Law and Digital Transformation[1]

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Abstract

The coexistence of digitization and law fuels their mutual influence and calls for scholarly inquiry into their mutual impacts and the effects thereof. Technization of society has contributed to society's development, and the objectives and vectors of this process have been in many ways informed by public and other social institutions, including law. Like before, digitization at its current stage combines social and technological mechanisms of managing societal processes, ingrained into the wide socio-economic context and connected with the implementation of the nation's strategic objectives. Similar phenomena and processes have a strong impact beyond Russia's borders as well. All this poses challenges for law. The article is an attempt to analyze legal challenges of digitization applying the method of comprehensive, intersectional and systemic analysis, which breaks down the excessive compartmentalization of sector-specific legal sciences and takes into account the relationship between national and international law, as well as advances in other social sciences. The new digital technologies transform law's functionality, and this, firstly, is reflected in the dynamically developing sector-specific legislation,

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and secondly, adds a distinctive dimension to the new laws and regulations of general character that create the basis for digitization. Digitization transforms the way subjects of law operate and the volumes of legal relations between them; generates new forms of administrative decision-making and of liability for non-implementation of these decisions; problematizes the subject area of the legal nature of technical (electronic) legal acts and the place they occupy in the legislative and regulatory framework; highlights the issue of the potential and limitations of automation of law. The study leads the researchers to conclude that in the age of digital transformation of economy, social sphere and public administration, law steadily continues to function as the regulator of socio-economic and other processes in society, ensuring both stability and the necessary transformational activities of individuals and public institutions.

Keywords

digitization, national law, international law, sectoral legislation, digital law, technical (electronic) legal acts, digital rights, automation of law, subject of law, liability.

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Introduction

Does law change in the age of digital transformation? This question is very important both theoretically and practically. The introduction of new digital technologies in different spheres of public life creates an impression that social contacts are quick in the making and transparent for the public and decisions are made directly, through an open dialog. This commonplace perception has deep roots, although it needs to be examined through a scholarly lens.

Law is a neat system of binding laws and rules regulating relations within society, individuals' conduct, and organizations' activities. By now Russia has a fairly well developed body of laws, which is being quickly updated due to the pandemic, the difficulties in international relations and, finally, the amendments to the Russian Constitution, requiring dynamic adaptation of the legislation [Khabrieva T.Y., Klishas A.A., 2021]; [Khabrieva T.Y., 2016].

Now we have two phenomena at play: classical, traditional, regularly updated law — and digitization, which reflects the new character and the new language used by individuals and organizations interacting with each other. How do these two phenomena link up and influence one another,

which one is more important, and can it be that one phenomenon is edging out another? Any simple answer to these questions is certain to be incorrect because while law strongly influences the process of digitization, digitization, in turn, influences legislative regulation and its forms, as well as individuals' legal awareness.

1. Legal problems of digitization

Thinkers of the past spent a lot of effort trying to solve the riddles of scientific progress. They believed that in the society of the future there would be different regulators. Friedrich Engels in his work "Anti-Dühring" supposed that in the future "the government of persons [would be] replaced by the administration of things, and by the conduct of processes of production." But the government of persons does not die out: persons themselves govern these processes, as well as their own mutual transactions. Our country in the 1970s was developing a national automated system of economic governance. So the subject discussed here did not appear out of nowhere — it has an eventful history. People have been thinking about how to use scholar and technological advances for solving social, economic and other problems.

The last few years have seen the publication of works addressing specifically the issue of digitization from a legal perspective: their authors propose a legal concept of robotization, review issues related to breaches of laws and regulations in the new digital settings, describe the specifics and prospects of legislative regulation of data exchanges in public administration [Talapina E.V., Yuzhakov V.N. et al., 2020]; identify environmental imperatives in laws and life [Bogolyubov S.A., 2020], which also need a robust informational support; research transformations of the institutions of budget law in the age of digital revolution [Artyukhin R.Ye., Povetkina N.A., 2021], etc. These studies show that some academic groundwork in the field has been done already, the basis is already in place and needs to be built upon.

At the same time, as law and scientific progress continue to interact, many new and interesting issues come up. The first issue in need of comment is overlaps between legal regulation and digitization. Digitization "sweeps into" various spheres, sometimes causing harm to people, and sometimes making their life easier and facilitating organizations' activities.

In the matters of public administration, digitization has a significant impact on public agencies' functionality so that some functions die off while others become substituted. In particular, the colossal flow of accounting and audit documents is substituted with more useful and efficient analyti-

cal and forecasting tools. The introduction of the new methods of data exchange allows to expand the informational foundation for administrative decisions and actions, significantly facilitating the task of public administration.

In the area of economy, robots are being introduced in great numbers in manufacturing and construction, successfully managing a great variety of manufacturing and technological tasks. The innovations in the service sector and social services are especially striking. Many services are gradually converted to electronic formats — individuals can use online portals to solve problems related to their pension, labor, housing and other social rights. In educational, academic and cultural spheres, a lot of things are going online as well. Thus, during the pandemic classes little by little went online. In such areas as ecology, environmental protection, the fight against climate change, and the protection of forests and other natural resources, new monitoring technologies are likewise very important: digitization does good.

The second issue concerns the changes in law in the age of universal introduction of modern digital technologies. The object of legal regulation is transformed while the social role of law in streamlining social interactions remains the same. The functional impact of law, meanwhile, changes, which is reflected, first of all, in the dynamically developing sectoral legislation: civil [Sinitsyn S.A., 2020: 73–171], labor, ecological, administrative, educational, health care law, etc.

In particular, provisions concerning digital rights are added to Russia's Civil Code while amendments to Russia's Labor Code reflect the new modes of employment. Overall, one should keep watching sectoral legislation: although quite well developed, it needs modernization to ensure that individuals and organizations/businesses can easily interact with each other using electronic technologies.

In addition to sectoral legislation, one would want to point to the recent legal acts of general nature creating a basis for digitization. The Strategy for Developing an Information Society in the Russian Federation for 2017-2030 was created yet in 2017;[2] impressive state program Information So-

[2] Decree of the President of the Russian Federation No. 203 May 9, 2017 "On The Strategy of Development of an Information Society in the Russian Federation for 2017-2030" [O Strategii razvitiya informatsionnogo obshchestva v Rossiyskoy Federatsii na 2017–2030 gody]. In: Compendium of Laws of the Russian Federation [Sobranie zakonodatel'stva Rossiyskoy Federatsii]. 2017. No 20. Art. 2901.

ciety is afoot;[3] the National Strategy for Developing Artificial Intelligence for the Period until 2030 was adopted;[4] a special legislation about digital financial assets is in place.[5] All this bodes well for the introduction of digital technologies into everyday use. The process is not easy because each sphere has a large stream of regulatory paperwork, including technical standards. Because these regulatory documents are very important, the modernization thereof is of the highest priority. Changes to some regulatory instruments, however, are introduced very quickly and without any concern for other related instruments, while updates to some other regulations are obviously slower to come about, so systematic updating is the objective to pursue.

The adoption of laws and other legislative instruments concerning technical norms has been a conspicuous tendency as of late. In different countries of the world law has made a significant progress in this direction: South Korea adopted the Intelligent Robots Development and Distribution Promotion Act (2008); the EU has the Civil Law Rules on Robotics (2017);[6] the Republic of Belarus on July 17, 2018, adopted a Law on Laws and Other Legislative Instruments (No. 130-3), introducing the concept of technical laws and regulations. Russian legal scholars, too, are increasingly more preoccupied with such issues as legal validity of new documents, new legal acts called technical or electronic. But the main problem is to find a place for this new type of solutions, new type of legal acts in the legislative and regulatory framework.

There are changes underway in the relationship between individuals and new technical devices, which are reflected in the status of both governmental agencies and their individual employees. Whereas previously each

[3] Order of the Government of the Russian Federation No. 313 April 15, 2014 "On Approving the State Program of the Russian Federation 'Information Society'" [Ob utverzhdenii gosudarstvennoy programmy Rossiyskoy Federatsii "Informatsionnoe obshchestvo"]. Ibid. 2014. No. 18. Art. 2159.

[4] Decree of the President of the Russian Federation No. 490 October 10, 2019 "On Developing Artificial Intelligence in the Russian Federation" [O razvitii iskusstvennogo intellekta v Rossiyskoy Federatsii]. Ibid. 2019. No. 41. Art. 5700.

[5] Federal Law No. 259-FZ of July 31, 2020 "On Digital Financial Assets, Digital Currency, and the Introduction of the Amendments to Certain Laws of the Russian Federation" [O tsifrovykh finansovykh aktivakh, tsifrovoy valyute i o vnesenii izmeneniy v otdel'nye zakonodatel'nye akty Rossiyskoy Federatsii]. Ibid. 2020. No. 31. Art. 5018.

[6] Civil Law Rules on Robotics: resolution adopted by the European Parliament on February 16, 2017. 2015/2013(INL) P8_TA-PROV (2017)0051. [2103-MS]. Available at: https://www.europarl.europa.eu/doceo/document/TA-8-2017-0051_EN.html (accessed:)

was responsible for his/her own area of work independently, watching, introducing corrections, using information, making decisions, now there is what might be called a partner — a robot who performs some of the tasks independently and some others, under a human being's guidance, and vice versa. Which brings us to the question: what types of decision-making should be trusted to electronic technologies, and what should remain the responsibility of governmental agencies and all public authorities. Creating typologies of administrative decisions is one of the vital academic and practical challenges because in the current electronic settings both rationales for decision-making and kinds of decisions to be made are changing.

The issues of managerial decision-making are logically tied in with the issue of liability for one's mistakes or violations of the law. An answer to this can be found in a model of shared liability, when parties liable for a robot's mistakes or even harm it has caused include the software developer who created software for the respective robot; the robot's operator responsible for its exploitation; and finally, the officer, the employee, the worker responsible for this area of work. This is a legal arrangement whereby each party carries his or her share of burden.

The legal issues invoked here should be dealt with very cautiously and accurately, seeking to strike a right balance, and moving on one step at a time, slowly because there are still too many unknowns in this new dependency between the traditional regulatory processes and the now ubiquitous processes of technization.

Introducing a new legislative framework, one should take into account the realities of the fourth industrial revolution, including fusion of technologies and erosion of the traditional boundaries between physical, digital, and biological spheres [Schwaub K., 2016]. Analyzing specifics of legal aspects of technization in economy, ecology, and biotechnology, one can see that the total or partial failure to take into account realities of life produce only superficial solutions: laws and regulations are adopted but don't really work or produce only a semblance of the desired effect, etc.

Of paramount importance is the knowledge of the dynamics of individuals' socio-legal roles and of the mechanics of adaptation of citizens, officials, public servants, entrepreneurs, pensioners to digitization — the process creating the new space where information and law overlap. The key question is whether an individual is prepared to use this space and digest the colossal volumes of diverse information, which enable people to expand the range of their activities and to better choose among different options. Hence the need to diagnose risks are an inevitable concomitant

of any human activity. When one develops legislative and regulatory instruments and performs legally important acts, risks should be assessed in advance.

2. Digitization through the lens of international law

The issue of relationship between digitization and law from the viewpoint of international and Russia's national legal systems is worth consideration.

Scientific advances accelerate the pace of global changes. International law in these circumstances becomes one of the indispensable regulators of technological progress. The ability of international law to respond to these challenges, however, is not boundless. In particular, the scope of international law and its applicability to the new technologies have some structural limitations [Rayfuse R., 2017: 500]. International public law does not have a single centralized law-making body and, therefore, lacks hierarchy. Besides, international public law is a "fragmented" legal order with a strong potential for conflict, which calls for rules to apply when addressing various possible conflicts of legal norms.

International law can serve as an organizational mechanism that countries willing to cooperate in the field of science can use. Thus, the high costs of large-scale scientific programs necessary for substantial progress in various fields of human knowledge encourage international cooperative projects and information exchange.

International organizations' activities are now an indispensable element of global politics. These organizations are parties to multilateral interactions, negotiations, global economic and financial processes, etc. In September 2018 Secretary-General of the UN presented a Strategy on New Technologies (hereinafter referred to as the Strategy), which "[defines] how the United Nations system will support the use of these technologies to accelerate the achievement of the 2030 Sustainable Development Agenda and to facilitate their alignment with the values enshrined in the UN Charter, the Universal Declaration of Human Rights and the norms and standards of International Laws." So, the Strategy presents the UN with a very difficult challenge: to regulate not only the past and present development and introduction of technologies, but also the indeterminate future these technologies present.

To support the Strategy's implementation, an Innovation Lab was established under the auspices of the Executive Office of the UN's Secretary-General. "The goal of the lab is to promote and support innovation across

the Secretariat, share best practices, and support efforts in the System to help incentivize and scale up existing and future innovative solutions for [the acceleration of the sustained development goals]." The Innovation Lab is also "tasked with organizing regular, thought-provoking exchanges between the Organization and outside innovators and technology pioneers." The Laboratory also "[supports] ongoing initiatives and [provides] an opportunity to scale up, where relevant."

The new technologies' technical features can open up previously unknown opportunities for strengthening the effectiveness of the provisions of international law. Can we automate international law? Moreover, can artificial intelligence systems be incorporated into the process of international law making?

The unilateral exploitation of artificial intelligence systems will undoubtedly contribute to changes in diplomacy and international negotiations in the nearest decades. For instance, yet in 2018 the ministry of foreign affairs of the People's Republic of China, to support strategic decision-making, started using an artificial intelligence, providing Chinese diplomats with a range of options and assistance in risk assessment.[7] But even if such "legal automation" is feasible for national legal systems, will this technology ever break through into the area of international public law?

First, the new technologies can be used for monitoring compliance with, and preventing violations of, international law. The ability of upgraded computerized and robotized systems to collect and process data vastly exceeds the respective human faculties. These systems can be used for documenting and analyzing data in order to identify consistent patterns that can result in violations of international law. There are some examples already proving that it is possible to significantly increase compliance with international law.

For instance, the Protection Assistant for Wildlife Security system (PAWS) now employs a machine learning algorithm predicting where poachers can show up in the nearest future. Using elements of artificial intelligence, the tool analyzes data about previous known poaching operations to suggest to wildlife rangers where illegal hunters are most likely to turn up next. Thanks to the machine-learning algorithms, the intelligence tool PAWS becomes more and more precise as new data is fed into it. PAWS uses the concepts and models of the game theory — in particular, security

[7] Available at: https://rg.ru/2018/08/02/v-kitae-sozdadut-iskusstvennyj-intellekt-dlia-diplomatov.html (accessed: 17.02.2021)

games — and an automated tool generating effective and randomized itineraries for patrol.

Another example of the use of artificial intelligence, Hala Systems' technology Sentry predicts aerial bombardment, affording time for civilians to hide in shelters. Sentry's creators point out that this is a commercial tool and they intend to offer the product in the future to public and private agencies for monitoring war zones and disaster areas.

Second, advanced technologies can be used for investigating violations of international law. In contexts of legal proceedings in international courts, blockchain can be used for checking and sharing evidence in order to ensure prosecution of international crimes [Lebedev V.M., Khabrieva T.Y., 2019: 301-342]. Most of these analytical tasks are now performed by humans, although many of them can be automated or improved using machine learning.

Third, the new technologies can be used for solving global problems. One is led to believe that cutting-edge artificial intelligence tools capable of analyzing data collected internationally will contribute to solving such global problems as climate change, sustained development, migration, terrorism, and armed conflicts.

As for legislative regulation of artificial intelligence, presently the field is dominated by private standards and guidelines produced by the industry (for instance, Google, Microsoft or Yandex). Corporate self-regulation is useful, but it still is voluntary and non-binding. Besides, not a result of governments' consensus, private standards are susceptible to influences from private interests and values. Given this, international law and international institutions can become coordinators of the efforts to develop the regulatory framework, perhaps with an eye on producing agreed-upon international principles which would ensure the integration of the core values into the design and development of the new technologies.

3. Legal personality and modern digital technologies

The modern technologies propose radical methods to transform life, so academic debates are centered on the issue of how to legally define a human being. The question that begs to be asked is this: what sort of influence do modern scientific advances have on the concept of legal personality — and, conversely, how does the corresponding legal construct can influence society's development?

The advances in informational and other technologies, in particular, reveal a new dimension of the problem of distinguishing between the human

being and the machine. The process of integration of a human body with engineering devices is called cyborgization. The cyborg (an abbreviation of cybernetic organism) is a biological organism containing mechanical or electronic components, "a hybrid of machine and organism" [Haraway D., 2017: 11]. As human beings become more dependent on mechanisms, including the substitution of organs with mechanical devices (prostheses, implants), they are gradually turning into cyborgs.

Inasmuch as law is concerned, the key questions to answer are these: what is the cyborg and what are its distinctive features; how is therapeutic cyborgization different from cyborgization intended to biotechnologically improve human beings; and what are acceptable limits to the coupling of the human being and the machine?

Identifying the boundary between the human being and the machine is not that easy because generally speaking any instrument or fixture created and used by a human being can be considered as his/her artificial extension. To identify the level of integration of a human body with technical devices when human identity becomes an issue, several criteria have been suggested: structural, functional, and the invasiveness criterion. Based on the first two criteria, the devices at issue include only structural or functional analogs of / substitutes for human organs [Yudin B.G., 2011: 18]. Yet another criterion for assessing the coupling of a human and a machine is the question of whether the device invades the person's body, whether it "[violates] a boundary between what is inside the person and what is outside" [Düwell M., Rehmann-Sutter C., Mieth D., 2008: 259].

Thus, neural prostheses can be non-invasive (electrodes stimulate electrical activity of the brain), minimally invasive (electrodes are implanted in the peripheral nervous system) and invasive (electrodes are implanted in certain areas of the brain). In the latter case, looking through the lens of the invasiveness criterion, we can see that there exists a closest connection between technologies and a human body (placing implants in the brain or the spinal cord requires a surgical intervention), and this sort of binding raises additional ethical and legal questions [Hochberg, L., Cochrane T., 2013: 235-250]. According to the guidelines of the European Group on Ethics in Science and New Technologies, "implants that cannot be easily removed" should be regulated by law as strictly as implants used in warfare.[8]

[8] Ethical Aspects of ICT Implants in the Human Body. Opinion 20. European Group on Ethics in Science and New Technologies to the European Commission. Luxembourg: Publications of the European Communities. 2005. Available at: https://ec.europa.eu/digital-single-market/en/news/ethical-aspects-ict-implants-human-body-opinion-presented-commission-european-group-ethics (accessed: 17.02.2021)

As any other biomedical technology, cyborgization is dual-purpose. Initially, the technologies are presented as opening new therapeutic possibilities: devices integrated into a human body can replace organs out of order and set right dysfunctions that can occur. As the technologies improve, however, their purpose shifts from the restorative function to the function of improving healthy persons' physical and intellectual abilities, and this raises quite different questions.

No matter how controversial, the gap between the mentioned objectives is necessary for further differentiation of the regulatory frameworks for body implants. Seemingly less problematic, incorporation of therapeutic artefacts into a human body is already partially covered by the regulatory framework concerning medical appliances. Cyborgization aimed at "improving" human beings, to the contrary, exists in a legal vacuum, although, one is inclined to think, it should be significantly restricted. The abovementioned criteria — in particular, the invasiveness criterion — can be used for differentiating between therapeutic effects of the technologies on individuals and these technologies' eugenic, upgrading effects.

Although there is some substance to the argument about a somewhat hypothetical nature of legal issues concerning the future possible application of such technologies as simulated reality, super-intellect, downloading consciousness, chemical preservation of the brain, etc., implanting artificial elements in a human body that affect its functioning is already a common practice. Presently high-tech implants are the fastest growing sector of biomedical research. Many of these implants have been widely used in healthcare for many years, forming close ties between the technologies and the organisms.

There is a wide range of implants which can be differentiated with respect to their technical characteristics and the stage of the relevant project's development (commercial use, research and development, experimental design), as well as with respect to purposes they serve (therapy, diagnostics, identification, etc.).

Cochlear and cardiac implants (heart valves, cardiac pacemakers, stents) have shown themselves to good advantage. Researchers are now working on the heart transplant, which can be used instead hearts from biological donors or at least to significantly increase the time when patients can safely wait for biological transplants. There are reasons to believe that at clinical trials the artificial heart would perform better and safer than xenotransplants, which until recently were inspiring similar hopes.[9] Along with the

[9] See: "I'm Waiting for an Artificial Heart That Will Work for a Long Time." President of the League of Nation's Health Leo Bokeria about Surgeries for 80-year-old Patients and

artificial heart, scientists are developing an artificial lung — a device to saturate blood with oxygen and remove carbon dioxide from it, assuming thus several functions of the biological lung.

The earliest body part substitutes were limb prostheses. Passive and serving an aesthetic purpose, the first prostheses were intended only as imitations of lost limbs. Next in line prostheses began to be attached to patients' bodies mechanically, as a simple substitute for a missing body part. Presently prosthetic research and development is largely focused on high-tech devices, which, integrated with the nervous system, can receive tactile signals synchronously with it and be controlled directly by the motor cortex of the brain [Stepanenko D., 2016: 26–27].

So, such devices are becoming ever more sophisticated and functional. "Recent developments in engineering technologies have meant that the ability to integrate silicon[10] with biology is reaching new levels and implantable medical devices that interact directly with the brain are becoming commonplace" [Tadeusiewicz R., Rotter P., Gasson M., 2012: 41–51]. Brain implants, brain-computer interfaces, transcranial magnetic stimulation and transcranial electrical stimulation can have a significant impact on a person's emotional, kinetic, and cognitive characteristics.

Because the brain is presumably an individual's common denominator and, therefore, the focus of transhumanist ambitions, the exploitation of such devices raises questions about admissible limits of cyborgization of human beings. Whereas there is a general support for the idea to create and use, for medical reasons, body parts' substitutes that can be repaired or replaced when out of order, the issue of cyborgization of the brain, much less the prospect of fully substituting the brain with an artificial system, is more complex. The most radical proponents argue that since generation of information is a functional basis of consciousness (functionalism), consciousness can be simply copied to a digital device and, so, there should be no legal prohibitions and restrictions on cyborgization of the brain. A more restrained approach is to recognize the necessity to preserve the material substrate of consciousness (mind-brain identity theory and certain

Rehabilitating Children After Surgeries.' [«Ya zhdu iskusstvennoe serdtse, kotoroe budet rabotat' dolgo». Prezident «Ligi zdorov'ya natsii» Leo Bokeriya — ob operatsiyakh dlya 80-letnikh patsientov i reabilitatsii detey posle khirurgicheskogo vmeshatel'stva] In: Izvestia. June 3, 2019. Available at: URL: https://iz.ru/883847/valeriia-nodelman/ia-zhdu-iskusstvennoe-serdtce-kotoroe-budet-rabotat-dolgo (accessed: 17.02.2021)

[10] The metaphor plays up the fact that this organic element is used in the manufacturing of most modern microchips. Artificial hearts and other organs are likewise manufactured from organosilicon compounds.

quantum-mind theories). Although scholarly inquiry into these questions includes, first of all, the continuing work to develop theories of consciousness, which explain the seminal issues of the relationship between mental and physical, law should be applied to this inquiry as well.

The first cautious attempts to "specify the design" of the brain and answer the question about a desirable direction for the expansion of consciousness, the question of whether certain areas of consciousness or the brain may be touched only in the case of serious psychiatric disorders or brain injuries or may not be touched under any circumstances, etc. — all of this brought about Magna Cortica: the basic guidelines for developing and introducing brain modification technologies, to be used in the years immediately ahead. Invoking, not unintentionally, the Magna Carta, Magna Cortica is a set of rights and restrictions designed to prevent potential abuses in the world obsessed with cognitive enhancement. The items include: 1) the right to self-knowledge; 2) the right to self-modification; 3) the right to refuse a modification; 4) the right to modify/refuse to modify your children; 5) the right to know who was modified.[11]

With the advancement of the technologies designed to integrate the human body or even the brain with technical devices for the purpose of restoring or even enhancing natural capabilities, there are questions inevitably being raised about the impact of these changes on the identity of such cyborgized creatures. The most radical question is probably this: to what extent does a human being remains human and, accordingly, a subject of law when his/her main external and internal organs are substituted with artificial implants or boosted with devices that enhance the person's abilities to a level unachievable for a biologically "natural" creature?

So, inasmuch as the concept of legal personality of a human being is concerned, one of the key consequences of human beings' cyborgization is the growing mismatch between the biological criteria of belonging to a species, on the one hand, and the set of characteristics that places an individual in the legal personality category, on the other.

4. Ecological imperative during the digital transformation

Broadly speaking, the relationship between the impact of digital technologies and the impact of law on the workings of society can be summed

[11] Available at: http://www.iftf.org/future-now/article-detail/from-10yf2014-magna-cortica/ (accessed: 02.02.2021)

up in three formulas: 1) law loses; 2) law lags behind; 3) law is in tune with the times.

In the first model, law's regulatory potential is less effective than digital technologies'. Improving legislation, therefore, is not tantamount to making it more effective. And the use of information technologies, for its part, lets us achieve objectives pursued by the authors of a respective legislative instrument. Besides, people find the use of digital technologies more convenient than the application of procedures prescribed by law.

An illustration for this model is the solution for the mass deaths of bees blamed on a wanton use of pesticides and agrochemicals used for eliminating agricultural pests. As is well known, in 2019 mass bee deaths were reported in several regions of Russia due to a wanton use of pesticides and agrochemicals. This is a multi-layered problem touching on the issues of state registration of pesticides and agrochemicals imported into Russia, governmental control over their use, etc. An important aspect of this story is the mandatory requirement to inform apiarists and population whenever there are plans to use pesticides and agrochemicals. In 2020 the Republic of Bashkiria proposed to enshrine in national law the requirement to inform population about instances of the use of pesticides and agrochemicals.[12] It should be noted that there is already a bylaw in place requiring that users of pesticides and agrochemicals warn population when they plan to use them.[13] This begs the question of whether we need amendments to our national legislation if the requirements of the Sanitary Rules and Norms (SanPiN) fail to ensure that population and, first of all, apiarists, are duly warned. How the public warning system can be improved?

According to media reports, Russia now has an online platform for farmers and apiarists where farmers can notify apiarists about where and when chemicals will be used, and this helps prevent mass bee deaths. It is expected that this platform will prevent mass bee deaths caused by failures to warn bee-keepers about plans to use pesticides in a timely manner. Whereas previously people tried to handle this problem using groups on social networks and in the messengers, as well as electronic message boards

[12] Draft of Federal Law No. 923742-7 " Introducing Amendments to Article 22 of the Federal Law 'On Safe Handling of Pesticides and Agrochemicals' [O vnesenii izmeneniya v stat'yu 22 Federal'nogo zakona «O bezopasnom obrashchenii s pestitsidami i agrokhimikatami»]. Available at: URL: https://sozd.duma.gov.ru/bill/923742-7 (accessed: 17.02.2021)

[13] Chief Public Health Officer of the Russian Federation. Orders No 17 March 2, 2010 "On Approving the Sanitary Rules and Norms (SanPiN) 1.2.2584-10" [Ob utverzhdenii SanPiN 1.2.2584-10] and No 40 December 2, 2020 "On Approving the Sanitary Rules and Norms (SP) 2.2.3670-20" [Ob utverzhdenii sanitarnykh pravil SP 2.2.3670-20].

and private contacts, now there is a universal platform in place. It can be accessed from any device connected to the Internet. Registering, bee-keepers need to mark a place on the map where their bee farms are located. When pesticides and agrochemicals are used on nearby plots of land, the relevant notice would be sent via email and as a text message.[14]

The digital platform will arguably make for a more efficient system of public notification about the application of pesticides than the notification methods provided for in the SanPiN. It should be noted that in late 2020 Federal Law № 490-FZ (30.12.2020) "On Bee Keeping in the Russian Federation" was adopted. This federal law has provisions regarding the prevention of the poisoning of bees by pesticides and agrochemicals (§16). Thus, no later than three days in advance of the application of pesticides and agrochemicals parties responsible therefor must notify of the event, through mass media (radio, print newspapers, electronic and other means of information and communication), residents of localities situated within seven kilometers of the border of plots of land where pesticides and agrochemicals will be used. This article of the law for the first time directly provides for the use of electronic communications for public notification, although this statutory requirement appears to lack specificity.

The second model — when law is not catching up with the developments in digital technologies — most often occurs in various spheres of legal regulation because law as the regulator of social interactions is more conservative. Such areas include, for instance, the procedures for assessing impact of industrial and other activities on the environment (hereinafter referred to as OVOS — *otsenka vozdeystviya na okruzhayushchuyu sredu*), regulated by Order No.372 (16.05. 2000) issued by the State Committee for Environmental Protection (Goscomecologia) "On Approving the Regulations on Assessing Impacts of Planned Industrial and Other Activities on the Environment in the Russian Federation." The OVOS prescriptions include giving the public notice on planned actions that can cause harm to the environment.

The order prescribes that such notice is made via the mass media: a brief notice should be printed in official publications of the federal executive bodies (for federal-level assessments), the executive bodies of the constituent entities of the Russian Federation, and the local self-governance bodies. Additional notification of participants of the OVOS can be carried out via radio, television, periodicals, the Internet, and other channels of informa-

[14] Available at: URL: https://specagro.ru/news/202005/v-rossii-zarabotala-onlayn-platforma-dlya-fermerov-i-pchelovodov (accessed: 17.02.2021)

tion delivery. The Internet thus is regarded as a secondary information delivery channel.

And the current OVOS regulations do not require to notify the public about forthcoming events by posting relevant messages on web sites of relevant public authorities. The most often used public notification method, meanwhile, is now precisely posting information and documents on public authorities' web sites and sending out information via email and the messengers.

Given this, it would seem appropriate to introduce the following provisions to the OVOS regulations: 1) the public notices about planned activities must be posted on public authorities' web sites; 2) OVOS materials should be posted online and publicly accessible; 3) an electronic log book should be kept to record advance notices about OVOS events; 4) public debates should be carried out online (as well as offline).

An interesting example of law staying in tune with digitization is the new legal institution of informational models in design and construction, which was introduced in the town planning legislation in 2019. Russia's Town Planning Code contains such term as "the informational model of a permanent building or structure construction project" — it refers to an array of interrelated data, documents and materials pertaining to a permanent building or structure construction project, which are compiled electronically at different stages of pre-construction survey and in the course of creating architectural and engineering design, building, renovating, structural repairs, exploitation, and demolition of a permanent building or facilities.

In order to introduce the informational models, several organizational and technical problems will have to be dealt with, and yet it can be assumed that the informational models will become widely used in construction design and, little by little, completely replace construction projects specs and drawing in the familiar textual and graphic formats. The informational model's key advantage over the traditional construction project drawings and specifications is the fact that the informational model accompanies its respective building/facility during the structure's entire life cycle. So, the informational model will allow to trace all transformations of the respective structure from its inception to its demolition.

Conclusion

Law steadily continues to be the regulator of socio-economic and other processes in society both at home and internationally. This is a very impor-

tant mechanism, which promotes both stability and the necessary transformational activities of individuals and public institutions.

On the other hand, digitization and the new information technologies change the nature of activities of subjects of law and the volume of their legal relations and expand the scope of their future activities.

Law meanwhile works in full force, contributing to technological progress. Law is an excellent ally to cutting-edge research and development projects, to digitization and informatization of society.

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