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ECONOMY, DIGITAL ECONOMY AND ASPECTS OF DIGITALISATION OF LAW

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Abstract

The paper describes the relationship between the economy in the traditional sense, the digital economy and law in the context of modern technology of the beginning of the 21st century and the Fourth Industrial Revolution. As long as law takes roots in the economy, it is at the current stage inevitably subject to digitalisation. The text contains brief descriptions of the above-mentioned types of economy and provides examples of the digitalisation of the legal field. Alongside, some problems are outlined that have to be addressed both at the national legislative level and under the framework of international law. The general philosophical approach of this legal study refers to the positivist methodology focused on analysing specific facts and deriving patterns of objective reality. It makes the basis for employing certain specific and general methods. The study concludes that the legal system integrates numerous components such as legislation, legal practice, legal theory as a science and legal culture. All these components of the legal system in modern Russia will be transformed. Still, it will primarily affect the biggest blocks of the legal system, that is, the system of law and the legislative system.

Keywords

Digitalisation – Law – Technology – Economy – Digital economy

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Introduction

The digital economy is developing rapidly, many books have been written, numerous incubators, centres and programmes have been launched. The Ministry of Digital Development, Communications and Mass Media is established in the Russian Federation. The authority is particularly in charge of administering state programmes ("Digital Economy of the Russian Federations", etc.) and federal projects; performing works and rendering services concerned with analytics and consulting in the area of the digital economy, information technologies, mass communications and communication technologies; developing the IT cluster and providing educational services for the business community and the government and so on. Russian and foreign legal studies over the past decades have upheld the discussion of the possibilities, directions, consequences and limitations of the digitalisation of the legal system and engaged in the professional legal and moral analysis of the emerging legal phenomena.

Methods

The general philosophical approach of this legal study refers to the positivist methodology focused on analysing specific facts and deriving patterns of objective reality. It makes the basis for employing specific and general methods such as sociological, comparative and legal, historical, logical, systemic and other methods. Studies addressing the relationship between the economic and legal systems of society traditionally employ the economic analysis of law, which seeks to establish the influence of legal norms on individual economic behaviours and the economy, the economic premises of laws and social relations governed by law.

Results

The digital economy is usually closely associated with technological breakthroughs capable of transforming the social landscape across the world and setting up a new understanding of human activities and the world in general¹. "The new technology age, if shaped in a responsive and responsible way, could catalyse a new cultural renaissance that will enable us to feel part of something much larger than ourselves – a true global civilization. The Fourth Industrial Revolution may indeed have the potential to robotize humanity and thus compromise our traditional sources of meaning – work, community, family, identity. But it can also lift humanity into a new collective and moral consciousness based on a shared sense of destiny. It is incumbent on us all to make sure the latter prevails²". The economy as an area of social life has gone a long way. For that reason, an essential step is to introduce some key categories essential for understanding the modern economic processes occurring both globally and at the national level, including in Russia.

Economy describes the set of productive relations and the historically established method of production (feudal, bourgeois economy). In a different meaning, the term relates to the interrelated system of industries of the national operations or any part of it. A national economy integrates industries of material production, or the real sector (manufacturing, agriculture, construction, transport, etc.) and non-production industries, or social infrastructure (education, healthcare, culture, etc.).

¹ B. Carlsson, "The Digital Economy: what is new and what is not?", *Structural Change and Economic Dynamics* Vol: 15 num 3 (2004): 245-264.

² K. Schwab, *Tekhnologii Chetvertoi promyshlennoi revolyutsii* (Moscow: Eksmo, 2018).

Intensified labour division contributes to the development of the *world economy*. By their respective positioning in the world economy, national economies are classified as either open or closed type. *An open economy* is an economy actively engaged in global economic relations and the international division of labour. The degree of openness is measured by the indicators of the "export quota", i. e., the relation of total exports to the gross domestic product (GDP), the per capita exports, etc.

Economic security, the frequently cited category now amid the pandemic, describes the state of an economy enabling steady and sufficient economic growth and efficient management of economic requirements; public control over the flow and management of national resources; protection of economic interests at the national and international level. Economic security is a constituent of national security, its foundation and material basis³. *The object of economic security* is the economic system in general and its constituent elements, including natural riches, productive and non-productive facilities, real estate, financial resources, economic structures, families, personality. *Threats to economic security* comprise phenomena and processes detrimental to the national economy and the economic interests of individuals, the society and the state. *The indicators of economic security* are the most significant parameters describing the state of the economic system in general, its stability and mobility, namely: GDP growth, living standards and quality of life accessible to a majority of population, inflation rate, unemployment, economic structure, income inequality, level of economic crime, technical condition of facilities, R&D spending, competitiveness, import dependence, economic openness, internal and external public debt. *Measures of economic security* refer to a set of methods and conscious actions to counter both external and internal security threats.

Economic activity refers to a range of actions across the levels of operation serving to accommodate human needs via the production and exchange of material goods and services.

Within the context of the digital economy, one should keep in mind that "an activity is designated as an economic activity when it targets or results in the production or exchange of goods or services deemed to be valuable or scarce. Economic activities relate to a specific domain: agriculture, manufacture, craftsmanship, import or export operations, professional operations, etc."

A strong focus of the modern economy is placed on *economic integration* which relates to the integration of economic subjects, their deepening interaction and development of ties between them. Integration may occur as either vertical or horizontal integration, both are observed in national economies and globally.

Global integration has evolved in three stages: the first stage was marked by the expansion of economic ties between individual countries and internationalisation (late 19th century – first half of the 20th century); the second stage corresponds to the early development of the world economy as a whole and its institutions (the IMF, World Bank); the third stage is globalisation beginning in the 1970s and gaining maximum momentum at the turn of the 21st century.

³ J. G. Rickards, "Economic Security and National Security: Interaction and Synthesis", *Strategic Studies Quarterly* Vol: 3 num 3 (2009): 8-49.

The modern stage of economic integration is characterised by expanding trade integration. The overall trend tends toward the dilution of customs barriers between countries and the elimination of non-tariff constraints. Cardinal structural shifts are observed in world trade. It all comes down to economic policies.

Economic policies represent a system of methods, tools and forms of government influence over socioeconomic processes in implementing a specific type of economic strategy. Depending on the stage of economic development, fiscal, tax or monetary policies may prevail. Economic policies are pursued in the context of *an economic system* understood as a set of interrelated economic elements making a sustained unity. Any economic action inevitably has a corresponding consequence. E. g., money issuance results in price increases, inflation, and inflation leads to lower living standards with all further consequences. An excessive increase in imports undermines the standing of local producers, etc. A systemic approach to business and economic administration assumes all factors affecting economic processes either directly or indirectly are taken into account.

A review of the above mentioned fundamental economic categories provides some insights. The digital economy is concerned with the production of factors and consumer items and rendering services. It is especially ripe today.

Where open and closed economies are concerned, one has to admit that closed economic systems have not only clear deficiencies but provide certain advantages, too. If a national economy is capable of producing maximum output to support domestic consumption, it is less vulnerable to the risks of the economic environment. Economic crises are unavoidable, and they are specifically inherent in the so-called market economy. Logically, economic development is identified with specific phases. Experts introduced the concept of "long waves in the economy"⁴, that is, the economy is inherently prone to cycles and crises, which has continuously been confirmed.

The overall trend of economic growth evolves with periodic fluctuations in economic activity, with alternating periods of contraction and expansion of output and investment, increases and declines of incomes, employment, prices, interest rates, security prices. The cycle of economic activity follows a sequence of four stages: crisis, depression, revival and recovery. Cycles of economic activity constitute minor economic cycles and have a period of up to 10 years. Long-term cycles comprise upside and downside waves of fluctuations of the economic environment, each lasting up to 30 years. Long-term cycles are driven by revolutionary shifts in technology and the structure of needs and production. The transition to the post-industrial society in advanced economies coincides with the fifth long wave. The beginning of its upside phase reflects the structural rearrangement of the economy supported by research-intensive high technology. It coincides with the early 1980s – early 1990s.

The premises of the emergence of the digital *economy* first occurred with the model *of the information society*⁵. As of the second half of the 20th century, there were already clear signs of the impossibility of further growth in the consumption (and, less so, production) of traditional material goods.

⁴ N. D. Kondratieff y W. F., Stolper, "The Long Waves in Economic Life", *The Review of Economics and Statistics* Vol: 17 num 6 (1935): 105-115.

⁵ C. Katzenbach y T. C. Bächle, "Defining concepts of the digital society", *Internet Policy Review* Vol: 8 num 4 (2019)

Traditional industries, e. g., carmaking, could at best move on to stagnation supported by the consumers changing cars after certain intervals. Here is where a new product emerges, i. e., information technology⁶.

The concept of the digital economy spans both electronic commerce in the broad sense, economic activities of the government engaging digital technology and certain types of non-profit operations employing information and communication tools⁷. In the above definition, activity, or, more specifically, form of activity is the predominant aspect, as technology advances rapidly and that causes changes to the economic operations it facilitates. Consequently, the subject of the digital economy is itself constantly refined. Presumably, irrespective of technology applications, the predominant aspect is the form of economic activity.

The emergence of the digital economy is a result of technological advance and its theory is the product of the theory of information society and information economy. The concept of "information society" dates back to the 1960s, it was introduced in the scholarly discourse by the American economist F. Machlup and Japanese researchers T. Umesao and Yu. Hayashi. *The information society* is a society where a significant degree of activity focuses on the creation, storage, processing and use of information.

The digital economy refers to economic activities focused on digital and electronic technologies, including electronic business and commerce and the resulting products and services. The main elements of the digital economy are electronic commerce, Internet banking and electronic payments, cryptocurrency and blockchain, online advertising and online games⁸.

The digital economy refers to activities engaging digital data as the main production factor, which, as it is processed and used on a major scale, including immediately upon development, serves to enhance the efficiency, quality and productivity of various types of production, technology and equipment in storage, sale and consumption of goods and services as compared to traditional economic forms.

Today's "digital natives" – also known as millennials or Generation Y (and Z) – need this new tool kit. There are more young people alive today than ever in history: Forty percent of the world population is under the age of 24, meaning an even larger percentage has no personal memory of colonialism or the Cold War. According to surveys by Zogby Analytics, these "first globals" identify connectivity and sustainability as their prime values. They aren't automatically loyal to the establishment at home or feel secure behind the borders that separate them⁹.

⁶ S. Valyanskii. *Za kakie idei my umiraem* (Moscow: Algoritm: Eksmo, 2005).

⁷ M. I. Stolbov y E. A. Brendeleva, *Osnovy tsifrovoi ekonomiki* (Moscow: Nauchnaya Biblioteka Publishing House, 2018).

⁸ A. Sizov; I. Losev; V. Voronov; D. Markov y E. Karpina, *Chto takoe tsifrovaya ekonomika? Tekhnologii formiruyushchie cifrovuyu ekonomiku v Rossii i mire. Maining kriptovalyuty*. Retrieved from: <https://mining-cryptocurrency.ru/cifrovaya-ekonomika>

⁹ H. Parag, *Konnektografiya. Budushchee globalnoi tsivilizatsii* (Moscow: Mann, Ivanov i Ferber, 2019).

Global infrastructures are morphing our world system from divisions to connections and from nations to nodes. Infrastructure is like a nervous system connecting all parts of the planetary body; capital and code are the blood cells flowing through it. More connectivity creates a world beyond states, a global society greater than the sum of its parts. Much as the world evolved from vertically integrated empires to horizontally interdependent states, now it is graduating toward a global network civilization whose map of connective corridors will supersede traditional maps of national borders.

At the same time, maps of connectivity are also better at revealing geopolitical dynamics among superpowers, city-states, stateless companies and virtual communities of all kinds as they compete to capture resources, markets and mind share. We are moving into an era where cities will matter more than states and supply chains will be a more important source of power than militaries—whose main purpose will be to protect supply chains rather than borders. *Competitive connectivity* is the arms race of the 21st century.

Given that only a quarter of global trade occurs between bordering countries, connectivity is an essential condition of growth of both national and global economies. Connectivity, alongside demography, stock markets, labour productivity and technology, provides a powerful developmental impulse of the world economy.

Supply and demand are more than a market principle for determining the price of goods. Supply and demand are dynamic forces that seek equilibrium in all aspects of human life. As we approach universal infrastructural and digital connectivity, the supply of everything can meet the demand for anything; anything or anyone can go nearly anywhere, both physically and virtually.

Technological advance holds not only obvious advantages but potentially numerous threats, too. Social communications, or social relations as they were known earlier, are gradually transitioning to the virtual universe. Certainly, humans as sociobiological beings would never abandon the beauty of physical communication, but still. If law is supposed to govern social relations, its "digitalisation" is unavoidable in the new environment.

Experts believe technology will affect even wider aspects of our life, specifically human rights, relations with society and international relations. The idea of what is acceptable and essential in life will change, too. For these and other reasons, it is crucial to keep people in mind as technological advance goes ahead¹⁰.

Blockchain and distributed ledger technology present some aspects of the so-called digitalisation of law. "Some challenges that need to be addressed are legal ambiguities, blockchain-related infrastructure, lack of standards, last-mile problems for physical goods, and national and cross-border data regulation issues. Cryptocurrencies are still in their early stages and there are unresolved externalities, such as environmental impact, their use by criminal organizations and general dispute resolution"⁹. This only marks a narrow scope of issues to be addressed in the short run.

However, one cannot ignore that the modern world is heading into truly tectonic movements as a result of the COVID-19 pandemic. For now, all processes have as if

¹⁰ K. Schwab, *Tekhnologii Chetvertoi promyshlennoi revolyutsii...* 320.

stalled and the world is seeking a way out of the crisis. Not long ago, there used to be the philistine trust in consumption and comfort as fundamental values. And suddenly it is far from being as solid as it seemed before. This undermines the theory of globalisation and the ideology of post-industrial urbanism. It may well happen that huge crowds of the urban population will have nothing to attend to.

There are also signs of another trend, specifically showing in the fact that the world is gradually moving toward the emergence of a contactless social environment, the post-human era. Today, many people have switched to remote work. They maintain their legal relations with their employers but perform their job responsibilities via modern communication networks. It may be also considered in terms of the "digitalisation" of law.

The economy in the traditional sense is thus the basis for the information economy or, rather, the economy of information. Given that information technologies are actively adopted in the production and consumption of products and services, law mediating these processes adopts a "digital" facade. It is now a steady global trend.

Discussion

We are witnessing the emergence of a completely new social reality. Science may be confronted with problems it has arguably resolved long ago. E. g., genome sequencing and the convergence of biology and technology may once again call into being the problem of humanity, not only in the philosophical and social aspect, but also in terms of law.

As experts point out, "The recent advance of artificial intelligence has led the European Parliament to put forth the initiative to elaborate legislation for governing the development of robots and AI systems. Somewhat intriguingly, the proposals even concerned the notion of an "electronic person" to regulate the rights and responsibilities of the most sophisticated autonomous robots... The report prepared by the MEPs warns the world is on the cusp of a new industrial robot revolution. It looks at whether to give robots legal status as "electronic persons" along the lines of corporate persons. It also emphasises robot designers should make sure any robots have a kill switch to enable an emergency shutdown"¹¹. Such discussion of the kill switch indicates potential human fear inspired by machines which may run out of control.

This brings about the questions of developing a completely different understanding of legal categories such as legal person, legal status, legal capacity and so on¹². Implantable chips will help to manage health and overcome diseases, including genetic disorders. However, there comes the danger of external control over humans themselves. All that may pose numerous problems for the "classical" legal theory.

The following point is made, "In fact, the science is progressing so fast that the limitations are now less technical than they are legal, regulatory and ethical. It is in the biological domain where the greatest challenges for the development of both social norms and appropriate regulation arise. We are confronted with new questions around what it means to be human, what data and information about our bodies and health can or should

¹¹ S. Hawking, *Kratkie otvety na bolshie voprosy* (Moscow: Bombora, 2019).

¹² R. Dremluiga; P. Kuznetsov y A. Mamychev, "Criteria for Recognition of AI as a Legal Person", *Journal of Politics and Law* Vol: 12 num 3 (2019): 105-112.

be shared with others, and what rights and responsibilities we have when it comes to changing the very genetic code of future generations"¹³.

The electronic and information environment means it might be very difficult to protect some human rights and freedoms (privacy, etc.). Individual, social and government interests may come in conflict here. E. g., an individual's private data are kept in databases maintained by various structures where "advanced users" can easily get access to. Even today, it creates a favourable environment for all kinds of fraud and who knows what may come tomorrow if private data of an individual or citizen might contain details the owners would not want to have in the public domain. Take for example the possibility of electronic passports containing all individual information. Confidentiality cannot be guaranteed, and thus, anyone with any intent may take advantage of such information, including with criminal purposes. Consequently, one of the top urgent problems is how database security can be ensured. For instance, the top global banks are frequently targeted in hacker attacks and, however, cannot guarantee the absolute security of their customer and deposit data.

Going forward, many institutes may be transformed to warrant a completely new interpretation, including the legal aspects, and it concerns not only private law but public law, as well.

The current age of digitalisation and the Fourth Industrial Revolution also drives the evolution of public law, with the recent focus on e-government, e-democracy and e-justice¹⁴.

The notion of e-government is only developing as a political and legal phenomenon determining the modern format of interaction between the government and the society facilitated by modern information communications. E-government includes e-government, e-justice and e-democracy¹⁵.

Accordingly, e-government refers to a model of administration facilitated by information and communication technologies adopted by public and municipal authorities and civil institutes in dealing with the public and designed to ensure better speed and convenience and lower costs of obtaining public, municipal or other services in electronic forms by organisations and individuals.

E-democracy refers to a form of public rule where the expression of the will of the public in the lawmaking and election processes is facilitated by information technology meant to support civil institutes and bring down the influence of the administrative governance factor in the adoption of legal acts and crucial public decision-making.

E-justice is a specific form of administering the state's role in considering and resolving various categories of cases in electronic form, including the electronic filing of a

¹³ K. Schwab. *Chetvertaya promyshlennaya revolyutsiya* (Moscow: Eksmo, 2016).

¹⁴ T. G. L. A. Van der Meer; D. Gelders y S. Rotthier, "E-Democracy: Exploring the Current Stage of e-Government", *Journal of Information Policy* Vol: 4 (2014): 489-506 y J. Rosa; C. Teixeira y J. S. Pinto, "Risk factors in e-justice information systems", *Government Information Quarterly* Vol: 30 num 3 (2013): 241-256.

¹⁵ A. S. Kiselev, *Formirovanie idei elektronogo gosudarstva i osobennosti ee realizatsii: teoretiko-pravovoe issledovanie* (Belgorod, 2018).

claim and supporting documents and administering a court trial facilitated by information technology, particularly when it comes to administering the judgement, passing it over to the contending parties via electronic communication services and placement of court documents at the court websites.

Though it is not unjustified, this viewpoint cannot be accepted without reservations. Electronic information communications transform the ways and methods of traditional institutions such as the state and law. However, it pertains rather to the technical side. One can hardly accept that e-government is a "political and legal phenomenon" if the words are taken in the conventional sense.

If the interaction between authorities and population assumes the form of information communications, the effect of "physical contact" between the individual and the decision-maker is gone inevitably. In such case, the technical side prevails and thus the definition of the modern state as a political and legal phenomenon is not fully justified. Rather, it is a symbiosis of technology and power. The discourse notion "ruling machine" literally adopts a new meaning and transforms from a metaphor into a reality.

All these approaches reflect the somewhat artificial nature of many constructs that have been actively discussed recently in the public domain and specifically in the legal theory and practice. The information and electronic environment has prevailed in many domains, including the legal domain.

The modern Russian understanding of the so-called e-justice shows an emphasis on the technical side. E. g., it often relates to electronic forms of filing, documenting the proceedings in trial, notifications of the parties, placing court decisions at the designated websites, etc. Meanwhile, many countries have gone further. E. g., in England, software is developed to try many categories of cases on the merits; the case is uploaded to the machine and it issues a decision based on the massive of statute law and precedents. The automation of justice has been accelerating. The Web enables contacts without physical presence. This has its upsides, as well as downsides.

E. g., many documents of title are now kept in electronic form. Still, people show certain inertia as they prefer to keep them in the conventional form. Moreover, a hard copy is perceived as a more reliable carrier. The information and electronic environment is and will be vulnerable to considerable risks up to full destruction of information.

That's how it works, when one problem is resolved, there is another one. The legal field, as many others, will see more automation going further. The pace will be rising. Experts forecast 47-50% of professional roles to be fully automated over the next 15-20 years. The core of legal practice, the legal profession may change in the future. Opinions vary. Some believe the legal profession will gradually become extinct, as the combination of distributed ledger technology and artificial intelligence would transform and digitalise the legal field, making lawyers redundant¹⁶.

Others oppose that the most vulnerable jobs in terms of automation risks are predominantly concentrated in the office, managerial and commercial segments and services. The low-risk group comprises jobs in healthcare, education, science, law, arts,

¹⁶ C. Skinner, *Chelovek tsifrovoy. Chetvertaya revolyutsiya v istorii chelovechestva, kotoraya zatronet kazhdogo* (Moscow: Mann, Ivanov i Ferber, 2019).

municipal services and the media, as these occupations are contingent on such human capabilities as communicativeness, responsiveness, unconventional thinking and negotiation and persuasion skills¹⁷. Indeed, the legal profession is a high-risk domain, as it may be automated in many aspects and we will not need as many lawyers as we have today¹⁸. However, there is one important circumstance here. Scholars are concerned about how to maintain the traditional systems of social regulation based on certain values. The central element of this system today is law that historically took over from religion that, in turn, replaced myth. Thus, law is associated with such values as justice, equality, humanism, solidarity, freedom. Only humans can perceive them, and machines will never be a replacement in that sense. Law is a civilisational and cultural phenomenon, it is one of the foundations supporting the society. It is destined to trail the processes occurring today and tomorrow. Thus, modern technologies are steadily transforming reality. The intersection of the physical, biological and digital worlds create a new reality where law is going to play its customary role but in new, primarily digital forms.

Conclusion

The digital economy refers to activities engaging digital data as the main production factor, which, as it is processed and used on a major scale, including immediately upon development, serves to enhance the efficiency, quality and productivity of various types of production, technology and equipment in storage, sale and consumption of goods and services as compared to traditional economic forms. Law takes roots in the economy and will always follow the processes occurring in production and exchange. The modern Russian legal system was shaped after perestroika specifically with the intent of integration in the world economy. Significant changes occurred in almost all areas of national law. Digitalisation is a wide-ranging process bringing not only positives but posing numerous threats, too. Modern societies will change significantly as a result of the "digital revolution". It has already been suggested that law will be taking on a more "technological" aspect. The legal system of a society integrates numerous components such as legislation, legal practice, legal theory as a science and legal culture. All these components of the legal system in modern Russia will be transformed. Still, it will primarily affect the biggest blocks of the legal system, that is, the system of law and the legislative system.

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¹⁷ A. Atkinson, Neravenstvo. Kak s nim byt? (Moscow: Delo publishing house, 2018).

¹⁸ S. Caserta y M. Madsen, "The Legal Profession in the Era of Digital Capitalism: Disruption or New Dawn?", Laws Vol: 8 num 1 (2019).

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