

Trends in Digital Governance in the Field of Space Activities

Anna Danylenko

Ph.D. in Law, Analysis Center of Air and Space Law (Kyiv, Ukraine)

E-mail: a_danilenko07@ukr.net

<https://orcid.org/0000-0001-8263-1364>

Diana Levchenko

Ph.D. in Law, Analysis Center of Air and Space Law (Kyiv, Ukraine)

E-mail: diana.levchenko5@gmail.com

<https://orcid.org/0000-0001-8343-2260>

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The relevance of this article is based on the need to find an answer to the question: are there mechanisms in the legal field and at the level of the management concept for adaptation to the inevitable evolutionary processes of the space industry, or is it necessary to look for new ways to regulate space activities? To answer this question, the authors needed to study the scientific doctrine, international acts and individual national norms of Ukraine regarding the identification of prerequisites for the development of global and national digital governance in the field of space activities, as well as the prospects for its proper functioning. The research is based on the use of a set of methods and techniques for carrying out scientific research. The main ones among which were the methods of analysis and synthesis, the formal-legal and the method of formalization. As a result of the study, it was stated that legal regulation does not keep pace with the development of the space industry and does not have the ability to cover all modern aspects of space activity with its influence. This leads to the need for a transition from formal bureaucracy to digital democracy in the aspects of legal regulation of space legal relations at the global and national levels. The example of Ukraine demonstrates the potential for the transition to this model of organizing and implementing communication between the authorities and society in the space industry, but it also indicates the need for a number of important administrative reforms.

Keywords: digital governance, global administrator, outer space, space activities, space legal relations.

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Introduction

The world is transforming today. And this statement can be understood in different ways. On the one hand, we are talking about the presence of pinpoint global problems, the solution of which world players are throwing all possible forces. For example, the ecological, which already have catastrophic consequences and the struggle with which has been going on for decades. So it is with the newly formed ones, for example, outbreaks of pandemics, the solution of which must be quick and accurate. There are also global problems that can hardly be called pinpoint. This is because their presence entails the gradual destruction of a significant range of world interests. For example, the lack of proper regulation of space activities, including the use of artificial intelligence or registration of space objects, can lead to unresolved legal liability issues. And in the future, these questions will only get worse.

On the other hand, it should be taken into account that any development involves a transition from one state to another. The world will not be the same as it was decades ago. We are actively introducing into everyday life such things that were not available a few years ago. And we are talking not only about scientific technologies, most of which are already available to almost everyone. We are talking about inevitable processes that have already become the norm.

All over the world, the use of space technologies for everyday purposes has become the norm. Commercial use of outer space will soon become the norm. Moreover, there are all the prerequisites for this. First, competition in world markets is intensifying both in the development of spacecraft and delivery systems and in the development of advanced science-intensive services (Danilin, 2018: 167). Secondly, the informatization and digitalization of the world economy entail an expansion of the market for space data – both in high-tech and traditional (agricultural sector, transportation and retail, healthcare, etc.) (Danilin, 2018: 167). These processes are changing the dynamics and nature of the evolution of the space industry and markets and pose serious challenges for space policy (Danilin, 2018: 168).

The main question is whether there are mechanisms for such adaptation in the legal field and at the level of the management concept, or is it necessary to look for new ways to resolve issues related to the inevitable evolutionary process of the space industry?

It is noteworthy that today the evolution of the space economy and digital technologies is leading to reformatting of space policy: the diversification of actors and functions, the formation of new clusters, the development of ecosystems, partly crowding out, partly organically complementing existing structures (Danilin, 2018: 176). Accordingly, does legal regulation keep pace with these developments? Does it have the ability to cover all these issues with its influence?

Obviously not. This is confirmed by the emergence of a new model of industrial and technological policy in the space sector (Danilin, 2018: 176). It presupposes a reassessment of the role of the state as an equal participant in space activities along with private space players and a more active organizer of the digitalization of society, taking into account changes in its specifics.

It should be understood that the prospects for space policy are primarily associated with the development of scientific and technological cooperation. Therefore, we can say with confidence that the use of digital technologies both in the mechanism of global and public administration and in certain regulated industries, such as, for example, space activities, is inevitable.

In fact, some authors consider the use of digital technologies to reform government structures, politics and public administration to be a “panacea” for the twenty-first century. They are presenting it as “an enlightened way to revive democracy and improve the quality of services for citizens” (Milakovich, 2011). Others, examining the impact of digitalization on our lives, point to the underlying financial challenges of many businesses, governments and other organizations at the heart of the e-government revolution (Milakovich, 2011). However, all agree that digital technologies, artificial intelligence, products and services of space activities affect the management sector around the world and its services.

Therefore, many governments are moving from a technology-oriented approach to a more citizen-oriented approach when providing online services (Milakovich, 2011).

Also, no one denies that with the help of digitalization tools, many manual processes have already been automated, which has improved the quality of service. And these are just a few of them: online filing of documents, online payments for various accounts, taxes, online registration of assets owned by individuals and commercial organizations, etc., which allows governments to operate smoothly and efficiently in the interests of public welfare (Khan et al., 2020; Almeida et al., 2020).

In the current realities, the issue of the relationship between global digital governance and national digital governance in the field of space activities is quite relevant.

In our opinion, global and national digital governance should be understood as management, which is characterized by digital democracy integrated into the mechanisms of public administration. The difference is at what level decisions are made.

Regarding the development of space policy in the context of global digitalization of state mechanisms of influence on legal relations, it should be noted that it is too early to talk about building a global digital structure for managing space activities. This is because not all states have national space regulatory legal acts that regulate the order, methods, methods and legal regimes in the field of space activities. And those that have – are not brought to a single model. That is, at the present time, it is problematic to ensure the transition to a new management paradigm, referred to as digital governance, at the global level. On the one hand, this requires a more thorough theoretical development of the methodological plane. On the other hand, there is the existence of legal norms that ensure such a transition.

So, for the focused question, we need to focus on the example of a specific country. It was decided to explore the experience of Ukraine. We need to consider the features of the process of transition from formal bureaucracy to digital democracy since the area under study is characterized by nonlinearity in managerial decision-making. Below we will give examples of how the digital governance of Ukraine is being implemented today in the field of space activities. Based on the data received, we will be able to see if Ukraine is ready for the transition to a new paradigm of space legal relations management.

Ukraine’s transition from formal bureaucracy to digital democracy

We have the opportunity to observe that formal bureaucracy is beginning to lose its relevance in the world. Indeed, it has already become clear that the administrative system may gradually abandon the hierarchical descent of power vertically to function effectively, also, from the burden of certain procedures for making socially important decisions, with the transition to partnerships.

In the context of globalization pressures that have intensified since the 1970s, governments in both industrialized and less developed countries have had to undertake large-scale administrative reforms and reorganizations to streamline their public sectors by reducing their size, functions, and activities. Hence the shift of the neoliberal paradigm with the accompanying aspect of “New Public Management” (NPM) (Farazmand, 2002). The main features of this theory are the focus on the rational use of budget funds, revision and transfer on a contractual basis of public services to private enterprises and increase their responsibility for the quality of these services, decentralization of budgetary and government powers (Solovyov, 2014: 83).

At the same time, it should be understood that the New Public Management approach does not eliminate bureaucracy, but only modifies it, which, according to Edwin Olson and Eoyang Eoyang, has led to so-called “professional bureaucracy” or “amateur bureaucracy” – without leadership and knowledge or technical capabilities, solving complex social issues (Olson & Eoyang, 2003; Keys, 2013).

Today, the New Public Management approach is far from exhaustive, as many countries have realized the flaws of clean market ideology and private sector efficiency models emphasized by the NPM (Farazmand, 2002). More and more attention is paid to the so-called “turquoise models” of relationships. This is the next level of development of consciousness, when standard concepts and approaches are challenged, and the organization begins to be perceived as a living organism, not a machine (Bass, 2018). Many such models have been described in the literature, including good governance (Leftwich, 1994; Weiss, 2000), partnership, cooperation and connections (Ansell & Gash, 2008; Stoker, 1998) and modern management (Magnette, 2003). Each model offers a slightly different emphasis, which makes the models more or less suitable depending on the local context (Ikeanyibe, 2017).

It should be noted that today in the context of global digitalization, new phenomena have emerged, such as digital governance and digital democracy. These models include a shift from a bureaucratic orientation to a customer-oriented service activity (Milakovich, 2011). Where digital technologies are seen as a means of restoring public trust and improving the quality of services. Also, digitalization contributes to: 1) stimulating wider participation of citizens in the political life of the country; 2) a more efficient and accountable electoral process (conducting electronic polls and referendums, conducting online discussions, forming a public opinion) (van Dijk, 2013); 3) transparency of government activities; 4) active two-way communication and interaction between stakeholders through forums and platforms; 5) public control over the activities of all subjects of government bodies.

However, the question of whether this technological revolution is effectively used by citizens to change political processes remains open, and there is no simple answer to it “yes” or “no” (Milakovich, 2011).

Looking ahead, it should be pointed out that an active, conscious civil society is needed to successfully build digital democracy in Ukraine. It is also necessary to make a transition from public administration, even digital, to digital public administration. However, there is a problem in understanding the categories of “management” and “public administration” at the present stage.

What has always been called public administration abroad has been public administration in Ukraine and is only now beginning to adapt to world standards. However, this thesis can be criticized, in particular, because the country focused on the legislation of the Russian Federation for a long time. In this country, the category of “public administration” is still used

as an analogy of the term “public administration.” Therefore, it is possible that in the initial translation of the category of “public administration,” domestic representatives of legal and scientific doctrine focused on the terminological apparatus of the neighbouring state. In any case, today, we have the problem of having three related categories – “public administration,” “public administration” and “public administration” (Danylenko, 2020: 34).

In our opinion, in Ukraine, the categories of public administration and public administration as part of the mechanism of ordering state and public affairs have become one piece of rubble as self-sufficient. These are interconnected elements of centralized unity that coexist organically. After all, the same social relations can be the subject of public administration and public administration. What does this mean? First of all, depending on the nature of the issue that needs to be resolved, the authorized entities choose its type: in the case of the organization of the public sector – there is public administration, and in the case of private and public interests – public administration (Danylenko, 2020: 34).

Thus, the modern paradigm of public administration in Ukraine is represented by a specific model of its implementation. This type of activity, which represents the performance of state functions, is the social orientation of public authority and involves variability of behavior or organizational structure of the object of administration, which is carried out by providing, protecting, protecting a range of social relations, both individual and public interest and demand from the state support, settlement in the course of their dynamic development.

Solve the question of convergence of the terminological apparatus of the administrative field of knowledge to the applied European common enough easily. In our opinion, we need to move to the model of digital governance – governance, which is characterized by digital democracy integrated into the mechanisms of public administration.

Thus, with the adoption of the Strategy for the Development of the Information Society in Ukraine, the legal category of “electronic democracy” was enshrined in law. It is defined as a form of public relations in which citizens and organizations are involved in state-building and public administration, as well as in local self-government through the widespread use of information and communication technologies (On approval, 2013).

However, since then, the state of development of the information society in Ukraine is still unsatisfactory. From the point of view of the problem of normative-legal, organizational-technical, personnel uncertainty of e-democracy in Ukraine, several alternatives of its decision are considered (Pantsyr & Kohut, 2015). These include a strategy of moderate change and small steps, a centralized strategic approach and a mixed top-down and bottom-up strategy (Pantsyr & Kohut, 2015).

Thus, in order to ensure the transition from bureaucratic public administration to digital public administration, a number of important administrative reforms need to be carried out. As a result, the main goal for public administration bodies, at all levels, will be to reduce public spending, which meets the expectations of citizens and the achievement of the goals of economic growth (Milakovich, 2011; Dijk, 2013), as well as set a benchmark for a conscious civil society and not on the government and public authorities.

Thus, in the new conditions of social development, which is accompanied by comprehensive informatization, deep social transformations and globalization, we should rely on new models of organization and communication of government and society. In Ukraine, there are significant prospects in terms of the implementation of digital democracy, some embryos of which already take place in law-making and law enforcement activities of public administration. Although with some problematic aspects, public services are provided online in the form of functioning

service platforms. In addition, in 2022, it is planned to launch a single national platform for interaction between executive bodies and citizens and civil society institutions (Press, 2021).

Digital governance of space activities in Ukraine

As we have already noted, space information technologies and services have already become an integral part of digital governance. In Ukraine, they are just beginning their path to development in many spheres of the life of society, the state, and, as a result, in law.

On the issue of digitalization of the sphere of space activity, Ukraine does not have many positive examples of the implementation of digital governance. Mainly due to insufficient funding of this industry. Still, she seeks to follow the example of world leaders.

This is because observation from space and space monitoring provides a comprehensive solution to the problems of environmental protection and rational use of natural resources. In addition to purely technical achievements, the organizational experience accumulated in space activities in solving large-scale problems of a complex nature turns out to be very useful (Leskov, 1995: 143). Such experience is cooperation in the creation of intergovernmental information systems for the exchange of data on various issues related to space activities.

For example, during the visit of the President of Ukraine Volodymyr Zelensky to the United States, the State Space Agency of Ukraine (SCA) and the US Space Command (USSPACECOM) signed a Memorandum between the SCA and the US Department of Defense on cooperation in space safety and space services. The document regulates the exchange of information in order to resolve abnormal situations that may arise with spacecraft during their launch into orbit, the ascent from orbit, entry into the atmosphere, disposal, to study electromagnetic interference, etc. (State, 2021).

It should be noted that such a procedure as registration of space objects is also gradually moving into the online format.

In accordance with Part 1, Article II of the Convention on Registration of Objects Launched into Outer Space, which was adopted by the General Assembly in its resolution 3235 (XXIX) on November 12, 1974 (Convention, 1974), registration takes place at the national and international level in two stages. First, the launching state registers the space object by recording in the appropriate register, which it creates and maintains. Thereafter, each launching state informs the Secretary-General of the United Nations of the establishment of such a register. The content of which and the conditions for its conduct are determined by the national state.

The UN registry is administered by the UN Office for Outer Space Affairs (UNOOSA), which created a searchable database as an open-source of information on space objects around the world (Schmidt-Tedd & Soucek, 2020). The main purpose of registration is to fix the legal relationship between the spacecraft (object) launched into space and the launching state and in the register of which this spacecraft (object) is entered to retain jurisdiction and control of this state over such a spacecraft (object), ensuring the possibility of returning the spacecraft (object) to the owner. At the same time, registration is important to establish which state will be responsible for specific space activities and possible liability for damage caused by such spacecraft (object) (Vidyuk, 2020).

UN has developed a platform – an online index of objects launched into outer space (Online, 2021), which provides a fast and efficient means of access to information on space objects provided by states and organizations (United, 2020).

However, there are no normative legal acts that would regulate the creation and vision of the state register of comic objects in Ukraine.

Therefore, today the subjects of space activity of Ukraine face a number of problems caused by the lack of a clear mechanism for regulating space activities. In accordance with Part 1 of Art. 13 of the Law of Ukraine “On Space Activities” spacecraft, such as artificial satellites, automatic interplanetary stations, automatic or manned spacecraft, orbital stations, spacecraft, etc., are subject to mandatory state registration in the State Register of Spacecraft Of Ukraine in accordance with the Rules of registration of spacecraft in Ukraine, approved by the Cabinet of Ministers of Ukraine (Vidyuk, 2020).

The Law of Ukraine “On Space Activities” was adopted in 1996, but so far, no relevant Rules have been developed, and as a result, it has not been determined who exactly, for what period, in what form submits information about the spacecraft to the SCA, which, in fact, should register the spacecraft and maintain the State Register of Spacecraft of Ukraine, how the SCA should inform the Ministry of Foreign Affairs and the UN about the state registration of the spacecraft, etc. In pursuance of Art. 13 of the above the law, as well as the Convention on the Registration of Objects Launched into Outer Space of 14 January 1975 (entered into force for Ukraine on 14 September 1977), the State Space Agency of Ukraine has developed a draft resolution of the Cabinet of Ministers of Ukraine “On approval of the Rules of registration of spacecraft of Ukraine” (Vidyuk, 2020).

Without these rules, there is virtually no official mechanism for registration of spacecraft, which must meet international standards for registration of space objects, the Law of Ukraine “On Space Activities” and the Law of Ukraine “On Administrative Services,” because the registration of spacecraft is an administrative service, which is provided to the subject of space activity in case of application to the State Space Agency of Ukraine.

Thus, the preparation of the draft resolution of the Cabinet of Ministers of Ukraine “On approval of the Rules of registration of spacecraft of Ukraine” is an important step towards harmonization of national space law to the legislation of leading space countries in terms of creating legal conditions for registration of spacecraft of Ukraine. In addition to creating legal conditions in this area, the approval in the near future of the Rules of registration of spacecraft of Ukraine will be a significant contribution to the program of digital governance of space activities.

Conclusions

1. The transformation of the world’s foundations is the norm today. Along with environmental, geopolitical, medical and other politics, space also has to adapt to new evolutionary realities. Currently, there are no mechanisms for such adaptation in the legal field and at the level of the management concept. Therefore, it is necessary to look for new ways of resolving issues related to the inevitable evolutionary process of all social and legal conditions. Digital management today is one of the most promising models for organizing and implementing communication between government and society. This is due to the fact that the use of digital technologies both in the mechanism of global and state governance and in certain regulated industries, such as, for example, space activities, is inevitable. Accordingly, the issue of global digital governance and its relationship with national digital governance needs further research.

2. Global and national digital governance is governance characterized by digital democracy integrated into public administration mechanisms. Regarding the development of space policy in the context of global digitalization of state mechanisms of influence on legal relations, it should be noted that it is too early to talk about building a global digital structure for managing space activities. This is because not all states have national space regulatory legal acts that regulate the order, methods, methods and legal regimes in the field of space activities. And those that have not been brought to a single pattern. That is, at the present time, it is problematic to ensure the transition to a new management paradigm, referred to as digital governance, at the global level. Despite this, there is still a need to develop a theory about the need for the existence of a global administrator. Its main function is the settlement of space commercial legal relations on the basis of both a linear-organized type and a linear-functional one, depending on the structure of the participants in such legal relations.

3. In the new conditions of social development, which is accompanied by comprehensive informatization, deep social transformations and globalization, we should rely on new models of organization and implementation of communication between government and society. An active, conscious civil society is needed to successfully build a digital democracy in Ukraine. It is also necessary to make the transition from public administration, even digital, to digital public administration. In Ukraine, there are significant prospects in terms of the implementation of digital democracy, some embryos of which already take place in law-making and law enforcement activities of public administration. But the sphere of space activities in this regard is still underdeveloped. Mainly due to insufficient funding for this industry. In the issue of digitalization of space activities, Ukraine seeks to follow the example of world leaders. A significant contribution of the program of digital governance of space activities will be the adoption of the Rules of registration of spacecraft of Ukraine, which will ensure such a procedure online.

The development of digital governance in space is an evolutionary process. On the one hand, this is due to comprehensive informatization, deep social transformations and globalization. On the other hand, there is a legal vacuum for the settlement of modern aspects of space activities. This necessitates the transition from formal bureaucracy to digital democracy in terms of legal regulation of space relations at the global and national levels. The main problem is that currently, the global administrator of space activities as a specialized institution that makes global legal decisions is absent. This encourages space powers to adopt national space regulations, which do not have a single model in terms of the content and nature of legal norms. This creates significant obstacles to the proper regulation of space activities, as no one has the right to interfere in the internal affairs of an independent sovereign state. At the same time, outer space is the property of mankind. Its development and use cannot be isolated. Access to information must be provided at all times. The exchange of information must also be continuous. Accordingly, the harmonization of global and national digital governance is a topical issue today and requires more specialized research.

In conducting further research, we will focus on the experience of space countries in the aspect of digital governance in the field of space activities. This will facilitate the search for concrete initiatives and proposals for the implementation of this model of organization and communication between government and society in the space industry in Ukraine. After all, modern experience in the digital governance of space activities in Ukraine is almost non-existent, although it has a basis for development.

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