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# Concept of the digital state: concept, nature and ontology

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**Abstract.** The article is devoted to the study of the phenomenon and concept of the digital state. The general concept and meaning of digitization in public administration is revealed. The problems of relevant interpretation and the limits of applicability of this concept to public administration are explained. The author's concept and definition are presented, explaining the concept, nature and ontology of the digital state. The author suggests to consider the digital state in 4 interpretive projections: 1) as an ecosystem of operational, multi-service and proactive state digital super-services; 2) as an integrated computer-software meta-platform (platform system); 3) as an organizational and technological approach and corresponding paradigm; 4) as the digital ontology of state-building and functioning, public administration and public policy. According to the author's interpretation, the concept of the "digital state" structurally includes the concepts: 1) the concept of the "digital government"; 2) the "digital democracy" concept; 3) the concept of the "digital justice"; 4) the concept of the "digital electoral technologies"; 5) the concept of the "digital public control over public administration". The article details the author's concept of "digital government". The article is based on application of research methods of analysis and synthesis, induction, deduction and abduction, classification and formalization; through application of research methods, the essential descriptive characteristics of the phenomenon and the concept of the digital state were revealed.

**Keywords:** digital state, digitization in public administration, general theory of public administration, digital government, digital law

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## Introduction

The concept of the "digital state" ["*Digital State*"] (French — "*État Digital*", less often — "*État numérique*"; Spanish — "*estado digital*"), reflecting the processes, ontology and results of digitization in the field (system, tools and process) of state building and management, - today, is on trend.

A kind of fashion has come for its use, publications containing this expression, and dealing to a certain extent with the relevant issues is becoming more and more frequent to meet [1; 2; 3].

However, the scientific literature and, more importantly, official documents still do not provide any clear and relevant explanations for this concept (and the phenomenon it reflects) that avoid unacceptable simplifications and sub-references from other areas (digital banking services, personal electronic identification cards (ID cards), etc.). Nor would such a search for an explanation transform the concept into an idealistic futuristic dream.

This is important because the concept of the "digital state" is quite new, "controversial and





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ambiguous for the legal science and for the general theory of public administration, without having a well-established universal interpretation.

In 2019, the Ministry of Digital Development, Communications and Mass Communications of the Russian Federation announced the allocation of 526 million rubles for the popularization of the digital state, without having so far explained the essence of this concept and (as we believe) not having understood for itself as well" [4].

Confusing the meaning of the digital state is a very common approach that reduces the digital state only to digitization of public services and public administration. However, it is unlikely that digitization of public services, by itself, will turn the state into a "digital" next. But then what is a digital state?

This article is intended to fill this gap.

**1. Revisiting the key concept of the topic under study**

The concepts "digital state" and "digital government" are included into the essential elements of the "new" model of public administration and reflect the topology of communication channels (including filters) of internal interrelations in the system of public administration and communications with external (in relation to public administration) objects and subjects.

According to an official Russian explanation, "digital public administration" aims to provide citizens and organizations with access to priority public services and digital services and to establish a national data management system, development of e-government infrastructure, introduction of end-to-end platform solutions in public administration" [5].

But this formulation raises many more questions than it answers.

What does the word "digital" mean and reflect, in principle? How can one define and explain the essential features of something transformed into a digital ontology or something displayed by a digital image?

Clarification of what constitutes the digital state of something is necessary first of all in a context where the digital states are part of a certain type of system [2, p. 11], in this case of the state (in terms of the ontology described).

Direct interpretation of the concept of the "digital state" is meaningless, since every state is always an organization of people (not machines, not robots), a community of people with corresponding public-law competences and structurally hierarchically structured within this community. Therefore, the concept under consideration should not be interpreted as "bluntly", but in a complicated way. Accordingly, an explanation of the said essence, nature and ontology of the said organizational and technological concept is required.

According to Vincent Muller, an object (the state of an object) is (and can be evaluated) digital if and only if it is a token of a specific type — performing a certain function, usually a representative function for the system. This interpretation, as explained by the named author, presupposes three levels of description (physical, syntactical, semantic), which implies that "being digital" is an issue of descriptive process or rather an issue of how we want to describe the world, if a functional description can be accepted [2, p. 11, 13].

The analysis of existing scientific literature and official documents on the subject, which reflect not so much projective sections as real experiences, reveals a range of different approaches to defining and explaining the digital state term.

**2. The author's concept and definition**

The notion of a digital state (electronic state) is soundly considered in the following interpretive projections:

1) the digital state as an ecosystem of operationalizable, multi-service and proactive state digital super-services of "one click", "one window", etc. (within the framework of this model, emphasis is focused on the main problems of public service delivery; the approach is also based on the digital ecosystem of guidance and implementation documents);

2) the digital state as an integrated computer and software meta-platform (platform system) for end-to-end and seamless interfaces (integration), aggregation, support and maintenance of the system, functions and processes of public administration (and its regulatory and legal support), the reference interests, resources and efforts of non-state actors;

3) the digital state as an organizational and technological approach and corresponding to the paradigm ("philosophy") of construction and functioning of the public administration system;

4) the digital state as the digital ontology of state-building and functioning, public administration and public policy.

All of these approaches are correct, reflecting different groups of aspects of ontology and functioning of the digital state.

According to our author's conception, the **digital state** is a system-based organizational and technological approach (and the underlying concept) of legal framework (a rigid legal framework — *vinculum juris*), topology and logistics superimposed

on the actual existing system of public administration and on the binding legal order of the **artificial order of digital infrastructure** providing effective and rapid information, analysis and expertise, objective control, verification and validation of public administration, system routing and algorithmization of distribution of ranked communication channels and interaction mechanisms, "seamless" complex structural functional-target interface and integration flows of public property, management, service and communication resource arrays and flows, as well as providing high-speed, intelligent electronic resources platforms for synergy of efforts and actions, both within the public administration system, subsystems and levels, and with other actors, including the users of the public administration system-produced organizational product of activity, including public services, and with beneficiaries from the exercise of the functions of the state.

To the above-mentioned (providing artificial order) **digital (information-telecommunication, mathematical and computer-software) infrastructure include:** cloud technologies, technologies of digital twin-models, technologies of augmented reality, Internet of things, including the Industrial Internet of Things, Big Data technologies, artificial intelligence technologies, etc. which are already actively and relevantly applied and planned in public administration.

Underlying all this is provision of internal homeostatic and non-entropy (self-regulating) factors of the public administration system, achieving the greatest possible efficiency, reasoned rationality and optimal public administration, its connection with public interests and social demands and expectations, efficiency and transparency of control of the system of public administration, ergonomics and simplicity of interaction with the authorities by other entities (individuals, society, organizations).

**3. Ontological structure of the concept of the "digital state" (the author's concept)**

The concepts of the "digital state" and "digital government" are overlapping but not identical concepts, and they are easily differentiated. The concept of the "digital government" is related to the activities of government structures, executive authorities, while the concept of the "digital state" is substantially broader and includes the concept of the "digital government".

The concept of the "digital state" incorporates structurally and ontologically concepts (and systems based on them a set of approaches and tools):

**1) "digital government"** ("e-government")" — see below;

**2) digital democracy concept ("e-democracy"):**

— providing opportunities and conditions for broad public discussion of draft legislation and by-laws (primarily on topical and socially sensitive subject-matter and object areas) By publishing drafts of such acts on official websites of state bodies and by collecting professional expert evaluations and suggestions and public comments on these projects through their interfaces;

— providing the possibility of submitting petitions and proposals through interfaces of official websites of public authorities;

— providing the possibility to ensure that the public communicates via the Internet with the head of state (collection of questions and communications from the public via the Internet; Live webcast)

— ensuring the transparency of public administration and the activities of public administration by officially publishing and providing necessary reference information on official websites of public authorities;

— creating and operation of specialized Internet-sites for organization and implementation of petitions, complaints and suggestions by the public, for organization of public discussions of significant projects (websites like "Active citizen", "My city" etc.);

**3) the concept of the "digital justice" ("electronic court system", "electronic justice"):**

An artificial intellectual "assistant companion" of judges;

— Introduction of technology in the judiciary to ensure distribution of computer and software cases by judge, based on the specialization and workload of judges, but through introduction of a random factor in such distribution, This significantly reduces the risk of litigants engaging in corrupt practices against specific judges;

— Complex of Internet communication technologies in organization of functioning of judicial institutions and in court proceedings (the possibility of filing a complaint through the website of the judicial authority, and the possibility of obtaining information on procedural changes, notices and evidence from the court via the Internet);

— a set of technologies for the use of videoconferencing systems and services in judicial proceedings;

— a set of live (real-time) video technology of the court hearing;

— placing (taking into account legislation on personal data and on various types of secrecy) on the specialized websites of the judicial authorities collections of judicial documents for public access;

— interfaces between electronic judicial databases and databases of different government

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bodies, cross-cutting and related logistical interfaces;

**4) Digital Electoral Technologies ("Electronic Electoral Technologies") concept:**

— State computer systems for ensuring the electoral process (system for recording and counting votes in elections, processing election results);

Direct (real-time) television transmission of images of events at polling stations;

— Digital (online) voting systems;

**5) The concept of the "digital public control over public administration".**

**4. "Digital Government" (the author's concept)**

Set of software and technology platforms and tools and organizational mechanisms called "digital government" ("e-government"; English. — "*electronic government*" or "*e-government*", French — "*administration électronique*"), which is "primarily related to the system of executive bodies of state power, public administration.

According to our author's conception, "digital government" includes and ontologically expresses through the following organically integrated into a single meta-system of public-management tools, platforms and technologies ("GovTech"):

1) within the public administration itself:

— platforms and interfaces for implementation and maintenance of relevant in-system communications (communication and document flow), algorithms and channels for public administration interaction and data transfer between different branches, levels and bodies of public administration and their individual subdivisions, between separate units within the same public administration body in implementation of such administration, as well as intergovernmental interactions of different states;

— mechanisms for control and accounting of public administration and for intellectual computer and software monitoring of efficiency, effectiveness, optimization and other public administration measures and processes and their conformity with the public interest; public demands and expectations, control of budgetary and financial auditing within the framework of public administration, control of the execution (performance and timeliness of) of instructions and orders, and execution of administrative and administrative documents, Implementation of legislative and regulatory legal instruments and control of the circulation of documents;

— platforms and communications of archival and public administration support (collection, archiving and systematization of information, systematic search and correction, establishment, implementation and optimization of search engines, interfaces of digital databases of various government bodies, ensuring seamless and graded logistic interrelati-vity through);

— platforms and resources for expert analysis, forecasting (situational and cenario prediction, scenario simulation, etc.) and planning support for public administration;

— platforms, mechanisms and interfaces for implementation and maintenance of register and cadastre activities in public administration;

— mechanisms for the operational monitoring, identification and evaluation of risks and uncertainties in public administration, formulation of "recipes" and recommendations for accounting of such risks and their operation;

— mechanisms for operational monitoring, identification and evaluation of errors and other defects, as well as imbalances and dysfunctions in public administration, as well as their causes and prerequisites, and formulation of "prescriptions" for their correction or reduction;

— monitoring and evaluation mechanisms for the status and dynamics, ontology features of subject and object areas of public administration, their susceptibility or, conversely, rigidity (sustainability, resilience, resistance) to public management impacts;

— mechanisms for monitoring and identifying references and conflicts of interest;

— mechanisms for monitoring and identifying the causes, conditions and prerequisites of corrupt practices and practices in public administration;

2) Ensuring interaction between public administration and other actors:

— online platforms of organization, realization and control of public contracts, public procurement, electronic tendering, competitions etc.;

— mechanisms and interfaces for providing/receiving public services in whole or in part electronically;

— mechanisms and interfaces for interaction of citizens and organizations with state authorities and administrations, state organizations in a positive manner (suggestions for improvement, petitions, gratitudes, etc.) and in a critical mode (complaints about acts and omissions of public administration bodies, complaints about crime commission, etc.) and in the manner in which public opinion is identified and recorded;

— mechanisms for making existing normative, strategic and other planning, doctrinal, programmatic, administrative and other official documents publicly available; as well as draft documents for professional and public discussion;

— electronic receiving offices (including chatbots);

3) in the operation of regulatory frameworks and normative processes:

— monitoring and evaluation platforms and mechanisms for quality (adequacy, consistency, regulatory effectiveness, etc.) evaluation of legislation;

— platforms and mechanisms for monitoring, identifying and assessing regulatory, doctrinal and planning defects and imbalances;

— platforms and mechanisms for ongoing and planned systematization of legislation;

— mechanisms for pre-design and simulation of draft normative legal acts and state strategic planning acts ("reproduction" of digital models of such acts, etc.);

— mechanisms of operation by normative legal and other state management documentary arrays, simplification, "smartization" (from "smart-") and other purposeful homologation of normative-legal arrays, legal system as a whole and its structural formations and divisions;

4) platforms and mechanisms of budgeting, budget support in public administration (concept of "open budget" etc.).

**Conclusion**

For the digital transformation of the state to be successful, digital technologies must be effectively integrated into public service policy and design processes and other public administration processes from the outset, which includes mobilizing existing and emerging technologies and data to rethink and re-engineer internal processes and operations. The goal is to simplify procedures, innovate provision of public services and create multiple channels of communication and interaction between the public and private sectors [6, p. 8]. However, states often face the challenges of using new technologies. As B. Ubaldi, E.M. Le Fevre, E. Petrucci and others rightly point out, a review of existing practices reveals three types of such problems: technical and practical difficulties related to availability of quality data and lack of universal standards; limited resources and capacity, generally associated with poor investment and financing, as well as low digital literacy and skills in the public sector; institutional, legal and cultural barriers, in particular regulatory gaps. The most common problems, however, are the lack of universal standards and adequate legal security, in particular because of growing concerns about equity, transparency, confidentiality and accountability in introduction of artificial intelligence and blockchain technologies [7, p. 4]. Operation of e-government may present a number of challenges, among which the following may be highlighted: providing services by default in a digital format may help to exclude certain categories of persons from receiving them; the need for extensive training in all the necessary skills of the population and civil servants; the risks associated with data protection and confidentiality; the risks associated with making relevant changes in complex and politically sensitive areas [8, p. 6–7].

That is, the reality (including with regard to real-world computer software) today is very far from those idealized images and representations, which are often done by planners and digital communicators in public administration, who are wishful thinking.

Nevertheless, the relevant component ("dry" constructive residue) in this topic exists, having high academic interest.

According to L. Pearce, the digital state is an opportunity to apply new technologies to ensure that the state and the system of public administration are transformed in a manner more in keeping with the realities and expectations of the twenty-first century [9, p. 136]. It is in this approach that interpretations and projection hypotheses about the desired concept should be drawn.

The ontology of the digital state in its very substantial part corresponds to the human digital rights (see details: [10]) as well as to the Right to good administration (French — "*bonne gouvernance*", Spanish — "*buen gobierno*") provided, inter alia, by Article 41 "Right to good administration" of the Charter of Fundamental Rights of the European Union of 07.12.2000 (in Rev. 2007).

So, how the digital states develops is dependent a lot on all of us.

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