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Analysis of The Processes of Formation of Business Models with The Help of Information and Communication Technologies in the Context of the Digital Economy

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Abstract: The article delivers an extensive review of business model establishment throughout the modern digital economy where Information and Communication Technology (ICT) plays an essential role in transforming contemporary enterprises. The discussion details core elements of traditional along with digital business models as it identifies their base factors along with attributes and key figures involved. These two business models differ structurally along with operationally yet the article demonstrates how digitalization modernizes current business methods. Research centers on studying digital platforms because they now control great power within today's economic system. These platforms help generate different types of value while allowing business operations with customers to occur dynamically and utilize data-based approaches for improved performance and competitive advantage. This work studies how digital platforms transformed normal business methods by developing approaches based on services and network connections instead of traditional product development models. The research investigates how ICT development impacts business scale capacity and user engagement and market penetration while describing how modern technological approaches outperform classic business structures through flexibility innovation and revenue generation capabilities. The article evaluates digital ecosystem trends to study the changing strategies behind business structures alongside market challenges and opportunities in digital economies. This analysis presents a detailed assessment of contemporary business model transformations that follows the strategic value of ICT systems for maintaining competitive stability during today's economic environment.

Citation: Saatova L. E. Analysis of The Processes of Formation of Business Models with The Help of Information and Communication Technologies in the Context of the Digital Economy. Academic Journal of Digital Economics and Stability 2025, 38(1), 316-321.

Keywords: building materials, production, innovative technologies, raw materials, environmental safety, energy efficiency, personnel training, state support, competitiveness, processing technologies.

Received: 10th Jan 2025
Revised: 11th Jan 2025
Accepted: 28th Jan 2025
Published: 10th Feb 2025



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1. Introduction

The digital economy is currently one of the most important directions of the world economy. It is based on information and communication technologies (ICT), which have significantly impacted production, services, and trade processes. As a result of the widespread application of ICT in our economy, business models are changing, and new digital platforms, online services, and innovative approaches are emerging.

Main Part

Digital technologies are becoming a new tool, method, and measure for the economic and social development of countries around the world. Today, digital business and its models form the basis of the economies of many developed countries and are considered the fastest-growing sector in the next 50 years. This includes new startups that are transforming industries based on artificial intelligence, big data, cloud technologies, and other digital technologies.

Globally, the formation of digital business models has led to a fundamental change in traditional business models worldwide. Companies without prior experience in business are conducting research on new digital ways of value proposition, surpassing large companies with 50 or more years of experience, and establishing new startups. All of this is taking place based on the development, implementation, and intelligent digitization of new digital business models.

The integration of digital technologies into our daily lives has expanded the boundaries of traditional business, transforming entire industries and creating new sectors, jobs, and online markets. Every new technology and business model has the potential to discover new markets and disrupt existing ones.

The global changes occurring in the world have also reached our country. To accelerate the digital development in our country, a number of important documents have been adopted. These include the January 28, 2022 Presidential Decree PF-60 on the "Development Strategy of New Uzbekistan for 2022-2026," the November 21, 2018 Resolution PQ-4022 on "Measures for Further Modernization of Digital Infrastructure," and the May 7, 2018 Resolution PQ-3698 on "Additional Measures for Improving Mechanisms for Introducing Innovations in the Economic Sectors" [1], [2], [3].

Furthermore, on October 5, 2020, the President of the Republic of Uzbekistan approved the PF-6079 Decree on the "Digital Uzbekistan - 2030" Strategy and measures for its effective implementation. In this decree, it was noted that within the framework of digital transformation of regions and sectors from 2020 to 2022, the following measures would be implemented:

Increasing the level of internet network coverage in settlements and bringing the mobile communication network coverage to 95%;

Implementing over 400 information systems, e-services, and other software products in various sectors;

Training 500,000 young people in computer programming as part of the "One Million Programmers" project;

Implementing over 280 information systems and software products for automating management, production, and logistics processes in enterprises of the real sector;

Increasing the digital literacy of local authorities, state bodies, and organization employees, and expanding the use of ICT to improve people's living standards.

All of the above requires the study of digitization, digital transformation, and digital business models, as well as knowledge of their effective implementation. These are all considered elements of the digital economy.

It should be noted that the digital economy is a new economic structure defined by the role of information technologies and internet services in economic processes. The key role of ICTs is that they ensure rapid information exchange, automate production and service processes, and create new opportunities. A business model is a conceptual description of entrepreneurial activity.

This concept first emerged in the late 1940s in the context of scientific works on economic topics, and in the 50s and 60s, it was solidified in the context of business games for managers. By the second half of the 1990s, the concept of a business model was considered in the context of corporate strategy, aligning with it. During the dot-com boom, interest in business models emerged as a tool to describe the differences between new internet companies and traditional businesses, and business modeling became an approach for introducing startups to investors unfamiliar with the new market. As a result, most of the research on business models conducted in the 1990s and 2000s was dedicated to technology companies, and the concept was associated with them.

Researchers from Brunel University London and the Paris School of Economics and Business studied approaches to defining business models, identifying them as the structural, operational, and financial mechanisms of a commercial organization, its products, present time, and their future development, serving the company's strategic goals.

Economist Michael Porter, in his approaches, includes other organizational aspects that define the way to achieve strategic goals (cost leadership, differentiation, or narrow

specialization). The business model arising from this strategy, in turn, defines the processes necessary for business activity, as emphasized by the author.

David Tis considers the strategy as a foundation for the business model, serving the role of an overall description of the company. In his approaches, the value chain acts as a link between these concepts, describing specific activities aimed at creating and distributing value.

2. Materials and Methods

In the September-October 1994 issue of *Harvard Business Review*, economist Peter Drucker did not specifically mention the term "business model." Instead, Drucker uses the concept of business theory and understands it as a set of assumptions about the company's operations. These assumptions include the definition of markets and competitors, customer values and behaviors, the company's strengths and weaknesses, and how the company makes money in general. Using IBM as an example, Drucker demonstrates how changes in market conditions render old assumptions incorrect and drive companies to seek new ones. Thus, IBM transitioned from supplying tabulators (tables, records) to leasing equipment, and then to manufacturing personal computers, microcomputers, and components. It is noteworthy that the company made another transition – to software development and service provision.

In 1998, the Director of the European Commission, Paul Timmers, published an article in the *Journal on Electronic Markets* about new business models in the e-commerce market, where he considered the business model as the architecture of products, services, and information flows that describe the roles of various economic factors, their potential benefits, and sources of profit.

The researcher introduced 11 models, which he categorized as either formed or developing, including online store models, purchasing systems, online auctions, e-mail, market models, social networks, service providers, integrators, thematic platforms, and information brokers.

Michael Lewis' approach to defining a business model is presented in his book *The New New Thing: A Silicon Valley Story*. Condensing the concept to the method of profit generation, he critically evaluates it as a synonym for poorly thought-out plans made by companies during the internet boom. He cites the rising prices of Microsoft software in 1999 and the flawed practices of numerous companies that encouraged website visitors to sell ad spaces as examples of unfounded practices.

Joan Magretta's work *Why Business Models Matter* appeared in the *Harvard Business Review* in May 2002, during the peak of the internet crisis. She refers to business models as stories and answers Peter Drucker's questions about business theory: What is the customer, and what are their values? She highlights that the development of business modeling was driven by the widespread use of personal computers and spreadsheet software. While successful business models in the past were based on assumptions and experience, software now allows us to link many factors together and design businesses before launching them.

In this context, Magretta divides the business model into two components: the creative component (which describes the development, acquisition, or production of the product or service) and the sales component (including customer identification and targeting, organizing sales, product distribution, or service delivery). Within this approach, creating a new business model can be achieved either by creating a new product or service or by altering processes. [9][13].

In his ideas, Alexander Osterwalder presented the business model as a project in which the company operates. He was the first to describe his business model framework in his 2004 Ph.D. thesis and later developed it further in his 2010 book *Business Model Generation*. [6][7]. Canva presents its business model in the form of nine interconnected blocks, including the key resources and processes involved in value creation, customers and their relationships, the value proposition, cost structure, and revenue sources. [9][8]. Clayton Christensen's concept of "disruptive innovation" describes the emergence of new business models that make older approaches competitive in the market. In his 2008

Harvard Business Review article, he defines a business model as a combination of methods for creating and delivering value to customers.

3. Results and discussion

Business models are actually divided into two types: traditional business models and digital business models.

Traditional business models are primarily based on the processes of creating, manufacturing, and delivering products or services to the market. They are generally divided into the following types:

- ⊗ Manufacturing-based model – In this model, companies produce products themselves and earn revenue by selling them. Product quality and price are the main competitive factors in this model.
- ⊗ Service model – Companies specializing in providing services, such as household services, repair workshops, or consultancy firms, operate under this model.
- ⊗ Retail intermediary model – Retail businesses act as intermediaries between producers and consumers. In this model, the efficiency of the supply chain plays a crucial role.
- ⊗ Franchising model – In this model, the franchisor earns revenue by offering its brand and business model for franchising. Examples include McDonald's or KFC.

The theoretical foundations of the creation of traditional business models, such as manufacturing and service models, are rooted in Frederick Taylor's scientific management theory and Henry Ford's mass production principles.

In the development of the franchising concept, Ray Kroc (the founder of McDonald's) made a significant contribution.

It is also worth mentioning the limitations of traditional business models:

- Dependence on physical space and infrastructure.
- Slow information exchange.
- Limited ability to respond to market demands.

In today's digital economy, traditional business models are being re-evaluated. Their main differences include:

- Value proposition: In digital models, the value proposition is created based on interactivity, speed, and personalization.
- Supply chain: In traditional models, the supply chain is sequential, while in digital models, it is horizontal and managed through platforms.
- Revenue generation model: In the digital economy, revenue sources are diversified. For example, Freemium models, subscription services, and revenue generation through advertising.

Currently, in the digital economy, the following main business models exist. These are primarily platform-based business models:

- ⊗ Marketplace platforms: These models connect consumers and suppliers (e.g., Amazon, eBay).
- ⊗ Customer service platforms: These models provide services through intermediaries (e.g., Uber, Airbnb).
- ⊗ Freemium model: These models offer basic services for free with additional paid options (e.g., Spotify, Dropbox).
- ⊗ Subscription-based model: These models allow customers to access services through a subscription for a specified period (e.g., Netflix, Microsoft 365).
- ⊗ Ad-based model: These models provide consumers with free content while generating revenue through advertising (e.g., Google, Facebook).
- ⊗ Digital product and service sales: These models sell digital products (e-books, apps) and services (e.g., App Store, Google Play).
- ⊗ Direct sales model: This model ensures direct interaction between consumers and producers through the digital economy (e.g., Tesla).
- ⊗ Model based on digital transformation: Traditional business models are reshaped by implementing digital technologies (e.g., IKEA uses AR technologies to allow virtual product viewing).

In this regard, it is worth briefly discussing the founders of digital business models, as Marshall Van Alstyne, Jeffrey Parker, and Sanjit Choudary have made significant academic contributions in shaping the platform economy.

Chris Anderson's work on popularization, "Freemium: The Future of Business", is considered a foundational source for the Freemium model.

Larry Page and Sergey Brin's approaches are based on advertising models, which formed the foundation of the Google company.

ICT has influenced the formation of business models in the following ways:

- Platform economy: Digital platforms have changed the ways products and services are produced, delivered, and consumed (e.g., Uber, Airbnb, Amazon). For example, Uber reorganized the taxi service market, and in 2022, over 7 billion rides were completed worldwide through the Uber platform.
- Online marketing and digital commerce: Internet sales have surpassed traditional sales today. Google Ads and Facebook's advertising systems are clear examples of such trends. According to the World Bank, in 2023, global e-commerce accounted for 21% of total retail sales.
- Automation: The use of ICT in business processes helps save labor resources and increase efficiency. For example, CRM and ERP systems. Companies like SAP and Salesforce help enhance efficiency through business process automation.

Notably, in Uzbekistan, according to the National Statistics Committee, in 2022, the volume of ICT services grew by 19%, reaching 14.5 trillion soms. Also, the annual payment volume through Uzcard and Humo payment systems exceeded 300 trillion soms. For instance, in various sectors, the application of digital technologies such as the use of drones and sensors in agriculture is helping to increase productivity. In healthcare, telemedicine services are making medical assistance more accessible to the population.

4. Conclusion

In conclusion, it can be said that the role of ICT in the development of the digital economy is unparalleled. At the same time, the following recommendations should be made for the further development of the digital economy:

- It is necessary to improve infrastructure for the development of the digital economy.
- There should be an increased focus on training specialists in the field of information technologies.
- Mechanisms should be created to encourage the use of advanced technologies in digitizing business models.
- A favorable legal environment should be created for the development of digital platform businesses in Uzbekistan.
- In the context of the digital economy, ICTs are transforming business models and elevating the efficiency and value creation processes of the economy to a new level. Additionally, strengthening cooperation between the public and private sectors in this process is of great importance.

REFERENCES

1. I. Karimov, Uzbekistan Economy and Industry Development, Tashkent: Science, 2015.
2. Republic of Uzbekistan, Presidential Decree No. PF-60 on the Development Strategy of New Uzbekistan for 2022-2026, Jan. 28, 2022.
3. Republic of Uzbekistan, Resolution No. PQ-4022 on Measures to Further Modernize the Digital Infrastructure, Nov. 21, 2018.
4. Republic of Uzbekistan, Resolution No. PQ-3698 on Additional Measures to Improve the Mechanisms for Introducing Innovations in Economic Sectors, May 7, 2018.
5. Web Source: 4. Wikipedia, "Biznes-model," available at: <https://uz.wikipedia.org/wiki/Biznes-model>.

6. Journal Articles and Books: 5. R. Mustafa and H. Werthner, "Business Models and Business Strategy – Phenomenon of Explicitness," *International Journal of Global Business & Competitiveness*, Jan. 1, 2011. [Online]. Available: Archived version from Jul. 1, 2015. [Accessed: Jun. 1, 2015].
7. A. Codrea Rado, "Until the 1990s, companies didn't have 'business models'," *Quartz*, Apr. 17, 2013. [Online]. Available: Archived version from Oct. 14, 2015. [Accessed: Jun. 1, 2015].
8. M. M. Al-Debei, R. El-Haddadeh, and D. Avison, "Defining the Business Model in the New World of Digital Business," Brunel University London, 2008. [Online]. Available: Archived version from Jun. 15, 2015. [Accessed: Jun. 23, 2015].
9. R. Mustafa and H. Werthner, "Business Models and Business Strategy – Phenomenon of Explicitness," *International Journal of Global Business and Competitiveness*, 2011. [Online]. Available: Archived version from Jul. 1, 2015. [Accessed: Jun. 23, 2015].
10. A. Ovans, "What Is a Business Model?" *Harvard Business Review*, Jan. 23, 2015. [Online]. Available: Archived version from Jun. 16, 2015. [Accessed: Jun. 23, 2015].
11. P. F. Drucker, "The Theory of the Business," *Harvard Business Review*, 1994. [Online]. Available: Archived version from Jul. 1, 2015. [Accessed: Jun. 23, 2015].
12. P. Timmers, "Business Models for Electronic Markets," *Journal on Electronic Markets*, vol. 4, 1998. [Online]. Available: Archived version from May 17, 2018. [Accessed: Mar. 20, 2018].
13. M. Lewis, *Noveyshaya novinka. Istoriya Silikonovoy doliny*, Moscow, Russia: Olimp-Biznes, 2004. ISBN 5-901028-70-8.
14. J. Magretta, "Why business models matter," *Harvard Business Review*, vol. 5, 2002. [Online]. Available: Archived version from Jul. 2, 2015. [Accessed: Jun. 23, 2015].
15. L. E. Saatova, "Approaches to the Formation of the Digital Economy," *American Journal of Economics and Business Management*, vol. 7, no. 11, pp. 1118-1124, 2024.