Features of Company Management in the Field of E-Commerce

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ABSTRACT

The relevance of the research topic is due to the increasing spread of e-commerce. For the effective development of a company in this area, a strategy with certain features is necessary, and the purpose of the study is to determine the author's concept of its development. The article reflects the most important stages of this process, defines the main competencies of developers. When forming the strategy, the following aspects were taken into account: a short period of time allowed for making managerial decisions; the need for highly qualified personnel developing a strategy, carrying out promotion and contacting the consumer, as well as the fact that innovations, the search for free markets serve as a source of development for e-commerce companies, which corresponds to the strategy of the "blue ocean". The study was carried out using methods such as analysis and synthesis, induction and deduction, a systematic approach the authors analyzed an array of scientific publications on the topic under study. The results of the work are of practical value for specialists involved in strategic planning in the field of e-commerce, as well as for the researchers and students interested in the issues discussed in the article.
Keywords: blockchain technologies; cryptocurrency; marketplace; smart contracts; development strategy; strategy typology; strategic management cycle; e-commerce

INTRODUCTION

The development of electronic commerce (e-commerce) provides companies with certain advantages, as it creates opportunities for active business growth in those segments that were previously unavailable due to territorial limitations of sales opportunities. At the same time, the promotion of services through Internet technologies is associated with the need to build business processes of companies in a special way.

There are still quite a number of unsolved problems in this area, the relevance of which is undoubted due to market trends. Thus, in 2022 Russia demonstrated high growth rates of e-commerce (38% in value terms and 65% in physical terms) [1]. However, in 2021 the progress in this sphere was more noticeable: (52% in monetary terms and 104% in physical terms compared to the previous period).[1] The slowdown in growth may be due to the fact that online commerce has already outgrown the stage of active development, and at this stage more efforts are required from companies to increase competitiveness and retain the desired market share.

This article deals with e-commerce as a specific field of activity. Therefore, before talking about the modernised process of developing a development strategy for a company operating in the field of e-commerce, it is necessary to first focus on the specifics of the latter and its distinctive characteristics in comparison with traditional commercial activities.

When conducting the research such methods as analysis, synthesis, induction, deduction, and system approach were used. Scientific publications on the research topic were studied and the author's position was developed, explaining the specifics of strategy formation for companies operating in the field of e-commerce.

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[1] According to estimates by Data Insight. URL: https://top100.datainsight.ru/#tabD 13439BA

TYPES OF E-COMMERCE

E-commerce is a special type of commercial activity involving the use of electronic services. From the point of view of a number of authors, the term 'e-commerce' is identical to the concept of 'electronic commerce' [2]. In our opinion, this statement is not quite legitimate, and the position of Doctor of Economics S.V. Pirogov, who understands e-commerce as a technology that allows to implement commercial processes with the active involvement of electronic resources, is more logical [3].

The e-commerce market covers traditional interaction sectors: B 2C (business-to-consumer); B 2B (business-to-business); C 2B (consumer-to-business); C 2C (consumer-to-consumer).

B 2G and G2B models (transactions between business structures and the state and vice versa); C 2G (interaction between consumers and the state); B 2M (transactions between business structures and professional managers); B 2E (transactions between companies and employees using electronic services) are less widespread (see the *Table*).

One of the main forms of interaction between market participants is an electronic trading platform. In this regard, the term 'marketplace' is actively used in the business environment, which is absent in Russian legislation, but is regarded as an e-commerce platform (an e-commerce site that unites sellers and buyers in one place). However, it should be noted that, according to the preamble of the Law of the Russian Federation dated 07.02.1992 No. 2300–1 'On Protection of Consumer Rights', the term 'marketplace' itself corresponds to the concept of 'owner of an aggregator of information about goods (services)', which means a right holder (a legal entity or an individual entrepreneur) or the owner of software for electronic computing machines (telephones), or the owner of a site (page) on the Internet, providing consumers with an opportunity to familiarise themselves with the offers of other persons (sellers) regarding a certain product

Table

Models used in the field of e-commerce

Name of the model	Characteristics	Examples
B2C (business to consumer)	A type of commerce that involves a company interacting directly with consumers (online shop)	Ozon, Yandex Market
B2B (business to business)	Transactions between business representatives (manufacturers with wholesalers or retailers)	Amazon, Alibaba, Rakuten
C2B (consumer to business):	Consumers, often freelancers, offer their services to legal entities	Twago, Nubelo or Adtriboo
C2C (consumer to consumer)	Consumer to consumer (individuals interacting with each other, online auctions)	eBay
B2G and G2B (business to government, government to business)	Transactions between business entities and the state and vice versa (entrepreneurs receive state services, pay taxes, fines, etc.; the state places orders).	"State Services for Business" portal; UIS (Unified Information System) Procurement
C2G (consumer to government)	Interaction between the consumer and the state (document flow, provision of state services, payment of taxes).	Public Services Portal "Gosuslugi"
B2M (business to manager)	Transactions between commercial structures and professional managers — intermediaries can act as professional managers.	
B2M (business to machine)	The technology by which entrepreneurs manage commercial equipment via the Internet	
B2E (business to employees)	Transactions between companies and employees using electronic services, corporate interaction	
D2C (direct-to-consumer)	Sales from the manufacturer directly to the consumer without the involvement of intermediaries; development of own electronic sales network	

Source: compiled by the authors.

(service).[2] Consequently, both concepts (both 'marketplace' and 'aggregator owner') serve to designate an electronic trading platform (platform), where information about the goods being sold (services being rendered) is placed, having received which it is possible to conclude a sales contract with a seller in electronic form and make payment. In other words, the marketplace acts as an intermediary between the seller and the buyer. Such subjects of the electronic market as representatives of the banking sector (banking ecosystems) are also involved in the platform

economy. The most striking example is the practice of Sber, which provides its clients with various partnership offers, carsharing, entertainment media services, video, and audio streaming, and much more [4].

ADVANTAGES OF E-COMMERCE

When developing a company's development strategy in the field of e-commerce, it is justified to take into account the specifics of the business in order to create prerequisites for the adequate choice of the existing model of strategic development in each specific case or to determine the required transformations for it. The configuration of the e-business will also be of importance in determining the prospects of the latter's development.

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[2] Law of the Russian Federation from 07.02.1992 № 2300–1 (ed. from 05.12.2022) 'On Protection of Consumer Rights'. URL: https://www.consultant.ru/document/cons_doc_LAW_305/?ysclid=lxsowb8p96968384428

The following features of e-commerce can be noted, which distinguish this sphere from conventional commerce and allow to take advantage of the digital economy:

• the speed of transactions in electronic networks is much higher — there is a significant saving of time and human resources;

• greater coverage of the target audience, leads[3];

• possibility of individual approach to consumers;

• increase in the probability of promotion, expansion and deepening of channels of influence on the audience;

• opportunities to use co-branding distance programmes;

• expansion of geography of presence.

These perspectives should be considered as part of strategic planning, while at the same time envisaging responses to certain threats that are specific to e-commerce.

RISKS AND LIMITS OF E-COMMERCE USE

The following are the main risks associated with e-commerce activities:

• large number of competitors, which makes it more difficult for a company to maintain certain positions and status (especially when using pricing instruments);

• increase in the amount of information available to consumers, which makes them more demanding in terms of the 'price-quality' ratio;

• increasing complexity of maintenance of electronic services, which requires the use of hardware devices of higher quality and, accordingly, more expensive;

• increasing complexity of services and increasing range of services when using electronic systems for business, which implies higher requirements to the professionalism of person-

nel in the field of electronic commerce and promotion;

• increasing risk of information leakage, which entails increased requirements to information security;

• electronic settlements, which increases the requirements to payment security systems.

E-COMMERCE COMPANY DEVELOPMENT STRATEGY

The development and implementation of strategy, especially in e-commerce, is a creative process, and the stages can move seamlessly from one to the other. For example, the owner has set a goal to enter new markets, but the political situation has changed and many of them have been closed; then, with the help of a strategic analysis of the external environment, the goals are revised. Strategy analysis, selection and implementation are linked processes, within which there is controlling, which allows to monitor its effectiveness and make adjustments if necessary.

When forming a development strategy, the type of e-commerce is taken into account, as well as the sphere of activity (universal assortment, sale of services, certain types of goods, etc.).

It should be noted that it is necessary to build an IT strategy and select the architecture of information solutions that support the main tasks. It is more efficient to develop this type of strategy after strategic objectives have been defined and corporate and competitive strategies have been selected.

The changes in consumer habits that have occurred with the transition to remote forms of commerce require increased attention to marketing when building a company's e-commerce development strategy. Nowadays, e-commerce promotion plays a crucial role in competing for markets along with reputation building, branding. Both positive and negative feedback about an organisation's actions in the online space spreads very quickly. Reputation can be lost literally in one day, while it can take months or even years

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[3] Lead — a potential customer, someone who has performed a targeted action (subscribed to a newsletter, requested a commercial offer, indicated an email in the feedback form, made an appointment with a master).

to regain the trust of customers. Therefore, the main strategic objectives of a company in the field of e-commerce marketing strategy are to acquire brand recognition and ensure high customer loyalty; their fulfilment will allow to capture and retain the desired market share and ensure high competitiveness.

As it was mentioned above, e-commerce requires high professionalism of human resources, so the HR management strategy is of great importance, which should be linked to the overall strategy. E-business requires targeting the increment of intellectual capital and the formation of an intra-company knowledge pool, which will eventually ensure the growth of the company's capital. Modern HR management strategy interacts with innovation strategy. Increase of competences, level of professionalism of employees allows to stimulate the introduction of new developments, because in the course of development of their own skills the employees of the enterprise generate new ideas that can ensure its development.

Such ideas will then be realised within the framework of the production strategy and disseminated in the market through the marketing strategy, which in turn is defined in the context of the competitive strategy. All these processes and their promotion take place within the framework of the main guidelines set by the corporate strategy. As a result, all levels of each strategy are interconnected both horizontally and vertically. At different points in time, under the influence of external and internal environmental factors, certain types of strategies may be prioritised.

The main principle in the preparation and implementation of strategic decisions should be to take into account the effectiveness and focus of actions. E-commerce provides for the use of omni-local approach, which allows to work on several platforms of contact with the target consumer (both online and offline tools are involved), which, according to A. P. Ivashchenko, allows to increase the efficiency of impact on customers [5].

USE OF BLOCKCHAIN-BASED TOOLS IN E-COMMERCE

The term 'blockchain' is associated with the publication of a paper known as 'Bitcoin: A System of Digital Peer-to-Peer Visibility', the authorship of which has never been disclosed[4] [6]. The essence of blockchain technology is understood in the publication as a system of online transactions that exclude trust. The scheme of transactions does not provide for identification — they have a simple structure, each node of the chain (a transaction consisting of a large number of mini-transactions — nodes) is an independent participant and possesses only part of the information.

Blockchain provides for registration of the transaction in the chain of nodes,[5] confirmed by the participants of the transaction. A transaction is structured data whose contents include the subject of the agreement and the will of the user. When the latter confirms the transaction, it cannot be cancelled — it is recorded in its own block, which has a unique code. Such a record makes it possible to determine the moment of the transaction to the nearest second. Since encryption is used to reflect its data, the possibility of falsification is excluded.

Blockchain technology, directly linked to 'Internet money', generates a new form of settlement, essentially eliminating financial intermediaries [7]. In the legal literature, blockchain is considered as a decentralised distributed database implemented in cryptocurrency and making payments without intermediaries due to the irreversibility of transactions [8].

It should be noted that blockchain is one of the variants of distributed ledger network functioning,

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[4] Satoshi Nakamoto's name was used in the article, but the true author or group of authors is unknown. According to RBC experts, it is very likely that the authors are of Russian origin. Blockchain: what it is, features of the technology. RBC Trends. URL: //https://trends.rbc.ru/trends/industry/5f05c0a79a7947a ac5c7577a

[5] Node — a node in the blockchain whose main function is to verify and validate a transaction.

as there are examples when the latter do not use blocks (Ripple platform, which mainly performs interbank transactions).[6]

Cryptocurrency is issued through mining (adding new blocks to the chain), which involves the issuance of new coins. The first participant who does this becomes a miner and is rewarded.

Cryptocurrency can be purchased for fiat money and other cryptocurrencies on special platforms; transactions involving cryptocurrency require digital keys, which are used to create a wallet (public) and to carry out transactions (private).

The first bitcoin was issued in 2009, when 50 new monetary units were issued; in 2010, the first cryptocurrency exchange Bitcoin Market was launched, mining started to develop [9], and transactions to purchase real goods for bitcoins began to take place.[7] The rate of this digital currency at that time grew 10 times.

In the future, the history of bitcoin developed ambiguously. In May 2010, it was exchanged for real goods — two pizzas, which were received by a U.S. citizen L. Hanech for 10,000 bitcoins [10]. In early 2011, the value of bitcoin was almost equal to the dollar value, setting a world record of growth — 1,300 times.[8] Bitcoin's history is very mixed and dramatic, from ups in 2015, 2017 to a complete collapse in 2022.

One of the popular cryptocurrencies, Ether, is often used to generate smart contracts [11] and differs from bitcoin in the way that in it a unit is an account rather than a financial transaction. The Ethereum environment has three levels of users [12]:

• the first is the user interfaces; this is where smart contract developers, users and miners operate;

• the second level is the Ethereum environment with minimal user interfaces; this is where smart applications are deployed for all users;

• the third layer is the blockchain data store.

The Ethereum platform, developed by V. Butarin, M. Wood et al.— is an open platform for generating smart contracts, eliminating the existing limitations in writing unique codes, and using the possibility of executing short blockchain-based programmes.

In the Ethereum environment, there is a fee on miners' activities. As a result, it turns out that the use of blockchain is associated with costs that are distributed differently than in traditional financial intermediation. In addition to Ethereum, users actively use the platforms Aeternity, Hyperledger Fabric, Cardano [12].

It is worth agreeing with the available opinions regarding the advantage of smart contracts in connection with the constant generation of backups. According to Western researchers in the field of digital economy, blockchain will allow to:

• reduce costs on IT infrastructure of companies [13];

• ensure transparency of banking services [14];

• create a new culture of collaborative consumption [15].

The listed advantages testify to the revolutionary and 'breakthrough' nature of the new tool, and some authors call it a 'basic' tool [16].

Next, let us consider how broad the possibilities of modern technologies are and how 'costless' the process of using them is. A number of scholars are quite justifiably reserved about the revolutionary nature of blockchain, noting that this technology is not associated with a scientific breakthrough [16], and the investments already made in its development do not correspond to the scale of their practical application. We believe it is possible to share this balanced position regarding the large-scale prospects for the restructuring of the financial system due to the application of blockchain. The blockchain allows to increase

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[6] Overview of cryptocurrencies, ICOs (initial coin offering) and approaches to their regulation. Bank of Russia. URL: https://www.cbr.ru/Content/Document/File/36009/rev_ICO.pdf

[7] Bitcoin History. Bitcoin Wiki. URL: https://bitcoinwiki.org/wiki/bitcoin-history

[8] Bitcoin History. Bitcoin Wiki. URL: https://bitcoinwiki.org/wiki/bitcoin-history

the efficiency of financial transactions due to increased reliability, permanence, and immutability of the latter [17]. *Figure 1* summarises the uses of blockchain technology.

Their use for the issuance of cryptocurrencies has already been discussed above; with the help of such mechanisms, investment of startups, microfinance, crowdfunding are facilitated [18]. The authentication of identity, rights to various assets is used in cadastral registration, generation of a dated digital signature [19].

Another modern technology that can change the structure of the financial market with the help of blockchain is 'smart contracts', or 'smart' or 'intelligent' contracts. Its author Nick Szabo in 1994 put forward the idea of conducting transactions by digitally representing a set of obligations between the parties, including a protocol of their fulfilment [20].

A common example of such technology implementation at the present stage is autopayments (for example, for housing and utilities). Financial intermediaries in this variant of transactions are excluded, they are replaced by software codes, which have the characteristic of immutability [21]. Distinctive features of a smart contract are self-execution and self-sufficiency [22], which essentially excludes traditional intermediation.

There is also a narrower understanding of this type of contract, as set out in the analytical review prepared in 2018 by the Central Bank of the Russian Federation, which gives as an example the implementation of a vending service — the purchase of coffee in a vending machine.[9] This study applies an extended understanding of smart contract to include the use of blockchain technology.

The terms and objects of a smart contract as its integral components are shown in *Fig. 2*.

Another important characteristic of a smart contract is the use of a programming language for its execution. The execution of the contract takes place through cyber means, but at the same time it mediates the relationship between people, so we can say that smart contracts are a type of cyber-social technology. The programme acts as a financial intermediary.

In most cases, such contracts are developed using the Solidity language — with its help, the code is transformed into Ethereum byte-code, and subsequently transformed into a transaction, which is assigned an address [23]. The simpler Vyper language is also used [24].

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[9] . Analytical review on the topic 'Smart Contracts'. Bank of Russia. 10.2018. URL: https://cbr.ru/Content/Document/File/47862/SmartKontrakt_18–10.pdf
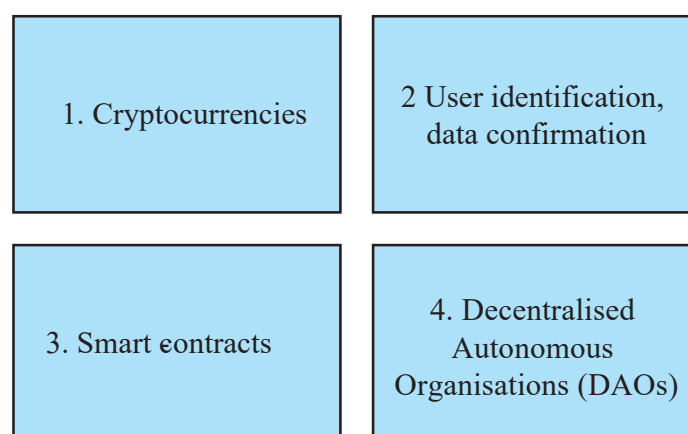
1. Cryptocurrencies	2 User identification, data confirmation
3. Smart contracts	4. Decentralised Autonomous Organisations (DAOs)

Fig. 1. **Directions of using blockchain technologies**

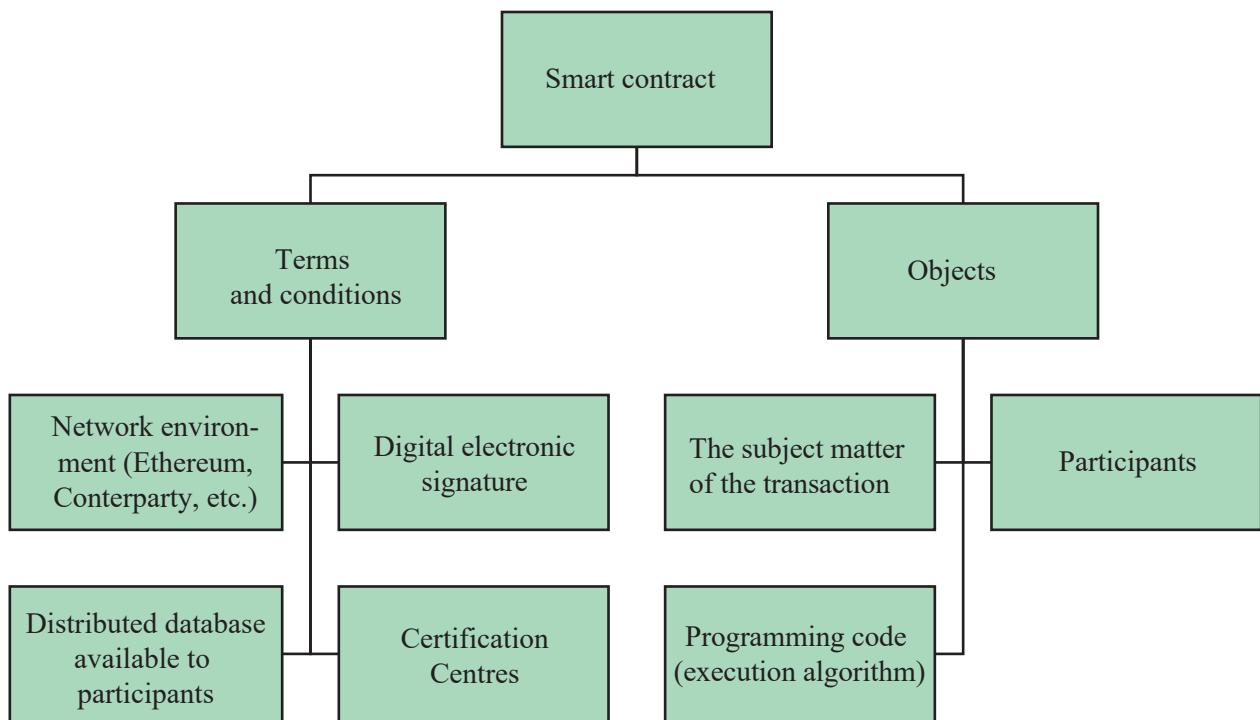*Source:* compiled by the authors based on [17, 31, 33].

Fig. 2. **Components of a smart contract**

Source: compiled by the authors based on [12, 22, 24].

The authors of the study consider the most understandable and financially related definition of a smart contract as an algorithm that operates on the basis of blockchain technologies and ensures compliance with the terms of the agreement.

The directions for the use of smart contracts as elements of financial intermediation can be presented as follows:

• insurance area (insurance accounting and document flow, insurance claims processing, insurance compensation payments in typical cases, for example, to customers automatically when flights are delayed according to the experience of AXA [25]);

• banking sphere (automation of settlement processes, small business lending);

• settlements via a system similar to SWIFT [26];

• settlement and clearing schemes [28];

• operations with digital assets (cryptocurrencies, tokens);

• financial services (exchange trading, auctions, etc.).

In some cases, for example, when concluding mortgage transactions, the application of smart contracts will not require the inclusion of a commercial bank as a counterparty to the agreement [29].

The wide possibilities of such contracts and the prospects for their use in insurance (medical, accident, natural disaster, car and cargo insurance) are actively discussed in the scientific literature [30], since insurance involves the execution of a large number of documents. By automating this work, transaction costs can be drastically reduced.

Automatic verification through smart contracts allows to save significantly on costs (including those related to network creation) [31].

An important advantage of such contracts is the invariability of records that constitute the contractual terms [32]; the initial public offering of digital tokens (ICO), which is a special way of attracting investment resources, is also
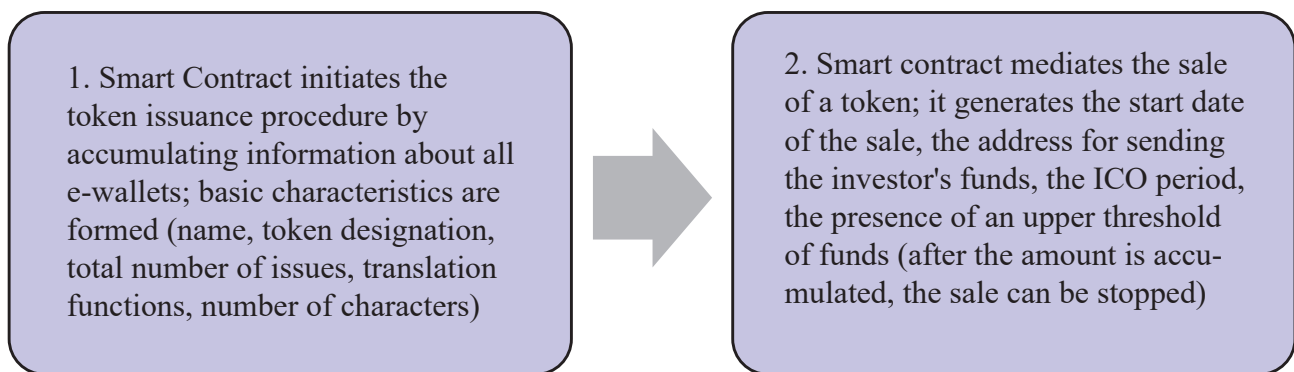
> 1. Smart Contract initiates the token issuance procedure by accumulating information about all e-wallets; basic characteristics are formed (name, token designation, total number of issues, translation functions, number of characters)

> 2. Smart contract mediates the sale of a token; it generates the start date of the sale, the address for sending the investor's funds, the ICO period, the presence of an upper threshold of funds (after the amount is accumulated, the sale can be stopped)

Fig. 3. **ICO scheme on the Ethereum platform**

Source: compiled by the authors based on URL: https://cbr.ru/Content/Document/File/47862/SmartKontrakt_18–10.pdf

called a promising area of smart contracts application.

An ICO can be carried out in two stages (two contracts are involved) (*Fig. 3*).

Another form of using blockchain technology in financial management is decentralised autonomous organisations (DAOs), which allow for the distribution of corporate rights, asset management, logistics, and the formation of global value chains.

The main characteristic of DAOs is the presence of an internal unit of account — token. D. V. Kirillov interestingly compares DAOs with collective farms in the USSR or Chinese communes [33]. Inside the company tokens play the role of money and, in addition, are motivators of efficient work and elements of 'profit participation'. In the framework of DAOs, interactions are cemented not by labour agreements, but by smart contracts.
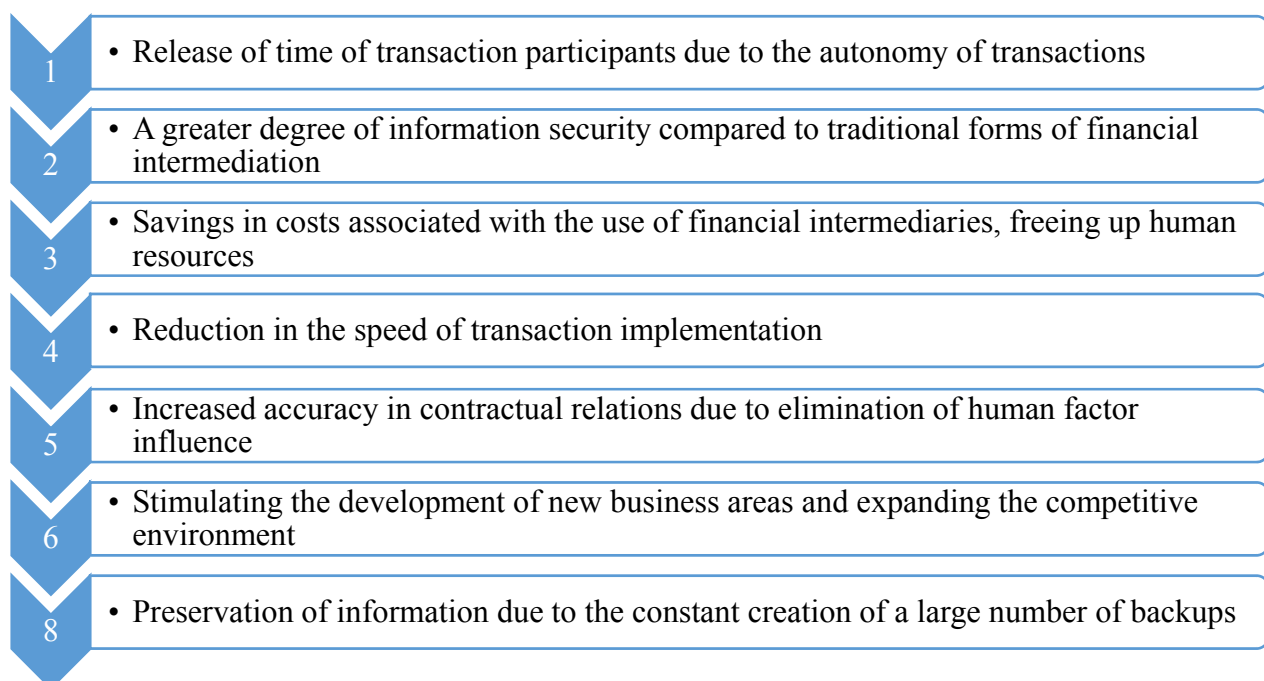
1. • Release of time of transaction participants due to the autonomy of transactions

2. • A greater degree of information security compared to traditional forms of financial intermediation

3. • Savings in costs associated with the use of financial intermediaries, freeing up human resources

4. • Reduction in the speed of transaction implementation

5. • Increased accuracy in contractual relations due to elimination of human factor influence

6. • Stimulating the development of new business areas and expanding the competitive environment

8. • Preservation of information due to the constant creation of a large number of backups

Fig. 4. **The possibilities of blockchain technologies and smart contracts in e-commerce**

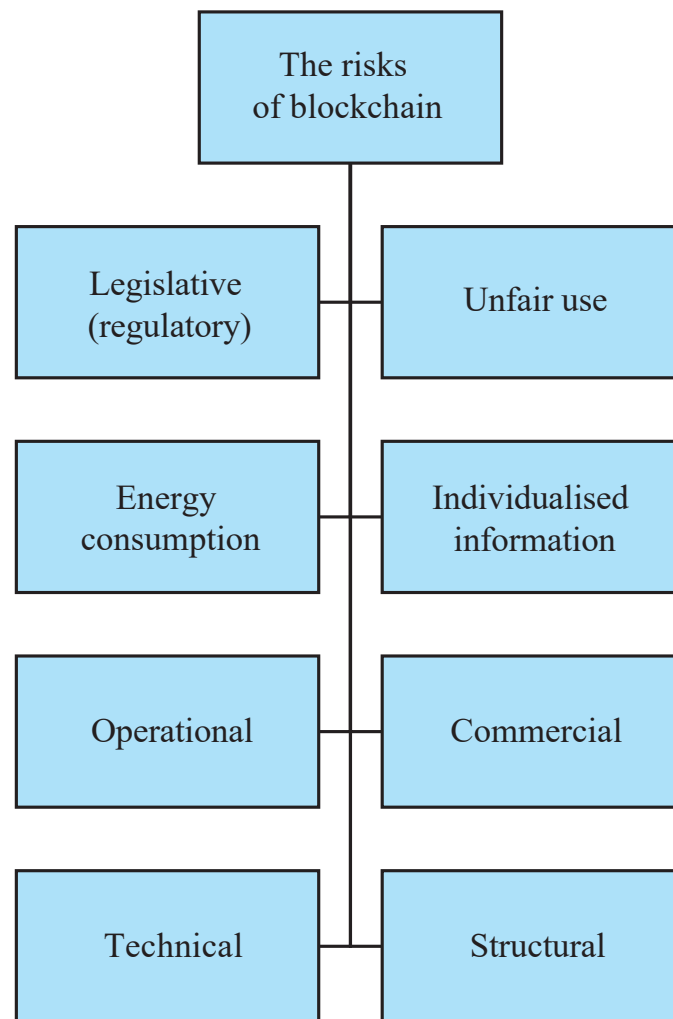*Source:* compiled by the authors based on [12, 13, 20, 24].

Fig. 5. **Classification of blockchain risks in e-commerce**

Source: compiled by the authors based on [27, 34].

ADVANTAGES AND RISKS OF BLOCKCHAIN TECHNOLOGIES IN E-COMMERCE

The main advantages of blockchain technologies in terms of their use in e-commerce can be grouped as follows (*Fig. 4*).

Despite the great opportunities offered by decentralised finance, as in any financial mechanism the effect correlates with risks, the classification of which is presented in *Fig. 5*.

Some of them are quite correctable, such as commercial and individual information. Others (legal, energy-related) are very difficult to manage. Let's consider the presented risks in more detail.

Legal risks in the use of smart contracts are rather high, as they are not fixed in the legal field. Regulatory risks are especially evident in cases where there are cross-border or international agreements, and entities from different countries must determine which right to use.

One of the ways to reduce the uncertainty of the legal status of smart contracts is to amend the existing legislation, which has already been done by such post-Soviet states as Belarus and Estonia.

At the same time, the world legal practice has not yet developed a unified approach to understanding the legal status of a smart contract — it is just being formed. There are several models, which

some researchers group as follows: technology-oriented, transaction-oriented, mixed, neutral [34].

Since blockchain technologies are inherently anonymous and do not depend on the public administration system, but are conditioned only by software tools, they can be used to implement:

• financing of illegal activities;

• improper disclosure of information in connection with 'cyber-attacks', hacking of systems;

• ignoring the will of users after their registration in the chain.

These risks of unfair use can only be reduced through government intervention, determining the legal status of the technologies used and establishing a legal regime.

The commercial risks of blockchain technologies are associated with situations where the costs associated with the implementation of these mechanisms are higher than their benefits. To operate digital tools, significant funds are needed to purchase software, train specialists, negotiate with partners to carry out transactions in the new form, etc. Storing and maintaining information using blockchain involves costs that increase with the scale of operations. Energy costs are also increasing significantly, and in some cases can be critical to projects. Finding new energy-saving modes in the software domain will avoid energy dependency in the future. It is necessary to apply financial planning and foresee the cost-effectiveness of projects that will be carried out with blockchain technologies.

Another problem is the lack of scalability, i.e., the lack of capacity of existing systems to process large amounts of information simultaneously, resulting in slower processing speeds.

Like any information system, blockchain technology is susceptible to hacking. Earlier, the development of bitcoin showed that fraudsters are quite capable of 'infiltrating' software codes. The first DAO could not resist a software bug and was hacked.

In order to reduce technical risks, it is necessary to involve highly qualified specialists in the process of writing smart contracts and use modern software tools.

CONCLUSIONS

The experience accumulated by researchers can be used in the development of the company's development strategy in the field of e-commerce.

The specifics of the development process include the need for quick decision-making, the availability of highly qualified specialists working with the consumer, and the use of analytical capabilities to calculate the best options in terms of risks. Companies working in the field of e-commerce must have the most up-to-date information in the field of settlement systems, electronic currencies, modern trends in the introduction of blockchain technologies. The issues of legal registration of transactions are of no small importance, as not all aspects of legal relations related to digital technologies currently have a clear legislative base, which makes the competences of management personnel all the more demanding. When applying digital technologies in work, it should be taken into account that not all service users have the skills and experience to use complex e-services. It is necessary to balance functionality and simplicity in the digital tools offered in order to increase the popularity among customers. In addition, e-commerce companies must be able to form an ecosystem of synergies in order to realise an expansion strategy in the market. Along with this, functional strategies such as innovation, marketing, and human resource strategies are also important. The source of development for e-commerce enterprises is innovation, search for free markets, which corresponds to the 'blue ocean strategy'. Competitiveness is achieved by increasing the intellectual capital and reputation of the company.

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