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<研究論文>

Needs for Improvement of Electronic Commerce in Uzbekistan

Islamov Bakhtiyor Anvarovich · Isokhujueva Munira Yashnarovna

【Abstract】 The article is devoted to the analysis of urgent needs for improvement of electronic commerce on the basis of the study of methodological aspects of the organization and functioning of e-commerce system abroad and attempts to apply its findings in Uzbekistan. The research of factors effecting on development of e-commerce is based on correlation-regression model, which helps to predict the size of increasing of trade in virtual environment depending on different factors. The authors also try to identify the main directions of development and the ways of increasing the efficiency of e-commerce in the country. They are in the medium term as follows: sustainable improvement of e-commerce by expanding access to national and international e-commerce infrastructures, including the Internet of wide layers for e-commerce participants; completion of creation of local and corporate information and communication networks in the main sectors of economy; completion of the formation of regulatory framework for e-commerce management to form the program for the expansion of e-commerce infrastructure; the development of software products for the organization of electronic trading floors, electronic stores and salons, operation of foreign trade and information portals; creation of electronic trading floors in each regional center and monitoring of commodity market; further development of electronic stores, salons in the regions of the country; formation of public procurement system using e-commerce; development of online payment systems and implementation of remote bank account management systems; further development of electronic export sites of Uzbekistan.

【Keywords】 Uzbekistan, E-Commerce (EC), Information and Communication Technologies (ICT), Internet Business

1. Introduction

Over the past four years, Uzbekistan has been implementing some of postponed market reforms to improve the institutional foundations of doing business and attracting investment. The liberalization of monetary policy with current account convertibility has become a fundamental step in improving the foreign investment and trade climate in the country. The position of Uzbekistan has risen by 25 points in the Doing business ranking of the World Bank over this period. It is occupying now 62nd place among 190 countries, it is among the top 8 countries as for registration of business and among the fastest reforming economies. In 2019 it has attracted \$4.2 bln., which is by \$3.7 bln. more than in 2018, i.e. the rate of growth is 3.7 times in one year. The share of investments in GDP of Uzbekistan reached 37%. Uzbekistan's economy shows a confident upward trend, as it accelerated in real terms at a pace of 5,1% in 2018 and 5.6% in 2019. Industrial output increased by 6.6%, exports - by 28% [1]. According to the World Bank's forecast, despite the pandemic, unlike many other countries, in 2020 Uzbekistan is expected to increase GDP by 0.8%. Growth is small, but maintaining stability and food security in the

face of a pandemic is a good indicator. The total volume of foreign investments in the Republic of Uzbekistan amounted to \$ 7.2 billion), including \$ 4.9 billion in foreign direct investment, and \$ 2.3 bln. in funds from international financial institutions [2].

There are still large reserves to increase the trade, investment and business attractiveness of the country and companies to turn the investment flow into a powerful driver of sustainable development, especially in e-business sector. Electronic data-driven innovation is at the core of modern development sources in the 21st century. An active transition to the introduction of digital technologies will significantly reduce the response time to the current challenges of the economy and consumers. As the President of the Republic of Uzbekistan Sh. M. Mirziyoyev in his Address to the Oliy Majlis noting, that: “In the modern world, digital technologies play a decisive role in all areas. The widespread introduction of digital technologies contributes to the efficiency of public administration, the development of the social sphere, in a word, to a radical improvement in people’s lives. Accelerated transition to the digital economy will be our priority task for the next decade” … “proposed to declare the year 2020 in the country as the Year of Science, Education and Digital Economy” [1].

Development of information and communication technologies is a basis for formation of innovative information society, the progress of which really depends on the development of science and education. Digitalization of economic and social life is very important as it is proved to be under current situation when human kind faced pandemic of COVID 19. It becomes now possible staying at home to study, work and make business via internet.

In March 2020, global retail website traffic hit 14.3 billion visits [3] signifying an unprecedented growth of e-commerce during the lockdown of 2020. According to A., Bhatti; H., Akram; H.M., Basit, «in the US, as many as 29% of surveyed shoppers state that they will never go back to shopping in person again; in the UK, 43% of consumers state that they expect to keep on shopping the same way even after the lockdown is over. Retail sales of e-commerce shows that COVID-19 has impact on e-commerce and its sales are expected to reach \$6.5 trillion by 2023» [4]. In this regard, the issues of the development of e-commerce are of greatest interest, rapid growth of which is also connected with the development of information infrastructure, improving payment systems and their reliability. E-commerce is an integral part of e-business, which covers the whole system of industrial relations and other sectors of economy apart from commercial activities.

The economic and legal issues concerning e-commerce system and entrepreneurship have been discussed vastly for recent several decades in various publications in English¹⁾ and in Russian literature

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published in Russian Federation²⁾ and Republic of Uzbekistan³⁾. The analysis of available research of various issues related to electronic commerce, however, showed³⁾ that some urgent aspects of this topic, such as methodological principles of the organization and functioning of electronic commerce system,

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- 2) Балабанов И. Т. *Электронная коммерция*. - СПб: Питер, 2011 - 145 с. Варакин Л.Е. *Информационно-экономический закон. Взаимосвязь инфо-коммуникационной инфраструктуры и экономики*. - М.: МАС, 2006.-160с. Вулкан Н. *Электронная коммерция. Стратегическое руководство для понимания и построения торговли в режиме «он-лайн», «Интернет трейдинг»*, Москва 2013 - 56с. Канев В.С., Шевцова Ю.В.. *Основы моделирования и управления операционными рисками в электронной коммерции и телекоммуникациях*. — М.: Горячая линия - Телеком, 2015. — 278 с. — 500 экз. — ISBN 978-5-9912-0495-8. Kobelev O.A.; edited by Pirogov S.V., - *E-commerce: 4th edition, Revised and add.* - М.: Dashkov I. K, 2017 - 684 p.: 60x84 1/16 ISBN 978-5-394-01738-4 - Access mode: <http://znanium.com/catalog/product/340852> *Digital economy: management of electronic business and electronic commerce: L.V. Lapidus*. - М.: INFRA-M, 2019. -- 479 p. - www.dx.doi.org/10.12737/textbook_5ad4a78dae3f27.69090312. <http://znanium.com/catalog/product/995938>; Михеев, А. А. Проблема коллизии регулирования сделок в Интернете// *Молодой ученый*. — 2016. — № 28 (132). Левшин Н. Российские законы как инструмент недобросовестной конкуренции в сфере электронной коммерции // *Пробелы в российском законодательстве*. — 2014. — № 5. — С. 110-114. Левшин Н. О проблемах применения отдельных статей ГК РФ при рассмотрении доменных споров // *Фундаментальные и прикладные исследования в современном мире*. — 2015. — № 9-4. — С. 139-141. Некоторые особенности электронной торговли: от «мифов» к «эффекту скольжения» (недоступная ссылка) / Т. Дианова // *Вопросы экономики* / . — 2012. — № 05. — С. 139—146. Рейман Л.Д. *Электронная коммерция Учебное пособие для служащих государственных организаций и коммерческих фирм* - М.: НТЦ «ФИОРД-ИНФО», 2012 - 56 с. Савельев А.И. *Электронная коммерция в России и за рубежом: правовое регулирование*. — М.: Статут, 2014. — 543 с. — ISBN 978-5-8354-1018-7. Юрасов А.В. *Основы электронной коммерции*. М.: Горячая линия - Телеком, 2008. — 480 с. — 2000 экз. — ISBN 978-5-9912-0013-4. Царев В. В., Канторович А. А. *Инфраструктура электронной коммерции* // *Мост*. 2015. № 40. Ноябрь - 524 с.
- 3) Арипов А.Н., Иминов Т.К.. *Вопросы менеджмента сферы информационно-коммуникационных технологий Узбекистана*. Т.: издательство «Fan va tehnologiya», 2015г. - 298 с. Букеева Т.М. *Электронный документооборот - гарант вашего успеха. Информационные технологии Узбекистана "Infocom.uz"*. №3 (75), 2016 - 32с. Джурабаев А «Роль образования в подготовке кадров» // *Экономика и статистика*. - Ташкент, 2014. -№ 4 - 28 с. Исаев Р.И. О государственном стандарте РУз OZ DST 1092:2005. *Информационная технология. Криптографическая защита информации. Процессы формирования и проверки ЭЦП*. Межд. научно-прак. конференция, Ташкент, 2006г. – 67с. Мухитдинов Х.А. *Проблемы повышения финансово-экономической эффективности инфокоммуникационных услуг в Узбекистане* - Т.: «Академия», 2017.-190с. Юлдашев М.М. *Развитие системы электронной коммерции Узбекистана в условиях вхождения в мировую экономику*: - Дис.. на соиск. уч. степ. к.э.н. - Т., 2005. -130 с. Иминов Т.К., Мирзахидов Х.М. *Выбор инновационной стратегии развития предприятий в условиях внедрения ИКТ*// *Экономика и финансы*, №1, 2012. Хасанов П.Ф., Хасанов Х.П. *Стойкость Государственного стандарта ЭЦП Республики Узбекистан* // «Сервисы удостоверяющих центров. Новые области применения РКІ»: Тез. докл. международной научно – практической конференции РКІForum- 2016, Санкт-Петербург, 7-10

the factors impeding the development of the latter and their quantitative analysis applied in Uzbekistan have not been studied enough despite their urgency. This paper to certain respect attempts to fill this gap and on this basis to make some proposals to improve the development of the e-commerce system in Uzbekistan considering vast international experience in this field.

Maintaining dynamic development of national economy is directly connected with activating efforts of the state and domestic entrepreneurs on increasing participation in Internet business. Application of the theory and methodology of electronic business in Uzbekistan by using modern information technologies and digital methods will allow to solve efficiently a number of economic problems, including tasks of long-term presence of business structures in targeted market. E-commerce is one of the prospective components of digital economy. That is why it is in the center of attention of both foreign and national scholars.

2. Methodological principles of the organization and functioning of electronic commerce system

There are many laws, decrees and other legal documents on various aspects of electronic commerce” adopted in the Republic of Uzbekistan.⁴⁾ They interpreted electronic commerce as implementation of transactions by parties stipulated by law for actions and operations in negotiating and executing transactions on sailing and delivering goods, operations, provision of services, and accomplishment of other operations in accordance with agreement concluded with the use of information systems aimed at making profit on the basis of electronic procedures.

Currently, however, in scientific literature there is no unity in the approaches to the definition of “electronic commerce”. In modern economic literature there is rather narrow definition of the concept of “electronic commerce” (EC) as commercial interaction of business entities through Global Internet.

ноября 2016. 33. Исламов Б.А., Исаходжаева М.Я. Актуальные вопросы и направления совершенствования системы электронной коммерции в Узбекистане. журнал «Международные отношения». Т.: УМЭД, №3-4, 2019 г., 0,8

- 4) Law of the Republic of Uzbekistan “On Telecommunications” from August 20, 1999, № 822-I.
Law of the Republic of Uzbekistan “On Informatization” from December 11, 2003 № 560-II.
Law of the Republic of Uzbekistan “On electronic digital signature”, from December 11, 2003, № 562-II.
Law of the Republic of Uzbekistan № 611-II “On electronic document management”, from April 29, 2004
Law of the Republic of Uzbekistan “On Electronic Commerce” from 29.0.2004 № 613-II (Law was adopted in a new version in accordance with the Law of the Republic of Uzbekistan from May 22, 2015, № ZRU-385 “On Amendments and Additions to the Law Republic of Uzbekistan “On electronic commerce”.
Law of the Republic of Uzbekistan №13 “On electronic payments” from December 16, 2005
Decree of the President of the Republic of Uzbekistan № UP-4947 “On the Strategy for Further Development of the Republic of Uzbekistan” from February 07, 2017
Decree of the President of the Republic of Uzbekistan “On additional measures for the implementation of digital economy, e-government, as well as information systems in the public administration of the Republic of Uzbekistan” from December 13, 2018, № UP-5598.
Decree of the President of the Republic of Uzbekistan “On measures for the development of the digital economy in the Republic of Uzbekistan” dated July 3, 2018, № PP-3832
Decree of the President of the Republic of Uzbekistan “On measures to accelerate the development of electronic commerce” from May 14, 2018, № PP-3724

In our opinion, it is necessary to consider e-commerce more broadly, including financial institutions that provide electronic payments in virtual environment. In addition, they should include methods for managing e-commerce, especially in connection with country's entry into digital economy. In terms of modern requirements of business, it is required to implement such measures of government regulation as licensing activities, standardization and certification of funds and insurance of electronic commerce entities (elements of unification of state regulation) besides the measures of fiscal, money-and-credit, and international trade policy. It's essential to pay attention also to the security of electronic transactions.

Taking into account the above-stated we suggest to define "e-commerce" as functionally interconnected complex of entities with the participation of buyers, sellers, financial institutions, elements of unification of state regulation, transaction security, and information and communication technologies on the basis of integrated approach. According to the definition there have been developed conceptual scheme for interaction of entities of electronic commerce. At the same time elements of the state regulation are beyond the system and effect on them from outside.

Fundamental types of electronic commerce in international practice are presented in Uzbekistan as well. The main share of e-commerce business relations in the world practice falls on "Companies to company", "Companies to consumer". They can facilitate foreign currency inflow and increase of exports of resources, goods and services. "State to business", "Business to business", "Business to consumers" became important in Uzbekistan too, particularly, in connection with the declaration of 2019 year as the "Year of Active Investment and Social Development" in Uzbekistan (Table 1).

Obstacles to the development of electronic transactions, including regulatory, economic, organizational, technological, social, personnel and security issues are identified on the basis of the Uzbekistan Agency for Communications & Information (UzACI) materials.

For each factor there assessed reasons that facilitate and refrain the development of e-commerce. Traditional business risks are fully inherent in e-commerce and in addition to that specific risks arising from e-commerce technologies themselves.

In particular, there are risks associated with information security: information privacy risks; information falsification risks; information loss risks; information failure risks. The issues of the low level security on the Internet leads to high risks of electronic transactions and occupy a special place among

Table 1. Classification of priority types and development barriers of electronic transactions

№	Types	Market environment	Development barriers
1.	State to state	E-government	<ul style="list-style-type: none"> - low level of security on the Internet and, consequently, high risks to electronic transactions; - the absence of mechanism of argument solution for electronic transactions and, consequently, the impossibility of providing written evidence in the court on the fact of virtual transaction; - the absence of a single reliable information resource in all spheres of electronic commerce; - the complexity of mechanism of cooperation with international financial institutions; - high tariffs for Internet services; - high prices of online stores; - shortcomings in cooperation with international EDS; - high prices for goods and services delivery; - the absence of licensing and certification procedures for e-commerce services; - underdevelopment of issues of standardization and insurance of operations in electronic commerce; - the need for specialists in the sphere of electronic commerce, etc.
2.	State to business	Public procurements, submitting statistical reporting, tax collection, customs payments, etc.	
3.	State to consumers	Utilities payments and social payments, etc.	
4.	Business-to-business	Virtual trading floors (electronic auctions, tenders); electronic payment systems, insurance services	
5.	Business – to – consumers	Online shopping, auctions, electronic payment systems, electronic employment	
6.	Consumers to consumers	Electronic auctions, electronic bulletin board	

Source: Table is drawn up by the authors on the basis of the Uzbekistan Agency for Communications & Information (UzACI) materials.

the barriers.

The reasons for emergence of risks are that they flow from specific threats of electronic commerce, including external (viruses and malware; hacker attacks; fraud; spam; the threat of seizing the intellectual property of copyright holder) and internal threats (information theft; sabotage; the absence of professionalism or negligence of employees). Risks can be classified according to the following criteria: by nature of occurrence; possible consequences; scale; content; area of origin; possible insurance; the types of entrepreneurial activity; possible diversification.

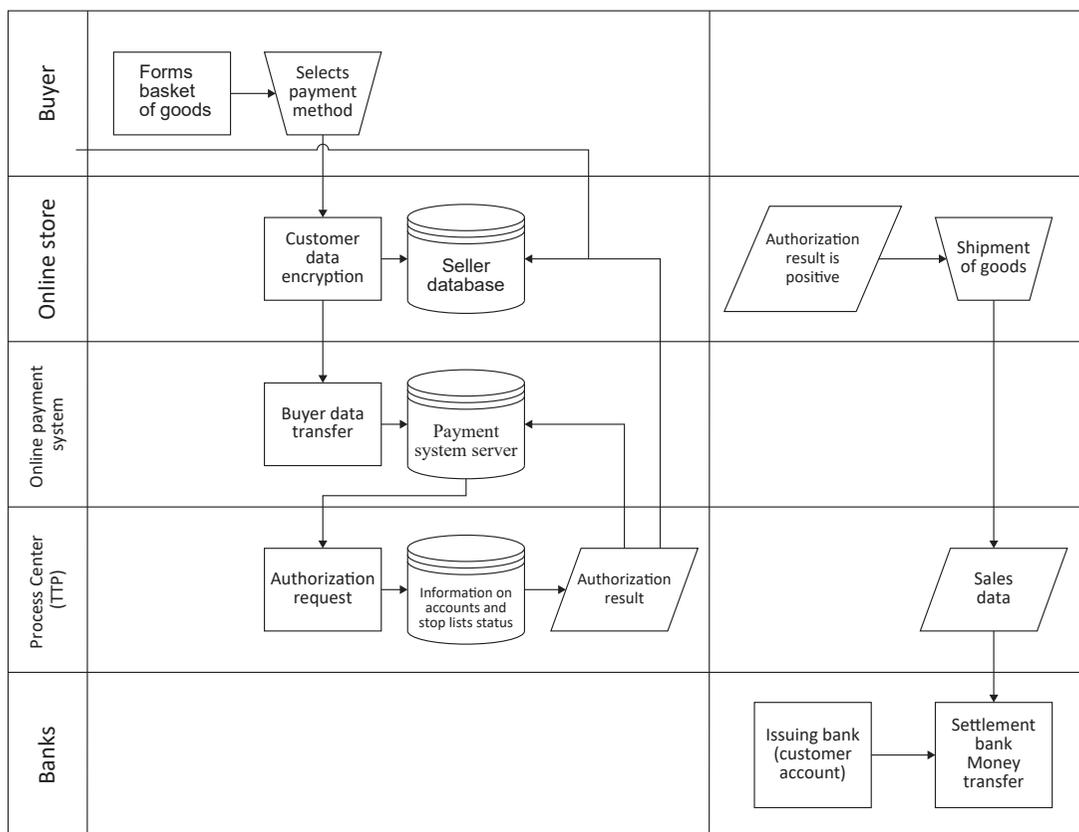
In the context of the entry of the Republic of Uzbekistan into the economy using e-commerce services, it became necessary to ensure the security of e-business. The problem of ensuring the safe conduct of e-commerce using new information technologies and global information networks is one of the most urgent in the modern business world. In these conditions, there are risky situations caused by the use of modern information technologies in business. In the course of electronic commerce, security means the preservation of the system under consideration, stability and the possibility of self-development. It indicates the state of protection against possible damage, the ability to contain or parry harmful effects, as well as to quickly compensate for the damage caused.

According to the results of a survey of CEOs of the largest organizations doing business in Russia, cyber threats are one of the main obstacles to business development for them. Cybercriminals target companies from various sectors of the economy: banking and financial organizations, retail trade, investment companies, telecommunications, industrial production, insurance companies, etc. 60% of business leaders in Uzbekistan believe that increased competition in the market can destabilize their business in the next five years. Such data was shown by the first Uzbek release of the global survey of CEOs of the world's largest companies, CEO Survey. It was presented on July 26, 2018 in Tashkent [5].

According to the results of the annual survey of leaders of the largest companies in the world, conducted by the auditing organization Price water house Coopers (PwC), the degree of influence of cyber threats on business has risen from 10th to 6th position. An annual survey of more than 9,700 respondents showed that the total number of information security incidents increased sharply - by 48% - compared to 2017, amounting to a total of 42.8 million incidents. This means there were 117,339 cyberattacks on average every day [6].

In terms of the number of information security incidents, they are more common in medium-sized businesses (growing by an average of 64% per year). In large business, on average, this figure increases by 44% per year. Smaller companies are less able to detect attacks. Transactions accomplished in virtual environment are not registered anywhere and, if necessary, there is no legal evidence of transaction confirmation. In solving arguments and conflicts between the parties, it is impossible to provide legally confirming document on the existence of transaction. It required legally authorized body in the form of certifying center that can issue a certified document on completed transaction. Classification of priority types, the main markets and development barriers of electronic transactions are given in Table 1.

International practice of solution of the issue is presented as authorized legal body - Trusted Third Party (TTP), certification center that issues certified document on the transaction, so-called "electronic notary". According to the International Telecommunication Union (ITU) recommendations, TTP is an organization or agent that provides one or several security services, and is trusted by another entity



Source: compiled by authors.

Fig. 1. Process of operations of e-commerce system with participation of TTP

according to the activities associated with these security services.

We presented principal scheme of TTP operation and proposed our approach for creation TTP in Uzbekistan. Our analysis identified the following services of Trusted Third Party as the most significant and necessary element for the development of e - commerce in the Republic of Uzbekistan (see Fig. 1).

TTP technology is based on the public key infrastructure (PKI), as technical, organizational and legal component that can provide confidence from the subjects of relations. TTP services, guidance on their use and TTP service management are defined in ITU Recommendation X.842 (10/2000) Series X: Data transmission networks and open communication system. According to ITU Recommendation X.842 TTP services are additional services in the application of electronic digital signature (EDS) and are recommended for the use by entities that wish to increase reliability and business confidentiality in electronic cooperation. On the basis of international experience and the analysis of functioning e-commerce and ITU More than 13 trust services have been determined by Recommendation ITU X.842.

The attribution service is intended to store additional information on identified subjects or objects of information exchange in order to differentiate the access to the resources and detect the level of privileges of the subject. Reliability service implements maintenance of indisputability of the subject from participation of evidence or facts on the basis of cryptographic verification.

Time break service provides certification of electronic document when it is necessary to indicate the date and time of signing and, therefore it used a guaranteed trusted time source. The service for managing keys and key certificates is responsible for key generation processes, registration and certification of keys, as well as for distribution, installation, storage and cancellation of keys. Certificate management service is intended to organize implementation of certificates of public signature keys and guaranteeing their life cycle; structured publication of signature key certificates and information on revoked certificates; keeping these publications up to date. Electronic Notary Service provides acknowledgement and certification of a document with the assistance of electronic signature or other means, rendering directory inquiries service in the form of electronic receipt signed by TTP.

Trusted third party along with the listed services arranges long-term archival storage of electronic documents, which facilitates active introduction and use of electronic means in everyday life. In future, TTP may differentiate its activities in allocation of additional services: information and marketing, trade and analytical, advertising, information security and consumer rights. Registration of electronic transactions will give an opportunity to control tax payments in virtual environment and solve the problems of tax evasion of electronic transaction for Government of Uzbekistan. TTP functioning will allow statistical accounting of transactions to operate on the Internet, which is very problematic issue of today. Participation of the structure will increase the dynamics of development of electronic commerce; accelerate the growth rate of electronic commerce in the network as well. TTP can also be used in e-government, electronic payments (transactions) and in informational interaction.

Thus, to solve the problems that hold the use of e - commerce according to international experience and practice of e - commerce development in the USA, Japan and in the West European developed countries it is necessary to establish Trusted Third Party and implement properly its services. The use of TTP services could give a strong impulse for improvement of the e - commerce system in Uzbekistan.

3. Analysis of Factors of Development of E- commerce in Uzbekistan

Recently, specialists' attention has been focused on the quantitative studies of various subsystems of electronic business. However, in domestic and foreign literature there is no single methodology for measuring the influence of various factors on the development of electronic commerce. We propose one of the methods for measuring contribution of different factors for the development of electronic commerce in Uzbekistan using the system of interrelated econometric equations given below:

1. $LTGDP = 4.68 + 0.94 * LNEC$
2. $LNEC = -4.8 + 0.1 * LNIU + 0.07 * LAS + 0.033 * LNDOM + 0.055 * LINV - 1.3112 * LNAT$
3. $LNIU = 4.34 + 0.91 * LAS + 0.46 * LOPER$
4. $LAS = -4.044 + 1.45 * LOPER + 0.157 * LNDOM$
5. $LNDOM = 4.89 + 0.19 * LINV + 0.072 * LNAT + 1.072 * LKOL$
6. $LINV = -18.71 + 2.37 * LDOH + 1.29 * LNAT$
7. $LKOL = -11.11 - 2.74 * LNAT + 0.21 * LNDOM$
8. $LDOH = 4.81 + 0.505 * LNEC - 1.44 * LNAT$
9. $LOPER = -5.945 + 0.154 * LINV + 2.29 * LNAT$

where the trade LDOH - income from communication services. LNAT - the number of active threats in the zone of the .uz domain; LINV - the volume of investments in the ICT sector, the number of domains in the .uz. zone is LNDOM, the speed of access to international information networks is LAS, the number of Internet users per 1000 people is LKOL, the estimated number of Internet users is LNIU, turnover in GDP is LGDP, the volume of electronic commerce is LNEC,

First equation shows that the increase in the share of trade in GDP by 0.94 percentage points is due to the increase in electronic commerce by 1%. This indicates the high contribution of e-commerce development to country's GDP. The second equation characterizes main factors in the development of E-commerce.

Among all factors, security has the highest coefficient of impact on the volume of ETs that is an increase in the number of active threats by 1% leads to a decrease in electronic commerce by 1.3112%. Thus, it is necessary to note that the security of transactions in the network is the most important factor influencing e-commerce development.

Introduction and accelerated extension of ICT is an influential factor in the development of e-commerce, which, in turn, leads to access to world markets, the development of industrial, trade and economic cooperation between regions and other countries, the increase of distribution channels, creation of new labor markets, capital and competitive economy, as well as stimulating necessary level of trade.

4. Lessons from International Experiences to Improve E-Commerce System of Uzbekistan

Uzbekistan considers its integration into global economy as one of the most important priorities for its sustainable development. To draw proper lessons from international experiences to improve E-Commerce System of Uzbekistan first of all it is necessary to consider contemporary global trends in this field.

E-commerce has become an important tool for small and large businesses worldwide, not only to sell to customers, but also to engage them. Today, traditional businesses are investing large sums of money into mobile applications and e-commerce. [7, 8]. In 2012, e-commerce sales have reached \$1 trillion [9].

The e-commerce market has gained much popularity among the western countries, in particular Europe and the U.S. Previously, these countries have been highly characterized with consumer-packaged-goods (CPG) [10, 11]. However, trends show that there are future signs of a reverse. For example, the highest per capita spending on e-commerce in the world was in United Kingdom in 2010 [12, 13]. In 2013, the biggest revenue from e-commerce in Europe was in enterprises of Czech Republic, 24% of the country's turnover generated from the online channels [14].

Among emerging economies, China's e-commerce presence continues to expand every year. In 2015, there were 668 million Internet users in China (twice as many as in the US), making it the world's biggest online market [15]. Moreover, China is also the largest e-commerce market, 80% of which was accounted to Alibaba in 2013 in the world by value of sales [16], with an estimated US\$899 billion in 2016 [17]. The success of e-commerce in China might be due to the Chinese retailers helping the consumers feel comfortable shopping online [18].

India is another powerhouse among the developing countries, having an Internet user base of about 460 million as of December 2017 [19]. In India, cash on delivery is the most preferred payment method, accumulating 75% of the e-retail activities [20]. The Indian retail market is expected to rise from 2.5% in 2016 to 5% in 2020 [21]. The e-commerce in Brazil is developing rapidly too. By 2016, according to eMarketer retail e-commerce sales in Brazil reached \$17.3 billion. [22].

New vast possibilities for further expansion of e-commerce are connected with wide spread of mobile phones and other devices facilitating purchases in domestic and foreign markets. In turn, dynamic development of home and cross-border e-commerce in parallel with new information technologies promotes domestic and foreign trade as well as rapid growth of modern enterprises and traditional businesses. Besides as the DeLone and McLean Model states that three perspectives contribute to a successful e-business are: information system quality, service quality and users' satisfaction [23].

Conducted analysis of foreign experience in the development of electronic commerce allows us also to draw a number of significant lessons that should be taken into account for Uzbekistan. Namely: emerging powerful, reliable and safe servers, available for the mass buyer (alternative is block chain), guarantying security of electronic transactions;

- growth of online culture;

- presence of well-established telecommunications infrastructure, including regions of the country;
- credit card prevalence;

- compliance and improvement of electronic payment systems with foreign payment systems;

- improvement of mechanism for interaction with international financial institutions;

- improving fiscal focus of customs operations of international trade;

- the presence of culture of orders and sales in catalogs; the existence of effective express delivery systems;

- development of mobile commerce, development of standardization issues in the sphere of electronic commerce;

- insurance of electronic commerce entities;

- licensing activities in the sphere of electronic commerce and certification of electronic commerce instruments;

- formation of necessary pool of human resources, especially in the regions, which will facilitate involvement of their population to the global electronic commerce.

Reasons for not using e-commerce services in Uzbekistan before coronavirus pandemic COVID 19, were identified via sociological survey. According to our respondents, the main reason is the absence of confidence in this form of trade due to the security factor and possible higher prices. 85.5% of respondents announced about it. Distrust is largely due to the lack of knowledge of the mechanism of electronic commerce (75.3%). Almost half of the respondents do not have access to the Internet, a third do not consider it necessary to use electronic commerce services. Significant issue in the organization of electronic commerce is the problem of delivery and its cost, which leads to the increase in the final cost of goods.

The Republic of Uzbekistan has been implementing a set of measures aimed at introducing and developing e-commerce that meet the requirements and rules of international trade, which will allow the

republic to become an equal member of WTO and participant in the world market. Customs legislation regulating entrepreneurial activity, for example, in legislation on licensing and certification are being improved here. It's necessary to consider a draft legislation on the protection of personal data; to develop standardization the issues in the sphere of e-commerce, insurance of e-commerce entities, licensing of activities in the field of e-commerce and certification of e-commerce instruments, on obligations for electronic transactions; on information security; on electronic stock market; criminal and administrative legislation to strengthen the responsibility of e-commerce participants. Additionally, it is essential to systematize the subject list of goods accessible to mandatory certification and harmonization with international and national standards in EC sphere.

Elaboration of the conditions of recognition of EDS and certificates of keys of foreign citizens in Uzbekistan in legislative order will help to solve legal side of trans-boundary cooperation. Conduction of monitoring of regulatory framework of the Republic of Uzbekistan and international legislation permits developing new regulatory documents aimed at accelerating further development of relations in e-commerce sphere. The absence of qualified human resources in the regions is particularly serious drawback, which impedes involvement of population of regions in the global electronic commerce. It is also necessary to raise mechanism for training e-commerce specialists. One of the most important factor suppressing perfection of e-commerce is the low level of security in the network, which involves the threat of intrusion, theft and fraud in virtual environment, respectively, mistrust among users of e-commerce services.

In order to create conditions for the development of small business and entrepreneurship in e-commerce sphere (for example, administrative, tax, information and other benefits), it is expedient to review income rates and integrated social taxes, customs duties (by creating single customs zone with countries near and far abroad) and simplification of procedures for passing through the customs zone for e-commerce facilities. Furthermore, it's essential to stimulate the development of e-commerce in rural areas by providing various forms of benefits, preferences, creating mechanism for preferential lending to the population on purchasing ICT products and using e-commerce services. Establishment of specialized credit systems for small and medium-sized enterprises using e-commerce services will attract manufacturers of goods and services to online sales, which will create competitiveness in virtual environment.

To increase sales in virtual environment, it is also indispensable to enhance the volume of exports of goods and services via Internet. Formation of Internet banking system and development of mobile banking will contribute to the growth of remote account management. Development and implementation of electronic insurance system, including Internet insurance for the introduction of e-commerce will increase users' confidence and, consequently, the demand for services in virtual environment. There required constant exchange of positive experience with the countries of near and far abroad in the sphere of ICT.

The increase in the number of online stores and expansion of the range of goods and services will lead to lower prices for the delivery of goods via online stores. Improvement of electronic payment system with the expansion of the range of services, including interbank cooperation provides different functioning financial institutions. There realized wide-range application of the use of universal electronic

plastic cards to cover all possible types of electronic payments. Formation of favorable conditions will serve for advantageous basis of wide attraction of investments, including foreign grants from international organizations, financial institutions, companies, firms, etc.

The growth of e-commerce indicators are characterized by prospects and conditions for attracting investments. In the course of studying the infrastructure of e-commerce system it is important to include the issues of certification of electronic commerce instruments and licensing activities in the sphere of electronic commerce. It is obligatory to take measures to improve certification procedures, which include: simplifying access to the information necessary for applicants to receiving certificate in order to determine technical requirements and procedures;

optimizing terms of certification procedures that will quickly bring technology to the market;

establishing rational payment for conducting certification procedures, including costs on trial, which allow manufacturers to hold control or choose from several test laboratories where exactly appropriate tests should be carried out;

introduction of consistent conformity assessment procedures that allow manufacturers to make rational and realistic business plans;

automatic renewal of certificates - recertification (it is needed to simplify procedures for recertification in the event that product changes affect technical parameters).

In this regard, the use of specialized software and hardware-software protection instruments that meet requirements of the State certification system on acquisition of information security deserves special consideration. On the assumption of the analysis of foreign and domestic experience, it is indispensable to form transparent conditions for licensing operations in the area of e-commerce.

It is reasonable to offer the following recommendations: substitute licensing information protection activities with the replacement of its certification, which will provide the necessary quality of information protection instruments and services for its protection; introduction of mechanism for non-governmental regulation of ICT sector - for example, independent associations, business communities, etc. To determine integrated standards and rules for managing e-commerce in the country and abroad it is necessary to build standardizing system in the sphere of EC. It is significant to introduce international standards in the area of e-commerce and commercial transaction support procedures recognized by international community. It is essential to conduct organizational measures in order to accelerate the development of e-commerce in the country. In order to improve delivery system for goods and services, it is prudent to expand postal and transport services, including application of electronic system for tracking movement of goods. Rural population connection to a single electronic document management will be provided with the further creation of centers for registering EDS keys in the regions.

Establishment of sustainable multi-purpose collective access offices in rural areas (in libraries, educational institutions, post offices) at moderate prices or for free access to various information resources, primarily the Internet, compliance with the intellectual property rights and encouraging the use of information and knowledge sharing will accelerate the process of integrating population of the country into virtual environment. Eradication of computer and Internet illiteracy is possible by encouraging media to promote and implement e-commerce in everyday life. The study and analysis of international trends in the creation and development of electronic commerce shows that it is important

to train and retrain personnel for working in the sphere of electronic commerce.

5. Conclusions

President Shavkat Mirziyoev in his Address to the Parliament of Uzbekistan stressed within short period of time we need to train 1 mln. qualified software experts [24]. It is necessary to transit successfully to modern digital economy and to supply properly such areas like e-commerce with proper specialists. Among the most urgent specific needs in e-commerce field it is very important to improve: planning and forecasting of training specialists, considering global, regional and national trends in the supply and demand of specialists in the field of e-commerce; elaboration of training standards for specialists; improvement of proposals to coordinate training e-commerce specialists in economic sectors; creation of specialized training centers in the sphere of “electronic commerce”; guaranteeing connection of training with production through the organization of placements in the structures involved in e-commerce process; formation of curricula and educational and methodical literature in national language and in various formats for teaching bachelors and masters in the sphere of “electronic commerce”; improving and developing the system of training on the basis of world experience, retraining and advanced training of personnel in the sphere of e-commerce by producing information-marketing and educational-consulting centers; employment of graduates in the direction of “electronic commerce”.

Solution of social aspects of electronic commerce services practice in the regions by increasing the culture of their use, producing multi-purpose office of collective Internet access remains as important issue (in libraries, educational institutions, post offices) in order to improve public services and improve the quality of life. Studying national priorities and international requirements for e-commerce we suggest to include a list of recommendations in the e-commerce development program in the medium term: sustainable improvement of e-commerce by expanding access to national and international infrastructure of e-commerce, including the Internet of wide layers of e-commerce participants;

- completion of creation of local and corporate information and communication networks in the main sectors of economy;

- completion of the formation of regulatory framework for e-commerce management, to form the program for the expansion of e-commerce infrastructure;

- implementation of modern electronic document management systems using electronic digital signatures in organizations of various forms of ownership;

- to complete the development of software products for the organization of electronic trading floors, electronic stores and salons, operation of foreign trade and information portals;

- creation of electronic trading floors in each regional center and monitoring of commodity market;

- further development of electronic stores, salons in the regions of the country;

- formation of public procurement system using e-commerce;

- development of online payment systems and implementation of remote bank account management systems;

- further development of electronic export site of Uzbekistan; stimulating investment by the private

sector.

President Shavkat Mirziyoyev in his latest Address to the Parliament of Uzbekistan on December 29, 2020 noted that despite all difficulties connected with pandemic COVID 19, the reforms were resolutely continued according to the State Program of the Year of “Development of Science, Education and Digital Economy” [25] and certain results were achieved. The economy of Uzbekistan avoided a recession and maintained positive dynamics. According to the State Committee on Statistics, the gross domestic product for January-December increased by 1.6%. (Compared to Kazakhstan's GDP decreased by 2.6% against growth by 4.5% in 2019. In Russia, at the end of the year, the decline in annual GDP was estimated at 3.8%. GDP of Kyrgyzstan in January-December 2020 decreased by 8.6%.) [26]. New steps towards strengthening of infrastructures of e-commerce were also achieved. Of course, more tasks in this field are to be achieved in Uzbekistan within the Decade of Digital Economy up to year 2030.

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