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# THE IMPACT OF BLOCKCHAIN TECHNOLOGY ON MODERN BUSINESS MODELS.

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**Abstract.** The article proposes an analytical framework for assessing the impact of blockchain technology on the evolution of business models. It provides an interpretation of B. Wirtz's integrated business model through the lens of the widespread adoption of blockchain technology in the global economy. The study is based on an analysis of empirical research on contemporary blockchain platforms across various economic sectors. This approach has enabled the synthesis and reevaluation of strategies for abandoning existing business models, revising, expanding, and creating new business models.

**Keywords:** blockchain, business model, value chain, blockchain platform.

Blockchain technology is positioned as a benchmark for the digital transformation of the economy and society. Blockchain integrates 20th-century advancements in cryptography, the open-source software movement, distributed computing, and the creation of a decentralized peer-to-peer (P2P) network, which facilitates access for other network participants without the need for central coordination through servers or stable nodes. As a class of distributed ledger technology (DLT), blockchain represents a database that allows users to verify transactions related to the creation, accounting, and/or exchange of any assets. This reduces uncertainty and ambiguity in transactions, ensures information disclosure, and thus forms a unified environment of trust for all transaction participants. Subsequently, the convergence of blockchain technology with artificial intelligence (AI), machine learning, the Internet of Things (IoT), quantum computing, robotics, and other technologies has formed a new, decentralized, and global computing infrastructure.

Blockchain serves as the foundation for a new economy, driving technological innovation and serving as a driving force of the Fourth Industrial Revolution, akin to how the Internet became a hallmark of the previous (third) industrial revolution and the establishment of the blockchain economy. The focus of the research lies in describing the technical intricacies of blockchain and the prospective applications of blockchain technology across various domains. The expansion and diversification of initiatives, the implementation of pilot projects, and the deployment of full-scale solutions based on blockchain technology have affirmed the potential of blockchain technology in both the economy and society. According to a global study by Deloitte in 2019, blockchain is recognized as a critical priority for all organizations in the context of exploring ways to integrate blockchain technology into existing business models.

The substantive content of a business model is grounded in the value chain, the creation and modification of which enable the organization's viability and the realization of benefits by all network participants within the framework of network interaction. The value chain is examined through the lens of the collective components of an organization's business model and the causal relationships between initial conditions, managerial choices, and successful business conduct. It is worth noting that debates surround the concept of the business model, its evolution, similarities, and differences in components from various research perspectives. An exhaustive classification of these components is provided in several studies.

Agreeing with the productivity of the presented approaches, it is pertinent to highlight B. Wirtz's integrated business model, which most comprehensively elucidates the nature of blockchain technology's impact on the prospects for changing the business model or its elements, using blockchain platforms as an example. The integrated business model describes how market information, products, and/or services are generated through the value chain. A comprehensive approach is achieved through three interrelated components proposed: the strategic component, the consumer/market component, and the value creation component, each of which is represented by partial

models supplemented by the author with characteristics of existing blockchain platforms.

**Table №1. The integrated business model and the result of blockchain technology's influence**

| Components | Components and their characteristics | Results of the impact of blockchain technology |
|---|---|---|
| ***Strategic Components*** | Strategic model: the strategic position of the organization and directions for development; value proposition of the business model. | Blockchain ecosystem |
| | Resource model: resources and key competencies; types of organization activities and key activities. | Data creation. Data storage reliability. Data processing. Data verification. |
| | Network model: networks; partnerships. | Online interaction. Consensus. Unified trust environment. Zero-knowledge collaboration. Accessibility. |
| ***Consumer/market components*** | Consumer model: relationships with consumers/target segments; distribution channel configuration | Absence of intermediaries. Transparency. Personalized support. Self-service. Service automation. Accessibility. Collaborative content creation. |
| | Market offering model: competitors; market structure; value proposition/products and services | Verification capability. Access to new products and services. Instant transactions. Low transaction costs. Programmable contracts ("smart contracts", "Ricardian contracts"). |
| ***Value creation components*** | Revenue model: revenue streams; revenue differentiation | Regular income. Transaction revenues. Service revenues. Crowdfunding. |
| | Production model: production; value generation | Simultaneous distribution of information among participants. Business process optimization. Business process automation. Streamlining value delivery. Collaboration and information exchange. |
| | Procurement model: resource acquisition; information | Guarantees. Security. Counterfeit prevention |
| | Financial model: financing; | Token-based financing. |

| | | |
|---|---|---|
| | equity formation; cost structure | Reduced costs for information search. Reduced costs for negotiations. Reduced costs for IT infrastructure. Increased spending on software, consulting services, and staff development. |

**Source: Compiled by the author based on B. Wirtz's integrated business model.**

The blockchain platform is an integrated, distributed, and computational environment utilized by companies to address issues and meet their business requirements. Participants in such a platform collectively engage in searching, interacting, creating, and exchanging value—products and services. An essential aspect of participant interaction on such a platform is the shift from traditional management culture to consensus adherence and code execution.

Specialization among participants in blockchain platforms also demonstrates various roles and value creation streams based on competencies and types of activities. To address industry-wide challenges, participants in blockchain platforms may form consortia. Such platform-based solutions are characterized by the following features:

Establishing partnership relationships within collaborative value creation, which are based on mutual vision of the common goal of cooperation;

Forming a blockchain community dialogue through representation of various networks, including research and development networks, the Internet, engineering infrastructure, transnational cooperation in cybersecurity, human rights, artificial intelligence, integrity, the Alliance for an Affordable Internet, the Electronic Freedom Forum, other organization networks, etc.

Ultimately, blockchain platforms contribute to both the creation of new business models and the revision of existing business models by changing one or more components. These include:

Using proprietary blockchain technologies or those jointly developed with other participants, changing only part of the management and business processes related to the technology;

Utilizing blockchain technologies without any changes to the structure of business processes by applying ready-made blockchain technologies from outside sources or hiring contractors through blockchain platforms;

Fully decentralized universal blockchain platforms, where every participant in the ecosystem can become a supplier of goods and services.

Optimization of business processes: digitization of assets simplifies property rights transfer, and transactions are carried out at a pace more consistent with the speed of conducting business.

Increased trust among network participants due to cryptographic confirmation of a set of transactions; since transactions cannot be tampered with and are signed by the corresponding parties, any breach becomes evident.

Knowledge and technology advantage through participation in the development of a decentralized platform as a new standard and thereby gaining a competitive edge.

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