

# Directions for transforming enterprise business models by implementing sustainable digital economy

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**Abstract.** Enterprise business models are the object of research in a wide range of economic and management sciences. The value proposition as well as the position in the network of values determine the perceived available options for the transformation of the business model in the context of digitalisation. The aim of the article is to investigate the possible directions of transformation of business models of enterprises under the actualisation of the concept of sustainable development in the digital economy. In order to realize this objective, we analyzed the relevant conceptual and empirical articles, as well as information obtained from extensive empirical research on the conditions of sustainable development of enterprises and changes in consumer values within the framework of the theoretical component. The hypothesis of the study is based on the fact that changes in the values of stakeholders, primarily consumers, determine the transformation of business models. Identifying changes in consumer values in the context of new opportunities to address environmental and social issues provided by digital technologies has allowed us to propose directions for transforming the logic of value creation in business models: transformation of business model components, changes in customization, changes in format management.

## 1 Introduction

Various authors have contributed to the current understanding of business models; for example, foreign researchers Zott, C., Amit, R. and Massa, L, are known for their methodology of business model classification [1]. The main criterion for classification in the works of these authors is the "source of value creation", which they associate with the indicators of financial performance of the company.

Also, development of practice-oriented design and selection of the most important elements of the business model were engaged in such scientists as Johnson M.W., Christensen C.M. and Kagermann H., etc. [2, 3, 4]. At the same time, the architecture of business model elements does not change fundamentally, experiments with forms of visualisation are conducted and focus on what, according to the authors, is the most important. There are also a number of publications in the literature that reflect the impact of information technology on the business model of the enterprise. In particular, the

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representation of the business model as a system of goods, services and information flows, which also includes a description of the various business actors and their roles [5].

The set of variables to characterise the business model has also been critically analysed in the works of a number of researchers. Steadily replicated in contemporary business rhetoric is the so-called business model, according to Osterwald, A. and Pignet, I. These scholars have proposed a kind of template for building a business, including a set of elements formed around the value proposition provided to clients and business partners [6].

According to some authors [7, 8], a deeper elaboration of the structure and essence of business model of an enterprise is related to the separation of activities or business processes which transform resources at the input into customer value at the output. The logic of this line of research presents the business model as a set of business processes of an enterprise.

Continuing the discussion on this issue, it should be noted that more and more research works in the field of business modelling concepts actualise the need for "transparency" of enterprise processes [9]. Thus, these concepts consider the consumer not just as a source of profit, but as a dynamic link, a participant in the process of formation of the final shape and implementation of the goods produced. This is expressed both in the participation of consumers in the creation of products and in the transfer of innovation between participants and co-competitors in the business environment. Digital technology itself is changing as the global community demands a higher level of quality content. At the same time, development and implementation time is decreasing, because the process members themselves are interested in the earliest product release and are involved in the production process, and the number of developers themselves is increasing" [10].

Studies (George, G. et al., 2021; Paiola et al., 2021) substantiate that in addition to the unconditional economic efficiency of implementing digital transformation, society can also reap environmental and social benefits [11, 12]. Many politicians and public figures are now calling for the solution of alarming environmental trends and social problems through sustainable development focused on the production and consumption of goods and services that create social and environmental value (Palmi'e, M., Rügger, S., Holzer, M. et al., 2023) [13]. In order to meet the demand for socially or environmentally beneficial solutions, these goods and services must be produced. Public authorities can create and fund such products, but they are hampered by two constraints (Blanck, M., & Ribeiro, JL D. 2021) [14]. First, they may lack the competencies and assets to create these products in the required quantity, quality, and time frame. Secondly, public budgets are notoriously tight, so raising alternative funding facilitates the situation [15,16]. However, in a market economy, other stakeholders can take on both tasks: consumers, acting as buyers, can pay for environmentally friendly products, while companies can provide for their production.

Value is a key category in business model transformation. "Creating value", "communicating value" to the consumer along with its appropriation are the basic variables in business models. Changes in value drive the transformation of business models, and an analysis of the drivers and conditions for these changes allows us to determine the direction of business model transformation.

## **2 Materials and methods**

The article is based on a conceptual research method, which relies on a literature review to find and integrate various concepts, including aspects of sustainable development, strategic marketing and operational management of enterprises.

The research uses data of official state statistics of Russia, annual financial reports and reports on sustainable development of Russian enterprises of various industries and sectors, the results of a survey of 1200 enterprises, implemented by PJSC "Sbrenbank", on the basis of

which this paper has implemented a study of the areas of consumer values accounting using the expert method, methods of theoretical generalization and comparative analysis.

The analysis of methods for successful models of sustainable and high profit extraction and for achieving superiority over competitors has confirmed the theory that it is impossible for companies to focus on market share growth, and that the value chain should be reversed so that it starts to emerge from the consumer's priorities.

### **3 Results and discussions**

Although research on digitalisation in the context of business model transformation is currently attracting increasing attention, there is still a research gap in this area as the amount of empirical data is limited. The results of Rachinger, M. et. al. (2019) show that it is the value proposition as well as the position in the value network that determines the perceived available options for business model innovation through digitalisation. The results of this study showed that members of the media and automotive industry perceive both the pressures and opportunities of digitalisation in relation to IMT; however, its application and exploitation remain challenging [17]. In the present time, research on the impact of digitalisation processes on business model change is gaining relevance. Acciarini, C. et. al. 2021 investigated the role of the digitalisation phenomenon in the development of innovative business models oriented towards sustainable development of enterprises in the automotive industry [18].

Stakeholders (above all investors and consumers) increasingly expect the company to consider the environmental as well as social impacts of its decisions. Companies are therefore being forced to include these areas in their corporate objectives and strategy. Market-based mechanisms for transforming environmental benchmarks to ensure the sustainable development of enterprises are being formed and refined. Thus ESG (Environment, Social, Governance) investments are intensifying the competition of national enterprises for the financial attention of stakeholders with enterprises of foreign developed stock markets.

Drivers of ESG transformation of Russian enterprises are the search for reserves to improve operational efficiency, the requirements of investors, partners and customers, the international agenda for achieving sustainable development goals, the reputational effect, and risk management. At the same time, large national enterprises have paid considerable attention to expanding the concept of social responsibility, sustainability and the ESG agenda over the past decade. Meanwhile, the indicator "share of procurement from SMEs" is one of the indicators of successful sustainability in national ESG rankings.

According to the survey conducted by the pioneer and leader of business transformation in Russia POA SBER, there are significant structural and sectoral distortions in the level of implementation of ESG practices in company management in the national market. For example, the largest companies in the industrial sector, including the energy, metals and mining sectors, show the best results in terms of ESG maturity. But this is due to the high environmental and social risks of their operations, as well as stringent government regulation and years of experience in sustainable management.

Table 1 presents the results of a survey of more than 1,200 Russian companies, different in scale of activity and distributed into 3 segments: the largest, large and medium-sized enterprises. The results of the survey confirmed the hypothesis that sustainability policies focused on stakeholders' interests, representation and transparency of sustainability and corporate social responsibility reporting are more extensive the larger the company is.

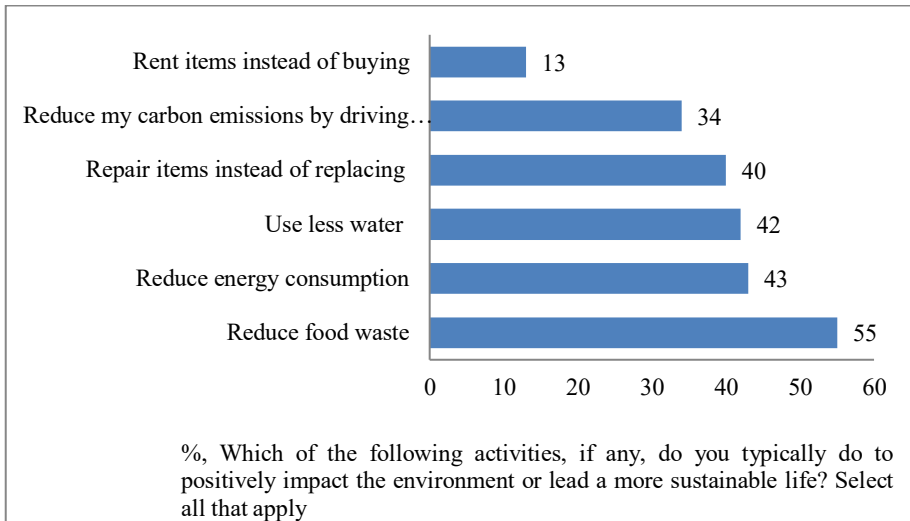
**Table 1.** Availability of corporate ESG documents of Russian enterprises (2022) [compiled by the authors on the basis of 19] (<https://sber.pro/special/praktikum-ustoichivogo-razvitiia-kak-rossiiskomu-biznesu-prodolzhat-esg-transformatsiiu-v-novykh-usloviakh>)

Prevalence of corporate documents among surveyed companies	% enterprises surveyed (average value)	% major companies	% large companies	% medium-sized companies
Provisions on governing bodies of the general meeting of shareholders, the board of directors and the sole governing body	44	87	46	36
A development strategy with corresponding goals and objectives	31	43	34	27
Code of Business Ethics and/or Corporate Governance Code	20	63	20	14
Anti-corruption policy or another similar document, %	16	36	17	13
Conflict of interest management policy or another similar document	14	56	13	8
Responsible Procurement Policy or Supplier Code of Ethics	5	11	5	5
ESG or sustainability or corporate social responsibility policies	4	18	3	2

SMEs, however, may be more attuned to the changing values of their stakeholders through greater flexibility and adaptability. The availability of economic benefits as a result of ESG transformation, the production of environmentally friendly goods and services makes business opportunities in sustainable development attractive (Palmie, Boehm, Lekkas et al., 2021) [13]. Thus, both public authorities and companies are interested in understanding what motivates consumers to pay for environmentally friendly products.

According to Euromonitor's "Top 10 Global Consumer Trends 2022" report, the main trends in consumer behaviour can be seen as localisation and optimisation, improved supply chain transparency, reduced spontaneous purchases, increased popularity of online resources as sources of product reviews and feedback, and concern for their own health and well-being. Euromonitor estimates that in 2022, 67% of consumers have tried to have a positive impact on the environment through their everyday actions [20]. At the same time, there is still a dissonance between the consumers' ability to pay extra for environmentally friendly products and services on the one hand. On the other hand, the consumption is being rationalized and the negative ecological effects on the environment are being reduced.

Figure 2 shows data from a survey conducted by Euromonitor in 2022 on what consumers typically do to have a positive impact on the environment or lead more sustainable lifestyles. 55% of those surveyed reduce food waste, about 40% each reduce energy and water consumption and repair things instead of buying new things. The high importance of these values, affects consumer behaviour and expectations and requires businesses to change the way they interact.



**Fig.1.** Acceptance scheme of the conflict caused by distribution chain participants' choice of interests [compiled from source Source: Euromonitor International Voice of Consumer: Lifestyles Survey, fielded January/February 2022]

In today's environment, the need for self-care has increased, so businesses will need to demonstrate their commitment to customer wellbeing by introducing new ways of generating value and how to deliver it to customers.

Businesses at the forefront of change are constantly looking for new ways to be sustainable: through building partnerships with environmentally conscious partners, innovative production and recycling methods.

Digital innovation is changing the way retailers, manufacturers and consumers move into a new era of eco-transparency. Technical tools such as digital product labelling and mobile tracking apps are helping consumers track their ethical requirements, their carbon footprint and recycling habits on their phones.

Millennials and especially Generation Z representatives feel they can make a difference with their choices. This largest consumer group of the future will use the tools to ensure minimal impact on the climate. The more offerings meet climate change expectations, the more brands will see their products and services resonate.

To summarise, the current high cost of living, high commodity, energy and housing prices are causing consumers to switch to energy-efficient technologies and products. Consumer market dynamics are driving the development of new ways for consumers to obtain value, such as through repair, reuse and rental.

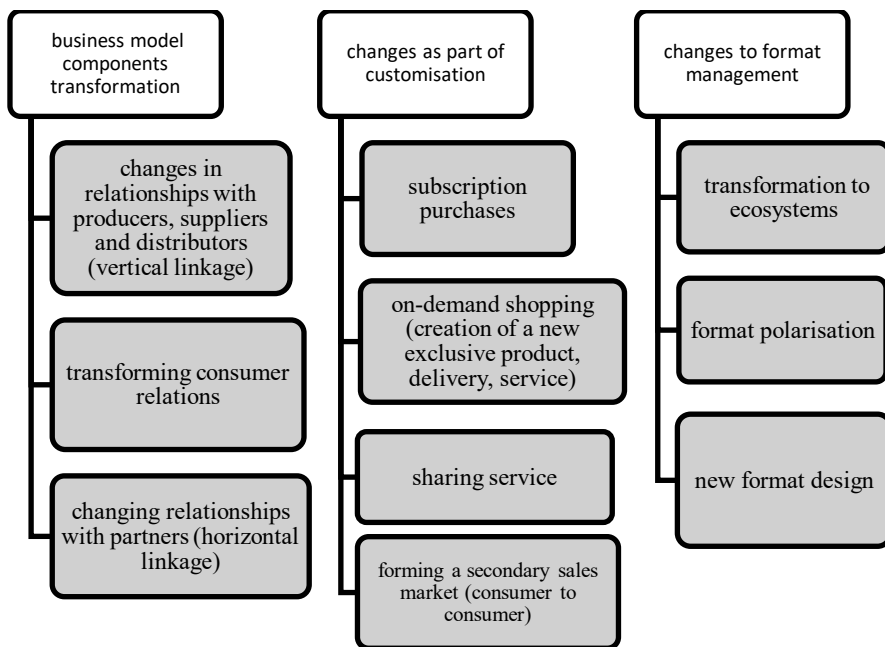
Personalisation, enabled by digital tools, is also an important trend changing consumer values and determining the transformation of business models. Personalisation will evolve and shift towards mass acceptance in all sectors, such as beauty, personal care and consumer health.

After severe restrictions during the pandemic, consumer groups have different attitudes towards service and show a split in preference. Some consumers have appreciated the convenience and safety of shopping online and continue to use this model of purchasing behaviour. Another part of consumers want to actively and fully return to the pre-pandemic model of active offline shopping. Businesses that demonstrate better adaptability have been able to rebuild and sustain themselves through the adoption of an omni-channel approach. Omnichannel in business models allows digital technology to offer consumer-relevant alternatives to physical visits. Such hybrid business models provide a seamless customer experience regardless of the channel. Peter C. Verhoef, P.K. Kannan, J. Jeffrey Inman define

omnichannel as the study of consumer behaviour patterns in the omnichannel space, methodical ordering of customer transitions from one channel to another, finding ways to optimize it [21, 22]. This approach reveals a basic property of omnichannelism - the seamless transition of the consumer from one channel to another.

Another trend in the evolution of business models refers to the emergence of a proactive business model, which defines the way to create innovative solutions and is expressed in a chain of operational and strategic values, built on the basis of information and communication resources (M. Murfield, C.A. Boone at al.) [23]. With this in mind, it is about delivering sustainable value to consumers. This contributes to the identification of new types of values in the context of achieving the goals pursued in commercial transactions with stakeholders to meet emerging needs.

The diagnosis of the determinants of ESG transformation of Russian enterprises, the analysis of the components of business models, the study of global experience of value-based business modelling allows us to determine the classification of directions applied in the transformation of logic in value creation (**Fig.2**).



**Fig.2.** Directions for transforming the logic of value creation in business models

The study of changes in consumer behaviour has influenced the development and emergence of a new trend - sustainable consumer behaviour as opposed to the previously accepted concept of purchase decision-making. In this environment, businesses need to adapt their business models to provide cost-saving synergies, the convenience of omni-channel access and consumption of products and services, supply chain transparency and personalisation of value to the consumer.

## 4 Conclusions

Increasing digitalisation has affected various business activities, including companies' business models, opening up various new forms of cooperation between companies and

leading to new product and service offerings as well as new forms of company relationships with customers and employees. At the same time, digitalisation is forcing companies to reflect on their current strategy and explore new business opportunities systematically and early on.

The key findings of the study are as follows. Digitalisation is changing the values of consumers, who are the most important stakeholders of companies. The increasing vector of sustainable development is changing the way value is produced, distributed and appropriated. Therefore, changing consumer behaviour actualises the transformation of business models for enterprises in the context of the realisation of a sustainable economy.

By identifying global consumer trends and comparing them with the conditions and drivers of ESG transformation, three areas of enterprise business model adaptation are proposed:

1. Transformation of the business model component based on changing relationships with consumers, partners, or distributors. The basis of this direction is the need to respond to requests for personalisation, ease of shopping and seamless transition from one type of distribution channel to another. In this direction, the way in which value is communicated to the consumer is changing, manifesting itself in the co-creation of value through a proactive approach.

2. Transformation within the framework of customisation aims at meeting the personalised values of consumers, aiming at concern for the level of ecological production and consumption, climate change, the balance between need and consumption, and social justice.

3. The direction of change in format management is based on ensuring the omnichannel delivery and consumption of products and services and the transparency of supply chains. This direction can be implemented through the transformation of the logic of building business processes in the form of new formats, the most popular of which is currently the creation of business ecosystems.

Having analysed the drivers and conditions for sustainable development in the digital economy, we can conclude that changes in consumer values directly affect not only the greening of production and the development of green products. But also, the transformation of consumer values determines new ways of delivering that value and redistributing it through distribution channels. In the concept of "open innovation" and open processes in business models, the actions of consumers guided by their values determine the transformation of vertical and horizontal connections of components of business models of individual enterprises, lead to new formats of cooperation and competition, stimulate the development of various ways of personalising goods and services.

## 5 Funding

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