CURRENT ISSUES OF DIGITALIZATION OF CRIMINAL PROCEEDINGS: A LOOK INTO THE FUTURE

Gaysa M. Meretukov, Sergey I. Gritsaev, Vitaliy V. Pomazanov
I.T. Trubilin Kuban State Agrarian University, Krasnodar, Russia

172

The authors point out the main problems of the transformation of criminal justice. Which rest on the need to reform the entire system of the branch of law, as the digitalization of any sphere of activity requires changes in formal and constitutional institutions, culture, as well as the creation and use of AI artificial intelligence systems, the creation of technological capabilities to analyze huge amounts of Big Data and the protection of personal data. This is a condition of digital transformation.

In the formation of a strategy of digitalization of criminal justice in the Russian Federation, according to the authors, there is a stalemate, which is difficult to resolve. On the one hand, criminal justice is a procedural institute, which operates strictly within the system of regulations, on the other hand, the digitalization of criminal proceedings requires huge changes in the sphere of law in general and in its individual branches.

From the technological point of view, we see from the example of some business projects that such processes of some sectors of the economy are feasible. To build a technological platform for criminal proceedings is currently possible, it requires a transition to electronic criminal records (with minor amendments to the RF Criminal Procedural Code), to implement artificial intelligence and "drive" it all into technologies for processing large heterogeneous data Big Data, OLAP and DataMining. The problem lies not in the impossibility to change the existing legal model of criminal procedure and other procedural subjects, but in the fact that law enforcement is carried out between values where logic is powerless, where thinking is carried out in the form of understanding. And the necessary condition for understanding requires intuition and empathy as the most important elements of legal thinking of the law enforcement officer. Artificial intelligence cannot have them.

In other words, in some parts of the law enforcement will be possible to create some kind of digital platforms, which will not meet the whole concept of building a sectoral platform, the consequence of these particular transformations is the fact that a comprehensive digitalization of criminal justice is not expected in the near future, in view of the thin matter of science – law.

1 Introduction

Law enforcement and enforcement agencies have accumulated extensive experience in the use of information technology in the fight against crime. This is evidenced by the annual reports of the Ministry of Internal Affairs of Russian Federation, the Investigative Committee of Russian Federation, the Federal Security Service of Russian Federation and other structures, as well as numerous scientific papers devoted to substantiating the need to use high technologies to effectively counter crime, including "cybercrime". The level of automation and informatization of criminal proceedings corresponds to the initial stage of creating digital platforms for law enforcement agencies and the judicial system. In the scientific environment, special attention is paid to the consideration of ways to form a new strategy for the digital transformation of crime investigation. However, for the vast majority of specialists, including the authors of the article, it is difficult to make a forecast of fundamental changes in the justice system due to the solution of complex tasks of digitalization of the sphere of criminal procedure, criminal law, criminology and other legal sciences.

The authors express their opinion on the methods of solving the ambiguous problem of digitalization of criminal proceedings, which will undoubtedly affect the development of society in the near future.

2 Digitalization as a phenomenon

In 1995, the American computer scientist Nicholas Negroponte formulated the concept of Digital Economics[1].

The phenomenon of "digitalization" took place as a derivative of computerization and informatization. Today, this concept is widely used in various fields of scientific activity. The possibilities due to the digital representation of information lead to the formation of technological environments for its functioning, i.e. the creation of digital platforms capable of solving classes of problems [1, p. 47].

The organization of digital platforms is connected with the change of formal and constitutional institutions; culture; with the creation and application of artificial intelligence systems; protection of personal data.

The concept of "digitalization" implies a broader understanding of technological processes compared to the term "automation".

A. S. Alexandrov, I. A. Alexandrova in substantiating the digitalization of criminal proceedings characterize its essence: "The development of digital technologies leads to the restructuring of the organizational and technical infrastructure of public administration in various spheres, including the provision of services to the public and business to counter crime protection" [2, p. 303]. In addition, the problems associated with the introduction of modern digital technologies require solutions – changing the culture and "depersonalization of personal data" (creating digital copies). The basic criterion of the digital paradigm is "everything as a service focused on data and the sharing of information resources (including government), taking into account the requirements of interoperability and security" [3, p. 17].

Thus, the concept of digitalization is associated with a certain substitution of the state's obligations to protect the rights and legitimate interests of persons and organizations affected by crimes by the provision of services, which raises concerns about the modernization of criminal proceedings.

The key is the problem of ensuring the security of individual rights. Digitization of documents of an individual is inevitable. This is the main element of a digital platform in any field of activity. Thus, an electronic payment document (for example, a bank card) is simultaneously an electronic identity identifier [4, p. 33]. The "digital image" of a person is the central element of the digital system of the world in the future, so it will always be a source of contradictions.

Therefore, it is worth agreeing with the

---

[1] Urmantseva A. Digital economy: how experts understand this term // RIA Novosti. 16.06.2017. URL: https://ria.ru/20170616/1496663946.html (date of access: 17.03.2021).

opponents of A. S. Alexandrov and I. A. Alexandrova. So, D. A. Grishin, supporting the position of V. N. Grigoriev, A. P. Sukhodolov and others [5], states: "... objecting to the idea of a digital criminal process as a kind of blockchain, the author of the article cannot agree with the approach where the use of information technologies in criminal proceedings and its digitalization acquire a negative connotation. In particular, it seems rather controversial to consider digital criminal proceedings as a system of distributed registries, as well as the assertion that any user of digital technology can act as a subject of investigation with the intensive use of information resources" [6, p. 209]. The critical position is presented in the publication of P. P. Ishchenko on the scientific work of S. V. Vlasova [7] devoted to the issues of digitalization of criminal proceedings [8, p. 92].

The principle of digitalization of any process involves the organization of separate "subprocesses" using information and communication technologies, information systems and digital devices within the framework of a single systematic approach to process management as an integral organism. For this purpose, the concept of a single information segment is being implemented, designed for the exchange of data between various fields of activity and structural units in real time. Achieving the interaction of systems is possible with the introduction of promising information technologies, including Big Data, OLAP and DataMining-technologies designed to process a large volume of heterogeneous data [9].

Digitalization includes such processes as the creation of a virtual space, continuous data management, compliance with a strict regime of realization with the regulations for managing all processes using intelligent methods based on regression and extrapolation algorithms of solutions[2]. An integral part of digitalization is the introduction of artificial intelligence technologies as the main technology of data processing and control action, solving a given question or obtaining the result of intelligent search, recognition, identification. Today, digital systems are being widely introduced into the activities of law firms and state legal structures in the world. This process is called LegalTech[3].

Therefore, the designated positions of A. S. Alexandrov, I. A. Alexandrova and S. V. Vlasova fit into the concept of digitalization of criminal proceedings. However, opponents cannot agree with this, since it contradicts witty their understanding of the scope of criminal proceedings, which is characterized by conservatism and the rigor of the implementation of procedural algorithms.

The technological basis for the digitalization of criminal proceedings is artificial intelligence, as well as blockchain technologies. They are tools for reducing the costs of control and supervision, which is a positive result in the field of management. However, the object increases the costs associated with the protection of its own rights and personal freedoms.

3 Artificial intelligences: prospects for implementation in criminal proceedings

Let's consider the situation related to the introduction of artificial intelligence models and technologies into the practice of criminal proceedings. The topic of artificial intelligence, the prospects for its implementation and the legal status of AI (Artificial intelligence)[4] are actively discussed in scientific circles.

The review of the topic allows us to conclude that there is a different interpretation of the concept of "artificial intelligence" in the legal community.

In cybernetics, the term "artificial intelligence" is "a scientific direction within which the tasks of hardware or software modeling of those types of human activity that are traditionally

---

[2] Zikeev V. Digitization of the Legal Profession, or Jurisprudence of the Millennial Era // Zakon.ru. 02.08.2018. URL: https://zakon.ru/blog/2018/8/2/ cifrovizaciya_yuridicheskoj_professii_ili_yurisprudenciy a_ epohi_millenialov (date of access: 17.03.2021).

[3] LegalTech – new application automation tool law? // XSUD: case management software. URL: https:// xsud.ru/news/legaltech-novoe-sredstvo-avtomatizatsii- primeneniya-zakona (date of access: 17.03.2021).

[4] Technologies of the XXI century in jurisprudence: materials of the II International Scientific and Practical Conference (Yekaterinburg, May 22, 2020) / edited by D. V. Bakhteev. Yekaterinburg: Ural State Law University, 2020. 597 p.

considered intellectual are set and solved. The property of intelligent systems to perform functions (creative), which are traditionally considered to be the prerogative of man"[5].

Artificial intelligence is implemented in the form of information systems and mechanisms. There are three classes of information systems – expert, decision support and intelligent modeling (knowledge representation, learning, communication, explanation, etc.). Mechanisms are robots and manipulators controlled by systems with artificial intelligence. Questions arise about the legal status of AI systems (robots) and about the prospects for their recognition by participants in legal relations and possible consequences. V. A. Laptev in his article considers the problem of attracting intelligent robots as cyber-physical systems with the ability to self-organize and responsibility. The necessity of considering AI robots in the form of subjects capable of bearing legal responsibility for their actions is substantiated [10, p. 99]. It is difficult to agree with this assumptio, since a device or systems endowed with artificial intelligence, despite the complexity of their algorithm, diversity and flexible functionality, the ability to scale and self-organization, remain a tool in human hands and will not be able to gain legal independence.

The issues of holding software developers accountable for illegal actions related to the use of artificial intelligence systems should be worked out in legislation. It is necessary to clearly formulate who is the subject of these legal relations.

Prospects for the introduction of artificial intelligence models and methods in the criminal justice system are possible, they may be in demand in the near future at all stages of the criminal process [11, p. 135].

For a preliminary investigation, these are recognition models based on neural networks, regression models that give answers based on the results of the analysis of the collected evidence, the assessment of anthropometric features,

biological and other materials, cluster models that allow us to identify acceptable solutions from a set of features [12].

In the publications of domestic and foreign scientists, there are works on the use of artificial intelligence in the field of predictive law based on the use of a predictive management model. The article by P. N. Biryukov examines the problems associated with predictive law, and provides examples from foreign judicial practice when a court makes a decision based on the results of predictions with insufficient evidence of the corpus delicti [13]. However, the issue of trust in artificial intelligence models provides justification for their reliability, errors can range from 5 to 20%. The error rate increases if the model contains a small amount of information for analysis and training. The accuracy of the prediction is affected by the following factors: insufficient amount of initial data, rules for normalization of the initial sample, errors, and others.

The question of the legality of making judgments based on predictive analytics remains relevant. We can agree with the position of O. A. Zaitseva and P. S. Pastukhova, according to which "... if the techniques and methods of pre-trial criminal proceedings are subject to rationalization, technologization: detection, disclosure, investigation of a crime, then the judicial investigation must remain essentially unchanged. It should continue to be determined by the principles of immediacy, publicity, verbality, competitiveness" [14, p. 42].

Predictive systems are an indispensable tool in the field of crime prevention and analysis of the empirical database. Predictive analytics is a field of knowledge of profiling, a new direction of LegalTech, designed for drawing portraits of criminals, crime scenes, the development and application of intelligent systems in the activities of profilers[6]. The use of predictive analytics in a judicial investigation is impractical.

At the preliminary investigation stage, artificial intelligence will be able to create its structure in the future (determining the goals of the investigation, the forces and means to achieve

---

[5] Petrunin Yu.Yu. Artificial Intelligence // New Philosophical Encyclopedia: in 4 volumes / scientific-ed. advice: V.S. Stepin, A.A. Huseynov, G.Yu. Semigin, A.P. Ogurtsov. 2nd ed., correct and additional M.: Thought, 2010. Vol. 2: E–M. S. 159.

[6] Birulya I. Overview of profiling technologies // RuBezh. Oct 17 2017. URL: https://ru-bezh.ru/ivan-birulya/18589-obzor-texnologij-profajlinga ((date of access: 17.03.2021).

them, i.e. planning), but the final decision on the necessary structure of the investigation remains with the investigator, who has the opportunity to adjust the model of goals and actions proposed by the program to achieve them. Artificial intelligence is a high–quality tool with a high efficiency, it is controlled by a specialist who knows how to handle it. The resulting result must be treated selectively. In this case, it is worth agreeing with the position of D. V. Bakhteev that "the artificial intelligence system, as well as its analogues, is unlikely to be able to replace the subject of law enforcement in the near future, however, with due attention of the scientific and practical communities to this technology, it can turn out to be an extremely useful tool for an investigator and an expert" [15, p. 107].

4 Transfer of criminally significant information into electronic form as one of the stages of digitalization

The need to conduct an electronic criminal case is reflected in the works of such scientists as: S. A. Yalyshev and E. A. Razumovskaya [16], A. F. Abdulvaliev [17], A.M. Bagmet [18], O.V. Kachalova [19], Yu. A. Pozansky [20].

The process of digitalization of a criminal case involves the transformation of criminalistically significant information into electronic form, that is, the conversion of text and other documents (text made using signs, symbols, with elements of natural or artificial language, both handwritten and typewritten, polygraphic, phonodocuments, photo, audio, video and film documents, voice message etc.) in electronic format; subsequent exchange of this information through electronic communication channels (telecommunication technologies). Such transformation should be carried out at the stages of preliminary verification of a crime report (the stage of initiation of a criminal case), preliminary investigation (initial, subsequent and final stages) and judicial proceedings, especially in the court of first authority. In fact, this is the introduction of an electronic form of a criminal case into criminal proceedings (pre-trial proceedings and court proceedings).

Information and telecommunication technologies are gradually becoming part of the law enforcement practice of administrative, civil,

arbitration and criminal proceedings, as evidenced by the adopted Federal Law

Information and telecommunication technologies are gradually becoming part of the law enforcement practice of administrative, civil, arbitration and criminal proceedings as evidenced by the adopted No. 220-Federal Law of Russian Federation "On Amendments to Certain Legislative Acts of the Russian Federation regarding the Use of Electronic Documents in the Activities of Judicial Authorities"[7] dated June 23, 2016 and Resolution of the Plenum of the Supreme Court of the Russian Federation No. 57 "On Some Issues of the Application of Legislation Regulating the Use of Electronic Documents in the Activities of Courts of General Jurisdiction and Arbitration Courts"[8] from December 26, 2017. In the scientific community there are supporters of radical transformations of existing institutions and procedures in this area [3; 8; 21], as well as followers of the moderate application of technical achievements. The latter adhere to the classical procedure of criminal proceedings, propose its improvement based on the intensification of existing information technologies [5; 6] or "... by improving existing institutions and procedures, including the use of new information technologies" [7, p. 98].

Currently, in accordance with Articles 35, 240, 278.1 of the Criminal Procedure Code of the Russian Federation (Interrogation of a witness, victim) or Article 293 of the Criminal Procedure Code of the Russian Federation (The last word of the defendant), a video conferencing system is used in criminal proceedings. During its implementation, audio and video recording is carried out simultaneously in real time. In order to ensure the reliability and admissibility of the received audio and video protocol, the identity of the interrogated person is established by means of its identification. The interrogation process is built according to the rules of organization and tactics of interrogation of a witness, victim, suspect (accused), defendant. Audio and video recording is carried out using digital information and communication technologies.

The possibility of using an automated

---

information system, audio and video recordings, computer equipment, technical means, and photography at the stage of pre-trial proceedings is provided for by art. 82, 164, 166, 170, 178-180, 182 and 183, 189 and 190, 192 of the Code of Criminal Procedure of the Russian Federation. They do not prohibit the use of digital technical means of detecting, fixing and removing objects and documents during investigative and other procedural actions, as well as in court proceedings (Articles 30, 259, 276, 281 and 399 of the Criminal Procedure Code of the Russian Federation). Therefore, it is possible to introduce digital technologies into the practice of the activities of preliminary investigation bodies and courts.

Criminal proceedings involve working with a large volume of documents at all its stages. Basically, such activities are routine in nature according to the set patterns defined by the procedural regulations. For error-free document management, high concentration of attention is required from employees, otherwise, a large number of technical errors may occur. The development and implementation of information systems that allow participants in criminal proceedings to create electronic documents and attach files with additional information to them, ensure the efficiency and error-free operation of the criminal justice system. For several decades, applications (special software) have been developed to implement the concept of creating documents in electronic form. They can be stored in the form of "hard copies", as well as reused as an electronic document.

In addition to the investigator, a forensic specialist using a digital technical tool must take part in the production of an investigative or other procedural action, which provides for the subsequent execution of the act of its application. It indicates the following information: the means and methods used to detect, fix and remove traces, objects and documents with traces relevant to the case, they may be potential material evidence. The drawn-up act should be attached to an audio, video protocol, which, in our opinion, will be a separate type (source) of evidence. It should also contain a description of the digital technical means and its brief description; the conditions and

mode of operation of the analog-to-digital conversion system are formulated; brief information about the laptop computer is provided; the name and version of the input and output device drivers; the type, name and version of the software; the type of paper used in the manufacture of "hard copy". The act also specifies all actions and manipulations performed by a forensic specialist. It is necessary to take all measures that exclude the possibility of computer editing of digital data, electronic retouching or editing. Therefore, an electronic document and a digital image must comply with the requirements of relevance, admissibility, reliability and sufficiency in solving evidentiary issues in a criminal case (Part 1 of Article 88 of the Code of Criminal Procedure of the Russian Federation). All investigative and other procedural documents, including an indictment, are drawn up in the form of an electronic document certified with an enhanced qualified electronic signature [22]. The above mentioned allows us to propose adding to Part 2 of Article 74 of the Criminal Procedure Code of the Russian Federation (Evidences) clause 5.1) audio, video protocols of investigative and judicial actions, the act of using digital technical means and clause 5.2) the result of using digital technical means or "digital information".

Within the framework of the materials of the article, it is impossible to consider all issues related to the translation of procedural documents into electronic form. In fact, the "electronic criminal case" can be divided into two electronic folders: "pre-trial proceedings" and "judicial proceedings". The folder "Pre-trial proceedings" can be represented in the form of two groups:

1. "Digitalization of the stage of preliminary verification of a crime report (the stage of initiation of a criminal case)", which can be divided into three files:

– "Digitalization of the implementation of administrative regulations on the reception, registration of a crime report";

– "Digitalization of procedural actions at the stage of preliminary verification of a crime report";

– "Digitalization of the adoption of a procedural decision on the initiation of a criminal case".

2. "Digitalization of the preliminary

investigation or inquiry", which can also be divided into three files:

– "Digitalization of investigative and other procedural actions on episodes of the initial stage of the investigation";

– "Digitalization of investigative and other procedural actions on episodes of the subsequent stage of the investigation";

– "Digitalization of procedural actions on episodes of the final stage of the investigation".

For the investigator to independently direct the course of the investigation, select the algorithm of actions, it is necessary to create several electronic folders: "The movement of the criminal case (CC) – statistical cards"; "Organization and planning of the investigation as a whole on the case and episodes"; "Typical investigative situations, versions, the algorithm of the investigator's actions according to the type of artificial intelligence"; "Reasons and grounds for separating a criminal case into a separate proceeding (Article 154 of the Code of Criminal Procedure of the Russian Federation)"; "Combining criminal cases into one proceeding"; "Forensic examinations"; "Participants in criminal proceedings" with separate files ("suspects (accused), victims, witnesses, specialists and digital scientific and technical means used by them, witnesses, the prosecution and defense, and others"); "Indictment on episodes and in the whole case". Other folders may be created depending on the current investigative situation in the case.

The creation of a criminal case in electronic form has certain advantages: it increases the speed of creating the structure of the upcoming investigation and the production of investigative and other procedural actions; allows to organize operational control over the state of the case by the head of the investigative body and the prosecutor; provides simultaneous familiarization of the accused and his defender with the case materials. During the trial, it becomes possible to show the required procedural electronic document, which simplifies the consideration of the case using video conferencing with simultaneous audio and video recording.

In the system of conducting criminal proceedings in electronic form, significant problems may arise, for the resolution of which financial investments are necessary, the development of relevant methodological materials for teaching students (trainees, cadets) the algorithm of conducting electronic criminal proceedings and current employees, as well as organizational support (the introduction of special staff, i.e. each investigator needs one assistant). For example, at the Department of Criminalistics of the Kuban State Agrarian University named after I. T.Trubilin second year students or students of the final year (bachelor's degree program) study the discipline "Practicum on crime investigation and trial of criminal cases" and acquire the skills of forming an educational electronic criminal case.

During the proceedings on an electronic criminal case, the investigator (inquirer) is obliged to find out the circumstances and details of the crime committed: the identity of the accused; the degree of his guilt; the motive of the crime; the amount of damage done; the causes and conditions conducive to the commission of the crime, etc. The investigator (inquirer) must provide the materials to the subjects of the criminal process in electronic form.

5. Digital information platforms of criminal proceedings and the mechanism of working with them

Digital technologies are a widely discussed topic, both in academic circles and in practice [23; 24]. In Western European countries the formation of legislation regulating the functioning of digital information in criminal proceedings is still under development. Yu.O. Daneeva, considering foreign scientific publications on the digital economy, notes the lack of a unified approach to the definition of the concept of "digitalization" and the justification of its content. It is worth recognizing the superiority of domestic researchers in the field of digitalization, they are rightfully considered pioneers in this field[9].

---

[9] The book "Pioneers of Digitalization", published for the 60th anniversary of the Analytical Center under the Government of the Russian Federation, tells about the attempt to digitalize the public administration system. The predecessor organizations of the Analytical Center implemented the project of the Automated system of Planned calculations of the USSR State Planning Committee, during the creation of which the nascent foundations of cybernetics received a real embodiment in the management of the economy of our country. URL:

Many domestic authors note that the way out of the current crisis situation in the justice system is associated with the further development of criminal procedure legislation, due to the transition to regulation of digital information platforms. The effectiveness of the policy in criminal proceedings depends on the optimization of procedural decisions related to the reduction of time spent on the production of investigative and procedural actions [21].

For the formation of digital information platforms, such basic issues as the creation and use of artificial intelligence systems and the ability to work with large amounts of data, the use of distributed registry technologies and decision-making systems come to the fore [25].

Prospects for the development of digitalization of criminal proceedings are associated with the process of transformation of existing institutions and procedures, as well as the introduction of advanced achievements in the field of automation theory and algorithmization of various branches of law. In criminalistics, complexes (algorithms) of operational search measures, investigative and other actions are widely used to establish circumstances indicating the involvement of a person in a crime [26]. This direction, due to objective obstacles, could not be implemented at the end of the XX century. [27, p. 164].

Today, according to experts, the level of penetration of digital technologies into law is no more than 30%, and the share of available online legal services does not exceed 4-5% [28, p. 5]. The necessary prerequisites are being created for the development of digitalization of criminal proceedings, and there are also mechanisms for the implementation of these processes.

The mechanism of working with digital information can be shown by the example of the identification procedure. Alternatively, the digital identification procedure can be carried out using a video camera. A participant in criminal proceedings is photographed with terminal information collection equipment (smartphone, tablet, camera, "smart glasses").

The image is transmitted via wireless or cable communication to a data storage system (DSS) deployed in a data center on the server of a digital service provider in a cloud computing environment. Next, the identification procedure is launched in the database by means of recognition models – machine learning methods based on the principles of neural networks. They are trained to recognize graphic objects by characteristic features and provide information about recognition results in a cloud environment (artificial intelligence level). In this case, the recognition result is a person's personal data. The object can also be identified by a fingerprint, the iris of the eye. Figure 1 shows the levels of technologies that ensure the organization of a single digital space.

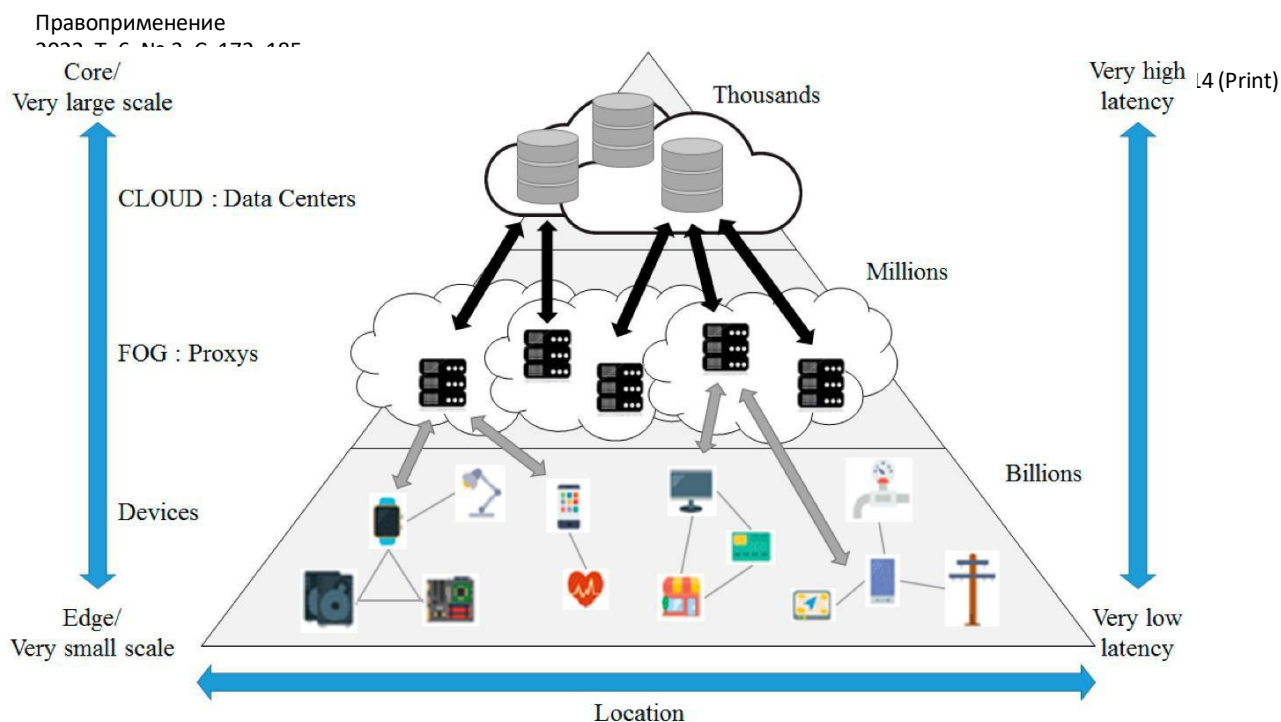https://ac.gov.ru/uploads/pdf/About._Documents._01/60_let_web.pdf (date of access: 03/17/2021).

Figure 1 – Diagram of the organization of work with data in digital systems [29]

At the lower technological level, billions of different terminal devices (gadgets, sensors, devices) are used. From them, data is transmitted to proxy servers that work with large amounts of information (Figure 1). Proxy servers implement "foggy calculations", the results of which, in the form of pre-prepared data, are sent to "cloud centers", where they are processed with the help of machine methods and returned as a result. Heavy-duty computer systems and high-speed lines with secure communication channels are needed to process large amounts of information and calculations. The development of these technologies requires the creation of a unified concept, and for its implementation – large material investments (billions of rubles).

In practice, a partial digital modernization of the system is carried out in domestic legal proceedings. For example, the company JSC "Papilon"(https://www.papillon.ru/) has introduced a system of face image recognition in the video stream into the practical activities of law enforcement agencies. The system is maximally adapted to solving the problem of mobile automatic identification of an individual by an image in real time. "This task is performed by mobile FRS terminals based on smartphones and smart glasses, offered for equipping law enforcement and security services. The smartphone software localizes and encodes images of persons falling into the field of view of the smart glasses camera, and checks images using a local database of up to 500,000 records downloaded from the system server. The check is performed automatically, the positive result is transmitted to the display of smart glasses."

In the absence of identification features, the regulations provide for alternative identification methods available within its framework, which are implemented in the system. For example, identity documents must be registered at the time of identification and attached to the case. If the personality is identified, the employee gets access to the personal data system, checks the system materials and document data and verifies them by certifying with his digital signature. A more complex but effective algorithm is scanning documents with a portable scanner or photographing and identifying them programmatically. Thus, in the course of algorithmic actions, a personality is identified and a document confirming this procedure is filled in. If it is not possible to recognize a person at the stage of the preliminary investigation, then the appropriate form is filled out – a document prescribed by the regulations. The role of the investigator and the inquirer is reduced only to the implementation of the sequence of events prescribed by the system of regulations. They can work in two modes: manual,

when the algorithm of actions is determined by a person, and in the "master" mode, when the algorithm is prescribed by the system. In it, the role of a person is limited. At this stage of the development of information technologies in domestic criminal proceedings, such technologies are pilot projects.

6 The current state of digitalization in the field of legal activity and criminal proceedings in general

Currently, technologies in the legal field are developing in the following areas: automation of standard legal services, the increase in online legal services for clients of the legal system, performing legal services remotely via the Internet (electronic online justice), as well as decision-making based on the use of artificial intelligence methods [30].

To implement the provisions outlined in the article, it is necessary to create regional information portals of the Ministry of Internal Affairs of the Russian Federation in each subject, which will provide subsystems for each area of activity, including for the preliminary investigation and inquiry body. Unfortunately, the existing concept of a Unified Information and Telecommunications System (UITCS) of the Ministry of Internal Affairs of the Russian Federation does not ensure the effective operation of the Main Information and Analytical Center (MIAC) and Forensic Centers (FC) of the Ministry of Internal Affairs of the Russian Federation on the ground, and also does not guarantee the level of information security and the introduction of a system for automating office work and document management in the structure of the Ministry of Internal Affairs. At the stage of pre-trial proceedings, there is no systematic use of electronic documents or digital information. At the regional level, in our opinion, it is advisable to introduce automation based on information and telecommunication technologies.

For example, the regional information portal of the Ministry of Internal Affairs of Russia in the Kaliningrad region (https://39.мвд.рф/umvd/structure/ information-center) was introduced in 2016 and is an information and documentary system characterized by the following functions:

preparation of procedural documents; formation of investigation schedules with automated control of procedural deadlines; creation of a database on criminal cases; search through a database of information about crimes; obtaining information about physical evidence. In fact, the functionality of the portal is much broader and covers not only the areas of informing citizens and providing services.

The creation of similar portals in the form of an automated database for all regions of the Russian Federation simplifies the mechanism of filling out documents, reduces the time for the implementation of legal proceedings, but does not solve the problem of digitalization. The introduction of digital technologies into the criminal justice system provides for a full cycle of entering, processing, transferring and storing documents. To implement such a cycle, it is necessary to aggregate a set of hardware and software and telecommunications technologies within a strictly regulatory space in order to provide organizational support for the activities of employees in the digital environment.

Conclusions

The problems outlined in the article allow us to conclude that it is impossible to digitalize criminal proceedings in the near future. This situation is due to the level of existing information technologies in the criminal process and the unpreparedness of the current criminal procedure legislation for possible institutional changes. An obstacle to digitalization is the lack of a systematic approach and the introduction of partial automation of various areas of activity in criminal proceedings.

In future, the system digitalization process will reduce the time spent on the production of preliminary investigations by increasing the level of technology of activities related to the detection, seizure, fixation and investigation of traces of crime, as well as the creation of an electronic digital form of document flow. This will minimize the possibility of organizing corruption schemes. As a result, efficiency will increase and transparency of criminal proceedings will be achieved for all its participants. It will be possible to implement real-time analytics tools to obtain retrospective and current information on request in the system.

The effectiveness of the implementation of

the planned plans for the digitalization of criminal proceedings will largely depend on solving the issues of transition to a qualitatively new level of regulatory regulation of the use of digital platforms in the field of criminal procedure. At the present stage, it is necessary to create a legislative framework that allows the use of digital technical means, namely:

– in Part 6 of Article 164 of the Code of Criminal Procedure of Russian Federation it is necessary to add the phrase "digital technical means or ..."after the word "apply";

– in Part 5 of Article 166 of the Code of Criminal Procedure of Russian Federation it is necessary to add the phrase "digital technical means or ..."after the word "also";

– – in Part 2 of Article 74 of the Code of Criminal Procedure of Russian Federation (Evidence) it is necessary to add clause "5.1) audio and video protocols of investigative and judicial actions, the act of using digital technical means" and clause "5.2) the result of the use of digital technical means or "digital information".

REFERENCES

1. Khalin V.G., Chernova G.V. Digitalization and its impact on the Russian economy and society: advantages, challenges, threats and risks. *Upravlencheskoe konsul'tirovanie = Management Consulting*, 2018, no. 10, pp. 46–63. DOI: 10.22394/1726-1139-2018-10-46-63. (In Russ.).

2. Aleksandrov A.S., Aleksandrova I.A. The Legal Framework for Combating Cybercrime in the Digital Age, in: *Yuridicheskaya nauka i praktika na rubezhe epokh: uroki proshlogo, vzglyad v budushchee*, to the 135th anniversary of the Professor Yuri P. Novitskii, Proceedings of the All-Russian Conference, Kostroma, December, 14–16, 2017, Kostroma, Kostroma State University Publ., 2018, pp. 303–309. (In Russ.).

3. Akatkin Y.M., Karpov O.E., Konyavskii V.A., Yasinovskaya E.D. Digital economy: conceptual architecture of a digital economic sector ecosystem. *Biznes-informatika = Business Informatics*, 2017, no. 4 (42), pp. 17–28. DOI: 10.17323/1998-0663.2017.4.17.28. (In Russ.).

4. Golovin E.G., Bolshakova V.M. Electronic identification of citizen: pros and cons. *Vlast'*, 2014, no. 8, pp. 33–36. (In Russ.).

5. Grigoryev V.N., Sukhodolov A.P., Ovanesyan S.S., Spasennikova M.G., Tyunkov V.V. Digital information platforms as an object of normative legal regulation in the sphere of criminal proceedings. *Vserossiiskii kriminologicheskii zhurnal = Russian Journal of Criminology*, 2019, vol. 13, no. 6, pp. 873–883. DOI: 10.17150/2500-4255.2019.13(6). 873–883. (In Russ.).

6. Grishin D.A. Digitalization of Pre-Trial Criminal Proceedings. *Vestnik Tomskogo gosudarstvennogo universiteta = Tomsk State University Journal*, 2020, no. 455, pp. 208–215. DOI: 10.17223/15617793/455/28. (In Russ.).

7. Vlasova S.V. On Adapting the Criminal Procedure Mechanism to Digital Reality. *Biblioteka kriminalista = Forensic library*, 2018, no. 1, pp. 9–18. (In Russ.).

8. Ishchenko P.P. About the ways of reforming and digitalization of the initial stage of preliminary investigation. *Vestnik universiteta imeni O.E. Kutafina (MGYuA) = Courier of Kutafin Moscow State Law University (MSAL)*, 2019, no. 8 (60), pp. 89–99. DOI: 10.17803/2311-5998.2019.60.8.089-099. (In Russ.).

9. Vakhitov A.R. The use of KPI, OLAP technologies and Data Mining in data processing. *Izvestiya Tomskogo politekhnicheskogo universiteta = The journal proceedings of Tomsk Polytechnic University*, 2009, vol. 314, no. 5, pp. 175–179. (In Russ.).

10. Laptev V.A. Artificial Intelligence and Liability for its Work. *Pravo. Zhurnal Vysshei shkoly ekonomiki = Law. Journal of the Higher School of Economics*, 2019, no. 2, pp. 79–102. DOI: 10.17-323/2072-8166.2019.2.79.102. (In Russ.).

11. Apostolova N.N. Artificial intelligence in legal proceedings. *Severo-Kavkazskii yuridicheskii vestnik*, 2019, no. 3, pp. 135–141. DOI: 10.22394/2074-7306-2019-1-3-135-141. (In Russ.).

12. Stepanenko D.A., Bakhteev D.V., Evstratova Yu.A. The use of artificial intelligence systems in law enforcement. *Vserossiiskii kriminologicheskii zhurnal = Russian Journal of Criminology*, 2020, vol. 14, no. 2, pp. 206–214. DOI: 10.17150/2500-4255.2020.14(2).206–214. (In Russ.).

13. Biryukov P.N. Artificial intelligence and «predicted justice»: foreign experience. *Lex russica*, 2019, no. 11 (156), pp. 79–87. DOI: 10.17803/1729-5920.2019.156.11.079–087. (In Russ.).

14. Zaitsev O.A., Pastukhov P.S. Use of information technology in the Russian criminal trial. *Vestnik ekonomicheskoi bezopasnosti = Economic security bulletin*, 2016, no. 5, pp. 40–43. (In Russ.).

15. Bakhteev D.V. Big Data and Artificial Intelligence in Investigative and Expert Activities, in: *Aktual'nye problemy kriminalistiki i sudebnoi ekspertizy*, proccedings of International scientific and practical conference, Irkutsk, Eastern-Siberian Institute of the Ministry of Internal Affairs of Russia Publ., 2019, pp. 104–107. (In Russ.).

16. Razumovskaya E.A., Yalyshev S.A. Electronic criminal case: advantages and unsolved problems. *Vestnik kriminalistiki*, 2008, no. 2 (26), pp. 31–32. (In Russ.).

17. Abduvaliev A.F. Prerequisites and prospects for the introduction of electronic form of a criminal case in the activities of the judiciary. *Pravo i politika = Law and Politics*, 2013, no. 1, pp. 58–65. (In Russ.).

18. Bagmet A.M., Tsvetkov Yu.A. The commodity-information concept of investigative and judicial communication. *Biblioteka kriminalista*, 2014, no. 1 (12), pp. 9–19. (In Russ.).

19. Kachalova O.V., Tsvetkov Yu.A. Electronic criminal case – an instrument of modernization of criminal proceedings. *Rossiiskoe pravosudie*, 2014, no. 2 (106), pp. 95–101. (In Russ.).

20. Poznansky Y.N. Electronic criminal case in solving the problem of investigation of criminal cases within a reasonable time. *Trudy Akademii upravleniya MVD Rossii = Proceedings of the Academy of Management of the Ministry of Internal Affairs of Russia*, 2015, no. 1 (33), pp. 41–44.

21. Zaytsev O.A., Pastukhov P.S. Formation of a New Strategy for Crime Investigation in the Era of Digital Trans-

formation. *Vestnik Permskogo universiteta. Yuuridicheskie nauki = Perm University Herald. Juridical Sciences*, 2019, iss. 46, pp. 752–777. DOI: 10.17072/1995-4190-2019-46-752-777. (In Russ.).

22. Rudykh A.A. About some directions of digitalization of investigation of crimes. *Sibirskie ugolovno-protsessual'nye i kriminalisticheskie chteniya*, 2019, no. 3 (25), pp. 70–79. (In Russ.).

23. Daneeva Yu.O. Theoretical approach to digitalization: review of foreign literature and new directions of research. *Khronoekonomika = Chronoeconomics*, 2019, no. 5 (18), pp. 53–58. (In Russ.).

24. Geliskhanov I.Z., Yudina T.N., Babkin A.V. Digital Platforms in Economics: Essence, Models, Development Trends. *Nauchno-tekhnicheskie vedomosti SPbGPU. Ekonomicheskie nauki = Scientific and Technical Bulletin of St. Petersburg State Polytechnic University. Economic Sciences*, 2018, vol. 11, no. 6, pp. 22–36. (In Russ.).

25. Bakhteev D.V. Big data and artificial intelligence in investigative and expert activities, in: *Aktual'nye problemy kriminalistiki i sudebnoi ekspertizy*, proceedings of International scientific and practical conference, Irkutsk, 2019, pp. 104–107. (In Russ.).

26. Meretukov G.M., Gritsaev S.I., Pomazanov V.V. Verifying a Person's Involvement in a Murder. *Vestnik Tomskogo gosudarstvennogo universiteta = Tomsk State University Journal*, 2020, no. 453, pp. 247–252. DOI: 10.17223/15617793/453/30. (in Russ.).

27. Shatalov A.S. Algorithmization and Programming Investigation in the Criminalistics Methodology. *Pravo. Zhurnal Vysshei shkoly ekonomiki = Law. Journal of the Higher School of Economics*, 2017, no. 2, pp. 155–172. DOI: 10.17323/2072-8166.2017.2.155.172. (In Russ.).

28. Mirzoev G. B. Thinking about the future of the legal profession in the context of digital innovation. *Uchenye trudy Rossiiskoi akademii advokatury i notariata*, 2020, no. 3 (58), pp. 5–8. (In Russ.).

29. Hyun-Jong Cha, Ho-Kyung Yang, You-Jin Song. A Study on the Design of Fog Computing Architecture Using Sensor Networks. *Sensors (Basel)*, 2018, vol. 18, iss. 11, art. 3633. DOI: 10.3390/s18113633.

30. Sokolova A.A. Artificial Intelligence in Law: Risks of Implementation. *Yuridicheskaya tekhnika*, 2019, no. 13, pp. 350–356. (In Russ.).

INFORMATION ABOUT AUTHORS

Gaysa M. Meretukov – Doctor of Law, Professor;
Head, Department of Criminalistics
I.T. Trubilin Kuban State Agrarian University
13, Kalinina ul., Krasnodar, 350044, Russia E-mail: crimkubgau@mail.ru
RSCI SPIN-code: 6393-7065
ORCID: 0000-0001-8243-0263

Sergey I. Gritsaev – PhD in Law, Associate Professor;
Associate Professor, Department of Criminalistics
I.T. Trubilin Kuban State Agrarian University
13, Kalinina ul., Krasnodar, 350044, Russia E-mail: grizaevserg@mail.ru
RSCI SPIN-code: 1818-7245
ORCID: 0000-0002-0012-448X

Vitaliy V. Pomazanov – PhD in Technology, Associate Professor; Associate Professor, Department of Criminalistics
I.T. Trubilin Kuban State Agrarian University
13, Kalinina ul., Krasnodar, 350044, Russia
E-mail: sertapru@mail.ru
RSCI SPIN-code: 5918-9589

ORCID: 0000-0001-7575-4809
ResearcherID: AAF-9860-2021

BIBLIOGRAPHIC DESCRIPTION

185