

APPLICATION OF BLOCKCHAIN TECHNOLOGY IN DEVELOPMENT OF BUSIENESS – THE EXAMPLE OF HOTEL INDUSTRY

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Abstract: Nowadays modern business cannot be imagined without application of IT Communication technologies (ITC), which develop rapidly in such a speed that many newer technical – technology solutions get outdated in a short period of time. Development of Blockchain technology provided development of decentralized business models during last ten years. These models present turning point in way of realization of business ideas. There are more often examples of tokens involvement which are used as shares in the market. Their trade and involvement of interested parties provide incomes of money which can be used for realization of a business idea, development of business of certain company. This work presented example related to hotel business, in which company by placing tokens on the market accumulates financial funds for purchasing of certain number of hotels all around the world, in order to become part of chain of hotels.

Key words: Blockchain technology, token, business idea, hotel chain

PRIMENA BLOCKCHAIN TEHNOLOGIJE U RAZVOJU BIZNISA- PRIMER HOTELSKE INDUSTRIJE

Rezime rada: Savremeno poslovanje se danas ne može ni zamisliti bez primene informaciono komunikacionih tehnologija (IKT), koje se razvijaju takvom brzinom da veliki broj tehničko-tehnoloških rešenja, iako novijeg datuma, veoma brzo zastarevaju. Razvoj Blockchain tehnologije poslednjih deset godina omogućio je razvoj decentralizovanih poslovnih modela, koji predstavljaju prekretnicu u načinu realizacije poslovnih ideja. Sve su češći primeri plasiranja tokena, koji figuriraju kao akcije na berzi, čijom trgovinom i angažovanjem zainteresovanih strana dolazi do priliva novčanih sredstava, koja služe za realizaciju poslovne ideje, odnosno razvoj biznisa određene kompanije. U radu je dat primer vezan za hotelski biznis, u kome kompanija plasiranjem tokena na berzi prikuplja finansijska sredstva za kupovinu određenog broja hotela širom sveta, sa ciljem da postanu deo hotelskog lanca.

Ključne reči: Blockchain tehnologija, token, poslovna idela, hotelski lanac

1. INTRODUCTION

Modern ways of business are under effect of global trends. These trends are mostly based on dynamical development of technologies, mostly ITC technologies, which develop rapidly in such a speed that many newer technical – technology solutions get outdated in a short period of time. It is impossible to avoid the fact that ITC technologies are a trigger for further development of technology and obtained level of development of certain society [14]. Modern society which is based on IT and which can be described as a society of a high level of creativity (opposite from industrial society which represents a society with high level of mass consumption). The final effect of informational society is reflected in technological connection of the entire society in which boundaries between countries do not represent an obstacle for business anymore. It is proven that each new technology can be such a force

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which can create creative destruction. Within “new economy”, the greatest danger for companies are not other companies but lack in application of new technological solutions [5].

No matter which term authors use for defining of ongoing phase of human society development, there are several important features which define its frame: 1) information as strategic resource for business, economy exists and develops on creation and distribution of information, 2) globalization, technological unity of the entire society, 3) knowledge as a main basis of the new society. Within modern society, the knowledge is a strategic source of power and wealth. The main social group are users of knowledge or persons which are capable to use knowledge in function of realizing of business activity. It is society in which “responsibility for application of knowledge and performance achieved through that” is used instead of “responsibility for performance of people” [2]. Through its development, ITC introduce changes in all phases of life. Therefore, there are changes in management of business quality of companies. According to the new concept, quality of new business is oriented on planning, prevention and improvement which prevent causes of lacks, cancellations and delays in all business processes of the organization. It is important to strive to constant alignment and integrity of IT system and management of quality system. They are mostly supported by informational technologies: financial processes, professional processes, sales, realization, warehousing, procurement etc. Until recently, improvement of transactions services was conducted always through additional legislations for such area of work and increasing of powers of participants. Limitation of powers of participants, at least partially was provided by state. Technology which would provide liberalization of model of transactional business with ensuring of needed functional features such as safety, speed, protection from misuses, would have the potential to change the model of conduction of transactions from centralized to direct, so called peer-to-peer model (P2P, Peer to peer) [7].

Blockchain technology actually introduced solution for mentioned problem. Although it is still considered as a new technology, it involves significant changes in so far approach to realization of transactions and business of companies. It makes them more approachable, process is transparent and opened to public. The consequence of transfer to the Blockchain technology can be fundamental change of many socio-economy flows and transition to decentralized form of realization of transaction, which can significantly contribute to improvement of quality of business of companies [13].

2. MAIN FEATURES OF BLOCKCHAIN TECHNOLOGY

Blockchain and cryptocurrencies are tightly connected. The first Blockchain was created by person Satoshi Nakamoto – his real identity is a mystery and it is still unknown whether it is an individual or organization behind this name. The concept on which development of digital cryptocurrency is established was introduced in article “Bitcoin” in 2008: A Peer-to-Peer Electronic Cash System”, and it was placed in the market in January 2009. New kind of digital crypto currency was formed in way that distributed system of verification was established. Bitcoin is created in process of “mining”. Its uniqueness lies in a fact that it is decentralized currency which is not supported by any state of bank. The bitcoin is a digital currency which is developed and kept in electronic form [3]. Regarding the name itself, the term “blockchain” is composed of words “block” and “chain” and it represents the chain of blocks. In that way, transactions of bitcoins are packed in blocks and blocks are connected in chain, presented in the Figure 1[20]. Cryptography is used for connecting of blocks. More precisely, it is HASH function and it provides connecting in way that it is impossible to change the content of one block without changing of content of all block after it. It is extremely important feature of blockchain since it provides constancy of entered data.

Information travels through peer-to-peer network in a way that each participant sends message only to its direct connections. After that, each of his connections sends that message to their direct connections. This process evolves until message reach all participants in network [10].

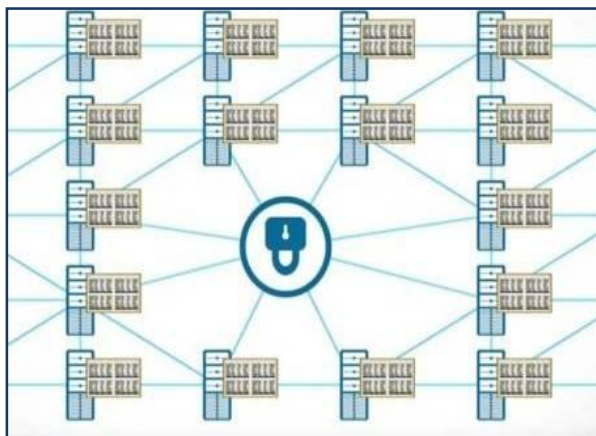


Figure 1 – Chain of blocks
Source: <https://www.norips.org>

Blockchain works as decentralized system which means that there is no central server or anything similar to which users can be connected. All users are connected in peer-to-peer network and each user presents a node of that network. Since peer-to-peer provides chance for each user to be directly connected with only several other users, it means that it is connected with other users indirectly. In order to maximize security, cryptocurrencies use method - proof-of-work, which is based on information that are hard to create but which provide easy check and verification of transactions to other participants [7,16].

Transactions are chronologically placed in blocks and each of them includes digital encryption of previous block. In that way, alignment is provided. Also, there is guarantee that new block can access the chain only if it starts on place of ending of previous block. One of main factors of safety of bitcoins is the fact that copy of each realized transaction is recored on each account on which bitcoin software is installed. Blockchains are constantly verified by computers of all users of software so the system knows how many bitcoins is in the wallet of each user in any moment [6]. During first several years of its existence, the blockchain technology attracted less attention and not many people considered it as a serious option. Five years ago, situation slowly started to change and increased number of institutions and companies started to become more interested in blockchain technology. Its innovative way of sending and warehousing of data is very attractive, including the way of solving of problem of trust in the system with more participants. Transparency and availability of public blockchain are features which are not favorable to many potential businesses developed an idea on private blockchain with most properties of public blockchain. Also, this blockchain removed everything which companies considered as lacks [7]. Main advantages of private blockchains include extremely high capacity, high internet connection which supports numerous transactions, management is more efficient and smaller number of participants provide easier reaching of consensus on each decision. Therefore, changes of protocol can be easily and faster implemented [17].

3. APPLICATION OF BLOCKCHAIN TECHNOLOGY IN FUNCTION OF BUSINESS PROMOTION

The potential of blockchain technology is reflected in way in which one company can conduct business. With its application, larger participants in all spheres of society lose their importance and their necessity is diminished in area of guarantee for transaction. Since direct reliable transactions become possible, services will also have to try to provide additional value in order to keep their customers. Costs of transactions will be also lower, and the reliability of the system will be higher. Offered approach of realization of direct transactions instead of centralized can change spheres of human organization. The Figure 2 graphically

represented the difference between paying systems which are realized with use participants and blockchain system of transactions. Application of blockchain in business is realized using concept of smart contracts, proposed by Nick Szabo in 1997. The main idea is that this kind of contract realizes by itself after activation in way that no participant is needed. Blockchain technology represents the excellent choice for digital version of smart contracts [12]. The main idea is that rules are coded in a certain language and then placed in the blockchain. Hence, their later change is not possible. In case of fullfilling of agreed terms, they activate by themselves [8].Blockchain technology is applied in businesses in which is favorable to possess clear, unchangeable, transparent collection of certain databases in order to have multiply access to the base.

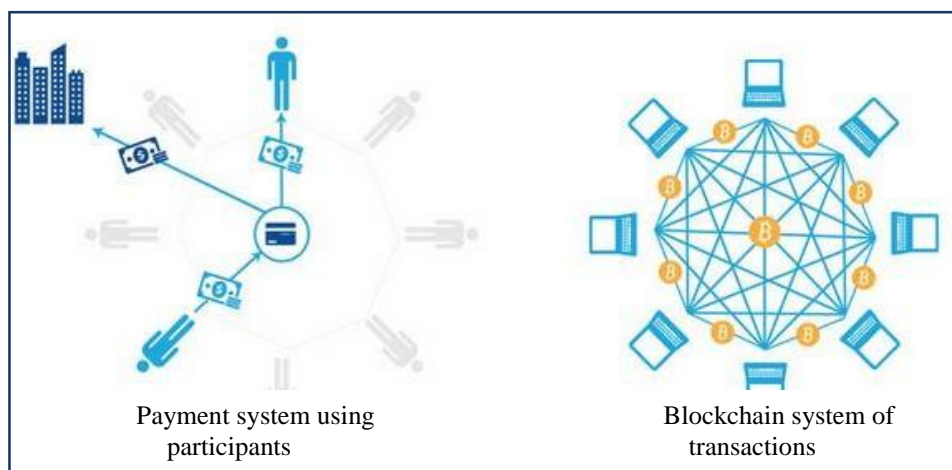


Figure 2. Comparative presentation of payment systems which are realized using participants and Blockchain system of transactions

Source: <https://www.norips.org>

Different applications in form of block databases are developed for such needs: platforms for creation of smart contracts, bases for warehousing of data for needs of financial institutions, healthcare system, notairs, cadastral data, e-government, logistics, education system, voting system, author rights, on-line shop, social networks, platforms for energy efficiency, in businesses of consulting and revision. The most famous role of Blockchain is creating and transfer of crypto currencies [10]. Challenges of application of Blockchain technology are implemented on level of conduction and planning of certain spheres of state economy. Therefore, states like Canada, Estonia, Thailand, Singapore, Sweden, UAE, Greece, Slovenia and Japan implemented projects of application of Blockchain technology in important segments which contribute to development of certain economy areas of these states. Application of Blockchain in various industries is realized through created startups which are based on opened platforms with clearly defined rules in processes, in order to achieve optimum collaboration and certain benefits [13].

4. APPLICATION OF BLOCKCHAIN TECHNOLOGY IN TOURISM INDUSTRY

Tourism industry is one of the most increasing economies according to worldwide estimations. Concerning the fact that it participates with 10% in world GDP and that it has achieved incomes of USD1,322 billions in 2017, it can be considered that tourism is the most increasing economy in the world and a key trigger for development of many regions. Within hotel industry as a significant subsystem of tourism industry, according to the World tourism organization (UNWTO), the planned expected increase unlike previous year was 4% for year

2018 and record USD170 billions in brutto reservations [15]. Such increasing of hotel industry makes this economy more interesting for investors since the income by hotels is significantly higher than incomes provided by real estates in property of individuals. It is well known fact that value of the hotel increases from the moment it opens its door for guests. Taking in account the main precondition that business management is reliable enough, the value of the hotel is increasing during each year. Value of the hotel additionally increases (2 to 8 times) even in the situation when one hotel becomes part of the hotel chain, which can be considered as additional motivation factor for all those who want to invest in hotel business. In modern business in tourism and hotel industry, application of ITC technologies is needed in order to promote and improve business processes, efficiency and quality of services. Nowadays, ITC technologies are getting more improved rapidly so certain technical solutions are considered as outdated and „exceeded“ (for example, certain softwares, fax machines, telephone reservations etc.) so application of Blockchain technology represents optimal solution in numerous aspects [10]. There is a large number of projects all around the world which use Blockchain technology. In hotel industry, those are mostly created "start-up" projects in which companies imagine and realize business ideas. Process includes involvement of cryptocurrency of a company in form of tokens which are used as shares in the market. The key objective of such projects is to use market trade or engage interested parties to achieve incomes, needed for realization of projects. Those are so-called decentralized business models, and tourism industry includes interesting examples such as projects WebJet, Concierge.io and Winding Tree, for which Blockchain technology provided sales of accomodation capacities, tourism arrangements, organization of travels etc. There is also interesting example of Government of a Greek island Agistry, which implemented Blockchain project in form of a new monetary ecosystem. They used it through involvement of Nautiluscoins, a cryptocurrency which is gonna be used as a currency in further project realization [4]. Officials of Russian Federation, chief of Federal Agency for Tourism mentioned that Russia includes serious plans for implementation of this modern technological process in tourism development, on tourism forum in Kazan, in November 2018 [19].

4.1. Traditional way of investing in hotel industry

Direct investements abroad are in modern economy considered as significant factor of corporative business strategies and part of process of their internationalization on a way to achieving of globalization. Unlike so-called shallow integration and non-equity modalities of engagement, direct investments include deeper integration into international markets in terms of long-term choosing of locating of business activities in other countries. Choosing of companies to make direct investments can be conducted by different reasons – need for mandatory presence during providing services, which is especially obvious in hotel industry, in terms of revision of relationship between expected and obtained income for consumer, to lower costs of production, easier access to new technologies, supportive monetary and world policies etc. [1]. Area of direct investments in hotel industry impacts on sales activities which are very intensive during last years. There are sales of whole chains of hotels often with developed image for international market and recognizable name. Most of direct investments are aimed to markets of East Asia including Pacific, South Asia, and Latin America. These global trends also involve hotel industry. International hotel companies are also involved in construction of hotels capacities in countries and regions chosen especially according to criteria of market competitiveness and profitability. One of forms of direct investment in construction of hotel objects are joint ventures. Joint venture, as a form of joining of economy subject developes by conclusion of agreements through which one or more economy subjects joint their resources and work in order to realize a certain business. Incomes and losses in that

business are equally paid by interested parties if it is not agreed differently. More precise, it is a contract in which two or more business entities joint their property and work in order to achieve previously defined business effort. After business effort is achieved, they joint appart but agreement parties share their incomes and losses, proportionally to their part in the contract/agreement [11]. This concept of investment is available to individuals as physical persons under condition to provide serious finance resources. The final objective of all mentioned who invest in hotel industry, no matter if it is individual or a company are dividends (passive income) from income hotels achieve through their business.

4.2. Application of Blockchain tehnology – modern way of investment in hotel industry

Main features of Blockchain technology are related to facilitating of business, strengthening of trust among participants, minimizing of possibility for misuse, minimizing of transactions costs, decreasing of costs and increasing of quality of overall business of company. All of them show that application of this technology is getting more intensive in different projects all around the world. Unlike traditional ways of investment in hotel industry, Blockchain technology provides for each individual to become and investor no matter which financial resources he/she has. Also, individual has an opportunity to get paid for dividends, although it is a sum of money which is a way below provision value, which is taken by banks for realization of that transaction. This fact encouraged company Planetprogram, which is active on world market during last 20 years to launch project Hotelium in April 2018. The vision of this project is to use strength of hotel industry, cryptoindustry (Blockchain technology) and industry of network marketing to develop hotel impery which will include certain number of hotels worldwide and which are supposed to be a part of chain of hotels of Hotelium Concept project in which three strong industries support each other. It is presented in Figure 3.

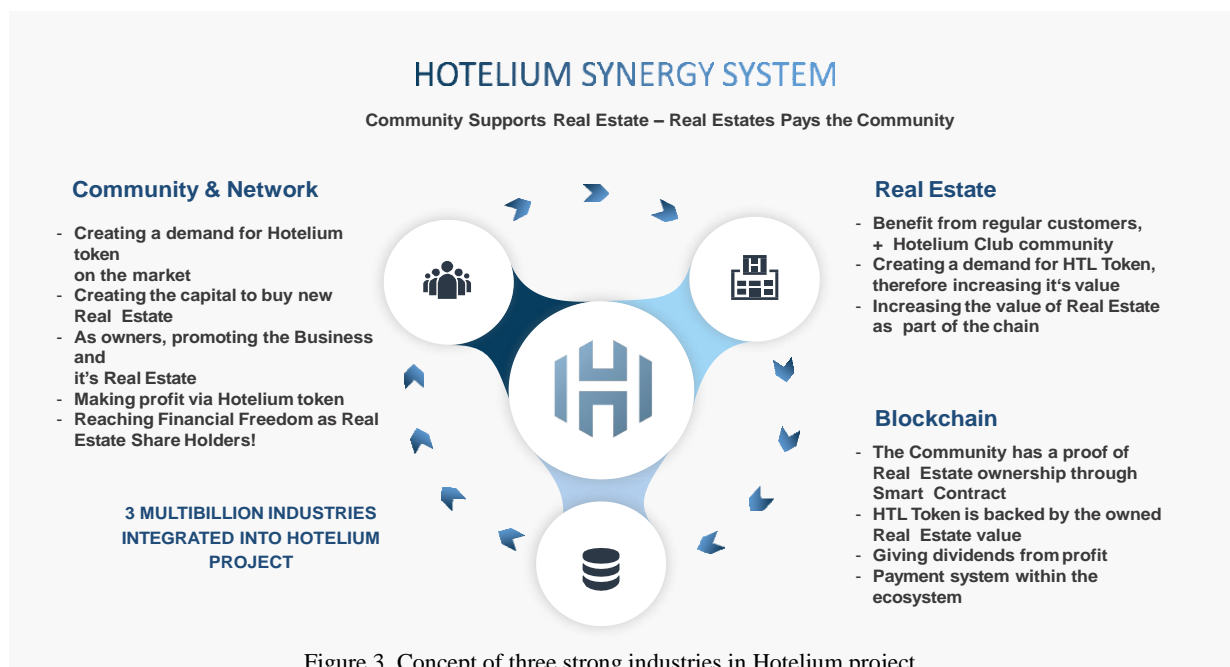


Figure 3. Concept of three strong industries in Hotelium project

Source: <https://planetprogram.io/>

Thanks to Blockchain technology, it is possible to collect resources for purchasing of a hotel no matter in which country investor lives and which is the amount of his/her financial resources. According to that, technology provides payment of dividends even in situation

when investment is minimum - 100 €, which is impossible to be payed via Bank transfer. The provision in that case would highly exceed income achieved by individual [18]. Tokens are basis of the entire Hotelium ecosystem since each Token in Hotelium club represents property over part of the Hotelium chain. Company Planetprogram has property of 490 millions of shares (HTL tokens), which had value of \$0.5 in moment of their introducing to the market (17th of December 2018). All tokens are marked with ERC-20 on ethereum blockchain. Purchasing of investment package and transferring of shares in Hotelium club provides for each individual to become owner of shares and to have the right on dividends according to number of shares in his/her property [18]. As it is known in each market business, the key moment of increasing of price of share at the market is to provide continuous demand for shares of Hotelium ecosystem. This process is presented in Figure 4.

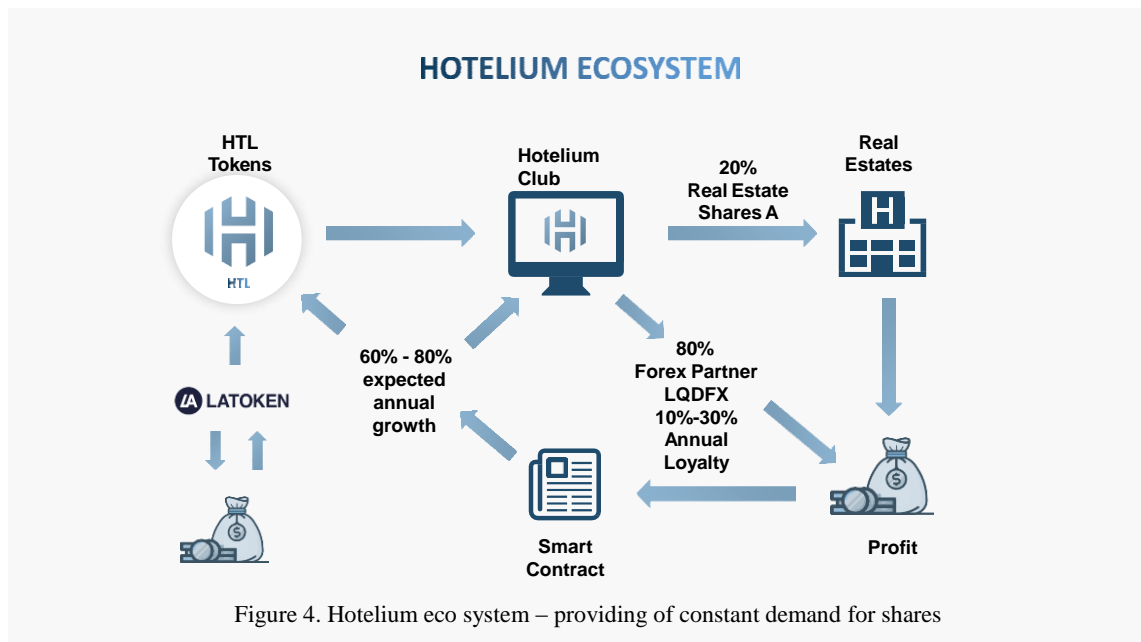


Figure 4. Hotelium eco system – providing of constant demand for shares

Source: <https://planetprogram.io/>

Role of the community is to create demand for Hotelium at the market and resources for buying of real estates. 20% of collected resources is moved to the budget for buying of real estates and 80% are invested via the most famous world trader. Community uses these funds to pay in form of loyalty prize, which can be in size of 10 to 30% annually. After buying of first hotel, achieved income, hotels beside community (refferals) create demands for HTL shares since shareholders pay in HTL tokens. Safety is guaranteed with the fact that community has a proof on co-ownership over properties through Smart Contract. Due to fact that HTL token, which is covered by value of properties, the company has the opportunity to everyone who wants to sell shares to pay guaranteed price of share [18]. This is one of latest projects in which application of Blockchain is recognized.

5. CONCLUSION

According to presented information on Blockchain technology, it can be concluded that it is more than expected that it will be technology of the future, which will introduce significant changes in business of companies. Large number of experts agrees in opinion that the Blockchain will become important technological basis in informational systems and that it will have significant impact on politics, economy, education, and all other spheres of life in the future. Numerous examples from practice explain the fact that there is increasing number

of projects which are supported by this technology in business world all around the planet. Therefore, this paper presented short presentation of Blockchain technology with intention to get wider public in Serbia more familiar with its possibilities. According to words of people for who Blockchain technology became part of business and private life – there is even higher wave of larger and faster technology progress. The question related to application of new technologies includes time needed for this wave to reach us and other people. Anyway, only those who firstly applied innovations will get deserved award, since the showed their trust and faith in something which is unknown for scientific and ordinary people.

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