

5.3 Legal Foundations of the Development of Information Technologies and Ensuring Information Security

World practice of developed countries in the information era at the turn of the twentieth and twenty-first centuries shows that a major orientation of their official policy is the attainment of leading positions through the active use of information technologies. Attention should also be drawn to the fact that various countries consider information technologies, especially “e-trade”, “e-management”, “e-business”, and others, not to be isolated spheres of activity, but as an integrated and mutually-dependent aggregate of these technologies and as major components of the unified foundation of transition to an information society and to a new economy.

Science and practice in this sphere extensively use terms: “information technologies”, “information-communications technologies”, “computer technologies”, “digital technologies”, and others. In practice these concepts primarily are used to define identical socio-economic phenomena, but more commonly in the context of this study is the term “information technologies”. The role of the said technologies comes down, as a rule, to these basic orientations:

(a) information technologies act as a branch of material production. This approach is concentrated on ensuring a policy of the development of production, distribution, exchange, and consumption with the use of information technologies (production-infrastructure approach);¹

(b) information technologies are the catalyst of the development of an information society (especially, the economy). This approach contemplates the adoption of a general strategy which affects a large number of sectors of the economy with a view to maximal informatization of the economy and society (conceptual-political approach);

(c) information technologies are one element of a general legal conceptual system which includes information resources, information systems, and the like (a “united” approach under which concepts are not separated, the definitions of which are given either one after another or combined in a system, the elements of which are very difficult to separate);

(d) information technologies are a separate object of legal regulation, which provided for the application of norms of civil-law relations to them.

It is necessary to emphasize the fact that the concepts “information system”, “information network”, “information technology”, and “information infrastructure” do not have precise definitions in national legislation or in international legal acts.²

At the same time, such a definition has been given by the legislation of Ukraine: “information technology is the targeted organized aggregate of information processes with the use of computer technology which ensure great speed in data processing, rapid information search, dispersion of data, and access to sources of information irrespective of the location thereof”.³

It needs to be stated that controversial issues remain in information law with regard to the structure of the concept of “information technology” and legal provision for social relations relating to information technologies.

The legislation of Ukraine also does not provide a definition of the concept “information process”; therefore, we suggest to take this variant as the basis: “information process is the process of the collection, processing, accumulation, storage, search for, and dissemination of information”.⁴

Proceeding from these definitions, there should be relegated to the basic objects of information technologies: information (data also is information, but in a formalized form suitable

¹ Carr (b. 1959) came to the conclusion that under contemporary conditions information technologies operate as a generally-accessible infrastructure of business. See Nicholas G. Carr, *Does IT Matter? Information Technology and the Corrosion of Competitive Advantage* (2004).

² I. L. Vachilo, *Информационное право: основы практической информации* [Information Law: Fundamental Principles of Practical Informatics] (Moscow, 2001), p. 93.

³ Відомості Верховної Ради України [Gazette of the Supreme Rada of Ukraine] (1998), no. 27-28, item 181, as amended.

⁴ A. G. Dodonov, D. V. Lande, and V. G. Putiatyn, *Компьютерные информационно-аналитические системы: Толковый словарь* [Computer Informational-Analytical Systems: Interpretative Dictionary] (Kyiv, 2011).

for automatic processing without the participation of a person or automated, with the participation of a person); computer technology; respective program milieu; means of dissemination of information and access thereto, irrespective of the location. The subjects of information technologies may be divided into these groups: subjects which organize and develop information technologies and means of the provision thereof, and also subjects which exploit and use objects of information technologies.

The informational needs of man, society, and the State are the moving force for the creation and development of information technologies. Two principal groups of components of information technologies may be singled out:

(1) infrastructure, which ensures the processes of the collection, processing, accumulation, dispersion, preservation, search for, and dissemination of the information;

(2) information relations, which arise in connection with the application of these technologies.

The legal base for the development of information technologies in the sphere of the creation and development of the respective infrastructure comprise the Laws of Ukraine: “On the Conception of the National Informatization Program”; “On the National Informatization Program”; “On Telecommunications”; “On the National System of Confidential Communications”; “On the Radio Frequency Resources of Ukraine”; “On Priority Orientations of the Development of Science and Technology”; “On the State Regulation of Activity in the Sphere of Technology Transfers”; “On Priority Orientations of Innovation Activity in Ukraine”; “On State Targeted Programs”; “On Innovation Activity”; “On the Special Regime of Innovation Activity”; “On the General State Complex Program for the Development of High Science-Intensive Technologies”; “On the Fundamental Principles of the Development of an Information Society in Ukraine from 2007 to 2015”; “On State Support for the Development of the Program Product Industry”; and others, together with the Regulation of the Cabinet of Ministers of Ukraine “On Confirmation of the Plan of Measures on Introducing in Ukraine the ‘Open Government’ Partnership”,⁵ and others.

Information technologies, as has been noted, are inextricably linked with social relations in the information sphere, and also materially influence their formation, development, and transformation.

Information relations arising during the creation and development of contemporary information technologies, especially, are regulated by laws of Ukraine “On Information”; “On Printed Mass Media (Press) in Ukraine”; “On Advertising”; “On Electronic Documents and Electronic Circulation of Documents”; “On Electronic Digital Signature”; “On the Defense of Information in Informational-Telecommunications Systems”; “On the Defense of Personal Data”; “On Access to Public Information”; “On Scientific-Technical Information”; “On State Secrecy”; “On State Statistics”; and other legal acts. An analysis thereof enables these basic conclusions to be drawn:

(1) The foundation for the development and legal regulation of social relations connected with information technologies is the 1996 Constitution of Ukraine. The Constitution contains a number of normative provisions which establish the basic rights and duties of participants of information relations;

(2) The creation, introduction, and application of information technologies entails the emergence in traditional law of objects and subjects of legal relations characteristic of the information sphere. Relations arising in connection therewith require adequate legal regulation. The said social relations which imbue now virtually all branches of human activity, society, and the State are an impulse which influences the development of information legislation;

(3) The regulation of legal relations in the information sphere of Ukraine under conditions of a headlong development of information technologies remains a rather new and complex problem. This is connected primarily with the fact that the normative base of this sphere, on one hand, so far

⁵ Урядовий кур’єр [Governmental Courier], no. 76 (26 April 2012); no. 194, 24 October 2012.

is formed for “stable” relations in society and, on the other hand, the stormy origin of new relations which are characterized by significant existing and potential contradictions.⁶

These contradictions to a significant degree also form legal contradictions. Therefore, a situation exists when adopted normative-legal acts do not always correspond to the complexities and diversity of real processes; there is no time for their rapid development or the origin of new in principle phenomena in the life of society, the State, and the international community.

The factors and trends in the development of contemporary society, especially mass informatization and accelerated introduction of information relations in the entire sphere of activity of man, the State, and society have changed the significance of the information infrastructure, imparted to it a system-forming quality which relates to contemporary indicia of the information sphere and relations forming in this sphere.

To such qualities should be relegated topicality, significant complexity, and structured nature of objects of information relations, great speed of changes and renewals, and the heterogeneity of the subject-matter of regulation. This makes urgent the problem of creating a new aggregate of legal norms which should operationally reflect the real processes and to a certain degree anticipate them.

At the same time, the origin and development of information law should not only take practice into account, but also the fundamental principles of the theory of law and State, cybernetics, information theory, and others.

(4) A precise definition of the objects and subjects of law is determinative for the creation and improvement of the legal foundations of the development of information technologies, proceeding from the essence of phenomena, processes, procedures, and so forth. The results of scientific studies⁷ of the essence of information relations and information technologies rather fully point to this problem.

The use of market regulators, on one hand, and the need to recognized the result thereof as creative activity, on the other, is the basic approach for defining information technologies and the further development of their normative-legal provision.⁸

A characteristic indicator of recognition of information and communications technologies as a product or a good is the initiative to liberalize customs tariffs: the 1996 Information Technology Agreement signed on 13 December 1996 in the course of a conference at Singapore by representatives of 56 States. On the whole State regulation in the sphere of the development and application of information technologies provides for:

(1) the development of information systems of various designation in order to provide citizens (natural persons), organizations, State agencies, and agencies of local self-government with information and also to ensure the interaction of such systems;

⁶ United Nations General Assembly Resolution No. 65/141, of 2 February 2011, recognized that: “...information and communications technologies present new opportunities and challenges and that there is a pressing need to address the major impediments that developing countries face in accessing the new technologies, such as insufficient resources, infrastructure, education, capacity, investment and connectivity and issues related to technology ownership, standards and flows, and in this regard calls upon all stakeholders to provide adequate resources, enhanced capacity-building and technology transfer, on mutually agreed terms to developing countries, particularly the least developed countries” (point 7).

⁷ V. G. Pylypchuk (ed.), Інформаційне насильство та безпеки [Information Violence and Security: Ideological and Legal Aspects] (Kharkiv, 2011); O. A. Varanov, Інформаційна інфраструктура: проблеми регулювання діяльності [Information Infrastructure: Problems of Regulation of Activity] (Kyiv, 2012); O. P. Dz'loban', Філософія інформаційного права: світоглядні й закладнотеоретичні засади [Philosophy of Information Law: Ideology and Fundamental Theoretical Foundations] (Kharkiv, 2013); Pylypchuk, «Актуальні проблеми становлення і розвитку правової науки в інформаційній сфері» [Topical Problems of the Origin and Development of Legal Science in the Information Sphere], Інформація і право [Information and Law], no. 2 (2012), pp. 39-47; Baranov, Інформаційне право України: стан, проблеми, перспективи [Information Law of Ukraine: Origin, Problems, Perspectives] (Kyiv, 2005); and others

⁸ The World Intellectual Property Organization (WIPO) has made its own contribution to forming a general definition of the concept “technology”, having provided that this may be expressed in an invention, industrial design, utility model, technical information, service, or assistance, and so on.

(2) the creation of conditions for the effective use of information and communications networks, including the Internet;

(3) the regulation of relations relating to the search for, obtaining, transfer, production, and dissemination of information with the use of information technologies (informatization) on the basis of principles established by legislation of Ukraine.

The content of the legal regime with regard to the regulation of social relations in the sphere of the creation and use of information products or rendering of information services, and also relations connected with information technologies and information networks, is considered to be the triad “information – information technology – system of communication”. The very process of providing information requirements for various information consumers also combined information technologies, information systems, and information communications. In the broad understanding, information infrastructure contains many components – personnel, organizational (management system), production, and others. At the same time, these three components suffice to define the essence of the subject-matter of legal regulation of the information infrastructure.

The greatest attention in legal studies of information relations is devoted to information resources, the right to information, the regulation of the activity of various groups of subjects of information relations, and the creation and use of information systems. A subject is situated between a specific information resource and the consumer thereof on which the manufacture and delivery of an information product depends and which effectuates the turnover of this product with the assistance of information technology.

The Organization of Economic Cooperation and Development (OECD) in 1998 gave a definition of the concept of information and communications technologies as technologies using micro-electronic means for the collection, storage, processing, search, transfer, and provision of data, texts, models, and sound.⁹

Another definition is given in model legislation of the Commonwealth of Independent States: “information technology is the organized aggregate of processes, elements, structures, or methods which are used for the processing of information”.¹⁰ Three constituent concepts of “information technology” are defined: (1) objects, actions, and rules; that is, subject-matter and form of their presentation; (2) preparation, processing, and delivery of information; that is, functional-targeted characteristics; (3) all technologies and branches active in these processes; that is, structural ensuring of the production itself and activity of producers of technologies.

Having regard to the said elements, the legal regulation of relations in the sphere of information technologies should encompass the entire aggregate thereof in accordance with the stages of the life cycle of the product: authorship; functional sphere of use; type of production – experimental, series, mass; inclusiveness in the sphere of exchange and use, and so on. It is important to ensure the legal regulation of the creation and further use of information technologies. This enables one to define legislatively information technologies as “programs and program provision for systems of computer technology which include certain actions and certain rules for their use”.¹¹

Therefore, the legal regime of information technologies as a complex legal institution should establish the bindingness of determining the forms for the submission of a technological product, forms of ownership and exclusive rights, categories of access and means of defense, and also to make provision for the use of methods and means of civil law, including the defense of intellectual property and advancement of public law means and methods (constitutional, administrative, criminal, and others).¹²

⁹ OECD (1998), DSSTI/ICCP/AH/M(98) 1/Rev 1.

¹⁰ Recommendatory Legislative Act “On Principles of the Regulation of Information Relations in States-Participants of the Inter-Parliamentary Assembly”, 23 May 1993. ИБ МПА СНГ [Information Bulletin of the Inter-Parliamentary Assembly of the CIS], no. 3 (1993).

¹¹ Bachilo, note 2 above, p. 125.

¹² Ibid., pp. 130-131.

An information technology does not function in and of itself, but only in aggregate with information and a certain infrastructure. This aggregate should be comprehended as an “information system”. But there are certain disagreements with the definition of this term.

In drawing attention to the fact that an equivocal definition exists in the information legislation of Ukraine, Baranov suggests the following definition: “an information system is the organized aggregate of enterprises, subdivisions, and specialists, a complex of organizational-technical measures, information technologies and resources intended to ensure information processes, in particular, ensuring the creation, dissemination, use, storage, and destruction (or utilization) of information”.¹³

Bachilo proposed another definition: “in the narrow sense an information system is the aggregate of technical program and other means combined structurally and functionally for the purpose of ensuring one or several types of information processes and providing information services”.¹⁴ At the same time, he drew attention to the distinctions between the substantive and the legal definitions of the terms “information system” and “system of information”. In particular to the fact that a “system of information” is primarily a resource, an aggregate of information, separated out according to individual indicia, whereas an “information system” is a system for processing information on the basis of separated programs and other means of automated processing and circulation of information, a system of communications.¹⁵ The very information system works solely under conditions of being filled by an information resource.¹⁶

As noted in some scholarly works, an information system is a complete infrastructure, organization, personnel, and components which take part in the collection, processing (or change, renewal), storage, transfer, demonstration, and dissemination of information.¹⁷

Lopatin in defining an information system as the aggregate of information and technologies for the creation, collection, processing, accumulation, storage, search, dissemination, and consumption of information considered it also to be a technical system that represents the aggregate of technical, program, and other means combined structurally and functionally to ensure one or several types of information processes and the provision of information services.¹⁸

To the basic indicia of an information system are relegated: fulfillment of one or several information functions; unity of the system (single file system, unified standards and protocols, single management or administration, and so on); possibility of composition and decomposition of objects of the system when fulfilling the functions given; compatibility with other systems in information space. Among the basic requirements for information systems there are: effectiveness (measures by the correlation of “losses – results”); quality of functioning (conformity of system to functions given); reliability, security.¹⁹

When defining the subject-matter of legal regulation of relations connected with objects in the form of information systems, one should take into account that:

(1) because an information system contains three elements: information product, information technologies, and means of communication, legal mechanisms are carried over to this system which regulate individual elements thereof. Simultaneously, an information system as a complex and targeted combination becomes an object of legal regulation of the highest level;

(2) issues of legal regulation of an information system, having regard to the differences between its technological and organizational components, are resolved by various legal means. The technological part of the system is regulated by primarily standards and technical rules (reglements). Requirements for the registration of the system and certification of the system and the

¹³ Baranov (2005), note 7 above, p. 98.

¹⁴ В. Н. Торпорнин (ed.), Информационное право [Information Law] (2d rev. ed.; Spb., 2005), p. 106.

¹⁵ Bachilo, note 2 above, p. 115.

¹⁶ Just as vaguely defined as the concepts “data base” and “data bank”.

¹⁷ Статистичний щорічник України за 2002 рік [Statistical Yearbook of Ukraine for 2002] (Kyiv, 2003), pp. 544-548.

¹⁸ V. N. Lopatin, Информационная безопасность России: Человек. Общество. Государство [Information Security of Russia: Man, Society, State] (Spb., 2000), p. 258.

¹⁹ Bachilo, note 2 above, pp. 106-108.

establishment of regulations which confirm its capacity to work in a determined regime are a similar element of this legal regime.

Regulation of the organizational part of the system requires additional legal mechanisms besides the mechanisms for the regulation of the system as a whole and all of its elements. This is primarily the determination of the legal status of the system (for example, the cadaster and the register), and also the application of mechanisms of civil law (contracts, mechanisms for the provision of services), and mechanisms of public and administrative law (reports, records, and so on). On the system itself which operates in a certain organizational form such as a juridical person is placed particular obligations and responsibility for their violation.

Regulations and standards are an integral element of legal provision for the creation and functioning of an information system and information technology. In connection in 2001 with the adoption of a number of laws in the sphere of standardization and certification, necessary measures are being implemented with a view to the modernization of the national system of standardization and adaptation of the institutions comprising it to contemporary requirements. At the same time, standards in the sphere of information relations are considered and confirmed rather slowly.²⁰ The need to accelerate standardization not only of technical means and protocols is urgent, but also information and communications technologies, information goods and services, especially to ensure the entry into international transactions.

The above points to the need to:

(1) more precisely define the elements of an information technology as an object of information legal relations and draft a single definition of the term “information technology” for the application thereof in normative-legal acts;

(2) unify the concept of information technology at the level of legislation, taking into account scientific and international aspects.

By virtue of their essence, questions of the creation, functioning, and development of information technologies as elements of information systems and contemporary information relations are integrally linked with questions of ensuring information security. As information technologies develop, this interlinkage only grows. Therefore, further analysis of the legal foundations of the development of information technologies is possible only jointly with the legal foundations of ensuring information security.

In the national legal field the concept “information security” was first used in 1992 in an Edict of the President of Ukraine “On Confirming the Composition of the Consultative Expert Group for Preparing the Conception of National Security of Ukraine”.²¹ Subsequently, it was used in the 1996 Constitution of Ukraine, Law of Ukraine “On Fundamental Principles of National Security of Ukraine” (2003), and a number of other legal acts.²² In so doing the term “information security” was not defined.

In July 2009 the President of Ukraine confirmed by an Edict the Doctrine of Information Security of Ukraine,²³ which defined information security as an “integral element of each sphere of national security. Simultaneously, information security is an important autonomous sphere of

²⁰ The Law of Ukraine “On the Conception of the National Informatization Program” pointed out that in Ukraine at present the number of standards for information technologies comprises about 4% of the total number of State Standards, but in other countries, more than 10%. The rate of development of international standardization in the sphere of information technologies is overtaking other branches and annually is increasing by 10 to 15%. The International Organization for Standardization (ISO) had adopted more than 1,400 international standards for information technologies and a similar number are being drafted. But in Ukraine for the period from 1992 to 1997 about 100 State Standards were introduced for information technologies, and the majority conceptual. Over time the lag is increasing.

²¹ Edict of 17 February 1992, No. 31-92/пн. <http://zakon2.rada.gov.ua>

²² See the Edict of 21 July 1997, No. 663/97. Урядовий кур'єр [Governmental Courier], 24 July 1997; for the Decree of the Supreme Rada of Ukraine, 2 June 1999, No. 705-XIV on parliamentary hearings on information technologies, see Голос України [Voice of Ukraine], 12 June 1999; and on information policy and security, see the Edict of 6 December 2001, No. 1193/2001. Офіційний вісник України [Official Herald of Ukraine], no. 50, item 2228.

²³ Edict of 8 July 2009, No. 514/2009. Офіційний вісник Президента України [Official Herald of the President of Ukraine] (2009), no. 20, item 677.

ensuring national security. Therefore, the development of Ukraine as a sovereign, democratic, rule-of-law, and economically stable State is possible only on condition of proper ensuring of its information security.

These provisions are very important for subsequent law-making work not only in the sphere of ensuring information security, but in the sphere of information relations as a whole. The Doctrine, however, only mediately, by way of determining fundamental principles, the vitally important interests in the information sphere, real and possible threats, and the priorities of State information policy, provides the possibility to autonomously form the definition of information security.

In 2007 the Supreme Rada of Ukraine adopted the Law “On the Fundamental Principles of the Development of Information Society in Ukraine for 2007 to 2015”,²⁴ which for the first time at the legislative level proposed this definition: “information security – the state of defense of vitally important interests of man, society, and the State under which the causing of damage is prevented because of: incompleteness, untimeliness, and unreliability of information; negative information impact; negative consequences of the application of information technologies; unsanctioned dissemination, use, and violation of the integrity, confidentiality, or accessibility of information”.

The legal basis of ensuring information security is the Law of Ukraine “On the Fundamental Principles of the National Security of Ukraine”,²⁵ the Strategy of National Security of Ukraine,²⁶ the Doctrine of Information Security of Ukraine,²⁷ and a number of other legal acts of Ukraine.²⁸

An analysis of that legal base shows that the majority of its provisions are primarily directed towards the defense of information. Individual norms directed towards the defense of information security contain contradictions with respect to ensuring the rights and freedoms of citizens in the information sphere, the application of contemporary information technologies, and the practice of ensuring information security.²⁹

The essence of such contradictions is that the legislator, on one hand, declares and legally ensures the human right and freedoms in the sphere of information relations and, on the other, to a certain extent limits these rights by taking into account the need to defend vitally important relations of society and the State in the information spheres. These contradictions influence the processes of ensuring information security in connection with the lack of the necessary balance of the said rights and interests.

The essence of contemporary information technologies and the orientation of means of ensuring information security, in our view, require a more precise, formalized, and normed definition of the criteria and indicia of prohibiting or limiting the dissemination of information. For example, the regulation of the use of information of limited access is effectuated by a number of laws of Ukraine: “On State Secrecy”; “On Banks and Banking Activity”; “On Communications”; “On the Defense of Personal Data”, and others. At the same time a number of problems remain in

²⁴ Відомості Верховної Ради України [Gazette of the Supreme Rada of Ukraine] (2007), no. 12, item 102.

²⁵ Відомості Верховної Ради України [Gazette of the Supreme Rada of Ukraine] (2003), no. 39, item 351.

²⁶ Офіційний вісник України [Official Herald of Ukraine] (2009), no. 11, item 389.

²⁷ Офіційний вісник Президента України [Official Herald of the President of Ukraine] (2009), no. 20, item 677.

²⁸ Урядовий кур'єр [Governmental Courier], 24 July 1997. Also see the Edict of the President of Ukraine, 6 December 2001, No. 1193/2001. Офіційний вісник України [Official Herald of Ukraine] (2001), no. 50, item 2228; the Edict of 23 April 2008, No. 377/2008; the Decree of the Supreme Rada of Ukraine on parliamentary hearings of 2 June 1999, No. 705-XIV, Голос України [Voice of Ukraine], 12 June 1999; the Decree of the Supreme Rada of Ukraine on an information society in Ukraine, Відомості Верховної Ради України [Gazette of the Supreme Rada of Ukraine] (2006), no. 15, item 131; the Decree of the Cabinet of Ministers of Ukraine confirming the Conception on the Technical Defense of Information in Ukraine, of 8 October 1997, as amended 16 January 2012. <http://zakon2.rada.gov.ua>; and the Decree of the Cabinet of Ministers on the procedure for the interaction of State agencies in defending information resources, Офіційний вісник України [Official Herald of Ukraine] (2002), no. 47, item 2155.

²⁹ See Articles 15, 23, 32, 34, and 37, 1996 Constitution of Ukraine; Articles 5, 6, 7, 11, 13, 14, 21, 24, 28, and 30, Law of Ukraine “On Information”; Articles 5 and 10, Law of Ukraine “On Access to Public Information”; Articles 21 and 24, Law of Ukraine “On State Statistics”; Article 2, Law of Ukraine “On the Information Agency”; Articles 2 and 3, Law of Ukraine “On Printed Mass Media (Press) in Ukraine”; and Article 6, Law of Ukraine “On Television and Radio Broadcasting”.

this sphere. Laws of Ukraine, in particular, have not been adopted “On Employment Secrecy” or “On Commercial Secrecy”, and a unification of approaches to regulating information of limited access in civil, tax, family, and labor legislation has not been undertaken.

The system of ensuring information security also encompasses the technical defense of information. One of the principal normative-legal acts in this sphere is the Conception of Technical Defense of Information in Ukraine, confirmed in 1997.³⁰ In our view, this document should be brought into conformity with contemporary requirements and coordinated with other normative-legal acts in the sphere of information security. At the same time, the urgency (even after twenty years) should be need of assessing the state of legal ensuring of the technical defense of information, especially:

“The state of technical defense of information is affected by:

- the imperfection of legal regulation in the information sphere, especially in the sphere of the defense of secrets (in addition to State), confidential information, and open information important for the individual, society, and the State;
- the imperfection of normative-legal acts and normative documents with regard to conducting studies and the production of means of ensuring technical defense of information;
- the incomplete creation of the certification system for means of ensuring technical defense of information;
- the imperfection of the system of attestation for conformity of objects to the requirements of the technical defense of information, the work of which is connected with information that is subject to technical defense;
- the insufficient coordination of normative-legal acts in force on matters of the technical defense of information with respective international acts”.

The Law of Ukraine “On the Defense of Information in Information and Telecommunications Systems” (Article 1) provides this definition: “the technical defense of information is a type of defense of information directed towards the thwarting, with the use of technical engineering measures and/or programs and technical means, the leakage, destruction, or blockage of information and disturbance of the integrity and regime of access to the information”.

It follows from this definition that the technical defense of information should make provision for the effectuation of a complex of measures (or processes, procedures, operations) and measures of a technical (or technical-technological, technological, program) and operational character with a view to achieving necessary results with regard to thwarting the leakage, destruction, and blockage of information and disturbance of the integrity and regime of access to the information.

A major issue in the sphere of the technical defense of information is actual control over program and program-technical means which are applied or which it is planned to apply in this sphere. We refer especially to issues of actual control with the use of the base program texts.

Taking into account world trends in the development of society and the experience of the State Commission of Ukraine for the Prevention and Elimination of Possible Consequences of the Computer Crisis of 2000 (Decree of the Cabinet of Ministers of Ukraine, 16 February 1999, No. 218), and also understanding that the basis of information technologies and ensuring national security in this sphere is an operational system, the Governmental Commission for Informational-Analytical Security of Agencies of Executive Power³¹ at its session in September 2000 (Protocol No. 6) considered the question “On Working Out a Fatherland Operation System (OC)” and, with the participation of the National Academy of Sciences of Ukraine (Cybernetic Center), and also specialists in the sphere of information technologies, adopted a decision to create a Ukrainian defense operational system on the base of OC Linux.

³⁰ Decree of 8 October 1997, No. 1126, as amended 16 January 2012. <http://zakon2.rada.gov.ua>

³¹ Created in accordance with Decree of the Cabinet of Ministers, 7 May 2000, No. 777, with a view to the organization and coordination of work to ensure the information security of the State.

At the time the nucleus of a national operational system might have been developed within a year, but this idea remained unrealized. Only in November 2011 did the Cabinet of Ministers of Ukraine return to this question and by Decree No. 1269, “On Confirmation of the State Targeted Scientific-Technical Program for Use in Agencies of State Power of Program Security with an Open Code for 2012 to 2015” proclaim the commencement of respective work.

Greater attention is being accorded to the notion that under conditions of information globalization no country in the world, irrespective of the level of economic, defense, or information potential, is capable of autonomously ensuring information security. Only by relying on agreed international legal norms and on scientific studies and developments,³² including conceptual, can one count on the achievement of an acceptable level of information security at the national, regional, and international levels.

Conclusions

We sum up the consideration of legal problems of the development of information technologies and ensuring information security with these basic conclusions and proposals:

[1]. Contemporary information technologies materially influence the development of an information society and all spheres of the activity of man, society, the State, and the international community. Under conditions of globalization, countries with backward information technologies risk being left on the edge of world progress, and even to become an appendage of highly-

³² I. V. Aristova and D. V. Sulats'kyi, Інформаційна безпека людини як споживача телекомунікаційних послуг [Information Security of People as Consumers of Telecommunications Services] (Kyiv, 2012); O. P. Dz'oban' and V. G. Pylypchuk, «Проблема агресії і насильства: світоглядно-інформаційний вимір» [The Problem of Aggression and Violence: Informational Outlook Dimension], Освіта регіону [Education of the Region], no. 2 (2012), pp. 171-177; Pylypchuk, «Пріоритети розвитку наукових досліджень в галузі інформаційного права та інформаційної безпеки» [Priorities of the Development of Scientific Studies in the Eyes of Information Law and Information Security], in Державна безпека України [State Security of Ukraine], no. 20 (2010), pp. 6-14; V. Ia. Nastuiuk and V. V. Belevtseva, Адміністративно-правовий захист інформації: проблеми та шляхи вирішення [Administrative-Legal Aspect of Defense of Information: Problems and Ways to Address Them] (Kyiv, 2012); V. M. Furashev, «Питання законодавчого визначення понятійно-категорійного апарату у сфері інформаційної безпеки» [Questions of Legislative Definition of the Conceptual-Category Apparatus in the Sphere of Information Security], Інформація і право [Information and Law], no. 2 (2012), pp. 46-55; K. I. Beliakov, «Ознаки неправомірної інформаційної діяльності» [Signs of Unlawful Information Activity], Право охорони [Science and the Right to Health], no. 1 (2012), pp. 103-109; Furashev, «Сутність та визначення понять «інформаційна безпека» і «безпека інформації» [Essence and Definition of the Concept “Information Security” and “Security of Information”], Правова інформатика [Legal Informatics], no. 2 (2012), pp. 51-59; Furashev, «Кіберпростір та інформаційний простір, кібербезпека та інформаційна безпека: сутність, визначення, відмінності» [Cyberspace and Information Space, Cyber Security and Information Security: Essence, Definition, Distinctions], Інформація і право [Information and Law], no. 2 (2012), pp. 170-177; A. I. Marushchak, «Дослідження проблем інформаційної безпеки у юридичній науці» [Studies of the Problems of Information Security in Legal Science], Правова інформатика [Legal Informatics], no. 3 (2010), pp. 17-21; N. A. Savinova, «Кіберзлочинність витоки та тенденції детермінації в умовах розвитку Глобального інформаційного суспільства» [Cybercrime: Origins and Trends of Determination in Conditions of the Development of a Global Information Society], in Актуальні проблеми вдосконалення чинного законодавства України: Збірник наукових статей [Topical Problems of the Improvement of Current Legislation of Ukraine: Collection of Scientific Articles] (2011), XXVIII, pp. 248-254; Marushchak, «Визначення об'єктів управління інформаційною безпекою» [Definition of Objectives of Management of Information Security of the State], Інформаційна безпека людини, суспільства, держави [Information Security of People, Society, and State], no. 1 (2012), pp. 34-39; D. V. Lande, «Мережна мобілізація: питання демократії та безпеки» [Networking Mobilization: Questions of Democracy and Security], Інформація і право [Information and Law], no. 1 (2012), pp. 113-121; V. V. Bryzhko, «Домінанта праворозуміння та основ понятійно-категоріального апарату інформаційного права» [Dominant of Law-Comprehension and Fundamental Principles of Conceptual-Category Apparatus of Information Law], Інформація і право [Information and Law], no. 3 (2011), pp. 5-17; V. S. Tymbakiuk, «Суспільна мораль як різновид інформаційної безпеки» [Social Morality as Variety of Information Security], Правова інформатика [Legal Informatics], no. 1 (2010), pp. 23-29; Marushchak and E. D. Skulysh, «Удосконалення правового регулювання відносин з управління інформаційною безпекою держави» [Improvement of Legal Regulation of Relations with Management of Information Security of the State], Інформаційна безпека людини, суспільства, держави [Information Security of People, Society, and State], no. 4 (2010), pp. 9-13, and others.

developed countries. Under these circumstances the regulation of legal relations in the information sphere should be built on the basis of a State information policy and respective strategies, conceptions, and programs, taking into account the complex of internal and external elements;

[2]. The creation and development of information technologies, technical, and other means of ensuring information security are subject to a general cycle: “notion (or idea, order) – research – working out – manufacture – exploitation – writing off (or utilization)”. A reduction of the duration of cycles for the creation or improvement and introduction of the newest information technologies and means of ensuring information security is a question of the survival of the State. The stage of their exploitation provides for the presence of operational and other documents which confirm the declared characteristics and the right to exploit this product;

[3]. The use of information technologies is impossible in the absence of a legal or authorization field. This means that necessary specialists from among jurists absolutely should be part of the process of the creation or improvement of information technologies and means of ensuring information security. With their participation questions of the operation of respective technologies should be reflected in the conceptions, strategies, programs, designs, contracts, organizational-dispositional and other acts. The topicality of this approach is enhanced by the headlong development of science, techniques, and technologies in the information sphere, severe competition, and the importance of this orientation of activity for society and the State;

[4]. In the contemporary information era the modernization of legal ensuring of social relations should ensure the dynamic development of information technologies which: (a) are the basis for the transformation of information, data, and the forming of information resources; (b) ensure the further accumulation of new information resources; (c) form the technical-technological basis of ensuring information security; and (d) comprise the basis of national and global information space.

[5]. The legal foundations of the development of information technologies and ensuring information security should be directed towards:

(a) ensuring the constitutional right “freely to collect, keep, use, and disseminate information ...” (Article 34, 1996 Constitution of Ukraine);

(b) realization of the right of access to public information and control by citizens and civic organizations over the activity of agencies of State power;

(c) defense of author’s rights and rights of intellectual property to information technologies, resources, products, and services, and technical and other means of information security;

(d) forming of equal conditions for all subjects of information activity (irrespective of forms of ownership) by means of the creation of a national market of information technologies, products, and services, a competitive milieu, and the effectuation of an effective anti-monopoly policy;

(e) ensuring the responsibility of subjects of a single information space for violations when creating information technologies, products, and services, and the forming of information resources and the use thereof;

(f) developing systems of international and collective information security and information exchange within a system of international cooperation.