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ABSTRACT

of dissertation for the degree of Doctor of Philosophy

REGULATION OF INTERNET ECONOMY AND GROWTH OF DEVELOPMENT MECHANISMS

Speciality: 5306.01 – Economics of technological innovations

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INTRODUCTION

The relevance of the study. Dynamic development and comprehensive application of Internet leads to radical changes in the economic sphere. The structure, forms, and methods of economic activity, and its directions of development undergo a serious transformation. The occurring transformation processes reflect the globalization, virtualization, convergence, and diversification of the economy.

The Internet plays a significant role in the activities of both individual subjects of economic processes and the economic system. Namely, the transnational companies rapidly develop, traditional companies integrate into the virtual environment, e-commerce grows, and new fields of activity related to the information industry and services are emerging via Internet technologies.

The study of development features, regularities, specific features, principles of the traditional economy transformed under the influence of the Internet, as well as new economic relations formed in the Internet environment is of great scientific relevance. Because, the formation, development, and management of the information society economy without studying all this is impossible.

Therefore, the development of new regulatory methods and mechanisms to ensure the normal functioning and development of the Internet economy is an actual issue. So, first of all, we should study, analyze, classify the existing problems related to the Internet economy and explore relevant solutions.

The Internet economy is one of the significant directions of the innovative activity of economic relations formed in the Internet environment and the knowledge-based economy. In this regard, the regulation of economic relations in the national segment of the Internet is important.

Providing the security of the Internet economy is crucial for its normal functioning and development. Economic security is closely connected to other elements of national security. Also, all elements of national security are related to the economic factor. Knowledge and

information, information technologies, and products play an important role in the Internet economy. In this context, information security, one of the key components of national security, also acts as the security of the information economy and its important branch - the Internet economy.

“National Strategy for Information Society Development in the Republic of Azerbaijan for the years 2014-2020” also focus on the development of the Internet economy in our country. The National Strategy considers expansion of ICT usage in the business sector and development of the Internet economy, including e-commerce.

In Strategic Road Map for development of telecommunication and information technologies (2017-2025) considers strategic goals such as the formation of the digital economy in the country; development of state regulation by improving the structure and regulatory framework of the ICT sector; expanding the scope of Internet services infrastructure for the application of ICT; creation of fair competitive environment based on liberal market principles, identification, and application of transparent and effective regulatory mechanisms and procedures.

Azerbaijan also aims to strengthen the position of our country in the IV Industrial Revolution, which dictates the current trends in the global economy and changes the competition rules, and ensure its place among the leading countries in this field. The Center for Analysis and Coordination of the IV Industrial Revolution was established in our country for this purpose.

Among the trends of the IV Industrial Revolution, the Internet of Things, Big Data, cloud services is also stated as perspective technologies of the Internet with high economic potential. The development of ecosystems, regulation, and development mechanisms is necessary for the formation and sustainable growth of the economy based on these technologies.

Development degree. Different aspects of the regulation of economic relations in the Internet environment have been studied by various foreign researchers, relevant international and regional organizations since the 2000s. Also, the OECD working group

analyzed and compared the legislation of member countries in the field of Internet economy regulation, the International Chamber of Commerce developed recommendations to improve the relevant legislation to create a suitable environment for innovation and investment in the Internet economy, K. Marsden (UK) investigated consumer protection issues in the Internet economy, V.Sridhar (India) studied the problems of cyber security, confidentiality, protection of personal data and intellectual property in terms of regulating the Internet economy, B. Lundqvist (Sweden) and M.S. Gal (Israel) considered the regulation of competition in perspective fields of the Internet, such as Big Data, Artificial Intelligence and the Internet of Things, J. Kremer (Germany) studied regulation and competition in the Internet economy.

The object of the study is the relationship between the Internet and the economy.

The subject of the study is the impact of the Internet on economic processes, the regulation of the Internet economy, and development perspectives.

Aims and objectives of the study. Influence of the Internet on economic processes, the features of economic relations in the Internet environment, the study of regularities, identification of problems, development of proposals for regulation and security of the Internet economy, development of proposals for the protection of intellectual property in the Internet environment, development of perspective Internet economy and the development of proposals is the purpose of the dissertation.

The following tasks have been identified to achieve the aims set in the dissertation:

- The essence of the Internet, its features, functions, opportunities, impact on various spheres of society, perspectives, and threats were investigated and analyzed;
- The transformation processes occurring in the existing economic system under the influence of the Internet were investigated, relevant regularities and problems were analyzed;

- The essence, features, problems of the Internet economy were studied, and scientific-theoretical views in this field were defined;
- Existing problems related to the regulation of economic relations in the Internet environment were defined and mechanisms for their solution were developed;
- The existing problems related to the security of the Internet economy were investigated and developed mechanisms to solve them;
- Protection problems of intellectual property in the Internet environment were investigated and developed mechanisms for their solution;
- Mechanisms for the development of perspective Internet technologies (Internet of Things, Big Data, Cloud technologies) were proposed.

Research methods. In the study, we used methods such as analysis and synthesis, systematic approach, formal-logical, economic-statistical methods, multidisciplinary approach, civilization approach, empirical virtualization, interpretation of historical-legal, legal norms, comparative law. Also, different theories on information, information society, information economy and Internet economy have been used.

The main provisions of the dissertation:

- Mechanisms for the regulation of economic relations in the Internet environment;
- Mechanisms to ensure the security of economic relations in the Internet environment;
- Mechanisms for the protection of intellectual property in the Internet environment;
- Development mechanisms of the Internet of Things economy;
- Development mechanisms of Big Data economy;
- Development mechanisms of cloud services economy.

Scientific innovation of study:

- Factors determining the transformation of the economy in the information society have been analyzed, and modern development trends have been identified;
- Scientific-theoretical foundations of the Internet economy has been analyzed, regularities, structure, and problems have been defined;
- Mechanisms have been developed to regulate economic relationships in the Internet environment;
- Mechanisms have been developed to provide the security of economic relations in the Internet environment;
- Mechanisms for the protection of intellectual property in the Internet environment have been developed;
- Mechanisms for the Internet of Things economy have been developed;
- Development mechanisms of Big Data economy have been developed;
- Mechanisms for the cloud services economy have been developed.

The theoretical importance of the research. The dissertation results on the transformation of the market economy, the concept of "Internet economy", the regulation, security, and development of the Internet economy are important for the development of relevant theories and approaches.

The practical importance of the research. The obtained results also show the concepts, strategies, and plans for the development of the information economy, innovative development, knowledge economy of the Internet economy, including the regulation and security of economic relations in the Internet environment, improvement of Internet legislation, development of the Internet economy, promising Internet technologies can be used in the preparation of appropriate curricula, lectures of universities and doctorates.

Approbation and application. The fundamental scientific-theoretical and practical results of the study were reported and discussed at the following conferences:

- The Seventh International Conference “Internet-Education-Science-2010”, Ukraine, Vinnitsia (IES-20100, September 28 - October 3, 2010.
- “The First Republican scientific-practical conference on information security problems” dedicated to the 90th anniversary of the national leader of the Azerbaijan Heydar Aliyev, May 17-18, 2013.
- 6th International Conference on Applied Economics, Business and Development (AEBD '14), World Scientific and Engineering Academy and Society, Lisbon, Portugal, October 30 - November 1, 2014.
- The First Republican scientific-practical conference “Problems of e-state building”, Baku, Dekabr 4, 2014.
- The Second Republican Scientific-Practical conference on multidisciplinary problems of the Information Society, dedicated to the 150th anniversary of ITU, Baku, May 14, 2015.
- The First Republican Scientific-Practical Conference “Big data: opportunities, multidisciplinary problems and perspectives”, Baku, February 25, 2016.
- The First Republican Conference “Scientific-practical problems of software engineering”, Baku, May 17, 2017.
- The Fifth Republican Conference “Actual multidisciplinary scientific-practical problems of information security” November 29, 2019.
- Republican Scientific and Technical Conference “Technological Perspectives of the IV Industrial Revolution: Industrial Internet, Cyberphysical Systems and Intellectual Technologies” dedicated to the 70th Anniversary of Azerbaijan Technical University, Baku, November 26-27, 2020.

Name of the organization where the dissertation was carried out: Institute of Information Technologies of ANAS.

The total volume of the work, indicating the volume of the structural units of the dissertation:

The dissertation consists of an introduction, 3 chapters, a conclusion, a bibliography of 134 titles and a list of abbreviations. The main content of the work is presented on 135 pages, including 8 figures and 7 tables.

The total volume of the dissertation by symbol: 279753 symbol.

The separate volume of structural units of the dissertation:

Title page – 390 symbol.

Contents – 1651 symbol.

Introduction – 18114 symbol.

The main content of the dissertation (chapter, paragraph, item) – 237945 symbol.

Conclusion – 2289 symbol.

List of references – 18828 symbol.

List of abbreviations – 536 symbol.

The structure of the dissertation:

Introduction

Chapter I. Impact analysis of the Internet on contemporary economic relationships

- 1.1. The Internet as a driving force in the development of society
- 1.2. Transformation of the economy under the influence of the Internet
- 1.3. The essence, features, and problems of the Internet economy

Chapter II. The development mechanisms of the Internet economy regulation

- 2.1. Regulating mechanisms for economic relations in the Internet environment
- 2.2. Mechanisms to provide the security of the Internet economy
- 2.3. Mechanisms for the protection of intellectual property in the Internet environment

Chapter III. Development of mechanisms for the establishment of the Internet economy

- 3.1. Development mechanisms of the Internet of Things Economy

3.2. Development mechanisms of Big Data Economy

3.3. Development mechanisms of Cloud Services Economy

THE DISSERTATION CONTENT

The introduction shows the actuality of the dissertation, remarks the research state of the problem. The aim of the work and the tasks for its achievement were explained. The scientific novelty of the work, research object and methods were demonstrated. The key scientific requirements of the dissertation, the practical significance of the work, the application of the results were remarked.

In the first chapter, the impact of the Internet on modern economic relations was analyzed. First, we analyze and classify technological and humanitarian approaches and views on the essence of the Internet. Also, approaches and views on the philosophical foundations of the Internet (virtuality, hypertext, multimedia, universal information network, network society, non-linear thinking, etc.) were analyzed. The social functions of the Internet were analyzed and classified.

The role and perspectives of the Internet in political processes and the democratization of society were analyzed. The role and perspective of the Internet in public administration were analyzed. The role and perspectives of the Internet in increasing the productivity and quality of scientific research, the formation of electronic science were shown. The role and perspectives of the Internet in improving the quality and effectiveness of education, the formation of e-learning were demonstrated. The influence of the Internet on the cultural sphere and its role in creating a global information environment was noted.

Also analyzes and classifies the elements, fields, levels, factors of the economic transformation processes under the influence of the Internet. Noted that the dynamic development and comprehensive application of the Internet lead to radical changes in the economic sphere as well as in all fields of activity. The structure, forms, and methods, development directions of economic activity undergo serious transformation.

In this chapter, we also investigate the essence, features and problems of the Internet economy. Also, concepts and approaches to the essence of the Internet economy were explained and classified.

The author puts forward his approach to the essence of the Internet economy: *Internet economy - is a virtual environment in which economic relations are established for the creation, distribution, exchange, and consumption of information and other products using the Internet, as well as the provision of various services.*

A new approach to the structure of the Internet economy was proposed (Figure 1).

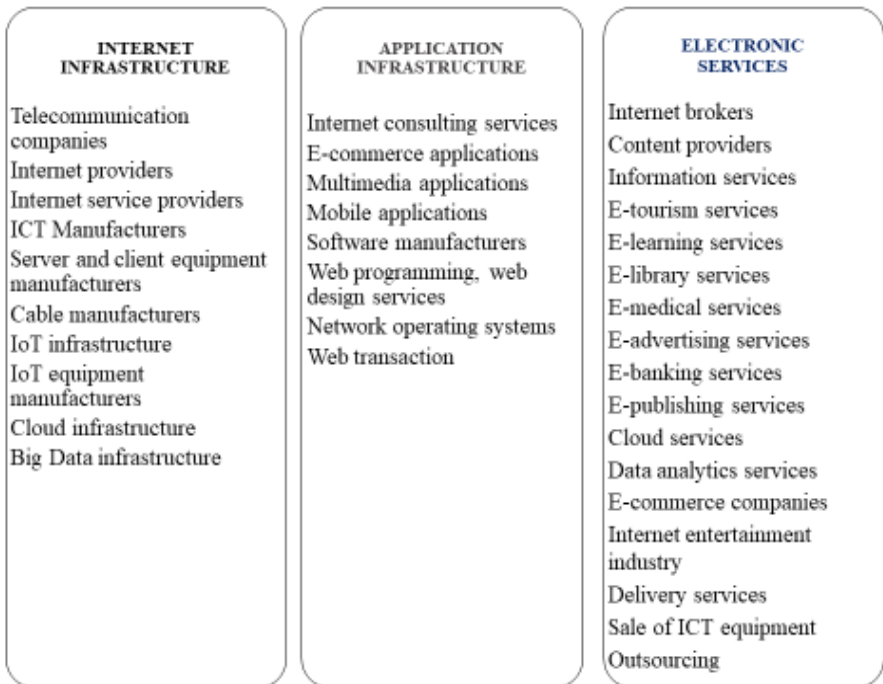


Figure 1. The structure of the Internet economy

Technological innovations, processes, approaches, and experts views related to the development of the Internet economy were analyzed. According to the relevant analysis, 4 development stages of the Internet economy have been identified.

Also, the basic laws of the Internet economy (communication law, fullness law, exponential growth law, breakpoint law, increasing efficiency factor law, reverse price formation law, loyalty law, substitution law, etc.) are classified according to the results of investigations.

Finally, the following key problems of the Internet economy have been identified:

- Defining the scope and boundaries of the Internet economy;
- Determining jurisdiction;
- Defining tax and customs policy;
- Protection of intellectual property rights;
- Provision of economic security;
- Regulation of electronic money circulation;
- Regulation of virtual brain flow, virtual labor relations;
- Estimation of market value;
- Regulation of competition;
- Control of export-import operations;
- Protection of consumer rights;
- Protection of personal data.
- Ensuring the security of the Internet economy.
- Development problems of the economy based on perspective Internet technologies.

The second chapter focuses on the development of mechanisms for the regulation of the Internet economy. In the first paragraph of this chapter, the following problems related to the regulation of the Internet economy were considered:

- economy;
- Regulation issues of virtual "brain flow", and virtual labor relations;
- Regulation problems of electronic money;
- Regulation issues of e-commerce.

If a state becomes part of a global network economy with a developed information infrastructure and transparent electronic (virtual) borders, then there arise serious problems related to the

implementation of macroeconomic policy of the state, and the regulation of the economy (tax, customs, labor relations, import control of export operations, protection of intellectual property, etc.).

The effect of traditional economic policies is diminishing when protecting against negative external economic influences. In this case, the determination of the boundaries of the national segment of the economy in the Internet environment is impossible. Because the Internet does not recognize national borders. In such a situation, to identify the subjects of economic activity and involve them in the mandatory state payments is problematic.

For the definition of global jurisdiction to solve the challenges posed by the global nature of the Internet economy, to establish multilateral and bilateral cooperation to address relevant issues, to develop model laws by appropriate international organizations, and to establish or improve national legislation was recommended.

The study found that the main problems in the regulation of virtual labor relations are related to the definition of the virtual workplace, time spent on work, control overwork discipline, etc. In the Internet environment, the agreements between the employer and the virtual employee which are not based on legal requirements, cannot resolve issues such as payment of wages, leave, business trips, professional development, temporary disability, termination of the employment contract. Consistently, the employer and the employee, who are the sides of the virtual employment relationship, operate in different countries. This creates additional problems in the regulation of labor relations in the virtual environment.

Therefore, for the regulation of labor relations in the Internet environment, the labor law system should be updated, considering the characteristics of the virtual environment. For the elimination of the problems in the field of virtual "brain flow", the regulation of virtual labor relations, first of all, the improvement of labor legislation, including the introduction of the "virtual (remote) employment" concept, the definition of relations between virtual (remote) employee and the employer was proposed to resolve issues such as concluding an employment contract for remote (virtual) work, labor protection of

a remote (virtual) employee, resolving issues of work and rest time, termination of remote (virtual) labor relations.

In the strategies and programs the "Azerbaijan 2030: National Priorities for Socio-Economic Development" to consider the issues of regulation and development of virtual labor relations is also expedient.

Also, in the development of a new Employment Strategy of Azerbaijan to consider the regulation and development of virtual labor relations, the rules and conditions for concluding an online employment contract using e-signature in the legislation is necessary. Also, the establishment of trade unions to effectively protect the rights of virtual workers is recommended.

This section identifies a number of advantages of electronic money over traditional money, as well as a number of problems that lead to negative consequences.

Also, the essence, technological, and economic features, advantages, and problems of Bitcoin, the most popular and rapidly expanding type of user of electronic money, have been studied. The relations of different countries with bitcoin have been identified and summarized.

Noted that the regulation of e-money circulation primarily serves for meeting the needs of the population and enterprises in technological payment services, protecting the rights of relevant service users, ensuring healthy competition with other payment service providers (primarily banks).

The following proposals have been suggested for the regulation of electronic money:

- The circulation of e-money should be controlled through the relevant state body (Central Bank);
- The definition of electronic money at the legislative level should be given, the list of transactions with it and its participants should be defined;
- The issuance of E-money, its circulation, and payment rules should be defined;
- Exact requirements should be put forward for issuers of electronic money (first of all, the amount of initial capital and

special funds, compliance with economic standards and reserve funds);

- Transparency of property and financial condition of e-money issuers should be ensured;
- Organizations operating with e-money should be required to improve the quality of risk management;
- Rules should be developed for unified standards of e-money and its conversion;
- Essential guarantees should be provided to protect consumers from financial fraud.

This paragraph also investigates the features, technological and economic problems of e-commerce, the recommendations of relevant international organizations in the field of regulation, and the experience of advanced countries.

In this section, the proposals such as the provision of broadband Internet access and quality services related to the regulation of e-commerce, provision of Internet security, reliable protection of electronic information on financial transactions, the increase of consumer confidence, solution of jurisdiction problems, protection of intellectual property rights, application of electronic signatures, protection of personal data of consumers have been developed.

This chapter also **studies the ensuring issues of the Internet economy security**. The following issues are considered in this section:

- provision of infrastructure security;
- fighting against the shadow economy;
- resisting against the criminal economy;
- protection of consumer rights;
- protection of personal data.

We should note that recently, information technology, including Internet technology is widely applied to the fields such as management, finance, technical infrastructure, production, services, household, etc. Under the influence of these technologies, traditional fields of activity such as public administration, banking, health, education, media, transport, communications undergo a serious transformation. Information security issues are becoming more

important for the emerging economic sector in the global network as the role of the Internet in economic spheres grows.

In the study, we identified the security objects of the Internet economy (Figure 2) and substantiated the importance of ensuring their security.

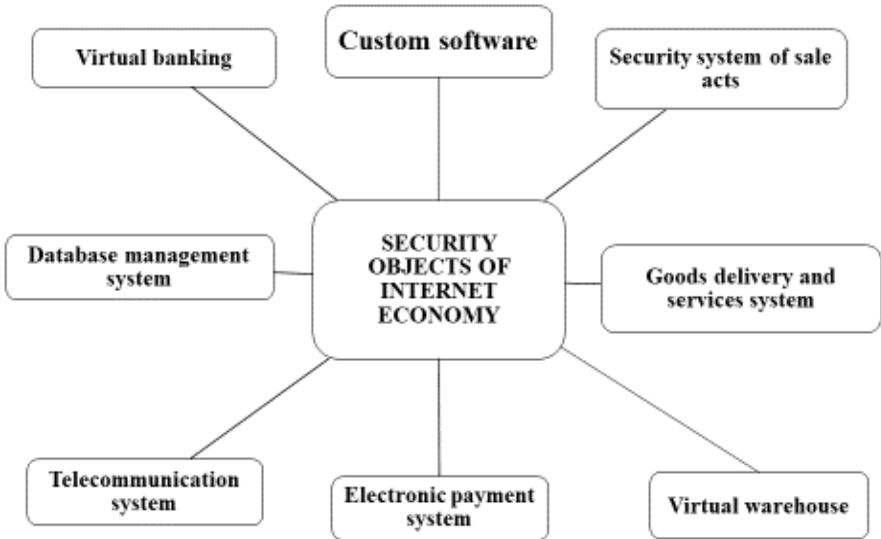


Figure 2. Security objects of the Internet economy

The study identified internal and external threats to the infrastructure of the Internet economy.

The following measures have been proposed to provide the infrastructure security of the Internet economy:

- Development of state policy in the field of ensuring the security of the country's Internet economy;
- Preparation of proposals for legal, methodological, scientific-technical, and organizational measures to ensure the security of the Internet economy;
- Designing a targeted development program to ensure the security of the Internet economy;
- Development and implementation of national secure electronic money, electronic payments, e-commerce systems;

- Formation of certified national information protection tools, application of these tools in the systems of collection, storage, processing, and transmission of economic information;
- Development of the selection and training methods of personnel working with systems for the collection, storage, processing, and transmission of economic information (financial, statistical, stock, customs, tax information);
- State control over the formation, development and protection of systems for the collection, storage, processing and transmission of economic information;
- Expanding the concept of economic crimes in criminal law, considering the characteristics of cybercrime;
- Establishment of CERTs in economic fields;
- Development of organizational and professional standards in the field of economic cybersecurity;
- Preparation of statistical reports on economic cybercrime;
- Reinforcement of scientific research on economic cybercrime;
- Implementation of measures to instruct the population on economic cybercrime.

Due to the anonymity of the Internet, there exist several objective and subjective difficulties in regulating legal and economic relations. Most business entities operate on the Internet without a license or without tax registration, which leads to the formation of the shadow economy.

In the study, for the solution of the problems, the simplification of Internet entrepreneurship, reducing the tax burden in this field, elimination of bureaucratic obstacles, formation of an effective protection system for intellectual property rights, the establishment of international cooperation in the field of legal regulation, considering the characteristics of the global network was proposed.

In the study, we classify the features and forms of criminal economy inherent in the Internet environment. For effectively fighting against the criminal economy was suggested to establish international cooperation in the Internet environment, harmonize relevant legislation, educate citizens, provide adequate support to the private

sector, warn and instruct users about possible threats, financial fraud, and e-banking and e-money systems crimes, etc.

Provision of consumer rights is one of the key conditions for successful e-commerce. Ordinary consumers do not trust e-commerce because of its being a new field. E-commerce is a completely new field of activity, so consumers do not trust this system as much as traditional commerce. Protection of consumer rights is an important legal tool to build confidence in e-commerce.

In the study, for the protection of consumer rights in the Internet environment, was proposed to effectively fight against the illegal transmission of unscrupulous advertising, low-quality goods and services, cybercrime, and personal financial information (for example, payment card information). Also, a model of achieving consumer confidence in the Internet environment has been proposed (Figure 3).

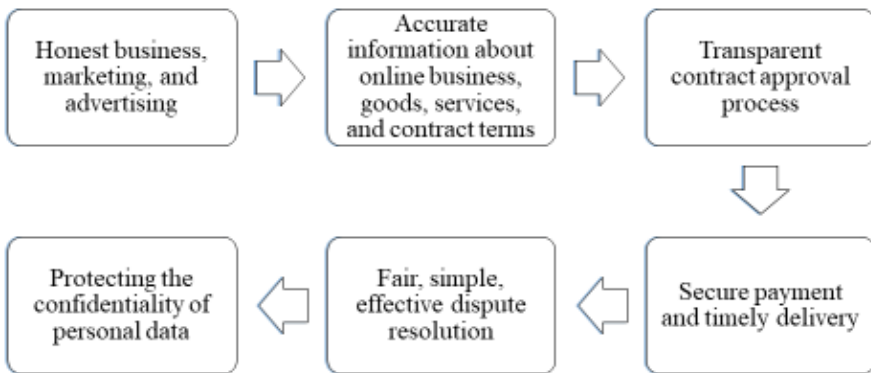


Figure 3. Consumer confidence model in the Internet environment

In the study also proposed to strengthen measures for fighting against cybercrime to protect the personal data of Internet service users, to impose appropriate responsibilities on legal entities and individuals providing Internet services to citizens. We also noted that citizens should protect their personal information in a virtual environment, and pay special attention to the formation of a culture of information security.

Though Internet technologies are effective tools for collecting and using personal information, they all pose serious threats to privacy.

The solution to this problem has great economic and social importance.

Therefore, this situation requires a reconsideration of Internet policy. First, the confidentiality of Internet services should be ensured. We should note that certain personal information is important for the provision of Internet services. Also, the successful development of the Internet economy depends on the convenient collection, analysis, and use of personal data. Therefore, the application of restrictions on the use of personal data may restrict the development of the Internet economy.

As the value and importance of personal information grows, the demand for it also increases. Due to the existence of legal liability and restrictions norms on the usage of personal data, there arises a need to use them for illegal business and criminal purposes contributing to the formation of a "black market" in this area.

For reliable protection of personal information and effectively fighting against the "black market", the improvement of the relevant legislation and strengthening measures to restrict cybercrime is important. The enterprises and organizations providing various services to citizens at the technological level, and agencies implementing the relevant state policy to strengthen the protection of personal data have a great role.

Within the second chapter, we also **focus on the development mechanisms for the protection of intellectual property in the Internet environment.** The urgency of this issue is due to the fact that the role of innovation, creative labor, intellectual property, information products in the Internet economy grows rapidly. In fact, the normal development of economic relations in the Internet environment is impossible without ensuring the protection of intellectual property.

In the study, the following issues were considered in the field of protection of intellectual property in the Internet environment:

- copyright protection;
- protection of computer programs;
- database protection;

- combating plagiarism;
- combating piracy;
- determining virtual inheritance.

For the protection of copyright in the Internet environment, to modernize the traditional legislation, considering the technological features, and the application of technical and software tools, along with legal means was recommended. Also, a copyright protection model in the Internet environment has been proposed (Figure 4).

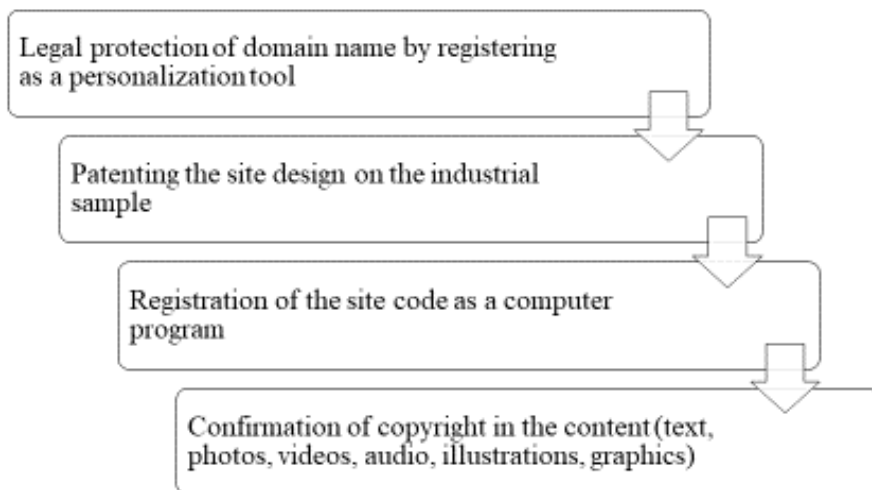


Figure 4. Copyright protection model in the Internet environment

For the protection of computer programs, registering them as objects of patent law, not as copyright has been proposed. The reason is that copyright protects only the objective form of any work, does not protect the original ideas, principles, and methods of the work.

The ineffectiveness of existing legislation on database protection and the formation of special legislation considering the specific features of this basis is necessary.

A conceptual model of the National Anti-Plagiarism System has been proposed to prevent plagiarism on the Internet. In this concept, the formation of national electronic resources, the formation of the legal framework, the socialization of plagiarism (public criticism), educating citizens about plagiarism, the development of a Code of

Scientific Ethics, and measures to combat social and psychological factors encouraging plagiarism have been proposed.

We propose to promote electronic registration of works, to educate the population about the superiority of original products in terms of quality and safety, to formulate a pricing policy in accordance with the purchasing power of the population, to apply legal methods (including improving relevant legislation) in order to combat piracy.

There doesn't exist a practice of regulating inheritance issues in the Internet environment in the world. Therefore, the adoption of special international conventions in this field, the application of traditional legislation by analogy, as well as the definition of the "digital property" concept and the scope of digital property are necessary.

In the third chapter, we developed the development mechanisms of economics, based on perspective Internet technologies (Internet of Things, Big Data, cloud services). The actuality of this issue is that Internet technologies develops very rapidly. Achievements in this field are applied quickly and successfully in the economy and management, production and services, social and domestic spheres. The main factor stimulating the rapid development of Internet technologies is their high business perspectives.

Internet of Things, Big Data and Cloud technologies have a special position among the Internet technologies with high economic potential. These technologies are the basis for the next development stage of the Internet economy. As a result of the successful application of these technologies, the significant increase in the size and value of the Internet economy around the world is expected. Considering this, the world's leading countries develop and implement concepts and programs for the development and successful application of these technologies.

The first paragraph of the third chapter focuses **on the development mechanisms of the Internet of Things economy.** The Internet of Things is characterized as the next stage in the development of the information technology industry after computers, the Internet,

and mobile telephony. In the future, by the realization of this concept, all the useful things surrounding us will have an IP address. According to forecasts, in the next decade, the sensor network (Internet of Things) will significantly change the people's lives everywhere and comprehensively.

The study identifies the essence, technological and economic features, perspective applications, and economic prospects of the Internet of Things. Also, a conceptual model of the Internet of Things Economy Ecosystem has been proposed (Figure 5).

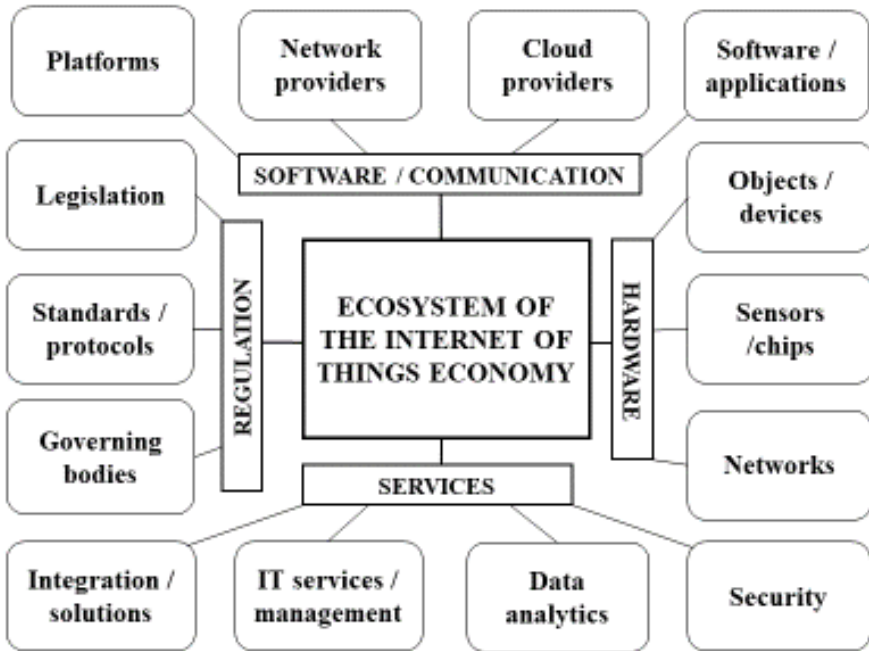


Figure 5. Ecosystem of the Internet of Things economy

Correspondingly, the main problems of the Internet of Things economy were identified and the following proposals were developed to solve them:

- Special strategies and programs should be adopted for the development of this field according to the relevant world experience;

- Local and foreign investments should be attracted in this field, tax incentives should be applied;
- We should pay attention to the training of relevant personnel and increase scientific research;
- Appropriate legislative framework should be formed based on world experience;
- Appropriate technological infrastructure should be created for the application of the Internet of Things to possible fields of activity;
- Measures should be implemented to provide the security of the Internet of Things;
- Protection of privacy and consumer rights should be ensured in the application of the Internet of Things;
- Special attention should be paid to the solution of existing problems related to the Internet of Things, international cooperation for the development of this field;
- Essential measures should be taken to stimulate the application of Internet of Things technologies in relevant sectors of the national economy.

In the third chapter, **the development mechanisms of the Big Data economy were also developed.** Currently, the global Internet is the largest database, the largest object of Big Data, the raw material database. Today, a great amount of information is generated in Internet services, social networks, e-commerce systems.

This demonstrates that the Internet is the basic source of information for the development of Big Data technologies. Most Internet companies use the big data arrays collected for their activities through Big Data technologies, as well as provide them to other management and business-oriented organizations on a commercial basis.

In the study, we also analyzed and classified the economic prospects and potential applications of Big Data. Additionally, the benefits and risks for the subjects of the Big Data economy have been identified.

Also, problems related to the development of Big Data as a field of economic activity were identified and the following proposals were developed to solve them:

- Defining the aims and objectives of the state policy on the development of Big Data;
- Determining the legal status of Big Data;
- Identification of Big Data as an economic "raw materials";
- Protection of human rights related to the collection, processing, use, and storage of data as the Big Data object;
- Prevention of monopolistic activity in the field of Big Data Economy;
- Staff training in the field of Big Data Analytics.

Finally, **the development mechanisms of the cloud technology economy have been developed in this chapter.** We should note that in the provision of services to the public and private sectors, the role of cloud technologies grows significantly due to the expansion of opportunities in the field of data processing, transmission, and storage.

Cloud technology is a distributed data processing technology where computer resources and devices are provided to users as an Internet service, without requiring special knowledge of cloud infrastructure and skills to manage that technology. According to experts, cloud technologies will have a significant impact on society and the economy as one of the most important turning technologies in the next 10 years. The rapid growth of data processing, storage, and transmission capabilities is the basis of the cloud economy.

Since the cloud technologies' activities are directly related to the Internet, act as a global network platform, and cloud services and implemented over the Internet, this area is considered a branch of the Internet economy.

The development and widespread usage of cloud technologies promises several economic perspectives at the macro and micro levels. Therefore, cloud services are considered one of the main, promising segments of the information economy and its leading direction, the Internet economy. Therefore most of the leading countries in the world pay special attention to cloud technologies in their national strategies

and programs for the development of the information society, ICT, information, or the Internet economy.

However, along with the advantages of cloud technologies, there exist also some problems. These problems are primarily related to the high cost of cloud technologies, information security, and regulatory issues. Additionally, the development of cloud technologies, the expansion of their application, and their influence make it necessary to define and implement a scientifically sound state policy in this area.

The study analyzed the economic perspectives of the cloud technology economy, areas of its application, and identifies existing problems.

Also, the following proposals were suggested to solve the issues such as public policy, security, legal regulation, development of relevant infrastructure, staff training:

- Evaluation of the country's readiness for the application of cloud technologies;
- Development of a national strategy for the development of cloud technologies;
- Solution of the infrastructure issues;
- Solution of normative-legal problems related to the application of cloud technologies, providing reliable protection of users' interests;
- Development of national standards related to the application of cloud technologies;
- Analysis and evaluation of possible development directions within the cloud technology economy;
- Provision of human resources;
- Provision of government agencies with cloud services.

The main scientific-theoretical and scientific-practical results obtained in the dissertation are as follows:

1. Factors and processes leading to the transformation of the market economy in the information society have been studied, innovative trends in the economy under the influence of ICT, including the Internet, have been identified [8-10]. Obtained

- result is important for future research in the field of economic theory, information and knowledge economy, in the implementation of education, as well as for the development of future economic development strategies.
2. The essence, features, the scientific and theoretical basis of the Internet economy were studied, the principal laws, structure, advantages, and problems were defined [20]. This result can be used in future investigations and training of the Internet economy.
 3. Mechanisms have been developed for the regulation of economic relations in the Internet environment, proposals have been put forward [1, 2, 14]. This result is important for the improvement of the regulatory mechanisms of the Internet economy and the implementation of practical activities.
 4. Mechanisms have been developed and proposals have been suggested to provide the security of the Internet economy [5, 19, 23, 24]. This result is significant for the improvement of legislation and implementation of practical activities in the field of the Internet economy security.
 5. Mechanisms have been developed and proposals have been made for the protection of intellectual property in the Internet environment [4, 12, 17, 25]. This result is important for the improvement of intellectual property protection mechanisms in the Internet environment and the implementation of practical activities.
 6. Development mechanisms of the economy based on Internet of Things technologies have been developed, proposals have been put forward [6, 11]. The obtained result is important in terms of improving the development mechanisms of the Internet economy.
 7. Development mechanisms of the economy based on Big Data technologies have been developed, proposals have been put forward [15, 16, 18, 21, 22]. The obtained result is useful to improve the development mechanisms of the Internet economy.

8. Development mechanisms for the economy based on cloud technologies have been developed, proposals have been put forward [7]. The obtained result is important in terms of improving the development mechanisms of the Internet economy.

The main content of the dissertation is reflected in the following articles:

1. Mahmudov, R.Sh. Problems of Establishing Internet Jurisdiction // Proceedings of the Seventh International Conference Internet-Education-Science. - Vinnytsia, Ukraine –September 28 – October 3, 2010. - c.19-21.
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