

Article

# On the Effectiveness of the Digital Legal Proceedings Model in Russia

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**Abstract:** Within the framework of this research, on the basis of the dialectical unity of its legal and mathematical components, on the basis of general scientific (analysis, synthesis, deduction and induction, abstraction, structural and functional method) and special research methods (formal-legal, method of legal construction, formal-logical, system, technical-legal analysis, statistical method, methods of mathematical statistics and probability theory, etc.), a model of digital legal proceedings in Russia is proposed. The article explains the optimal variant between the components of the digital legal proceedings model in Russia, as well as providing an analysis and evaluation of the effectiveness of the digital legal proceedings model and the prospects for the development of digital legal proceedings. It is concluded that there is a need to develop legal regulation in terms of introducing the definition of “electronic evidence”, types of electronic evidence; it is recognized as a positive practice of implementing a video-conferencing system that ensures the implementation of citizens’ rights to participate in a court session, which significantly reduces the time for case consideration; the need to create a single Internet portal for receiving, processing, and providing electronic documents by all authorities in Russia is explained. In this research, it is explained that the use of mathematical algorithms in evaluating evidence and modeling the behavior of participants in trials is now at an early stage of development, which allows them to be used only in the consideration of similar cases.

**Keywords:** legal proceedings; digitalization; electronic justice; Internet; protection of constitutional rights



**Citation:** Anatoly Tikhonovich, K.; Alexander Vladimirovich, S.; Veronika Aleksandrovna, M. On the Effectiveness of the Digital Legal Proceedings Model in Russia. *Mathematics* **2021**, *9*, 125. <https://doi.org/10.3390/math9020125>

Received: 27 November 2020

Accepted: 30 December 2020

Published: 7 January 2021

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## 1. Introduction

Modern Russian justice is a special type of state activity carried out by the courts by means of constitutional, civil, administrative, and criminal proceedings. The essence of legal proceedings is to consider and resolve cases in accordance with the principles and norms of law contained in both international and domestic normative legal acts, to ensure the protection of violated or disputed rights, freedoms, or legitimate interests of participants in the process.

In recent years, all types of legal proceedings have undergone global changes due to the increasingly active development of digitalization and informatization of public relations. However, in order to understand the essence of digital legal proceedings, it is important to build the entire procedural mechanism according to a certain concept. To do this, you need to answer a number of questions. First, it is a question of how effectively the existing justice system is able to take into account the changes that have taken place in the life of society in terms of fulfilling its main tasks. Secondly, it is necessary to understand what difficulties may arise and what advantages may arise during the implementation of digital technologies in the work of courts. Finally, the third question: can digitalization create a new quality of legal proceedings, radically changing its foundations, thereby transforming the entire system of public life?

Let us note that “digital legal proceedings” are often used in the context of similar terms: “electronic legal proceedings”, “digitalization”, “digital rights”.

In the current legislation, there is no legal, normative definition of “digitalization”, while in legal science and the media, the most common term is “digital rights”, which includes the right of people to create and use digital works, access to computers, and communication networks.

In other words, digital rights are considered as objects of civil rights, which is directly indicated in Federal law No. 34-FL of 18.03.2019 “On amendments to parts one, two and article 1124 of part three of the Civil code of the Russian Federation”. It seems that the existence of digital rights in the field of civil law is quite justified from a practical point of view, because the bill adapts the process of concluding transactions to modern realities.

However, the introduction of the “digital rights” category is not limited to the sphere of civil law; attempts are being made to distinguish the category of digital rights in other branches of Russian law. This is certainly possible, and in some cases even necessary, but you should always keep in mind the principle of “*Pluralitas non est ponenda sine necessitate*” (you should not multiply entities unnecessarily).

Digital rights traditionally should include universal human rights adapted to the conditions of the information society, in particular, the right to privacy, the right to exchange information, the right to freedom of expression on the Internet, and the right to access the electronic network.

According to part 2 of article 45 of the Constitution of the Russian Federation, everyone has the right to protect their rights and freedoms in all ways not prohibited by law. Thus, each person or organization can choose any method of protecting their rights that is not prohibited by law. One of the methods established by law is judicial protection. Part 1 of article 46 of the Constitution of the Russian Federation guarantees judicial protection of the rights and freedoms of everyone. Judicial protection is a system of actions of judicial authorities to consider and resolve a court case and execute a decision. Judicial protection can be considered as a separate judicial action (passing a sentence, taking measures to secure a claim, applying or canceling a preventive measure, issuing a private ruling), as well as general activities of the court in a criminal or civil case, as well as the activities of the entire judicial system. Performing various procedural actions: examining evidence, listening to the testimony and explanations of the parties, making a decision, resolving the petitions submitted by the parties the Constitutional Court of the Russian Federation in the Resolution of 2 November 2013 No.16-R, noted that justice by its very nature can be recognized as such only if it meets the requirements of justice and ensures effective restoration of rights, the Federal legislator, establishing the procedure for its administration, is obliged to provide a mechanism (procedure) that would guarantee the delivery of just, i.e., legal, justified and fair, judicial decisions.

Thus, the right to judicial protection is a guarantee provided by the state to everyone to ensure the restoration of their rights violated by other individuals, legal entities, decisions and actions (inaction) of state authorities, local self-government bodies, public associations and officials, through justice (article 52 of the Constitution of the Russian Federation).

It is obvious that the right to judicial protection can be indirectly attributed to the category of digital rights. However, the organization of receiving complaints, posting court decisions via the telecommunications network “Internet”, etc., hardly makes it possible to attribute the right to judicial protection to a type of digital constitutional rights. Accordingly, the question arises, what is meant by electronic court proceedings? And how correct is it to use this term?

Having analyzed the first normative legal acts regulating the examined area, let us note the transition from the term “informatization of the judicial system and the courts” (Federal target program “Development of judicial system for the years 2002–2006”, approved by the RF Government Resolution of 20 November 2001 No.805) to the “e-justice” (Federal target program “Development of judicial system for 2007–2012”, approved by the Resolution of the Government of the Russian Federation of 21 September 2006 No.583),

and after “electronic justice” (Federal target program “Development of the judicial system of Russia for 2013–2020”, approved by Resolution, of the Government of the Russian Federation of 27 December 2012 No.1406, hereinafter-FTP 2013–2020).

The term “electronic legal proceedings” is not found anywhere else in the normative legal acts of Russia, only similar terms are presented: electronic signature (Federal law of 6 April 2011 No.63-FL “On electronic signature”); electronic work record (Labor code of the Russian Federation of 31 July 2020); distant electronic voting (Federal law of 23 May 2020 No. 152-FL “On conducting an experiment on the organization and implementation of distant electronic voting in the Federal city of Moscow”); electronic documents and forms of procedural documents (Criminal procedure code of the Russian Federation of 18 December 2001 No.174-FL, etc.).

Referring to explanatory dictionaries, you can find the following definition of the term “electronic”:

- based on electronic technology. This term is intended to cover any or all devices or systems that operate on the basis of electricity (technical translator’s guide).
- everything related to the properties, interaction, influence, etc., of ions and other microparticles, the electron shell of an atom (Dmitriev’s explanatory dictionary);
- related to electrons; electronic theory that considers electrical phenomena as the result of the combined action of a set of elementary electric charges of electrons, based on the laws of electron motion (dictionary of foreign words of the Russian language).

It is obvious that the legislator has not yet decided on the terminology, so it should be clarified, distinguishing “digital legal proceedings” from other, similar definitions, its principles and features, goals, and objectives.

The instrumental approach that prevails in the doctrine of civil procedure is appropriated here: the civil procedure is a kind of “production”, and digital technologies in it; “tools”, means of carrying out this activity. From the point of view of this approach, the introduction of digital technologies in the civil procedure that accelerate and simplify interaction between its participants should help to increase the effectiveness of this activity, and more quickly and efficiently achieve the result of such activities, the consideration and resolution of a specific civil case, while the essence of the procedure does not change.

In this aspect we can talk about the electronic proceedings in the procedural stages: from submission of appeal to the court and ending with the imposition of electronic judicial act, that is, a procedural action by the court or the participants in electronic form. Informatization of related justice activities and use of different online services, data systems and services offered or not to exclude from the definition of “electronic justice”, or to consider e-justice in a broad sense. Or to use the phrase “use of digital technologies in judicial activities” as a means of ensuring: the transition to an electronic document management system and video-conferencing in court proceedings; the use of the Internet to provide access to information about the activities of courts; automated distribution of cases among judges; online interactions and electronic turnover between all elements of the judicial system, as well as with the information systems of other subjects and bodies; on electronic notifications and notices, as well as on providing general access to complete and reliable information about the activities of courts [1] (pp. 121–123).

However, digital legal proceedings model in Russia should not be limited to a purely procedural component. Another direction of digitalization is the use of artificial intelligence in making court decisions or at least evaluating evidence. In this context, digitalization is the application of mathematical algorithms for making a court decision; mathematical modeling of participants in legal relations; the use of mathematical probability theory in evaluating evidence in court; modeling the psychological model of the criminal to determine his possible motives, etc.

Despite the fact that there are no examples of fully-fledged use of artificial intelligence (AI) to make court decisions in international practice (only algorithms that expedite preparation of an electronic court decision for similar cases), we must agree with those authors who believe that artificial intelligence systems can perform two roles: “AI assistants” that can support judges in the decision-making process by predicting and preparing judicial proceeding decisions; and “robotic judges” that can replace human judges and autonomously decide cases in fully automated judicial proceedings [2–4].

In Canada, four legal contexts mention AI in Canadian judicial legislation, including: legal examination, investment tax credits, trademarks, and access to government records. However, the Canadian judicial system does not use AI [5–9].

Thus, the model of digital legal proceedings today consists of two interrelated components: legal and mathematical.

1. Legal element:

- 1.1. Transition to the electronic document management system in courts (including submission of electronic appeals to the court and receipt of electronic court documents);

- 1.2. Regulatory and legal regulation of access to information about the activities of courts (including documents submitted to the court by other participants in legal proceedings);

- 1.3. Use of video-conferencing and other forms of distant participation in court proceedings.

2. Mathematical element (as a basis for the introduction of artificial intelligence in court proceedings):

- 2.1. Application of mathematical algorithms in making a court decision;

- 2.2. Modeling the behavior of participants in a legal relationship;

- 2.3. Using the theory of probability in evaluating evidence in court.

The model of a phenomenon is not identical to the phenomenon itself, it only gives some idea for its understanding, some approximation to reality. However, there are all the elements in the model that are necessary for its existence and effective functioning. These elements can be described in general terms, but they can still give a very satisfactory approximation to reality.

## 2. Materials and Methods

Within the framework of this research, a digital legal proceedings model in Russia is built on the basis of the dialectical unity of its legal-security and mathematical elements, on the basis of general scientific (analysis, synthesis, deduction and induction, abstraction, structural, and functional method) and special (formal-legal, method of legal construction, formal-logical, system, technical-legal analysis, statistical method, methods of mathematical statistics, and probability theory, etc.) research methods. After that, the optimal variant of these components of the digital legal proceedings model is proposed (see the Figure 1).

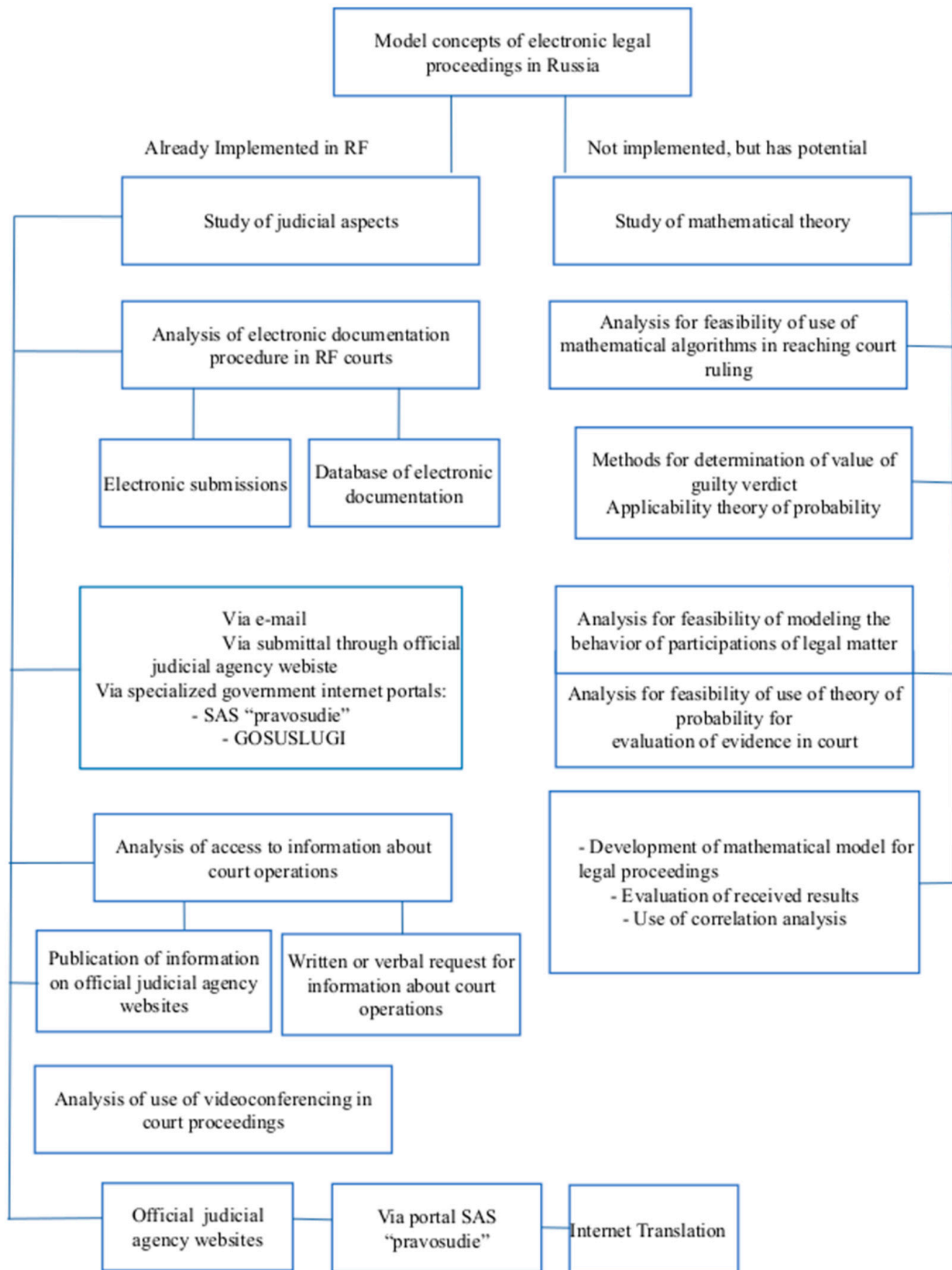


Figure 1. Block diagram of the legal proceedings model in Russia.

### 3. Results

#### 3.1. Legal Element of the Digital Legal Proceedings Model in Russia

##### 3.1.1. Transition to the Electronic Document Management System in Courts

Law, as a regulator of public relations, provides regulation of the procedure for digital legal proceedings in Russia by means of the system of legislation.

The availability and openness of the judicial system for citizens and organizations determines the need to regulate the use of information technologies in the process of applying to the courts.

Nowadays, the electronic submission of appeals provided for by many regulations: paragraph 2, article 10, and article 11.3 of the Federal law "On organization of providing state and municipal services", paragraph 4 of article 1 and paragraph 1 of article 7 of the Federal law "On providing access to information on activities of state authorities and local self-government bodies", article 37 of the Federal constitutional law "On the Constitutional Court of the Russian Federation", paragraph 1, article 41 of the Arbitration procedural code of the Russian Federation, parts 2 and 3 of article 45 of the code of administrative procedure of the Russian Federation and some others. However, the fundamental law for electronic appeals remains the Federal law "On procedure of considering appeals of citizens of the Russian Federation", according to part 3 of article 7 which "appeal received by state authority, the local self-government body or official in the form of electronic document, is to be considered in the order established by the present Federal law."

At the same time, neither the Federal law "On the procedure for considering appeals of citizens of the Russian Federation" nor any other law establishes a list of ways to submit an electronic appeal. However, in practice, there are three such methods:

- sending an appeal by email;
- sending an appeal through the electronic reception of the official website of the judicial authority on the Internet;
- by means of specialized state Internet portals.

Let us look at each of these methods in more detail.

According to 1 of article 10 of the Federal law "On providing access to information on activities of state authorities and local self-government bodies" and part 1 of article 10 of the Federal law "On providing access to information on activities of courts in Russian Federation", all authorities are obliged to create their websites and email addresses on the Internet. However, the Law does not contain any additional regulation, leaving it to the discretion of the authorities themselves.

The Federal legislator obliged the authorities to create an e-mail address, in fact, obliged them to consider the appeals received to this address. However, unlike the Russian post or other postal service operator, mail programs on the Internet are not subject to the Federal law "on postal communications". They are not regulated by Russian law in principle [10] (p. 13).

This problem is especially relevant in the work of judges who receive appeals to a specific court on the Internet and do not have to post their personal email address separately. The only exceptions are justices of the peace, who, due to the specifics of their activities, are forced to contact citizens personally. However, the regulatory legal acts do not fix email addresses, but only spontaneously appear in the reference information.

A question arises: what should I do if the appeal is sent to the official email address of the judge? From the point of view of legal theory, such an appeal is sent to an official and according to part 1 of article 8 of the Federal law "On the procedure for considering appeals of citizens of the Russian Federation" is permissible. However, in practice, everything is different. Only letters sent to an official email address are considered officially submitted, all other correspondence is considered unofficial and does not give rise to legal consequences provided for by the Federal law "On the procedure for considering appeals of citizens of the Russian Federation".

In Mexico, judicial agencies have created their own websites with diverse levels of technological sophistication and functionality, often with the intention of opening their

processes and interacting with multiple stakeholders. In contrast to the executive branch, however, little is known about the structure, usability, content, and impacts of these websites. There is also no clear understanding of how judicial websites could be used to better understand and assess electronic justice and open justice efforts [11–15].

Even more depressing is the situation with sending appeals through electronic reception offices (Internet reception offices), or, in another way, feedback forms of official websites of judicial authorities on the Internet. In fact, the electronic reception office is a subprogram built into the site that allows the applicant to send appeals without using their email program. The appeal stated in the electronic reception is generated as a regular email sent to the email address specified by the site developers in advance.

It is important to understand that the electronic reception office is a legal fiction and at the same time “internal” business of each site (respectively, the court). At the same time, the authorities rarely seek to establish the relevant legal relations, and the rules on electronic reception offices are clearly fragmented and unsystematic.

The documents in electronic form (electronic document), within the framework of administrative, civil and criminal proceedings (hereinafter—electronic documents) submitted to the court in accordance with the Order of the Judicial Department under the Supreme Court of the Russian Federation from 27 December 2016 No.251 “On approval of the Procedure of submission in the Federal courts of General jurisdiction documents in electronic form, including in electronic form”, by means of filling the form posted on the official website of the court is an information-telecommunication network “the Internet” means, strictly defined in this Order.

When a document is submitted to the court in electronic form without filling out special forms, such documents are rejected by the court, and the applicant is notified of this by sending a message in electronic form (if technically possible) or by other means.

Several basic terms are used in the process of sending documents to the judicial authorities.

An electronic document, a document made in electronic form without preliminary documentation on paper, is signed with an electronic signature in accordance with the legislation of the Russian Federation.

An electronic image of a document (electronic copy of a document made on paper) is a copy of a document made on paper translated into electronic form using scanning tools, certified in accordance with the procedure for submitting documents with a simple electronic signature or an enhanced qualified electronic signature.

An electronic image of the document is made using scan tools, which should be made in 1:1 scale black-and-white or grey color (as 200–300 dpi), ensuring the preservation of all the details and authentic attributes of authenticity, namely: graphic signature of the person printing and a corner stamp of form (subject to availability), scanning in full color is carried out in the presence of the document color graphic images or colored text, if it matters for the case consideration.

In Austria, the full implementation of the electronic justice system took over 30 years. In Ukraine, the implementation of the electronic justice system has been ongoing for over 10 years.

In Ukraine, electronic archive of documents and databases of official publications are not available to date.

The Austrian electronic justice system is technologically advanced using open standard web technology such as XML, web services or SOAP. ELC is secured by SSL. There are several access points, and great efforts are put in to ensure data security. The implementation of electronic justice system has resulted in significant cost reductions in the justice sector. This particularly applies to savings in postage and staff costs. Additionally, users of the electronic justice system (e.g., court staff, parties, lawyers, etc.) benefit from reduced duration of legal proceedings, time saved through (fully) automated types of legal proceedings, etc. [16,17].

In Russia, the question of whether the electronic procedures introduced for submission of appeals really simplify access to the court and comply with the principle of equality,

and do not allow unjustified restrictions on the right to judicial protection is particularly relevant [18]).

However, can it be considered justified to establish additional requirements for the form of electronic appeal in comparison with the traditional written form by a bylaw (Order of the Judicial Department under the Supreme Court of the Russian Federation)? Differentiation of legal regulation is obviously justified due to the specifics of the electronic form, the need to establish additional technical requirements related to the applicants passing the identification and authentication procedure, and certification of the document with an electronic signature. However, serious doubts surround the establishment of the Judicial Department for such requirements to be filled by the applicant on the website form, which are not related to the technical side, and with the additional information of the applicant and other participants in the process (i.e., the defendant, the third parties, the other stakeholders). Moreover, this information is not required at all or is optional when submitting a claim in traditional paper form.

If we turn to the practice of state electronic reception offices, we will have to state that at present the vast majority of them do not allow us to track the fate of appeals.

The beginning of the process of making separate state websites for submissions of citizens' appeals have laid the Federal law "On organization of providing state and municipal services", according to paragraph 2 of article 10, which guaranteed "the submission by the applicant of the appeal and other documents required for providing state or municipal services... using the Unified portal of public and municipal services".

Speaking about specialized Internet portals by means of which citizens can send their appeals to the judicial authorities, we should point out the creation of a single information space for courts (all except constitutional ones) in the Federal system of SAS "Pravosudie".

SAS "Pravosudie" began to be created in 2004 as a geographically distributed information system of Federal courts of General jurisdiction, judicial community bodies and Judicial Department bodies. With the adoption of the Law on access to information about the activities of courts, SAS "Pravosudie" was also assigned the task of creating a unified information space of Federal courts and justices of the peace as a set of information interaction between the Supreme Court of the Russian Federation, Federal courts, justices of the peace, judicial community bodies and the Judicial Department system of databases and data banks, technologies for their maintenance and use, information systems and information-telecommunications networks that operate on the basis of common principles and general rules.

Nowadays, the portal of SAS "Pravosudie" is a geographically distributed, automated, information system designed to form a unified information space of courts of General jurisdiction and the system of the Judicial Department under the Supreme Court of the Russian Federation.

The Internet-portal is created in the form of a web site with shared access, on the main page of which all the functions that can currently be offered to the user are displayed in separate blocks. A citizen can choose the topic that interests them independently, and in case of difficulties or questions, contact the technical support of SAS "Pravosudie".

To use the site, registration is not required, and search forms also do not require any data, except for those that will be used to analyze the information that the user needs. In all sections where the submission of a complaint/appeal is provided, the citizen must fill out the form, leaving their contacts for communication. In the future, a user registration system and a single personal account may be created (for now, this procedure is only provided for in the section of the Supreme Court of the Russian Federation).

The most promising subsection for employees of the judicial system is "Judicial records management and statistics". Developments in this direction involve the transfer of all analytical work on the collection, systematization and storage of information in full on automatic resources.

In order to submit documents electronically, you need to register in your personal account, and you need to put an electronic digital signature on the documents.



It is worth noting that SAS “Pravosudie” is not the only Internet portal for sending appeals, complaints and other documents in electronic form (but all portals have different domain names, that is, they are not interconnected).

It is worth noting that the developer of this portal is Research Institute “Voskhod”, which has already implemented electronic systems of SAS “Vybory” and the Internet portal ogic.ru, which was the forerunner of the Internet portal Gosuslugi.ru. Let us describe the latter in a little more detail.

The unified portal of state and municipal services (functions) aimed at speeding up and optimizing the provision of public services by executive authorities and was developed by a different company that made it more perfect (than SAS “Pravosudie”) both conceptually and technically [8] (p. 68).

The portal Gosuslugi became the first Federal portal for submitting appeals in electronic form. Its work is regulated by the Resolution of the Government of the Russian Federation “On Federal state information systems that provide state and municipal services in electronic form (performance of functions)” and the Resolution of the Government of the Russian Federation “On infrastructure that provides information and technological interaction of information systems used to provide state and municipal services and perform state and municipal functions in electronic form”.

Its implementation began in August 2009, when the Government of the Russian Federation designated “Rostelecom” as the sole performer of the E-Russia program activities in terms of designing and creating e-government infrastructure; these activities also included providing the provision of public services in electronic form.

The Russian government has approved a plan of transition to providing state services and performing state functions electronically by Federal executive authorities and the project owner for creation of the portal Gosuslugi.ru made by “Rostelecom”, the direct executor of the project—the company “Envizhgroup” the portal started working authorization services (“personal account”), which gave users the opportunity to register on the website and send the documents for registration of different services (up to this point, the portal could only find reference information).

Since December 2010, infocommunication terminals “infomats” have been installed in municipalities for communication with the portal Gosuslugi and receiving state and municipal services to persons who do not have independent Internet access.

The public services portal provides the following set of rights for applicants:

- submit applications directly through the portal (bypassing the paper form);
- pre-schedule a personal appointment;
- leave comments on the quality of services provided;
- pay off fines for traffic violations (if you do this in the first 20 days from the date of the decision, the discount will be 50%);
- submit a tax return (you can also fill out the document on Gosuslugi—in the section “Submitting a tax return”, after which it is automatically forwarded to the tax service);
- make an appointment with a doctor (you need to specify the number of the medical policy, choose a clinic, specialist, date and time of the appointment. At the appointed time, the applicant’s medical card will already be at the doctor’s office);
- find out about the amount of the funded part of the pension and transfer it. In the first case, you must submit an application for the service “Notification of the state of the personal account in the RPF”, after which the statement will be sent in electronic form to the applicant’s email address. If you need to transfer your savings to a non-state pension fund, you can use the “investment portfolio selection” service, which allows you to transfer the funded part of your pension from one fund to another once a year;
- collect signatures for registration of candidates for elections in three regions of the Russian Federation, etc.

In addition to broad functions, the portal has a convenient interface: all the necessary information about the procedural aspects, terms, and location of the authority is set out in

the relevant subsections of the service. Moreover, the citizen is offered to choose the most convenient territorial authority for him with the display of geolocation on the map.

It is noted that on the portal of SAS “Pravosudie” such geolocation with a convenient search on the map is provided only in the section “Higher qualification board of judges of the Russian Federation”.

The “Gosuslugi” app has also been developed for Android, IOS, and Windows smart phones.

The factors above make the portal Gosuslugi in demand for citizens; this is most clearly shown in the figures: to date, more than 100,000,000 users are registered on it, of which 70,000,000 have a confirmed account [19].

It seems that it would be more productive to make a single Internet portal for submitting electronic documents to all authorities, which could be implemented within the framework of a single Internet portal Gosuslugi, denying the SAS “Pravosudie”. Completion of the Federal state information system “Unified portal of state and municipal services (functions)” will be carried out as part of the implementation of the activities of the superservice “Pravosudie online”. The relevant project is currently being discussed on the portal of draft normative legal acts ([regulation.gov.ru](https://regulation.gov.ru)).

Analogous digital platforms are common in international practice. For example, LexNET Justice is a platform used in Spain on the basis of Law No.18/2011, updated on 2 March, 2020 to allow those participating in legal proceedings to communicate with judges via email, Twitter account, or telephone to stay informed and support users [20].

The procedure for identifying plaintiffs is similar to that in Russia: a digital signature or a certification system is implemented to verify a citizen’s identity. In order to obtain such a certificate, it is necessary for an individual to appear before a government official with documentation of identify to obtain this electronic file, which then allows him this access [21,22].

In Great Britain, judicial electronic platforms allow not only to file an application, but also to track case management, conduct hearings with a judge via video-conferencing and even obtain judicial authorization via email.

However, unlike the Russian Federation, in United Kingdom the identify of users is not verified.

### 3.1.2. Regulatory and Legal Regulation of Access to Information about the Activities of Courts

Federal law No. 262-FL of 22 December 2008 “On providing access to information about the activities of courts in the Russian Federation” became another important law within the framework of the legal security element of the digital legal proceedings model in Russia, by means of which citizens were able to freely get acquainted with complete information about the activities of courts.

The right to receive information by a citizen is an essential component of fundamental constitutional human rights, which is legally enshrined in part 4 of article 29 of the Constitution of the Russian Federation: “everyone has the right to freely search, receive, transmit, produce and distribute information in any legal way.”

From the legislative point of view, two procedures are distinguished: the direction of “classic” appeals and requests for information about the activities of judicial bodies. In addition to these requests, access to information is also realized by publishing it, placing it in information and telecommunications networks.

According to paragraph 2 of article 1 of the Federal law “On providing access to information on activities of courts in Russian Federation” under the information on courts activities means information, prepared within their authority by the courts or referred to the courts, and related to their activities and the legislation of the Russian Federation, establishing the procedure for legal proceeding, powers and procedures of courts, the judicial acts on specific cases and other acts regulating their activities.

Therefore, the object of these relations is any information related to the activities of judicial structures. Information of a legislative nature, bylaws and judicial acts on specific

cases is more open and accessible. The exception is information classified by Federal law as information constituting a state or other secret protected by law.

A special feature of the Federal law “On providing access to information about the activities of courts” is a fairly detailed regulation of the scope of a court decision for publication. For example, article 15 of the Federal law “On access to information about the activities of courts” establishes a special publication procedure, which involves placing the texts of judicial acts after their adoption, and for sentences after their entry into force. The text must be presented in full as well as the principle of the procedure for providing information on the completeness of the texts of judicial acts to be published. The procedure for implementations of the users’ rights to get acquainted with information about the activities of courts from archival funds has a reference to the legislation of the Russian Federation on archival cases and regional laws.

We will analyze the official websites of the courts of the judicial system of the Russian Federation for compliance with legal requirements for providing information on the example of constitutional (statutory) courts.

To begin with, the section on access to information about the court’s activities is not available on any official website of the relevant courts. It is possible to exercise the right of access by requesting information only by sending a classic appeal (namely, an electronic application), since sections on sending appeals are available on all the sites reviewed. However, in this case, consideration of citizens’ appeals should take place within the framework of the Federal law “On the procedure for consideration of citizens’ appeals”.

At the same time, the “appeals” section has its own characteristics. For example, the official website of the Constitutional Court of the Republic of North Ossetia-Alania has a section “Appeal procedure”. They also introduced a restriction: by e-mail, you can contact the specified judicial authority only on procedural issues, legal issues are accepted only in writing. However, this is the only site that has a sample appeal for information in addition to the sample appeals in the form of petitions and complaints.

The Constitutional Court of the Republic of Tatarstan in the section “appeal” presents only a sample of the complaint about the violation of the constitutional rights and freedoms of citizens. The Republic of Dagestan in the section “procedure for applying to the court” fixes the general provisions on the appeal, while there is a separate section that allows you to send an electronic appeal. The Republic of Ingushetia and Kabardino-Balkar in such a section has samples of complaints, requests for compliance with the Constitution, interpretation, and a court request. Detailed regulation of the appeals and requests is the official website of the Charter court of the Sverdlovsk region: written direct order, there is a reference to the Federal law “On providing access to information on activities of courts in the Russian Federation” and the Law of Sverdlovsk region from 15 July 2010 No.66-BL “On providing access to information on the activities of the Charter Court of the Sverdlovsk region and of the justices of the peace of the Sverdlovsk region”. It also keeps records of appeals received by the Charter Court.

Therefore, we can say that official sites do not allocate a request for information in a separate line, as a result, this right can only be implemented by means of a classic appeal.

Having analyzed the official websites of the Constitutional (statutory) Courts of the Russian Federation subjects, it can be concluded that despite the fairly detailed regulation of providing information on the Internet, the section on access to information about the activities of the court is not available on any official website of the relevant courts.

So, the implementation of the citizens’ right to access information about the activities of Constitutional (statutory) Courts in the subjects are regulated by the same type of laws, which do not establish any separate legal regime and method of exercising this power.

Regional legislation mostly refers to the main legal source in this area—the Federal law “On providing access to information about the activities of courts in the Russian Federation”. As a result, we can say that these regional laws only increase the already disparate array of legislative material. At the same time, the implementation of the right of access by sending a request is rather limited, since official sites equate this right with

the right to appeal, without establishing a special legal regime for responding to the corresponding request. At the same time, regional laws do not specify Federal norms, but only duplicate them.

These trends are also typical for websites of courts of General jurisdiction, arbitration courts, and justices of the peace. The only difference is that the accumulation of the latter on the SAS “Pravosudie” platform allows you to quickly search for court decisions directly on the Internet portal. However, for other information, you also have to go to separate websites of the courts, where the information is not systematized.

In Brazil, CNJ Resolutions No.102 of 2009 and No.215 of 2015 established a list of information and tools required to be on the official websites of all judicial authorities. Even with these conditions, however, the transparency of the Brazilian judiciary system remains low, dominated by formalism (e.g., it is not possible to submit a remote request for information about the activities of the court; information about a judge’s income and expenses are not published, etc.). Mostly this is due to historical factors: the prevalence of authoritarianism in public administration even after the Brazilian Constitution was adopted in 1988; the structure of the judicial system and the organization of judges are determined by the military regime.

### 3.1.3. The Use of Video-Conferencing in Trials

In Russia, the procedure and conditions for using video-conferencing are provided for in all procedural codes. However, its main disadvantage is that to connect to a videoconference a citizen must appear in a different court.

The use of cameras through digital media platforms is widespread in China. The Chinese government treats this as a control strategy aimed at improving the legitimacy of the regime. Online, through the video software QvodPlayer [23].

According to the judicial Department, in 2019, the courts of appeal of the Russian Federation’s subjects considered 5300 cases (0.3% of the total number of cases considered in this instance) using video-conferencing system (in 2018—5500, or 0.3% of the total number of cases considered in this instance).

Video-conferencing in trial is a method of implementation of procedural actions, stipulated by law, with the use of software and hardware audio and video communication channels with one or more subscribers (paragraph 1.5 of the Regulation of organization of video-conferencing in the Federal courts of General jurisdiction, approved by Order of the Judicial Department under the Supreme Court of the Russian Federation from 28 December 2008, No.401—hereinafter Regulation).

In paragraph 12 of the Instructions on record keeping in arbitration courts of the Russian Federation, approved by Resolution No. 1002 of the Plenum of The Supreme arbitration court of the Russian Federation of 25 December 2013, a video-conferencing system is understood as a set of software and hardware tools of arbitration courts that allow information exchange between arbitration courts by transmitting audio and video signals in real time.

Paragraph 16 of the Regulation states that court sessions in the video-conferencing can be held only if there are technical and organizational capabilities in the courts and only in courtrooms equipped with the software and hardware complex of video-conferencing system of SAS “Pravosudie”, connected to the departmental data transmission network of SAS “Pravosudie”. According to paragraph 3.4 of the Regulation for information in the organization of the trials by video-conferencing on the official websites of Federal courts of General jurisdiction of the Internet portal of SAS of the Russian Federation “Pravosudie” in the section “Reference information”/“Video-conferencing” is the following information: address of the court; the difference in time between the cities of Russia and Moscow; the courtrooms’ numbers equipped with video-conferencing; phone numbers (Fax) departmental network video-conferencing; availability of technical capabilities for video-conferencing; schedule of video-conferencing (if available); periods of availability (unavailability) of courtrooms in case if sessions are not held in a specific hall on any days;

contact of persons responsible for technical support of video-conferencing (surname, first name, patronymic, position, phone number). It should be noted that the use of video-conferencing in courts is provided for by the Federal target program “Development of the Russian judicial system for 2013–2020” [24–31].

By using video-conferencing system, the following persons participating in the case (plaintiffs, defendants, applicants, interested persons, the third parties), as well as witnesses, experts, specialists and interpreters can participate in the court session. At the same time, within the meaning of part 2 of article 152, article 327, 386, 391.10, 396 of the civil code of the Russian Federation, video-conferencing can be used during court sessions at any stage of civil proceedings: in a preliminary court session; when resolving disputes by the court of first instance; when considering a case in a court session appointed to resolve certain procedural issues (for example, to resolve the application of a person participating in the case to review court decisions on newly discovered or new circumstances). Civil procedure legislation provides for a single direct ban (part 6 of article 10 of the CRC) on the use of video-conferencing system—their use is not allowed in a closed court session.

The grounds and procedure for using video-conferencing system in civil proceedings are determined by article 155.1 of the civil procedure code of the Russian Federation, the content of which allows us to point out the following basic aspects:

- 1) the use of video-conferencing system in civil proceedings is directly dependent on the availability in a particular court where the relevant court session is held, the technical possibility of its implementation;
- 2) the initiative to use video-conferencing system (in the form of a petition addressed to the court) may come from persons participating in the case, their representatives, witnesses, experts, specialists and interpreters. In addition, such a procedural decision may be made by the court on its own initiative;
- 3) the court may use video-conferencing system of other courts (at the place of residence, place of stay or location of persons whose participation in the process is provided in this way) to conduct a court session, to participate in the case of persons who are in places of deprivation of liberty or in places of detention;
- 4) the security court (or the administration of an institution in places of detention or in places of deprivation of liberty) checks the appearance of the relevant persons and establishes their identity, takes a subscription from witnesses, experts, interpreters to explain to them the rights and obligations of the court considering the case and warn them of responsibility for their violation [28–30].

Criminal procedure legislation defines a different procedure for using video-conferencing system. According to the General rule established by part 1 of article 240, part 6.1 of article 261 of the criminal procedure code of the Russian Federation, the defendant participates in the court session directly. In exceptional cases, in order to ensure the safety of participants in criminal proceedings, the court may, when considering criminal cases on crimes provided for in articles 205–206, 208, part 4 of article 211, part 1 of article 212, articles 275, 276, 279, and 281 of the criminal code of the Russian Federation, at the request of any party to make a decision on participation in the court session of the defendant in custody, by using video-conferencing system. On the contrary, a witness and a victim can be interrogated by a court of first instance by using video-conferencing system without any restrictions on the category of the case (part 4 of article 240 of the code of criminal procedure of the Russian Federation). At the same time, in accordance with part 4 of article 278.1 of the code of criminal procedure prior to questioning a judge of the court at the location of the witness on behalf of the presiding judge of the court dealing with a criminal case, certifies the identity of the witness. The witness’s subscription to explain his rights, duties, and responsibilities and the court documents provided by the witness at the location of the witness shall be sent to the presiding judge of the court hearing the criminal case.

At the criminal trial in appeal and cassation order and in the resolution of issues related to the execution of the sentence the convicted person in custody and who desire to be present at the examination of the application representation or in the resolution of

issues related to the execution of the sentence, the court's decision ensured the right to participate in judicial session directly or by use of video-conferencing (parts 1 and 2 of article 389.12, article 399, article 401.13 code of criminal procedure). The form of such participation is determined by the court. The question of participation in the court session of the court of appeal or cassation instance by using video-conferencing system of the victim, his legal representative is decided by the court if there is a corresponding request filed within 10 days from the date of receipt of the notification of the court session.

A similar form of participation in the hearing is the use of a direct Internet broadcasting of court sessions, which is reflected in the Russian legislation (article 54 of the Federal constitutional law of 21 July 1994 No.1-FCL "On the Constitutional Court of the Russian Federation" article 6, 15.1 of the Law on access to information; part 7 of article 10 of the code of civil procedure of the Russian Federation; part 7 of article 11 of the APC, as amended by Federal law of 29 July 2017 No.223-FL; part 5 of article 11 of the APC).

The difference is that Internet broadcasts are more likely to ensure the transparency of the trial, which implies a passive observer role for the subject, if he is not a participant in the trial.

In this model, we offer an alternative web conference system along with a video-conferencing system, which will allow the parties to quickly interact with the court and take part in court sessions using various means of communication (computer, smart phone, pad), without the need to appear in court.

Persons participating in the case and other participants in the process will be able to participate in the court session by using the web conference system, provided that they submit a request to do so and if the courts have the technical ability to conduct a web conference.

The identity of a citizen, his representative or a representative of a legal person participating in the hearing by use of the web conference should be identification documents of the citizen using information technology tools for distant identification and authentication of persons, including a uniform system of identification and authentication, single biometric system.

### 3.2. *Mathematical Component of the Digital Court Proceedings Model*

#### 3.2.1. Application of Mathematical Algorithms in Making a Court Decision

Trends in the development of digitalization of the judicial system allow us to raise questions about the procedure for using artificial intelligence information technology in the judicial process, when legal proceedings, in essence, can represent an algorithmic analysis of court documents, while a court decision can be made without the direct participation of a judge.

In the Common Law tradition of the United States, lawyers typically argue by citing precedent cases which favour their side and distinguishing precedent cases which favour the other side. Explanation therefore tends to take the form: the case should be decided in this way because it is like these cases, and unlike these other cases, a form of contrastive explanation, making use of both positive and negative examples. Another idea motivating was that the explanation would be enhanced by citing hypothetical features of the case which, had they been different, would have changed the outcome, by making it sufficiently similar to an adverse precedent [31].

The main problem here is the mathematical calculation of the judge's conviction in a particular case. Let us take a closer look at this problem using the example of criminal proceedings.

The definition of "inner conviction" is given by the legislator in part 1 of article 17 of the criminal procedure code of the Russian Federation in relation to the evaluation of evidence, while the scope of criminal procedure decisions is quite wide and diverse. Therefore, in certain situations, not only evidence may be evaluated, but also other data related to the circumstances of the crime.

Only if there is a conviction formed on the basis of the evaluation of evidence that the event of the crime took place, the act was committed by this person, etc., the criminal

case can be resolved correctly. It is necessary to pay attention to the fact that the judge’s decisions are made at the final stage of the proceedings, so they must be accurate and correct. The algorithm of the court’s discretion in forming an inner conviction is the adoption of a procedural decision; in the theory of criminal procedure, it is determined mainly in connection with the law of evidence. However, inner conviction is necessary to analyze in relation not only to the evidence and circumstances subject to the discretion of the case, so a better understanding of inner conviction of the judge allows you to split the class for activities not related to the evaluation of the evidence, that is, to cases where the court decides on the basis of analysis of other data.

So, the considered categories of “inner conviction” and “making decision algorithm” are quite closely related. The formation of a judge’s inner conviction precedes the adoption of a criminal procedure decision, although other subjective and objective factors are also involved in this procedure.

The standard for deciding whether a defendant is guilty or not is largely determined by the price of possible errors in the making decision ( $U_{21}$  and  $U_{12}$ ). As already mentioned, the second of these values is much larger in absolute value than the first. For illustrative purposes, let us suggest that their ratio is 10.

Then in some conventional units  $U_{21} = -10$ ,  $U_{12} = -100$ . The usefulness of the “objectivity” of a court decision is also important (of course, objectivity is used with a certain amount of conditionality, since an absolutely objective decision cannot be made). For illustrative purposes, let us suggest that the corresponding utility is 10, i.e.,  $U_{11} = 10$ .

Regarding the acquittal of an innocent person, it is worth saying that such an acquittal in itself does not seem to be particularly satisfying. For the purposes of the simulated situation, we will take this value as the starting point, that is, we will consider it equal to zero:  $U_{22} = 0$ .

The result is presented as a Table 1.

**Table 1.** “Objectivity” of various outcomes of the criminal process (conventional figures).

	Guilty	Innocent
to sentence	10	−100
to acquit	−10	0

For example, in a criminal case of apartment theft, the estimated probability that suspect A committed it is 73%, and that he is innocent is 27%.

Calculate the expected probability of each of the two possible court decisions. Multiplying the utilities by probabilities and adding the corresponding products, we get the following answer.

The expected utility of a conviction is −19.7 (negative utility, mainly related to the cost of a possible error in favor of the prosecution). The expected utility of an acquittal is −7.3 (related to the cost of a possible error in favor of the suspect).

The negative expected utility of the trial as a whole may seem unexpected, but this is just the result of choosing a starting point. If the process is not carried out at all, the criminal will definitely remain at large, that is, the utility will be −10 units. Holding a court session can increase it.

It turns out that with the parameters we set, the expected utility of an acquittal is significantly higher. In other words, the judge should make an acquittal.

However, if, for example, we estimate the cost of incarceration of an innocent person not at 100 conventional units, but only at 50, the picture changes. Then the expected utility of a conviction will be −6.2. The expected utility of an acquittal is still 7.3. With these parameter values, the expected utility of a guilty verdict is higher. It will be passed by a judge with such a system of values.

The high price of error (namely, the conviction of an innocent person) explains the high standard of proof in criminal proceedings. In the case of a high price of such an error

(in our conditional example, 100 units), even a fairly high probability of guilt of the accused (in our example, 73%) may not be enough to make a conviction.

We do not know the specific utility values of  $U_{ij}$ . In this case, the standard of proof in criminal proceedings is difficult to determine numerically. That is, it is difficult to specify a specific threshold for the probability of guilt of the defendant, if exceeded, a conviction should be issued. What is clear is that with reasonable parameter values, this threshold value will be significantly higher than 50% and quite close to 100%.

In real criminal trials (Anglo-American), this standard is formulated by the judge for the jury not by a formula, but by the words: a conviction should be pronounced if, in the opinion of the judge, the defendant is guilty (beyond a reasonable doubt).

A real judge makes a decision partly intuitively: guided by law and conscience, but as decision theory tells us, this process can be modeled by assuming that the judge mathematically resolves the case to maximize expected utility.

In civil proceedings, it is not about the freedom and life of the defendant, but, as a rule, only about a certain amount of money. The price of an error in favor of either party is the same—it is just the price of the claim. We will consider that this value is equal to 100. The usefulness of a correct decision in favor of each of the parties can also be considered the same. Let us take this value as the beginning of the reference, that is, we will consider it equal (see Table 2).

**Table 2.** “Objectivity” of various outcomes of the civil process (conventional figures).

	The Defendant Committed an Offense	The Defendant Did Not Commit an Offense
To satisfy the claim	0	−100
To dismiss the claim	−100	0

In this case, the prescriptions of decision theory about maximizing expected utility are that the claim should be satisfied if the probability that the defendant actually committed an offense is more than 50%.

In other words, the probability that he committed is greater than the probability that he did not commit. It is in this case that the expected utility of the judge’s decision in favor of the plaintiff is higher than the verdict in favor of the defendant.

Obviously, this standard, unlike the standards of criminal law, is symmetrical, that is, based on a simple comparison of the probabilities of alternative outcomes. This is due to the same cost of error in favor of either side.

In English, this standard of proof is referred to as the “balance of probabilities”, while in American, it is referred to as the “preponderance of evidence”. Its concept is that a decision in favor of the plaintiff should be made if the judge is convinced that the violation “occurred rather than did not” (more likely than not). From the point of view of mathematics, this looks like an order to compare the probabilities of the corresponding facts.

### 3.2.2. Modeling the Behavior of Participants in a Legal Relationship

Modeling the behavior of participants in a legal relationship can be built on the basis of the theory of trust functions, which allows you to give reasonable answers to the behavioral characteristics of the subject, the features of the objective side of the crime, which are not always taken into account by the straightforward application of “ordinary” probability theory to the proof process in court.

For example, a white taxi hit a parked car and disappeared. The owner of the damaged car wants to file a claim. In the city, only two companies (A and B) have white taxi cars, with company A’s fleet of 90 cars and company B’s fleet of 10 cars. We can suggest that the a priori probability that the hit-and-run was made by a company A’s car is 90%.

If so, the defendant (company A) would most likely need very strong evidence to lower this probability below 50%.



The most that can be said on the basis of the evidence presented in this case is that perhaps the mathematical odds to some extent add up in favor of the suggestion that the defendant's taxi caused the accident. This is not enough.

In any life situation, a person has a choice of several possible solutions, each of which means performing some action in the real world (action will be understood in a broad sense, including inaction). Using this knowledge, the subject determines the state in which the environment will come after performing an action (and satisfaction/dissatisfaction with this state).

The numerical expression of this degree of satisfaction is called utility. This hypothetical value is widely used in economics and is therefore well-known to lawyers interested in research on the economic analysis of law.

In economics, utility usually has a monetary value. However, this concept is also used in solving economic problems. Then utility is just an abstract measure of the subject's satisfaction with the result of their actions.

Thus, each state of the environment after the subject performs an action is characterized by a number from 0 to 1: the probability that the environment will come to this state after the action is performed.

Then the driver of the white taxi could decide whether to stay at the scene of the offense or to escape. In the first case, the probability is 50% and he will need to compensate for material damage, otherwise the probability is also 50% that he will not be found and the damage will not have to be compensated. This means that leaving the scene of the accident will be a rational (but illegal) decision, so the probability of guilt of the driver of a white taxi is more than 50%.

### 3.2.3. The Use of Probability Theory in Evaluating Evidence in Court

Before any phenomenon or social process can be mathematically studied, it is necessary to create a mathematical model of it. This means that the practical task before us is subjected to logical analysis, and from the whole variety of properties inherent in the phenomenon, only those that will be taken into account are selected.

For civil, criminal, administrative and constitutional legal proceedings, we can offer not one, but many models. It may well happen that several models based on different primary assumptions can describe the phenomenon equally well. This is usually observed only up to certain limits, starting from which one (or more) of them is less preferable.

The creation of mathematical models in legal proceedings is an important stage of knowledge, since it allows us to clearly formulate our ideas about the course of phenomena of interest to us and the connections that operate in them. We list the assumptions we have made, and in the course of experimental verification or when comparing the actual flow of the process with the pre-calculated one according to the theory based on the model made, we have the opportunity to investigate the influence of each of the assumptions made.

The most important stage of studying connections is to evaluate the reliability of the results obtained using the apparatus of mathematical statistics and probability theory. The results of evaluating the reliability of the calculated values of the parameters of the connection of features allow us to clarify the hypothesis about the presence and form of the connection and select the most significant features. A characteristic feature of functional connections is that in each individual case, a complete list of factors that determine the value of the effective feature is known, as well as the exact mechanism of their influence, expressed by a certain equation.

Legal norms regulate real social relations, of course in court proceedings for any category of cases is the incompleteness of facts that give rise to uncertainty, which this system, by its nature, must be treated as probabilistic, the connection between variables becomes stochastic, in which one of the random variables  $Y$  responds to a change in the other variable  $X$  changes its distribution.

Since the values of the dependent variable are subject to random variation, they cannot be predicted with sufficient accuracy, but only indicated with a certain probability.

A characteristic feature of stochastic connections is that they appear in their combination, and not in each of its units. Moreover, neither a complete list of factors that determine the value of the effective feature is known, nor the exact mechanism of their functioning and interaction with the effective feature. There is always the influence of the random. The different values of the dependent variable that appear are the implementation of a random variable.

The phenomenon of stochastic connections is subject to the law of large numbers; only in a sufficiently large number of units will individual features be smoothed out, accidents will be mutually extinguished, and the dependence, if it has a significant force, will appear clearly enough. A special case of stochastic connection is correlation. It exists where interrelated phenomena are characterized only by random variables. In this connection, the average value (mathematical expectation) of a random variable of the effective feature  $Y$  naturally changes depending on the other value  $X$ . Correlation is also shown not in each individual case, but in their combination as a whole. Only in a sufficiently large number of cases, each value of the random attribute  $X$  will correspond to the distribution of the average values of the random attribute  $Y$ . Correlation is a narrower concept than stochastic connection. The stochastic connection can be reflected not only in the change in the average value, but also in the variation of one trait depending on another, i.e., in any other characteristic of the variation.

When a judge establishes a cause-and-effect connection between a real phenomenon and the evidence presented to him, he actually analyzes it—this is the search for an answer to questions: is there a connection between the variables under study? How do I measure the tightness of a connection? The main method of processing statistical data in order to study the connection between variables is correlation analysis.

The purpose of correlation analysis is to provide some information about one variable using another variable. If this goal is achieved, it is considered that the variables are correlated. The correlation reflects only the linear dependence of the values, but does not reflect their functional connectivity. For example, if you select the values of  $X_1$ , found as  $\sin x$ , and  $X_2$ , found as  $\cos x$ , and calculate the correlation coefficient  $K(X_1 \text{ and } X_2)$ , it will be close to zero, i.e., we can assume that there is no dependence between  $\sin x$  and  $\cos x$ , although in fact it is functional  $X_2 = 1 - X_1$ , so the correlation coefficient reflects a linear dependence and is not at all suitable for describing complex, nonlinear dependencies. Let us take a closer look at the section of mathematical statistics related to the concepts of “correlation” and “regression”.

Let us suppose that the judge needs to determine whether a citizen has committed an offense or not, for this purpose, two random variables  $X$  and  $Y$  are observed. The fact that  $X$  and  $Y$  owe their appearance to the same experience, generally speaking, creates a certain connection between them (guilt is present in a particular situation, or is absent). There is a dependence between random variables, but it is not strictly functional. Such examples are especially characteristic of jurisprudence, where the development of phenomena, as a rule, depends on many other factors that are difficult to account for.

The freedom to evaluate evidence enshrined in article 117 of the code of criminal procedure of the Russian Federation suggests that a judge, jury, prosecutor, investigator, and inquirer evaluate evidence based on their inner conviction, based on the totality of evidence available in a criminal case, guided by the law and conscience, is largely comparable to the mathematical transferable belief model (TBM).

In the framework of this model there are two levels of working with uncertainty. The first level is called the credal level, at this level, mass functions (trust functions) are defined and operations are performed with them (summation according to the Dempster rule). The corresponding values characterize the degree of a person’s subjective belief in certain hypotheses. The concept of probability is not defined at this level. However, to make a decision, you need to go to a different level—the pignistic level.

The most logical way to convert a court decision in ignorance of which of several alternative outcomes can be realized into the probability of the corresponding outcomes is to

evenly distribute the probabilities between these alternative outcomes. That is, for example, a judge may be 20% convinced that the case should be resolved in favor of the plaintiff, or in favor of the defendant (without further clarification), converted to 10% probability for the plaintiff and 10% probability for the defendant.

The linguistic transformation converts the mass function that the subject has at the “credal level” into the calculated probability of elementary events that they use to make decisions at the “pignistic level”. The general formula for this transformation is as follows.

$$BetP_m(a) = \sum \frac{m(A)}{|A|}, [?]a \in \Omega,$$

where  $BetP_m(a)$  is the calculated probability of event  $a$ ,  $m(A)$  is the mass function, and  $A$  is the number of elements (elementary events) in the set  $A$ .

Summation is performed for all hypotheses  $A$  that include an elementary event  $a$ . Knowing this calculated probability, our idealized subject (appearing in decision theory) makes a decision according to the usual rules of rational choice, calculating the expected utility using this probability function.

$$E_m U(f) = \sum BetP_m(\omega)u(f,\omega)$$

Thus, with (possibly) the third interested party (in whose favor the case should be resolved), these formulas give a calculated (i.e., “pignistic level”) probability of 50% for both the plaintiff and the defendant. Accordingly, participation in a court case will be useful if it is 50% similar to an existing (similar) court case.

#### 4. Discussion

According to the statistics of the Supreme Court of the Russian Federation, the use of electronic documents in the field of justice is growing dynamically. In 2019, the courts received more than 1 million appeals in electronic form, which is twice as much as in 2018, while the number of documents submitted to the courts in electronic form increased by 30 to 40% on a quarterly basis.

The analysis showed that digitalization of the judicial system of the Russian Federation is an actual and popular direction and has many components.

The issues of digitalization of the judicial system have become particularly acute due to the rapid spread of the COVID-19 virus, which has exposed many imperfections in the implementation of the constitutionally guaranteed right to judicial protection and access to court in electronic form. For example, in Russia, from 19 March to 10 April 2020, personal reception of citizens in courts was paused, it was recommended to contact the judicial authorities through electronic Internet reception offices of courts, while it was indicated that only urgent cases are subject to face-to-face consideration, while other disputes, if technically possible, are recommended to be considered by using video-conferencing system (Resolution of the Presidium of the Supreme Court of the Russian Federation and the Presidium of the Council of judges of the Russian Federation of 18 March 2020 No.808).

It seems that, on the one hand, the unified e-justice system is more consistent with the constitutional content of the principle of access to justice, since it makes it easier for the user to work with it and search for information, and allows this access to information to be based on common rules. However, on the other hand, the digitalization of courts should not be implemented at the expense of the requirements of completeness, timeliness and objectivity of court cases.

One of the guarantees of the quality of justice is the availability of information about the activities of the court. In contrast to the United States, where paid access to court decisions, case documents, and their copying in the “PACER” system is generally established, justified by the need to cover the costs of maintaining the system, in the Russian Federation, the prevailing position is that this approach contradicts the principle of open court and transparency of justice. In this regard, access to the information system of SAS

“Pravosudie” is provided free of charge. In addition, as in common law countries, in Russia, the state information system “Pravosudie” and other state information systems—the Constitutional Court of the Russian Federation, constitutional (statutory) courts of subjects of the Russian Federation, arbitration courts—are not the only source that provides access to information about judicial activities. Along with them, alternative non-state systems are being developed. Thus, the disadvantages of judicial practice in the unified system of SAS “Pravosudie” are compensated by alternative data banks based on other principles of searching for judicial information, such as the private project “Gcourts.ru” or reference legal systems “ConsultantPlus”, “Garant”.

The practice of using video-conferencing has shown that the quality of communication is often unsatisfactory. Sometimes the court session is interrupted due to loss of sound or image, and the participants had to wait for the resumption of the communication session, and sometimes repeat the points that were voiced earlier. Because of the low-quality video to meeting participants, in some cases, failed to convey to the court its position, causing the court to not properly be able to consider their arguments.

At the same time, it should be taken into account that the district courts do not have information technology specialists who could quickly provide technical support. If, as a result of interrupting a video-conferencing, the rights of a person to participate directly in a court session are violated, this gives grounds to file a corresponding request and form the basis of appeals or cassation complaints.

For example, in the Arbitration court of St. Petersburg, when considering case No. SIR-727/2017, related to intellectual property infringement, the court could not satisfy the party’s request to use video-conferencing due to the lack of such technical capabilities due to the video-conferencing in a hall equipped with such a system, the meeting “on other cases in accordance with the schedule of the arbitration court”.

Thus, the courts often refuse to hold a video conference due to the impossibility of holding a court session in an equipped room due to its workload, as well as problems related to the large territorial distance and time zone differences. Another point is related to the fact that the use of video-conferencing does not always allow persons participating in the trial to quickly state their position, especially in complex cases with a large amount of evidence or in cases involving active interrogation of participants in the court session.

Therefore, video-conferencing may distort information exchange, and some fragments of witness statements may be lost, distorted, or misinterpreted.

Electronic evidence is also an element of information technology in various types of legal proceedings. At present, a significant disadvantage of the procedural legislation is the lack of this definition and its components. It is proposed to understand that electronic evidence is any information (messages, data) submitted in electronic form, on the basis of which the court, prosecutor, investigator, inquirer, in accordance with the procedure established by the procedural legislation, determines the presence or absence of circumstances to be proved in the proceedings, as well as other circumstances that are important for the correct consideration and resolution of cases.

As an example, we will analyze article 70 of the code of administrative procedure of the Russian Federation, where electronic evidence, as a type of written evidence, can include the following properties:

- 1) act in the form of information about the circumstances relevant to the administrative case, acts, contracts, certificates, business correspondence, judicial acts, protocols of court sessions, protocols of individual procedural actions and appendices to them (diagrams, maps, plans, drawings) and other documents and materials;
- 2) have the form of digital and graphic recording;
- 3) can be obtained by Fax, electronic or other communication, including using ITS “Internet”, via video-conferencing or other means that allows you to establish the authenticity of the document.

In other words, electronic evidence can include: files, network addresses, domain names, electronic messages, electronic documents, information systems, websites and

pages of websites on the Internet, electronic signatures, computer programs, databases, electronic journals, electronic money, etc.

Speaking about modeling the behavior of participants in legal relationships, based on the theory of utility, it can be expressed by the formula, where  $\omega$  is the set of possible states of the objective side,  $F$  is the set of possible solutions  $f$  (for example, to leave the place of committing an offense or not).

Let  $U(f, \omega)$  be the utility of the decision  $f$  in the state of the objective side  $\omega$  (in the example above, utility is the amount of compensated harm, if the perpetrator does not leave the place where the offense was committed).

Then the expected utility (i.e., the mathematical expectation of utility) of the  $E_p U$  solution  $f$  is defined by the following formula:

$$E_p U(f) = \sum p(\omega)u(f,\omega).$$

However, it should be recognized that this mathematical algorithm does not take into account the situation if the offender is guided by other motives (not related to obvious material utility), for example, he is religious and the utility for him is expressed in the preservation of "pure karma", etc.

In such a situation, we will inevitably have to convert them into confidence functions in probabilities before comparing utilities. This would seem to be a step back from the more general theory of trust functions. However, this step is unavoidable if we want to achieve consistency in our decisions.

Mathematical algorithms that allow making a court decision without the direct participation of a judge were given above. The use of a mathematical algorithm in a trial is possible on the basis of "balance of probabilities".

Thus, if we use the previous example,  $p_1$  is the probability of the person's guilt (73%), and  $p_2 = 1 - p_1$  is the probability of his innocence (27%). In this case,  $f_1$ —the decision to issue a conviction,  $f_2$ —an acquittal.  $U_{ij}$  means a matrix of corresponding utility values for four possible cases (guilty/innocent, convicted/acquitted). Then the expected utility of the  $EU$  verdict  $f_i$  is expressed as the following sum:

$$EU(f_i) = \sum_j p_j u_{ij}.$$

For an approximate matrix of a fair decision in criminal proceedings, and the probabilities indicated above for civil cases, the expected objectivity of the decision can be expressed by the following mathematical formula:

$$EU(f_1) = 10p_1 - 100p_2 = -19.7,$$

$$EU(f_2) = -10p_1 = -7.3.$$

Accordingly, an acquittal is "more objective" than a conviction, so based on the mathematical algorithm, the defendant is more innocent than guilty.

In this case, a conviction should be issued if the following ratio between expected benefits is met (and vice versa, an acquittal when not met).

$$p_1 u_{11} + p_2 p_{12} > p_1 p_{21} + p_2 p_{22}.$$

Taken into account, the ratio  $p_2 = 1 - p_1$ , this inequality can be converted to the following form:

$$p_1 > p_{crim} = \left( 1 + \frac{u_{11} - u_{21}}{u_{22} - u_{12}} \right).$$

This inequality sets the criminal standard of proof, that is, the threshold value of the probability of guilt of the accused  $p_{crim}$ , if exceeded, a conviction should be issued. The threshold value is determined based on the socially defined value of a correct verdict and the price of judicial errors, i.e.,  $U_{ij}$  values.

However, the introduction of artificial intelligence programs directly into the administration of justice raises the question of compliance with the principles of justice, and the meaning of legislation, that is, the “spirit” of the law, can only be revealed by a person with a high level of legal culture.

It is worth noting that the use of artificial intelligence in the administration of justice is currently unacceptable without the participation of a judge, as this violates a number of principles of judicial proceedings. For example, the principle of legality and justice is ensured, including accurate and appropriate to the circumstances of the case, by the correct interpretation of normative legal acts. As we know, interpretation is an intellectual process that is aimed at identifying the true meaning of a legal norm directly by the interpreter and communicating the meaning of the legal norm to interested parties.

On the other hand, as calculations have shown, if we evaluate the cost of incarceration of an innocent person not at 100 conventional units, but only at 50, then the expected utility of a conviction will be 6.2. The expected utility of an acquittal is still 7.3. With these parameter values, the expected utility of a conviction is higher. It will be passed by a judge with such a system of values. In other words, the establishment of specific numerical indicators for such legal categories as: individual freedom, age of the subject, form of guilt, first-time commission of a crime, etc., could protect a person from excessively harsh punishment (for example, when there is a professional deformation of the judge).

In addition, when implementing the principle of competition and equality of the parties, artificial intelligence is able to neither provide the parties with proper assistance in the implementation of their rights, nor to create the necessary conditions for a comprehensive and complete establishment of all the factual circumstances in the case.

Making a court decision is associated with the use of a number of evaluative and value concepts and categories enshrined in the most different legal force and subject of regulation, regulatory legal acts.

## 5. Conclusions

Based on the results of the study, it can be concluded that the procedure for electronic appeal to the courts and sending procedural documents in electronic form already have a legal basis. At the same time, the issues of forming and conducting electronic cases, conducting electronic and digital processes have not received the necessary legal registration in Russia. The development of e-justice technologies requires not only solving the problems of implementing information systems in the processes of judicial proceedings and the judicial system, but also developing an organizational and legal digital mechanism for domestic justice.

We believe that at present the norms of procedural legislation should be added with provisions concerning the legislative consolidation of the definition of “electronic evidence”, types of electronic evidence. In addition, at the legislative level, it is necessary to provide in what cases and in what order each of the listed types of electronic evidence is allowed.

The use of mathematical algorithms in evaluating evidence and modeling the behavior of participants in legal relationships is still at an early stage of development, which allows them to be used in the consideration of similar cases that do not require the study of various options for the objective side, in particular in cases under the jurisdiction of a justice of the peace.

The introduction of a video-conferencing system that provides the implementation of citizens’ rights to participate in a court session and significantly reduces the time for consideration of cases should be recognized as positive.

There is a need to create a single Internet portal for receiving, processing and providing electronic documents by all authorities in Russia, including the courts. We think that this should be implemented on the platform of the Internet portal “Gosuslugi”.

Since the administration of justice must ensure the priority of individual rights and freedoms, therefore, the use of any type of information technology in the activities of the court should not be arbitrary or accidental. Digitalization of judicial activity should be

the result of an objective, balanced and appropriate decision of the authorized authorities aimed at improving the accessibility and quality of justice.

**Author Contributions:** Conceptualization, K.A.T.; Methodology, M.V.A.; Writing—original draft, S.A.V. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Institutional Review Board Statement:** Not applicable.

**Informed Consent Statement:** Not applicable.

**Conflicts of Interest:** The authors declare no conflict of interest.

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