Civil Law Means of Digital Business Transformation

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Abstract: The author raises the problem of using various civil legal means, specific legal phenomena, such as cloud technologies, the Internet of Things, artificial intelligence (AI) for transforming business processes in digitalization. The author analyzes the legal nature and attributes of new technologies that can change the future of business. First, it is necessary to analyze the tools for digital transformation of business and applications in various industries to reveal the stated topic. Second, it is necessary to analyze the development of AI technology and its legal regulation: machine learning (ML) and deep learning (DL). Artificial intelligence technologies cannot be explored without considering cloud computing and big data: these technologies together represent a complete mechanism for the digitalization of business processes in business and professional activities.

1 INTRODUCTION

Entrepreneurial and professional activities are currently transforming towards digital business, which is viewed through the prism of four new technology areas: artificial intelligence, blockchain, cloud technologies and data analytics. Because of the dynamic nature of the development of innovations, the potential of this hybridization, integration, recombination and convergence of these technological areas will be analyzed. The author will use multidisciplinary approaches that show how digital tools affect all areas of business processes.

Business digital transformation is a strategy that grabs attention as companies face the challenge of continually improving their business processes and capabilities. It stimulates new ways of working and interacting with customers by stimulating the creation of new business models.

Digital business transformation can make firms fit for the future and increase average net revenues, and use technology to improve a firm's performance. This digital business transformation has already brought significant changes to business operations through improved customer service, payments, business models and new methods of online interaction. As noted, Amazon could revolutionize business across a wide range of sectors, including supermarkets, publishing and logistics. They did this by collecting and using the information to improve customer service (Grewal, Hulland, Kopalle, 2020).

Foreign literature has repeatedly noted that digital business transformation is a way of doing business and transforming it from traditional to digital (Li, F., 2015). We believe it to be more than just a transition from «bricks and mortar» storefront for shoppers to a «clicks and bricks» environment. Digital transformation permeates all areas of business through introducing advanced and often converged technologies. The goal of digital transformation is to harness digital opportunities to transform the traditional enterprise into a leader in the digital economy. Most digitally advanced firms such as Google, Netflix, Uber and Airbnb have successfully developed and leveraged their digitized, open and collaborative business models embedded in a unified ecosystem of producers and consumers. Some argue digital business transformation is an ecosystem of innovative platforms in which "Uber, the world's largest taxi company, does not own vehicles and Facebook, the world's most popular media owner, does not create any content. Alibaba, the most expensive retailer, has no inventory, and Airbnb, the world's largest housing provider, does not own real

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estate "(Goodwin, T., 2015). In this digital world, subscription services are preferable to owning assets or goods with little inventory requirements or depreciation costs of those assets.

Although digitalization of business seems to be quite wide, we will pay attention to all four existing technologies: artificial intelligence, cloud technologies and data analytics.

Digital transformation is inextricably linked to digital business strategy (for example, cross-functional integration, structural changes) and organizational capabilities (for example, through the management bodies of a legal entity, considering their competencies, as well as the capabilities that are established by the Charter of the organization for the executive body of the legal entity). The tools for the digital transformation of business and professional activities focus not only on implementing of reliable technologies but also on the formulation of a clear vision, transformation of the business model, the development of dynamic opportunities and understanding of partners and contractors. In foreign legal order, digital business transformation is understood in different ways. On the one hand, digital transformation permeates all operations and transactions carried out in an organization to control all business processes (Kumar, Ramachandran, Kumar, 2020), on the other hand, business digitalization is focused only on the partners of a business entity, as well as its digital products and services (Davenport, Spanyi, 2020), thirdly, digital transformation of entrepreneurship is a new business model for creating more powerful mechanisms of entrepreneurial efficiency in professional activities (Verhoef, et al., 2019).

2 METHODOLOGY

The methodological basis of the research is the general scientific dialectical method of cognition and specific scientific and special legal methods: comparative legal, formal legal, historical legal, statistical, methods of economic analysis. About this study, the formal legal method allows the study of civil law means, as legal phenomena (AI, cloud technologies and others) and the impact on the transformation processes faced by subjects of entrepreneurial and professional activity. This allows finding the meaning and significance of the rules of law governing relations in this area, based on their content. We associate the comparative legal method with the specifics of the object and subject of research. Since a sufficient systemic legal framework

and relevant legal practice at the national and international level on the issues under consideration have not been developed, the study of various doctrinal points of view of foreign and domestic scientists, legal documents, their comparison and analysis allows a more detailed study of this area of research. The historical and legal method allows the study of legal relations associated with the use of AI, cloud computing, the Internet of things and others from the point of view of their evolution in the legal field, not limited to the analysis of these legal institutions within any one country. That allows the definition of their specific legal content through their historical assessment.

Since the method of economic analysis is aimed at studying legal norms from the standpoint of their economic efficiency, impact on public welfare and optimal allocation of resources, it is used in the study of relations in which one of the structural elements is new technologies, as legal phenomena in the system of legal means.

3 RESULTS OF THE STUDY

3.1 Digital Transformation of Business in Various Industries

Manufacturers use big data analytics to optimize equipment utilization, reduce waste of materials and other resources, develop supply chain networks, and improve business efficiency. The auto industry, for example, is trying to compete with leading car manufacturers such as Tesla and Faraday Future. Any stable manufacturer understands it is important to combine digital technology with traditional processes to stay ahead of the competition. Audi has benefited enormously from a digital transformation in sales, marketing and operations to better meet demand (Dremel, Wulf, Herterich, Waizmann, Brenner 2017). Smelters are leveraging the power of digital tools to increase production by visualizing productivity, optimizing operations, and gaining insight into the causes of disruption (Hartmann, King, Narayanan, 2020). Pharmaceutical manufacturers now use less production space and quality control has improved as it is easier to detect counterfeit drugs and chemicals. The consumer goods industry has also made improvements through digital transformation (Sushkova, 2021) by getting closer to consumers and forging long-term relationships that are tantamount to re-doing business and increasing satisfaction (Kumar, Ramachandran, Kumar, 2020).

Someone widely used digital transformation tools in trade, in the banking sector and the field of turnover of the results of intellectual activity. Retailers deserve special attention. Retailer «Magnit» has introduced 3D equipment modeling into business processes. The technology creates three-dimensional images of structures and various details: the location of the light source, glare and reflection, the correspondence of design elements to the design of the store, and many others.

3D modeling of equipment is a new technology for domestic retail and is currently not widely used. With the help of specialized engineering programs for creating and processing models, the company's experts can "arrange" and "move" models in the sales area, select the optimal equipment options by the company's standards and analysis of customer preferences.

New technology reduces time, money and labor costs. For several hours online, employees can visualize models of commercial equipment. There is no need to order and pay for many test samples that do not always meet requests (Sushkova, 2021).

3.2 Afiniti's AI-powered Digital Transformation Study

Afiniti uses AI to predict interpersonal behavior patterns for companies seeking success in human interactions. The goal is to replace the first-in, first-out (FIFO) caller system, which can make serving customers more difficult. Afiniti uses AI, big data analytics, and machine learning (ML) algorithms to analyze human behavior and leverage the results to improve customer-agent interactions. Afiniti customers can tailor their services, delivering better revenue and improved retention rates for companies like T-Mobile and Virgin (Afiniti, 2018).

Afiniti collects data from different communication vectors, call history and CRM records for customers around the world. It then combines the results of the interaction layer from customer data and uses specialized machine learning algorithms to identify different consumer behavior patterns and predict outcomes based on their behavior. Since the number of interactions is quite low compared to the data available (which includes demographics, interaction data, and internal analytics), using machine learning alone can lead to unreliable results. The system launches the algorithm in real time upon the customer's call. Afiniti launches the process in less than 200 ms, allowing the caller to connect to the right agent. The call results are recorded for future interaction with the customer to improve the quality of service.

3.3 Machine learning as an AI Application

The term machine learning (ML) was coined by Arthur Lee Samuel in 1995 (Syam, Sharma, 2018). Machine learning is considered a prerequisite for developing AI applications - it requires vast amounts of data. ML can be categorized as supervised learning where certain data is provided to produce a result, but this is a unique case for unsupervised learning when the data is unstructured and unlabeled. Machine learning without a teacher teaches a machine to detect hidden patterns and structures without a target variable (Lim, Tucker, Kumara, 2017). For example, M6D uses this technology to target potential consumers by displaying targeted ads for hundreds of brands (Perlich, Dalessandro, Raeder, Stitelman, Provost, 2014). With the rise of actual price exchanges, the advertiser can target specific potential customers. Machine learning plays an important role in solving this problem, calculating vast amounts of data about consumer behavior, deciding and delivering advertisements in near real time. AI and machine learning have a positive impact on personal selling and sales management. While many believe that AI and machine learning will destroy jobs, others believe they will create over 2 million new jobs by 2025. Sales management (as we have shown in Russia, added by the author) can be very effective in using machine learning due to timely interactive detailed reports and service data facilitating the seller's work, allowing companies to translate discovered patterns and trends into actions.

Deep Instinct is one of the world's first deep learning companies specializing in cybersecurity. Deep Instinct leverages DL-based prediction capabilities to help companies protect themselves from cyberthreats, complex persistent threats and zero-day threats, and can run on servers, mobile devices, and company endpoints. During the preparation phase, data samples are presented for a deep learning neural network that contains multiple flagged files such as malware (viruses), mutations, etc. During the training phase, raw data is trained using graphics processing units (GPUs) that run faster than central processors (CPUs), for example, we can train data in 3 days. In the deep learning phase, data is processed using DL algorithms. During the detection phase, neural networks detect cyber threats of an ongoing learning process. During the prediction phase, the deep learning brain can now predict the

level of cyber threat a file may pose. At the stage of creating an agent, the brain can turn terabytes of understanding into megabytes of instinct. At the stage of agent deployment, it is domain independent - it can be used for endpoints and mobile device servers. At the stage of protecting and preventing agents, the latter check every file, macros, script, etc.

One should agree with A.V. Minbaleev, who notes that «the appearance on the Internet of some new relations, types of mass communications, active development and functioning problems necessitate expanding legal regulation, increasing the number of areas and aspects of legal regulation about the Internet». S.S. Alekseev pointed out that the expansion of the sphere of legal regulation does not comprise a partial strengthening of coercive measures of influence, sometimes caused by temporary difficulties, a difficult situation, but of the expansion of such areas and aspects of legal regulation, the functioning of which is characterized by an increase in moral principles in the life of society, an increase in the organization of public relations, the order of responsibility in relationships between people (Alekseev, 1971). The ideas expressed by the scientist over forty years ago are still relevant to our days (Minbaleev, 2014).

4 THE DISCUSSION OF THE RESULTS

The concept of long-term socio-economic development of the Russian Federation for the period until 2020, approved by the order of the Government of the Russian Federation dated November 17, 2008, No. 1662-r (Decree of the President of the Russian Federation dated July 21, 2020 No. 474 «On the national development goals of the Russian Federation for the period up to 2030») includes the provisions for introducing innovations in the socio-economic sphere, designed for the long term.

I.V. Ershova believes (Ershova, Kashkin, 2020) that for the introduction and use of the latest technologies, such organizational forms of innovation as a business incubator, a techno park, a techno polis, and a strategic alliance are currently most common in entrepreneurial and professional activities. The multi-component nature and the need for a strong connection and interaction between the components of the association show the need to introduce platform technologies and artificial intelligence technologies into the basis of the functioning of the listed ecosystems. An effective form of government support for the establishment and development of a new business model is a business incubator.

The principles of work in techno parks and techno polis are currently not fully enshrined in legislation, which leads to the chaotic nature of the work process itself and hinders effective scientific development. The formation of such nuclei of science contributes to progress on the territory of Russia, regardless of the remoteness of the subjects from the center. This contributes to the creation of a single and more homogeneous economic space in the state and a single social and legal space, which is necessary for the effective development of the country at the present stage.

Such processes in Russia are considered an ecosystem of the digital economy - a system of interconnected and interacting elements of the environment that, based on information technologies, provide qualitatively new methods and mechanisms of management with electronic interaction between participants in civil and trade turnover, a single digital space, as well as the interpenetration of digital culture, consciousness and values in today's digital society (Laptev, 2021). The systemic education "ecosystem of the digital economy" includes a fairly large number of elements: electronic interaction (for example, e-commerce, Internet things, etc.) and digital space (for example, Big data and cloud systems, neuronet, etc.). Laptev V.A. notes that with the transition to the digital economy, the idea of modern entrepreneurship has changed. Significant changes have taken place in the organization (institution) of business and management of the activities of economic entities; direction of economic activity; interactions between contractors; registration of the results of economic activity and the fulfillment of fiscal obligations; ensuring the rights and legitimate interests of market participants (Laptev, Lapteva, 2018).

At the same time, a significant number of regulatory legal acts have been adopted in Russia (Federal Law No. 123-FZ of 24.04.2020) regulating "digital" relations of entrepreneurial activity.

Mikhaylov A.V. determines how existing technologies (each separately) affect entrepreneurial activity (from a positive and negative point of view), which makes it possible to conduct deeper research on the stated topic.

Considering the possibilities of using AI in business, the scientist notes that highlighting AI as an object of civil circulation (Articles 128,1225 of the Civil Code of the Russian Federation), it is difficult to argue that this is a separate object. You can recall the following forecast: the current Internet (Web

2.20) will be replaced by a new one - Web 4.0 (neuronet) by 2030, where communication will be carried out on the principles of neuro communication - the connection between the brain of one person and the brain of another through a computer (Mikhaylov, 2020).

Introducing of such technologies will require the adoption of many rules aimed at ensuring the protection of information and the rights of the subject. Neurocommunication technologies will influence the development of AI and the learning process in schools and universities. Additional mechanisms for protecting insider and commercial information will be required in business activities.

Mikhaylov A.V. further defines how Cognitive Technologies can process information unstructured. Information processing is considering many factors, the computer is capable of self-learning. Now, an ordinary search engine gives out a lot of links when asked on the Internet, but in the future, the use of cognitive technologies will allow getting a specific and accurate answer to the question posed. In this part, the author sees the convergence of cognitive technologies and AI. A rather complicated legal issue arises - responsibility (its nature, forms, types, etc.) for the provision of inaccurate or incompletely reliable information got using such technologies.

Mikhaylov A.V. notes that at present, cloud technologies are widely used - these are systems of network access to information that is in remote access. Until now, the legislator does not take any action on legal regulation of such technologies and relations that develop in entrepreneurial activity. Such relationships are usually contractual. The existing contractual models do not fully reflect the interests of the subjects of such legal relations. There is also no law enforcement practice on these issues, which creates legal uncertainty in using the new technologies under consideration in entrepreneurial and professional activities.

5 CONCLUSION

The results show technologies have individual benefits, and we can derive more business value from leveraging their interconnectedness to speed up business growth and productivity. Technology is driving the development of transformative business models with new platforms that automate processes, align supply and demand, dynamically set prices, and decide in real time. This section discusses some challenges and limitations of these technologies from the perspective of various stakeholders.

This study explores not only the positive business-oriented use cases of AI, but also the negative ones. There are widespread concerns, such as ethics, privacy, and algorithmic bias. The danger of AI lies in responsibility in regulation and its safe use. Because of these problems, business and professional actors trust AI less because they think AI cannot mitigate their business risks in entrepreneurship. Research shows that people do not trust AI solutions such as medical diagnosis, financial planning, or business risk mitigation in the business and professional fields. While varieties of AI such as machine learning and deep learning, are just being introduced into entrepreneurial practice, the opinions expressed in the scientific legal literature show that autonomous systems should not replace humans. Foreign scientists have expressed a position according to which (Davenport, Ronanki, 2018), the full disclosure and transparency of an intelligent agent or hybrid systems (both human and automated devices) should clarify the roles of man and machine, since most subjects of business communities have a negative attitude to bots and virtual assistants, although research has shown that certain demographic groups would prefer to use the proposed technologies.

Although AI has a high accuracy based on a high-quality and varied dataset, it can also make mistakes that are known in the scientific legal literature as false negatives and false positives. People who make mistakes because of poorly defined algorithms can experience asymmetric effects. Taking longer to train different datasets will reduce errors in size and frequency, making the systems more robust. AI systems can be used in law enforcement agencies and courts to determine both the right to arrest, the timing of sentencing, and when analyzing judicial practice to make a more informed decision, despite the specificity of each specific civil or administrative case (Sushkova, Verdiyan, 2020). Since unstructured data as visual analytics become available for analysis using complex AI, algorithms (for example, people search) can be regulated at the level of a constituent entity of Russia, considering national legislation.

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