an integrated or multi-channel strategy creating a new synthesis of digital and physical orientation is necessary.

The technique of transition to digital technologies requires a balance between the physical and digital means of organization, and servicization requires a combination of goods, work, services (“hybrid”).

Today, without a doubt, physical and digital business tools should work in tandem. This consolidating concept is radically different from the approach taken in the days of Internet expansion, when there was competition between e-business and traditional business.

Innovative engineering changes in business models do not require large investments in scientific development, which provides startups with limited resources, operating with a cloud IT platform with unlimited expansion, to promote their platforms creating a competition for the old-timers which have not rethought their competencies.

By generating the new conceptual solutions to attract customers, digitalization is opening up the new business opportunities.

The architectonics of digital platforms facilitating two-way communication between the counterparties provokes a repeat of the purchase, facilitate the replication of transactions. Technical clients’ binding is carried out by various means, for example, providing bonuses during registration, ensuring free delivery, engaging in Forums and thereby expanding the potential customers’ audience.
With an increase in the number of operations, a platform service company replenishes information on the assortative mating preferences of its customers and can make the additional offers for purchased goods, thereby optimizing the offers’ range, and using the accumulated transaction data as a product, create the new offers.

Summary
The main preferences acquired by firms as a result of the business models’ adaptive evolution can be summarized:

• the lack of temporary and geographical barriers allows for large-scale integrated digital operations;
• digital technologies have the data that firms can use to develop and improve their offerings of physical assets and services;
• digitalization ensures the creation of new communication channels, improves interactions between contractors, creates the ability to instantly respond to the individual consumer needs;
• digitalization, accumulating and analyzing data on prevailing demand and using software-based tools to convert the individual offers into the standardized products, can help promote commercial implementation. [8]

The main expected results from digital investments are: ensuring the growth of competitive opportunities, the corruption eradication, cybersecurity, improving the well-being of citizens by achieving the sustainable economic development.

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