

**MINISTRY OF HIGHER EDUCATION, SCIENCE AND INNOVATION  
REPUBLIC OF UZBEKISTAN**

**NAMANGAN INSTITUTE OF ENGINEERING - CONSTRUCTION**

**" ECONOMICS " DEPARTMENT**



**JURAYEV ELYORBЕК SOBIRJON OGLI**

**"DIGITAL ECONOMY"**

**BY SCIENCE  
CURRICULUM COMPLEX**

**Namangan -2024**

UDC :

E.S.Jurayev educational-methodical complex on the subject of "**Digital economy**". For lecture training. - Namangan : Economy and management , 2024 years, 193 pages.

**Reviewers:**

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It was discussed at the meeting of the " Economics " department in " \_\_\_\_ " \_\_\_\_\_, 20\_\_\_\_ .

The educational-methodical complex was recommended for implementation in the educational process in accordance with the decision of the educational-methodical Council of the Namangan Engineering-Construction Institute No.

**COMPOSITION OF THE TEACHING-METHODICAL COMPLEX**  
( for lecture training )

<b>I</b>	<b>STUDY MATERIALS.....</b>	<b>5</b>
<b>1</b>	Introduction to the science of "Digital Economy".	
<b>2</b>	Digital Economy: Fundamentals of Electronic Business Management	
<b>3</b>	Features of the development of electronic commerce (Internet commerce).	
<b>4</b>	Indicators of digitization of the economy	
<b>5</b>	Features of business management in the digital economy	
<b>6</b>	Mobile technologies	
<b>7</b>	Neurotechnologies and artificial intelligence	
<b>8</b>	Design Thinking in Business	
<b>9</b>	Virtual and augmented reality technologies	
<b>10</b>	Effective use of robotics in innovative business	
<b>11</b>	Electronic business models	
<b>12</b>	New possibilities of crowdsourcing and crowdfunding in business	
<b>13</b>	Features of the modern e-commerce market	
<b>14</b>	E-commerce models	
<b>15</b>	Features of digitization of e-government and service sector	
<b>16</b>	Development of e-learning platforms	
<b>17</b>	Effective use of digital technologies in industry. "Industry-4.0" concept	
<b>18</b>	Digital marketing	
<b>19</b>	E-branding	
<b>20</b>	Features of e-business implementation in some branches and sectors of the economy	
<b>21</b>	E-business and e-commerce management issues	
<b>22</b>	Electronic services quality management	
<b>23</b>	Creating a personal e-business	
	<b>PRACTICAL TRAINING MATERIALS.....</b>	<b>205</b>
	<b>BANK OF CASES.....</b>	<b>220</b>
<b>II</b>	<b>SUBJECTS OF INDEPENDENT STUDY.....</b>	<b>234</b>
<b>III</b>	<b>GLOSSARY.....</b>	<b>246</b>
<b>IV</b>	<b>APPENDICES .....</b>	<b>251</b>

## INTRODUCTION

Current period digital economy and she is with depends has been one how much efficient technologies, that's it including electron commerce and electron business to our lives intensity with come in is coming Just like that therefore for also state and society development more acceleration in order to our republic leadership one how much important decisions acceptance did For example, Uzbekistan Republic president 2020 year 25 in January 2020 year for the most important priority tasks about High To the meeting In the petition too in our country digital of the economy development according to the following telling passed: "*In our country science more development find our youth deep knowledge, high spirituality and culture the owner reached to educate competitive the economy formation regarding started our work fast continue carry on and new, modern to stage raise in order to i in our country 2020 per year "Science, enlightenment and digital the economy development year "*, that name to give offer I will go." From him except Uzbekistan Republic President 2018 year 19 in February PF-5349 numerous *Information technologies and communications field more development measures about "gi* Order execution reach regarding <sup>1</sup>, also in our republic digital the economy state management to the system application to do for modern information technologies fast development according to conditions create, as well information safety provide in order to Ministers Court 2018 year 31 in August digital of the economy goal and duties set giving "*Uzbekistan in the Republic digital the economy current to do and more development according to addition measures about "* Decision acceptance did and UzR President PQ-3832 03.07.2018 in "*Uzbekistan In the republic digital the economy development measures about "gi* decisions too that's it events including input possible This decision according to the following in Uzbekistan digital the economy more development according to the most important tasks stated as :

➤ Investment and entrepreneurship diversification to do for activities in the field of cryptoassets circulation, including mining, smart contract, consulting, emission, exchange, storage, distribution, management, insurance, crowdfunding (collective financing), also blockchain technologies current reach and development.

➤ Blockchain technologies work release and of them use in the field practical work skills have has been qualified personnel preparation

➤ Digital the economy more development for innovative ideas, technologies and developments current reach in the field state organs and entrepreneurship of subjects near cooperation provide.

➤ Crypto assets according to activity and blockchain technologies in the field international and foreign organizations with cooperation each bilaterally development and work release in the field activity showing high qualified foreign specialists attraction to do

➤ Abroad experience account received without blockchain technologies current reach for legal create a base .

Above decree and of decisions successful execution for digital of the economy essence what and his main concepts of what consists of perfectly cooked knowing get demand will be done. This interesting and attractive digital economy to the field our trip from the start previously informed society and she is with organic depends has been one how much main concepts with closely getting to know to exit movement we do Because that's all this study in the manual reflection delivered matter, problem and concepts right to understand possible will be

Short by doing so to speak *digital Economy* - this society blessings work release, distribution and consumption to do in processes electron and information communicative technologies wide current to reach in the eye holding of a person economy activities research doer is a science.

Digital economy the term two different different concepts to express for is used. First, digital economy – this of development modern stage considered creative labor and information of his blessings priority place with is described. Secondly, digital economy – this to himself hos theory being his learning object, informed social processes is considered Digital economy theory own development initial during the because of civilization digital information to the stage pass one how many ten just cry started

Digital *economy* " the term scientific to practice Spanish and american sociologist, informed of society leader researcher Manuel Castells by included.

This about she is his own Information *period: economy, society and culture* " named three bound monograph print reached Current to time come and digital economy theory in full yet not formed and the majority economists by wide scale being studied. Scientific in the literature present time " *New digital economy* " different solutions with is called

New digital technologies and platforms physical persons and enterprises to the management more and more big in scope mutually in communications transaction expenses shorten and state structures and economy host subjects with near connections done to increase possibility gives Of these as a result network services based on digital or electron economy is formed. Digitization of the concept himself items from the internet pulling electron the government to technologies has been modern information technologies "close up" apply based on goods and services work release manage and work release himself of improvement from the new stage proof gives of the economy digital segment of expansion main the reason transaction of the sector growth is and she is developed countries national of YIM from 70% more organize does. This sector to the composition the following includes: state management, consulting and information services show, finance, wholesale and retail trade, also different utility, personnel and social services show. In economics dynamics and diversification level how much high if country inside and outside so much big in volume unique data becomes suitable respectively, national economy within too bigger information traffic to the body will come That's it because of digital economy and electron commerce information of technological services come in to go level high and participants the number a lot has been in the markets the most efficient activity shows. First in line this of e-segment share YIM 10% organize that does employment from 4% high has been and this indicators obvious growth to the trend have has been to the internet dependent networks (transport, trade, logistics and etc.) with depends. Technological in terms of digital economy and electron of commerce development four main trend set gives: these are mobile technologies, business models, cloudy technologies and social media tools. This while own in turn that's it means that national the segment in formation their of possibilities complete use important importance occupation That's enough with one at the time national digital economy

and electron to commerce internal and external investments efficient attraction reach and from him dividends get for comfortable entrepreneurship environment create, weighty human being capital preparation, management process too development is necessary. Of these all of them economic of growth foundation is considered and the same that's it because of them development measures set to determine must

# **LECTURE EXERCISES**

## LECTURE SESSION PLAN

### MODULE 1. GENERAL FUNDAMENTALS OF DIGITAL ECONOMY TRANSFORMATION

#### Topic 1. Introduction to the science of "Digital Economy".

1. Economic laws of information technology development
2. Concept of digital economy and its features
3. Consistent implementation of innovative ideas, high technologies in production and social life
4. Digital economy and economic growth

**Applied pedagogical technologies:** teamwork, clusters, BBB.

#### Recommended literature on topic 1

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .
2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .
3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."
4. Lapidus L.V. Digital economy: upravlenie elektronnyim biznesom i elektronnoy kommertsiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.
5. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.
6. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019
7. Gulyamov S.S., Ayupov R.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

#### Topic 2. Digital Economy: Fundamentals of Electronic Business Management

1. The nature and development features of e-business.
2. The role of innovative technologies in the formation of the digital economy.
3. Features of creating a business on the Internet.
4. Features of development of digital economy in Uzbekistan, legal basis.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

### **Recommended literature on the 2nd topic**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".
2. Resolution No. PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure in order to develop the digital economy".
3. Decision PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the "Digital Trust" support fund for the development of the digital economy."
4. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".
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6. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.
7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

### **Topic 3. Features of the development of electronic commerce (internet commerce).**

1. Electronic business models .
2. Electronic commerce (e-commerce) and electronic trade (e-trade) are proprietary symbols and differences.
3. Mobile commerce (m-commerce) and its impact on business.
4. The impact of the digital economy on informed market participants.

**Used pedagogical technologies:** teamwork, fish skeleton , case study , pinboard.

### **3 -recommended literature on the topic**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .
2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .
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6. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

7. Gulyamov S.S., Ayupov R.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

#### **Topic 4. Indicators of digitization of the economy**

1. Digital economy indicators, their characteristics.
2. Indicators of digital economy development.
3. Digital Economy and Society Index (DESI) and World Digital Competitiveness (MDC) indicators .
4. Characteristics of Networked Readiness Index (NRI) and Digital Evolution Index (DEI) indicators.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

#### **Recommended literature on topic 4**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution No. PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure in order to develop the digital economy".

3. Decision PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the "Digital Trust" support fund for the development of the digital economy."

4. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".

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6. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.

7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

#### **Topic 5. Features of business management in the digital economy**

1. Features of digital economy techniques and technologies.
2. Future technologies. Consequences of Digitization.
3. Big data (Big data) and analytics, database organization mechanism.
4. Digital company strategies.

**Used pedagogical technologies:** teamwork, fish skeleton, case study , pinboard.

## **Recommended literature on the 5th topic**

9. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

10. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

11. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

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15. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

16. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

## **Topic 6. Mobile technologies**

1. and development history of mobile technologies in the digital economy .
2. Mobile device market analysis. Stages of entry and development of mobile devices in the market of Uzbekistan.
3. Characteristics of mobile technologies entering the corporate network.
4. Models of introduction of mobile technologies. Mobile technologies and digital transformation of business.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

## **Recommended literature on the 6th topic**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution No. PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure in order to develop the digital economy".

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7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

### **Topic 7. Neurotechnologies and artificial intelligence**

1. The history of the development of artificial intelligence. The relationship between artificial intelligence and smart media.
2. The structure of the intellectual system. Properties of the neural network.
3. Creative intelligence as a factor of innovative economic development.
4. Mechanisms of effective use of intellectual resources.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **Recommended literature on topic 7**

17. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

18. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

19. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

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23. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

24. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 8. Design Thinking in Business**

1. Features of design thinking in business process management.
2. Thinking design - user-oriented products, services and services.
3. Stages of thinking. Empathy as a human-centered design-process center .
4. Focusing on the business process. Development of ideas. Prototyping. Testing.

**Used pedagogical technologies:** teamwork, fish skeleton, case study , pinboard.

### **Recommended literature on topic 8**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".
2. Resolution No. PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure in order to develop the digital economy".
3. Resolution PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the Digital Trust" digital economy development support fund.
4. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".
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7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

### **Topic 9. Virtual and augmented reality technologies**

1. The essence of virtual and augmented reality technologies.
2. Augmented reality - AR (augmented reality, AR) technologies as sensory devices that help fill in and receive information about objects.
3. VR (virtual reality, VR, artificial reality) virtual reality - creating information about an object using technical means,
4. A way to communicate to people through their imaginations. Problems of AR/VR technology development and features of the world market.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **Recommended literature on the 9th topic**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .
2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .
3. Decision No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."
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8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 10. Effective use of robotics in innovative business**

1. History of effective use of robotics in business.
2. Types of robotics. Modern robots that are being created based on the achievements of science and technology
3. International Federation of Robotics (IFR) and its tasks.
4. Analysis of the degree of robotization in the industry of countries. The main trends of robotics.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

### **Recommended literature on the 10 topic**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure for the purpose of developing the digital economy".

3. Decision PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the "Digital Trust" support fund for the development of the digital economy."

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## **MODULE 3. ORGANIZATION AND MANAGEMENT OF ELECTRONIC BUSINESS MODELS**

### **Topic 11. Electronic business models**

1. Globalization of the market of goods and services. The theory of generations.
2. Shared consumption (Sharing economy). Future generations (Generation NEXT) features and implementation options.
3. Organizational structure of e-business and e-commerce management.
4. Classification of companies doing business on the Internet.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

#### **1 1 -recommended literature on the topic**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .
2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .
3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."
4. Lapidus L.V. Digital economy: upravlenie elektronnyim biznesom i elektronnoy kommertsiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.
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6. Hasanshin I. A., Kudryashov A.A., i dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019
7. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019
8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 12. New possibilities of crowdsourcing and crowdfunding in business**

1. Theoretical and methodological foundations of crowdsourcing and crowdfunding in business.
2. Features of crowdsourcing and crowdfunding technologies in the business model of modern companies.
3. Opportunities to reduce Internet costs based on crowdsourcing. Coase theory. Effective use of innovative marketing elements based on crowdsourcing.
4. Formation of additional demand for crowdsourcing goods/services.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

#### **1 2 -recommended literature on the topic**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure for the purpose of developing the digital economy".

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### **Topic 13. Features of the modern e-commerce market**

1.The history of the development of electronic commerce, the impact of technologies on the development of electronic commerce.

2.Share of e-commerce in GDP of countries. The impact of electronic commerce technologies on the formation of new markets.

3.International e-commerce participants. Features of the electronic services and digital products market.

4.Evaluating the effectiveness of electronic advertising. Features of the development of electronic commerce in Uzbekistan.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **1 3 -recommended literature on the topic**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

4. Lapidus L.V. Digital economy: upravlenie elektronnyim biznesom i elektronnoy kommertsiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.

5. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.

6. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

7. Gulyamov S.S., Ayupov R.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

#### **Topic 14. E-commerce models**

1. The essence of different approaches to business modeling.
2. Creation of business model and their classification.
3. Features of creating an e-commerce model . Development factors of electronic commerce
4. Risks in electronic commerce. Business models in social networks. Development directions of e-commerce models in Uzbekistan.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

#### **1 4 -recommended literature on the topic**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure for the purpose of developing the digital economy".

3. Resolution PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the Digital Trust" digital economy development support fund.

4. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".

5. Lapidus L.V. Digital economy: upravlenie elektronnyim biznesom i elektronnoy kommertsiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.

6. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.

7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

### **MODULE 4. ORGANIZATION AND MANAGEMENT OF THE DIGITAL ECONOMY IN NETWORKS AND FIELDS**

#### **Topic 15. Features of digitization of e-government and service sector**

1. The main tasks of e-government and its relevance.

2. The role of electronic government in ensuring the efficiency, speed and transparency of the activities of state bodies.
3. Electronic document circulation in the implementation of mutual relations with the population and business entities.
4. Formation of information exchange mechanisms between the mutual cooperation of state bodies and their databases. The ONLY interactive public services portal (YAIDXP) .

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **1 5 -recommended literature on the topic**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .
2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .
3. Decision No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."
4. Lapidus L.V. Digital economy: upravlenie elektronnyim biznesom i elektronnoy kommertsiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.
5. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.
6. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019
7. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019
8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 16. Development of e-learning platforms**

1. Development of e-learning market and types of educational platforms.
2. Development directions of electronic education in Uzbekistan.
3. The concept of a digital educational institution. Organization of export of educational services.
4. Organization of webinars and video conferences. Ways to develop distance education.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

### **1 6 -recommended literature on the topic**

1. of the President of the Republic of Uzbekistan dated December 13, 2018 " On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure for the purpose of developing the digital economy".

3. Resolution PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the Digital Trust" digital economy development support fund.

4. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".

5. Lapidus L.V. Digital economy: upravlenie elektronnyy biznesom i elektronnoy kommersiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.

6. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.

7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

### **Topic 17. Effective use of digital technologies in industry. "Industry-4.0" concept**

1. The essence and development of the "Industry-4.0" concept.
2. Features of the use of digital technologies in industry.
3. Blockchain technologies. Production process planning.
4. Digitization of enterprise personnel management. Digitization of cost management.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **Recommended literature on 17 topics**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

4. Lapidus L.V. Digital economy: upravlenie elektronnyy biznesom i elektronnoy kommersiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.

5. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.

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7. Gulyamov S.S., Ayupov R.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

## **Topic 18. Digital marketing**

1. Fundamentals of digital marketing and the 4R concept.
2. Advantages of digital marketing over traditional marketing. Collaborative relationships between consumer and business sectors.
3. Marketing media tools. Creating effective web networks and using them effectively.
4. Electronic advertising transformation. Advertising costs and revenues. Digital marketing performance metrics.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

## **18 recommended literature on the topic**

1. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

2. Resolution No. PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure in order to develop the digital economy".

3. Resolution PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the Digital Trust" digital economy development support fund.

4. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".

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7. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

### **Topic 19. E-branding**

1.Branding - its essence and main features. The main features of e-branding.

2.Branding technology is aimed at further increasing the interest of regular customers in goods or services.

3.Search engines, content advertising, internet PR, online video, e-mail marketing, audio advertising, etc.

4.E-branding strategies. Strategies for strengthening the brand, repositioning, increasing the value of the existing brand.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **Recommended literature on 19 topics**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385.

2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018.

3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

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7. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018.

### **Topic 20. Implementation of e-business in some branches and sectors of the economy**

1. The main advantages of digitalization of the production sector.
2. Opportunities for digital business in the production of consumer goods. Features of digitization of the agricultural sector.
3. Digitization of service delivery. Development of e-banking system. Digital financial system, financial assets.
4. Features of e-logistics. Actual issues of digitization of tourism services.
5. Development of the "Smart City Concept" in Uzbekistan.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

### **Recommended literature on topic 20**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

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8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 21. E-business and e-commerce management issues**

1. Problems of information security. Digital security issues and ways to ensure it.
2. Types of fraud on the Internet and ways to detect them. Email scams. Spams. Theft of information, cyber-attacks. Fierce competition.
3. Features of competitive intelligence. Industrial espionage. PROTECTION OF PERSONAL INFORMATION.
4. Intellectual property protection system. Ways to solve fraud problems on the Internet.

**Applied pedagogical technologies:** teamwork, clusters, BBB.

### **Recommended readings on topic 21**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .
2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .
3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."
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7. Gulyamov S.S., Ayupov R.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019
8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 22. Quality management of electronic services**

1. Development trends of e-business market. Analysis of the state of e-business in developed countries. Digital services feature.
2. Correlation between e-services and their quality. Classification of electronic services.
3. Problems of quality assurance of electronic services. Methods of measuring and evaluating the quality of electronic services. Using systematic analysis in quality management of digital services.
4. International standard requirements for quality assurance of digital services (E-SQI). The main directions of ensuring the quality of electronic services in Uzbekistan.

**Used pedagogical technologies:** insert technique , lily flower, working in groups, T table.

### **Recommended literature on topic 22**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

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6. Hasanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019

7. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

### **Topic 23. Creating a personal e-business**

1. Steps to create a personal e-business. The sequence of activities on the way to start a private business.

2. Opportunities to search for and select ideas for new products or services. Startup projects.

3. Personal e-business development strategies. Fundamentals of market positioning. Risk management.

4. Selection of investment and funding sources. Features of venture investments.

**Used pedagogical technologies:** "Why?", teamwork, fish skeleton .

### **Recommended literature on topic 23**

1. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385 .

2. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018 .

3. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."

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7. GulyamovS.S., AyupovR.H. and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

8. Baltabaeva GR The main directions of the use of the digital economy in the national economic sectors in the process of globalization. Scientific electronic journal "International Finance and Accounting". No. 6, December, 2018 .

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**TEXT ANNOTATION AND LATEST NEWS ON  
TOPICS**

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## **Module 1. General principles of digital economy transformation**

### **Topic 1. Introduction to the science of "Digital Economy".**

1. Economic laws of information technology development
2. Concept of digital economy and its features
3. Consistent implementation of innovative ideas, high technologies in production and social life
4. Digital economy and economic growth

One of the characteristics of the future world is that digital technologies will continue to penetrate our lives. This is explained by progress in the fields of microelectronics, information technology and telecommunications. Thus, digitization is an objective, inevitable process that cannot be stopped. One of the most serious risks accompanying digitization is mass unemployment among low- and medium-skilled professionals. The middle class may shrink dramatically as these jobs are the first to be automated and replaced by intelligent robots. A significant part of the active, educated, able-bodied population, accustomed to a sufficiently high lifestyle, will fall by the wayside due to the western way of life. However, the digital world is taking shape so quickly that accelerating the process of training highly qualified personnel can prevent their shortage. For this reason, whoever is ready for change, there is still enough time for it.

In the long term, the "digital" (electronic) economy can become a tool capable of realizing the centuries-old dream of freedom for people condemned to hard physical labor. Many people are given wide opportunities for creativity, science (both fundamental and applied) and art. The digital revolution will enter some sectors and countries earlier and more strongly, and others later and less. Services, media and entertainment will be the first, followed by telecommunications companies and banks. But according to the general opinion of analysts and the results of a survey of company managers, digitalization affects us all to one degree or another. Today we can identify each essence as belonging to one or another world, but after a certain time then, for most objects, we cannot make such a distribution <sup>1</sup>.

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<sup>1</sup>Resolution PQ-3832 of the President of the Republic of Uzbekistan on July 3, 2018 "On measures to develop the digital

*Digital economy* is a science that studies the economic activity of a person, which envisages the wide introduction of electronic and information and communication technologies in the processes of production, distribution and consumption of society's goods. The term digital economy is used to express two different concepts. . First, the digital economy is considered a modern stage of development, characterized by the priority of creative work and information benefits. Secondly, the digital economy is a unique theory, the object of its study is the information society. The theory of digital economy is in the early stages of its development, because the term "*Digital economy*" was introduced into scientific practice by the Spanish and American sociologist, leading researcher of the information society, Manuel Castells, which began only a few decades before the transition of civilization to the digital information stage. In this regard, he published a three-volume monograph entitled "*Information Age: Economy, Society and Culture*". Until now, the theory of the digital economy has not yet been fully formed and is being widely studied by many economists. In the scientific literature, the modern "*New digital economy*" is called by different names. For example, "*post-industrial economy*" (D.Bell), "*informational economy*" (O.Toffler), "*megaeconomy*" (V.Kuvaldin), "*economy based on information and communication*" (I.Niniluto), "*technoeconomy or digital economy*" (B. Gates), "*knowledge-based economy*" (D. Tapscott). The factor connecting these concepts is the primary place of information technology in the process of globalization of economic processes.

It can be said that the development of the digital economy is considered in three main segments:

- the sector of suppliers and buyers of real goods and services;
- the sector of software and technology developers;
- infrastructure in the form of legal framework, personnel training system, all kinds of data transmission and storage channels.

The digital economy includes the following areas:

- big data;
- artificial intelligence;
- blockchain;

- quantum technologies;
- production technologies;
- industrial internet;
- robotics;
- wireless communication;
- virtual reality.

We can understand the transition from the digital economy to digital modeling and the Internet of Things as interactions with the virtual world. Of course, financial relations in the national economy cannot be implemented without a digital currency in the form of a national cryptocurrency.

Many information systems perform operations better, faster and cheaper than humans, which allows to achieve unprecedented speed of action due to the minimization of the number of errors. There are now examples of robot assistants to help students, robot journalists, and even robot leaders who distribute tasks more efficiently than humans. A set of information services that interact with each other during one or another process is the result of digital transformation of service business processes. Many banks now perform borrower assessment processes without human intervention. In new companies, when calling a taxi, all interactions between the client and the driver are carried out using the information system, and human participation is not even considered. However, it is not always possible to completely exclude the participation of people from business processes. In this case, digital transformation allows for rapid data collection and provides remote control over digital communication channels with the help of robotics technologies. Examples of such changes can be observed in the service sector, oil production, electric power and manufacturing. Undoubtedly, the term "digital transformation" is becoming more and more popular in modern business. It seems that new technologies that are actively developing on a global scale will soon fundamentally change our perceptions of digital technologies and artificial intelligence.

The higher the level of dynamism and diversification in the economy, the greater the amount of unique information that circulates inside and outside the country, accordingly, the greater the traffic of information within the national economy.

Therefore, the digital economy operates most effectively in markets with a high level of penetration of information technology services and a large number of participants. and these indicators are related to Internet-dependent sectors (transport, trade, logistics, etc.) with a clear growth trend. Technologically, the digital economy is defined by four trends: mobile technologies, business models, cloud technology and social media tools. This means that the full use of their potential is important in the formation of the national segment. At the same time, it is necessary to create a favorable business environment, prepare significant human capital, and develop the management process to effectively attract internal and external investments to the national digital economy and receive dividends from it. All these are the foundations of economic growth, and for the same reason, it is necessary to determine a set of measures for their development.

## **Topic 2. Digital Economy: Fundamentals of Electronic Business Management**

1. The nature and development features of e-business.
2. The role of innovative technologies in the formation of the digital economy.
3. Features of creating a business on the Internet.
4. Features of development of digital economy in Uzbekistan, legal basis.

Today, sustainability in the service business is more difficult than ever before. Achieving a solid competitive advantage , reaching the top, and maintaining that status is no easy task. In particular, according to American statistics, more than 52% of **Fortune 500** companies in 2000 no longer exist. Another important indicator: the average life expectancy of companies in **the Standard & Poor's 500** was 60 years in 1960, but by 2020 it was reduced to 12 years. The reason for such a five-fold reduction in lead time is the transition of the entire business, including the service business, to digital foundations, which we are currently witnessing and participating in. The phenomenon of "Digital Disruption" *is* one of the current topics among analysts and company boards of directors.

The service business is becoming a digital business with the status of «default» in a sense. On the one hand, no company wants to repeat the fate of **Kodak**, which once missed the leap from film to "digital" in the photo business . On the other hand,

*Amazon, Uber, Airbnb* and others show how to take advantage of the digital revolution and create and implement completely new ways of doing business. Gone are the days when the Internet was initially viewed as an online storefront and later as an online magazine as a supplement to an offline business. The arrival of new generations on the stage of life - young people who "live" on the Internet led business to become online ("digital"). Humanity has entered the era of global changes. In recent times, the main spheres of human activity - economy and management, science and security - have now begun to acquire a new form and content.

The world's largest companies have been using various information technologies for a long time. However, implementing a platform does not make a business digital. What is the difference between a normal technology platform and a digital economy platform? First, digital economy platforms are intended to create the most convenient interactions for many participants of a network or industry. Nowadays, it is difficult to find examples of fully settled public platforms, but the future is behind such solutions. *Google, Facebook, Apple, Amazon, and Alibaba Group* are the closest to fully implementing this idea, and many large companies are planning to create such platforms in the near future. end-to-end) should automate business processes. A complete digital economy platform should consist of three parts: consumer ecosystems, producer ecosystems and a communicative core. The function of the consumer ecosystem is to satisfy all the needs and wants of the user of the platform, to ensure its convenience and functionality. The ecosystem function of the manufacturer is to ensure that it performs supporting functions that facilitate doing business and lower the entry threshold. The platform itself implements the functionality of interaction between consumers and producers and provides the necessary technological base and infrastructure needs. it is possible: social networks as a consumer ecosystem, *Alibaba Group* is primarily a producer ecosystem (the other two components are less developed), *Uber* is a vivid example of a communicative core of a platform core without ecosystems. However, combining all three components within one model allows for a significant synergistic effect.

Another key technology that the digital economy relies on is the Internet of Things. That is, it is common for many household appliances to be connected to the

mains, but these are secondary. More and more objects of the material world are connected to the Internet, which provides information gathering and even remote control of these objects. In practice, a virtual copy of a material object, consisting of the external world and various indicators of the object, appears on the Internet, which allows to manage this object via the Internet. An example of the Internet of Things is a virtual data transmission system that sends, for example, a list of spare parts that need to be replaced as part of technical support services and unplanned repairs. The next stage of the development of the Internet of Things is the ability of objects to communicate not only with humans, but also with the ability to interact, which will allow to achieve automated interactions in conveyor lines, maintenance systems, logistics and many other business areas . But there are still issues to be solved, such as: electronics that consume minimal electricity, as well as creating new communication standards for things to communicate with each other.

the Decree <sup>2</sup>of the President of the Republic of Uzbekistan dated February 19, 2018 No. PF-5349 *"On measures to further develop the field of information technologies and communications"* , as well as the rapid development of modern information technologies in the state management system of the digital economy in our republic in order to create the conditions for information security, as well as to ensure information security, on August 31, 2018, the Cabinet of Ministers adopted the document *"Additional measures for the introduction and further development of the digital economy in the Republic of Uzbekistan"* that defines the goals and objectives of the digital economy made a decision, and the decisions of the President of the Republic of Uzbekistan PQ-3832 dated July 3, 2018 *"On measures to develop the digital economy in the Republic of Uzbekistan"* can be included in these measures. According to the decision, the following are the most important tasks for the further development of the digital economy:

- Implementation and development of activities in the field of crypto-asset circulation, including mining, smart contract, consulting, issuance, exchange, storage, distribution, management, insurance, crowd-funding (collective financing), as well as

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<sup>2</sup>Decree of the President of the Republic of Uzbekistan dated February 19, 2018 No. PF-5349 "On measures to further develop the field of information technologies and communications"

blockchain technologies, in order to diversify investment and entrepreneurship .

- Training of qualified personnel with practical work skills in the field of production and use of blockchain technologies.
- Ensuring close cooperation of state bodies and business entities in the field of introducing innovative ideas, technologies and developments for the further development of the digital economy.

the product created on the basis of digitization to technical means without seriously losing its quality , so digitization, unlike digitalization, allows businesses to significantly accelerate development and gain new competitive advantages.

In practice, there are two directions of digital transformation. The first direction is to automate and robotize existing business processes to minimize human involvement. The second direction is to scale the management system obtained in order to create an exponential organization. By exponential organization, we understand that due to their scaling, they have at least ten times higher productivity compared to other organizations working in the same field. It is no secret that regional and international expansion of companies is often hindered by the difficulty of replicating the management system on a global scale. stands up. Problems with limiting rapid growth are often caused by difficulties in replicating. An example of this is the process of changing the educational process from a business school, which is limited by the scope of the region, the size of the classrooms and the number of teachers, to create a business of a national or international scale. Digitization of the educational process allows to minimize costs, and to make educational courses open to an unlimited audience that understands the language the teacher speaks (MOOC).

One of the main conditions for creating an exponential organization is the possibility of homogenization of services, if the service is homogenized, the management system for the provision of these services can also be homogenized and fully automated in the future. it is possible to advance, dumping on this price and minimal costs at the expense of a digital interface for ordering services will ensure "explosive" growth of the business.

The digital transformation of the business process is possible with the help of BPMS (Business Process Management Suite) class systems. The second stage of digital

transformation is the automation of individual operations. For example, customer trustworthiness assessment is done automatically, as is testing among training course participants. "Digital robots" that make decisions independently based on mathematical algorithms or even artificial intelligence are often used to automate operations.

### **Topic 3. Features of the development of electronic commerce (internet commerce).**

1. Electronic business models .
2. Electronic commerce (e-commerce) and electronic trade (e-trade) are proprietary symbols and differences.
3. Mobile commerce (m-commerce) and its impact on business.
4. The impact of the digital economy on informed market participants.

Currently, there is no common understanding of the phenomenon of the digital economy in the world, although there are many definitions of it. Digital economy is a digital concept that allows to significantly increase the efficiency of storage, sale and delivery of various productions, technologies, equipment, goods and services based on the use of process analysis results and processing of large volumes of data. data are economic activities that are considered the main factor of production. In our opinion, this definition is very accurate, but a little awkward to use. On the one hand, the lack of a comprehensive definition of the digital economy is not an obstacle to the discussion of many private and narrowly specialized questions. But, on the other hand, since the goal of this tutorial is to form an integrated view of the digital economy phenomenon, we decided to offer our definitions. As we said above, the digital economy is an economy that exists in the conditions of a hybrid world. This definition is also correct and reflects the essence, but does not explain the expected changes, and accordingly, its use in practice is somewhat complicated. It is for this reason that we expressed the following functional definition: Digital (electronic) economy is an economy characterized by maximum satisfaction of the needs of all participants due to the use of information, including personal information. This is due to the development of information, communication and financial technologies, as well as the openness of the infrastructure, which provides the possibility of full interaction of all subjects of

economic activity in the hybrid world - objects and subjects of the process of creation, distribution, exchange and consumption of goods. may exist.

All economic objects and subjects must have significant digital components for full interaction. For example, digital components (software and sensors) that significantly improve the consumer characteristics and safety indicators of a car at the moment account for more than half of the car's cost. Over time, the tangible part of the value of many goods and services is determined by its digital component. Such goods are called "smart" goods. Digitization can either significantly improve their basic features (for example, the car's safety increases and its operating cost decreases), or new features (voice control, remote control via the Internet or mobile phone, etc.) may appear.

Internet search engines, intelligentized with the help of cognitive technologies, provide thousands of answers to one query. These data are open, reliable and fully competitive for human perception, they begin to process the collected data themselves and, as a result, make this world "transparent" for us. In such a world, it is impossible to deceive, because lies are immediately exposed, and reputation is the most important capital. The consumer will find the manufacturer independently, and due to automatic documentation, he will be able to interact directly with all his counterparties. In this way, *the M2C (manufacturer to customer)* business model and personalized production, which involves the production of goods with original characteristics necessary (or desirable) for this consumer, will be possible. A C2M (*customer to manufacturer*) model appears.

Cloud computing platforms (*Cloud Computing*) is a new information technology concept that requires the lowest operating costs or through which requests are quickly provided to the provider and the necessary computing resources can be provided everywhere and with a convenient network connection according to the requirements. holds . Data transmission networks, servers, data storage devices, service programs - both together and separately can be examples of network resources of cloud technologies. In other words, cloud technologies (Cloud technologies) are data processing technologies that can provide computer resources to the Internet user as an online service *on demand* . It should also be said that cloud technologies have made

and are making a huge contribution to the foundations of the emerging digital economy. This contribution is not only limited to technological components, but also includes economic and ideological components. The development of cloud technologies, for example, production on demand ( *production on-demand* ), software as a service ( *software as a service* ) is the main idea for most of the future business models and many economic interactions. led to the emergence of concepts that become principles for communication.

The Internet of Things is a concept that combines many technologies, equipping with sensors and connecting all equipment to the Internet, which allows remote monitoring and control of processes in real time (including automatic mode) and their management based on this. Today, two major directions have been formed: the Internet of Things ( *IoT - Internet of Things* ) and the Industrial Internet of Things ( *IIoT - Industrial Internet of Things* ). Instrumentally, these technologies are very similar to each other, and the main difference is in the task to be performed: if the main task of the Internet of Things is to collect diverse (primarily used for building models and predictions) data. , the task of the Industrial Internet of Things is the automation of production ( *remote control of resources and power according to sensor indicators* ). According to forecasts of *OVUM, Machine Research* and *Nokia analysts*, by 2020 , the number of industrial devices connected to the network will increase from 530 million units, and by 2025 , their number is expected to be from 20 to 200 billion units.

In many countries, the development of production resource management technologies, including in the interests of their virtual use, the creation and transformation of digital economy infrastructures is carried out according to state programs: *Industrie4.0* in Germany , *Advanced Manufacturing Technology in the USA* , and in China the main focus is on advanced the strategic concept of production development focusing on the introduction of technologies, quality and innovation, *Innovate UK in Great Britain* , *National Digital Economy in Australia* . Projects on the creation and implementation of *IoT platforms, the development of application services are also being implemented in Russia*. The Internet Initiatives Development Foundation developed a road map for the development of the Internet and founded the Internet of Things Association. It is planned to develop and adopt standards in the field

of the Internet of Things as part of the activities of the new technical committee on standardization "Kiberfizicheskiesistemi" operating within Rosstandart.

Big Data is a set of methods, tools and approaches designed to process structured and unstructured data (including from independent sources) in order to obtain human-perceivable results. Big data is characterized by a large volume, variety and speed of updating, which makes standard methods and tools for working with information insufficiently effective.

Experts in the field of big data today are not those who know the latest modern trends in analytical algorithms and can estimate the speed of future calculations, but those who can create long-term and sound financial models based on the application of these technologies. Nowadays, there are a large number of methods and complex software products that allow processing big data, for example, IBM, Oracle, Microsoft, Hewlett-Packard, EMC, Apache Software Foundation (HADOOP) and others.

Sources of information necessary for working with big data can serve as:

- Internet user behavior logs;
- GPS signals from cars to the transport company;
- information about the transactions of all customers of the bank;
- information about all purchases in a large retail chain;
- information received from a large number of urban IP video cameras;
- information from large production sensors equipped with industrial internet technologies, etc.

Now let's talk about virtual currencies that are becoming more and more popular nowadays.

**Virtual (digital/electronic) currency** is money that is not embodied in a material form and can be used as a full-fledged monetary token.

**Cryptocurrency** is a type of emission currency based on the use of cryptographic algorithms in special forms.

**The chain of blocks of transactions (Block Chain / Blockchain)** is a methodology for creating distributed data sets, in which the record of each data consists of information about the history of its ownership, which strictly limits the possibility of forgery. yadi Blockchain is used to perform transactions in virtual currency systems

and store their history.

**Bitcoin** is the first and most widely used cryptocurrency among existing virtual currencies, and it uses the Bitcoin blockchain technology.

Virtual currencies may not belong to cryptocurrencies and may not use Blockchain technology. Examples of such virtual currencies are Yandex-money, Web-money (WebMoney) and Kiwi-wallet (Qivi). Many people confuse the terms virtual currencies, cryptocurrencies and blockchain and use them as synonyms, but this is true only for the first one - bitcoin. The fact is that the blockchain technology was developed specifically for Bitcoin and was not used anywhere else for some time, and this is not the case now. On the basis of blockchain technology, the Bitcoin cryptocurrency was invented and its issuance began. The use of blockchain in the field of public record-keeping, not from the point of view of monetary denomination, is a completely different matter. Public sector experimentation with blockchains is gaining momentum around the world. In the US healthcare system and a number of other sectors, in the registration of property rights in Sweden, in the field of pension provision in Great Britain, they have chosen the same way, that is, using blockchain. In such projects, the state's risks are at a much lower level compared to the creation of cryptocurrencies. At the same time, the social effect obtained from them, the contribution to the digital and ordinary economy will be high. For example, according to calculations, the introduction of blockchain in the field of registration of property rights in the USA alone would allow saving 2-4 billion dollars per year. In this case, savings are observed with the acceleration of operations, that is, with the development of the commercial sector. Blockchain technology is increasingly used in the following fields: copyright, voter counting, initiative crowdfunding, social reputation, insurance, advertising, rates, and several other fields.

The listed features of blockchain technology ensure the main feature of cryptocurrencies - reliability, that is:

1. impossibility of counterfeiting;
2. impossibility of stealing.
3. lack of a common emission center;
4. availability of open source code;

5. lack of external regulation (other than included in the software code);
6. presence of transboundary.

In addition to reliability, cryptocurrencies also attract users with ease of use and minimal transaction costs. The value of Bitcoin ( *or any other cryptocurrency* ) is determined on the basis of market supply and demand in special exchanges ( *cryptoexchange or virtual currency exchange* ). In other words, many virtual currencies do not have material security, but are a form of social contract.

#### **Topic 4. Indicators of digitization of the economy**

1. Digital economy indicators, their characteristics.
2. Indicators of digital economy development.
3. Digital Economy and Society Index (DESI) and World Digital Competitiveness (MDC) indicators .
4. Characteristics of Networked Readiness Index (NRI) and Digital Evolution Index (DEI) indicators.

The digital economy develops on the basis of modern information technologies and in accordance with real economic conditions. If earlier production, trade and financial technologies developed consistently, by now, mainly horizontal interactions (self-organization and singularity), innovative entrepreneurship (self- development), NET, which is the basis of the modern information economy, based on information engineering (self-improvement) and auto-formalization (auto-structuring) of economic processes, appeared. The material basis of NET is data centers and modern IT platforms designed for information systematization and analytical processing.

The development of "providing" services for business analysis and management consulting is also of urgent importance in the digital economy. New institutions - information-consulting services and state development agencies are the organizational basis for improving the business environment. From the point of view of assessing the impact of the digital economy on the development of society, the reports of the Organization for Economic Cooperation and Development (IHTT) are of particular interest. In 2008, the Declaration on the Future of the Internet Economy was adopted

in the framework of this organization in Seoul (South Korea). Within this declaration, as shown in the table below, seven topics that are most important for the development of the digital economy are discussed.

**An area of discussion in the Declaration on the Future of the Internet Economy**

The name of the topic	Content of the subject
Internet connectivity using high-speed infrastructure as the backbone of the Internet economy	Development of high-speed networks, including expansion of connections to existing networks; development of conditions for competition; ensure convergence; adaptation of the IPv6 protocol; use of radio frequency spectrum; improvement of the evaluation system
Digital content and "green" information and communication technologies (green information and communication technologies (ICTs)) (hereinafter - green ICT)	Digital content is considered from the point of view of developing a suitable market for it, creating local content; information about the public sector, protection of intellectual rights, etc. Green ICT envisages ICT resource efficiency, sensor networking, intelligent ICT applications and networks
Intellectual Internet application development	The development of intelligent applications in various sectors of the economy, for example, intelligent transport, intelligent power supply networks, taking into account the new role of information as an intangible asset and the spread of intelligent devices.
Cyber Security and Privacy	Security of information systems and networks, protection of personal data and digital identity management are considered
Powers and consumer protection	B2C e-commerce market, especially online and mobile payment issues, purchasing digital content; social media marketing and collaborative purchasing, as well as dispute resolution and indemnification
Internet of the economy ensure openness	Ensuring openness for the growth of the Internet economy and the creation of innovations, developing policy principles in the field of the Internet
Ensuring global interactions in the Internet economy	Creating conditions for expanding access to the Internet and related ICT for the population of developing countries, including the development of cloud technologies

According to a survey conducted by IHTT in 2016 in 32 member countries and 6 partner countries, they have a strategy, plan or program for the development of the digital economy. As of September 2017, Australia announced that the government has started developing the Digital Economy Strategy. In the USA, it was announced about the formation of the 2015 digital economy agenda (digital economy agenda), and in

2016, the Council of Advisors on the Digital Economy was established under the Ministry of Commerce, which performs the development of the Internet, information security, promotion of innovations and other functions carried out by private businesses. The following table shows the goals for the development of the digital economy conducted by IHTT based on the analysis of existing strategies and surveys.

## Prioritization of digital economy development goals in IHTT countries

The goal	Priority		Number of countries involved in the strategy
	2017, color	2020-2022, expected color change	
1	2	3	4
Improving e-government services	1	0	21
Development of telecommunications infrastructure	2	-3	22
Promote ICT-related skills and competencies	3	0	16
Strengthen security	4	+2	18
Expand data connectivity	5	+1	6
Encourage the adaptation of ICT to business, including small and medium-sized businesses	6	-1	3
In specific sectors such as health and education	7	+1	3
Promotion of ICT adaptation	7	+1	3
Strengthening the protection of personal data	8	0	5
Strengthening digital identity	9	0	2
Development of the ICT sector, including international markets	10	0	2
Promotion of e-commerce	11	-1	5
Addressing global challenges, including Internet government, climate change, and more	12	+1	1
Strengthening the protection of consumer rights	13	-1	0
Expanding Internet accessibility, including for the elderly and people with disabilities	14	+1	4
Keeping the Internet open	15	0	4

<b>Additional objectives of national strategies</b>			
Promotion of science, innovation and entrepreneurship			16
Providing access to the Internet, services and information			12
Development of digital content and culture			10
Expanding the use of digital technologies			10
Developing a normative approach to the digital environment			3

As can be seen from the table, a total of 20 goals of the digital economy were considered, including 15 goals proposed by IHTT and 5 more goals included in the national strategies of the digital economy of individual countries. At the moment, the most important goals (according to the results of a survey conducted by IHTT) are "improvement of e-government services" and "development of telecommunications infrastructure". In national strategies, these two goals are more common (21 and 22 times, respectively). The analyzed content of the objectives of the development of the digital economy is characterized by the fact that the survey mainly processed data on developed and a certain amount of developing countries (Brazil, Mexico, Russia, etc.). The information provided does not include the views of many developing and underdeveloped countries. For these purposes, issues related to solving the negative consequences of digitization, including unemployment, technological and economic backwardness, and increasing dependence on a small number of transnational (large) corporations, have not been reflected. a system of indicators describing the directions has been developed:

- the development of the high-tech sector of the economy, the importance of processing industry products and services;
- investments in scientific developments, software development, education and additional retraining costs;
- development and production of information and communication equipment, creation of jobs in the field of science and high technologies, indicators of cooperation between corporations, venture firms, universities and research organizations;

- international knowledge flows, international cooperation in the field of science and innovation; mobility of scientists, engineers, students;
- dynamics of internetting diffusion;
- the share of high-tech products in international trade.

The universality of the impact of growing information flows on the development of the economy and society allows us to talk about them as the leading resource of economic growth of modern society. describes changes and the formation of the digital economy. It is possible to distinguish four criteria of the analysis of the digital economy, which are considered by different researchers to one degree or another:

- criterion related to the field of employment;
- spatial criterion;
- technological criterion; ○ economic criterion.

In this case, although researchers often prefer one or another definition that fits their imagination, there may be overlapping criteria. However, most definitions are based on the belief that quantitative changes in the field of information processing will lead to the emergence of qualitatively new socio-economic relations.

*Criterion related to the field of employment:* This approach is closely related to the works of D. Bell, CH. Leadbiter and P. Drucker, which examine the models of observed changes and the structure of employment. shows that the majority of those employed are working in the digital sector of the economy. The decrease in the share of people employed in the production sector and the growth of the service sector are considered as the replacement of physical labor with informational labor. In this case, a significant increase in the share of labor in the field of data processing, which is the main resource in this case, can be considered as a transition to the digital economy. Statistical observations show that the share of people employed in the service sector is growing ( In Western Europe, the USA, Japan, this share is 70% and more), most of them are related to data processing activities in one way or another, and therefore this basic digital economy the proof of existence seems convincing. The main problem with this approach is the personnel involved in working with the data. For example, the process of increasing the number of computer technology specialists, employees of

telecommunication companies, and analysts, whose main task is data processing, can be considered as the basis of the formation of the digital economy. However, at present, there is no methodology for calculating employees of the digital economy. At the same time, there is a rapid increase in the number of salespeople, lawyers, and others who do not have a strong connection to the digital economy, but they all fall into one category.

*Spatial criterion:* A number of concepts of the digital economy are based on the geographical principle. The main focus is on information transmission networks that connect different places and therefore can affect the formation of the global economic space. Information networks are a distinguishing feature of modern society. This is the most important opportunity to consider in the research of the digital economy, which aspect is related to information transmission networks. It does not matter whether it is a technological aspect (ie the availability of data transmission systems in a given area) or whether it is necessary to analyze other aspects such as the quantity and quality of data transmitted over these networks. Currently, a number of general questions, for example, what is actually considered a network, what is the difference between different network levels, what data volumes and their transfer speeds determine the transition to a digital economy, also lead to debate.

*Economic criteria:* This approach assumes that the growth of economic value in the field of activities related to the creation, transmission, processing and storage of information is taken into account. If this type of activity in the economic sphere prevails over such activity in the agricultural and industrial spheres, then it will be possible to talk about the transition to the digital economy. In addition, information itself becomes an object of economic relations in such conditions. Specialized companies, research organizations provide services for the collection and analysis of data for the purposes of the customer, and accordingly, such data will have a certain value. The main problem of such an approach is that Behind the large statistical material, which indicates the growing role of data in economic activity, their actual impact on the company's activity has been studied rather superficially, and the methods of evaluating the effectiveness of the employees' performance related to data processing and interpretation have not been sufficiently developed. . For example, the information and analysis department of

a manufacturing enterprise is engaged in information activities, but the question of how to allocate its share in the production of the entire company for statistical purposes remains open.

*Technological criteria:* Many technological innovations in the field of information and communication technologies, which have become available to a wide range of users, have become the basis of the technological concept. New technologies are the most visible sign of changing economic systems and are often referred to as drivers of economic development. The main idea of such opinions is that the increase in the volume of technological innovations in the field of data processing and transmission leads to changes in socio-economic relations, because their effects are very significant. There is no doubt that the impact of technological innovation is significant. They are enhanced by the possibility of computer technology to change the field of telecommunications and to combine these technologies, as a result of which e-mail, text data transfer, data transfer in the form of audio and video files, social networks, messengers and other services have developed. . The wide spread of digital technologies gives reason to reflect on new socio-economic relations and trends in the formation of the digital economy in one or another country.

### **Topic 5. Features of business management in the digital economy**

1. Features of digital economy techniques and technologies.
2. Future technologies. Consequences of Digitization.
3. Big data (Big data) and analytics, database organization mechanism.
4. Digital company strategies.

Digital business is the emergence of new business models that combine the physical and digital worlds. School of Management defines digital transformation as "the use of modern technologies to fundamentally increase the value and productivity of enterprises." will change the world in which companies operate. They will have to either fill the gaps in the new market or adapt to the changes by changing the existing gaps. It turns out that the digital transformation of organizations is a response to the development and active spread of new information technologies around the world. By

reaching different levels of digital transformation, the difference between them has the same meaning as the difference between two terms - "digitalization" and "digitization". Digitization is the transfer of information from physical media to digital media. Examples of digital rendering are e-books, video courses, making a digital copy of a photo, etc. In this case, the information structure will not change: it will only have an electronic form. Digitalization is often used to improve existing business models and optimize business processes. Digitization is the creation of completely new products in digital form. For example, a dynamic learning course with multiplication or an interactive system of document interpretation is digitization. It is not possible to transfer the product created on the basis of digitization to technical means without seriously losing its quality, so digitization, unlike digitalization, allows businesses to significantly accelerate development and gain new competitive advantages.

The development of national economies towards a new digital economy requires the expansion of theoretical research and debate in this area. The practical programmatic actions of the higher management bodies aimed at creating a techno-digital platform for the development of the national economy can also make a great contribution to the transition to a new economy. is closely related to rapid development and innovation in **Hard Ware** and **Soft Ware sectors**. The content-related aspect of the digital economy is, first of all, the reform of the education system and the "digitalization" of all aspects of human life. For example, the emergence of innovations such as the computerization of industrial design and the modeling of construction readiness in production will facilitate the design of products with a high level of complexity, such as machine tools, cars, trains, airplanes, buildings, etc., and significantly shorten the work cycle. The emergence and implementation of new digital technologies (production, financial, management, social, etc.) in our country can lead to a large number of positive effects and results for the national economy:

- increase in labor productivity;
- increase in capitalization;
- improvement of quality of life;
- formation of new markets;
- increase in efficiency of utilization of resources (assets, capital, powers);

- increase in competitiveness;
- increased security;
- increase in public welfare.

Until now, as long as the process of globalization has not ended, all the listed effects lead to the fact that the country that first adopts a new technology gains dominance in international markets, and this leads to the next "market segmentation". From the perspective of an individual country, this can actually be interpreted as economic growth driven by the introduction of new technology. But the growth in the global economy is limited by the "additional" capitalization of the introduced technology (excluding the capitalization of the displaced technology). The digital economy and digital economy can bring the model of extensive development back to life if they are not ready to push. In this regard, it should be recognized that the development of digital economy and technologies cannot be a means of saving from any disaster either for Uzbekistan or for the whole world. For each individual country, this is a necessary measure that allows to remain competitive, revise the parity of shares in the world economy and preserve sovereignty. Currently, many specialists and economists in your country and abroad are trying to describe and understand the current state of development of the new economy, including one of its manifestations - the digital economy. Many researchers are trying to understand and perceive this phenomenon from the general - objective and subjective point of view typical of the modern economy through the prism of subjective attitude. Objectively, this is more related to the manifestation of new aspects, aspects, signs, trends and laws in the modern economy. It is of great interest to study and take into account new economic phenomena, in particular, to distinguish the digital economy as a relatively independent part of the new economy, because it is important to improve the quality and speed of economic management, to make amendments to the rules and legal field of doing business, digital technologies - the economy of impressions, MICE - allows to create innovative products, services and services on the basis of industry, Smart-city and the like.

With a strong focus on the analysis of new trends and phenomena in the economy, and relying on the works of American researchers such as Nicholas Negroponte, Chris

Meyer, Mohanbir Sawhney, Daniel Spulber, Don Tapscott, Steve Jurvetson, Patricia Seybold, the authors "New Economy" , "economy 2000", "internet economy" (Internet Economy), "Net economy", "Web economy", "digital economy", "electronic commerce" (E economy, E-business), "intangible economy", "item It can be noted that he seeks to describe new aspects of the modern economy using terms such as "economy without appearance" . These terms often refer to new phenomena in the economy based on the formation of a global electronic network, the global spread of personal computers, the creation and continuous improvement of software, the development of information technology and digital technologies, and the production of intangible products and services of IT companies. used synonymously in the review.

Based on the results of existing research in this field, the following definition of the subject field of digital economy can be proposed: "digital economy is a techno-digital form of existence, economic relations for the production, distribution, exchange and consumption of goods and services are systematic is the sum. The techno-digital nature of economic relations is the main feature that distinguishes the digital economy from others. Thus, if the new economy is a legitimate form of the manifestation of the post-industrial economy, then the digital economy is one of the evolutionary forms of the manifestation of the new economy. Therefore, as a "form of form", the digital economy has not only a set of symptoms of the new economy, but also a number of distinguishing aspects that characterize the qualitative precision of the digital economy.

"Industrial" focuses on the new content of traditional economic rules that manifest themselves in connection and harmony with digital technologies, as well as the emergence of new laws and trends that have no place in the economy. Under the influence of scientific and technical progress and economic development, serious changes are taking place in the rules of the market economy, in the rules of doing business, in the new manifestation of traditional economic rules and laws. For example, the emergence and development of electronic networks, computers and software products, digital technologies, electronic products and services will fundamentally change the content, ratio and importance of the following concepts in the new economy: material (in the form of goods) and immaterial (non-goods) , geographic distance, time and space, consumption value (utility) value, quality and quantity,

competition and consumer preference (advantage), intermediation and logistics, human capital and business ethics, transactions and efficiency valuation, buyer and seller behavior, new relationship between consumers and producers, marketing technologies and sales.

It can be seen that in developed countries, especially in the USA, with the rapid development of internet companies and internet firms, a new market of internet services, products, services, provider services, etc. will be formed, which will penetrate into all areas of the economy and change the outlook of the entire economy. Therefore, in our opinion, the Internet-economic and digital economy can be defined in a narrow sense - as a set of relations on the creation and use of digital technologies, products and services of Internet companies and firms, and in a broad sense - mainly in the third, fourth Compared with the "industrial" economy corresponding to the technological system, it is appropriate to distinguish the new economy as the economy of enterprises of any sectors operating in the conditions of the global electronic network, which has a number of distinguishing features and uses the digital format of technologies.

The new economy, in its digital content, allows companies and individuals from all over the world to interact in a variety of ways thanks to the Network and using digital technologies instantly, intermediaries, distance or markets, including innovative digital technologies, products, It describes a deeper stage of economic development of society based on the achievements of the fifth and sixth technological systems, which enter into business relations regardless of the geographic location of services and service markets. Thus, the development of the digital economy is primarily determined not only by revolutionary technological changes, but also by the laws of evolution of the new economy, which directs modern management to take into account new management principles and rules of business conduct, support for the growth of product quality and labor productivity. eliminates the negative aspects of the economic cycle, reduces inflation and unemployment, ensures stable growth of the economy in the conditions of globalization. becomes This law of the new economy, on the one hand, provides ample opportunities for global business, and on the other hand, it radically increases the responsibility of firms and companies to consumers. Consumer dissatisfaction with a company's product becomes immediately and widely known and

creates a sense of social responsibility.

Globalization of the economy, and the "disappearance" of time and space in the digital economy leads to a change in the value of many production factors and, first of all, the time factor. Time, as a category of social production, has always determined the value of production. However, in the current conditions, the "price" of time will grow to an incomparable level. In the world of "instantaneous" communication between producers and consumers, time (saving it and speed of transactions) cannot provide a great, arguably, strategic advantage. A firm's ability to study market conditions, evaluate terms for deals, make online decisions, and execute deals will determine its success or failure in the business world. Among the companies that have achieved success in these conditions, it is necessary to include companies that introduce continuous and continuous changes to the improvement of product production due to digital business technologies and promotion of products to the consumer. Such a policy allows to accelerate the "digitalization" of scientific and technical progress and to ensure a strategic advantage over traditional companies that are successful from the outside. As one of the leading trends of the digital and new economy, the calculation of the "disappearance" of the material components of production and products, their replacement by components that are not in the form of goods, has been accepted. Here, first of all, the trend of growth of the role and importance of information-digital components in production costs is envisaged. The acquisition, digital processing and transmission of information is becoming more and more important than the physical, analog movement of products and sometimes even traditional money.

In addition, the value of companies and firms, their competitiveness is increasingly not with tangible property, but with intangible property: knowledge of people, human capital, ideas, artificial intelligence and a strategic combination of key intellectual property that provides the firm with a strategic advantage over competitors. (having ideas, innovative digital technologies). The total human capital (workforce) of the digital economy is becoming dynamic and flexible, giving employers valuable markets for organized labor (in the form of community organizations and trade unions). allowing to bypass and work directly with each employee (based on Big Data and

personal information about the nature of the workforce). This increases the speed of movement of the labor force and reduces the overall cost of paying for human capital.

Compared to the growth of labor productivity, the growth of wages is relatively stagnant, due to the flexibility and globalization of the labor market, the level of employment security is reduced. Employees, for their part, prefer to choose stable employment in the conditions of the digital economy rather than activism in terms of wage growth. All other conditions being equal, a certain compromise is reached in the behavior of employers and employees. The principle of accelerating economic growth should be considered as another characteristic of the digital economy.

## **6th topic. Mobile technologies**

1. and development history of mobile technologies in the digital economy .
2. Mobile device market analysis. Stages of entry and development of mobile devices in the market of Uzbekistan.
3. Characteristics of mobile technologies entering the corporate network.
4. Models of introduction of mobile technologies. Mobile technologies and digital transformation of business.

The higher the level of dynamism and diversification in the economy, the greater the amount of unique information that circulates inside and outside the country, accordingly, the greater the traffic of information within the national economy. Therefore, the digital economy operates most efficiently in markets with a high level of penetration of information technology services and a large number of participants. and these indicators are related to Internet-dependent sectors (transport, trade, logistics, etc.) with a clear growth trend. Technologically, the digital economy is defined by four trends: mobile technologies, business models, cloud technology and social media tools. This means that the full use of their potential is important in the formation of the national segment. At the same time, it is necessary to create a favorable business environment, prepare significant human capital, and develop the management process to effectively attract internal and external investments to the national digital economy and receive dividends from it. All these are the foundations of economic growth, and for the same reason, it is necessary to determine a set of measures for their development. Written in order to convey the above-mentioned ideas about the field of digital economy to the general public, and especially to graduate students, this study guide is dedicated to presenting the same and similar issues and problems to the public and covering them as much as possible. .

Currently, revolutionary changes are taking place in the world financial-banking system, primarily due to the rapid growth of the market share of elements such as electronic payment systems of the digital economy, cryptocurrencies and lending without intermediaries. First and foremost, mobile payments (which nearly doubled annually from 2010 to 2016) and peer-to-peer (P2P) lending (which grew 15-fold in

the US in the last 3 years and 2015 turnover reached \$78 billion), a rapid increase in volume is observed. It is known that, unlike traditional industries, the market price of Internet companies has no material basis, and the more useful information the company has collected, the cheaper the production of a product (or service) becomes. Currently, the number of digital banks and financial institutions that do not have their own offices and ATMs is growing rapidly. Among the main concepts of digital banking (digital banking) are customer orientation, the transition from the concept of Kosnotsium to the concept of digital banking, the development of CRM (Customer Relationship Management), the growth of trust in customers, the personalization of offers and the feature of mobility. The services of digital banks are observed in all areas of life of modern people, first of all, mobile devices, social networks, information services, e-commerce, internet trade, etc. A digital bank offers a variety of digital products and services to its customers using digital channels. Such banking infrastructure is optimized for digital communications and is not yet ready for the rapid change of digital technologies. Among the main tasks of such banks is to quickly inform the client about the status of his accounts and transactions, and to find the nearest bank branch, ATM, exchange point or car kiosk for him. In addition, a digital bank should provide its customers with such an online service that it can work on multiple platforms and focus its activities mainly on mobile devices. We can point out seven main directions for improving the digital banking model:

- omnichannel and simplification of user services;
- development of new methods and tools of information management;
- using an open API system;
- cooperation and competition with financial and technical companies;
- development of mobile payments;
- development and implementation of the innovation management strategy in the banking sector;
- implementation of innovative regulation of activity.

A full transition to digital services will benefit not only banks, but also consumers who will be able to access a variety of banking services quickly and conveniently (for example, lower costs, coverage, flexibility, better knowledge of the client). Innovative technologies based on modern ICT software and technical tools are actively being

introduced in the banking system of the Republic. According to the extended meeting of the Bank of the Republic of Uzbekistan on the results of the banking system, the share of banking services in the structure of financial services was 88% and increased by 1.2 times compared to previous years. In addition, for 2019, certain tasks have been set to expand the number and quality of banking system services, and to rapidly introduce modern information and communication technologies in this area. is growing steadily due to The population's low level of financial literacy and lack of trust in cashless accounts prevent the rapid spread of digital channels of banking services.

Mobile marketing offers a wide range of opportunities for companies today. In particular, there are wide application possibilities in the marketing practice of companies in the field of information and communication services, including Near Field Communication (NFC), Bluetooth-based marketing, mobile-optimized websites, mobile wallet, mobile commerce, mobile application. , mobile social media, mobile optimized e-mail, mobile search, geotargeting, QR-codes are effective.

As part of the targeted measures for the development of the digital economy in Uzbekistan, the companies in the field of information and communication services require the implementation of innovative technologies and modern requirements in their marketing activities. Based on the analysis of existing theoretical concepts and methodological developments in the field of innovative marketing, scientific-theoretical classification and systematization of the main types and levers of digital marketing strategies will serve the effective organization of these activities.

Effective use of marketing technologies based on social media marketing, virtual reality, the Internet connecting tools and artificial intelligence based on the analysis and systematization of innovative marketing strategies formed under the influence of the rapid development of web technologies in the world is an important future way of improving the market of information and communication services. were defined as complaints.

By applying content marketing, social media marketing, crowdsourcing, and mobile marketing methods of using innovative marketing strategies in the field of information and communication services, it will be possible to increase the effectiveness of the marketing activities of local companies and, in the future, to form

an effective communication system with consumers, as a result, the foundation of the national innovative development system will be established. .

Increasing the number of subscribers to blogs and e-newsletters on the websites of companies in order to increase the effectiveness of content marketing within the scope of social media marketing activities of local companies allows to improve the company's marketing potential. Taking into account that the level of use of e-mails among the population of Uzbekistan is much lower than the level of use of mobile messengers, as a result of the organization of subscriptions to electronic messages through mobile messengers (in particular, Telegram) on the basis of creating channels, groups and bots, companies and consumers It is possible to effectively establish alternative relations between and increase the level of consumer satisfaction with the company's services.

optimized site, mobile application, mobile commerce aimed at popularizing cashless payments in order to expand the use of e-commerce platforms offering information and communication services in Uzbekistan and by using QR-code innovative marketing technologies, there is an opportunity to increase the competitiveness of national companies and provide convenience to consumers.

Based on marketing research, it was determined that the use of social media platforms is popular in the information and communication services market of Uzbekistan. When improving strategic marketing activities, local companies should consider segmentation based on the characteristics of users of digital platforms (demographic, geographic and lifestyle) and device preferences (mobile, tablet or computer).

The use of a three-stage (introduction, attraction and listening) system as the main directions of monitoring the innovative marketing activities of local companies, the classification of the strategic goals and objectives of the social media marketing activities of the companies according to the network activity and the company scale encourage the development of digital marketing strategies of the enterprises. should be studied as the main direction of motivation.

Within the framework of the conceptual model for increasing the efficiency of planning and monitoring social media marketing activities of companies in the field of

information and communication services, the implementation of the criteria for evaluating the social media marketing activities of companies in the field of information and communication services will allow to increase the efficiency of the activities of companies in the field of information and communication services.

A number of factors influencing the level of consumer satisfaction in offering e-commerce platforms services were analyzed based on the PLS model of the SEM program. According to the results of this model, in the development of the e-commerce market in Uzbekistan, it is important not only to increase the convenience of e-commerce websites, but also to increase their integration with social media platforms, and also in the marketing activities of companies. It was determined that the use of content marketing and mobile marketing technologies is the main direction that ensures the increase in the volume of sales of the country's e-commerce market .

### **Topic 7. Neurotechnologies and artificial intelligence**

1. The history of the development of artificial intelligence. The relationship between artificial intelligence and smart media.
2. The structure of the intellectual system. Properties of the neural network.
3. Creative intelligence as a factor of innovative economic development.
4. Mechanisms of effective use of intellectual resources.

In the future, after a person buys a tablet and installs artificial intelligence software on it, he will be able to learn without having to interact with his teacher. In 10-15 years, AI-powered higher education will be as simple as reading and writing. In November 2017, **Microsoft** developed a special program for learning Chinese. In it, the student receives education by responding to the teacher-bot's information consisting of short words ( *in audio and text form* ) *in the chat*. But this digital teacher from Microsoft is not just another chatbot, but an artificial intelligence algorithm that analyzes the user's responses to teach him.

selects the necessary opportunities and implements education accordingly. The program interface also helps the digital teacher to simulate a real conversation. It is similar to the popular **WeChat messenger in Asia**. Thus, the development of digital technologies is gradually changing education, simplifying the process of acquiring

knowledge. In the USA, various services allow students to complete their homework faster. Due to these trends, the relevance of simple textbooks, study guides and abstracts is gradually disappearing. Because every student has the opportunity to use google, wikipedia or electronic libraries to find the necessary information. There is not only enough information now, but more than ever. Only students and pupils know where to get the necessary information. Student educators, tutors, and distance learning educators are increasingly using electronic assistants to educate young people. For example, *Ashok Goel*, a teacher at the *University of Georgia* , launched a digital assistant for a student chatbot on a separate learning channel. He put 40,000 pieces of information from the forums into *the Jill Watson* chatbot to choose the right and human-friendly answers for students . This algorithm not only helps students with their homework, but also allows them to conduct extracurricular activities using their smartphones. Bots similar to Yotson's are now being implemented in all the world's leading universities. One of them is **BI Norwegian Business School in Oslo** . A robot named **Tega**, developed in the media lab at the *Massachusetts Institute of Technology*, provides personalized learning to students. In this educational institution, students learn Spanish through games on a tablet computer together with the **Tega robot**. The educational process is organized in the form of learning together with a classmate or fellow student, not as a teacher. Modern distance education services are also changing with the emergence of new digital technologies. For example, **the Duolingo** service is using its bot to teach foreign languages. The reader asks the chat-bot a question and gets an answer quickly. But the rapid development of artificial intelligence may make classes with chatbots and tutors a thing of the past. The **Parla program** for learning foreign languages is also a big step towards creating a digital teacher based on artificial intelligence. The educational technology in it creates an individual educational program for the student and adapts it to the student, analyzing the student's level of knowledge. According to the developers of this system, taking into account the correct and incorrect questions, the speed of solving examples and problems, and the interest of the student, the artificial intelligence program can find an individual approach to teaching for him. Educational software such as **Parla** and **Microsoft** mean that mobile teachers will appear in the next 5-10 years. In the process of studying the problems in

this regard, a question arose: " *Why can it be considered that the process of teaching on computers is better than that of people?*" ". Because, firstly, in the modern information society, the fear of intelligent machines is decreasing. Second, there is a shortage of qualified teachers in most countries, and this shortage needs to be filled as quickly as possible through digital technologies. Research conducted by **PISA 2009** also revealed that 35% of teachers in Brazil and 70% in Mexico do not have sufficient qualifications to provide quality education. India, China and Japan also do not have a large number of highly qualified teachers. In a scientific study called **Bot.Me: A Revolutionary Partnership** , 63% of people surveyed said they believe that machines equipped with artificial intelligence will solve many of humanity's problems. Another problem with traditional education is that each student learns at a different rate. While some people understand all the material in one reading, other students take a long time to master the given learning material. And the teacher does not have the opportunity to divide students into groups and organize teaching according to their mastery levels.

The digital economy is also characterized by a change in the institution of mediation. The activity of intermediaries has now changed in form, because the awareness and provision of information to buyers is replaced by the direct interaction of market participants. On the one hand, traditional distributors and agents in developed countries are now in serious business because they contact buyers and sellers directly and do not use intermediaries in their transactions due to the development of the Internet. are facing difficulties.

On the other hand, the amount of information is constantly and rapidly growing, and users (buyers) feel the need for special "filters" that exclude unnecessary information. In such conditions, conditions are created for the emergence of a new type of mediation - information mediation. A growing number of information-internet companies offer intelligent services or aggregated services to consumers aimed at providing powerful and technology-enabled support in all aspects of transaction execution. These companies create a communicative and organized environment for the convenience of consumers and, of course, in the interests of their own business. Information intermediaries connect sellers and buyers in a certain way, based on digital technologies and through electronic networks, taking into account their interests . It is

interesting to note that any companies that have personal relationships with all market participants and appropriate information technologies, as well as potentially useful information from the data sets formed about these participants, can be information intermediaries. With the emergence of the global electronic network, buyers have new, unprecedented opportunities to satisfy their needs, and sellers, in turn, have acquired a new source of economic power (competence) for growth. In the conditions of the digital economy, there is no need to "physically" study the sales conditions and prices in the markets, to compare the prices in different stores and companies by analogy. An alternative option is quickly identified during research, and a competitor can be eliminated with one move of the computer "mouse". An important aspect of the Internet economy and the digital economy, in particular, is the unique technology of doing business. A distinctive feature is that the transaction is carried out on a "one-to-one" basis and without traditional intermediaries or taking into account information intermediaries. Therefore, the informational component of the value of goods and services is increasing. At the same time, sellers consider this process more profitable than the cost of the product to cover the costs of traditional components .

Consumers, in turn, tend to individualize their product requirements according to their preferences. Unprecedented conditions are created for the exchange of information between suppliers and consumers, sellers and buyers. For them and for them, information becomes the main aspect of economic life. The digital technological platform (the techno-digital basis of the new economy) creates great opportunities for the implementation of the selective-address methodology of socio-economic subjects. Formation of data sets, large tables or large data arrays (Big Data) with the emergence of new digital technologies for working with information on supercomputers, to determine what the subjects of relations prefer and to develop addresses and offers to each individual. allows exit. In the conditions of global relations, an individual approach to each consumer or participant in relations (including socio-political) becomes a real reality and an effective management tool.

Digitization of control over stocks, labor costs and logistics allows to minimize the costs of finished goods and, ultimately, to control the growth of prices (for example: "kanban" - "just-in-time" supply system, information scanning and bar-coding, in

transport GPS-monitoring, vertical linking of services, reduction of labor reserve). According to other researchers, such as Michael Mendel, the economic cycle in the digital economy, despite the development of high technologies, depends on the economic instability and the technological cycle that leads to a crisis. Taking into account the main laws of the development of the digital economy, it is possible to distinguish the main principles of its operation. They can be taken into account when improving the management of the digital economy. These principles include:

- In the conditions of globalization of the digital economy, the importance of distance decreases and the principle of "compression" of space is the most important principle of the modern economy. Globalization of the digital economy unites producers, consumers and competitors regardless of their geographical location. Everyone is connected to everyone else, not "protected" from each other in terms of competitiveness and accountability of their business. In the digital economy, geographical location is not as important as in competition - the "pre-digital" economy.

- The principle of "compression" of time means that the speed of all economic relations, changes and, especially important, management decision-making will increase. In the conditions of rapid communication in social production, time is becoming a great advantage and, at the same time, a responsibility. Digital companies provide more time savings compared to traditional companies. The strategy of digital companies is focused on continuous changes throughout the entire production cycle, and the acceleration of changes in improvement provides them with competitive advantages.

- The "smart" principle of organization and management is also important in the digital economy. Human capital, people, knowledge, ideas, artificial intelligence are the main assets of the digital economy. It ensures the content and speed of changes in the technological field, the emergence of bold ideas and innovations in business and management . Human capital will be "priceless" in the digital economy, and HR management will focus on the company's ability to create "winning" technologies and solutions.

- The principle of growth and development of the "network" in the conditions of

the digital economy is connected with the unique, "viral" nature of communications, first of all, with the electronic network (Network). The ease of communications and their chain-like nature contribute to the rapid spread of awareness for all business participants. Internet businesses can experience explosive growth by getting network marketing right, the first step. In a world of Internet users, the use of digital technologies, iterative planning and management can, all other things being equal, serve to accelerate economic growth.

- The principle of the value of technological platforms (including digital forms) and standards is based on the rapid spread of successful stand-alone solutions, which later become the basis of large-scale production, as a rule, ensuring the acquisition of large market shares. A variety of companion products and services will then be associated with this platform. In the digital economy, more and more event complexes of products and services, which become leading standards and values in consumer behavior, shape people's lifestyle and style, and are determined by a certain event, are appearing. Manufacturers and sellers cannot fail to notice these circumstances and take them into account when organizing business.

- Working with information, the principle of "efficiency" directs the participants (subjects) of the digital economy to organize a large amount of information. All participants feel the need to "filter" information in order to isolate the most important and useful information in each specific case. Therefore, there is a need for "smart" customer service and aggregated services. Some digital companies specialize in this and become effective information intermediaries.

- The principle of "virtuality" of the market means that there is no need to participate or physically appear in the market . Product prices and competitive advantages can be compared even without going to shopping centers, and special programs can ensure the search for products with the optimal ratio of quality and price. Physical barriers to competition disappear, business strives to offer the best quality and lowest price, the customer responds with enthusiasm: product search and purchase are done practically at the same time, without visiting sales points.

- In the digital economy, the principle of change in the cost structure is important.

The informational component of the product value is increasing, and the material aspect is decreasing. The operation or consumption of high-tech products is cheaper for the consumer (unit of useful efficiency), more satisfied and praised. they are

- The principle of "impulse" motivation means that the selection and purchase of goods is often done impulsively, as a one-time and immediate process, thanks to the Internet. Desire and purchase also occur when looking for another product. There is virtually no disconnect between search, desire and purchase. Soft coercion is one of the tools used by digital companies.

- The principle of "internationalization" of the digital economy can be interpreted, on the one hand, as a manifestation of the international division of labor, and on the other - as the development (globalization) of world economic relations. Globalization of the economy is removing barriers and restrictions on production and consumption thanks to digital technologies. Logistics and digitalization are making goods more accessible and accessible. Support at all stages of the product life cycle is provided in different languages, and the availability of special programs allows the translation of information from one language to another immediately and without translators. Human capital mobility and international standardization contribute to the internationalization of the digital economy.

The main directions in the strategic planning of public welfare in the digital economy are:

- formation of target descriptions for raising the standard of living of the people;
- researching the resources allocated to the implementation of public welfare goals;
- researching the future dynamics of the size and structure of the consumer fund;
- formation of indicators of population income structure and volume;
- research of formation processes of consumer social funds;
- developing development indicators of the non-production sector;
- modeling of non-production capital investment implementation processes;
- dynamics of the volume and structure of non-productive funds
- modeling;

- development of new measures to increase the standard of living of the people and assessment of the resources necessary for their implementation;
- overall strategic planning of the development of the people's standard of living and its coordination with other sections of the strategic plan of the national economy;
- evaluation of the processes of implementation of plans for raising the standard of living of the people and development of measures to encourage their implementation;
- systematic assessment of the quality of the strategic plan and control of its implementation.

Solving specific tasks is achieved on the basis of strategic goals, which are changed to global, local and target indicators of social development. It is also taken into account when predicting the dynamics of important aggregate indicators that describe the growth of public welfare. Local goals are taken into account in the calculation of specific indicators of material goods and services, different sectoral characteristics of the development of the non-production sector, differences in the growth of public welfare.

Thus, the modern trends of the development of the world economy are largely determined and based on the future development of the global electronic network, information-intellectual and digital technologies, artificial intelligence and the full realization of the potential of human capital. Therefore, the study of the problems of the digital economy is necessary both from the point of view of economic science and from the point of view of practical change of management systems at various levels: from electronic government to digital models of smart management of various objects (city, traffic, house, apartment, car, etc.). It should also be noted that the most important aspect of the digitization of social life, which is not covered by this chapter, is the economic and computer security problems, which are becoming more and more important throughout the world with the formation and development of the digital economy.

## **8th subject. Design Thinking in Business**

1. Features of design thinking in business process management.
2. Thinking design - user-oriented products, services and services.
3. Stages of thinking. Empathy - to a person directed design process center as .
4. Focusing on the business process. Development of ideas. Prototyping. Testing.

One of the main principles of design thinking is empathy, that is, knowing how to look at the world through the eyes of other people, to feel their needs, desires and tasks. From a methodological point of view, design-thinking approaches are used to solve problems under uncertainty using heuristic methods. In this case, the tasks are not creative, but emergent. Students attend a design-thinking course before receiving a diploma.

Another aspect is the modeling of products, processes and services. Traditionally, a company uses a focus group to determine consumer attitudes toward its product. But the creation of modeling tests the designed product with the support of the consumer, and then based on the information received, changes are made to it immediately.

Developing a design concept for corporations is also considered one of the most important jobs. Practical training will consist of creating styles of furniture, interior items and accessories. Due to the fact that the current market requires a lot of innovation and change, the need to use computer technologies arises. Therefore, students immediately begin to master specialized programs and strive to become qualified specialists.

Students should have practical design skills and experience. This means that the main focus of teachers is on design-related activities, students are taught not only to draw, but also to work with drills, lathes, gas welding equipment, and computer operations. In addition, conditions are created with a certain amount of allocated materials for them to conduct experiments and experiments freely. Their attention is mobilized to production and creation of new items.

In Germany, a whole academic semester is often allocated for professional training of designers, students are sent to enterprises and firms to gain experience. As a result, there will be a great demand for such specialists-bachelors in the labor market.

The mission, purpose, essence, theory and methods of professional training of designers are based on the Bauhaus pedagogical system. First of all, in the production of industrial products, working with various materials and studying them, using new technologies, active creativity in educational processes, searching for new design solutions, and creating a form based on the function of things are among these.

**The types of skills that are in high demand in today's economy**

<i>Cognitive</i>	<i>Social and behavioral</i>	<i>Technician</i>
Literacy and math skills, as well as higher-order cognitive skills (such as logical and creative thinking)	Social-emotional skills and personality traits	Manual skills Knowledge of tools, ability to work with materials, mechanisms and tools
The ability to solve problems, the knowledge necessary to solve a problem	Readiness for new experience, honesty, extroversion, tact and emotional stability	Technical skills acquired during post-secondary vocational training or study, or in the course of employment
Verbal literacy, numeracy, problem solving, memory and thinking speed	Self-regulation, willingness to compromise, focus, decision-making and interpersonal skills	Skills needed to work in a specific profession (eg engineer, economist or IT specialist)

*Source: " Digital Dividends". Lecture review on world development. 2016. World Bank, 2016. 33 pages.*

Good communication skills are essential to ensure smooth functioning and collaboration in such interdisciplinary teams. The development of business activities and industries based on convergent technologies is also likely to create a demand for scientific services and skills, including legal services on intellectual property and other issues, marketing and strategic management consulting. It is shown that training for convergent technology skills and interdisciplinary skills , in particular, envisages the combination of biotechnology, information and communication technologies, nanotechnologies and cognitive science. if we talk about the principles, it is impossible to bypass the aspect such as its compliance with the principle of social responsibility as the possession of universal deep knowledge. The philosophical content of this concept is related to the prediction of systemic changes in the environment and the consequences of the development of digital technologies. Without pretending to be complete, we list the development risks of digital technologies related to:

- the risks of data collection and storage, without which the information economy cannot exist (creating huge data sets about citizens and the actions they take, with the possibility of rating their desirability; control over not only the population, but also the states with opportunities; risks associated with information leakage and the negative consequences of the loss of the country's digital sovereignty);
- The impossibility of predicting the development of technical progress, which may turn out to be more extensive and more rapid than previous developments, risks related to children (competition between technology and education; each adapting labor skills that allow a person to acquire the necessary skills and avoid labor market traps; risks such as digital disruption and marginalization);
- security, including issues of ensuring cyber security (prevention of economic fraud using modern information technology), as well as regulation of electronic trade, use of the Internet, bioengineering technologies, artificial intelligence, cryptocurrencies, drones;
- risks of lack of or non-compliance with consumer protection and competition laws in the digital economy.

It can be seen that each of the educational levels forms the mentioned universal competencies at its own level. Preparation from the point of view of compliance with the principle of social responsibility is primarily related to the development of the digital economy, as well as the development of social responsibility skills in solving environmental and technosphere security tasks in the conditions of the development of data storage methods and cyber protection tools of organizations.

In the process of our transition to the digital economy, we have not yet developed the mechanisms of quality training to transform knowledge into innovations, use it effectively, and be successful. We should note the following: firstly, in order to develop Uzbekistan in an innovative direction, investments in the social sector (development of human capital) should be higher than in the real sector, that is, new thinking, new thinking and new It is necessary to introduce new terms to form a lifestyle, namely: smart family, smart neighborhood, smart medicine, smart education, smart religion, smart student, smart entrepreneur... All these are the improvement and effective use of intelligence and abilities. it is necessary to develop own road maps.



## 9 . Virtual and augmented reality technologies

1. The essence of virtual and augmented reality technologies.
2. Augmented reality - AR (augmented reality, AR) technologies as sensory devices that help fill in and receive information about an object.
3. VR (virtual reality, VR, artificial reality) virtual reality - creating information about an object using technical means,
4. A way to communicate to people through their imaginations. Problems of AR/VR technology development and features of the world market.

The digital economy is a virtual environment that complements the real world. Experts from Western countries agree that digital technologies will not work if relations between economic entities and management are not adjusted. Active information process changes consumer behavior. Marketing is also gradually approaching the essence of economic interaction, the main driving force that forces everyone to engage in economic interaction - needs. The management process in the digital economy (through professional personnel) is a computerized system of interaction management, which carries out large-scale work on the active use of electronic information to meet the growing needs of humanity. For example, it involves forecasting, planning, organizing, executing, controlling and coordinating system activities. That is, there should be a general integrated system of managing the national economy complex based on data collection and analysis in order to develop and implement the ways of development of the country.

In the long term, the "digital" (electronic) economy can become a tool capable of realizing the centuries-old dream of freedom for people condemned to hard physical labor. Many people are given wide opportunities for creativity, science (both fundamental and applied) and art. The digital revolution will enter some sectors and countries earlier and more strongly, and others later and less. Services, media and entertainment will be the first, followed by telecommunications companies and banks . But according to the general opinion of analysts and the results of a survey of company managers, digitization affects us all to one degree or another. Today we can identify each essence as belonging to one or another world, but after a certain time After t, we cannot make such a distribution for most objects. Such examples exist even today: **IP**

camera or any other transmitter connected to a network - which universe is it part of? Undoubtedly, they are the essence of the events of both worlds. A mobile phone today stores a lot of information: phone numbers, birthday information, photos, passwords and other information. Even though we are not physically connected to the phone, we feel functionally one with it. It does not take a lot of courage to say that the merging of the real and virtual worlds has begun and there is no way to stop it.

As a result of the merger of the real and virtual worlds, a new hybrid world is created, in which different laws and regulations apply, different from the laws and regulations that are common to us now. From this point of view, it should be said that there is no "digital" economy that exists separately from the rest of the economy: "Digital" (electronic) economy is an economy that exists in the conditions of the hybrid world. A hybrid world is the result of a combination of real and virtual worlds, characterized by the possibility of performing all "vital" actions in the real world through the virtual world. Low cost, high efficiency and openness of digital infrastructure are prerequisites for this process.

Digital business is the emergence of new business models that combine the physical and digital worlds. School of Management defines digital transformation as "the use of modern technologies to fundamentally increase the value and productivity of enterprises." will change the world in which companies operate. They will have to either fill the gaps in the new market or adapt to the changes by changing the existing gaps. It turns out that the digital transformation of organizations is a response to the development and active spread of new information technologies around the world. By reaching different levels of digital transformation, the difference between them has the same meaning as the difference between two terms - "digitalization" and "digitization". Digitization is the transfer of information from physical media to digital media. Examples of digital rendering are e-books, video courses, making a digital copy of a photo, etc. In this case, the information structure will not change: it will only have an electronic form. Digitalization is often used to improve existing business models and optimize business processes.

We can understand the transition from the digital economy to digital modeling and the Internet of Things as interactions with the virtual world. Of course, financial

relations in the national economy cannot be implemented without a digital currency in the form of a national cryptocurrency.

Many information systems perform operations better, faster and cheaper than humans, which allows to achieve unprecedented speed of action due to the minimization of the number of errors. There are now examples of robot assistants to help students, robot journalists, and even robot leaders who distribute tasks more efficiently than humans. A set of information services that interact with each other during one or another process is the result of digital transformation of service business processes. Many banks now perform borrower assessment processes without human intervention. In new companies, when calling a taxi, all interactions between the client and the driver are carried out using the information system, and human participation is not even considered. However, it is not always possible to completely exclude the participation of people from business processes. In this case, digital transformation allows for rapid data collection and provides remote control over digital communication channels with the help of robotics technologies. Examples of such changes can be observed in the service sector, oil production, electric power and manufacturing. Undoubtedly, the term "digital transformation" is becoming more and more popular in modern business. It seems that new technologies that are actively developing on a global scale will soon fundamentally change our perceptions of digital technologies and artificial intelligence.

Another key technology that the digital economy relies on is the Internet of Things. That is, it is common for many household appliances to be connected to the mains, but these are secondary. More and more objects of the material world are connected to the Internet, which provides information gathering and even remote control of these objects. In practice, a virtual copy of a material object, consisting of the external world and various indicators of the object, appears on the Internet, which allows this object to be controlled via the Internet. An example of the Internet of Things is a virtual data transmission system that sends, for example, a list of spare parts that need to be replaced as part of technical support services and unplanned repairs. The next stage of the development of the Internet of Things is the ability of objects to communicate not only with humans, but also with the ability to interact, which will

allow to achieve automated interactions in conveyor lines, maintenance systems, logistics and many other business areas. But there are still issues to be solved, such as: electronics that consume minimal electricity, as well as creating new communication standards for things to communicate with each other.

Another innovative direction related to digitization is augmented reality ( *Augmented Reality, AR* ). Augmented reality technology, which allows adding objects of the virtual world to the real world, is one of the most promising technologies. Imagine walking down the street and seeing additional information about the people and objects around you. There are examples of augmented reality, which are actively used in life. For example, in some parks in Moscow, you can find signs that indicate that an object of the material world is connected to an object of the virtual world. Games with elements of augmented reality are actively spreading, virtual mirrors and fitting rooms are available in stores, augmented reality is also being tested in cars. Virtual reality technologies are not so actively used in business, where the demand for **3D** modeling technologies is stronger. Examples of creating digital **3D** models of the real world are service industry enterprises, construction companies, manufacturers of complex technological products, oil production and other industries. In the framework of **3D** modeling, it is possible to talk not only about creating models of objects, but also about filling them with data, which, in turn, helps to optimize the process of management decision-making and, as a result, to connect the means of designing products with the means of their production. allows you to At the same time, in the way of mass introduction of virtual reality technologies, it will be necessary to ensure a further increase in the reality of the virtual world reflection in new generations of equipment that ensures a more realistic participation of a person in virtual reality. There is no doubt that the digital economy is closely related to robotics. The participation of robots in human life has been discussed many times by science fiction, but now robots are entering our real life very quickly and directly. Robots performing simple functions performed by humans in production can significantly reduce the number of errors and increase the speed of work. It's no secret that many industrial companies actively use robotics in assembly lines and logistics, which allows to reduce the importance of the human factor and involve a minimum number of people. Decreasing the cost of

industrial robots makes it possible to gain economic efficiency from their use, and in practice, people only have to monitor how the machines produce products in automatic mode without human intervention. In Germany, even the term **4.0.Industry** has appeared, which envisages the creation of fully automated production and logistics networks that will interact within the automatic production process. The combination of robotics, the Internet of Things, artificial intelligence and **3D** printing is now making it possible to build fully mechanized factories for the production of products ranging from sneakers to cars. **3D** printing is a technology that can fundamentally change some industries and engineering. The creation of a large number of 3D printers, which can print products from polymers, concrete, metal and even gold, will also change the understanding of the production cycle itself, since many types of products can be made without leaving the house, only in three dimensions. it will be possible to get a model and a **3D printer**. **3D** -printing has also been actively involved in mechanical engineering, where it is cheaper to print than to obtain details in the "classical" way. Designers of clothes and shoes are also printing their new products. Builders, jewelers, medical workers are also actively using **3D printing** in their business processes . A printer that can print itself has also been created. And Chinese companies have begun to produce constructors that any person can assemble a **3D printer** for himself at home . Although the technology still has questions about printing complex products, it is very possible to print products with complex components that can be printed on a new sneaker, taking into account the characteristics of the sole of the foot. The main thing is that it can be done without leaving home.

Now let's talk about the synergy of technologies. The use of innovative digital technologies together with other tools allows not only to change one or another business process, but also to completely reorganize the network, producing a product that did not exist before. The most exciting thing about digital transformation is the changes that are happening and how all these technologies can be used together. In the terms of the theory of synergetics, it can be said that the social system is constantly changing, and random changes (fluctuation) of institutional forms are an indicator of disorder at the micro level of the system and the possibility of its development. Some fluctuations turn out to be so strong that they determine the trajectory of future

development and bring about qualitative changes.

Augmented and virtual reality makes a new world visible to the human eye. And robotics and 3D-printing allow full automation of many routine operations. It can be said that the emergence of many advanced technologies will fundamentally change people's lives, eliminate some old professions and create new ones, and undoubtedly turn the world into a digital world. This digitization of the world will bring great changes in all sectors and, most importantly, many new companies will appear, and the companies that will not only find a place in this wave of change, but will become leaders. If all problems are solved and a center of competence for digital transformation is created, the network needs to start analyzing the opportunities and customer needs that new technologies will allow to meet them. Next, it is necessary to determine the prospects for standardization of internal business processes and services and form a plan for their digital transformation. reported by medium-sized companies. Examples of Uzbek companies undergoing digital transformation can be found in the banking sector, telecommunications, education, services and information technology.

### **Topic 10. Effective use of robotics in innovative business**

1. History of effective use of robotics in business.
2. Types of robotics. Modern robots that are being created based on the achievements of science and technology
3. International Federation of Robotics (IFR) and its tasks.
4. Analysis of the degree of robotization in the industry of countries. The main trends of robotics.

Today, in business models, there is a constant "breaking" of the set of skills with a minimum of time , and then there is a high demand for new skills, which determines the requirements for new professions. That is, in all industries, in all areas, the "shelf life" of skill sets will decrease sharply.

With the development of robotics, many essential skills will disappear. Moreover, even in industries with subtle technological changes, changing demographics or shifting to other markets will change the skills needed.

The growth of employment means that the basic set of skills required for the main

jobs in one or another sector is not provided, and some people are left in a difficult situation - they face a surplus of labor and this even. The possibility is also not excluded that the situation could undermine the incentives of businesses and employers to invest in reskilling. Here, it is important to consider the time-related process of the impact of information technology on different sectors. Foreign experts highlight the following factors that affect business models and the demand for labor skills:

- development of mobile internet and cloud technologies;
- large databases;
- crowdsourcing, sharing economy and pinning networks;
- variable working conditions and flexible working mechanisms;
- transition to a green economy;
- new energy sources and technologies;
- internet of things;
- advanced production technologies, 3D printing;
- advanced robotics and autonomous transport;
- artificial intelligence and its hardware;
- advanced materials, biotechnology and genomics.

*Microsoft* and *The Future Laboratory*, 65% of today's schoolchildren and students hold positions that do not yet exist. Experts predict that by 2025, virtual habitat designers, robotics experts, lawyers, freelancers, and biohackers will be in high demand. According to Steve Tuz, editor of *The FutureLaboratory*, it is important for future professionals to acquire several skills at once<sup>3</sup>.

A significant impact on changes in the field of employment and technology, demographic and socio-economic problems, as well as the role of intersectoral cooperation in establishing the necessary educational networks for personnel training are noted. In the coming years, not being able to foresee and solve these issues can lead to huge economic and social costs. All this raises the question of a complex strategy of personnel training with new skills, which corresponds to modern development strategies and trends of the modern technological revolution. The step that requires

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<sup>3</sup>Rossiyskie spetsialisty namazali professii budushchego <http://tass.ru/plus-one/4572666> ;

preparation requires commenting. It is assumed that the main category of training at this level is the low-income part of the population (pensioners and other socially vulnerable groups), therefore, it is correct to organize it on a budgetary basis on the basis of the centers of social development and digital education organized at the national level. were

Information economy is not simply the development of information technologies, it is the emergence of new business models whose efficiency can be increased due to intermediaries and optimization. Business dynamics increase and become more complicated, today there is no general correct answer on how to organize one's activities in the information economy. Companies that develop new technologies and use different types of innovation change the rules of business and destroy any barriers. "Digital technologies, such as the Internet of Things ( **IoT** ), big data , the use of mobile devices and various devices, will fundamentally change social interaction methods, economic relations and institutions. Economic agents will be coordinated to jointly solve the set tasks, and new methods of cooperation will appear ( **sharing economy** )". According to the laws of synergy, in a modern business equipped with new technologies, all excesses will disappear, which will increase competitiveness or reduce production costs, including the replacement of intermediaries with automatic network services. In addition to seriously reducing the value of services, this type of business organization leads to a new economic structure in which underemployment and various forms of individual production may play a major role. This type of labor market shift depends on how to improve human labor, which human resources are required, which educational models are needed for the digital economy, and finally, the lack of creative potential, special social and communicative skills, and rapid changes and the question of what to do with people who cannot work under conditions of uncertainty becomes urgent. But despite this, the processes are continuing and we imagine that the problem of automation of production is being solved somewhat successfully in our country, completely new productions are being created using robotics in some sectors. There is a significant reduction of both working and middle management personnel.

The given situation is not made up, it has completely realistic foundations. In

some sectors, the situation changes slowly (higher education, gas, chemistry); in others it is faster (healthcare, transportation, consumer goods, public sector/engineering, energy), but in some the process is much faster (banking, insurance, hi-tech, telecom, media, retail, sports and entertainment, defense). There is no doubt that the speed of diffusion of digital effects in the above-mentioned network groups can change both in this direction and in this direction, depending on the influence of various factors on this process, but there is no turning back. In recent years, radical changes will take place in the labor market, changes in professions requiring new skills from employees will be observed. As before, there may be employment guarantees in the cross-section of networks. At the same time, it can be seen that the competitiveness of organizations and even the country, the pace of their innovative development is determined by the availability of personnel potential. Describing the nature of modern work, K. Schwab said that professional activity "is released to the virtual cloud of ready performers located anywhere in the world. clearly describes the division into specific projects and specific tasks" and "isn't this the beginning of a new flexible work revolution that will give new opportunities and independence to everyone connected to the Internet and will be able to eliminate the shortage of professionals? Or will it lead to a ruthless race at the bottom of an unregulated virtual world of hard work? If the outcome of the revolution is the last option - the social class of workers who earn money from order to order, deprived of labor rights, contract and guaranteed employment, will become a social class, a source of political instability and social upheaval? <sup>4</sup>.

### **MODULE 3. ORGANIZATION AND MANAGEMENT OF ELECTRONIC BUSINESS MODELS**

#### **Topic 11. Electronic business models**

1. Globalization of the market of goods and services. The theory of generations.
2. Shared consumption (Sharing economy). Future generations (Generation NEXT) features and implementation options.
3. Organizational structure of e-business and e-commerce management.

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<sup>4</sup>Klaus Schwab. Fourth industrial revolution. -M., Eksmo. 20167S.63

#### 4. Classification of companies doing business on the Internet.

The rapid development of information technologies is also reflected in the economy. Currently, the basis of the achievements in the economy, especially in the field of entrepreneurship, lies in the highly developed and effective use of various segments of information technologies. The economy of Uzbekistan is certainly not an exception. As a clear example, a number of segments of information technologies, such as data transmission networks, information Internet resources and electronic document exchange between them, business and commerce are developing steadily. For Uzbekistan, the development of information technologies is of great importance in ensuring new economic relations. But this process takes place only if there is a certain level of informational readiness of the society, which arises as a result of the increase of educational standards in the field of information technologies, modernization of national telecommunication networks, and the formation of the legal framework.

As a result of the gradual development of the economy of Uzbekistan, the importance of new principles of conducting business activities, especially electronic commerce, has greatly increased. By now, every internet user has tried to understand the meaning of the word e-commerce. On average, 1.5-2 trillion per year in the US markets related to such activity, which has not yet had time to build its long history . Funds are transferred in the amount of US dollars .

To date, the state bodies in Uzbekistan follow the following principles, which are widely used in the world experience, in the development of electronic commerce.

- The corporate sector should play an active role in the development of electronic commerce;
- In relation to electronic commerce, it is necessary not to allow the imposition of various unfounded restrictions by state bodies;
- State authorities can intervene in the e-commerce process in order to support the subjects of this field and improve the legal base;
- When developing e-commerce management measures, the government should take into account the peculiarities of the Internet;
- The process of electronic commerce should take place on a global scale,

regardless of administrative-territorial division and state borders.

As a result of economic development, Uzbekistan is increasingly strengthening its position in the international economic system. This, in turn, creates the need to improve the e-commerce infrastructure, to ensure its emergence as a strong competitor in the world market. Taking into account the above circumstances, a number of significant works have been carried out to improve the basis of electronic commerce, that is, the legal basis. Law of the Republic of Uzbekistan on April 29, 2004 N613-II on "Electronic commerce", on November 30, 2007 Cabinet of Ministers No. 21 on "Development of electronic commerce" and on June 12, 2007 "Implementation of the electronic commerce system" "Improving the payment system in Ukraine" was adopted. In addition, in order to develop electronic commerce in the Republic, the "Ekarmon" project was developed and is being effectively implemented.

A number of positive results have been achieved based on the work carried out and completed. For example, the result of the work carried out in order to increase the speed of information exchange and reduce the time spent on it can be seen in the increase of the speed of international information networks in the Republic.

- The development of e-commerce has a positive effect on the structure of the Uzbek silk labor market. Industrialization of high information technologies creates thousands of new jobs.
- Stabilization of Uzbekistan's economy, increasing competitiveness of goods and services, and the simultaneous development of e-commerce will lead to an increase in our export opportunities.
- Electronic commerce ensures the improvement of the standard of living of the population, the development of fields such as marketing and management.

It should be emphasized that the opportunities for the development of e-commerce in Uzbekistan are growing year by year. Its development creates opportunities for our national producers to open new markets and find new customers. Following the chosen and current path of e-commerce development will make the economy of Uzbekistan one of the leading representatives of the world market in the future. Choosing the right way to solve the problems of electronic commerce in Uzbekistan is reflected in the well-being of the people, the progress of our society, and our economic development.

Uzbekistan is at the initial stage of the development of business activities through the use of the Internet. At the same time, this process has started. The number of Internet users is expected to increase significantly. Currently, the subject of electronic business in our Republic is mainly books, audio and video cassettes and some types of services. This is especially important for the poorly developed transport infrastructure in the republic.

According to experts, the number of electronic magazines operating in Uzbekistan is about 100. 70 percent of them are located in Tashkent. In these magazines, you can buy electronic versions of publications, books, music and video CDs, computer games, medical goods and services, video editing equipment and software, works of art. In addition to specialized electronic stores, there are also trading houses that offer a wide range of goods (auto parts, computers and household appliances, household goods, building materials, office furniture, antiques, etc.). With the help of the Internet, it is also possible to use various services of companies operating in finance, recruitment, tourism, real estate, computer and other markets. As an example, we can mention [www.torg.uz](http://www.torg.uz), an electronic store for food products, and [www.artel.uz](http://www.artel.uz) , an electronic store for buying technical products.

Many factors affect the development of e-commerce in business. Indeed, the development of e-commerce is influenced by technological factors, but the technological factor cannot be a fully influencing factor. The following factors affect the development of electronic commerce.

Technological factors. Currently, almost 90% of the world is provided with electronic infrastructure. Technological factors include:

- Increase the growth rate of the Internet audience;
- Development of information and communication technologies (ICT);
- Increase of intellectual potential in the development of computer technologies;

Economic factors. The main benefit of e-commerce is that it increases economic efficiency. It helps in increasing economic efficiency with the following aspects of e-commerce:

- It significantly reduces the communication costs of companies;
- It is a low-cost infrastructure;
- It is possible to conclude fast and cost-effective production contracts with suppliers of raw materials;
- It is a low-cost method of global information exchange;
- It is a very low-cost advertisement;
- Consumers can be served at a lower cost.

above reasons, it can be seen that e-commerce mainly reduces costs and affects cost reduction. In a market economy, firms try to increase economic efficiency. This further increases the need for e-commerce. Payment has greatly influenced the change in the nature of payment systems and the development of e-commerce. The increase in the mass of money in the economy, the acceleration of money movement, the expansion of the geography of money movement created the need for electronic payment systems. Currently, about 90% of the money in the US is electronic. It can be seen that the demand for electronic payment systems has had a significant impact on the development of electronic commerce.

E-commerce has a number of advantages over traditional economic activities. This difference can be felt by comparing several parameters. It is felt that conducting economic activity in the traditional way is much more expensive than conducting economic activity in online mode.

### **Topic 12. New possibilities of crowdsourcing and crowdfunding in business**

1. Theoretical and methodological foundations of crowdsourcing and crowdfunding in business.
2. Features of crowdsourcing and crowdfunding technologies in the business model of modern companies.
3. Opportunities to reduce Internet costs based on crowdsourcing. Coase theory. Effective use of innovative marketing elements based on crowdsourcing.
4. Formation of additional demand for crowdsourcing goods/services.

In many areas of the economy, middlemen can be replaced with automatic network

services (a site or mobile application that works well enough) to increase the level of profitability. Such organization of business can lead to a new economic structure dominated by the role of underemployment and various forms of individual production, in addition to allowing a significant reduction in the cost of services.

Crowd-funding and crowdsourcing technologies can also be considered digital economy technologies. Eliminating intermediaries, developing the Internet and creating "smart" automated services - this is also a transition from an economy based on obtaining added value to an economy based on cooperation and exchange of favors. teeth (including "sharing economy"). Therefore, competition gives way to mutually beneficial cooperation and interactions, and is based on equal interactions, providing complementary services, rather than vertical relationships. From here comes the increase in the volume and volume of electronic trade of services and the increase in the number of services. According to the experts of the World Bank, a 10% increase in the number of users of high-speed Internet can increase the annual GDP growth from 0.4% to 1.4%. The share of the country's GDP in the form of electronic economy is growing by about 20% per year , which is a recognition of the importance of such an economy, in developed countries this indicator is seven percent on average. According to forecasts, the share of such an economy in the world GDP may reach 30-40% after 10-15 years with the growth rate maintained . New social models for organizing interactions based on the integration of modern information platforms lead to the embodiment of the example of economic technologies (NET). NET's main principles are:

- development of completely new business models;
- optimal integration of various information technologies and their use in organizational and technological processes in the real sector of the economy;
- minimize transaction costs and material resources used in the development of material resources.

The digital economy develops on the basis of modern information technologies and in accordance with real economic conditions. If earlier production, trade and financial technologies developed consistently, by now, mainly horizontal interactions (self-organization and singularity), innovative entrepreneurship (self- development),

NET, which is the basis of the modern information economy, based on information engineering (self-improvement) and auto-formalization (auto-structuring) of economic processes, appeared. The material basis of NET is data centers and modern IT platforms designed for information systematization and analytical processing.

Thanks to the well-known and popular crowdfunding platforms, small businesses have found their way to capital through the Internet. **Oculus Rift** and **Pebble Watch platforms** used in foreign countries are the first steps of this model. But as before, participants can purchase capital directly. The new US startup aid law allows small investors to raise funds directly through crowdfunding campaigns, but investors and entrepreneurs still need intermediaries like *Kickstarter* or *Indiegogo* and a traditional payment method, usually bank cards *PayPal* . The intermediary is the arbiter of these matters, including who decides what belongs to whom. Blockchain equity (which is one option) further develops this concept. Now, companies can raise funding on the "blockchain", issuing tokens or virtual securities corresponding to the tangible value of the company. They can reflect the positions of market participants quoted on the platform, as in the case of shares, bonds or others, giving their owners the right to decide which prediction markets the company will open. *Ethereum* has made further progress by funding the development of an entirely new blockchain to sell its token, *ether* , on pre-orders . *Ethereum is* currently the second-longest and fastest-growing public blockchain. The average investment in *Augur's* crowdfunding was \$750, but it's not hard to imagine minimum subscriptions of \$1 or even 10 cents. Anyone in the world - even the poorest strata of the population and residents of the most remote regions - can become an investor in the stock market. According to *Augur* 's management team, the only practical limit to prediction markets is imagination. Anyone can post a specific prediction to Augur with a specific end date. Augur is a decentralized market prediction platform that rewards users for accurately predicting the future of future events - sports events, elections, new product launches, celebrity children. creates.

*Augur relies* on the "wisdom of the crowd" - the scientific principle that believes that a large group of people can predict the outcome of an event more accurately than one or a few experts. In other words, *Augur* uses the market mechanism to improve the accuracy of predictions.

in the past, such as *the Hollywood Stock Exchange*, *Intrade*, and *HedgeStreet* (now Nadex), but most of them have shut down or never launched at all due to legal and regulatory issues. The use of blockchain technology is relatively resistant to system development. , more specifically, letters, enforcement and liquidity problems are stable and lead to what *the Augur* team calls "regulation by obsolete jurisdictions". On *the Augur* platform, referees are called "referees", and their legitimacy is determined by their authority. For "correct behavior" - that is, for an event, an election or the result of a game - more prestige points are written. Compliance with ethical standards in the system also brings other material benefits: the more influence points a user has, the more markets he can make and the more money he can make. *Augur* states that "our prediction markets eliminate the risks associated with third-party, centralized servers and form a global market using cryptocurrencies, including blockchain, ether, and stablecoins. All funds are stored in smart contracts, money cannot be stolen." *Augur* also solves the problem of unethical contracts by introducing zero tolerance for violations.

Prediction markets are useful for investors interested in betting on eventual events, such as: "Will IBM's earnings grow by at least 10 cents this quarter?" Now, the initial estimate of corporate profits is just the average or median value of several expert analysts' predictions. Using "crowd wisdom", we make realistic predictions for the future, making markets more efficient. Prediction markets can also serve to hedge against anomalous events and global uncertainty. Prediction markets can function objectively as early warning systems for investors around the world. Prediction markets can complement and ultimately transform many aspects of the financial system. Imagine the prediction markets on reports of acquisitions, management turnover . Market hedging and value hedging can be done based on information from prediction markets, and in the future they will even supplant mystical financial instruments such as options, interest rate swaps and credit default swaps. Of course, the prediction market is not needed everywhere, of course. It won't be liquid enough to attract attention until enough people are interested. But still, its potential is huge and open to everyone. Blockchain technologies affect all types and functions of the financial services market, from retail banking and capital markets to accounting and regulation.

They also force a rethinking of the role of banks and financial institutions in society.

If the old world was rigidly hierarchical, slow, closed, and opaque, resistant to change, and controlled by powerful intermediaries, the new world is flatter, offering blind decisions, frequent and reliable, will be transparent, integrated and innovative. Of course, change will cause disruption and instability, but industry leaders have an opportunity to take action today. The financial services industry faces both contraction and growth in the coming years: fewer intermediaries can offer more products and services to more people at much lower costs. We think this is very good. Whether open and closed blockchains can find a place in a decentralized world is a controversial issue. We believe that the irresistible force of blockchain technology is now attacking the entrenched, deregulated and stagnant infrastructure of modern finance. Their collision will change the landscape of the financial system for decades. It is hoped that it will finally become the platform of the money machine of the industrial age. Several companies, attracted by the offer of potential profit, are working on search engines for blockchains.

*Google has taken on the mission of collecting and organizing all the information in the world, and* it is no surprise that the company spends a lot of human resources on researching this issue . There are three main differences between web search and blockchain search. First, it is the privacy of the user's personal data. At the same time, transactions are transparent, everyone is the owner of their personal data, and they decide how to deal with it. It is possible to participate in the process anonymously or under a pseudonym (under a fictitious name - anonymous) or pseudo-anonymously (partially anonymous). Many companies will have to rethink and reorganize their recruitment process .

Another cause of conflicts in firms is the cost of contracts, price negotiations, defining and determining the scope of the terms of supply of goods or services, ensuring and regulating the implementation of these agreements, and taking measures for their non-performance. Contracts and agreements are a relatively new phenomenon that arose when we began to exchange obligations, not property. Verbal agreements proved to be unreliable: they were easy to falsify, misremember, and witnesses could not always be relied upon. Doubt and mistrust prevent working together with new

people. Agreements should be implemented immediately, and enforcement was achieved only through the threat of force - there were no formal mechanisms for this. A written contract has become a way to record obligations, establish relationships based on trust, and describe expected outcomes from each other. Written contracts specified what to do in the event that one of the parties defaulted or an unexpected event occurred. But they couldn't exist in a vacuum—a legal framework was required that would recognize contracts and ensure that each party's rights were respected. Blockchain would lower contract costs and allow firms to open up and develop new relationships beyond their borders.

Consensus (agreement), for example, can create interactions with different groups of participants, both in its territory and outside its territory, because these relations are managed by smart contracts, not traditional managers. Participants themselves set goals that satisfy everyone and receive rewards for achieving them - all this is done on the blockchain.

### **Topic 13. Features of the modern e-commerce market**

1. The history of the development of electronic commerce, the impact of technologies on the development of electronic commerce.
2. Share of e-commerce in GDP of countries. The impact of electronic commerce technologies on the formation of new markets.
3. International e-commerce participants. Features of the electronic services and digital products market.
4. Evaluating the effectiveness of electronic advertising. Features of the development of electronic commerce in Uzbekistan.

Uzbek consumers are also actively paying for internet or phone services through mobile applications. This indicates that the population of Uzbekistan believes in electronic transactions, but so far users are not very ready to increase the average purchase volume by performing small transactions that do not require large expenses.

The average size of the user of electronic transactions in Uzbekistan is between 50,000 and 200,000 sums. In line with the world indicators, the Uzbek consumer uses

a mobile phone to make an electronic transaction because it is more convenient and has a number of convenient applications. When it comes to product selection, most respondents preferred to buy clothing, household appliances, and electronics online. Cars and real estate were the least purchased items online. This can be explained by the fact that at the moment the user is not yet ready to give large amounts of money in the "online" mode.

In addition, users actively use payment systems such as UzCard, VISA, MasterCard. The least popular systems are Union Pay, WebMoney and cryptocurrencies. When it comes to problems with purchasing products online, almost all respondents mentioned difficulties in payment time, poor product/service quality, long delivery time, and expensive price. Thus, based on the information obtained as a result of the public survey, we can mention a number of problems and shortcomings that are stopping the development of e-commerce in Uzbekistan:

1. People's lack of confidence in making electronic transactions;
2. The high cost of delivery;
3. Low quality of goods/services;
4. Fear of fraud;
5. Low level of computer literacy.

However, at the same time, social surveys conducted among the population show that the population of Uzbekistan is ready to carry out electronic transactions, but at the time of their implementation, the user pushes the average consumer further and in Uzbekistan faces a number of problems that slow down the development of e-commerce. The age of information technologies has determined new ideas and rules for economic development. The digital economy, which is interesting for a narrow range of theoreticians-scientists, is a market model with great potential in our country, because:

- information is a priority commodity, although this resource is not limited at all;
- the network market is huge and democratic, the main thing is that network boundaries are easily "washed away";
- the success of the project or company no longer depends on the number of employees and the size of financial assets;

- hardware power becomes a multi-use, universal, timeless and non-degrading tool;
- the competitive landscape will change, as rapid intellectual solutions in the digital environment will outperform any strong physical base.

One of the main features of the digital information market is the speed and ease of decision making. The heavy manufacturing base is the last place here. Large corporations that seem to have existed forever and have huge market shares in the network have given way in just a few years to companies with no history at all. It is impossible to stretch. This is a natural and cruel stage of evolution, in which those who live by the rules and scales of the previous century are left behind. It would be appropriate to compare them to dinosaurs.

*Infonomics* is a relatively new discipline that emphasizes the value of information as an economic asset. The authors of this methodology recommend comprehensive evaluation of information, not individual files, and call for the use of openness as one of the main criteria of information value - the more difficult it is to obtain information, the more valuable it is. In this case, evaluation of communication channels - the value of information is determined by the benefit, level of influence, quantity and openness for interested parties within a specific communication sector. Monetization of algorithms is the process of determining their economic potential. And the valuation algorithm is a specific, universal commodity that can be used in various markets and industries. Information as a commodity does not have a centralized body responsible for economic justification of processes, technologies and algorithms at this stage. Thus, there are no clear standards for the evaluation of information assets. But it is he who opens up a world of great benefits to enterprising and enterprising companies and individuals. Whoever is the first gets what he wants, and those who follow him can only get what's left (that is, everything goes to the winner).

It would be short-sighted to consider the old schemes of doing business as one hundred percent anachronisms. The boundaries between networks are disappearing, new opportunities are emerging, but at the base of any commercial relationship there is always one simple desire - the desire to sell or buy goods or services. Adaptation is the only correct and, most importantly, effective solution in such a situation.

The process of the digital economy is to change the following:

- business models and portfolio of available services;
- standards of behavior in relations with customers and partners;
- corporate culture with special emphasis on training and motivation of personnel;
- the level of responsibility and regulation of IT departments with the introduction of virtualization, cloud technologies;
- organization of the company's infrastructure taking into account new technologies, software-hardware requirements of the environment, interests of customers and partners.

It is noteworthy that the changes for the purpose of improvement of any of the mentioned items can involve the elements of the company's business models working with it, leaving aside the passive assets. Only the sector needed to work here and now will change. In this way, the digital economy becomes more mobile than fickle physical assets. The existing funds and mechanisms should not be destroyed in the name of new technologies. A timely audit and a good understanding of what is happening are enough incentives to start moving in the right direction.

E-commerce also requires data privacy, authentication, and access control tools. Digital currencies, cryptocurrencies, ICOs and their tokens and digital currency exchanges also require effective electronic security measures. Modern cryptographic protection methods are also used as technical and software tools.

### **Topic 14. E-commerce models**

1. The essence of different approaches to business modeling.
2. Creation of business model and their classification.
3. Features of creating an e-commerce model . Development factors of electronic commerce
4. Risks in electronic commerce. Business models in social networks. Development directions of e-commerce models in Uzbekistan.

Companies using Internet technologies have gained an advantage over their competitors due to the fact that they first solve problems operationally. B2C, B2B and P2P schemes are currently the main models of conducting e-business.

B2C - "business-to-consumer" scheme refers to the retail sale of goods and services to a private person over the Internet.

B2B - "business-business" scheme represents the interaction of companies with each other using specific information technologies and electronic data exchange standards.

P2P - "peer-to-peer" scheme of business relationship represents a business relationship between partners in the same position on the Internet.

B2B "business-to-consumer" model. From a commercial point of view, the B2C "business-to-consumer" model is the most promising direction of e-commerce, since it is based on e-retail. Internet retailing is a rapidly growing sector of the economy and accounts for a large share of the e-commerce market.

The following applies to B2C systems:

Web showcases created using Web design tools of trade companies;

Internet stores, which usually have the necessary business - infrastructure - back office to manage the e-commerce process over the Internet in addition to the storefront;

Back offices are commercial Internet systems consisting of Internet stores fully integrated with the company's commercial business processes.

While all three trade online, each option has a different level of automation of the trading process. Customer service has different levels of complexity, and the cost of doing business also varies.

Sometimes the concepts of e-business and e-commerce are confused, but there is a significant difference between them:

1. Electronic business is the implementation of the main business processes of the company using Internet technologies in order to increase the efficiency of the activity. In other words, electronic business is a service activity that uses global information networks to carry out internal and external relations of the company.

2. E-commerce is an important component of e-business. E-commerce covers various forms of business activity - retail and wholesale, marketing, business-to-business transactions, rental of applications, provision of services, and more. All these services are performed electronically using computer networks.

The new market is based on the use of modern information technologies and is

designed for operational communication with the consumer. In the near future, e-commerce operations will be and will remain a core part of any business.

Web showcases are relatively inexpensive and fairly simple sites to implement. From a technical point of view, the Web is a showcase-catalog, a navigation system and an order processing complex. In other words, order sales are organized with the help of Web-windows. On such sites, the Product list of a certain company is placed in the form of an online catalog. It should be noted that the profitability of the Web storefront is not much different from the profitability of ordinary trading. E-business is often called the technology of the third millennium. The development of electronic business on the Internet began in 1995, when private users began to use the network. In the same year, Amazon-Internet magazine, one of the first, was opened.

Internet magazines. The information technologies of electronic Internet stores allow the buyer who can use the Internet to familiarize himself with the types of goods and services of various companies without leaving his home, to get information about their quality and price, to make payment via the Internet and to make purchases with home delivery. In general, the main tasks of an Internet store are to provide information services to customers, process orders, make payments, and collect and analyze various statistical information.

Electronic commerce activity is determined and implemented by the Law of the Republic of Uzbekistan "On Electronic Commerce" dated April 29, 2004 No. 613-II.

E-commerce is used to describe commercial activity on the Internet. It provides an opportunity to purchase, sell, provide service, and conduct marketing activities using a computer network.

The difference between electronic commerce and traditional types of commerce. E-commerce differs from traditional trade in the following characteristics:

- the buyer has the opportunity to choose and buy the product at a time, place and speed convenient for him;
  - trading activities in parallel with work activities, that is, without separating them from production;
  - the ability of a large number of buyers to contact several firms at the same time.
- This is an opportunity for a large number of buyers to communicate with sellers using

communication tools;

- to quickly search for the necessary products and to contact companies with these products, to efficiently use equipment and vehicles, to collect products in one place and to contact specific addresses when purchasing them. Reduces excess time and costs;
- the opportunity to buy products with equal rights for everyone, regardless of the buyer's place of residence, health, and level of material security;
- the ability to choose and sell products that meet current global standards;
- e-commerce further expands and updates the opportunity of the seller in the process of selling his products (work, services). Now the seller will have to speed up the process of selling his products, regularly replace new and high-quality products, and speed up the turnover of products.

Organization of trade in e-commerce increases the competition of firms, eliminates monopolies and provides an opportunity to improve the quality of products. Buyers can choose quality products that they need in their daily life. Refers to foreign companies.

In order to achieve the desired development and prosperity of the world community, the need for information technology (IT) is increasing rapidly. Activation of economic growth, improvement of the standard of living of the world's population is the result of the penetration of information technologies into our daily life. The experience of the world shows that the provision of free flow of information accelerates the transition to a market economy and increases social welfare.

## **MODULE 4 . ORGANIZATION AND MANAGEMENT OF THE DIGITAL ECONOMY IN NETWORKS AND FIELDS**

### **Topic 15. Features of digitization of e-government and service sector**

1. The main tasks of e-government and its relevance.
2. The role of electronic government in ensuring the efficiency, speed and transparency of the activities of state bodies.
3. Electronic document circulation in the implementation of mutual relations with the population and business entities.
4. Formation of information exchange mechanisms between the mutual cooperation of state bodies and their databases. Unified interactive public services portal (YAIDXP) .

Today, the concept of "electronic government" has various definitions and descriptions. In some sources, e-government is considered to be the automation of the process of providing state services, while in others, e-government is defined as the use of information and communication technologies in the provision of state services to citizens, business representatives, state bodies and organizations.

In general, e-government is a continuous optimization of the process of providing public services based on digital technologies, the Internet and modern mass media, and the participation of citizens and management through changes in internal and external relations. E-government facilitates the provision of public services to citizens, entrepreneurs and state bodies, creates additional opportunities for self-management of citizens, increases their awareness of technological innovations and facilitates their participation in public administration.

Electronic government consists of the following main modules (systems):

- G2C (Government to Citizens).
- G2B (Government to Business) — Government to business
- G2G (Government to Government).

The ultimate goal of "e-Government" is to create a perfect electronic government apparatus capable of further improving the possibilities of providing interactive services.

After the introduction of "Electronic Government", the transparency and openness of the activities of state bodies will increase significantly, the use of services of state bodies will expand and become easier, it will be possible to present them to individual citizens, it will be possible to involve citizens in political processes and state management, the use and exchange of information will be accelerated, public services will be made available to the public. and business representatives will be optimized, citizens will be able to self-serve, while other advantages and conveniences related to the provision of public services will be provided to all users.

In Uzbekistan, like other countries of the world, great attention is paid to the formation and introduction of electronic government.

A Republican commission was established to coordinate the implementation of the Comprehensive Program for the further development of the national information and communication system. In addition, a number of important issues such as the creation and mutual integration of information systems, the automation of the activities of state bodies, in order to ensure the efficient and high-quality performance of their functions and tasks, were presented to state bodies. was placed.

The activity of the "Electronic Government" system development center is aimed at developing strategic directions for the improvement and further development of the electronic cooperation system of the state with the population and business entities in our country. This center, which provides a unified technological approach to the formation of this system, which provides for the design, development and integration mechanism of the database and information resources used by state bodies, analyzes and researches world trends in this regard, as well as the experience of foreign countries. provides high-quality public services while saving money, and solves tasks such as transferring new services to electronic development.

The main goal of the Information Security Center is to ensure the information security of the database, resources and information systems complex of the "electronic government" system, to assist in the development and implementation of the information security policy of the relevant resources and systems of state bodies, the information of the "electronic government" system development of the regulatory and

legal framework in the field of security, as well as implementation of work on the improvement of the national Internet segment.

On July 1, 2013, the Unified interactive state services portal, one of the most important tools of the "electronic government" system, was launched in our republic ([www.my.gov.uz](http://www.my.gov.uz)). The slogan of Yagonaportal is called "Services in a new look" and its meaning is to provide interactive public services for users through a single point in real time.

Today, more than 220 services are provided to users through the Single portal.

Since the beginning of the year, 30 new services and services have been launched on the single portal for business entities and citizens.

Currently, users, mainly business entities, can use the following services through the single portal:

- receive an electronic extract from the schedule of inspections;
- registration of information on foreign trade contracts in the single electronic information system of foreign trade operations;
- electronic submission of applications for business entities to submit technical conditions for their connection to gas supply networks
- making payments for some types of services through the "sms-payment" payment system;
- provision of payment terminals for business entities, electronic submission of applications for the purchase of local motor vehicles;
- submitting applications for obtaining licenses and permits for certain types of activity, etc

On October 1, 2014, the office of the business entity was launched on the Single portal. Through this cabinet, business entities can create and send various tax, statistical and other types of reports, make various payments, receive various information and use other types of interactive government services. In order to further develop and improve "electronic government" and improve interactive state services in our republic, in cooperation with ministries and agencies, it was assigned to develop measures to introduce the following services for business entities:

- together with official organizations, submit an electronic application for the agreement of materials for the selection of land plots, as well as submit an application for issuing permitting documents in the field of construction;
- submitting an electronic application for certification of manufactured and imported products from the National Certification System;
- submitting an electronic application for a permit for temporary import (export) of goods and products;
- submitting an electronic application for a permit to place goods under the re-export customs regime, etc

The following issues can be solved with the help of e-commerce:

- Establishing communication with future customers, suppliers and customers through the web system;
- Electronic exchange of necessary documents for trade transactions;
- Control of the sale and delivery of goods and services;
- Product promotion and post-purchase support;
- Make an electronic payment for the purchase.

Effective use of these opportunities, their further improvement, approach to each issue with special attention creates an important basis for further development of the enterprise's activities and achieving economic efficiency.

Enterprises that integrate their activities with e-commerce will have the following advantages and opportunities:

- Reducing costs of maintaining business infrastructure;
- Reducing the cost of goods as a result of reducing advertising costs;
- Save the time of order acceptance and implementation;
- Control over all orders;
- Increase in prospective customers.

E-commerce differs from traditional trade in the following characteristics:

- the buyer has the opportunity to choose and buy the product at a time, place and speed convenient for him;
- it is possible to carry out trading activities in parallel with work activities, that

is, without separating them from production;

- the ability of a large number of buyers to contact several firms at the same time.

This is an opportunity for a large number of buyers to communicate with sellers using communication tools;

- to quickly search for the necessary products and to contact companies with these products, to efficiently use equipment and vehicles, to collect products in one place and to contact specific addresses when purchasing them. Reduces excess time and costs;

- the opportunity to buy products with equal rights for everyone, regardless of the buyer's place of residence, health, and level of material security;

- the ability to choose and sell products that meet current global standards;

- e-commerce further expands and updates the opportunity of the seller in the process of selling his products (work, services). Now the seller will have to speed up the process of selling his products, regularly replace new and high-quality products, speed up the circulation of products;

From the above information, it can be concluded that the organization of trade on the basis of e-commerce increases the competition of firms, eliminates monopolies and provides an opportunity to improve the quality of products. Buyers can choose quality products that they need in their daily life.

One of the important tasks of the center is to develop effective benchmarking methods for the provision and use of interactive public services in the implementation of "Electronic Government" system projects. It should also be noted that the implementation of the electronic government system in Uzbekistan: providing the possibility of interactive services; transparency of reports of authorities; convenience and individualization of connection to services; informedness and effectiveness of citizens' participation in political processes; free exchange of information; optimization of public services to the population and business sector; support and expansion of service opportunities for citizens; is to increase the level of participation of the country's leadership in all elections and public administration processes, and to create a perfect electronic state administration apparatus capable of further improving others.

The responsibilities of the Department of Electronic Government Information System Development include the development of electronic government architectures

and the complex of information systems, as well as conducting expertise in information systems.

The Department of Coordination of the Activities of Specialized Structural Units also functions as part of the Center, and its duties include coordination of the activities of state bodies and economic management bodies, as well as special units of local government bodies. In addition to the above-mentioned departments, the structure of the Center includes the services of financial, international, as well as other departmental administrative staff.

### **Topic 16. Development of e-learning platforms**

1. Development of e-learning market and types of educational platforms.
2. Development directions of electronic education in Uzbekistan.
3. The concept of a digital educational institution. Organization of export of educational services.
4. Organization of webinars and video conferences. Ways to develop distance education.

Changes in the economy today and predicted in the near future affect the entire education sector, putting increasing pressure on the HEI environment and raising the question of the value of their diplomas. What can traditional higher education institutions offer in the conditions when the pace of onlay education is increasing, business is forming a corporate system of training and retraining , developing professional standards and presenting their own standards for compliance with them?

Currently, universities and other higher education institutions face the tasks of the transition to the digital economy: to expand the set of programs along with the preparation of bachelor's and master's degrees in predetermined directions and specializations, and to equip students with the skills required by the digital economy. creation of necessary conditions for learning and acquiring knowledge is one of the most urgent tasks. As we noted earlier, the speed of diffusion of digital effects is different in different sectors, which explains the need to harmonize training for both the existing analog economy and the digital economy. But nevertheless, new models

of universities should be formed during the transition period, and experts have highlighted a number of new functions that can be created on the basis of these models:

- Modeling the surrounding world (setting university).
- Maximizing the function of modeling the surrounding world, that is, the modeling function, in which the university, conditionally speaking, prepares personnel and pedagogues who are able to model and create the surrounding world.
- Maximize resources sufficient to create new models at the systemic level.
- The "Rocket unicorn university" model, i.e., the model of a university created by individual people, is to maximize the function of creating new startups based on it.
- Maximizing the ideology manifested in the world today in the "singularity university" model.
- Maximizing motivation can solve the problems of 80% of students and children interested in studying.
- Maximizing the manifestation of talent, that is, encouraging any talent that appears in any direction.
- Maximizing the competitive advantages of the national economy, first of all, in the field of digital economy, programming and companies working in the global market.
- Maximize the call to make a university devote its entire mission to creating some one new product that will revolutionize the world.
- Maximization of accumulated scientific capital.
- Ecosystem maximization, i.e. maximum involvement of people with existing competencies to solve training tasks limited by regulatory frameworks.

Of course, the listed functions may apply only to a certain group of universities, and experts include global research universities among them. In addition to research, these universities develop as project universities, as modern universities that develop start-ups, create a favorable environment for their graduates for new businesses, new social initiatives, clubs, etc.

Another important group of educational institutions includes universities that cannot compete in global science, but need to participate as centers of intellectual concentration in the regions. In them, the social function - the development of local businesses and social projects, as well as the creation of a wide cultural shelf - will be

given priority. In this case, it is important to separate the main regional higher education institutions, to provide them with expanded university functions, which experts have defined as an absolutely clear base.

The third turion of universities is focused on providing services to online (distance) learning processes. In practice, universities help students obtain a specific degree from a large number of short courses they take. The function of these universities is to provide the maximum coverage of higher education, which is considered a social imperative for the population of any developed country. Corporate universities, which train and retrain personnel for corporations and industries, form a separate group. Another type of universities - universities that should grow out of the current colleges. This is now called an applied bachelor's degree in most countries, but it is broader than an applied bachelor's degree.

According to predictions, by the 2030s, manual occupations will remain scarce and highly prestigious in the labor market. It should also be taken into account that there is a huge competition sector for universities operating in the same fields. The new sector is created by training centers of large companies, specialized firms, and educational start-ups emerging in the market. Universities are too inert to meet the rapidly changing, highly individualized demands, which certainly offers great opportunities for new commercialization of this sector.

Currently, a number of leading HEIs in most countries have begun to build an educational environment that can adequately respond to the challenges of the digital economy, despite external constraints and internal obstacles. Since one of the main changes in the field of education and personnel training in the field of digital economy is the principle of broad humanitarianism, combining humanitarian and technical higher education institutions for the development of joint educational programs can become a promising direction. The radical changes are affecting all aspects of life. This will fundamentally change the ways of digital education, but unfortunately, many problems remain as before: inequality in access to digital technologies, decline in the quality of education for various reasons, its commoditization.

Great attention should be paid to the fact that modern information and communication technologies can be used to improve the quality and efficiency of

education, and that they can contribute to the equalization of educational opportunities. Without it, the goals set by the community of the republic cannot be achieved. In the conditions where people become the main element of the digital economy, education becomes not only a social good and a basic human right, but also a complex task - a strategy that must solve the mechanism of "launching the future" in the conditions of fundamental changes in civilization. will also have priority content. Today, the structure of the economy in the world is fundamentally changing - more and more people are not engaged in the production of goods, but in the acquisition and processing of information. The traditional economy that is familiar to everyone is being replaced by a digital economy that has a number of features:

- the basic circulation of information is inexhaustible;
- that there are no restrictions on trading areas on the Internet;
- the size of the company does not affect its competitiveness;
- that one material resource itself can be used indefinitely to provide different services;
- the scope of operational activity is mainly determined by the capabilities of the Internet system.

Relying on the quantitative measures of the mathematical theory of information, DS Robertson (USA) put forward the formula "civilization is information" on the basis of the mutual reinforcement of developed processes. :

Level 0 - the information capacity of an individual's brain is 10<sup>7</sup> bits;

Level 1 - oral communication within a community, village or tribe - the amount of information exchanged - 10<sup>9</sup> bits;

Level 2 - written culture; the measure of society's informatization is served by the library of Alexandria, which has 532,800 rolls of paper containing 1,011 bits of information;

Level 3 - book environment: there are hundreds of libraries, which store tens of thousands of books, newspapers and magazines, the total capacity of which is estimated at tens of thousands of terabytes;

Level 4 - an information society in which information with the size of several thousand zettabytes and petabytes is processed electronically.

From an economic point of view, it can be said that information should contribute to the growth of labor productivity and create added value in the material component of the production of social wealth, and this will become its first economic content in the economy of the information society. Information as "raw material" is created by man, nature and various technical devices. It is also consumed by them, for processing it is required to solve the issues of information transfer, storage, search and delivery, for this "transport" (highway and local networks, communication systems), "warehouses" (data centers), "technique" (computers), "tools" (software) are created. That is, certain segments of material production and services are formed in the economy to meet the information needs of the society.

Digital economy, or in other words web-economy, represents the system of economic, social and cultural relations organized using modern digital technologies. Digital economy becomes a daily reality in modern society, thanks to its use, efficiency of all industries increases. The possibilities of using modern computer technologies are increasing in terms of quality and quantity - it is possible to perform almost all operations through a computer: pay money, order a ticket, search for the necessary information. In the era of the digital economy, information plays the most important role and it has a huge value. becomes a major intangible asset. At the current stage, the main trend in the development of information is the improvement of computer technology together with the achievements in the field of artificial intelligence and communication tools. Today, information is becoming one of the main social values of society in the world. Information technology has become an important component of the process of using information resources by society. Currently, they have gone through several stages of evolution, and their exchange is mainly based on the emergence of more modern technological tools for information search and processing. The current stage of development is characterized by a change in the direction of the information technology segment from the development of the technical base to the use of open tools to create a strategic advantage. There are several points of view regarding the development of information technologies using different types of data processing, which are divided into time stages.

2017, the digital economy entered a decisive phase - half of the population of the

planet connected to the Internet. According to McKinsey (MGI) global institute, in the next 20 years, up to 50% of the world's work operations will be automated, which can be compared with the industrial revolution of the 18th and 19th centuries. It is a response to the need to increase the rate of consumption of information resources and significantly increase labor productivity in the sector of social production. The practice of economically developed countries such as the USA, Japan and the European Union shows that the solution to the problem of informatization of society is a global goal of development and is connected with the transition of the civilization of our planet to a new level. High speed is one of the symptoms of the digital economy. Speed growth is happening everywhere, but especially in order fulfillment, information creation, retrieval, processing, and shipping. Any action is expected to receive an immediate response. The digital economy is rapidly displacing the old order in all spheres of activity of modern society, making it possible to automatically perform daily repetitive boring operations and quickly provide information for making optimal decisions. The main role in the digital economy is played by information systems. Such systems for the communication operator are, first of all, operations support systems (OSS-operations support systems) and business support systems (BSS-business support systems). Because they represent the application support category of internal business processes, changing them is a response to changes in business processes.

With the use of information technologies, great changes are taking place in all levels of society, in personal life, and people's lifestyles are radically changing. There is a need for new professions and means of communication. Information, information infrastructure, electronic resources that represent a collection of entities that carry out information collection, formation, distribution and use, as well as the role of the system of regulating relations that arise in this, are growing. Of course, the question of introducing specialists into the digital sector arises. For example, in the field of digital economy, we should include engineers and economists who design buildings for *YandexTaxi drivers or communication facilities*.

The information space of any country is expected to perform certain strategic and tactical functions. Strategic functions aimed at protecting against the intrusion of foreign information and creating a social identity are carried out by means of artistic

and news communications. Tactical functions that serve to fulfill certain tasks of social management, organize support for government initiatives, and inform the population about short-term events are mainly performed by news communications .

### **Topic 17. Effective use of digital technologies in industry. "Industry-4.0" concept**

1. The essence and development of the "Industry-4.0" concept.
2. Features of the use of digital technologies in industry.
3. Blockchain technologies. Production process planning.
4. Digitization of enterprise personnel management. Digitization of cost management.

As technology enters our lives more and more, the border between the real and digital world is disappearing:

- we accept the tasks related to our work through the Internet and continue working at home;
- we buy food and clothes from online stores;
- it is possible to communicate remotely with a relative in any city of the world, communicate with friends via video, or even play chess;
- the opportunities for free online education are expanding at prestigious universities of the world, and students are also following university lectures in their own cities online from home;
- it is becoming common for educated employees to work internationally, and their transformation into a global employee;
- regardless of time and place, it became possible to work on data stored in Cloud and Drive systems, learn any language, and watch movies via the Internet.

What we read with wonder in science fiction books yesterday is becoming a reality in front of our eyes today. It went through several stages before becoming a reality. We list these steps below.

The 1st Industrial Revolution (Industry 1.0) began in the late 18th century with the creation of water and steam powered devices. In particular, the first mechanical

knitting machine was created in 1784.

During the 2nd industrial revolution (Industry 2.0) observed at the beginning of the 20th century, products began to be mass-produced with the discovery of electricity.

In the 70s of the 20th century, when the 3rd industrial revolution (Industry 3.0) took place, automation of production based on computer programs and electronics became widespread.

Today, the interconnection of production through the Internet is called the 4th industrial revolution (Industry 4.0).

What does this mean? What to expect in Industry 4.0?

The main feature of Industry 4.0 is the communication between robots and humans in production (Cyber Physical Systems-CPS) through the Internet. According to the results of McKinsey's research, by 2025, a total of 11 trillion dollars - 3.7 trillion dollars will be spent on manufacturing enterprises, 1.7 trillion dollars on urban development, and 1.6 trillion dollars on connecting services and activities in the field of health through the Internet. allocated for placement.

"Industry 4.0" is the application of "Internet of Things" factors to production. To see an industrial example of this, imagine a piece of equipment that automatically fetches the software it needs for its workflow from the network, analyzes its own wear and tear, quickly orders spare parts from a warehouse, and autonomously adjusts itself to improve its performance. can also learn. In agriculture, transmitters (sensors) in the soil automatically control irrigation according to weather information. There are many such examples.

The main feature of "Industry 4.0" is the use of all components of the production process (enterprise equipment and its information systems - warehouse and logistics accounting, accounting, management, etc.) in the work of other systems and other systems to achieve a specific goal, while reducing human intervention. consists of interacting with people.

As a result of the development of the Internet and wireless communication technologies, we have "communication at any time", and smartphones and tablets have made it possible to implement the principle of "communication at any place". Now, we are on the threshold of a new revolution that will fundamentally change our lives, where

machines will start creating other machines.

The reason why a complete transformation of the manufacturing sector is called a revolution is that the changes are not superficial, but radical, and the industry is rebuilt from the beginning to the end. Business models change, new companies appear, world-famous brands with many years of history fail and disappear before joining the ranks of new "revolutionaries".

Currently, the behavior of customers is changing, they want an individual approach and unique goods, and the need for popular goods is decreasing. Businesses that are used to producing the same things are forced to reorganize their work.

The implementation of the principles of "Industry 4.0" helps to have several advantages that are not present in traditional industrial models. For example, companies can take an individual approach to orders, depending on the wishes of customers.

Old plants and factories are now turning into "smart" enterprises, starting to produce individual products according to specific orders. At the same time, the cost of producing a single product is reduced, and companies are able to produce a unique product at the price of a popular standardized product.

For example, from anywhere in the world, you can download the Nike application to your mobile device or go to the company's website, choose a sneaker model, paint it in the color of your favorite football team, pay for it, and receive it in a few days. Excluding the cost of delivery, its cost will not be more expensive than a regular popular sneaker from this company.

Engines, servers and anything else can be produced according to individual orders. At the Fujitsu Siemens plant in Augsburg, Germany, computer systems and servers are manufactured exactly for a specific customer.

In a fully automated factory, the cost of a custom-made product does not increase - if the equipment for two pairs of sneakers used to be readjusted manually, now the computer system itself does it in a few minutes.

The robotization of the factories of the electric car manufacturer Tesla allowed the company to organize its production in California, not in China. This was cheaper than using the labor of Chinese workers and then the travel costs of bringing in the

finished cars.

Some examples of today's Internet connection of processes in practice:

- street lights can be programmed to turn on only when a moving object appears within 15 meters, without staying on at night;
- as soon as the children step on the mat with sensors, it sends a message to the parents that the children have come home; or when an elderly person who lives alone at home falls on a carpet, the sensors execute the command to call an ambulance (on the other hand, if a dog is lying on this carpet, the sensors may not distinguish between a dog and a person);
- the washing machine determines the level of dirtiness of the clothes and determines how much powder to add. When the powder runs out or some part breaks, it automatically orders a new one;
- the device installed in the fields determines the information about the level of fertilizer in the soil, air temperature, humidity, and the level of sunlight in the field itself and sends information to the farmer's phone. The TracoVino software, which performs these tasks, is widely used among winemakers today.

Germany is at the forefront of Industry 4.0. In particular, the share of the industry in the Gross Domestic Product is 23%. In the USA, this indicator is 13% (3). Germany occupies a leading position in the world in the fields of machine production and construction, chemistry, medicine, electricity, space. Today, not only engineers, but also programmers work in the automotive industry, producing products equipped with sensors that collect information. In the 2014 list of top newsmakers, Germany ranked 6th, one of its strongest competitors, the United States, ranked 13th, South Korea ranked 18th, Japan ranked 20th, and China ranked 24th.

As mentioned above, the "Industry 4.0" program was adopted by the German government in 2011 for the first time at the state level, and it was defined as a strategic program for the country's economic development.

It should be said that China has taken a leading position in the field of robotization of production. In his speech at the Chinese Academy of Sciences in 2014, Chinese President Xi Jinping spoke about the coming robot revolution that would fundamentally change China and then the whole world, saying, among other things:

"The Chinese government has tasked Chinese companies with accelerating the implementation of Big Data, cloud computing, Internet of Things technologies and developing intelligent manufacturing. ) will be assigned the task of concentrating attention on organization".

In recent years, Chinese companies have dramatically increased the amount of investment in high-tech research around the world, as a result of which China's industrial robot market has become the largest in the world since 2013. By 2020, China is expected to have an average of 150 robots for every 10,000 industrial jobs. This means 3 times more than in 2015.

Now, it will not be easy for developed countries like USA and Germany to surpass China in this regard. Industrial Internet Consortium (Industrial Internet) was established in the USA in 2014 and it is managed by such industry leaders as General Electric, AT&T, IBM and Intel.

In Germany, there are factories that offer not only "smart" industrial components, but also ready-made models of such factories. An example of this is the German Research Center for Artificial Intelligence in Kaiserslauten.

According to official data, the German industry will spend 40 billion a year until 2020 on the development of the Internet infrastructure. Makes investments in the amount of EUR. And this is 140 bln., which is introduced annually throughout Europe to the fourth industrial revolution. Makes a significant share of investments in the amount of euros.

Japan is not far behind in this regard and they are developing the concept of Connected Factories to develop their industry. In Russia, in 2017, the "Technet" special road map was adopted, and the "Digital Economy 2024" program is being prepared as part of it. In neighboring Kazakhstan, the transfer of production to digital technologies and the "Industry 4.0" program have risen to the level of state strategy.

So the world may be completely different in 10-15 years. Not noticing the changes taking place, not appreciating them, is the same as being left out of development. In order to achieve such leadership, we must shape these changes ourselves!

A primary consequence of the fourth industrial revolution is the widening of the income gap between the winners and losers.

Based on this, it can be said that in the future, the demand for programmers and engineers who have a good understanding of computer technology will increase for each field. In addition, in addition to their field of expertise, knowledge of computers in the field of medicine, law, journalism, medicine, education, and agriculture becomes their advantage.

What place does Uzbekistan occupy in this innovative competition? Although the world industry is on the threshold of "Industry 4.0", all its technologies can be implemented only by those who have mastered the achievements of the previous industrial revolution "Industry 3.0".

As for the economy of Uzbekistan, it must be admitted that we are currently at the stage of transition from the level of "Industry 2.0" to the level of "Industry 3.0". Of course, this situation is a serious obstacle to the complete modernization of Uzbekistan's industry. Obviously, acknowledging and understanding the problem is a step forward.

President Shavkat Mirziyoyev declared 2018 as the "Year of supporting active entrepreneurship, innovative ideas and technologies" in our country. In addition, the President defined a strategic plan to include Uzbekistan in the ranks of the 20 developed countries in the world. In order to achieve this huge and universal goal, it will be necessary to fundamentally change the economy and industry of Uzbekistan and widely implement the principles of "Industry 4.0".

Of course, it is not possible to solve the problems before us by introducing new terms and announcing new initiatives. To achieve specific goals, it is considered appropriate to take the following practical measures:

1. Involvement of "Fraunhofer-Gesellschaft", "ISO", "DIN", "PTB" and other foreign experts for the preparation of relevant parts of the "Industry 4.0" strategy project and together with them Germany, USA, Canada, Japan, China, South Studying the experience of Korea and preparing legal frameworks and regulatory documents to support the introduction of new technologies.

2. Systematic establishment of cooperation in mutual scientific research between the main forces driving the society - the state, higher education institutions and representatives of the business world. Ensuring that higher education institutions are

the main business incubators, where students, teachers and professors create new enterprises based on the technologies created in them. The state should take on the role of a venture investor. Business representatives, together with higher education institutions, undertake the task of developing fundamental and practical research in their laboratories and universities.

3. It is necessary to develop the National Technological Development Program for the next 15-20 years, which will create conditions for Uzbekistan's regional and even global leadership, and start implementing it immediately. In the project, assigning special tasks to modern higher education institutions - they will have to take on a new entrepreneurial function and create an economic and cultural environment that is 10-15 years ahead of others. Only then, higher education institutions can prepare people not for the past, but for the future.

Currently, such fundamental changes are taking place in the world that there have never been such great opportunities and such great potential dangers in the history of the world. The narrow-mindedness and lack of "revolutionary" thinking of the leaders of some sectors can stop the development strategies. Artificial intelligence, robotics, the popularization of additive technologies (that is, the production of even metal details and spare parts in 3D printing), nanotechnology, biotechnology and many other things are becoming an integral part of everyday life.

If we want to be among the leaders of these changes, we need to be able to understand the direction in which technological development will develop in the coming years and what global innovations are expected in the future, and we should actively participate in their creation.

## **Topic 18. Digital marketing**

1. Fundamentals of digital marketing and the 4R concept.
2. Advantages of digital marketing over traditional marketing. Collaborative relationships between consumer and business sectors.
3. Marketing media tools. Creating effective web networks and using them effectively.
4. Electronic advertising transformation. Advertising costs and revenues. Digital marketing performance metrics.

Digital marketing is a new concept. There are specific marketing methods based on any media that attract customers. Today, digital marketing is not a luxury but a necessity.

Business circles are debating about digital marketing. There are a number of important assumptions related to digital marketing:

When we say "digital," we don't mean the media, but the technology that supports it.

People care little about advertising, but they care about things that are interesting to them. They should not be disturbed by reports of violence. They respond well on topics of interest.

It only makes sense if the investment is long-term. Thus, investments should be directed to sustainable and long-term projects.

It is useless to force people to discuss your issues. Listen to them better and make their discussions beautiful.

Consumers prefer to have everything done for them in advance.

Big buildings are ideal platforms for digital marketing. A museum, a sports stadium, a concert hall, a medical center or a shopping center - these buildings attract many people and must provide customers with timely and useful information. No amount of paper advertising will ever be enough. Important tasks are:

People should not get lost in a big building. Therefore, they can easily visualize their position. Information must be delivered in a timely manner.

Information content should be flexible and dynamic.

Digital advertising means minimizing the cost of advertising materials (paper, posters, flyers, etc.).

More use of advertising carriers, integrated system of communication channels.

Transparent and easy evaluation of the marketing campaign.

Protect marketing costs and guarantee maximum advertising effectiveness.

It's all about digital marketing. In addition, the media has a positive impact on customers without being annoying. They are located at the point of sale and play an important role in strengthening the decision to buy. Digital signage technology is sure to attract repeat visits and purchases from satisfied customers.

As part of digital marketing, digital signage is a service innovation. The impact of buying patterns is high and advertising is more effective than other advertising mediums. Hence, more advertising should be given to digital carriers to improve their sales performance.

Media planning is an important part of a marketing campaign. In order to make an excellent investment, first of all you need to answer the question "Where to get Roy investments" ("Investing on Return)". Media planning makes this task easier.

The term "media planning" appeared in 1994 during a two-day seminar held by the research center "V-nisb" at the Institute of Sociology of the Russian Academy of Sciences. In short, media planning is a plan for the proper placement of advertisements. Where and when does advertising answer the questions of how it should be presented to consumers? What potential audience will be reached and what resources should be spent? In other words, we are talking about the optimal marketing budget when choosing the most effective marketing channels. An appropriate media plan takes into account many factors specific to this or that media space. Media planning based on improved research and secondary information can be well targeted and effective.

Rating is a basic concept of media viewing, which involves estimating the size of the audience. Influence is another important term related to the effectiveness of marketing and reaching the target audience. The higher the coverage, the more effective the advertising message. Reach refers to the potential audience, while another concept "reach" describes the audience actually affected.

Media planning is a relatively young science. It already manages a set of indexes, but is open to wide comments. Media planning is only as useful as it is understandable.

Non-standard approaches to lighting the audience are the most effective tools today. A good example is your Cocor Basket in Bucharest (Romania) in front of the media of this Center. This large 3,300 square meter warehouse offers advertising, commerce and entertainment on multiple LED screens. Approximately, this square is 5.8 million people who pass along the eight-lane road every month. The piece is seen by the drivers. Depending on the traffic density, the connection length varies from 40 seconds to 3 minutes. Half of all broadcasts were devoted to local and national news - anniversaries, calendar holidays, cultural events, traffic news, etc. The rest of the time is for commercial advertising. The content management system allows to display synchronized high-definition promos on all LED displays.

Phoenix Island in China is another good example. The media was installed here on January 11, 2011 and immediately became a symbol of modern China. New generation multi-functional video technology lighting effects in buildings create a wonderful and unforgettable impression.

The media front is based on LED technology, semiconductors that convert electric current into highly colored light. Unlike other light sources, it has better light purity, wide color range, high reliability, power, high productivity, life expectancy (up to 100,000 hours), energy efficiency, fire safety and environmental safety. . Hundreds of thousands of LEDs are placed on the front of the huge media and display images and video programs. Unlike the neon signs, the light environment covers almost the entire building and forms its new image in the evening hours.

Digital signage advertising messages are targeted to target audiences at specific times and locations. According to statistics, 70% of Americans pay attention to video screens in places every month and 52% every week. 33% increase in sales outside the five-figure signature in four media campaigns. Not a bad option!

Who can confirm that digital signage is better than traditional static outdoor advertising? It's fast, flexible, easily customizable to customer requirements, interactive, and more.

Media itself and digital signage is a great example of integration with architecture, marketing, information technology and multimedia. They give rise to new terms such as mediatecture (media and architecture), digital marketing and many ideas for creative branding. Print and digital signage is slowly being replaced by outdated billboard and vinyl signs. Moscow is a typical metropolis surrounded by advertising. Naturally, local authorities prohibit the excessive use of billboards and banners, especially in city centers. A similar trend is observed in all European cities. In this environment, it is only natural that you invest carefully for digital advertising, which has all the advantages of outdoor advertising, TV and information terminal, to protect your investment.

The dynamism and flexibility of digital signage will welcome this technology into many shopping centers around the world. According to market experts, in 75% of cases, consumers make a purchase decision unexpectedly at the point of sale. Isn't that a good reason to fill the storefront with dynamic digital screens aimed at shopping?

Digital signage monitors are also popular in showrooms. Traditionally, exhibition space is used for permanent exhibitions and advertising. As exhibitors are constantly changing and visiting audiences belong to changing groups, digital signage is the only solution that allows you to reduce costs for constantly changing advertising content. A good example of digital advertising in an exhibition complex is the World Market Center in Las Vegas.

The modern service industry is a potential customer for digital advertising systems. Thus, the scope of growth of digital gestures is enormous.

Media Front is a new technology that takes a step forward over the digital LED screens that have become permanent features in many cities. As LED technology continues to evolve, it's time for architects and manufacturers of LED applications to plan together for the future of cities.

Visually, you will not compete on the media front. There is a benefit. However, the financial side of media facade projects is also important. Properly planned and executed, multimedia and digital signage projects are profitable by default. Compared to traditional print advertising methods, digital advertising is largely characterized by

a faster return on investment (ROI) due to easy and flexible control over content delivery.

Despite its young age, mass media and digital signage technologies are considered by many experts as the technology of the future. Who dares to swim against this rapidly changing trend?

Choosing a media front end is a complex and expensive process, so clients need to avoid mistakes and pitfalls. We will try to provide readers with several useful pointers:

First, see a large portfolio of already completed media projects around the world. It helps to understand the diversity and scope of the program.

Undoubtedly, the formulation of requirements for the planned project. Consider all possible constraints, structural, environmental, architectural, etc.

Evaluation of the media facade project from the point of view of the advertiser: distance to the corner, distance, traffic and pedestrian flow, etc.

After the financial plan is approved, start the first phase of the design project - conceptual design.

Architectural lighting, graphic or color effects, video advertising or slide show, samples of future content, support of your company's corporate image, calculation of advertising fees - all these factors are important. Previous (pre-installation) stage.

Don't forget to bid for the best conceptual design of your future project. In addition to real tenders, you can conduct virtual simulation tenders on the website.

After the design is complete, you can start thinking about the practical. During the construction phase (which can be very long) you may want to consider hiring a temporary fixed screen or screen on site to prepare people to offer digital advertising here. Pricing won't "kill" the project, but it will be useful in promoting your site while you wait for the finished digital feed.

Time to develop detailed technical documentation and specifications.

Having approved the plan with investors and city officials, you can enter the second (easy) stage of placing the production order and actually install the media classification.

It looks easy, but it really isn't. There are many factors to consider and consider. Naturally, the help of a group of qualified specialists is necessary.

Even with a real algorithm, the client will always produce common errors. We hope you can avoid them by paying attention to the following:

Make sure you understand the goals and objectives of the future media.

To avoid construction problems, consider integrating your technology with the architectural features of the building, and carefully monitor the installation process.

Select the right equipment for installation (capable of performing the required tasks) before starting the project again to avoid project frustrations and misconceptions.

Not an ordinary consumer product: such projects are individual. Not every LED display manufacturer can build a media front. Do not buy equipment that is not originally produced for these purposes.

Do not forget about environmental issues and climatic conditions. Some manufacturers have no idea that the environment in the climate zone can be aggressive.

Choose manufacturers and system integrators based on experience and their previously installed projects.

If you take into account the high marketing potential of your future media when evaluating the cost of the project and the return on investment (ROI), in this case only a high level of income is guaranteed.

### **Topic 19. E-branding**

1. Branding - its essence and main features. The main features of e-branding.
2. Branding technology is aimed at further increasing the interest of regular customers in goods or services.
3. Search engines, content advertising, internet PR, online video, e-mail marketing, audio advertising, etc.
4. E-branding strategies. Strategies for strengthening the brand, repositioning, increasing the value of the existing brand.

There is no general definition of the concept of "brand" in the literature, so we will mention some of the existing ones.

A brand is a word, expression, sign, symbol, design work or a combination of them used to identify the goods and services of a specific seller or group of sellers in order to distinguish them from competitors (this definition was developed by the American Marketing Association).

a combination of these elements, intended to identify the goods or services of a specific manufacturer, as well as to differentiate them from the products of competitors received opinion).

A brand is a unique name, symbol, design or image used to identify a specific product or company.

Brand is the sum of product characteristics: its name, packaging, price, history, reputation, advertising method. A brand is a complex of impressions left by a customer after using a product (David Ogilvy).

The brand helps in:

1. Product identification, that is, the product should be recognized as soon as it is touched.

2. Separation from competitors' products, that is, separation of the product from the total mass.

3. It is necessary to create a pleasant image for consumers, that is, the brand should instill confidence in them.

4. Aggregate different emotions associated with the product.

5. It helps the buyer to make a purchase decision and make sure of the correctness of his choice, that is, to feel satisfied with the correctness of his decision.

6. Formation of a group of permanent buyers who associate the image of their life with the brand.

A characteristic feature of a brand is that it can be separated from the product that gave it its name and become an independent product. That is, a real brand always deserves a high price. It is this issue that decides whether a particular trademark is a brand or not. From a psychological point of view, people can also use a brand as a means of self-expression and self-representation.

Usually, many authors emphasize that there is a difference between the concepts of "trademark" and "brand", because there are a number of complications in understanding these categories.

Legally (according to the Civil Code) there is a concept of "trademark", which is defined as a means of product individualization, which an organization or ownership complex has the right to have. According to the Paris Convention, a trademark is a necessary attribute of any product authorized for sale. A brand is not only an advertisement of a company, but also a responsibility for the quality of its products. There are about 5 million trademarks in the world. In everyday speech, "trademark" is more commonly called "trademark". Thus, "trademark" is a legal concept, and "brand" is a marketing term.

A trademark consists of a name, a graphic image (logo) and a sound symbol of a company (brand), and all companies have a trademark. But very few companies have their own brands.

The brand, in turn (based on the above-mentioned points), can be considered as a system of interaction of social, emotional, functional and economic factors. From this it can be concluded that the brand is a combination of all the characteristics of the brand and the product in our mind, created by the users during its existence, decorated with an emotional attitude. For example, when talking about mobile phones, the first brand that comes to mind is Nokia, and when talking about perfumes, the brand CHANEL comes to mind.

In marketing practice, it is emphasized that brands have several characteristics.

1. Each brand has certain attributes - functional and emotional associations - assigned to it by buyers and potential customers. Brand attributes can be both positive and negative, and they can have different strengths for different market segments.

2. Each brand has a main characteristic that determines its essence (Brand Essence).

3. The sum of all attributes of the brand constitutes the individuality of the brand (Brand Identity), which is created and maintained by a brand specialist. Brand personality represents what the brand stands for and the brand's long-term promises to consumers.

4. At any given time, any brand has a specific image - this is a unique combination of associations that exist in the minds of consumers at that moment. These associations represent what the brand represents at that moment, they are the promises of the brand's authors to consumers at that moment. In particular, the brand image can be formed by an advertising company.

Brand image is what exists in the minds of customers at the moment, while brand individuality is a long-term concept.

Types of brands by level of recognition.

A brand, like any event, has the ability to influence the minds of consumers and shape their desires.

A strong brand is a brand that 60% of consumers of this product category know well and distinguish it from other brands.

Between 30% and 60% of consumers recognize and distinguish a developing brand.

A weak brand is a brand that 30% of consumers recognize among competitors.

Lynn Anshaw, one of the leading experts in branding theory, believes that the concept of a brand is much broader than it is traditionally understood.

Noting that there are several types of brand that have a place in the market, he offers the following classification:

1. Product brands (Produkt brands) are the first brands that appeared on the market. They are the basis, the core of branding, because they have a quantitative advantage over other types of brands and are remembered first by consumers.

2. Service brands (Service brands) - these brands are few in the market compared to goods brands, because it is more difficult to present services that are difficult to be seen and affect the senses in a beautiful way.

3. Organizational brands (Organizational Brands) are the brands of corporations, non-profit organizations, political parties, and educational institutions.

4. Event brands (Event brands) are event brands that constantly take place in the world of sports, show business and art. Organizers of such events often achieve their goals by using traditional instruments of branding. Manufacturers tend to advertise

their products during breaks during the broadcast of a prestigious sports tournament, and this is the price of the brand.

5. Personal Brands - athletes, singers, politicians, businessmen have always existed in human society, but today they have become like other brands. The characteristic of them as a brand is that their popularity extends beyond their activity, sportsmen and politicians appear in advertisements, singers - in movies, actors and businessmen hold sports competitions, etc.

6. Geographical brands (Geographical brands) - these are cities, countries, resorts. This type of brand is very popular in the tourist business. For example, a ski resort in St. Morts, French Riviera and Seychelles are examples of such brands.

The stages of creating a brand include:

1. Research and analysis. Before planning production, it is necessary to conduct marketing research and evaluate the product, that is, the product:

- completely new;
- new for the manufacturer (in response to the actions of competitors);
- a representative of a new generation, with an improved configuration;
- it will be necessary to determine whether it will be traditional (line extension), which will expand the assortment, take away the niche from competitors.

2. Development of the structure. According to the brand portfolio development strategy or branding perspective, brand architecture is developed (Promotion).

There are two models of the portfolio: "zontikli", which is also called Branded House (brand roof, common house), and the second is a complex of separate brands - House of Branded (house of brands).

In the first situation, all efforts are focused on creating a single brand covering all groups of goods. For example: Johnson & Johnson (where body and hair care products are released under the same name). A prime example of an umbrella brand is the Genius brand, which offers a variety of equipment, from computer mice to scanners.

The fact that the advertising budget is directed in one direction also attracts the attention of consumers. Sometimes the advertising budgets of mega brands are higher than the sum of individual brands' budgets. This method is optimal for company stores or boutiques ("Iv-roshe" cosmetics).

But in the consumer market, it is not possible to place all types of products of the brand on one shelf (it is known that shampoos are placed separately, creams are placed separately), so the brand is forced to split.

There is also a certain risk in the development of such megabrands: the failure of one product can affect all groups of goods and break the brand.

3. Choose a name ("Brand-name"). Any brand needs a name. It must be suitable for the selected segment, otherwise, additional costs will be incurred to overcome stereotypes.

4. Creating a brand image. ("Brand Image"). Some experts on "brand building" ("Brand Building") suggest using the following stages of the "brand ladder":

- identity (what is it?)
- importance (why is it?)
- reaction (what do I think about it?)
- relationship (what associations are connected with it?).

And Kevin Keller builds the brand from six blocks:

- characteristic features
- features of use
- image
- evaluation and feelings
- resonance (what feelings).

Others build a target and "shoot at the target" (brand target, brand wheel) or emphasize giving personal characteristics to the brand. In this way, the brand is given human qualities and it is "revived" in this way.

By summarizing different methods, the following algorithm of brand creation can be created:

The presented features should answer a number of questions:

1. What? Physical and functional characteristics of the object. Attributes.
2. What problem does it solve? Importance of object usage. Superiority.
3. With whom? Use of the object brings closer to which social group. Personality.
4. What emotions are observed during consumption. What makes an association?

Value.

## 5. Visual embodiment. Attributes

At this stage, the logo, packaging, advertising, technical tasks aimed at product development are formalized, and in some cases, the design of the product is also created. a brief task describing the market space the new brand needs to enter is also needed.

Launching the brand (click and expand the initial step). This is the most expensive stage of brand building. It is divided into several periods. The main task for the initial period is to increase the growth rate or to compete for the maximum level of sales in a short period of time.

A comprehensive advertising company will be developed to bring the brand to the market for all groups of abl and btl instruments, in addition to solving technical tasks for the introduction of sales and developing the infrastructure.

Media planning focuses on maximum audience coverage. Merchandise turnover increases in any situation ("Beer Pit" increased turnover by 16% for 6 months, but it is clear that this is a reaction to a new product, not advertising). But during this period, sales cannot cover the costs of advertising, which means that during this period, the brand does not yet make a net profit.

A massive advertising company must be fully coordinated with the growth of the distribution network. It is not possible to advertise a product that is not on the shelves. Therefore, brand management, logistics, sales process are considered links of one chain.

A period of maturity. The main task is to maintain a high level of sales for a long period of time and start receiving dividends. On the one hand, optimization and reduction of costs is observed, on the other hand, various marketing activities are carried out, the work of all units of the organization is improved, personnel, dealers are encouraged, and the process of profiting begins.

Marketing research in this period is focused on those who make their first purchase. Advertising and information activities are aimed at the correctness of the selection and image formation. It is during this period that incentive programs for regular customers are developed - "brand loyalty".

Brand obsolescence (crisis). Over time, the third stage - the stage of downward movement - begins. In order to delay the arrival of this period, it is necessary not to be limited only to advertising activities.

It is necessary to find new ways to develop the brand in a quality way and to attract the attention of the customer to the product. Life is changing, new priorities are emerging, the market situation is changing.

The main task of the brand manager is to create brand equity, brand image and turn it into a communication tool by choosing a position. The first of them is directed to the market, and the second is directed to the inside of the company. That is, the brand manager needs to achieve common goals through internal marketing instruments (both organizational and communication) and to understand the role of each person in the formation of brand capital and, as a result, in the success of the brand in the market. The formation of the brand image depends on each employee of the company. Thus, the internal role of the brand is the attitude of various audiences within the company (management, shareholders, financial and production service, all personnel) to the brand, their perceptions about it. The goal is to turn every employee of the company into carriers of the brand idea.

## **Topic 20. Implementation of e-business in some branches and sectors of the economy**

1. The main advantages of digitalization of the production sector.
2. Opportunities for digital business in the production of consumer goods. Features of digitization of the agricultural sector.
3. Digitization of service delivery. Development of e-banking system. Digital financial system, financial assets.
4. Features of e-logistics. Actual issues of digitization of tourism services.
5. Development of the "Smart City Concept" in Uzbekistan.

E-commerce is buying and selling over the Internet. Its possibilities are different. You can buy necessary books, clothes, computers, and even food products using the Internet. So what opportunities does the Internet create? This technology has evolved over the years. It is widely used by Dell, Cisco, IBM, HP, Oracle, Microsoft and Sun.

Cisco makes  $\frac{1}{4}$  of its product sales over the Internet. Using the Internet gives marketers a lot of opportunities. Promotion of its products and goods at the international and regional level. In addition, the ad may include a picture of the product, discounts offered by the seller, and additional information along with general rates.

- An additional business can advertise its enterprise in order to gain partners.
- Can quickly monitor market price changes;
- Investors can advertise their projects in order to find;
- It is possible to create a system for receiving orders from the Internet for the goods sold;
- E-mail enables quick communication with sales representatives and direct access to business partner information. And to the buyer:
  - Quickly find a company that sells the right product;
  - Getting to know the prices on the market, and finding a seller who sells the desired goods and satisfies the price;
  - Seller using e-mail - send specific questions to the company and receive answers;
  - Ordering goods;
  - Selection of freight forwarders and transport service providers;
  - Order to bring the cargo;
  - Making payments etc

Both sellers and buyers can use the Internet as a source of information they need. The structure of the Internet is constantly being improved, and its possibilities are expanding. Now there is a completely new search engine called "Internet Help". The novelty of this system is that the user gives the necessary questions in plain language (or dialect). The operator receiving these requests will send the WEB-addresses related to this request. Today, the Internet is rapidly penetrating not only computer equipment, but also enterprises that produce goods (televisions, telephones) that are technologically complex. The goal of such enterprises is to fully use the opportunities of the home-equipment market. For this reason, computer and mobile phone technologies are widely used, and the cost of virtual reality devices is reduced, which increases the economic possibility of accessing information through the Internet. As a result, alternative devices lose their advantages. As an example, we can take the issues

put before the engineers of Microsoft company: controlling the computer with the help of human voice, improving the image quality on computers, etc. Electronic payment technology. money is transferred from the buyer's account number to the seller's account number. There are several ways to book an account using a money transfer (bank transfer, bank card account, checks and similar methods). The operation of transferring money from a bank for a desired purpose is called a transaction (transaction means an agreement, a contract from the Latin). A transaction is a sequence of data created by system participants, transmitted from system participant to participant to provide services to the bank card owner, when authorized by the bank card owner.

A transaction has the following main properties:

- Indivisibility;
- Isolated;
- Reliability
- Communication between the cardholder and service providers.

Non-dissociation of the transaction - that is, all the operations of the transaction should be performed or none of the operations should be performed. The agreement of the transaction - that is, the information about the cards and account numbers in the database will not be changed.

Transaction Isolation – Indicates that a transaction is independent of other transactions. Transaction reliability is seen in the following, a completed transaction can be rolled back after itself, while an incomplete transaction is rolled back.

Communication between the cardholder and the service providers is defined as such communication, as a result of which some change occurs in the cardholder's account number. In many ways, electronic payment is reminiscent of ordering goods by phone, which is used in ordinary stores. The difference is that the electronic payment process is carried out through the buyer's computer and the seller's WEB server. Electronic payment system As can be seen from this picture, the buyer makes the necessary order by filling out the form located on the WEB server of the goods seller with the help of a browser, that is, a program. Many sellers have forms for placing orders on their WEB-servers. The completed form is entered into the database located

on the seller's server. The electronic payment system includes the following forms of calculation:

- Bank cards;
- Electronic checks;
- Digital money;
- Electronic money.

Bank cards are used to make large and medium-sized payments. Electronic checks are mainly used to make small payments that need to be made quickly. Electronic money, i.e. transfer of money in electronic form, is mainly used to make large payments. Bank cards are a type of intellectual cards.

Smart card is a general term that includes all cards that differ in purpose of use, service packages, technical capabilities, and the institution that produced them. The special feature of smart cards is that they store information that is used in applications. Such cards can be used as a key to enter a building, a key to a computer, or a driver's license. Interactive Financial Transactions Since the advent of the Internet, economic and financial processes have become increasingly global. At the same time, the increasing dynamics of the financial environment weakens its stability, which in turn increases the level of crisis. The financial environment is by definition maximally informational and virtualized. For this reason, Internet technologies are being incorporated into banking and brokerage services. The new telecommunication devices provide fast and low-cost financial transactions. Buyer Browser Seller Server Transaction Management Gateway Substitution Seller Bank Identification and Ledger Embedding the Internet into banking is proceeding in three different ways:

- Electronic processing of banking and other documents;
- Computerization of the payment system, i.e. implementation of payment operations through computers;
- Use of telecommunication systems to establish communication between the bank's workstations. A voluntary entrepreneur follows the rule "Convenient, Reliable, Useful" when choosing a bank to provide services to him. This involuntarily draws his attention to the computerization of banks and Internet banking. Internet banking is a collection of databases, software, and other tools that bring information together and

make it available from computers connected to the Internet. The direction of organization of Internet banking in the Republic of Uzbekistan and the programs used for them should play an important role in the development of commercial banks and in the financial policy of the state. For this purpose, we should study the experience of the countries that have achieved great success in the field of banking. E-commerce and electronic payment system The creation of e-commerce was founded in 1970 in the USA by the emergence of data in electronic form on computer networks - EDI (Electronic Data Exchange) and the electronic exchange of money between banks. The development of the Internet has rapidly increased the interest of all trading firms and customers in this technology. The Internet has led to the development of electronic commerce at the entity level. Small businesses and individuals conduct their commercial transactions and other types of operations in electronic mode, that is, in real-time (on-line) mode - in the mode of operation of a money exchange ATM. All operations between the ATM and the processing center and account number transactions are carried out in real time.

On the basis of e-commerce, new e-commerce enterprises are being created - e-shops, new types of services and goods are appearing in them due to the great competition. Electronic trade is the circulation of goods on the Internet. Circulation of the goods should be carried out on the basis of fully complex activities intended for its sale. They are the development and use of information, advertising activities and similar activities. There are the following methods of circulation of goods on the Internet.

- Advertising through banners

- Offline advertising

- Advertising through listing in search engines and directories Advertising through banners. A banner (English banner - a title written in capital letters) is a clearly visible image linked to the advertiser's WEB page via a hyperlink. The standard sizes of banners are: 468x60, 400x50, 88x31. Offline advertising. Offline advertising is advertising of goods of Internet companies through radio. In other words, Internet companies mainly focus on radio, television, and print advertising during their work. Radio advertising is very suitable for creating a new electronic brand and building a

company's image. The reason is that the radio advertising audience consists of people between the ages of 35 and 55. Advertising by listing in search engines and directories.

A catalog is a publication in the form of a spravochnik, which is organized in order to make it easy to find the goods. Directories are usually divided into several subdirectories, which in turn are divided into directives. To register in such directories, it is necessary to perform the actions indicated on their WEB page.

The stability of e-commerce is largely determined by the continuity of the information flow. If the company engages in electronic sales through the Internet, then this company will increase its competitiveness. At the same time, the limits of the company's ability to provide services will be greatly expanded. It takes very little time to complete agreements and financial transactions as a key factor in interactive business support.

Internet - logistics works with flows under logistics.

- Product flow or material flow in commodity form

- Service flow

- Information flow

- The flow of tourists

- Workforce flow

- Financial flow, including the flow of bank products, insurance flow, and investment flow. Business logistics manages the aforementioned flows. In other words, it is the management of the work of the sub-sector that helps to coordinate and move the supply and demand of a specific commodity at a given time. Business-logistics concept as an integral tool of management in 1960. Made in USA. In this way, the science of logistics serves as a theoretical basis for the practical work of defining business logistics. Business logistics in the Internet mode organizes logistics based on joint business logistics operations between an entrepreneur and a computer. Such logistics is called "Internet business logistics" or "Internet - logistics" for short. Internet logistics was founded when computers, processors and the Internet were created.

It is no secret that companies' competitiveness in the rapidly changing modern market is largely based on the availability of information systems, communication and information transfer capabilities. Therefore, special attention is being paid to the

development of e-commerce in our country, which is an opportunity to reduce distance, save time and increase work efficiency. In particular, today, new types of banking services and electronic payments are being implemented, payment practices are being simplified. All this, including the current stage of development of information technologies, requires further improvement of the legal framework in the field. This is the reason why the draft law "On electronic commerce" is being considered in a new version in the Legislative Chamber of the Oliy Majlis. Ulugbek SAMATOV, a member of the Information and Communication Technologies Committee of the Lower House, told our reporter about the importance and essence of this legal document:

- In order to regulate relations in the field of e-commerce, a strong legal framework has been formed in our country. Including, "On Information", "On Electronic Payments", "On Information Protection in the Automated Banking System", "On Electronic Document Circulation", "Electronic "On Commerce" and other laws were adopted. On this basis, systems such as electronic bank document circulation and electronic plastic cards are being consistently put into practice. Their advantages are well appreciated by our compatriots. With the support of these facilities, commercial practices between economic entities and citizens are quickly and efficiently carried out, mutual relations between customers and suppliers of goods are being raised to a qualitatively new level. Therefore, there is no doubt that entrepreneurs can find a partner from any country in the world and fully realize their potential with the help of modern information and communication services. At this point, it should be noted that more than 700 brokerage offices in more than one hundred commercial areas in our country are conducting stock exchange transactions electronically. The new version of the draft law "On electronic commerce" is significant in that it is aimed at further improvement of this direction. It serves to create additional conditions for further development of entrepreneurship and improvement of business environment, as well as organization of technological market infrastructure in accordance with international standards. The draft law envisages the norm of formalizing invoices and other documents related to the execution of commercial offers, e-commerce agreements and contracts, not only in paper form, but also in electronic form . This facilitates the process of formalizing electronic transactions and their implementation, increases the

transparency of commercial practices, and creates conditions for buyers of goods and services to receive information about prices, quality, and delivery conditions immediately. Another innovation is that it is related to the expansion of the composition of information intermediaries that provide services for the conclusion of electronic transactions to e-commerce entities. In addition, the draft law pays special attention to the issue of information security of electronic commerce and protection of personal data of its participants. is enough. In turn, the use of information technologies in the activities of state bodies and economic entities expands the possibilities of electronic procurement practices by them.

During the years of independence, small business and private entrepreneurship became a leading force in our country. Artificial obstacles have been removed for the safe conduct of business activities. Effective measures were taken for this purpose. The widespread introduction of trade and services with the help of information and communication technologies is an important factor in the development of business as well as the formation of a favorable business environment. This, in turn, serves to increase the competitiveness and quality of products and services provided by entrepreneurs in the world market. The draft Law of the Republic of Uzbekistan "On Electronic Commerce" (in the new version) creates legal, economic, organizational and technical conditions for the development of electronic commerce. It also facilitates the process of registration and execution of electronic contracts. In 2004, the laws "On Electronic Commerce" and "On Electronic Payments" were adopted in order to regulate electronic commerce on the basis of legislation. During the past time, information technologies and economic processes have developed. New possibilities of electronic commerce have opened up. Therefore, there was a need to revise and further improve the regulatory legal documents regulating relations in this field . The new version of the draft law "On Electronic Commerce" was developed for this purpose. This document is being intensively discussed by deputies and experts in the parliament, various opinions and suggestions are being expressed. Special attention should be paid to the fact that in the e-commerce system, funds circulate quickly, and financial transactions are performed in a short time. This will strengthen enterprises-organizations, business entities, and the economy of the country as a whole. The

financial support of workers will improve, and the acceleration of the circulation of funds will allow the population to pay salaries, pensions and other social payments on time. In a word, the development of e-commerce ensures the efficiency of cashless settlements and payment systems. The population will benefit greatly from this, of course. Along with the prospect of e-commerce, the development of the information sector is also taken into account in the draft law. In particular, it reflects the norms regarding the perspective of legal entities involved in the organization of telecommunications system operators, bank electronic contests, auctions and fairs. The new version of the law is primarily aimed at simplifying the mechanisms for concluding electronic contracts. Its adoption will not lead to the spending of additional funds or an increase in the cost of state revenues. It is a solid basis for effective use of e-commerce opportunities in the activities of business entities, especially small businesses and entrepreneurs, to increase their competitiveness and achieve high economic results. After the adoption of the draft law, the creation, execution, accounting and control of transactions in e-commerce will be simplified. Including the use of alternative types of personal signatures, storage of electronic documents and other information on transactions concluded in e-commerce, rules of circulation, mechanisms for issuing electronic documents for invoices, waybills, deeds in the execution of transactions it is planned to develop regulatory documents, as well as to introduce changes and additions to some legal documents. The draft law, developed in accordance with international practice, covers all areas of legal regulation of the main directions of electronic commerce. It reflects state policy in the field of e-commerce, internal corporate relations of those involved in product sales and service provision, and their interactions with consumers and partners. Adoption of this law and wider introduction of e-commerce in the republic will make it possible to:

- reduction of costs (transaction costs) of trade operations, solving problems related to geographical distance of e-commerce entities;

- to create conditions for the direct and rapid establishment of contractual relations between sellers and buyers, including the emergence of new participants in the market (under such conditions, small business entities can effectively compete in the international market can do);

— to increase the transparency of operations in electronic trade by means of information networks, which allows sellers and buyers to quickly receive information about prices, quality and delivery of goods offered by various competitors;

— improvement of mechanisms of transaction execution in e-commerce and simplification of procedures, as well as provides opportunities to pay for goods purchased within the framework of concluded transactions at the delivered address;

— to simplify procedures for customs clearance of electronic content and goods in the conclusion of international agreements by improving and simplifying the mechanisms for controlling and accounting for the structure of export-import transactions in e-commerce;

— in order to increase the volume of e-commerce, to strengthen state support for business activities in this area by reducing tax burdens.

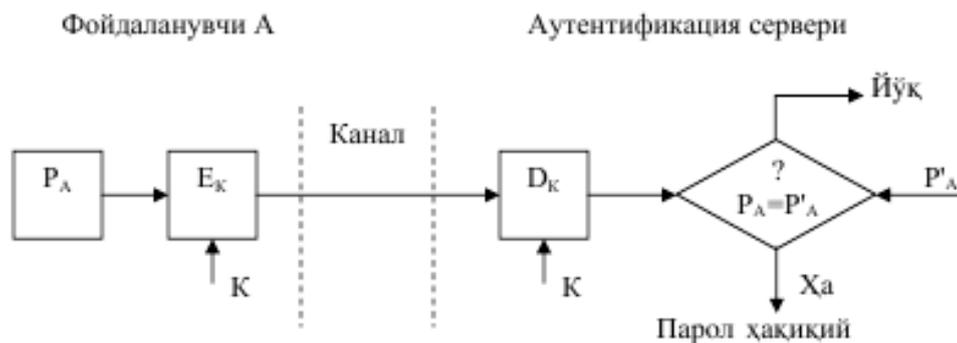
During the past time, more than ten meetings were held by the working group formed under the Committee on Information and Communication Technologies of the Legislative Chamber of the Oliy Majlis in order to improve this draft law. Proposals and comments received from the ministries and departments were studied in them. In order to prepare the draft law for the second reading of the Legislative Chamber, it was coordinated with the requirements of the Law of the Republic of Uzbekistan "On Regulatory-Legal Documents" and legislative techniques.

## **21 . E-business and e-commerce management issues**

1. Problems of information security. Digital security issues and ways to ensure it.
2. Types of fraud on the Internet and ways to detect them. Email scams. Spams. Theft of information, cyber-attacks. Fierce competition.
3. Features of competitive intelligence. Industrial espionage. PROTECTION OF PERSONAL INFORMATION.
4. Intellectual property protection system. Ways to solve fraud problems on the Internet.

One of the most common authentication schemes is simple authentication, which is based on the use of traditional multiple-use passwords. A simple authentication process for a user on a network can be imagined as follows. A user trying to access the network types his ID and password on the computer keyboard. This information is sent to the authentication server for processing. A matching entry is found from the user ID database stored on the authentication server, and the password is found and compared with the password entered by the user. If they match, the authentication is considered successful and the user receives the legal (legal) status and the rights defined for his status by the authorization system and permission to use network resources.

The most common method is to store users' passwords in system files, openly. In doing so, files are assigned read and write protection attributes (for example, by specifying the appropriate privileges in the operating system's access control list). The system compares the password entered by the user with the entry stored in the password file. This method does not use cryptographic mechanisms such as encryption or one-way functions. The disadvantage of this method is the ability of a malicious person to access the system with administrator privileges, as well as system files, including password files.



Simple authentication organization schemes differ not only in the transmission of passwords, but also in the types of their storage and verification. The most common method is to store users' passwords in system files, openly. In doing so, files are assigned read and write protection attributes (for example, by specifying the appropriate privileges in the operating system's access control list). The system compares the password entered by the user with the entry stored in the password file. This method does not use cryptographic mechanisms such as encryption or one-way functions. The disadvantage of this method is the ability of a malicious person to access the system with administrator privileges, as well as system files, including password files.

For security reasons, it is convenient to transfer and store passwords using one-way functions. In this case, instead of the clear form of the password, the user must send its image obtained using the one-way function  $h(\cdot)$ . This change ensures that the user can't reveal the password through his image, because the user faces an unsolvable number problem.

Simple authentication systems based on multi-passwords have low tolerance, since the authenticating information is compiled from a relatively small set of meaningful words. The validity period of multiple-use passwords should be defined in the organization's security policy, and such passwords should be changed regularly. Passwords should be chosen in such a way that they are not in the dictionary and are difficult to find.

One-time password-based authentication uses different passwords for each request. A one-time dynamic password is only valid for one-time use of the system. A password is useless if even someone intercepts it. An authentication system based on one-time passwords is usually used to authenticate remote users.

Generating one-time passwords can be done in hardware or software. One-time password-based hardware is implemented in the form of miniature devices with a microprocessor, similar to plastic payment cards. Such cards, commonly called switches, have a keyboard and a small display window.

The following methods of using one-time passwords for user authentication are known:

1. Using a timestamp mechanism based on a unified time system.
2. Using a list of random passwords common to the legal user and the controller and their reliable synchronization mechanism.
3. Using a pseudo-random number generator with the same initial value common to the user and the controller.

SecurID authentication technology can be shown as an example of implementation of the first method. This technology was developed by the Security Dynamics company and was implemented on the servers of a number of companies, in particular Cisco Systems.

The authentication scheme using time synchronization is based on the algorithm of generating random numbers after a certain time interval. The authentication scheme is from the following two parameters

uses:

- a secret key consisting of a unique 64-bit number assigned to each user and stored in the authentication server and the user's hardware key;
- current time value.

There is another problem with this authentication scheme. A random number generated by the hardware key is a valid password for a period of time that is not large. Therefore, in general, a short-term situation can occur where a hacker can capture the PIN code and use it to access the network. This is the weakest point of an authentication scheme based on time synchronization.

Another option that implements OTP user authentication is "request-response" authentication. When a user tries to use the network, the server sends him a request in the form of a random number. The user's hardware key decrypts this random number using, for example, the DES algorithm and a secret key stored in the user's hardware

key memory and in the server's database. Random number - the request is returned to the server in encrypted form. The server in turn encrypts the random number it generates using the same DES algorithm and the user's secret key from the server's database. The server then compares the encryption result with the number from the hardware key. When these numbers match, the user is allowed to use the network. It should be noted that the "request-response" authentication scheme is more complicated to use than the authentication scheme using time synchronization.

The second method of using a one-time password for user authentication is based on the use of a list of random passwords common to the user and the controller and their reliable synchronization mechanism. A partitioned list of one-time passwords is a sequence or collection of secret passwords, each password being used only once. This list must be shared in advance between the authentication exchange parties. According to one variant of this method, a request-response table is used. This table contains the requests and responses used by the parties for authentication, and each pair must be used only once.

The third method of using a one-time password for user authentication is based on the use of a pseudo-random number generator with the same initial value common to the user and the verifier. There are the following options for implementing this method:

- **sequence of changeable one-time passwords** . In the next authentication session, the user creates and transmits a password encrypted in the secret key obtained from the password of the previous session for this very session;

- **password sequence based on one-way function** . The essence of this method is the sequential use of a one-way function (the famous scheme of Lamport). From a security point of view, this method is preferred over the sequential password method.

E-business uses new technologies to organize communication between buyer and seller, express, negotiate, modify, sell goods and services, and change payment processes. Currently, most of the problems of e-commerce and business are related to information security, that is, security problems are considered a serious obstacle in the development of e-commerce and business.

Any commercial company needs to communicate with other companies or between departments of this company. Currently, the global Internet provides reliable and inexpensive information exchange between its nodes. Many risks arise during the operation of e-businesses that actively use the channels of the open global Internet network.

Internet access channels may allow external access to company information resources. Careless use of communication, especially HTTP - protocol-based programs can lead to the introduction of special programs - "Trojan horses" that disrupt the functionality of the information system and/or destroy information system data. Among these programs, viruses are the most common. Specially trained professionals often use public networks to access corporate information networks without their knowledge.

The intention of frequent use of e-box can help malicious people to discredit the usernames of the e-business organization. Special programs widely used in the network can be used to search for weak points of the system that stores user data (names, passwords, PIN codes, etc.).

The Internet can transmit confidential information anywhere in the world, but if it is not adequately secured, it can be intercepted, copied, altered, and read by any number of outside users—malicious individuals, adversaries, and the casually curious. For example, when sending an unsecured payment order or credit card number, remember that you are not sending over a private/private network and outside users can manipulate your message. In addition, your message can be switched: there are ways to send messages from user A in the same way as from user V. Internet-specific packets, perfectly legitimate packets, excessive numbers of packets, transmission failures, and network component failures may become inoperable. Such points are called "denial of service" and are the most serious threat to e-commerce.

Information security is one of the most important elements of an electronic business system and must be ensured using a whole set of methods and tools. The volume of trade in e-commerce is limited by the fears experienced by buyers, sellers and financial institutions concerned about Internet security issues. These fears are based, in particular, on:

- lack of confidentiality guarantee - someone can intercept your data in transit and try to find valuable information (for example, your credit card number, delivery date and address);

- Inadequate level of verification of the participants in practice - if the participants of the transaction are not verified, one of the parties may organize a "masquerade", the consequences of which will be very expensive for the other party. For example, a buyer enters the site and doubts the authenticity of the company on it, it may also happen that the buyer gives the credit card number to a person who does not have sufficient authority;

- the seller has no way to verify that the buyer who placed the order is the legal owner of the credit card;

- the bank - issuer of the credit card may want to verify the seller who has made a request for payment;

- there is no guarantee of data integrity - even if the sender of the data is identified, a third party can change the data during transmission.

Let's look at a typical application of e-commerce from the point of view of ensuring information security - acquiring products and services over the Internet. This process can be represented by the following steps.

1. The customer selects a product or service through the Web server and issues an appropriate order.

2. The order is entered into the store's order data bank.

3. The availability of the ordered product or service is checked through the central database.

4. If the product cannot be obtained, the orderer will be notified accordingly and the process of obtaining the product or service will be stopped. The request for the product can be directed to another warehouse (with the consent of the customer).

5. If the product or service is available, the customer confirms the payment and the order is entered into the appropriate database. The electronic store sends an order confirmation to the customer. In many cases (especially in companies that have just started) orders, checking the availability of goods, etc. There is a single database for

6. The customer pays for the order online.

7. The goods are delivered to the customer.

The threats faced by e-commerce companies in the above stages are:

- replacing the page of the electronic magazine website. The main way to implement this threat is to forward the user's request to another server. This threat increases when the customer enters their credit card number in six steps;

- placing false orders and fraud by e-store employees. Currently, the internal/external threat ratio is 60/40;

- interception of data transmitted in an electronic commerce system. Withholding a customer's credit card information poses a particular risk;

- access to the company's internal network and discredit electronic store components;

- to carry out a "denial of service" attack and disrupt the operation of e-commerce or its node.

As a result of these threats, the company - the provider of electronic transactions - loses the trust of customers, suffers financial losses. In some cases, these companies can be sued for exposing your credit card number. As a result of a "denial of service" attack, the operation of the e-store may be disrupted, human, time and material resources are required to restore its functionality.

## **Topic 22. Quality management of electronic services**

1. Development trends of e-business market. Analysis of the state of e-business in developed countries. Digital services feature.
2. Correlation between e-services and their quality. Classification of electronic services.
3. Problems of quality assurance of electronic services. Methods of measuring and evaluating the quality of electronic services. Using systematic analysis in quality management of digital services.
4. International standard requirements for quality assurance of digital services (E-SQI). The main directions of ensuring the quality of electronic services in Uzbekistan.

The rapid development of information technologies has a positive effect on the processes taking place in society, increases the effectiveness of reforms, serves to ensure the interests of the population, and opens the door to new opportunities. From this point of view, today the concept of "Electronic Government" occupies a deep place in our daily life. Although not all residents of our republic have complete information about it, world experience shows that over time this system covers all aspects of society's life.

It should be noted that the term "Electronic government" should not be confused with the concept of traditional government. In essence, this system automates administrative procedures at the country level, creates a basis for increasing the efficiency of public administration and reducing excessive expenses.

Electronic government activities are defined in three areas. That is, it covers "state - state", "state - business" and "state - citizen" directions. This system serves to improve the efficiency of information exchange between state institutions at the interagency level and the quality of local planning and management. It allows regular monitoring of public opinion and influence on it. In state and business relations, administrative procedures are automated. As a result, entrepreneurs save time and money in submitting business registration, tax and statistical reports, customs declarations. The e-government is aimed at creating additional mechanisms for communication with the people, ensuring the efficiency, speed and transparency of the activities of state bodies, and further strengthens executive discipline.

It should be said that the introduction of the "single window" principle into the public administration system is one of the priority tasks. In 2013, the Single Interactive State Services Portal was launched in our country. By March of this year, 308 electronic services were introduced on this portal. Services are provided in informational (offline), semi-automatic, automated and interactive forms. Portal State Tax Committee, State Customs Committee, ID.UZ identification system, information systems and resources of the People's Bank of the Republic of Uzbekistan, portal of the impact assessment system of regulatory legal documents (<https://regulation.gov.uz>) and connected to the "Entrepreneurship" system. Currently, work is underway to

integrate the "single window" information system into the single identification information system.

If we talk about the applications received on the single interactive public services portal, their number has exceeded a million. In addition, the increase in the number of interactive public services on the portal has also stimulated the increase in applications. Today, more than 2,400 state and economic management bodies, including structures under agencies, are providing electronic services through the Unified Interactive State Services Portal.

Today, the e-government system is showing its effectiveness in countries such as South Korea, Great Britain, USA, Australia, New Zealand, Singapore, Norway, Canada, Netherlands, Denmark and Germany. In these countries, many public services can be accessed online without leaving home. These include answers to requests to state bodies, various payments, obtaining samples of official documents, filling them out, sending them with an electronic signature, distance learning in higher educational institutions, applying to internal affairs agencies, etc. For example, in South Korea, individuals can track the status of their application through the official website.

In any country, national databases and electronic registers are the main aspects of e-government. These mechanisms allow systematization of information about individuals and legal entities, automobile transport, real estate, public services. It should be noted that "Uzinfokom" is responsible for ensuring centralized storage of this information in our country.

Six information bases and 12 sets of information systems are being created in our country as part of the development of national information systems. For example, the complex of information systems "Tax" consists of 10 software products and 31 automated systems. As a result of its launch, it will be possible to digitize 31 services of the State Tax Committee. In addition, there is a set of information systems such as "Clearing", "Purchase", "Budget", "Customs", "License" and "Justice", which are used to collect and process data in a specific field and to provide services. is creating conditions for the electronicization of a part of it. In addition, the "Healthcare", "Education", and "Communal" systems are about to be implemented. In the near future, it is planned to develop the "Justice-2", "Pension" and "State Administration" systems.

In 2016, the work on the formation of the relevant database was completed. "Cadastre and Real Estate Registration" and National Geoinformation Systems have not yet been finalized.

Today in Uzbekistan, all types of tax and statistical reports of economic entities are submitted in electronic form, the declaration of goods and the registration of export-import contracts have also been transferred to electronic form.

Another important innovation in the industry. In 2015, the Open Data Portal was launched. At the initial stage, 80 types of information from 8 organizations were placed on it, today 2216 types of information from 120 organizations are placed on this portal. This information covers the economy, health, education, transport and other relevant areas.

In addition, in accordance with the comprehensive program for the development of the National Information and Communication System of the Republic of Uzbekistan in 2013-2020, it is planned to gradually develop the high-speed telecommunication infrastructure for the effective functioning of the electronic government. In particular, until 2020, it is planned to implement 17 large-scale projects to further expand the capacity of Internet channels and develop broadband networks, especially in remote regions. In addition, until 2020, 22 projects will be implemented to ensure and develop electronic communication of citizens with state bodies.

The attention paid to the development of electronic government is reflected in the quality of the business environment in our country. For example, in the "Doing business" rating of the World Bank, over the last five years, the overall rating of Uzbekistan has risen from 150th place to 87th place.

On the single interactive portal of state services, including filing a complaint for violation of established procedures, registering an entrepreneur for the purpose of identification through the applicant's mobile phone number, applying for connection to engineering and communication technologies, self-made automobile transport for business entities services such as application for purchase of equipment, registration of the right to real estate, etc. have been introduced.

Since 2014, export and import contracts have been registered for free on the Unified Interactive State Services Portal. Banks, tax and customs authorities monitor

the foreign trade activities of economic entities through the unified electronic information system of foreign trade operations . Electronic cargo customs declarations are accepted on the website of the State Customs Committee ([www.customs.uz](http://www.customs.uz)). In 2015, a special information portal on public procurement was launched and the form of electronic sales was put into practice. With the introduction of remote banking services in 2016, one million 847 thousand 569 users applied for a loan electronically.

According to UN experts, in 2016, the index of development of electronic government in Uzbekistan was 0.5434 or 54 percent compared to the highest indicator. This laid the groundwork for our country to become one of the countries with high e-government development (over 50 percent).

In 2016, the United Nations Department of Economic and Social Affairs published its next report on the development of e-government in various countries of the world. Based on the UN methodology, the ranking of countries is formed based on the index of the development of electronic government. This index consists of three factors, i.e. information and communication technology infrastructure, human capital and development of e-services. Another very important indicator is the increase in the e-participation index. According to this index, the government's effective use of information and communication technologies for the development of communication between citizens, business entities and state bodies is evaluated, and the achieved results are studied.

Another noteworthy point is that Uzbekistan rose 24 places in the e-participation ranking from 71st place in 2014 to 47th place in 2016. According to the rate of growth of this index, our republic took the first place among the countries of Central Asia, and the third place among the countries of the Commonwealth of Nations. UN experts have launched a home owners' association portal ([e-kommunal.uz](http://e-kommunal.uz)), an open data portal ([data.gov.uz](http://data.gov.uz)) and a portal for discussion of regulatory legal documents ([regulation.gov.uz](http://regulation.gov.uz)) in Uzbekistan. focused on. According to them, these efforts are a positive step in ensuring the openness of state bodies and introducing practical mechanisms of communication with the people.

The level of providing electronic services (56 percent growth) played an important role in the growth of Uzbekistan's index on the development of electronic government.

However, the growth in ICT infrastructure development was not that high (6 percent). This index is formed on the basis of the number of landline and mobile phone subscribers, mixed and wireless broadband networks, as well as the number of Internet users. In 2016, the share of the population using the Internet regularly in Uzbekistan was 46.4 percent, and the number of broadband Internet users was only about 1 million 900 thousand people. The index of the developed level of human capital decreased by 3.5 percent. Special attention is paid to the literacy of older people and the level of coverage of the population by the educational system.

According to experts, such growth in the field of online services has been achieved mainly due to the open information portal, the expansion of the possibilities of paying utilities via the Internet, and providing various online advice to the population.

Effectiveness of e-government cannot be achieved without an integrated system of interdepartmental electronic communications. In our country, within the framework of the E-Government Development Program, the tasks related to the integration of the database of the relevant competent state bodies regarding the registration of business entities, the provision of licenses and other permitting documents to them have not been fully implemented. The procedures for allocating land plots, granting construction permits, registering property rights, and connecting to engineering and communication networks have not been transferred to an interactive basis. "Tax", "Customs", "License", "Communal" information system complexes are not integrated into a single platform where all procedures of the "single window" principle can be transferred.

At present, each office is operating on the basis of separate regulations and guidelines for business operations and administrative procedures. Unfortunately, many problems arise in this case. Such a procedure complicates the collection and processing of data and creates excessive bureaucratic obstacles. In particular, the need for the applicant to be present in person and submit original copies of documents (in order to ensure their authenticity) at the stage of issuing a permit negates the effectiveness of remote provision of public services.

As a result of such non-integrated situations, repetition, "partial" automation and closure of information resources are formed. As a result, the introduction of information systems and resources does not affect the socio-economic development of

the regions and the improvement of the quality of life of the population. For example, in the "Doing Business - 2016" report, it was noted that there are 6 additional procedures in Uzbekistan that require 28 days to obtain a construction permit. As a result, according to this indicator, Uzbekistan fell to a lower place compared to 2011. Allocating land plots and issuing construction permits remains one of the most complex procedures. This is also confirmed by surveys conducted among business entities.

Today, 37.5 percent of respondents have a negative assessment of land acquisition for business. This sentiment is 50.3% in Bukhara, 48.6% in Andijan, 38.4% in Jizzakh, 37.7% in Samarkand, 37.4% in Namangan, and 38% in Tashkent. Such a negative situation is clearly visible in the area of "property registration".

It is necessary to expand the use of the interdepartmental electronic cooperation system in order to bring the e-government activities to a new level. It should not be forgotten that in e-government activities, information goes beyond a specific state institution. This puts the improvement of the information security system on the agenda.

### **Topic 23. Creating a personal e-business**

1. Steps to create a personal e-business. The sequence of activities on the way to start a private business.

2. Opportunities to seek and select ideas for new products or services. Startup projects.

3. Personal e-business development strategies. Fundamentals of market positioning. Risk management.

4. Selection of investment and funding sources. Features of venture investments.

Today, when the number of Internet users around the world has exceeded four billion, a new type of quality appears under the term "virtual economy" and is gaining ground. In it, purchases are made through shopping sites that use new ways of doing business and have their own marketing strategies and many other possibilities.

Hardware and software vendors and computer and telecommunications service providers have benefited from companies that have moved their business to the Internet first.

Each online store consists of two main parts: an electronic storefront and a sales system.

The electronic showcase stores information about the products sold on the website, provides access to the store database, registers customers, works with the buyer's electronic "basket", processes orders, stores marketing information 'playdi', provides the data to the trading system.

The trading system delivers the product and prepares documents for its payment. Trading system - a complex of stores of different companies that rent their space on a Web-server belonging to a separate company.

The working technology of the online store looks like this:

The buyer selects the desired product from the catalog of products and prices in the electronic showcase and fills out the form in which personal information is entered (name, surname, postal and e-mail address, preferred method of delivery and payment). If the payment is made via the Internet, special attention is paid to its information security.

The formalized product is submitted to the sales system of the online store, where the order is completed. The trading system can be operated manually or automatically. A manual system works on the same principle as a regular mailer when it is not possible to purchase and set up an automated system, usually when the product volume is not large.

**Delivery and payment of the product (goods). The delivery of the product to the customer is carried out in the following ways:**

- by a magazine courier in the city and its surroundings;
- by a specialized courier service (including foreign);
- by mail;
- pick up by the buyer;
- a special product (goods), such as information, is delivered through telecommunication networks.

**Payments for the product (goods) are made in the following ways:**

- in advance or at the time of receipt of the product;
- with cash when it comes to the courier or real store;
- by postal order;
- by bank transfer;
- using a credit card (VISA, Mastercard, etc.);
- through electronic payment systems through individual commercial banks.

Recently, e-commerce, or Internet commerce, has been growing rapidly around the world. Naturally, this process is carried out with the direct participation of credit and financial organizations. And this type of trading is becoming more and more widespread, especially in places where the new electronic market can be used by businesses and the majority of the population.

Commercial activity on electronic networks overcomes some physical limitations. By connecting their computer systems to the Internet, companies are able to serve their customers 24/7. Product orders can be accepted anytime, anywhere.

But there is another side to this issue. Abroad, in countries where e-commerce is developing more, the value of sales contracts or products in most cases is limited to 300-400 US dollars.

This is explained by insufficient solutions of information security problems in computer networks. According to the UN Committee on Crime Prevention and Control, computer crime has risen to the level of an international problem. This type of crime in the USA is the third most profitable after arms and drug trafficking.

Such a wide range is determined by the problem of ensuring the information security of electronic commerce. If the level of security remains as it is today, then the world turnover of e-commerce may decrease even more. This situation shows that the low level of protection of the e-commerce system is a factor that stops the development of e-business.

Solving the problem of ensuring the economic security of electronic commerce is primarily related to the protection of the information technologies used in it, that is, with the issues of ensuring information security.

The integration of business processes into the Internet environment will lead to a dramatic change in the security landscape. The emergence of rights and responsibility on the basis of an electronic document requires comprehensive protection of both the document sender and the recipient from all types of risks.

Unfortunately, the leaders of e-commerce enterprises are realizing the seriousness of information risks and the importance of organizing the protection of their resources after being exposed to information attacks. As you can see, all the listed obstacles are related to the field of information security.

Key requirements for conducting business practices include confidentiality, integrity, authentication, authorization, warranties, and confidentiality.

Ensuring the openness, confidentiality, integrity and legal importance of information is the basic task in achieving information security.

Each risk must be considered in terms of its potential to harm these four characteristics and quality of secure information. Restricted information means that only the person to whom the information is intended to have access has access. Under the integrity of information is understood the property of its irreversibility. Openness of information is determined by the system's ability to provide authorized subjects with unhindered access to information. The legal importance of data is increasing recently in our country together with the creation of a regulatory framework for information security.

In the framework of ensuring comprehensive information security, it is necessary to distinguish the main problems in the field of electronic business security, which include the following:

- data protection when transmitted through communication channels;
- protection of computer systems, databases and electronic document circulation;
- to ensure that information is stored in electronic form for a long time;
- ensuring the security of transactions, confidentiality of commercial information, authentication, protection of intellectual property.

**There are several types of e-commerce-oriented risks:**

- External access to the system.
- Illegal access within the company.

- Deliberate theft and reading of information.
- Deliberate destruction of data or networks.
- Improper (fraudulent) user identification.
- Violation of software protection.
- Illegal access of the user from one network to another.
- Virus attacks.
- Denial of Service.
- Financial fraud.

Against these risks, a number of methods based on different technologies are used, such as: encryption - coding to prevent data from being read or changed; electronic signatures verifying the identity of the sender and receiver; stealth technologies using electronic keys; firewalls, virtual and private networks.

None of the protection methods are considered universal, for example, firewalls do not check for the presence of viruses and are not able to ensure data integrity. There is no absolutely reliable way to prevent automatic protection from being hacked, and it will be hacked sooner or later. However, the violation of such protection depends on its quality. Admittedly, software and hardware for protecting Internet connections and applications have been in development for a long time, but these new technologies are not being implemented uniformly.

**Below is information about the risks that await the company at each stage:**

- replacing the web page of the e-store server (redirecting requests to another server), which ensures that information about the customer, especially information about his credit cards, is accessible to strangers;
- creation of fake orders and implementation of various forms of fraud by e-store employees, for example, manipulations with databases (statistics testify that more than half of computer incidents are related to the activities of its employees);
- stealing data transmitted through electronic commerce networks;
- intrusion of criminals into the internal network of the company and questioning the components of the electronic magazine;
- conduct denial-of-service attacks and disrupt operations or disrupt e-commerce networks.

As a result of the realization of such risks, the company loses its reputation and trust of customers, loses money in potential and/or unrealized agreements and transactions, disrupts the operation of the electronic store, spends time, money and human resources to restore the operation.

Of course, threats related to the theft of information transmitted over the Internet are not limited to the field of e-commerce. However, the circulation of credit card numbers, bank account numbers, contents of contracts and other information of important economic importance in the systems of this sector has a special place.

At first glance, each such unpleasant event may seem like an internal affair of a specific e-business entity. However, consider the case of mass outages of leading e-business servers such as Yahoo!, eBay, Amazon, Buy, CNN, ZDNet, Datek, and E\*Trade, whose operations are truly nationwide. An investigation by the Federal Bureau of Investigation (FBI) revealed that these servers were down due to a surge in requests to the service address as a result of DoS attacks. For example, the flow of requests to the Buy server increased by 24 times on average, and the limited ones by 8 times. According to various estimates, the economic damage suffered by the economy of the State of Azerbaijan as a result of these actions fluctuates around the figure of half a billion.

Ensuring security is not only a necessary condition for successful e-business, but also the foundation of reliable relations between counter-agents. The essence of e-business is the active exchange of information, the transfer of transactions through an unprotected open network, which cannot be carried out without a reliable relationship between business entities.

Therefore, security is complex and includes access to Web servers and Web applications, authentication and authorization of users, ensuring the integrity and confidentiality of data, implementation of digital signature, and other issues. covers

With the development of commerce on the Internet, attention is being paid to the protection of information transmitted over the network.

Specialized protocols (for example, SET, SOCKS5, SSL, SHTTP) designed to organize secure cooperation over the Internet are widely used all over the world and

are successfully used by foreign manufacturers to create banking and trading electronic systems based on the Internet.

Internet Security Task Force (ISTF), a public organization composed of representatives and experts of companies such as providers of information security and electronic business tools and Internet service providers, is engaged in solving the problems of information security of e-business abroad .

**The ISTF Consortium identifies the following twelve areas of information security that e-business organizations should focus on:**

- a mechanism for objective verification of identifying information;
- right to personal information;
- defining security incidents;
- protection of the corporate perimeter;
- defining attacks;
- control of potentially dangerous content;
- access control;
- administration;
- incident response.

It is known that reliable protection against most risks is enabled by the use of electronic digital signature (EDI) algorithms, but this is only the case when these algorithms are added to the cooperation protocols based on them, the legally correct construction of relations and a logical closed system of trust. gives

The basis of data protection lies in the logic of the processes of calculating, extracting and verifying an electronic number with a pair of corresponding keys, that is, a logic based on fundamental mathematical research. Only the owner of the private key can calculate the digital number, and the owner of the public key corresponding to the private key can verify it.

Undoubtedly, it is necessary to ensure information security, but the heads of state authorities, enterprises and institutions, regardless of their form, should keep these issues in the center of attention.

**They are for below information of safety complex system of organization main functional components cited:**

- communication protocols;
- cryptographic tools;
- authorization and authentication mechanisms;
- means of controlling access to workplaces from public networks;
- anti-virus complexes;
- attack detection and audit programs;
- tools for centralized user access control and secure exchange of data packets and messages of various applications over open networks.

There are already a number of committees, mostly made up of volunteer organizations, that are gradually standardizing the technologies offered on the Internet. These committees, which form the core of the Internet Engineering Task Force (IETF), have standardized several important protocols, speeding their introduction to the Internet. The introduction of protocols such as TCP/IP for data transfer, SMTP (Simple Mail Transport Protocol) and POP (Post Office Protocol) for e-mail, and SNMP (Simple Network Management Protocol) for network management are the efforts of the IETF. is a direct result. The type of protection product used will depend on the needs of the company.

Secure data transmission protocols (SSL, SET, IP v.6) are widely popular on the Internet. The listed protocols appeared on the Internet relatively recently as a necessity to protect valuable information and immediately became de facto standards. At this point, we remind you that the Internet was created several decades ago for the exchange of scientific information, which did not have much value.

**At the moment, in our republic, the introduction of the Internet into the spheres related to the transmission, processing and storage of confidential information is being approached cautiously. At this point, it should be recognized that the development of electronic commerce is slowed down by the following reasons:**

- Non-existence or slow development of e-commerce infrastructure and the inability to deliver products to the buyer (courier services), especially through an "electronic store" located in another city.

- The backwardness of state legislative practice in this area, and as a result, the absence or weakness of guarantees for the execution of transactions concluded in electronic form.
- The presence of objective and subjective reasons for the development of fraud related to the use of the Internet in commerce.
- Lack of thorough marketing treatment of e-commerce projects.
- Difficulties in making payments for products, in particular, lack of public trust in commercial banks.

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## **VIDEO LECTURES ON SCIENCE, VIDEO ROLLS**

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## Video lectures on science, video clips

<https://www.youtube.com/watch?v=sR-qL7QdVZQ> Philip Kotler: Marketing  
<https://www.youtube.com/watch?v=hZLMv5aexto> 4 Principles of Marketing Strategy

<https://www.youtube.com/watch?v=H8aZr-Ula1w> Marketing Mix: Pricing Strategies

<https://www.youtube.com/watch?v=XBmWEduod5k> Pricing Strategies  
<https://www.youtube.com/watch?v=GZgFdPWtVGY> Promotion  
<https://www.youtube.com/watch?v=ys7zx1Vc9po> The Seven Ps of the Marketing Mix: Marketing Strategies

<https://www.youtube.com/watch?v=H8FANR-2u2Q> Strategic Planning: SWOT TOWS Analysis

<https://www.youtube.com/watch?v=qbyb0ht-dsk> McDonalds SWOT  
<https://www.youtube.com/watch?v=mCdcdf-b8AU> PEST Analysis  
<https://www.youtube.com/watch?v=Zq391bgs6h0> - What is Market Research? An Informative Presentation.

<https://www.youtube.com/watch?v=sdQfId91Y0g> - Ethical Behavior in Marketing

[https://www.youtube.com/watch?v=n\\_L4tBP\\_KFQ](https://www.youtube.com/watch?v=n_L4tBP_KFQ) - Market Segmentation: Geographic, Demographic, Psychographic & More - Study.com  
<https://www.youtube.com/watch?v=IyjDjr33wAQ> - Live affiliate marketing case study  
[https://www.youtube.com/watch?v=2Zwlb\\_1Q23I](https://www.youtube.com/watch?v=2Zwlb_1Q23I) - Market Feasibility Study: More Important Than a Business Plan

<https://www.youtube.com/watch?v=b0hle7pVLmM> How to Create a Digital Marketing Strategy - A Silverstone Case Study  
<https://www.youtube.com/watch?v=ZzPjSqvm9P8> Infragistics Marketing Dashboard Case Study  
<https://www.youtube.com/watch?v=laTzwz08M94> Market segmentation: a case study  
<https://www.youtube.com/watch?v=bqaEhW3xOck> Market Orientation and Sales Orientation

<https://www.youtube.com/watch?v=IggKinwxbZ4> Part 5: Marketing, Community and Apps Case Study featuring Coca-Cola - Salesforce World Tour Chicago  
<https://www.youtube.com/watch?v=z-9Yxo02hRk> Case Study 2016: When Content Marketing Meets SEO  
<https://www.youtube.com/watch?v=lcoLoIyGw7I> Nike Marketing Strategy | Successful Marketing #1  
[https://www.youtube.com/watch?v=9\\_XWp5fnXKc](https://www.youtube.com/watch?v=9_XWp5fnXKc) What is Marketing & Brand Strategy?

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# **REVIEW OF USED PEDAGOGICAL TECHNOLOGIES**

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## OF USED PEDAGOGICAL TECHNOLOGIES

### 1. Lectures are the main forms of organization of classes

Lecture training is the leading form of organization of teaching in OO'YU, aimed at primary acquisition of knowledge.

The main purpose of the lecture is to provide a theoretical basis for teaching, to develop interest in educational activities and specific academic subjects, and to form guidelines for cadets to work independently on the educational course.

#### ***Requirements for the content and volume of lecture materials***

*The content* of the lecture materials should meet the following criteria:

- designation for novelty, scientificity, reasonableness and information;
- existence of a clear, reliable example, fact, rationale and scientific evidence;
- lack of fact-based (statistical and vh) materials.

*The volume* of lecture materials should be sufficient to cover the planned topic.

#### **Types of lectures and their characteristics**

<b>The purpose of the training session</b>	<b>The type of lecture , its characteristics</b>
<b><i>Introductory lecture</i></b>	
To provide the guiding basis of the student's action on the assimilation of educational information within the scope of science.	It is a motivational stage in the structure of education. Its task is to give preliminary ideas about the content of the academic subject, its place in the educational process and its importance in the future operational-service activities, to guide students in the work system, to familiarize them with the methodology and organization of the independent work that lies ahead, Clarification of reporting time and assessment.
<b><i>Informative lecture</i></b>	
Forming an idea about the educational topic	This is a traditional type of lecture: a coherent presentation of the educational material in a monologic manner according to the lecture plan.

<b><i>Problem lecture</i></b>	
Organization of problem definition and solution/consolidation and analysis of traditional and modern perspectives and formation of imagination/knowledge on the subject of study through vh.	New knowledge is introduced through the problem of questions/tasks/situations . In this process, students' knowledge is based on cooperation and dialogue with the teacher, and it is approached by research activity.
<b><i>Exhibition lecture</i></b>	
Formation of imagination/knowledge on the subject of study through extensive use of OTV.	Reading such a lecture leads to the disclosure and brief interpretation of the visual material in question.
<b><i>Binary lecture</i></b>	
Forming imagination/knowledge on the subject of study by demonstrating to students the culture of debate, collaborative problem solving.	Reading such a lecture shows the dialogue of two teachers/scientific representatives of the 2nd school/scientist and practitioner/teacher and students.
<b><i>Conference-lecture</i></b>	
Forming imagination/knowledge on the subject of study by illuminating the active participation of students in the process of searching, selecting and presenting educational information.	It is conducted in the form of a scientific-practical exercise with a system of lectures (5-10 min. duration) intended to cover a predetermined problem and its comprehensive coverage. At the end of the lesson, the teacher concludes independent work and speeches, fills in/clarifies information, expresses the main conclusions.
<b><i>Summarizing lecture</i></b>	
Systematization of knowledge without detailed clarifications and clarifications.	The basis of the theoretical situations described in the lecture is the scientific-conceptual and conceptual basis of the course or major departments.
<b><i>Advisory lecture</i></b>	
Deepening and systematization of knowledge.	It can go according to different scenarios. 1. "Questions and answers" - the teacher answers students' questions about the section or the entire course. 2. "Question-answers-discussions": the teacher not only answers questions, but also organizes the search for answers.
<b><i>A daily lecture</i></b>	

Systematization of knowledge without detailed clarifications and clarifications.	Completes the study of the course, summarizes what has been learned throughout the period. In the final lecture, the teacher divides the main ideas of the course , shows how to apply the knowledge gained in the future operational-service activity and learning other subjects, explains the nature of the final control in the subject, the options of the final control explains complex questions.
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## **2. Basic forms of organizing practical training**

Practical training:

- directed students to engage in active conversation with the teacher and with each other,
- providing conditions for the implementation of theoretical knowledge in practical activities,
- a training form of training designed to discuss the possibilities of practical use of the acquired knowledge.

### ***Requirements for the content of practical training***

- controversial questions are brought to the discussion ;
- the discussed questions are considered from the point of view of the modern achievements of science ;
- the integral unity of theory and practice is revealed;
- the connection of the discussed material with the future professional activity of students is ensured;
- the material under consideration is not available in the literature or the material is partially described.

## practical training and their characteristics

Practical type of training	The form of practical training, its specific features
<p><b><i>Systematization/structuring/strengthening/expanding students' theoretical knowledge:</i></b></p> <ul style="list-style-type: none"> <li>- a good study of the most important and unique scientific topics from a methodological point of view.</li> <li>- detailed study of the subject questions that are difficult to understand and master.</li> <li>- detailed study of the main topics that determine the quality of professional training.</li> </ul>	<p><b><i>Extensive conversation.</i></b>            It provides for the preparation of students for each lesson plan questions with recommended mandatory and additional literature common to all. By using all the means of activation: well-thought-out well-formulated questions to the speaker and the whole group, the ability to focus the students' attention on the strengths and weaknesses of the speaking students, the students' attention and interest, to the new aspects that are revealed in the work process. Allowing that time to highlight and engage more students to discuss the questions based on others. A wide-ranging conversation does not exclude, but rather assumes, that individual students will speak on some questions in addition to the pre-planned ones. However, such information will not be the basis for the discussion, but will be complementary to the discussed questions.</p> <p><b><i>Discussion of lectures and abstracts.</i></b>            No more than 2-3 lectures lasting 12-15 minutes will be included in the discussion. Sometimes an additional speaker and opponents (opponents) are designated. The last students get acquainted with the text of the lecture in order not to repeat the content. However, in most cases, no one prepares seriously for the seminar, except for the speaker and opponents, additional speakers. Speakers themselves are studied only one question. At the same time, introducing a "dry theoretical" element to the usual seminar work, such trainings arouse some interest in students. It is very important to train students to come prepared each as an additional speaker or opponent. It would be appropriate to consider the abstract lectures in the final seminar, on a large topic, the main questions of which have been discussed in advance.</p> <p><b><i>Press conference.</i></b>            After a short speech, the first question is given to the speaker (if the lectures are given to a number of students, the teacher himself gives the floor to one of them). After that, each student should ask him a question on the topic of the lecture . Questions and answers form the central part of the seminar. The more serious preparation is done, the more thorough and skillful the questions will be. The speaker will answer</p>

<p>Deeper development of private problems in science .</p>	<p>the questions first, and then any student can express his opinion about him or others. In such cases, additional speakers will be active, if designated. The teacher makes his conclusion on each discussed question or at the end of the seminar.</p> <p><b>Mutual reading.</b> A seminar with the main objective of studying questions of the highest complexity for understanding and mastery. During the seminar, it is important to direct students to mutual study: each small group is given a question of the topic, on which they will work, and the basis for it (expert sheets - a plan for covering the question, visual presentation of the prepared information) recommendations on) are given. After the presentation of the work results of the expert groups, the teacher makes conclusions.</p> <p><b>Round (written/verbal) table.</b> The main goal of the seminar is to develop and clarify knowledge on the previous topic, to mobilize existing knowledge and apply it in various situations, to express one's thoughts in a short and reasonable manner. It can be conducted under various scenarios.</p> <ol style="list-style-type: none"> <li>1. "Written round table" - a sheet on which the student's question / idea to be solved is written, is passed around the circle, and each participant adds his comments.</li> <li>2. "Oral round table" - each student makes his additions to the answer to the question / supports and develops the idea proposed by the previous participant.</li> </ol> <p><b>Special seminar .</b> It is held in 4 courses of the bachelor's degree and in the master's degree. Represents the school of dialogue for young researchers on a scientific topic. During the special seminar, students' desire to work in groups and evaluate it, to use scientific research methods, plays a big role. In the final session of the special seminar, the teacher, as a rule, summarizes the seminars and students' scientific work , opening the prospects for future research and students' participation in them.</p>
<p><b>special (professional) and general educational</b></p>	<p><b>Educational game.</b> It allows to increase the effectiveness of training by not only actively involving its participants in the process of</p>

***skills and practical skills***

:  
- practical application of acquired theoretical knowledge related to determining the algorithm of actions in the process of analyzing and solving a practical problem situation.

acquiring knowledge, but also by using them (now and here); skills of tactics to behave in changing situations; vyrobatyvaet dynamic rolevogo povedeniya; represents practice imitation; focused on the formation and development of specific skills and competencies.

The effectiveness of the seminar is determined by its organizational and methodological support: development of the technological map of the game; preparation of game attributes and a package of materials: situation statement, instructions for participation, description of characters (if the game is role-playing or business) or situational instructions (if the game is modeling).

***Carrying out practical tasks.***

Most of the practical tasks are carried out in small groups and include the following steps: giving instructions → getting acquainted with the instructions for completing the training task → performing the task → public presentation of the results → summarizing and evaluating the results.

***Problem solving exercise.***

It is carried out individually and includes the following steps: giving instructions - solving the problem - presentation of a selection of results - generalization.

***Solving problematic issues and situations.***

Developing problematic issues and situations requires a lot of effort. But solving problems and analyzing problematic situations from practical professional activity by students allows to connect the theory with real practice. This allows to activate teaching, helps students to understand the practical benefit of the studied material.

***Solving educational practical problem situations (cases) .***

includes a written description of the specific conditions of the life of organizations, groups of people or individual individuals , which direct students to express a problem, analyze and evaluate a problem situation, and search for appropriate solutions .

It is important to include the following steps in the case resolution process:

- analyze and solve the problem individually,
- jointly (in small groups) analyze the solution found individually, formalize a mutually acceptable solution option,
- presentation of group work,

	<p>→ collective selection of the most optimal option of problem solving methods and tools.</p> <p>The process of fixation, independently found evidence that appeared in the process of solving a problem situation helps to find and strengthen landmarks, professional assets, and to understand the connection with future professional activities.</p> <p><b>Presentation and evaluation of educational projects</b></p> <p>The role of the teacher in the preparation of this educational activity is as follows : development of the project assignment; help students search for information; to be a source of information; coordinate the whole process; support and encourage participants; implement continuous feedback; put forward.</p> <p>In this training session, the groups report on the results of their activities and present it in the prescribed form (the results of the project activities, as well as the project product in the form of a visual and oral presentation).</p> <p>The teacher organizes the mutual evaluation of the groups and evaluates the activity of the project participant.</p>
<p><b>Monitoring and evaluation of students' level of theoretical and practical training</b></p>	<p><b>Colloquium .</b></p> <p>Colloquiums (interviews) of the teacher with students are usually conducted with the aim of determining and deepening knowledge on one or another topic of the course. It often covers 1) additional topics that are not included in the program, but which arouse the interest of students; 2) during additional lessons on particularly complex topics of science, but not sufficiently mastered by students; 3) to determine the level of participation of students who did not respond in the last seminar sessions.</p> <p>Lectures, abstracts, etc. during the seminar - colloquium. WRITTEN works can be checked.</p> <p><b>Written (supervision) work.</b></p> <p>Students answer control questions/solve tests/perform control tasks. It is important to make a set of them correctly: they should correspond to the level of mastery of the planned educational material and should ensure their verification.</p>

### 3. Pedagogical technologies used in lectures and practical training

#### MENTAL ATTACK METHOD

Brainstorming (brainstorming) is a method used in collective creation of the idea of solving practical or scientific problems .

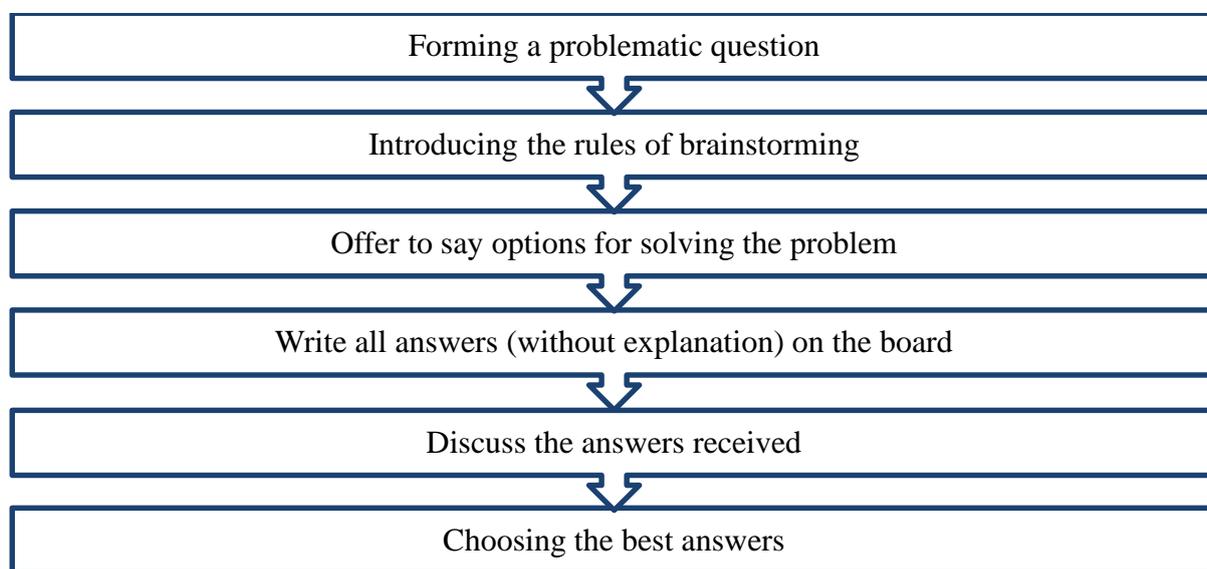
☞The method is based on directing students' mental activity to search for non-traditional ways to solve a specific problem (question, problem) within a limited period of time.

☞The selection of a problem for a brainstorming session is carried out according to the following principles:

- the selected problem should be of theoretical and practical importance and arouse active interest in students;
- should have many different solutions.

In the development of teaching technology, the brainstorming method can be planned as a part of the training session or as a basis for conducting the entire session.

The technological diagram of the brainstorming method is presented in Figure 1.



Technological diagram of the brainstorming method

### **INSERT TECHNIQUE**

INSERT (derived from the English word - **INSERT** - **I** nteraktive- interactive **N** oting - designation System - system for **E** ffective - effective **R** eading - reading and - and **T** hinking - means thinking).

1) It is an interactive markup system for effective reading and thinking.

Text markup system:

( √ ) - information confirming my knowledge;

( + ) – new information for me;

( – ) - contrary to my knowledge;

( ? ) - made me think. I need more information on this.

### **CASE STUDY METHOD**

**CASE** - (visual. case - set, specific situation) - *a teaching tool* that allows applying theoretical knowledge in the process of solving practical tasks .

By studying and analyzing the situation described in the case, students will get a ready-made solution that they can use in similar situations in their future professional activities.

The situations described in the case (professional) are fundamentally different from the situational issues solved in practical training. If situational problems always have a condition (what is given) and a requirement (what needs to be found), then in the case, as a rule, there are no such parameters.

In an optional case presented to the student:

- case definition and task/questions must be clearly defined;
- should contain sufficient and necessary information to solve the stated problem situation
- *methodical instructions* for solving the case .

**Case-stadi** (ingl.sase- collection, specific situation, stadi-teaching) – method of practical teaching situations.

Case-study is an arrangement that ensures the guaranteed achievement of predictable learning results in the process of implementing the educational goal of teaching, information, communication and management and solving the practical problem situation described in the case-study. is a teaching technology consisting of a set of optimal methods and tools.

This method encourages students to:

- to formulate a problem;
- to analyze and evaluate the practical situation;
- to choose the most optimal solution to the problem.

Two main arguments determine the choice of the teaching technology of the training session:

1. The size of the case (short, medium, large)
2. The method of presentation of the educational task:
  - with questions (questions are given after the case)
  - assignment (the assignment is given at the end of the case introduction)

### **STUDY PROJECT METHOD**

The essence of this method is that within a certain period of time (within 2-3 months of one training session) the learner performs a project assignment on a given topic in a group or individually. Its task is to obtain new information directed to a specific user , to provide a scientific and technical solution to a given problem within a specified period of time.

The concept of a study project:

- aimed at searching, researching and solving problems aimed at a specific consumer, formalizing the result in the form of a unique (material or intellectual) product. *The method of* organizing independent educational activities of students ;  
*tools and tools* aimed at solving practical tasks through theoretical knowledge ;  
*didactic tool* aimed at development, education and expansion of knowledge, deepening and formation of skills .

### **GRAPHIC ORGANIZERS**

**CLUSTER** (cluster-set, link) - a way of creating an information map - creates a certain content based on the collection of ideas around some main factor to summarize and determine the essence of the whole structure.

Accelerates the activation of knowledge, helps to freely and broadly involve new interrelated ideas on the subject in the thinking process.



### Instructions for the tutorial on creating a cluster

1. In the center of a large sheet of paper, write a keyword or a 1-2 word topic name in a circle.
2. Write a word or phrase related to the topic in a small circle-"companion" next to the keyword. Connect them with a line to the word "head".
3. These "compliments" may also contain "sub-compliments" in which more words or phrases can be written and continued until the allotted time runs out or the ideas run out.

**"WHAT FOR?" SCHEME** is a chain of thoughts to determine the initial cause of the problem, develops systematic, creative, analytical observation skills.

### "Why?" instructions for the educational task of creating a scheme

To determine the cause of the problem indicated in the tutorial:

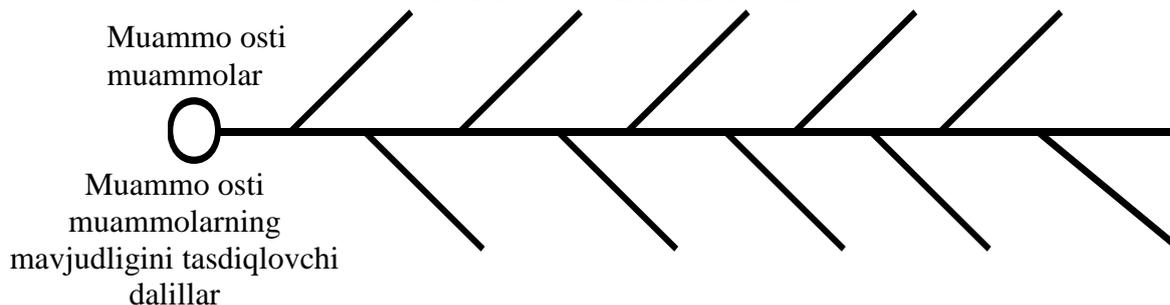
- 1) Write the problem and draw an arrow line "Why?" write the query.
- 2) Write the answer to the question and repeat the question why. Continue this process until the root cause of the problem is identified

**" FISH SKELETON " DRAWING** - allows you to describe a number of problems and solve them. Develops the skills of systematic thinking, structuring, and analysis.

### Instructions for the educational task on the creation of the "Fish skeleton" scheme

To describe the problem area specified in the study assignment:

1. Draw a « fish skeleton » :



2. In the left part (or upper bone) of the "bone" write the underlying problem, and in the right part (lower bone) - write the evidence confirming that the underlying problem actually exists.

**" HOW?" HIERARCHY DIAGRAM** - consists of a chain of logical questions that allow to get a general idea about the problem, to find methods and means of finding its solution.

Develops systematic, creative, analytical thinking skills.

**"How?" to the educational task on drawing up a diagram  
guide**

"How?" Before creating a diagram, you should know the following: In many cases, when solving problems, you will be asked "What to do?" you don't have to think about it. To find a solution to a problem, it is mainly a question of "How to do this?" will be in the tribe. "How?" - is the main question in solving the problem.

1. Draw a circle and write the problem to be solved inside it.

2. "How?" ask a question and answer this question. Keep asking the questions in this order and keep writing the answers often without thinking, comparing, evaluating.

*Advice and recommendations:*

Decide for yourself whether to record new ideas graphically: in a tree or cascade view, from top to bottom or from left to right. Most importantly, remember: the method that allows you to find a relatively large number of useful ideas and solutions to problems is the most suitable method.

If you ask the right questions to find a solution to the problem and keep faith in its development direction, the diagram guarantees that you will find a practical solution to any problem.

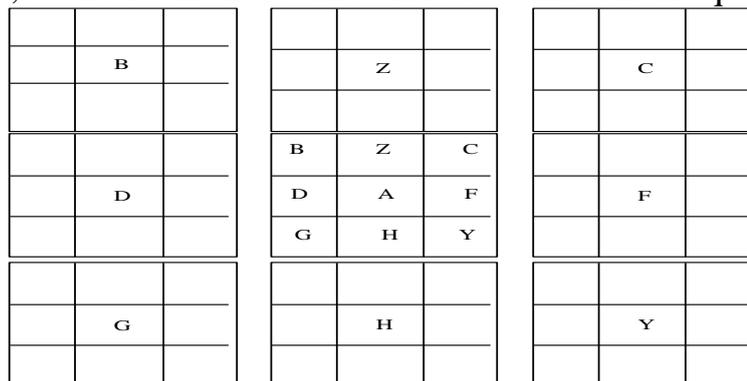
**" LILY FLOWER " DRAWING** is a problem solving tool. It embodies the image of a lily flower. It is based on 9 large squares, each of which in turn consists of nine small squares.

Forms systematic, creative, analytical thinking skills.

**Instructions for the educational task on the creation of the "Lilac flower"  
scheme**

To find solutions to the problem shown in the tutorial:

1) Draw a diagram that incorporates the image of a lily flower. Its basis is formed by 9 large squares, each of which in turn consists of nine small squares;



2) write the main problem in the center of the central square. Write the solution ideas in the remaining eight squares around the central square;

3) transfer each of these eight ideas to the center of the eight large squares around the central square, in other words, from the lily flower to its petal . Thus, each of them, in turn, is considered as another problem.

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**RECOMMENDED ELECTRONIC MAGAZINES AND WEBSITES**

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# **GLOSSARIES**

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## GLOSSARY

The name of the term in the Uzbek language	The name of the term in Russian	English name of the term	The meaning of the term
Information economy	Information economy	Information economy	it is a science that studies the economic activity of a person, which envisages the widespread introduction of electronic (information and communication) technologies in the processes of production, distribution and consumption of society's goods.
Knowledge management	Upravlenie znaniyami	Knowledge management	it is knowledge identification, knowledge management, knowledge development and utilization. It deals with how to acquire knowledge, distribute it, transform it, use it, and continuously find practical advantages necessary for the firm.
Global management paradigm	Global paradigm of management	The Global Management Paradigm	it is a management system that is followed in whole or in part by companies regardless of national, cultural or political traditions and customs at the global level. It is a set of interconnected, logically coherent activities in areas such as organizing, decision-making, and reasoning.
Integrated process management	Integrated management process	Integrated process management	is a systematic method of management, the main feature of which is the integration of consumers and producers into a single process. The product in the customer's hands is considered part of the production cycle, which implies the integration

			(joining) of the customer into the production process .
Process innovation	Innovative process	Process innovation	is the introduction of a new or significantly improved production or delivery method, a significant change in technical processes, equipment and/or software.
Marketing innovation	Marketing innovation	Marketing innovation	introduction of a new marketing method by the firm (product design and packaging, positioning, pricing, marketing) if it is being used by the firm for the first time.
Intellectual property	Intellectualnaya sobstvennost	Intellectual property	these are the results of intellectual activity and means of individualization of the participants of economic relations . Intellectual property includes inventions, utility models, industrial designs, trademarks, service marks, company names, trade names and symbols.
Trademark	Trademark	Trademark	it is an original graphic image, number, letter or combination of words intended to distinguish the goods and services of one manufacturer from similar goods and services of another manufacturer.
Invention	I zobretenie	Invent ion	this is a technical solution related to a product (in particular, a device, substance, microorganism stamps, plant and animal cells) or a method (the process of performing an action on material objects ) in various fields .
Useful model	Poleznaya model'	Model	technical solution for this device. Constructive implementation of means of production and consumption

			objects and their components are included in useful models.
Industrial samples	Promyshlennye obraztsy	Industrial Designs	it is an artistic-constructive solution that determines the appearance of industrial or craft products.
Selective beds	It is technologically new	Selection achievements	It is the result of a person's activity aimed at a specific goal, such as creating (identifying) a new type of plant or a new type of animal through creative work.
Cryptography	Cryptography	Cryptography	refers to mathematical methods of learning ways to change information to protect it
Electronic digital signature	Digital signature	Digital Signature	is information attached to the text and identifying its cryptographic transformation, which allows to verify the authenticity and authorship of the text when it is received by another user.

## **RECOMMENDED E-JOURNALS AND INTERNET SITES**

### **Basic literature**

1. Lapidus L.V. Digital economy: upravlenie elektronnyy biznesom i elektronnoy kommertsiei : uchebnik / L.V. Lapidus. — M.: INFRA-M, 2019.
2. Markova V.D. Tsifrovaya ekonomika: Uchebnik/ V.D. Markova. — M.: INFRA-M. 2019.
3. Hassanshin I. A., Kudryashov A.A., and dr. Tsifrovaya ekonomika. Uchebnik dlya vuzov - M.: Goryachaya line. Telecom, 2019
4. Gulyamov SS, Ayupov RH and others. Blockchain technologies in the digital economy. T.: TMI, "Economy-Finance" publishing house, 2019

### **Additional literature**

1. Mirziyoev Sh.M. Critical analysis, strict discipline and personal responsibility should be the daily rule of activity of every leader. // People's word newspaper. 16 January 2017'.
2. Mirziyoev Sh.M. Together we will build a free and prosperous, democratic country of Uzbekistan. - Tashkent: Uzbekistan, 2016. - 56 p.
3. Mirziyoev Sh.M. Ensuring the rule of law and human interests is the guarantee of the country's development and people's well-being. - Tashkent: "Uzbekistan", 2017. - 48 p
4. Mirziyoev Sh.M. We will build our great future together with our brave and noble people . - Tashkent: "Uzbekistan", 2017. - 488 p.
5. Mirziyoev Sh.M. 19 September 2017 Speech at the 72nd Session of the United Nations General Assembly.// People's Word, 20 September 2017'.
6. Address of the President of the Republic of Uzbekistan Sh. Mirziyoev to the Oliy Majlis. // People's word, December 23, 2017.
7. Law of the Republic of Uzbekistan dated May 22, 2015 "On Electronic Commerce" No. ORQ-385.
8. Address of the President of the Republic of Uzbekistan Shavkat Mirziyoyev to the Oliy Majlis of December 28, 2018.
9. Resolution No. PQ-4321 of the President of the Republic of Uzbekistan dated May 18, 2019 "On measures to further improve the infrastructure of the digital economy and the "Electronic Government" system."
10. Resolution No. PF-5598 of the President of the Republic of Uzbekistan dated December 13, 2018 "On additional measures to introduce digital economy, electronic government and information systems to the public administration of the Republic of Uzbekistan".

11. Resolution PQ-4022 of the President of the Republic of Uzbekistan dated November 21, 2018 "On measures to further modernize the digital infrastructure for the purpose of developing the digital economy".

12. Resolution PQ-3927 of the President of the Republic of Uzbekistan dated September 2, 2018 "On the establishment of the Digital Trust" digital economy development support fund.

13. Decision PQ-3832 of the President of the Republic of Uzbekistan dated July 3, 2018 "On measures to develop the digital economy in the Republic of Uzbekistan".

14. The main indicators of the socio-economic development of the Republic of Uzbekistan in 2014-2017. WWW/ stat.uz.

### **Electronic journals**

1. International Journal of Business Forecasting and **Innovation** .  
www.inderscience.com

2. Ansoff matrix. www.free-management-ebooks.com

3. Economy and innovative technologies. Scientific electronic magazine. www.iqtisodiyot.uz

4. Economic overview\_www.cer.uz

5. Journal of Innovation. www.ama.org

6. Journal of Marketing Research . www.ama.org

### **Internet sites**

1. www.mineconomy.uz (Ministry of Economy of the Republic of Uzbekistan)

2. www.mehnat.uz (Ministry of Labor and Social Protection of the Population of the Republic of Uzbekistan)

3. www.mf.uz (Ministry of Finance of the Republic of Uzbekistan)

4. www.stat.uz (State Statistics Committee of the Republic of Uzbekistan)

5. www.ima.uz (Intellectual Property Agency of the Republic of Uzbekistan)

6. www.academy.uz (Academy of Sciences)

7. http:// www. semi rssi . ru–site of the Central Institute of Economic Mathematics of the Russian Federation.

8. http://www.nber.com – the website of the US National Bureau of Economic Research.

9. http:// www. w e bofscience . com- International Scientific Articles Platform.

10. http:// www. scope . com – International Scientific Articles Platform.

11. http:// www. elibrary . ru - index of Russian scientific articles.

NAMANGAN ENGINEERING CONSTRUCTION INSTITUTE

"APPROVED"

Vice Rector for Academic Affairs

«\_\_\_\_»\_\_\_\_\_2024

DEPARTMENT OF ECONOMY

WORKING PROGRAM

Course title:  
" DIGITAL ECONOMY "

Direction of education	Semester	Course structure			Control type	Total study hours
		Lecture	Practical training	Independent education		
<b>Daytime department</b>						
<b>Economics</b>	<b>3</b>	<b>34</b>	<b>38</b>	<b>108</b>	<b>+</b>	<b>180</b>

## Namangan-202 4 years.

The working program of the subject is developed in accordance with the curriculum of the subject "Digital Economy" in the working program.

Working Curriculum of Science 5230100-Hours and Types of Supervision in Science in the Working Curriculum for Economics (by Sectors and Industries):

### Compilers:

- O. Aripov - NECI , Head of the Economics department , DSc
- I. Ergashev - NECI , Teacher of the Economics department .
- E. Jurayev - NECI, Head teacher of the Economics department.

### Reviewer:

- Kh. Talaboyev - NECI , Associate Professor of the Economics Department
- Q. Umarqulov - NamSU Associate Professor.

The working curriculum of the subject was discussed at the meeting of the Department of Economics " \_\_\_\_\_ " in 202 4 and recommended for discussion at the faculty council.

**Head of Department:** \_\_\_\_\_ **DSc. O. Aripov**

The working curriculum of the science was discussed by the board of the Faculty of Economics and Control and recommended for use.

( 2024 year \_\_\_\_ » \_\_\_\_\_ « \_\_\_\_\_ » - protocol number).

Considered and recommended by the Academic Council of the Namangan Engineering Construction Institute. \_\_\_\_\_ - minutes of the meeting « \_\_\_\_\_ » \_\_\_\_\_ in 202 4 .  
(Registered with the number \_\_\_\_\_).

## INTRODUCTION

As a result of the implementation of our chosen strategy for further development, renewal and modernization of our country in 2017-2021, our country is one of the few countries in the world to ensure sustainable economic and social development, increase the welfare of our people .

The ongoing economic reforms in the Republic of Uzbekistan are becoming increasingly important. The active integration of the republic into the world community has played an important role in economic reforms.

The study of the national economy as a whole, the effective use of factors of its development, reducing inflation, strengthening the purchasing power of the national currency, increasing export potential, the study of ways to ensure the stability of the balance of payments are the subjects of digital economics.

### 1 . Guidelines for teaching science

The purpose of teaching the subject is to teach students the role and importance of the digital economy in business and social spheres, digitalization of business processes, business models, e-commerce, the use of blockchain technology. and the formation of skills.

The task of the subject is to teach students the basic approaches to the analysis of various economic situations at the macro and sectoral levels, accurate modeling of situations taking into account the technological, situational, organizational, legal and institutional features of the digital economy, organization of digital economy infrastructure, effective use of global information resource bases, development of the digital economy in the context of public-private partnership, identification of information security problems, effective organization of e-business processes, effective decision-making on the effective use of e-commerce models.

The following requirements are set for the knowledge, skills and abilities of students in science. **STUDENT :**

- basic approaches to the analysis of various economic situations at the macro and sectoral levels; correct modeling of the situation, taking into account the technological, situational, organizational, legal and institutional features of the digital economy, the organization of the infrastructure of the digital economy; understanding the essence of blockchain technology; **know and be able to effectively use** global information resource databases;

- development of the digital economy, introduction of blockchain technologies; development of the digital economy in the context of public-private partnership, organization of crypto-exchanges, implementation of the most promising and strategically important projects; creation of platforms for the development of the digital economy; **have the skills to develop and implement startups ;**

- identify the positive and negative consequences of digital transformation, the factors that affect them; assess the impact of the digital economy on macro and micro indicators; evaluation of digital transformation efficiency; identification of information

security problems; development of digital economy on the basis of public-private partnership; have the skills to identify and assess the factors that hinder the effective organization of business processes, the effective use of e-commerce models.

**Personalized education.** In essence, this education involves the full development of all participants in the educational process. This means that when designing education, of course, the approach should be based not on the personality of a particular learner, but primarily on the learning objectives related to future professional activities.

**Systematic approach.** Educational technology should include all the features of the system: the logic of the process, the interconnectedness of all its components, the integrity.

**An action-oriented approach.** Represents education aimed at the formation of process qualities of the individual, the activation and intensification of the learner's activities, the discovery of all his abilities and capabilities, initiative in the learning process.

**Dialogic approach.** This approach emphasizes the need to build learning relationships. As a result, the individual's creative activity, such as self-activation and self-expression, increases.

Organize collaborative learning. Democracy, equality, and the need to focus on the introduction of collaboration in shaping the content of teacher and learner activities and evaluating the results achieved.

**Problem-based learning.** One of the ways to activate the learner is to present the learning content in a challenging way. In this case, the objective contradiction of scientific knowledge and ways to solve it, the formation and development of dialectical observations, their creative application in practice.

**Using modern means and methods of presenting information** - the use of new computers and information technology in the educational process.

**Teaching methods and techniques.** Lecture (introduction, thematic, visualization), problem-based learning, case study, pinboard, paradox and design methods, practical work.

**Forms of teaching:** dialogue, polylogue, frontal, collective and group based on communication, collaboration and mutual learning.

**Teaching aids:** in addition to traditional forms of teaching (textbooks, lecture notes) - computer and information technology.

**Methods of communication:** direct interaction with the audience based on operational feedback.

**Methods and means of feedback:** observation, blitz-questionnaire, diagnostics of training based on the analysis of the results of intermediate and current and final control.

**Methods and means of control:** planning of lessons in the form of a technological map, which defines the stages of the lesson, the interaction of the teacher and listener in achieving the set goal, not only in the classroom, but also independently outside the classroom control of affairs.

**Monitoring and Evaluation:** Systematic monitoring of learning outcomes, both in the classroom and throughout the course. At the end of the course, students' knowledge will be assessed using test assignments or written work options.

Computer technology and Microsoft PowerPoint programs are used in the teaching of "Environment and Natural Resources Economics". Assessment of students' knowledge on some topics is based on tests. The official economic indicators of the Internet are used, handouts are prepared, a test system and intermediate and final controls are conducted on the basis of key words and phrases.

## **MAIN PART**

### **Main theoretical part (lectures)**

#### **Science includes the following topics:**

##### **Topic 1. Introduction to the subject of "Digital Economy"**

Fundamentals of development of the information society. Economic laws of information technology development. Features of the digital economy. The concept of digital economy. Innovative ideas, high-tech production, consistent application in society. Digital Economy and Economic Growth.

## **Topic 2. Digital economy: the basics of e-business management**

The essence and development features of e-business. Network economy. The role of innovative technologies in shaping the digital economy. Signs of the digital economy. Composition of Gross Domestic Product (GDP) by countries. Features of creating a business on the Internet. M2M technology - as the basis of the Internet of Things. Problems and prospects of development of Internet of Things. The ecosystem of the digital economy. Prospects for the development of the digital economy. Problems of digitalization of society. Features of the development of the digital economy in Uzbekistan, the legal framework.

## **Topic 3. Features of the development of e-commerce (Internet commerce)**

E-commerce and e-commerce are private brands and differences. Mobile commerce (m-commerce). The Impact of the Digital Economy on Business: Opportunities and Risks. Electronic business models. Market system. The impact of the digital economy on informed market participants. Virtual world, "thin client", features of cloud technologies. The most valuable deals and startups in the e-business and e-commerce market.

## **Topic 4. Digitalization Indicators of the Economy**

Indicators of the digital economy, their characteristics. Digital Economy and Society Index (DESI), Networked Readiness Index (NRI), Digital Evolution Index (DEI), IMD World Digital Competitiveness (MDC), and other indicators of digital development.

## **Topic 5. Features of business management in the digital economy**

Features of techniques and technologies of digital economy. Future technologies, the consequences of digitalization. Big data and analytics, a mechanism for creating a database. Big data - areas of application. Cloud technologies: opportunities and shortcomings. Business transparency and collaboration features. Digital company strategies.

## **Topic 6. Mobile technology**

Mobile technologies in the digital economy. Mobile Devices Market Analysis. Stages of entry and development of mobile devices in the Uzbek market. Development dynamics of the smartphone and mobile phone market. Features of the penetration of mobile technologies in the corporate network. Mobile technology implementation models. Mobile technology and the digital transformation of business.

## **Topic 7. Neurotechnology and artificial intelligence**

History of the development of artificial intelligence. The connection between artificial intelligence and smart media. The structure of an intelligent system. Features of the neural network. The work of an artificial neural network. The neural network is related to medicine, psychology, neurophysiology, and engineering. Classification of intelligent information systems. Development of communication skills - an intellectual interface, solving complex, difficult formal problems - expert systems, development

and independent learning - independent learning systems. Artificial Intelligence Market Changes. Intelligence as a factor in the innovative development of the economy. The role of intellectual capital in the development of the country. Mechanisms for efficient use of intellectual resources. The development of artificial intelligence: pros and cons.

### **Topic 8. Business thinking design**

Thinking in business process management is a feature of design. Thinking design is the development of user-oriented products, services and services. Thinking design - always prioritizes user requests, and only then focuses on technical feasibility and economic feasibility. Stages of thinking design. Empathy is the center of a human-centered design process. Focus on the business process. Develop ideas. Choose an idea. Prototyping is the creation of iterative models that help you find the right solution. Testing is the process of getting feedback on prototypes.

### **Topic 9. Virtual and augmented reality technologies**

The essence of virtual and augmented reality technologies. Augmented reality (AR) technology is used as a sensor device that helps to fill in and receive information about an object. VR (virtual reality, VR, artificial reality) Virtual reality is a method of creating information about an object using technical means, conveying it to people through their imagination. Problems of AR / VR technology development. AR / VR technology features the world market.

### **Topic 10. Effective use of robotics in innovative business**

History of effective use of robotics in business. Types of robotics. Modern robots created on the basis of scientific and technical achievements. International Robotics Federation (IFR) and its responsibilities. Analysis of the level of robotization in the industry of countries. Global Robotics Market Analysis. The main trends in robotics.

### **Topic 11. Electronic business models**

Globalization of the market of goods and services. Generation theory. Sharing economy. Generation NEXT features and feasibility. Changes in traditional business models due to the development of information technology. Organizational structure of e-business and e-commerce management. Buy-side and sell-side systems in e-commerce. CRM - application and features of technologies. Management of supply chains in the implementation of electronic transactions. Functional-objective model in the management of the organization. Classification of companies doing business on the Internet. Price strategies in e-business. Crowdfunding as a technology of capitalization of the company. Key indicators of e-business efficiency.

### **Topic 12. New opportunities for crowdsourcing and crowdfunding in business**

Theoretical and methodological bases of crowdsourcing and crowdfunding in business. A feature of crowdsourcing and crowdfunding technologies in the business model of modern companies. Features of commercial and social crowdsourcing. Crowdsourcing innovation. Opportunities to reduce Internet costs based on

crowdsourcing. Coase theory. Effective use of innovative marketing elements based on crowdsourcing. Creating additional demand for crowdsourcing goods / services. Risks and barriers to crowdfunding.

### **Topic 13. Features of the modern e-commerce market**

History of e-commerce, the impact of technology on the development of e-commerce. The share of e-commerce in the GDP of countries. The impact of e-commerce technologies on the formation of new markets. International e-commerce participants. Features of the market of electronic services and digital products. Herfindahl - Hirschman index. Online store, electronic payments, internet banking and cryptocurrency. Evaluate the effectiveness of electronic advertising. Features of the development of e-commerce in Uzbekistan.

### **Topic 14. E-commerce models**

The essence of different approaches to business modeling. Creating a business model and their classification. Features of creating an e-commerce model (B2B, V2S, V2G, S2S, etc.). Business model of e-shops. Factors for the development of e-commerce. Risks in e-commerce. Business models in social networks. Trends in the development of e-commerce models in Uzbekistan.

### **Topic 15. Features of digitalization of e-government and services**

The essence of the content of the law e-government. Measures being taken to include Uzbekistan one of the 30 most developed countries by 2030 in the development index of e-Government of the United Nations and the World Bank's Doing Business Index. The main functions of e-government and its relevance. Creating a single data platform of the Republic of Uzbekistan. Formation of state information resources, creation and development of information systems, ensuring their compatibility and mutual cooperation. The role of e-government in ensuring the efficiency, speed and transparency of government agencies. Electronic document management in the interaction with the population and business entities. Establishment of the principle of "Single window" in the system of public administration through the interaction of government agencies and the formation of mechanisms for the exchange of information between their databases. Single interactive public services portal (SIPSP). United Nations' IT Evaluation Index (E-Participation Index). Open data portal in Uzbekistan.

### **Topic 16. Development of e-learning platforms**

Development of e-learning market and types of educational platforms. Directions for the development of e-learning in Uzbekistan. The concept of a digital educational institution. Organization of export of educational services. Organizing webinars and video conferences. Ways to develop distance learning. Problems of digitization of education and ways to solve them.

### **Topic 17. Effective use of digital technologies in industry. "Industry-4.0 concept**

"The essence and development of the concept of Industry 4.0. Features of the use of digital technologies in industry. Sharing economy is a new model of co-

consumption. Blockchain technology. Production process planning. Digitization of enterprise personnel management. Digitization of cost management. Digitization of sales and customer relations management. Digitization of project management in the enterprise. Digitization of receivables management system of the enterprise. Digitization of the life cycle of product management process. Problems of digitization of industry and ways to solve them.

### **Topic 18. Digital marketing**

Fundamentals of Digital Marketing and the 4R Concept. Advantages of digital marketing over traditional marketing. Partnerships between the consumer and business sectors. The remedies of Marketing media. Creating and using effective web networks effectively. Market segmentation in digital marketing. Electronic advertising transformation. Advertising expenses and income. Price models for electronic advertising. Indicators of evaluating the effectiveness of digital marketing. Marketing research on the internet. Organizing consumer behavior on the Internet. Customer Relationship Management System (CRMS technology). Digital marketing strategies. Opportunities and challenges of digital marketing development in Uzbekistan.

### **Topic 19. E-branding**

Branding - the essence and main features. The main features of e-branding. Branding technology is aimed at further increasing the interest of regular customers in the product or service. Search engines, content advertising, internet PR, online video, e-mail marketing, audio advertising and etc. E-branding strategies. Strategies to gain an advantage over competitors through the use of communication technologies. Strategies for creating virtual systems and improving service quality that communicate directly with the consumer. Brand advertising strategy on the Internet. Internet branding is a strategy for a company to increase its market share through online sales. Features of children's branding. Strategies for strengthening the brand, repositioning, valuing the existing brand.

### **Topic 20. Implementation of e-business in some sectors and fields of the economy.**

The main advantages of digitalization of the manufacturing sector. Opportunities for digital business in the production of consumer goods. Features of digitization of the agricultural sector. Digitization of services. Development of e-banking system. Digital financial system, financial assets. Features of e-logistics. Current issues of digitization of tourism services. Development of the Smart City Concept in Uzbekistan".

### **Topic 21. Problems of e-business and e-commerce management**

Problems of ensuring information security. Digital security issues and ways to ensure it. Types of Internet fraud and ways to detect them. Fraud via email. Spam. Information aggravation, cyber-attacks. Unfair competition. Features of competitive

intelligence services. Industrial espionage. Protection of personal data. Intellectual Property Protection System. Ways to solve the problem of fraud on the Internet.

### **Topic 22. Quality management of electronic services**

Development trends of the e-business market. Analysis of the state of e-business in developed countries. Digital services feature. Advantages and disadvantages of providing electronic services in enterprises and organizations. The correlation between e-services and their quality. Classification of electronic services. Problems of ensuring the quality level of electronic services. Methods of measuring and evaluating the quality of electronic services. Use of systematic analysis in quality management of digital services. International standard requirements for quality assurance of digital services (E-SQI). The main directions of ensuring the quality of electronic services in Uzbekistan.

### **Topic 23. Creating a personal e-business**

Stages of creating a personal e-business. Sequence of activities on the way to starting a personal business. Opportunities to search for ideas for new products or services and select them. Startup projects. Fundamentals of market positioning. Selection of sources of investment and financing. Features of venture investment. Personal e-business development strategies. Risk management.

## **IV. Instructions and recommendations for practical training**

*The following topics are recommended for practical training:*

1. "Introduction to Digital Economics
2. Digital economy: the basics of e-business management
3. Features of the development of e-commerce (Internet commerce)
4. Indicators of digitization of the economy
5. Features of business management in the digital economy
6. Mobile technology
7. Neurotechnology and artificial intelligence
8. Business thinking design
9. Virtual and augmented reality technologies
10. Effective use of robotics in innovative business
11. Electronic business models
12. New opportunities for crowdsourcing and crowdfunding in business
13. Features of the modern e-commerce market
14. E-commerce models
15. Features of digitalization of e-government and services
16. Development of e-learning platforms
17. Effective use of digital technologies in industry. Industry-4.0 concept
18. Digital marketing

- 19.E-branding
- 20.Features of e-business in some sectors and industries of the economy
- 21.Problems of e-business and e-commerce management
- 22.Quality management of electronic services
- 23.Creating a personal e-business

Practical training should be conducted by one professor-teacher per academic group in an auditorium equipped with multimedia devices. Classes should be conducted using active and interactive methods, with the use of appropriate pedagogical and information technologies.

## 2. Lectures

**Table 2**

No	Lecture topics	Size of lesson hours
1.	Introduction to the subject of "Digital Economy"	1
2.	Digital economy: the basics of e-business management	1
3.	Features of the development of e-commerce (Internet commerce)	1
4.	Indicators of the digitization of the economy	1
5.	Features of business management in the digital economy	2
6.	Mobile technology	1
7.	Neurotechnology and artificial intelligence	1
8.	Business thinking design	2
9.	Virtual and augmented reality technologies	2
10	Effective use of robotics in innovative business	2
11	Electronic business models	2
12	New opportunities for crowdsourcing and crowdfunding in business	2
13	Features of the modern e-commerce market	2
14	E-commerce models	2
15	Features of digitalization of e-government and services	1
16	Development of e-learning platforms	1
17	Effective use of digital technologies in industry. Industry-4.0 concept	2
18	Digital marketing	1
19	E-branding	1

20	Implementation of e-business in some sectors and industries of the economy	2
21	Problems of e-business and e-commerce management	2
22	Quality management of electronic services	1
23	Creating a personal e-business	1
	<b>Total hours</b>	<b>34</b>

Lectures are held in an auditorium equipped with multimedia facilities for the flow of academic groups.

### 3. Practical training

**Table 2**

No	Practical training topics	Size of lesson hours
1.	Introduction to the subject of "Digital Economy"	1
2.	Digital economy: the basics of e-business management	1
3.	Features of the development of e-commerce (Internet commerce)	1
4.	Indicators of the digitization of the economy	1
5.	Features of business management in the digital economy	2
6.	Mobile technology	1
7.	Neurotechnology and artificial intelligence	1
8.	Business thinking design	2
9.	Virtual and augmented reality technologies	2
10.	Effective use of robotics in innovative business	2
11.	Electronic business models	2
12.	New opportunities for crowdsourcing and crowdfunding in business	2
13.	Features of the modern e-commerce market	2
14.	E-commerce models	2
15.	Features of digitalization of e-government and services	2
16.	Development of e-learning platforms	2
17.	Effective use of digital technologies in industry. Industry-4.0 concept	2
18.	Digital marketing	1
19.	E-branding	1
20.	Implementation of e-business in some sectors and industries of the economy	2
21.	Problems of e-business and e-commerce management	2

22.	Quality management of electronic services	2
23.	Creating a personal e-business	2
	<b>Total hours</b>	<b>38</b>

Practical trainings are held individually for each academic group in an auditorium equipped with multimedia devices. Trainings are conducted using active and interactive methods, "Case-Study" technology is used, the content of the case is determined by the teacher. Exhibition materials and information are transmitted using multimedia devices.

#### 4. Independent education

**Table 3**

No	Independent education topics	Size of lesson hours
1.	The content and essence of the priorities for further development and liberalization of the economy in the Action Strategy for the five priority areas of development for Republic of Uzbekistan 2017-2021	2
2.	Economic and legal framework for the development of information technology Uzbekistan	2
3.	Features of the digital economy and the development of the digital economy in foreign countries	2
4.	Innovative ideas, consistent application of high technologies in production, public life	2
5.	Assessing the interrelationship between the digital economy and economic growth	2
6.	The essence and development features of e-business	2
7.	Features of creating a business on the Internet	2
8.	M2M technology - as the basis of Internet of Things	2
9.	The ecosystem of the digital economy	2
10.	E-commerce and e-commerce are private brands and differences	2
11.	Mobile commerce (m-commerce)	4
12.	Economic and legal framework for the development of information technology Uzbekistan	2
13.	Features of the digital economy and the development of the digital economy in foreign countries	2
14.	Innovative ideas, consistent application of high technologies in production, public life	4
	Total hours	30 hours

1.	The impact of the digital economy on business: opportunities and risks.	2
2.	Virtual universe, delicate clientele, cloud technology features.	2
3.	The most valuable deals and startups in the e-business and e-commerce market.	2
4.	Indicators of the digital economy, their characteristics.	2
5.	Future technologies and the consequences of digitalization.	2
6.	Big data and analytics, the mechanism of creating a database.	2
7.	Mobile technologies in the digital economy.	2
8.	Stages of entry and development of mobile devices in the Uzbek market.	2
9.	Features of the penetration of mobile technologies in the corporate network.	2
10.	The connection between artificial intelligence and smart media.	2
11.	Neuroscience - connection with medicine, psychology, neurophysiology, engineering.	2
12.	Development of communicative skills, intellectual interface, solving complex, difficult formalizing problems.	2
13.	Artificial Intelligence as a factor of innovative development of the economy.	4
14.	The development of artificial intelligence: pros and cons.	2
15.	Thinking in business process management is a feature of design.	2
16.	Development of ideas. Choosing an idea.	2
17.	The essence of virtual and augmented reality technologies.	2
18.	Challenges and global market characteristics of AR / VR technology development.	2
19.	Buy-side and sell-side systems in e-commerce.	2
20.	Application and features of CRM technologies.	2
21.	A feature of crowdsourcing and crowdfunding technologies in the business model of modern companies.	2
22.	Features of creating an e-commerce model (B2B, B2C, B2G, C2C, etc.).	4
23.	The role of Uzbekistan in the UN e-Government Development Index 2030 and the World Bank's Doing Business Index until 2030.	2
24.	UN E-Participation Index.	4
25.	Development of e-learning market and learning platforms	2
26.	Directions for the development of e-learning in Uzbekistan.	2
27.	Effective use of digital technologies in industry. Industry-4.0 concept.	2
28.	Development and future of digital marketing.	2
29.	E-branding - the essence and main features.	2
30.	Development of the Smart City Concept in Uzbekistan".	2
31.	Digital security issues and ways to ensure it.	2

32.	Analysis of the state of e-business in developed countries.	2
33.	Advantages and disadvantages of providing electronic services in enterprises and organizations.	2
34.	International standard requirements for quality assurance of digital services (E-SQI).	4
	Total hours	<b>76</b>

### **Instructions for organizing a course project**

The course work on the subject is not planned in the curriculum.

### **The form and content of the organization of independent work**

There are various forms of independent learning, in which the student can, under the guidance of a teacher, acquire new knowledge, learning and skills in the field, to carry out creative activities.

The following forms can be used in the preparation of independent work of the student, taking into account the characteristics of a particular subject:

- Organize science chapters and topics according to textbooks or manuals;
- change the part of reports on handouts;
- work with automated training and control systems;
- work on sections or topics of special or scientific literature (monographs, articles);
- organization of new techniques, equipment, research processes and technologies;
- in-depth organization of scientific departments or topics related to the student's research work (IdOSDOTRSRW);
- active and problem-based learning activities (service months, discussions, seminars, colloquiums, etc.)
- distance learning.
- organize science topics using textbooks.

### **Outcomes of science teaching (emerging competencies)**

As a result of mastering the subject, the student:

- theoretical bases of functioning and development of modern market economy; the mechanism of distribution of scarce resources based on the supply and demand model; **have an idea and knowledge** of the main features of competitive and non-competitive markets and the rules of conduct of firms in this market;
- student market analysis and conclusions based on statistical data on supply and demand in the student market; **have the skills to** create demand and supply functions on the basis of statistical data and analyze and forecast the market situation on their basis;
- on the mechanism of functioning and development of the student market

economy; on the principles of distribution of scarce resources; on the basis of supply and demand; **have a clear qualification of** competitive and non-competitive markets.

### **Learning technologies and methods:**

- Learning technologies and methods:
- lectures;
- interactive case-stages;
- seminars (logical thinking, quick questions and answers);
- work in groups;
- making presentations;
- individual projects;
- projects to work and protect as a team.

### **Assessment System of Student Assimilation**

In accordance with the Decree of the President of the Republic of Uzbekistan No.PD-3775 of June 5, 2018 on additional measures to improve the quality of education in higher education institutions and ensure their active participation in the ongoing comprehensive reforms in the country, The purpose of monitoring and evaluation of students' knowledge is to achieve the training of competitive personnel through the management of the quality of education, to prevent the formation of leaders in the study of students, to identify and eliminate them.

The total study load for the course "**Digital Economy**" for the 2nd year and 3 semesters is 180 hours, including 34 hours of lectures, 38 hours of practical training, 108 hours of independent study.

Information on the types, forms, number and maximum assessment of controls for the assessment of students' knowledge in the subject "**Digital Economy**", as well as the qualifying assessments of Pre-final exams are announced to students in the first lesson on the subject is done.

The control of students' knowledge in the subject of "**Digital Economy**" is carried out through intermediate and final tests.

**Pre-final exam (PFE)** is conducted during the semester to assess the student's knowledge and practical skills after the completion of the relevant section of the working science program. Mid-term control is carried out once or twice during the semester in the form of tests or in writing, depending on the schedule of the educational process, depending on the schedule of hours approved by the department. Assessment of the student by the type of Pre-final exam **is taken into account his / her practical training and completion of independent study assignments.**

Pre-final exam and assessment of this type of control is carried out by the instructor who conducted the training.

**Final control (FC)** is held at the end of the semester to determine the level of theoretical knowledge and practical skills of the student in the subject. The final type of control and the assessment of the student's knowledge of this type of control is carried out by **a professor who has not conducted the training.**

*It is forbidden to participate in the final control of the professor who teaches the subject "**Digital Economy**"*

The conduct of **Pre-final and final control examinations** is regularly reviewed by the Department of Education Quality Control. In this case, in case of violation of the order of control, the results of the control may be revoked. In this case, the appropriate type of control is repeated.

Students must have passed the midterm exam before the final exam in **Digital Economics.**

### 1. Pre-final exams (PFE).

The distribution of grades for the preparation of midterm examinations from lectures is given in the table below.

Types of Pre-final exams	Form of examination	Execution mechanism	Students' knowledge is assessed as follows	Time	Comments
<b>1- PFE</b> <b>In preparation for the lecture on the workload</b>	Writing	There will be a written test based on 3 theoretical or practical questions	There will be a written test based on 3 theoretical or practical questions	schedule approved by the responsible faculty (outside of class)	Questions will be asked on topics 1-12 of the working program
<b>2 - PFE</b> <b>In preparation for a 17-hour lecture on the workload</b>	test	The questionnaire will be prepared and 30 test questions will be answered	Correctly answers 26 or more test questions - 5 (excellent) grade, Correctly answers 21 or more test questions - 4 (Good) grade, 17 and answers 3 or more test questions correctly is rated-3 (satisfactory), correct answers to 16 or less test questions is rated 2-unsatisfactory	Free time from class	Questions will be asked on topics 13-23 of the working program

### 2. Final control (FC).

Final control is carried out in the form of a test (written) in accordance with the schedule of final control, developed by the dean of the faculty and approved by the Vice-Rector for Academic Affairs. .

Types of Pre-final exams	Form of examination	Execution mechanism	Students' knowledge is assessed as follows	Time	Comments
<b>FC</b> According to the study load	test	The questionnaire will be prepared and 30 test questions will be answered	Correctly answers 26 or more test questions - 5 (excellent) grade, Correctly answers 21 or more test questions - 4 (Good) grade, 17 and answers 3 or more test questions correctly is rated-3 (satisfactory), correct answers to 16 or less test questions is rated 2-unsatisfactory	According to the schedule dean's office	After allocated classroom lessons were finished
<b>FC</b> According to the study load	Writing	There will be a written test based on 3 theoretical or practical questions	The procedure for assessing students' knowledge in writing is given in the appendix	According to the schedule dean's office	After allocated classroom lessons were finished

### I - Appendix

#### *Procedure for assessing students' knowledge in writing or in the form of tests:*

1. According to the results of **PFEs** , students' knowledge is assessed in writing as follows:

<b>Mark</b>	<b>Substantiation of the student's knowledge requirements</b>
5 (excellent)	the student is able to make independent conclusions and decisions, think creatively, make independent observations, apply the acquired knowledge in practice, understand, know, express, tell the essence of the science (topic) and have an idea about the science (topic) ;
4 (good)	the student is able to observe independently, apply the acquired knowledge in practice, understand, know, express, tell the essence of the science (topic) and have an idea about the science (topic);
3 (satisfactory)	the student is able to apply the acquired knowledge in practice, understand, know, express, tell the essence of the science (topic) and have an idea about the science (topic);
2 (unsatisfactory)	when it is found that the student has not mastered the science program, does not understand the essence of the science (topic) and has no idea about the science (topic).

2. Based on the test results, the scores from **PFEs** and **FC** are rounded to the nearest whole number before being added to the group account, and the results are evaluated as follows:

**A table of comparative comparisons of student performance assessment systems in higher education**

<b>Mark</b>	<b>Percent</b>	<b>Number of correct answers</b>
5 " excellent "	90-100%	27-30
4 " good "	70-89.9 %	21-26
3 " satisfactory "	60-69.9 %	17-20
2 " unsatisfactory "	0-59.9 %	16 and under

The final assessment grade for the student as a grade is served as a basis for the results of the final control work and is recorded in the appropriate account.

**Notes:**

1. A student who does not pass the pre-final exams I type, as well as a grade of "2" (unsatisfactory) in this type of control will not be included in the final type of control.
2. An academic debtor is a student who is not included or not included in the **FC** , as well as a student who received a grade of "2" (unsatisfactory) for this type of supervision. An academic debtor is given 1 month to retake the control types ( **PFEs** and **FC** ).
3. In case of unexcused absence of the student during the control, the academic group journal will be marked "0".
4. If a student is dissatisfied with the results of the subject assessment, he / she may appeal within 24 hours from the date of publication of the results of the assessment.

#### Basic literature:

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#### Additional literature:

1. Mirziyoev Sh.M. Together we will build a free and prosperous, democratic country of Uzbekistan. - T.: Uzbekistan, 2016. - 56 p.
  2. Mirziyoev Sh.M. Ensuring the rule of law and human interests is the guarantee of the country's development and people's well-being. - T.: Uzbekistan, 2017. - 48 p
  3. Mirziyoev Sh.M. We will build our great future together with our brave and noble people. - T.: Uzbekistan, 2017. - 488 p.
  4. of the President of the Republic of Uzbekistan dated February 7, 2017 No. PF-4947 "On the strategy of actions for the further development of the Republic of Uzbekistan ". [www.lex.uz](http://www.lex.uz).
  5. Jumaev T. Ecological economics: theory and practice. Monograph. - T., 2014.- 240 pages.
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- T. Jumayev, TIJurayev, A.A. Yadgarov, GTIsmailova . Study guide on " Ecology " . - Tashkent: Economy, 2018, 183 pages.

#### Information sources

1. [www.gov.uz](http://www.gov.uz) is the government portal of the Republic of Uzbekistan.
2. [www.lex.uz](http://www.lex.uz) - national database of information on legal documents of the Republic of Uzbekistan.
3. [www.mineconomy.uz](http://www.mineconomy.uz) (Ministry of Economy of the Republic of Uzbekistan)
4. [www.mehnat.uz](http://www.mehnat.uz) (Ministry of Labor and Social Protection of the Population of the Republic of Uzbekistan)
5. [www.mf.uz](http://www.mf.uz) (Ministry of Finance of the Republic of Uzbekistan)
6. [www.stat.uz](http://www.stat.uz) (State Statistics Committee of the Republic of Uzbekistan)

7. [www.ima.uz](http://www.ima.uz) (Intellectual Property Agency of the Republic of Uzbekistan)
8. **[www.academy.uz](http://www.academy.uz)** (**Academy of Sciences**)