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Essence, concept, and types of national legislation in the field of information technology

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Abstract: The relevance of scientific work is due to the high level of development of innovative technologies in the world community, which contributes to the development of new approaches to ensuring the interests of citizens, including in the information segment. The target areas of scientific research are the disclosure of national legislation in the field of information technology in Kazakhstan. The implementation of the task set is possible due to the use of dialectical-methodological and comparative methodological approaches, system analysis, synthesis method, and others. The results of the study showed that at this stage of the formation of legislation in the field of information technology, it develops in accordance with global trends in the field of regulatory regulation of information technology and creates conditions for the liberalisation of the information and communication technology market. Some aspects of the information legislation requiring reform and improvement were also highlighted.

Keywords: information society; information and communications technologies; e-government; digital economy; information security.

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1 Introduction

The urgency of studying information legislation in the society of Kazakhstan and the legal system as a whole is increasing, and the importance of this branch of law in connection with the paradigm shift is supported by the acquisition not only of a sectoral nature. Ensuring the information security of the state is carried out by authorised entities, which together make up the institutional component of this structure (Ginters et al., 2010; Pohle and Thiel, 2021). This allows a thorough and comprehensive examination of the structure of ensuring the security of the State in the information key, as well as identification of the reasons for the lack of effectiveness of the institution in its constituent elements and the mechanism as a whole. The Institute of Information Law is a complex branch of law, which is confirmed by the active development of information legislation, as well as its universal significance since information and legal regulations relate to a variety of law branches (Tatsyi et al., 2010; Finn, 2021).

For the first time, the introduction of digital format at the legislative level in Kazakhstan was connected with the adoption of the Law of the Republic of Kazakhstan No. 370-II “On Electronic Document and Electronic Digital Signature” (2003), which provided for such terms as ‘electronic document’, ‘electronic digital signature’, ‘electronic archive’ and ‘electronic document control’. It could not be said that the digital signature had been widely used since the adoption of the legislation; its use had been limited to certain areas, such as payments between banks. The Law of the Republic of Kazakhstan No. 337-IV “On amendments and additions to certain legislative acts of the Republic of Kazakhstan on the development of the ‘electronic government’” (2010) which added to the Civil Code of the Republic of Kazakhstan (1994). The use of electronic digital signatures, and expanded the grounds on which the exchange of electronic documents was equated to the transaction in written form, which defined the subjects and the content of their expression of will.

The Law of the Republic of Kazakhstan No. 394-VI ZRK “On Amendments and Additions to Certain Legislative Acts of the Republic of Kazakhstan on Information Issues” (2020), which supplemented the provision of Article 152 of the Civil Code of the Republic of Kazakhstan (1994). According to this law, included transactions in electronic format were assigned to the written form of the transaction at the legislative level. This

type of transaction has become common in the practice of public procurement, procurement of goods, construction and services contracts that were concluded as a result of an electronic contract with an electronic digital signature. The Law of the Republic of Kazakhstan No. 418-V “On Informatization” (2015) introduced the concept of “electronic offer”. It means that if the written offer or electronic offer does not contain a deadline for acceptance, then the contract is considered concluded, in the event that an acceptance has been received by a person who has made an offer before the end of a period that is prescribed by law or for which no such period has been established, only for the time necessary.

However, the changes introduced, which are determined by the introduction of digital technologies into many public and social processes, do not always function at the proper level (Khussain et al., 2020; Petersone and Ketners, 2017). In this regard, the key direction in the conduct of scientific research in the studied area is the analysis of both theoretical and practical components. The disclosure of the theoretical aspect is based on the disclosure of the concept, essence, and identification of types of national legislation in the field of information technology in Kazakhstan, and the practical basis is the consideration of legislative acts in the form of their hierarchical system, conducting an analysis of the regulation of legal norms in the field of information technologies in their application in various segments, which will also allow considering problems that may interfere with the proper provision of the information society. Thus, the purpose of the research is to conduct an analysis of the regulation of this area and highlight the relevant recommendations for increasing the level of efficiency.

2 Materials and methods

This study is based on the use of various methodological approaches that reveal the studied aspects of the work in their theoretical and practical significance. Highlighting a dialectical methodological approach, it is possible to identify key directions and the importance of national legislation in the field of information technology in providing information to the population in Kazakhstan in all public spheres. Using the method of analysis, it is possible to analyse the components of types of national legislation in the field of information technologies in Kazakhstan and their key elements. The method of system analysis will help in the consideration of this system of regulatory legal acts in the field of information technologies in the form of a hierarchical system of regulation of the examined sphere.

The dogmatic method of legal knowledge can be used as a study of the development and establishment of national legislation of Kazakhstan in the sphere of information technologies, as well as identification of influence, which provides a system of legislative acts in the direction of regulating these types of legal relations. With the help of the synthesis method, it is possible to consider the collectively studied data in their theoretical analysis and practical application and to trace, how effective the mechanism of functioning of the regulation of the sphere of information technologies in Kazakhstan, as well as to identify the problems of the studied sphere. The allocation of such a methodological approach as a comparative-legal methodological approach will help not only in the analysis of the functioning of legislation in the field of information technology in Kazakhstan and the identification of problems. However, will also give due consideration to the functioning of the studied segment to highlight recommendations

that contribute to increasing the effectiveness of regulatory and legal acts in the field of information technology in Kazakhstan. The use of the deduction method will facilitate consideration of the entire mechanism of national legislation in the field of information technology through the prism of highlighting its constituent elements and features.

Based on the above, scientific work will take place in several stages:

- 1 The first stage involves an analysis of the theoretical component to understanding the mechanism as a whole, which involves the disclosure of such aspects as the concept, essence, and types of national legislation in the field of information technology in Kazakhstan.
- 2 The next stage is based on the consideration of legal norms of legislative acts in the field of information technology and their consideration in a structural system of a hierarchical nature, which will help in the analysis of types of national legislation in more detail.
- 3 The final stage provides for the identification of problems related to the proper functioning and regulation of legal and regulatory norms in the field of information technology in Kazakhstan in the form of an analysis of each regulatory legal act, taking into account the advantages and disadvantages, and to highlight recommendations that will contribute to increasing the level of efficiency of this activity should consider the segment of the study of legislative norms in the field of information technology in more detail.

3 Results

The active development of digital technologies has a significant impact on the legal system and the legislation of modern states. The emergence of new pieces of legislation is bringing about changes in many traditional legal institutions. The development of legislation is a consequence of the legislative activity that exists in an objectified form. The digitalisation and informatisation processes have a significant impact on the activities aimed at the preparation and adoption of legal acts, as well as on the use, improvement, and systematisation of legislation (Sakhaee and Wilson, 2021). Everyday citizens enter into information relations, which should be regulated by special information legislation. On this basis, it is quite important to find the optimal legal solution that could balance the rights and obligations of subjects of information relations (Mishra et al., 2022). The flow of the emergence of new legal norms in the law-making process rather complicates the content and structure of legislative acts that regulate the sphere of information legal relations (Au et al., 2021).

Modern national regulation of information legislation can be based on both Anglo-American and European legal system doctrine, each of which has a system-forming function. For example, when considering Anglo-American legal doctrine, it is inherent in the regulation of legal issues, including the information sphere, fragmented at the legislative level. That is, this legal system is aimed at resolving public issues. It is also unique in that it is not based on general rules and principles but contains a set of descriptions of legal cases and legal conclusions from them, which is not a typical legal system as Romano-German legal doctrine (Hipolito et al., 2021). In European legal doctrine, the legal definition of branches of law prevails, rather than their systematisation.

In particular, this legal doctrine lies the division of the right into private and public, due to the difference in interests that regulate private and public law (Badovskis et al., 2017; Perbangsa et al., 2018). Highlighting the differences between the European and Anglo-American legal doctrine, it is worth noting here the hierarchical system of sources of law, division of the right into branches, and the presence of a «fund» of basic legal concepts. For the Anglo-American legal doctrine is characteristic of «the development of the process», which should be understood as the procedure of consideration of disputes in court, that is, case law. In addition, in European doctrine is not established jurisprudence as a source of legislation, although this source is quite important and has a great impact on the development of the legal system (Giraldo, 2021).

The use of Anglo-American legal doctrine is possible in cases where the legal regulation of social relations is in the formative period, which indicates the borrowing of the legal regulation of the metropolis. As well as when the legal regulation is in a state of reform when it is borrowed from other national systems and does not take into account national specificities. The use of European legal doctrine can be used in many cases, as it can take into account the peculiarities of different cultures, and social and legal traditions of the state and is quite diverse (Williamson, 2021).

Analysing the legal doctrine that is used in the legal regulation of Kazakhstan, in this case, the use of European doctrine is noted. This is because this legal doctrine can be used in a traditional unitary State. It is worth mentioning that in the event that in the branches of law the number of legal norms in the same or the same sphere of legal regulation reaches a critical state, the emerging branch of law undergoes the process of legalisation, as, for example, legal regulation in the field of information technology. This branch of law is based on the basic provisions of the theory of the state and law, constitutional law, administrative, financial, criminal, civil, and labour law, as well as international public and private law (Borowski, 2021). Information law is an important fundamental right but according to the Codes of the Republic of Kazakhstan, it is secondary and more characteristic of a citizen's standard of living than his mandatory condition.

At this stage of formation, information legislation is not the leading branch of law. This industry exists at the intersection of traditional branches of law with the development of new information and communication technologies and the development of information and legal relations. Nevertheless, the Institute for the Functioning of Information Law strives for its full independence. This is because it has its own subject matter and method of regulation. Analysing the field of information law in a narrow sense, it is noted that it regulates individual components, such as for example, telecommunications, computer devices, internet platforms, and others (Aissani, 2022). In a broad sense, it is worth mentioning here that it becomes the subject of legal regulation that covers all aspects of the creation, transformation, transmission, and dissemination of information (Sieck et al., 2021).

The field of information law has its own characteristics. First of all, many norms of information law are norms of other branches of law. For example, the Constitution of the Republic of Kazakhstan (1995) guarantees the right of every person to receive and disseminate information legally, which is enshrined in article 20. The same rule is contained in the Law of the Republic of Kazakhstan No. 418-V "On Informatization" (2015), namely in Chapter 3 of Article 18, which stipulates that the citizen has the right to receive, use, distribute, transfer, provide to third parties electronic information resources, including open data, to use the information system under conditions determined by the

legislation of the Republic of Kazakhstan, the owner or owner of electronic information resources, information system. Thus, both the Constitution and the Law regulate public relations from the point of view of the law, which arise when seeking, receiving, transmitting, and disseminating information.

Analysing the legislation of the Republic of Kazakhstan, it can be noted that it contains about 300 normative acts related to the information sphere, of which 140 are directly or indirectly related to the global internet (Khanna, 2021). Researching the directions of legal regulation of information and information technologies in the legislation of the Republic of Kazakhstan, the directions that affect the information sphere and the sphere of information technologies are singled out. These include personal data protection, information security, data collection and processing (Big Data), rules and approaches to identification of persons, simplification of procedures, and shortening of terms of development of documents on standardisation through the development and use of information system in the field of standardisation (Ginters, 2019; Pangrazio and Sefton-Green, 2021). An analysis of the legal and regulatory framework in each area will help to systematise regulations and identify the strengths and weaknesses of national legislation in the field of information and information technology.

4 Discussion

Information law refers to a complex field of law, on this basis, the protection of personal data is to some extent connected with other normative legal acts (Au et al., 2021). For example, the Criminal Code of the Republic of Kazakhstan (2014) reflects the norm of privacy and the legislation of the Republic of Kazakhstan on personal data and their protection in chapter 3 of article 147. Code of the Republic of Kazakhstan on Administrative Offenses (2014) contains an article, namely, article 79, which deals with violation of the legislation of the Republic of Kazakhstan on personal data and their protection. Law of the Republic of Kazakhstan No. 199-V “On the Internal Affairs Bodies of the Republic of Kazakhstan” (2014) regulates the protection of personal data by the internal affairs agencies, which is stipulated in Article 46, Chapter 2.

On the basis of the above, the protection of personal data, as a concept of information law, is regulated by the main branches of law, namely criminal, administrative and other, as well as by special branches, which include labour, health, and others. This indicates the complexity of the information and information technology field in jurisprudence (Pohle and Thiel, 2021; Ketners and Petersone, 2021). Currently, the protection of information security of the state, businesses, and citizens is becoming a priority in the activity of legislators. At the moment the state program ‘Digital Kazakhstan’ was developed, the development of which was due to the inclusion of Kazakhstan in the global network of information technologies and telecommunications. The active use of the global network has led to an increase in the use of information technologies in public administration, business and industrial facilities management systems.

Since the beginning of questions about information security, there is a separation of legal regimes of information resources, which are in the public domain and confidential storage, establishing the rights and obligations of right holders, owners and users, relating to their protection. The legislative framework of Kazakhstan in the field of information security, aimed at streamlining and regulating the conduct of subjects and objects of information relations, and determining responsibility for violations of norms, consists of

low legislative acts. Such legal norms should include the Laws of the Republic of Kazakhstan “About National Security”, “About State Secrets”, “About Personal Data and their Protection”, “About Informatization”, “About Communication”, “About Electronic Document and Electronic Digital Signature”, the Criminal Code of the Republic of Kazakhstan, the Code of the Republic of Kazakhstan on Administrative Offences and other legal acts.

In the Law of the Republic of Kazakhstan No. 527-IV “On National Security of the Republic of Kazakhstan” (2012), informational security means “the state of protection of the information space of the Republic of Kazakhstan, as well as the rights and interests of the individual and citizen, society and the State in the information sphere from real and potential threats, which ensures sustainable development and information independence of the country”. In this definition, the key becomes the protection of information from accidental or intentional actions that can harm the owner of the information or the user, that is, the state, business, or citizen (Lavrov and Pasko, 2018). The Act also defines the main threats to national security in general, namely in chapter 1, article 6, in the field of information of interest to us. The Law defines a national threat as an informational influence on the public and individual consciousness, which is connected with deliberate distortion and dissemination of unreliable information to the detriment of national security interests.

It is worth mentioning that it is not important to eliminate the consequences of the breach of information security but to prevent the risks of its absence. This provision is confirmed by the definition in the mentioned Law in chapter 4, article 23, where the ways to preserve and ensure information security are the list of actions of state bodies, organisations, and officials, aimed at ensuring information security, such as preventing information dependence in Kazakhstan, preventing information impact on public and individual consciousness (Law of the Republic..., 2012). The Law defines the authorised body in the field of communication and informatisation as the central government body, which carries out the formation, development, and security of the unified information space.

The concept of cybersecurity ‘Cyber shield of Kazakhstan’ (2022) defines the main problems and threats in the sphere of the use of information technologies. They have a significant impact on the efficiency and effectiveness of the digitalisation process in Kazakhstan. The main goal of the Concept is to maintain the level of security of information systems, resources, information, and communication structures from external and internal threats. In 2017, Kazakhstan took 82nd place in the world ranking of cybersecurity (Cyber shield of Kazakhstan, 2022). The reasons for this are insufficient coverage of the infrastructure by means of information protection, lack of public awareness of cyber threats, neglect of information security requirements, and lack of human capital. ‘Cyber Shield of Kazakhstan’, adopted in 2017, provided for the development of legal regulation of the protection of personal data, the maintenance of the register of operators of personal data, the protection of the rights of subjects of personal data, and Monitoring compliance with personal data protection requirements. As a result of the implementation of the action plan developed according to this concept, a large number of changes were introduced.

First of all, it should be noted the formation of a legal framework in the field of information technology. Amendments were made to the Law of the Republic of Kazakhstan “On Informatization” (2015), the Uniform requirements in the field of information and communication technologies and information security, the Rules of

control of information security of informatization objects were approved 'E-Government', as well as the National Anti-Crisis Response Plan (Cyber shield of Kazakhstan, 2022). In addition, the launch of the National Information Security Coordination Centre, which includes the Computer Emergency Response Team KZ-CERT, which monitors the information security of state bodies and the objects 'e-government'. It is noted that in 2019, the National Coordination Center for Information Security (2019) prevented a cyber attack on the information systems of government agencies and the quasi-public sector.

As a result of the Concept, the Information Security Operations Center was launched, which in 2019 was able to prevent 2.7 million cyberattacks (Cyber shield of Kazakhstan, 2022). Also, a professional standard for training specialists in information security was developed and approved: B058-Information security, on which training of graduates in 7 educational programs is carried out. The number of grants in the area of B058-Information Security training increased from 500 in 2019 to 800 in 2020 and 2,302 in 2021. Equally important is the development and implementation of awareness-raising activities on cyber threats. Thus, the implementation of the Concept of Cyber Security makes it possible to increase the effectiveness of the digital economy for citizens and businesses, increase the trust in the state from businesses and citizens, and actively develop the information security industry (Lavrov et al., 2020).

The Decree of the President of the Republic of Kazakhstan No. 636 "On approval of the Strategic Development Plan of the Republic of Kazakhstan until 2025 and invalidation of some decrees of the President of the Republic of Kazakhstan" (2018). It aims to develop a reliable, accessible, and safe digital infrastructure, plans to launch a mechanism for rapid response to cyber threats in the financial market, as well as the introduction of information technologies in various spheres of public life. The decree also notes that the COVID-19 pandemic has accelerated the rapid development and use of technology, such as automation, elements of the fourth industrial revolution, and robotics.

It is worth mentioning that the national legislation of Kazakhstan is a poorly developed regulatory framework that regulates the storage and dissemination of information. First of all, we are talking about the possible absence of a source of information threat in the jurisdiction of Kazakhstan. This may complicate the application of the law. Law of the Republic of Kazakhstan No. 567-II "On Communications" (2004), namely Article 15, paragraph 1, obliges the owners of communication networks and communication operators to collect and store service information. For example, in the fight against extremism and terrorism, it is important to have personal data such as personal correspondence.

The importance of regulating the collection and processing of data sets is now clear. So, Nursultan Nazarbayev in the Address of the President of the Republic of Kazakhstan "New Opportunities for Development in the Fourth Industrial Revolution" (2018) spoke about the need to increase the efficiency of transport and logistics structure, including using information arrays – Big Data. The use of Big Data technology will allow the government and businesses to develop quality analytics, create a growth reserve and reduce excessive costs. In the National Development Plan of the Republic of Kazakhstan until 2025, a priority task is the training of specialists with professional competence in the field of Big Data (Decree of the President..., 2018).

The introduction of the Big Data tool into the Judicial Institute will create an infrastructure that can include artificial intelligence and Big Data analytics in information systems. In case the construction of the agreement on providing the information is

included in the Civil Code of the Republic of Kazakhstan (1994), legal confirmation of data turnover will be possible. Such a structure would protect information from third parties and create a legal data market.

Establishing rules and approaches to online identity is an important area in the legitimate use of information technology. Therefore, in the national legislation of Kazakhstan, the digital profile of the citizen and electronic identity card are subject to legal regulation. The Strategic Development Plan of Kazakhstan until 2025 clarified the requirements and standards for the provision of financial services related to online identification (Decree of the President..., 2018). On this basis, there is a gradual transition from personal service to remote and undocumented, which is based on biometric methods of remote identification and authentication. It should be noted that the digital profile of the citizen, which includes the totality of all digital records about the citizen in the information systems of State bodies and organisations, has no legal status. In 2021, an online discussion of the National project “Digital Lifestyle – DigitEL” (2021) was held, in which by December 2023 it is planned to create a digital profile of the citizen and a digital profile of the business entity.

Law of the Republic of Kazakhstan No. 370-II “On Electronic Document and Electronic Digital Signature” (2003). The Act defines the concept of an electronic digital signature, regulates its regulatory use in the electronic document management system, and also recognises a foreign electronic digital signature. In this case, it is worth noting that the Anglo-American doctrine does not impose special requirements for signature at the end of the document. For States that subscribe to European doctrine, including Kazakhstan, the signature is perceived as the fact of giving legal force to the document. In this regard, Kazakh legislation provides for the concept of an electronic digital signature. This concept refers to a set of electronic digital symbols created by means of an electronic digital signature and confirming the authenticity of an electronic document, its ownership, and the immutability of the content. According to the Civil Code of the Republic of Kazakhstan (1994), article 152, paragraph 2, it is possible to conclude a transaction by electronic digital signature. Kazakhstan has developed a sufficiently effective legal framework for the use of electronic digital signatures. The basis for the use of digital signatures is the Law of the Republic of Kazakhstan No. 94-V “On personal data and their protection” (2013). The problem of the authenticity of the digital signature was solved by the adoption of Order of the Minister for Investments and Development of the Republic of Kazakhstan No. 1187 “On approval of the Rules for verifying the authenticity of electronic digital signature” (2015).

The simplification of procedures and the shortening of the time frame for the development of standardisation documents is an important aspects of national IT legislation. Considering the existing problems of the innovation process, it is noted that there are no unified information spaces, a lack of accountability and the disconnection between monitoring and the new creative process, lack of tools for analysis before drafting normative legal acts. The solution to these problems will be to improve the information system as a whole, which will operate in a unified information space and will become transparent for any citizen.

Thus, the areas identified in the national legislation of Kazakhstan in the field of information technology are related to the protection of personal data, the sphere of information security, the regulation of the collection and processing of big data, establishing rules and approaches to the remote identification procedure, simplifying procedures and reducing the time needed to develop documents. The analysis of the legal

and regulatory framework of Kazakhstan shows that it has been developed in accordance with the world trends in the field of regulatory regulation of information technologies and creates conditions for the liberalisation of the market of information and communication technologies.

Development of communication capabilities of Kazakhstan society includes electronic identification of citizens, regulation of the open part of state information resources, informatisation of state bodies, Expansion of global internet users in the public and non-governmental sectors, the establishment of the legal and regulatory framework, and provision of information security (Yaroshenko et al., 2019). On this basis, it is quite important to adopt at the legislative level the conditions for the free operation and development of the global internet, which will consolidate the free access of citizens to information in general and legislative information, of a legal and executive nature via the internet, in particular.

In the Republic of Kazakhstan, websites belong to the mass media and are therefore subject to the same legal regime as the mass media. Sites are not subject to mandatory registration, which is mandatory for traditional media. National legislation on the use of information technology sufficiently reflects international trends legal regulation of the sphere of information technologies and contributes to the further development of information technologies and the global internet in the Republic of Kazakhstan.

5 Conclusions

Having conducted scientific research in the field of studying the concept, essence, and types of national legislation in the field of information technology of Kazakhstan, it is worth noting that modern regulatory and legal framework is created in accordance with world trends and is successfully developing due to the digitalisation policy. An active legislative process related to the reform of legislation in the information sphere affects the public, quasi-public, business sectors, and the private life of citizens. The use of the internet platform and information technologies for the state and non-governmental sectors is possible due to the development and improvement of e-commerce, the increase in information security of the business. The legal basis for regulating business on the internet is prescribed in the Civil Code.

However, some aspects of information legislation require further improvement and reform. It should be noted that the law-making process should be carried out by taking into account the specifics of the national mentality, the legal culture of the population, and the peculiarities of public and public life. Therefore, it is necessary to harmonise the conceptual framework of laws and by-laws regulating public relations related to information. Some categories relating to the legal regulation of information technology are poorly developed. As a result, their application in practice is ambiguous. This can lead to social conflicts between the participants in information relations.

The rules governing public information relations are scattered over different laws and by-laws. This is an obstacle in their search, analysis, and agreement in practical use. Several issues related to the storage and dissemination of information were also raised. Currently, the sources of cyber threats may lie outside the jurisdiction of Kazakhstan. The regulatory framework is poorly developed; it is related to the blocking of content, which is contrary to the legislation of Kazakhstan.

Thus, the basis of law-making legal regulation in the field of information technologies should be the methodology of a systematic and integrated approach, since the development of constitutional norms is reflected in the system-forming legislative acts, which regulate information relations in Kazakhstan. The materials in this study may be useful to scientists and practitioners in the field of digitalisation.

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