

UDC 338.012

ADOPTION OF BLOCKCHAIN TOURISM IN KAZAKHSTAN

Zholdymuratova Akzhan

zholdymuratova@mail.ru

Masters degree student of economy faculty at L.N. Gumilyov Eurasian National University,
Nur-Sultan, Kazakhstan

Scientific director - Rakhmetulina Zh.B.

Due to the development of innovation, the emergence of new digital technologies, the tourism industry is at the stage of regular transformations. New technologies that are being created nowadays allow a tourist, a consumer to work directly with the manufacturer of tourism services, which contributes to providing consumers with a better quality and cheaper product, increasing the responsibility of the product manufacturer.

An evolutionary breakthrough in the development of information technology is widespread of blockchain in various industries – e-commerce, healthcare, tourism, financial transactions, mobile payment systems. Despite the fact that blockchain technology is still at an early stage of its development, it already demonstrates tremendous potential in terms of the formation of a fundamentally new digital mechanism for the exchange of “valuable” data.

The application of blockchain technology in the tourism industry will seriously change the market in the next 5-10 years. Kazakhstan has already started work in this direction with specialists in the field of high technologies. The development of blockchain technology has already been identified as one of the objectives of proactive state within the framework of the “Digital Kazakhstan” state program.

Blockchain is a special technology for storing data on many nodes (computers) connected to a network, and it is based on four principles: a distributed database, which is accessible to all participants, but none has full control; lack of hierarchy; transparency; the immutability of records.

These principles are the undoubted advantages of the technology, including, in addition to the above, low transaction costs, minimizing the time spent on “proving the work” of the system by all participants, etc. [1].

Saying simply, blockchain is a digital platform that stores transaction information between users and verifies their accuracy. Transactions, or blocks, are recorded in a distributed database. Individual entities, in this case, tour operators or travel agents, each have their own copy of this database, connected to thousands of other carriers on the network. When the next transaction is conducted, a new record (or block) is created and verified by the network, which is added to the blockchain. This guarantees safe and almost instant deals. This system allows you to store money and important documents, track transactions and operations, and independently, without intermediaries, make money transactions.

At the same time, the transmission of information moves along the entire chain of operations, showing what happens at each point in the chain and is recorded in chronological order, and the event recorded in the chain cannot be deleted. However, in Kazakhstan, there are a number of problems in the adoption of blockchain technologies.

Blockchain technology which is sometimes referred to as distributed ledger technology (DLT) is not a universal answer to all questions, related to providing a safe, open and secure interaction of economic markets participants.

By analogy with the architecture of the Internet, which allows us to quickly and conveniently exchange information, blockchain technology opens the road for a new way of exchanging data between companies, government institutions and ordinary people.

Amadeus experts in the analytical study “Blockchain in the service of the travel industry” classify blockchain technology to a group of six key directions that can make a revolution in the travel industry, has tremendous potential in terms of creating a fundamentally new digital mechanism for exchanging “valuable” data [2].

According to CoinDesk, the German tourism giant TUI Group is testing a blockchain to track internal operations and intends to expand further the scope of this technology to other processes. Currently, the company is implementing a pilot project called BedSwap, in which blockchain technology acts as a central element of the hotel room data accounting system. In the long term perspective, the company intends to radically change its approaches to the accounting of hotel rooms, transferring all the relevant operations to the distributed ledger technology [3].

According to the CEO of a German travel agency, the new technology will destroy the monopolies generated by such market players as Expedia, Airbnb, and Booking.com, the main expense of which is gigantic advertising costs.

A well-known Australian tourism agency Webjet is planning to launch a blockchain app in the next few months, the work on which has been done since 2016. The application is designed to account hotel rooms around the world and was created on the Microsoft Azure Blockchain-as-a-Service cloud platform using the private version of the Ethereum blockchain. However, while the goal of most technology-based solutions is to remove intermediaries or increase overall efficiency, Webjet has a slightly different task - in addition to obtaining a new source of potentially valuable data on tourist trends, the Webjet blockchain application also helps intermediaries between customers and hotels to get paid for their role in the booking process [4].

Ethereum blockchain attracts more than just traditional business representatives. Thus, the transfer of its decentralized storage service from the Bitcoin blockchain to the Ethereum blockchain was announced by the Storj cloud storage platform, which is preparing for the crowdsale [4].

Brief ICO-startups review shows that there are already more than 15 working d-applications (dApps) on the international market, directly related to tourism and more than 20 d-client applications, indirectly connected to tourism (airline tickets, restaurants, service aggregation, insurance). The fact that there are d-applications on the tourism market, serving tourism consumers all over the world suggests that such a segment of the digital economy as “blockchain-tourism” (or tourism 3.0) has already appeared and is on a start of its exponential growth [5].

Let's consider in more detail the d-applications operating on the tourism market (Table 1) and analyze them from an economic point of view.

Table 1 – The list of d-applications, related to the tourism industry

Accommodation facilities	Trippki; TravelBlock; Acomobase; Tetarise; Emphy; Lotus; Abab; LockChain
Tourism-industry	MoMo; Movement App; LifeStyleCoin; Lifestyle Token; CoinHealth; Pally; LibLob; Agrivita (PreICO); Nomad; Entropy
Catering	eWaiter; Uber Food
Passenger air transportation	Flight Delays Suck; Aeron; BitAir
General	BeeNest; Winding Tree; TravelChain; MeetnGreetMe; World Tourism; TravelBlock; Kato; Machtcoin; Cubaaz; LibLob

All mentioned dApps can be divided into two big groups: d-applications, which by using a blockchain had improved the traditional loyalty marketing system (LMS); d-applications, which introduced new, innovative service in the LMS industry.

Under the traditional LMS we mean the following services: cashback, loyalty points and discount systems.

Innovative LMS-blockchain uses blockchain's new function, connected to the ability of sharp reduction in transaction costs of economic exchange by excluding the third party during the process of data validity confirmation. Blockchain-system now allows the user to earn on sharing his reviews, because they increase the reliability level of the blockchain ecosystem. In other words, blockchain-technology lets to monetize new types of sharing. We distributed the D-applications listed in Table 1 among the matrix cells (Table 2) to determine the type of benefits received by the consumer and provider in each ecosystem.

It should be noted that Kazakhstan was actively involved in the process of digitalization of the economy, pilot projects for the implementation of innovative ideas have been developed in almost all sectors. Big attention is paid to the development of new technologies such as the internet of things, additive technologies, artificial intelligence, blockchain and others in the framework of the "Digital Kazakhstan" program directions.

Nowadays projects in Kazakhstan are being implemented on the basis of the blockchain technology in different spheres. An example is the placement of short-term notes for the population of the Republic of Kazakhstan by the National Bank, and the Ministry of Agriculture also uses the blockchain in the circulation of electronic grain receipts. In addition, projects based on the blockchain technologies are implemented by the Ministry of Finance for transferring VAT accounting to the blockchain registry, Kazpost JSC Pay Post for the implementation of smart contracts, and the Government for Citizens NAO.

Table 2 - Types of consumers of service providers in blockchain-ecosystems

Types of consumers in blockchain-ecosystems		Types of Service Providers in Blockchain Ecosystems					
Tourist	Housing Facilities	Tourist	Housing Facilities	Tourist	Housing Facilities	Tourist	Housing Facilities

Improved LMS	Cash-back, points, discounts loyalty	Travel Block MoMo ; Trippki	Trippki; Acomobase Tetarise; Emphy; BeeNest; LockChain	Flight Delays Suck	Travel Block; Lotus; Winding Tree; Travel Chain	eWaiter Uber Food	Coin Health	Movement App Machtcoin	
Innovative LMS	Data sharing	Kato Coin Health LibLob Flight Delays Suck Travel Chain Machtcoin	Emphy	Aeron	Travel Chain			Movement App; LibLob	LibLob; Pally
	Sharing exp	MoMo Emphy Meetn Greet Me	BeeNest					MoMo; Nomad; Entropy	
	Competency sharing						Kato	MoMo; LibLob	Kato; LibLob; Meetn GreetMe

A pilot project for the development of energy-intensive computing and digital mining is also being implemented together with the Kazakhtelecom JSC and the international investor Genesis Mining in Pavlodar data center, a large blockchain Dala project is being developed in Ekibastuz. Moreover, domestic startups are actively engaged in the development of systems using blockchain technology.

However, the development of this technology in Kazakhstan, which many experts in the field of IT and finance have great hopes for, is hampered by the lack of a legislative framework. In the legislation of the Republic of Kazakhstan there is no system regulation and a number of important provisions and legal definitions that are necessary to determine the legal relations arising from the use of digital innovations. The lack of these conditions restrains the digitalization of the country in general [6].

New legislation should make it clear on why and how to implement blockchain technology in the industry of governmental services and various spheres of the economy. It will increase the investment attractiveness of the country - the state will have a new market in the industry of data centers development and digital mining, which will increase Kazakhstan's revenues, develop new areas of the digital economy and a new market for services in the context of global competition.

In our opinion, the obvious advantages of implementing blockchain tourism are the following:

1. Automation and simplification of financial operations, reduction of time for preparation and execution of contracts, transaction transparency, reduction of paper workflow.
2. Virtual reality shops, online reservations and other electronic services allow tourists to quickly and beneficially plan their trip.
3. Reducing the cost of a tourist product and improving the quality of services provided.
4. Reducing the costs of currency exchange transactions.

5. Automation of identity processes, automated verification of a company (hotel, airline).
6. The participation of consumers of tourist services in the global loyalty system, the accumulation of bonus points when buying tours.
7. The increase in profits of organizations providing tourism services through the optimization of trade, information, production activities.

Attention should also be paid to the problems that already need to be solved now in order to obtain an effective result from the implementation of the innovative institution of blockchain.

Three main blocks can be distinguished:

1. Legal - the lack of a legislative framework in the blockchain system. There is no institutional and legal regulation of the blockchain in Kazakhstan, the standards for regulation of distributed database technology are not developed; There are no norms provided on the form, conditions, order for entering into the smart-contracts, no legal provisions on the protection of consumer rights; no mechanism has been defined and developed to hold accountable the participants of the deal. The registration of citizens on the digital platform can lead to mass violations during the work with personal data (storage, processing, transfer), the difficulty of establishing and holding liable perpetrators.
2. Technical – the distributed database takes a lot of space, which is why technical problems may appear, failures with processing, loading, data transfer. In the case of entering a wrong password, loss of access to the secret key, it leads to the loss of all data and others.
3. Economic – due to the high-cost value on the acquisition and implementation of the blockchain technology, not every tourism company financially will be able to execute an innovative transition. Besides, additional expenses will be necessary for the education and retraining of specialists to work in the blockchain system.

It is obvious, that the first step to the upcoming changes in the tourism industry on the blockchain-technologies in Kazakhstan has already been taken, in our deep conviction the next step should be a competent state policy on practical implementation, legal regulation of the blockchain institution, trial practical implementation in tourism organizations, assessment of effectiveness, identification and elimination of disadvantages in the work using the blockchain.

Thus, the tourism industry of Kazakhstan faces the ambitious task of innovative development of tourism, the active promotion of a quality tourism product on the world market. The use of blockchain will make it possible to simplify its solution, therefore guaranteeing the buyer the quality of a tourist product.

LIST OF LITERATURE

1. Blockchain: harnessing its potential in travel <https://amadeus.com/en/insights/research-report/blockchain-harnessing-its-potential-in-travel>
2. Chakhova D.A., Kosheleva A.I. Problems and prospects for the development of blockchain tourism in the regions of the Russian Federation (on the example of the Kaluga region) // *Regional Economics and Management*. - Moscow.-2018.-№1 (53).
3. *Webjet has used the Ethereum blockchain to solve the problems of the tourism industry* (2017, 08 26). Retrieved 2019, from forklog: <https://forklog.com/krupnejshij-turoperator-evropy-zadejstvuet-blokchejn-dlya-vnutrennih-operatsij/>
4. *Europe's largest tour operator uses blockchain for internal operations* (2017). Retrieved 2019, from forklog.com: <https://forklog.com/kompaniya-webjet-zadejstvovala-blokchejn-ethereum-dlya-resheniya-problem-turisticheskoy-industrii/>
5. *What is blockchain and how is it being implemented in Kazakhstan* (n.d.). Retrieved 2019, from kazpravda.com: <https://kazpravda.kz/projects/page/3842945>
6. Osipova T.A. Blockchain- a new organizational paradigm // *Collection of materials of the III All-Russian scientific and practical conference «Industry of modern banking services: present and future»*. - EFU.- 2018.-P.139-142.