

International Journal of Electronic Security and Digital Forensics

ISSN online: 1751-9128 - ISSN print: 1751-911X

https://www.inderscience.com/ijesdf

Legal mechanism for regulating responsibilities in the information sphere

Aigerim Issakhankyzy, Gulnar A. Alibayeva, Ainur A. Sabitova, Serik K. Zhetpisov, Botakoz S. Shansharbayeva

DOI: <u>10.1504/IJESDF.2024.10052611</u>

Article History:

Received: 01 August 2022 Accepted: 05 October 2022 Published online: 12 January 2024

Legal mechanism for regulating responsibilities in the information sphere

Aigerim Issakhankyzy* and Gulnar A. Alibayeva

Department of Constitutional, International Law and Customs, Eurasian Law Academy named after D.A. Kunaev, Almaty, Republic of Kazakhstan Email: issakhankyzy@nanyang-uni.com

Email: issakhankyzy@nanyang-uni.com Email: gul_alibayeva@singapore-uni.com

*Corresponding author

Ainur A. Sabitova

Sorbonne-Kazakhstan Institute, Abai Kazakh National Pedagogical University, Almaty, Republic of Kazakhstan Email: aa.sabitova@u-tokio.eu

Serik K. Zhetpisov

Department of Law, Innovative University of Eurasia, Pavlodar, Republic of Kazakhstan Email: zhetpisov@lund-univer.eu

Botakoz S. Shansharbayeva

Department of Law, Eurasian Technological University, Almaty, Republic of Kazakhstan Email: shansharbayeva@toronto-uni.com

Abstract: The relevance is conditioned upon the fact that the information sphere affects the components of the security of the Republic of Kazakhstan, such as political, economic, social, and others. The purpose of the research is to identify all the characteristic features of the legal mechanism of regulation of the information sphere on the territory of the Republic of Kazakhstan, to consider the functioning of this segment, to identify obstacles and legislation. An important component is the study of the problem of the legal mechanism of regulation in the information sphere on the territory of the Republic of Kazakhstan. In the course of the research, several methodological approaches were used, including a theoretical-methodological approach, the method of analysing scientific literature, formal-legal method and others. The results obtained in the course of the study will help to eliminate conflicts in the legal norms, as well as to propose methods of reforming this.

Keywords: legal regulation; information law; labour law; informatisation; digitalisation; methods of reforming.

Reference to this paper should be made as follows: Issakhankyzy, A., Alibayeva, G.A., Sabitova, A.A., Zhetpisov, S.K. and Shansharbayeva, B.S. (2024) 'Legal mechanism for regulating responsibilities in the information sphere', *Int. J. Electronic Security and Digital Forensics*, Vol. 16, No. 1, pp.14–27.

Biographical notes: Aigerim Issakhankyzy is a doctoral student at the Department of Constitutional, International Law and Customs, Eurasian Law Academy named after D.A. Kunaev. Her research interests are information sphere of regulation, international law, and constitutional law.

Gulnar A. Alibayeva is a Full Doctor in Law and the Vice-rector for Research Work and International Relations of the Department of Constitutional, International Law and Customs, Eurasian Law Academy named after D.A. Kunaev. Her research interests are administrative law enforcement for violation of land legislation.

Ainur A. Sabitova is a Full Doctor in Law and the Director of the Sorbonne-Kazakhstan Institute, Abai Kazakh National Pedagogical University. Her research interests are international law, counteraction to corruption, and volunteering.

Serik K. Zhetpisov is a Full Doctor in Law and Associate Professor at the Department of Law, Innovative University of Eurasia. His research interests are criminology and penal law.

Botakoz S. Shansharbayeva is a Full Doctor in Philosophy and Senior Lecturer at the Department of Law, Eurasian Technological University. Her research interests are land relations, and criminal liability for land crimes.

1 Introduction

Modern society, due to its constant development, is characterised by an increase in the role and importance of the information sphere. The information sphere itself is a set of information and information objects, the purpose of which is to collect, disseminate, and use the information received, and also this sphere includes a legal mechanism for the settlement of legal relations arising in this case. Notably, the information sphere actively influences many constituent elements of society, for example, economic, political, social, defence, and other elements that ensure the security system of the Republic of Kazakhstan (Volodina and Devyatkin, 2016; Khussain et al., 2020). Information is one of the most important elements of the life of modern society. At this stage of development of this sector in the territory of the Republic of Kazakhstan, it can be concluded that it is in the process of development. The purpose of the policy of the Republic of Kazakhstan in the field of information protection and ensuring information security, in general, is to guarantee their independence and territorial integrity, ensure a democratic legal policy, bring the economic situation of the state to a new level, as well as establish contact with

other states and build a new model of international legal relations (Kakizhmanov and Mamyrbaeva, 2018; Buil et al., 2015).

Due to the constant development of the information sphere, a new branch is emerging – information law. Considering this concept, it can be stated that it is a branch of law that regulates actions arising in the information sphere, which are directly related to the circulation of information and its resources. Information law can also be considered as a sub-branch of administrative and civil law (Nurgalieva and Syrlybaeva, 2020). It is also possible to consider information law as a separate institution in which a set of legal norms allows regulating the arising legal relations in the information sphere. This industry is characterised by its own specific features, and among those, one can distinguish, first of all, the existence of an independent subject of legal regulation, its own terminology that identifies the basic principles and features for the functioning of information law, as well as the use of only those methods that will be characteristic in the regulation of information law (Abdymomynov, 2019).

Highlighting the object of information law, it can be noted that in this case it is directly information. Accordingly, being an object of legal relations, it is endowed with some characteristics. Firstly, it can be transferred from one entity to another but it must be legally fixed without fail about its belonging to the entities. Secondly, it cannot be physically taken away from the consumer, the creator, or the owner. Notably, the information must be documented, and when such an object is included in circulation, it must be displayed on a tangible medium. It is also characteristic of information as an object of information law that source materials, specialised structures that can own information can be added to it, and it should be included in the property of such an organisational structure (Mikelova, 2017; Babak et al., 2020a). However, to the objects and subjects of information law, it is also necessary to include not only information but also related processes.

The purpose of the research is to identify all the characteristic features of the legal mechanism of regulation of the information sphere on the territory of the Republic of Kazakhstan, to consider the functioning of this segment, to identify emerging obstacles and legislative conflicts that interfere with proper functioning.

2 Materials and methods

The research in the field of studying the legal mechanism for regulating responsibilities in the information sphere was carried out through the use of scientific methods that can cover this subject quite widely. Using the method of analysis of scientific literature, the opportunity was given, based on the study of the works of Kazakh and foreign scientists, to consider different positions of researchers regarding a given subject in theoretical and practical aspects. Due to the use of a theoretical methodological approach, it is possible to cover important elements of the study of the legal mechanism for regulating responsibilities in the information sphere, to identify the main signs and characteristics, as well as to identify emerging conflicts in the information sphere of the Republic of Kazakhstan. The scope of study lies in the study of the legal mechanism of regulation, and for this, in turn, a formal-legal method was used, which will help to consider all legal positions, norms enshrined in regulatory legal acts, and make their analysis. Accordingly, the method of analysis and the method of comparative analysis will also be used, which will help in the study of legal norms. A functional methodological approach will help to

identify the main goals and objectives set by the legal mechanism for regulating the information sphere. The synthesis method allows combining theoretical and practical aspects in research for a wider disclosure in the study of the provided subject.

Since the material must be written consistently and logically, the method of logical analysis will be used for this. The dialectical method will also be useful in the study, which will help to cover the topic of legal regulation in the information sphere of the Republic of Kazakhstan in more detail and more effectively. The study was carried out in several stages. The first stage is characterised by the theoretical component of scientific work, that is, the study of the functioning of the legal mechanism for regulating the information sector, the analysis of the norms enshrined in the regulatory legal acts of the Republic of Kazakhstan, as well as consideration of the features and principles characteristic of the functioning of this sector in the territory of the Republic of Kazakhstan. The second stage is characterised by the consideration of the practical experience of legal mechanism functioning of the information industry regulation in the territory of the Republic of Kazakhstan, as well as the identification of the level of efficiency of its functioning and consideration of conflicts of legislation. The third stage, which is the final one in this study, is the consideration of recommendations for the elimination of conflicts in legislation and the proposal of reforms related to the work of the legal mechanism of regulation in the information sphere. This stage also implies a review of the practices of other countries in the field of regulation of the information

In the theoretical aspect of the study of information security, its main areas should be mentioned. Thus, the first important area in the information sphere is the information protection of fundamental rights and freedoms. Further, an important area of such information protection is, admittedly, information protection of the interests of the state and subjects from unfriendly and unsafe information. And, finally, it is important to highlight information protection from the influence of unauthorised persons for illegal purposes (Antipov and Grishanova, 2017).

The main elements of information security are the purpose; scope; information security objectives; authorisation and access control policy; classification of data; data support and operations; security awareness sessions; responsibilities, rights and duties of personnel; references to relevant legislation and other (Kostadinov, 2020). There are many subtypes of information security. These subtypes cover specific types of information, tools used to protect information and domains where information needs protection. Firstly, application security strategies protect applications and application programming interfaces (APIs). If you do not secure your apps, the system will further gain access to wider apps, putting your personal information at risk. Secondly, infrastructure security strategies protect infrastructure components, including networks, servers, client devices, mobile devices, and data centres. The growing connectivity between these, and other infrastructure components, puts information at risk without proper precautions. Thirdly, cloud security adds extra protections and tools to focus on the vulnerabilities that come from Internet-facing services and shared environments, such as public clouds. Fourthly, endpoint security helps protect end-user endpoints such as laptops, desktops, smartphones, and tablets against cyberattacks. Fifthly, cryptography uses a practice called encryption to secure information by obscuring the contents. Sixthly, incident response is a set of procedures and tools that you can use to identify, investigate, and respond to threats or damaging events. Also, there is vulnerability management is a practice meant to reduce inherent risks in an application or system. The idea behind this practice is to discover and patch vulnerabilities before issues are exposed or exploited (Cassetto, 2022; Yee and Zolkipli, 2021).

In the case of unlawful influence or encroachment on information protection, it is also necessary to consider the characteristic features of the violation of such a legal regime. The first characteristic feature will highlight the structure of the offence and how widespread such a violation can be. The second feature will allow finding out the personal characteristics of subjects who might have encroached on information security to prevent such incidents in the future. And the last characteristic feature can be established, in which area of protected information can be problems with the violation of information security.

3 Results and discussion

Information, as well as ensuring its security, are one of the most important elements in the life of national policy and modern society. In the policy of the Republic of Kazakhstan, the definition of information security is fixed in Paragraph 5 of Article 4 of the Law of the Republic of Kazakhstan No. 527-IV 'On national security of the Republic of Kazakhstan' (2012), where this concept is interpreted as the state of security of the information sphere of the Republic of Kazakhstan, as well as the rights of a citizen and a person, society and the state in the field of information law, information security, information independence of the state and its continuous development are guaranteed, and is also one of the most important elements in the development of national security of the Republic of Kazakhstan. Article 15 of the Law of the Republic of Kazakhstan No. 527-IV 'On national security of the Republic of Kazakhstan' (2012) defines that the provision of information security is entrusted to specialised information bodies that are endowed with the powers that are controlled by this regulation. In the Republic of Kazakhstan, this body is the central executive authority, whose activity is the development of security, provision of the information space and infrastructure of the Republic of Kazakhstan. In addition, this body is entrusted with the powers in the field of development of regulatory legal acts and control over their implementation and compliance with these legal measures. Notably, this body in its activities is coordinated by the general provisions on ensuring national security, which is enshrined in Article 3 of the Law of the Republic of Kazakhstan No. 527-IV 'On national security of the Republic of Kazakhstan' (2012).

In addition, on the territory of the Republic of Kazakhstan, information law is regulated by other legislative acts. Thus, the Law of the Republic of Kazakhstan No. 401-V 'On access to information' (2015) allows defining the concept of information, the scope of application of information, the placement of information on various resources, and other provisions. In addition, Law of the Republic of Kazakhstan No. 418-V 'On informatization' (2015) allows disclosing the provisions of informatisation, its main goals in the state activity of the Republic of Kazakhstan, showing the responsibilities of subjects and the protection of objects of informatisation, and other provisions enshrined in this legislative act.

Due to the development of the information sphere, groups of information legal relations are beginning to form. The first group of legal relations is connected with the creation of an information source and its transformation; such objects can be of intellectual property or any information of both central and local self-government bodies, which is officially confirmed. The second group is a legal relationship that is related to the storage of information and its protection. The third group should be defined as one that transmits information to other entities and distributes it; a vivid example of such a group of legal relations in the information sphere can be represented by the mass media. The last group is related to the consumption of information resources. Notably, all these groups tend to overlap with each other, which means that these groups of information legal relations cannot be restricted from each other (Omirali et al., 2019).

Since information law is a complex branch of law, it is typical for it to use various methods to regulate legal relations in the information sphere. There is an opinion that the basis for regulating the legal relations of the information sphere is administrative law, which serves as a public branch of law. However, taking intellectual property as an example, it can be attributed to both civil and information law, and taking the institute of legal protection as an example, a branch of criminal law already appears there. These examples allow concluding that dispositive and imperative methods may be characteristic of the legal regulation of information law (Otasheva, 2018). Analysing the dispositive method of legal regulation of the information sphere, it is worth noting that it is characterised by independence in decision-making and equality of subjects involved in information legal relations. The imperative method of legal regulation is indicated by the fact that when choosing it as a regulator, the choice is limited or absent at all. With this method, non-compliance with certain requirements and obligations requires the imposition of sanctions in the form of punishment of the perpetrator or the use of coercive measures. In contrast to the dispositive method of legal regulation, the imperative one is characterised by the inequality of participants in information legal relations, as well as a rather strict and rigid model of behaviour of subjects in these legal relations of the information sphere.

It is necessary to consider a rather interesting question about the regulation of information legal relations in the labour law of the Republic of Kazakhstan. Previously, researchers argued that information relations were such legal relations that are related only to labour and are an integral part of them but at the moment there are beliefs that the existence of information in labour relations is conditioned upon the presence of labour relations or those that are related to labour (Nurgalieva and Syrlybaeva, 2020; Tomashevski and Yaroshenko, 2020). The labour law of the Republic of Kazakhstan currently considers the information sphere as such, which positions information relations as public, which can be regulated by the legal norms of labour legislation, and the subjects in these legal relations are those who can bear the rights and obligations of information law. In such a case, the subjects of information legal relations may be employees, employers, enterprises, bodies that can perform the function of control supervision in the sector of labour relations, as well as those bodies whose powers include the consideration of labour disputes. Referring to the objects of information relations in labour law, it should be mentioned that these objects are immaterial, that is, they do not represent economic value and cannot be separated from the subject as their bearer of rights and freedoms (Zhakupzhanov, 2017; Yaroshenko et al., 2020). Having analysed the Labor Code of the Republic of Kazakhstan (2015), it is worth mentioning first that the main content of information relations in this area are the rights and obligations of the subject. The rights of the subject include the rights to receive, access, process, and protect the received information and personal data. Now it is necessary to describe in more detail the fixed regulations to determine the mechanism of regulation of the information sphere in the labour.

Thus, for example, Article 22 of the Labor Code of the Republic of Kazakhstan (2015) establishes a provision on obtaining complete and reliable information about working conditions and labour protection, and this article also regulates the provision on the guarantee of protection of personal data held by the employer. Further, it is necessary to consider Article 23 of the Labor Code of the Republic of Kazakhstan (2015), which allows regulating such provisions as the employer's obligation to provide employees with complete and reliable information that is necessary for concluding a collective agreement and conducting negotiations of this kind, as well as the employer's obligation to warn an employee about the possible receipt of any diseases during the performance of their work duties or receiving harm during the performance of work duties, the employer's requirement for the conclusion of an employment contract of all necessary documents from the subject who plans employment. The provision on the obligation to keep commercial secrets by employees is also important; failure to fulfil this obligation entails the introduction of certain sanctions – the employee bears material responsibility together with the payment of the damage caused. Article 193 of the Labor Code of the Republic of Kazakhstan (2015) contains a provision on the requirement and receipt by state bodies in the field of control of all necessary documents from employers and their employees, as well as the right to send the information received to the courts by state bodies. In addition, the Labor Code of the Republic of Kazakhstan (2015) provides for provisions on information law on the consideration of individual and collective labour disputes. Notably, information legal relations in the field of labour law accompany all objects of labour law and the norms arising from it. Due to the analysis of the fixed regulatory norms, it can be concluded that the duties of the information sphere in labour law are regulated by the Labor Code of the Republic of Kazakhstan (2015), which states the rights and obligations of both employers and employees, as well as specialised state control services.

The development of the information sphere of the Republic of Kazakhstan has both state and public interest. Considering the first one, it is worth noting that due to the development of the information sphere, national policy can systematise the legal mechanism in this area and issue legislative acts that will comply with international standards; further, an important element in the development of such a sector is the system of control of information institutions; the development of the informatisation process through national policy, the introduction of such a process in all areas, in particular, in the field of staffing. Considering the second type of interest in the development of the information sphere, that is, the public, the development of a democratic policy in relation to society to the state is noted; education and strengthening of such qualities as patriotism, education, and respect for spiritual and cultural values. It should be mentioned that the main task of the national policy in the field of information legal relations is to ensure the protection of secrets of all kinds for the subjects of such legal relations. And this will be one of the problems of information legislation since it tries to regulate and guarantee information of absolutely all kinds, which is practically impossible. As a result, there is an increase in inertia in legal relations between the state and society, a decrease in the financing of information structures due to a decrease in the level of activity of subjects of information legal relations (Babak et al., 2020b).

Therefore, for this problem to be resolved, it is quite important in national policy to correctly prioritise ensuring and guaranteeing the security of the information sphere, as

well as to motivate the subjects of information legal relations in the prospect of creating a non-governmental body to support security in the information sphere, whose activities can also be coordinated with public authorities The inclusion of non-governmental organisations in ensuring security in the information sphere provides solutions to many important tasks. This provides an opportunity for the public to participate in decision-making on information security issues; ensures the process of involving citizens in solving information security problems. The functioning of the state information security system with the support of non-governmental organisations can be carried out by involving such organisations in establishing an effective infrastructure for the information security of the state. Also, similar organisations can engage in coordination activities for prevention and forecasting phenomena in the sphere of influence on information security. Facilitation of non-governmental organisations' involvement in the experience of international cooperation in the field of ensuring information security, as well as the involvement of organisations in the development and discussion of proposals for changing the regulatory framework in the field of ensuring the information security of the state (Khanov and Zhienbekov, 2016; Ginters, 2020).

It is worth considering a rather interesting position of the Government of the Republic of Kazakhstan on the creation of an 'open government'. The concept consists of government bodies' reporting on their decisions, as well as the effectiveness of decisions taken, open access to government data information, which should be based on the principles of transparency and accountability (Kolesnikov and Pazhetnykh, 2018; Stepanchuk et al., 2020). The Government Program 'Informational Kazakhstan – 2020' (2021) was implemented on the territory of the Republic of Kazakhstan. The main purpose of the program is the transition of the Republic of Kazakhstan to the information society, to provide information infrastructure, to improve the efficiency of the public administration system, to increase key indicators, including the share of public services in electronic format, the index of 'electronic government', the level of computer literacy of the population, and other indicators. This state program was implemented in several stages. First of all, the tasks of improving public administration were solved, the level of accessibility of information infrastructure was increased, 'mobile government', access to e-health, educational process, and other things were developed and made available (Lavrov et al., 2020).

Further, the control carried out by state bodies in the field of business has been improved, the purpose of which is to increase the efficiency of the provision of public services. An important part of the Kazakh program is also the provision of specialised courses to improve the computer literacy of subjects in various fields. A special online platform was also created, due to which the subjects of information legal relations have the right to receive consultations or state and non-state services in electronic format. The aforementioned healthcare system has also been reformed as a result of this state program, and now subjects have the right to receive consultations in electronic format. The result of the Government Program 'Informational Kazakhstan – 2020' (2021) on the territory of the Republic of Kazakhstan was the availability of information infrastructure, the receipt of consultations by subjects from state bodies, and the index of 'electronic government' was increased.

One of the integral parts of the 'information society' is the 'electronic government', which operates on the basis of the information infrastructure of public authorities, ensuring the effective implementation of most functions of public administration and,

first of all, focused on the interaction of the state apparatus with citizens and business structures on the basis of information -communication technologies (Nurgaliyeva et al., 2021). E-government refers to the development and use of information and communication technologies (ICTs) with the aim of streamlining the delivery of public services to citizens, businesses, and public agencies. Recently, it has become a life-sustaining means for managing a crisis due to its ability to improve service delivery, leadership, communication, and collaborative efforts (Khan et al., 2021).

In Kazakhstan 'e-government' means a public system of governance based on information and communication infrastructure aimed at timely and high-quality public service. It is a system of interaction among government agencies, the public and business using modern electronic technologies, designed to reduce administrative constraints and decrease the number of physical visits by citizens to public institutions. One problem leading to failures in the implementation process is using the top-down policy creation approach. Thus, Kazakhstan should apply the citizen-centric approach to increase the readiness of the population to use the tools of digital government and improve their satisfaction (Bokayev et al., 2021).

To understand the legal mechanism of regulation of the information sphere and the information law of the Republic of Kazakhstan in general in more detail, it is necessary to first identify the methods that can be used to regulate the information sphere. At the moment, there are some problems in the Republic of Kazakhstan related to the functioning of the information sphere, as well as guaranteeing its security. Thus, the most important problem area is the imperfection of the legislative framework and the conflicts arising in it. Another equally important problem is the lack of Kazakh-made information technologies. These forces the acquisition of information technologies produced in other countries, which, in turn, do not have any confirmation according to the requirements of information security, which considerably undermines the confidentiality of databases and data banks, and other objects carrying information. In addition, a considerable problem is the low level of provision with qualified specialists and the field of information security protection (Polomarchuk, 2021). Thus, it is necessary to highlight the principles on which the information security of the Republic of Kazakhstan should be based. As discussed earlier, an important element in the development of the information sphere should be the availability and openness of information about the activities of central authorities and local self-government. Another important aspect is the comparison of all interests, that is, the interests of the state, social, material, spiritual, personal, and public; for such an important and difficult step, systematic work is required. And the last but not least aspect is the creation of its own concept with a suitable hierarchy of priorities for the Republic of Kazakhstan, which will be created by the working personnel who aim to push the state to a new information level.

The constant development of ICTs generates a new process in the territory of the Republic of Kazakhstan – informatisation. Informatised society is presented as a society characterised by the presence of highly developed technologies, infrastructure, whose activity consists in the automation and computerisation of organisational structures and industries (Lavrov et al., 2019). This process has a huge potential in the future since it allows creating an open system with major changes in the social sphere. The phenomenon and the great excitement around this area lies in the ever-changing processes of introducing new information technologies. The process of informatisation allowed affecting all spheres of social life, and, due to this, educational reform was carried out in the Republic of Kazakhstan. The reform introduced new teaching methods, electronic

journals, an online educational system, and much more, which considerably changed the structure, volume, and content of educational materials and subjects. In addition, the process of informatisation has considerably changed the healthcare system. The most important change is the Symptomaster (2021). This is a platform developed in the Republic of Kazakhstan, which, due to the introduction of symptoms of the disease by a registered user, according to the algorithm, shows a presumptive diagnosis and then prescribes the process of further examination and treatment.

Another relevant issue in the study of legal regulation is the process of introducing the digital economy into all spheres of life. The process of 'digitalisation' implies the introduction of digital technologies in all spheres and it is connected with the processes of globalisation and the Fourth Industrial Revolution. At the moment, attention should be paid to the problems of the information sphere that arise as a result of constant changes due to the digitalisation process. The main areas in which problems manifest themselves are the economic sphere, the sphere of science, education and technology, the sphere of state and public security. Considering the first, economic sphere, the main problem is determined by dependence on information technologies that have been produced in other countries; in the field of science, education, and technology, it is necessary to consider a problem of a low level of citizens' computer literacy and awareness of the security of personal information, as well as a low percentage of information security personnel and the introduction of developments; the sphere of state and public security carries the problem of increasing the level of use of the information sphere to damage and harm the stability of the state, its independence, and territorial integrity (Lopatin, 2019).

These problems have arisen due to the fact that at the moment, the information sphere is in a critical state, as a result of which the loss of information sovereignty of both the individual and the state is possible, as well as the inefficient use of the legal mechanism for regulating the information sphere, in particular, for the introduction of security by legal means to gain access to confidential information. The main reasons that lead to problems related to the effective functioning of the information sphere include the absence of international legal acts that could regulate the relations of the information sphere at the interstate level, the desire of various countries to use their information resources to occupy dominant positions in the field of information relations, as well as distributed resources between states, as a result of which there is no possibility of using them all together to ensure information security. It is necessary to consider the risk ratios of intellectual property depending on the level of the digital economy. At the first level of digitalisation, which is based on economic spheres where there is interaction between subjects, the risk of the absence of an intellectual property market in general increases, as well as an increase in the level of competition in an unfair nature, monopolisation of the market, and a ban on anti-monopolisation of intellectual property (Tumanyan, 2019).

The second level of the digital economy, which forms the development of markets and sectors of the economy, will be based on the creation of risks in the use of other people's software, which will increase the level of computer illiteracy and undermine the confidentiality and protection of intellectual property. The third level of the digital economy, which allows creating 'hothouse' conditions for the development of technologies, will create a risk for intellectual property in lowering the level of legal literacy on the regulation of intellectual property issues and lower the level of workers who may be competent in the field of intellectual property regulation (Aliev, 2018). For the above problems not to interfere with effective activities in the information sphere and

try to reduce their percentage or eradicate them altogether, certain reforms are required. Firstly, attention should be paid to the adjustment of strategies and state programs, focusing exclusively on the resources and budgetary capabilities of the state. Further, it is necessary to consider the possibility of creating a single space of the economic sphere with interstate cooperation, which will combine the resources of each state in one area and create a powerful mechanism for the development of the information sphere. And, last but not least, the elimination of conflicts of legislation, to regulate the fixed legal norms to increase the effectiveness of the mechanism of regulation of the information sphere in modern digital processes.

4 Conclusions

Having done research in the field of studying the legal mechanism for regulating responsibilities in the information sphere, which was based on both the study of theoretical and practical aspects, several key conclusions were made. First of all, the concept of information law was identified, which defines the branch of law that regulates actions arising in the information sphere, which are directly related to the circulation of information and its resources. In addition, according to some scientists, information law can also be considered as a sub-branch of administrative and civil law. Having considered this as a branch of law, it is necessary to highlight the existence of an independent subject of legal regulation, its own terminology, which highlights the basic principles and features for the functioning of information law, as well as the use of only those methods that will be characteristic in the regulation of information law.

The most important stage in the research was the study of regulatory legal acts that allow identifying the legal mechanism for regulating the responsibilities of the information sphere of the Republic of Kazakhstan. Thus, one of the objects of research was the labour law of the Republic of Kazakhstan, and in particular, the study of labour law norms, due to which it is possible to consider the regulation of duties. For example, this is a provision on employees' obligation to keep trade secrets, failure to comply with which entails the introduction of certain sanctions – the employee bears material responsibility together with the payment of the damage caused. In addition, the subject of the research was the development of the process of informatisation and digitalisation in the territory of the Republic of Kazakhstan. Due to the research, the main areas in which problems are manifested as a consequence of these new processes were identified, namely the economic sphere, the sphere of science, education and technology, the sphere of state and public security. Possible steps that will be able to resolve emerging problems and improve the efficiency of the information sphere were considered.

It was approved to improve the efficiency of the program is the transition of the Republic of Kazakhstan to the information society, to provide information infrastructure, to improve the efficiency of the public administration system, to increase key indicators, including the share of public services in electronic format, the index of 'electronic government', the level of computer literacy of the population, and other indicators. The result of the Government Program 'Informational Kazakhstan – 2020' (2021) on the territory of the Republic of Kazakhstan was the availability of information infrastructure, the receipt of consultations by subjects from state bodies, and the index of 'electronic government' was increased.

References

- Abdymomynov, G. (2019) 'Prerequisites for the formation of information law in Kazakhstan', in *VI International Congress of Young Scientists*, Eurasian Technological University, Almaty, pp.34–36.
- Aliev, S.B. (2018) 'Problems of Eurasian integration and the practice of solving them in the work of the EEC', in Lopatin, N.V. (Ed.): *Tenth International Forum 'Innovative Development through the Intellectual Property Market'*, Russian Academy of Sciences, Moscow, pp.221–223.
- Antipov, A.A. and Grishanova, E.M. (2017) 'Information law as an important factor in the security and protection of information', *Economy and Quality of Communication Systems*, Vol. 3, No. 1, pp.88–98.
- Babak, V.P., Babak, S.V., Myslovych, M.V., Zaporozhets, A.O. and Zvaritch, V.M. (2020a) 'Methods and models for information data analysis', *Studies in Systems, Decision and Control*, Vol. 281, No. 1, pp.23–70.
- Babak, V.P., Babak, S.V., Myslovych, M.V., Zaporozhets, A.O. and Zvaritch, V.M. (2020b) 'Simulation and software for diagnostic systems', *Studies in Systems, Decision and Control*, Vol. 281, No. 1, pp.71–90.
- Bokayev, B., Davletbayeva, Z., Amirova, A., Rysbekova, Z., Torebekova, Z. and Jussupova, G. (2021) 'Transforming e-government in Kazakhstan: a citizen-centric approach', *Innovation Journal*, Vol. 26, No. 1, pp.1–21.
- Buil, R., Piera, M.A., Gusev, M., Ginters, E. and Aizstrauts, A. (2015) 'MAS simulation for decision making in urban policy design: bicycle infrastructure', in *International Conference* on Harbour, Maritime and Multimodal Logistics Modelling and Simulation, I3M Conference, Bergeggi, pp.95–102.
- Cassetto, O. (2022) *Information Security (InfoSec): The Complete Guide* [online] https://www.exabeam.com/information-security/information-security/ (accessed 19 September 2022).
- Ginters, E. (2020) 'New trends towards digital technology sustainability assessment', *Proceedings of the World Conference on Smart Trends in Systems, Security and Sustainability*, Vol. WS4, No. 1, pp.184–189.
- Government Program 'Informational Kazakhstan 2020' (2021) [online] https://egov.kz/cms/ru/articles/gp inf kaz 2020 (accessed 15 March 2022).
- Kakizhmanov, M.T. and Mamyrbaeva, Z.A. (2018) 'Administrative and legal regulation of information security in the Republic of Kazakhstan', in Au, T.I. (Ed.): Theoretical, Legal and Law Enforcement Issues of Improving the Legislation of the Republic of Kazakhstan in the Conditions of the Fourth Industrial Revolution: Materials of the International Scientific and Practical Online Conference, Karaganda University of Kazpotrebsoyuz, Karaganda, pp.60–67.
- Khan, A., Krishnan, S. and Dhir, A. (2021) 'Electronic government and corruption: systematic literature review, framework, and agenda for future research', *Technological Forecasting and Social Change*, Vol. 167, No. 1, pp.1–19.
- Khanov, T.A. and Zhienbekov, Z.A. (2016) 'Information security system', *Actual Problems of Our Time*, Vol. 2, No. 1, pp.37–43.
- Khussain, B.K., Vinnikova, K.K., Kumarov, Y.Y., Meirbek, Z.D. and Khussain, A.B. (2020) 'Import substitution of software for digitalization of industry in the Republic of Kazakhstan', News of the National Academy of Sciences of the Republic of Kazakhstan, Series of Geology and Technical Sciences, Vol. 3, No. 441, pp.204–207.
- Kolesnikov, E.V. and Pazhetnykh, D.V. (2018) 'Constitutional foundations for the development of information rights of citizens in the Russian Federation and the Republic of Kazakhstan', Interaction of Government, Society and Business in the Development of the Digital Economy, Vol. 3, No. 1, pp.66–71.

- Kostadinov, D. (2020) *Key Elements of an Information Security Policy* [online] https://resources. infosecinstitute.com/topic/key-elements-information-security-policy/ (accessed 19 September 2022).
- Labor Code of the Republic of Kazakhstan (2015) [online] https://online.zakon.kz/Document/?doc id=38910832 (accessed 16 March 2022).
- Lavrov, E., Barchenok, N., Lavrova, O. and Savina, N. (2019) 'Models of the dialogue 'human-computer' for ergonomic support of e-learning', 2019 3rd International Conference on Advanced Information and Communications Technologies, AICT 2019 Proceedings, No. 1, pp.187–190.
- Lavrov, E., Pasko, N. and Siryk, O. (2020) 'Information technology for assessing the operators working environment as an element of the ensuring automated systems ergonomics and reliability', *Proceedings 15th International Conference on Advanced Trends in Radioelectronics, Telecommunications and Computer Engineering, TCSET 2020*, No. 1, pp.570–575.
- Law of the Republic of Kazakhstan No. 401-V 'On access to information' (2015) [online] https://online.zakon.kz/Document/?doc id=39415981 (accessed 18 March 2022).
- Law of the Republic of Kazakhstan No. 418-V 'On informatization' (2015) [online] https://online.zakon.kz/Document/?doc id=33885902 (accessed 18 March 2022).
- Law of the Republic of Kazakhstan No. 527-IV 'On national security of the Republic of Kazakhstan' (2012) [online] https://online.zakon.kz/Document/?doc_id=31106860 (accessed 19 March 2022).
- Lopatin, V.N. (2019) 'Problems of innovation law in the digital economy', *Law and State*, Vol. 1, No. 1, pp.40–56.
- Mikelova, T.A. (2017) 'Information law as a complex branch of law', in Chernov, S.S. (Ed.): Priority Research Areas and Critical Technologies: Collection of Materials of the II International Scientific and Practical Conference, Tsentr Razvitiya Nauchnogo Sotrudnichestva, Novosibirsk, pp.146–151.
- Nurgalieva, E.N. and Syrlybaeva, F.M. (2020) 'Informational legal relations in Kazakhstani labor law', *Science*, Vol. 1, No. 1, pp.25–29.
- Nurgaliyeva, A., Kenzhetayeva, G., Shafeyeva, L., Akhmetova, D. and Beisembina, A. (2021) "Electronic government' in the public administration system', *Bulletin the National Academy of Sciences of the Republic of Kazakhstan*, Vol. 5, No. 1, pp.82–89.
- Omirali, Z.O., Omirali, A.O. and Darkhambaeva, A.D. (2019) 'Analysis of the legal regulation of information security of the Republic of Kazakhstan', *Colloquium Journal*, Vol. 25, No. 1, pp.4–6.
- Otasheva, G.Z. (2018) Legal Informatization in the New Reality [online] http://www.zqai.kz/ru/massmedia/pravovaya-informatizaciya-v-usloviyah-novoy-realnosti (accessed 20 March 2022).
- Polomarchuk, B.V. (2021) 'The problem of ensuring information security of the Republic of Kazakhstan', *The Scientific Heritage*, Vol. 70, No. 1, pp.52–55.
- Stepanchuk, O., Bieliatynskyi, A. and Pylypenko, O. (2020) 'Modelling the bottlenecks interconnection on the city street network', *Advances in Intelligent Systems and Computing*, AISC, Vol. 1116, No. 1, pp.889–898.
- Symptomaster (2021) [online] https://www.symptomaster.com/client/ (accessed 21 March 2022).
- Tomashevski, K. and Yaroshenko, O. (2020) 'Problems of labour legislation codification in Belarus and Ukraine: history, current situation and prospects', *Transition Studies Review*, Vol. 27, No. 2, pp.41–49.
- Tumanyan, Y.R. (2019) Digitalization of the Economy as a Factor in Stimulating Economic Growth and Solving Social Problems [online] https://cyberleninka.ru/article/n/tsifrovizatsiya-ekonomiki-kak-faktor-stimulirovaniya-ekonomicheskogo-rosta-i-resheniya-sotsialnyh-problem (accessed 22 March 2022).

- Volodina, E.E. and Devyatkin, E.E. (2016) 'Internet of things: trends and development prospects', in *Mobile Business: Prospects for the Development and Implementation of Radio Communication Systems in Russia and Abroad. Collection of Materials of the 38th International Conference of the Russian Academy of Natural Sciences*, NIRIT, Moscow, pp.16–17.
- Yaroshenko, O.M., Vapnyarchuk, N.M., Burnyagina, Y.M., Kozachok-Trush, N.V. and Mohilevskyi, L.V. (2020) 'Professional development of employees as the way to innovative country integration', *Journal of Advanced Research in Law and Economics*, Vol. 11, No. 2, pp.683–695.
- Yee, C.K. and Zolkipli, M.F. (2021) 'Review on confidentiality, integrity and availability in information security', *Journal of ICT in Education*, Vol. 8, No. 2, pp.34–42.
- Zhakupzhanov, A.O. (2017) 'The current state of legal regulation in the field of informatization in the Republic of Kazakhstan', *Science*, Vol. 2, No. 1, pp.91–96.