

Article

Important Aspects of Implementing Digital Business Models in Enterprises

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Abstract: The article examines the key parameters that determine the successful implementation of digital business models in enterprises. Based on a review of international and national literature, nine core parameters are identified and an integral assessment methodology is proposed. The main types of digital business models are compared, and Uzbekistan's level of digital development is benchmarked against Central Asian and CIS countries using international indices. Statistical analysis reveals high growth rates of the digital services market and IT service exports, and recommendations for accelerating digital business models at the enterprise level are developed.

Keywords: digital business model, digital transformation, platform, ecosystem, value proposition, digital maturity, integral index, enterprise.

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1. Introduction

In the digital economy, competition takes place not between products but between business models. Of two companies using the same technology, one may become a market leader while the other may incur losses and exit the market — the difference is often hidden in the economic parameters of the business model: the cost of acquiring a customer, the period of retaining that customer, the network effect generated by an additional user, and the share of revenue earned from each transaction.

Whereas general financial indicators such as revenue, costs and profitability were sufficient for assessing a traditional business model, they do not provide a complete picture for digital business models. For example, platform companies may operate at an accounting loss for many years while at the same time creating substantial value through their customer base and network effects. It is therefore necessary to identify the specific parameters of digital business models and to develop methods for measuring them[1].

In the first quarter of the 21st century, digital technologies have fundamentally changed the mechanisms of creating value, delivering it and generating revenue from it in all sectors of the economy. Today, the competitiveness of enterprises is determined not only by product quality or cost levels, but also by the adaptability of their business model to the digital environment. New forms of business models, such as platforms, ecosystems, subscription-based services and data monetization, are eroding traditional industry boundaries and reshaping the market structure.

In the Republic of Uzbekistan, the development of the digital economy has been designated as one of the priority areas of state policy. The "Digital Uzbekistan – 2030" strategy, approved by Decree of the President of the Republic of Uzbekistan No. PD-6079

of 5 October 2020, provides for the digitalization of public administration, the real sector and the regions. As a result of this policy, in 2024 the country rose to 63rd place among 193 countries in the UN E-Government Development Index (EGDI) and entered the “very high” group for the first time. At the same time, the achievements in the public sector are not yet fully matched by the widespread adoption of digital business models at the enterprise level: many enterprises limit digitalization to the introduction of individual technologies (accounting software, a website, online payment) and do not redesign the business model itself – the value proposition, customer relationships, revenue streams and cost structure[2].

Therefore, identifying the parameters that determine the success of implementing digital business models in enterprises, and developing a methodology for measuring and managing them, is a pressing scientific and practical task.

Although the concept of the “business model” entered scientific discourse at the end of the 20th century, its theoretical foundations were formed in the 2010s. D. Teece defines the business model as the logic of how an enterprise creates and delivers value for customers and how it captures part of this value as profit, and distinguishes it from business strategy. A. Osterwalder and Y. Pigneur proposed a method of describing the business model by means of the nine-block “Business Model Canvas” tool, which has become the most widely used analytical tool in practice[3].

C. Zott, R. Amit and L. Massa, having systematized the literature on business models, substantiated the need to view the business model as a system of interdependent activities that extends beyond the boundaries of the enterprise and is interconnected with partners.[3] H. Chesbrough, in turn, showed that the main barrier to business model innovation is not technology but organizational attachment to the existing model.[4]

The business model occupies a central place in research on digital transformation. G. Vial, having analyzed 282 scientific sources, defined digital transformation as a process of fundamental change in the ways an organization creates value under the influence of digital technologies, and showed that its success depends on changes in strategy, organizational structure and culture.[5] P. Verhoef and co-authors divided digital transformation into three stages – digitization, digitalization and digital transformation – and concluded that the business model is fully rebuilt only at the last stage.[6] A. Bharadwaj and co-authors put forward the idea of merging information technology strategy and business strategy into a single “digital business strategy”.[7]

Individual types of digital business models have also been studied in depth. G. Parker, M. Van Alstyne and S. Choudary investigated the network-effect-based value creation mechanism of platform business models. O. Gassmann, K. Frankenberger and M. Csik identified 55 recurring business model patterns and showed that most new models are the result of recombining existing patterns. The empirical study by M. Rachinger and co-authors found that digitalization affects business model innovation, but that enterprises often limit themselves to changing only internal processes rather than the value proposition.[8]

On the question of the factors of implementing a digital business model, G. Kane and co-authors found that the main driver of digital maturity is not technology but strategy, leadership and organizational culture.[9] G. Westerman, D. Bonnet and A. McAfee showed that enterprises referred to as “digital masters” combine digital capabilities with leadership capabilities[10].

In the domestic literature, issues of the digital economy have been studied mainly at the macro level, i.e., in the context of public administration, e-government and the development of the IT sector. The issue of systematically assessing the parameters of implementing a digital business model at the enterprise level has not been sufficiently researched, and this constitutes the scientific gap addressed by this article. For this reason, the topic is relevant specifically in the conditions of Uzbekistan from the standpoint of

developing enterprises, increasing their positive contribution to GDP and increasing tax revenues to the budget[11].

2. Materials and Methods

The aim of the study is to identify the important parameters of implementing digital business models in enterprises, to develop a methodology for assessing them, and to make proposals for their application in the conditions of Uzbekistan.

The study used the systems approach, scientific abstraction, analysis and synthesis, comparative analysis, grouping, time-series analysis (growth rates, average annual growth rate), a linear trend model, as well as expert assessment and integral index methods.

The article develops a system of parameters for implementing digital business models in enterprises. Based on the literature review, the parameters of implementing a digital business model were identified and divided into five groups. Uzbekistan's level of digital development was compared with that of neighbouring countries using international indices, and the dynamics of the digital services market were analyzed using statistical methods.

In addition, an integral assessment methodology at the enterprise level was developed. Assessment criteria and weights were set for each parameter, and a formula for the integral index of digital business model implementation (RBMI) was proposed.

3. Result and Discussion

Taking into account that, within the next five years, approximately one third of the revenues of traditional competitors may be at risk of being lost due to the digital revolution, the authors of the study propose four main business models based fully or partially on a digital platform:

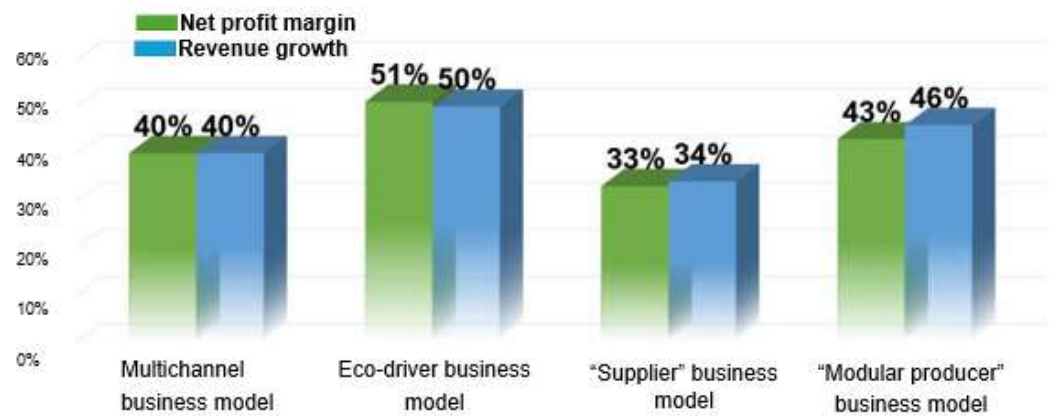
1) an omnichannel business model that combines multiple communication channels in the "producer-consumer" system into a single service concept in order to eliminate gaps in communication with customers;

2) a business model in the form of an ecosystem driver — creating several offerings in the form of tangible products and services on a single platform in order to attach consumers to a single but multifunctional supplier;

3) the "supplier" business model — selling a tangible or other product through external system solutions (electronic trading platforms for B2B and marketplaces for B2C);

4) the "modular producer" business model — focusing on one or two types of products and/or services and developing them through continuous innovation[12].

The multichannel and eco-driver business models are presented by the authors as full digital transformation, while the other two are presented as only partial transformation. At the same time, according to the authors, the eco-driver business model ensures the maximum growth of revenue and net profit margin (Figure 1).



Source: prepared by the author based on official data

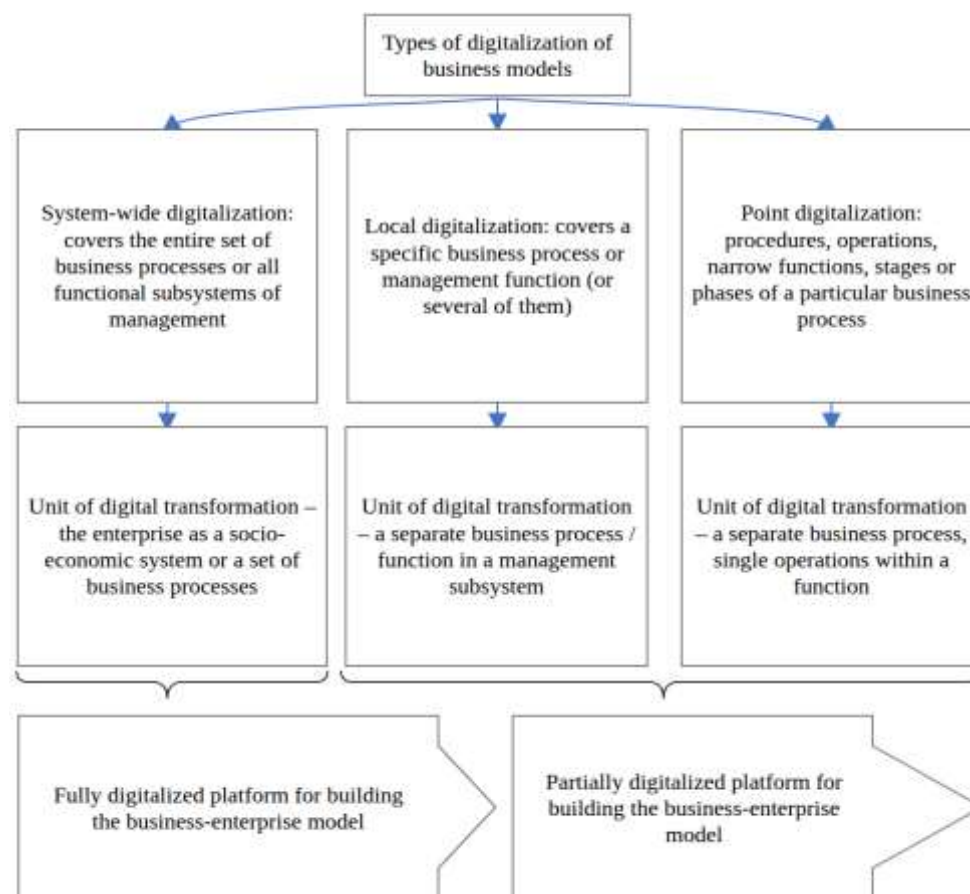
Figure 1. Effectiveness of digital transformation of different business models

It is evident that the eco-driver business model based on a digital platform yields the greatest economic efficiency, since by its nature it is a monopolist that exploits economies of scale. The second most effective digital transformation is the "modular producer" business model, which by its nature is a practical implementation of the long-known marketing strategy of "focusing on a segment"; a similar strategy can be observed in the transformation of the omnichannel business model. Accordingly, the digital transformation of the "supplier" business model is the practical application of a cost-saving strategy[13].

Scientific studies published by a number of foreign researchers mention particular or local aspects of the digital transformation of business models, or consider point solutions. The local aspects of digital transformation usually relate to changes in the technological basis of a particular business process or of a functional subsystem of management.

As a rule, these concern processes or functions that were previously commonly outsourced (accounting, sales logistics, staff training and personnel records, etc.). Point changes within the sequential succession of stages in a business process, or within the sequence of operations performed by a particular function, usually concern certain routine procedures (for example, electronic waybills in supply logistics, various notification systems, digital permits, etc.)[14].

Based on the above, we can note that there are three main types of digital transformation of business models, including those intended to improve the activities of manufacturing and service enterprises (Figure 2).



Source: author's compilation based on official data

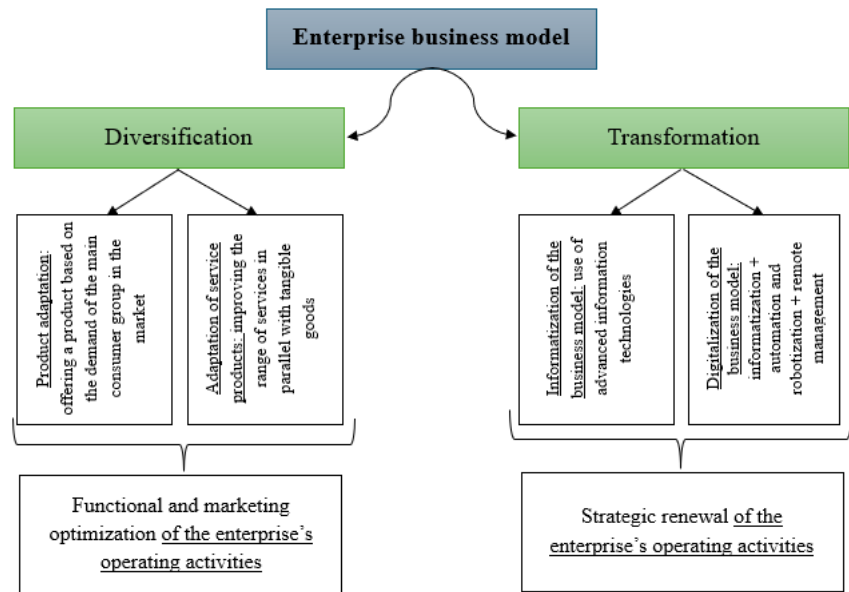
Figure 2. Types of digital transformation of business models of manufacturing enterprises

Next, it is necessary to consider the types or directions of the digital transformation of business models, also taking into account foreign scientific research in this area. In 2017, K. Schwertner wrote that markets and firms are being renewed under the influence of four convergent technological forces: social networks, mobile devices, cloud computing and big data[15].

In fact, these are only a small part of the technological forces that not only change the business models of enterprises but, at the same time, determine the long-term trend, which has no alternative, towards the industrialization of the world economy and global digitalization. That is why many different varieties of the digital transformation of the business models of economic entities can be found in Russian and foreign scientific studies[16]:

- a) by the set of business processes: digital transformation of core, supporting and management business processes;
- b) by functional subsystems of management: digitalization of production, logistics, human resources, finance and other subsystems;
- c) by business units or types of economic activity: digitalization of material production or digitalization of additional services;
- d) by interaction with the external environment: direct digitalization, or only implemented, or only external digitalization of communications, cooperative links, etc.;
- e) by the structural elements of accounting: digitalization of operating, investing or financing activities.

These types of digital transformation are presented in the most generalized form in Figure 3.



Source: author's compilation based on official data

Figure 3. Directions of diversification and transformation of the business model in enterprises

As can be seen from the figure above, the improvement of the business model in corporate structures can be achieved in two ways: diversification and transformation. Through diversification, an enterprise can optimize its operating activities and thereby achieve the expected economic effect. In this case, the main emphasis is placed on market segmentation, and the enterprise adapts its product and the processes of its sale to the market based on the results of segmentation analyses. The transformation direction, in turn, requires sufficient capital and time resources from the enterprise. In this case, the enterprise undergoes strategic renewal processes aimed at the fundamental renewal of its operating activities. The mechanism for implementing this is given as "digitalization of the current business model (informatization + automation and robotization + remote management) = building a new business model"[17].

The parameters of a digital business model can be divided into six groups, and it is advisable to define measurement indicators for each of them (Table 1).

Table 1. Important parameters of digital business models and indicators for measuring them

Parameter group	Content of the parameter	Key indicators
Value parameters	Value offered to the customer, convenience, personalization	Conversion rate (CR), NPS, share of active users (DAU/MAU)
Network parameters	Increase in value as the number of users grows	Number of active users, seller/buyer ratio, share of organic acquisition
Revenue parameters	Mechanism for converting value into cash flow	ARPU, take rate (commission share), GMV, share of paying customers
Cost parameters	Scalability and cost structure	Marginal cost, CAC, gross margin, share of fixed costs
Customer retention parameters	Duration of the relationship with the customer	Churn (customer attrition rate), retention, LTV, LTV/CAC
Data parameters	Use of data as a source of value	Share of data-driven sales, conversion through recommendations

Source: author's compilation based on official

The parameters are interrelated, and their combination is reflected in the unit economics of the business model. The ratio of LTV to customer acquisition cost (CAC) and the CAC payback period are taken as the criteria of business model sustainability. This confirms the conclusion that customer retention parameters are of decisive importance in a digital business model[18].

The share of e-commerce, the most widespread form of digital business models, in retail trade in Uzbekistan was 3.7–3.8 percent in 2024 and, according to the regulator's estimate, 4.6 percent in 2025 . For comparison, in Kazakhstan this indicator was already approaching 10 percent in 2022 , while the global average is estimated at around 22 percent [19]. Thus, the Uzbek market lags behind the global average by almost five times, which indicates a large growth potential for digital business models.

Table 5. E-commerce turnover in Uzbekistan and its share in retail trade[14, 16]

Indicator	2023	2024	2025
E-commerce turnover, trillion soums	13.26	15.21	22.7
Chain growth rate, %	–	114.7	149.2
Retail trade turnover, trillion soums	–	410.07	–
Share of e-commerce in retail trade, %	–	3.71	4.6

Source: author's compilation based on Uzbekistan authorities' official data

Data in US dollar terms make it possible to cover a longer period: according to KPMG estimates, the market size amounted to USD 168 million in 2021, and according to state statistics it reached USD 1.2 billion in 2024[20].

4. Conclusion

Overall, based on the results of the research conducted, the following conclusions can be drawn:

1. Digital business models differ fundamentally from traditional models in terms of the source of value (the user network and data), the cost structure (near-zero marginal cost) and the scale effect (demand-side network effect).

2. It is advisable to divide the important parameters of a digital business model into six groups — value, network, revenue, cost, customer retention and data parameters — and to measure each of them through unit economics indicators.

3. It is recommended to use the LTV/CAC ratio (at least 3) and the CAC payback period as the integral criteria of business model sustainability.

4. The importance of the parameters depends on the type of business model: network parameters are the priority for platforms, customer retention for subscription models, and data parameters for advertising-based models.

The following are proposed for the development of digital business models:

- using unit economics indicators alongside traditional financial indicators when evaluating the performance of digital companies, and developing unified methodological recommendations on calculating them for investors and banks;
- relying on the priority parameters presented in Table 4 when choosing the type of digital business model, and directing resources specifically towards improving these parameters;
- as the market matures, paying more attention to retaining existing customers (reducing churn, loyalty programmes, ecosystem services) than to acquiring new ones;
- improving the cost parameters of platforms and expanding the network effect by developing logistics infrastructure in the regions;
- expanding statistical observations of e-commerce and digital services by the Statistics Agency, in particular collecting data on the number of active users and digital revenue indicators.

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