Methods and Means of Legal Regulation of Relations in Entrepreneurship: Novels of Digitalization

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Keywords: Business and Professional Activities, Blockchain Technologies, Big Data Analytics, Crowdsourcing, Innovative Business Models, Banking.

Abstract: The use of blockchain technology is often used in business and professional activities because of the decentralization of user data and consensus building through a public network of participants to ensure the accuracy of information. It is important to evaluate the fundamental characteristics of such a technology: transparency, security, decentralization and immutability of transactions. Businesses around the world are experimenting with the scalability of blockchain technology, so it is necessary to legally qualify the technology for systemic application and establish common standards and rules, technical capabilities, asset digitization, and the application of a self-regulatory mechanism. Foreign scientists Kumar V., Ramachandran D., Kumar B. suggest that blockchain technology must pass three tests: a test of decentralization (i.e., political, architectural, commercial and contractual), a test of cryptoassets, and a test of a business model. Cloud computing has undergone significant changes, but the standards and interoperability issues of this platform are now becoming apparent. Scientists Kathuria A., Mann A., Khuntia J., Saldanha T.J., Kauffman R.J. believe that cloud computing can be based on technological capabilities, cloud service portfolio capabilities (cloud service offerings, market offerings) or cloud integration capabilities (legacy synchronization and consistency) to influence profits, competitiveness and commercial turnover of business entities. Data analytics is transforming business operations, but business and professional actors need to solve managerial and technological challenges to benefit from large datasets. Incompatible IT infrastructure and data architecture can impede the ability to store, analyze and retrieve effective information from datasets that include structured, semi-structured, and unstructured data.

1 INTRODUCTION

Assets, trust of counterparties, property, money, personal data and the system of contracts can be put on a programming language in the blockchain domain and it is important to manage how to create and receive the desired result from each of these components. Other scholars argue «despite the many potential benefits of blockchain, the concepts associated with blockchain (eg support, adoption, implementation, etc.) still need to be understood and well understood by many managers. Questions related to how the results got from the use of blockchain technology can ensure that through its implementation in business processes the value of the organization of management and business activities of the business is increased, remain unanswered» (Wamba, Queiroz, 2020). Blockchain auditing is one of its greatest strengths regarding transparency, although cybersecurity issues inevitably arise. The major challenge for blockchain is to ensure that the system is not riddled with fake blocks or invalid data infiltrating from fake and illegal transactions or their sources used to making important decisions that can damage the digital ecosystem. Audit becomes nearly impossible in a digital environment without the ability to recalibrate what is fact rather than fiction.

Cloud computing is at the core of digital transformation. It is imperative to explore the relationship between cloud computing and the Internet of Things, AI, blockchain, data analytics and crowdsourcing to develop an innovative business model. The downsides of cloud computing

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highlighted in this study are due to poor integration and lack of business value. Cloud computing hacks have also caused some of the largest retail data breaches in online history, invalidating service level agreements between businesses and cloud providers. When the data of hundreds of millions of customers get on the open Internet, this is a serious problem that needs to be solved in court. End users are left stranded when their credentials are stolen and class action claims take a long time to resolve (Trofimova, 2019). The Mandatory Data Breach Notice Principles and Guidelines are directed to privacy and data officers around the world to ensure disclosure of consumer data breaches (e.g. credit card numbers, name, date of birth, login information and password). After a commensurately small fine for e-commerce service providers, such unscrupulous business entities come up with new mechanisms to carry out fraudulent activities (Gracheva, Korobeev, Malikov, Chuchaev, 2020). Legislative regulators of business law do not allow such persons to be prosecuted because it is extremely difficult to prove their guilt because of technical tricks.

IOT (Internet of Things) devices are placed in key public places on the websites of businesses and customers to stimulate digital innovation, to produce video analytics for visitors and customers (for example, in museums), and in commercial storerooms to clarify a particular type of product on the shelf (its demand) and equipment operability for its timely technical inspection or repair. By what means can businesses communicate to citizens that their tools are collecting and analyzing data in real time? What are the legal and ethical regulators and how business and professional entities can effectively use the tools offered by scientific and technological progress? Business entities need to study the existing factors in the information's development society and form law enforcement practice. This will contribute to the development of legislative regulators that ensure the normal conduct of business and professional activities.

There are serious issues related to technology incompatibility between enterprise-wide platforms for sharing big data and analytics with an organization and its industry system, and inconsistency between internal and external databases. Receiving data from third parties can also create a risk that the data will be outdated and of lesser value. Missing, incomplete, or inaccurate data can distort models and algorithms. Data got meets two important criteria: understanding and quality. To extract information from the collected data, it is important that analysts can understand and distinguish relevant data from unrelated and misleading data.

2 THE DISCUSSION OF THE RESULTS

Data analytics in Russia has an expanded character: the Concept for the creation of a digital analytical platform (Order of the Government of the Russian Federation of December 17, 2019, No. 3074-r) has been adopted, which defines the procedure for analyzing statistical data. The analytics used in business and professional activity is different, but it has elements of statistics. So far, this is one of the few normative sources that regulate the public relations under consideration and legal relations between the subjects involved in business processes.

Tarasenko O.A. notes extended analytics in the banking sector is little used in comparison with its use in other types of business and professional activities (insurance). Banks using advanced analytics have a definite advantage over their competitors. Using advanced analytics is expected to increase soon due to many benefits: in terms of customer retention, risk assessment, better decision making and fraud prevention (Tarasenko, 2020). Mikhaylov A.V. believes big data is the collective name for approaches, tools and methods for processing results. A vast amount of information from an ever-growing number of sources will be systematized and processed in such a way that the user of the processed data will receive qualitatively new information. These legal relationships are regulated by the Civil Code of the Russian Federation through a contractual model - an agreement on the provision of information (Article 783.1 of the Civil Code of the Russian Federation), which is planned to be used to work with big data (Mikhaylov, 2020).

Kharitonova Yu.S., Savina V.S. note “there are discussions in science about how the use of big data can be regulated, various legal regimes are proposed - copyright or related rights, trade secrets, antitrust regulation, etc.” (Haritonova, Savina, 2020). Using big data is necessary for the effective functioning of AI systems, which raises a whole range of legal and ethical issues (for example, about the boundaries of the use of personal data). The European Union already has a privacy impact assessment (PIA) procedure - an assessment of the impact of the functioning of robots and other devices connected to the Internet on the confidentiality of personal data. The procedure is regulated by a special act on the

collection, processing and storage of big data - General Data Protection Regulation (GDPR) (Regulation (EU) 2016/679). Each citizen, according to the act, is given the right to file objections regarding the fact of the collection of data (profiling) and processing of the results about him, which can have a significant impact on his rights and obligations.

Data analytics in foreign countries have been gaining momentum in recent years because of the emergence of big data. Scientists argue (Akter, Wamba, 2016) that it is "a holistic process that includes the collection, analysis, use and interpretation of data for various functional units in order to got practical ideas, create business value and establish a competitive advantage." Big data goes beyond the capabilities of conventional database systems (Dumbill, 2013) because the data does not match the structure of the database architecture (as an intellectual property object - added by the author). To extract maximum value from data, advanced information technology is required because existing information systems are not suitable because of the size and incompatibility of big data processing.

According to Mikhaylov A.V., blockchain technology soon should become one of the most popular in vertical and horizontal business relations (Federal Law of 02.08.2019, No. 259-FZ). Blockchain is based on multiple data duplication and storage in a distributed network. Distortion of data in this case is almost impossible - each record contains a history of changes. The technology is being applied in copyright fixing, in insurance, in crowdfunding (Mikhaylov, 2020). The digitalization process (blockchain technology) will allow accepting goods (commercial activities), fixing the execution of the contract, and making it part of an electronic business contract (or the construction of a smart contract as an electronic way of fulfilling an obligation).

Sushkova O.V. notes that as more and more users use the Internet to meet their needs through the purchase of goods - Internet e-commerce services are becoming more global and complex. The question arises about the effective regulation of Internet commerce.

First, the legal regulation of such a global environment would provide protection against existing adverse actions. Second, there is a lack of regulation in the delivery of goods ordered remotely. Third, confidentiality issues can be quickly resolved. In the changing conditions of the use of digital technologies, there are frequent cases of violation of the rights of buyers and users of the global network. To solve this problem, blockchain technology can become an algorithm that stores all transactions and does not use the details of these operations to provide other actions (Sushkova, 2020). Yu.G. Leskova notes that «the use of the institution of self-regulation ... will allow the state to solve two major tasks: expanding the boundaries of self-regulation and improving the methods of realizing the social rights of citizens» (Leskova, 2013)

3 RESULTS

Blockchain, based on advanced cryptography, operates as an open source distributed database (Kirkland, Tapscott, 2013). Bitcoin is one of the most popular blockchain applications running on an open ledger (Kumar V., Ramachandran, Kumar B., 2020). This open source platform allows anyone to change the underlying code, giving everyone an opportunity to see what's really going on. It is a peer-to-peer (P2P) system that does not require intermediaries to authenticate or settle transactions. The system can record any structured information, for example, who paid whom, who owns the money, or which light source from which power source (Iansiti, Lakhani, 2017). Blockchain is a secure platform and cannot be hacked, although recent research (Orcutt, 2019) has reported security issues on some platforms.

Blockchain can actually reduce costs, such as the cost of verifying transaction details and eliminate the cost of intermediary services (Michelman, 2017). A blockchain transaction works by representing a transaction as a block in the system, which is then broadcast to all parties in the network. When those on the network approve the transaction, the block is added to the chain, providing an ineradicable and transparent record of the transaction, for example, transferring money from one side to the other (as a new electronic form of payment, along with payment orders and others) (Crosby, Pattanayak, Verma, Kalyanaraman , 2016).

The blockchain architecture comprises contiguous blocks in sequential form that store transactions and records similar to those stored in a traditional public ledger. The blockchain comprises decentralized ledger technology (DLT), which is supported by peer-to-peer networks and is not controlled or owned by any single authority. It is protected from unauthorized access, and the user cannot lose control over digital identities, even if they lose access (Dunphy, Petitcolas, 2018). Blockchain technology has three other recognized characteristics: persistence, anonymity, and auditability. Blockchain persistence is where tampering can be easily detected

as transactions are verified, written to blocks, and propagated throughout the network. Anonymity on the blockchain supports users as they can generate as many addresses as they want to avoid revealing their identity. The blockchain auditing capability allows users to track and trace any transaction by accessing any nodes in the distributed network, providing improved traceability and data transparency (Zheng, Xie, Dai, Wang, 2016). Blockchain operates on five principles: record irreversibility, computational logic, transparency with pseudonymity, distributed database, and peer-to-peer networks.

3.1 Implementing Digital Transformation in the Blockchain-based Banking Sector

Tarasenko O.A. says that blockchain technologies are used in banking to find cost optimization and new business models. Large-scale events 2017-2018 with the use of blockchain technology were: placement of bonds of the National Settlement Depository, the creation of a factoring platform by Sberbank and M.Video, implementing S7 Airlines in partnership with Alfa-Bank of a solution for the sale of air tickets. The scientist notes that the limiting factors for the spread of technology are: the unavailability of the market infrastructure, the lack of effective cases and personnel, the emergence of significant negative experience. Analysts confirm this trend: up to 90% of blockchain projects have not brought benefits. Despite this, according to experts, in the coming years there will be improvements in technology with an emphasis on increasing its productivity. The success of the Visa payment system is 56 thousand transactions per second, while performing most blockchain networks is only dozens of transactions per second. Tarasenko O.A. notes that we will comprehend the understanding of the effectiveness of the application of such technologies in the Russian banking sector over the next 10 years (Tarasenko, 2020).

Thanks to the constant development of data and computing power, big data is effectively used for business or data analysis (Wamba, Akter, Edwards, Chopin, Gnanzou, 2015). Big data and traditional analytics researchers are looking at different ways to extract additional information from different data sources to gain a competitive advantage (Battisti, Shams, Sakka, Miglietta, 2015). Traditional analytics differs from big data analytics in four dimensions: volume, variety, speed, and availability (Morabito, 2015). Volume represents a disproportionately enormous amount of data and less data storage needs of business and professional entities. These organizations need to capture large amounts of data from pervasive, heterogeneous and developing sources and devices in order to generate effective and meaningful information for making accurate decisions. Diversity refers to the different data collected from businesses, which can include structured, semi-structured, and unstructured data. Because of the dynamic nature of big data, speed depends on the speed of data creation and analysis, and sometimes includes real-time analytics. We define accessibility as the ability to get data from a variety of sources (Ohlhorst, 2013). Many researchers substitute accessibility and include fidelity as the fourth dimension of big data and describe dimensions as 4V. Truthfulness is related to the validity and access to the complete dataset because the uncertainty, complexity, inconsistency, and anonymity of big data can affect reliability. Recently, other authors have proposed two more dimensions: value and variability, characterizing big data as 6V (Akter, Bandara, Hani, Wamba, Foropon, Papadopoulos, 2019). Variability is associated with the heterogeneity of big data because it can be generated because of the difference in speed. The economic value of data types determines the dimension of big data. Data in its raw form is useless until it is explored using appropriate analytics to extract meaningful information.

Consumers, automation and monetization are considered the three main driving forces of big data (Sathi, 2012). Big data has seen a vigorous growth in recent years thanks to the Internet of Things (IoT), which includes machine intelligence. IoT, due to the interconnected nature of network technologies and smart devices, can facilitate fast and constant real-time data exchange with the potential to improve functionality and scale up processes, leading to new and better products and services (Xia, Zhang, Chiu, Jing, 2020). Big data opens up new opportunities and adds operational and financial value. Companies can leverage their resources to achieve better results by harnessing the potential of big data. Cost effectiveness and efficiency, improved decision making and exploration of new opportunities are considered the three major benefits of big data analytics (Davenport, 2014). Large companies can adopt big data technologies to leverage traditional technologies. This can significantly improve efficiency by increasing productivity and product quality through added value (Manyika, Chui, Lund, Ramaswamy, 2017). Production data can be analyzed to map the optimal use of resources - time, human resources and raw materials. Big data can improve the

before and after production stages in the supply chain and combine production data with other functions, increasing overall efficiency and effectiveness (Feinleib, 2014). Big data analytics can decide more efficiently and quickly, and provide opportunities for fact-based decision making. Data-intensive companies such as Google, eBay, Amazon and Facebook are generating additional revenue and implementing new value streams through Big Data analytics. Information from large datasets can transform business models, enhance innovation and productivity, and open up new markets using data-driven approaches (Gobble, 2013).

4 CONCLUSION

Implementing digital business transformation should focus on how to integrate new and other technologies (for example, the Internet of Things) for various business functions in hybrid modes, for integration, recombination and convergence. Cloud accounting is gaining traction when supported by AI, big data, and blockchain-based financial reporting (Ionescu, 2019). To develop a holistic platform using innovative technologies, foreign scientific literature proposes a framework showing how to integrate AI, IoT and blockchain for the next generation cloud computing environment (Gill, 2019). Recent research highlights the link between AI, deep learning and blockchain as complementary technologies for digital transformation (Arora, Chopra, Dixit, 2020). This integration can help business community actors develop customer and supplier relationship management through innovative business models that are being implemented. Leading cloud AI platforms such as Microsoft Genee, Oracle Crosswise or Salesforce Einstein strive to achieve a competitive advantage in their markets through predictive and prescriptive analytics. Fundamental applications of new technologies (for example, AI, advanced technologies, the Internet of Things and robotics) and understanding how to integrate these processes can be effective if there is a systemic legal regulation at all levels (international, European and national).

This study, using an interdisciplinary perspective, puts forward technology as a fundamental building block for the future of digital business transformation. To answer the questions in technology-driven research, we started with a discussion that clarified the concept of business transformation and its implications for various industries. The author then introduced AI, blockchain, cloud computing, and data analytics with use cases and applications. As the operational effectiveness of applications will shape the future of digital business transformation, the findings shed light on various challenges and opportunities. The most important question for business and professional entities is to establish the relationship between these technologies in order to get the maximum benefit. Innovative processes include hybridization, integration, recombination and convergence. The study summarized the early emergence of technology and its impact on digital transformation through business use cases.

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