



# **ASSESSMENT OF THE IT MARKET AND DIGITAL ENTREPRENEURSHIP ENVIRONMENT IN THE REPUBLIC OF UZBEKISTAN**

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# 1 GENERAL INFORMATION ABOUT UZBEKISTAN

## UZBEKISTAN (population figures)

 **36**  
million

## Capital: TASHKENT

 **2,9**  
million

## Economically active population, 2021

 **14,98**  
million

## Age of Population

 **55,6%**  
of the population is  
under the age of 29

## Average annual population growth

 **1,86**  
for the last 6 years

## Visa-free entry for citizens from

 **90**  
countries

Uzbekistan is the largest country in Central Asia in terms of population, and shares borders with Kazakhstan, Turkmenistan, Afghanistan and Tajikistan. The demography of Uzbekistan is characterized by a population growth rate of about 1.9% per year, and it is marked by a relatively young average age i.e., 55,6% of the country's population is under 29 years of age. Also, unlike other countries in Central Asia, Uzbekistan has a high population density. The economically active population in 2021 amounted to 14.98 million people.

Tashkent is the capital of Uzbekistan and the largest city in Central Asia with a population of 2.9 million. Tashkent is dynamically developing as a modern western city while also combining it with traditional hospitality, and preserving

national traditions and features.

The economy of Uzbekistan is growing. The GDP of Uzbekistan in 2022 amounted to US \$80 billion. Over the past 3 years, the average annual GDP growth rate was 9.5%, GDP per capita is also growing, and the average annual growth rate over the past 3 years was 7.4%. The dynamics of all key economic indicators (GDP, GDP per capita, economically active population, foreign trade volume) in 2020 were negatively affected by the SARS-CoV-2 pandemic, but economic growth resumed in 2021. In terms of the structure of GDP, agriculture occupies the largest share of the labor market, and of the industry as well. The average annual inflation rate for 2016-2021 amounted to 11.7%. The average monthly accrued wages in Uzbekistan in 2022 amounted to US \$558.

The geographical position allows

Uzbekistan to interact equally with the states of Europe, Africa, the Middle East and Asia. Historically, raw materials have been a key component of Uzbekistan's exports. The top three merchandise exports in 2021 are gold, food, and non-ferrous metals. The three main commodities imports are machinery and equipment, chemical products and their products, and foodstuffs. The export of services accounts for 15.5% of total exports, and 67.6% of exports of services are transport services.

In the World Bank Group's Doing Business 2020 ranking, Uzbekistan ranked 69<sup>th</sup> out of 190 economies. The state is taking measures to improve its position in this ranking, as well as to stimulate the development and conditions for doing business in promising, knowledge-intensive and

GDP, 2022

**\$ 80**  
billion

GDP per capita, 2022

**\$ 2,254**  
USD

Average annual GDP growth

**9,5%**  
for the last 3 years

Average annual growth of GDP per capita

**7,4%**  
over the last 3 years

Average monthly accrued salary, 2022

**\$ 558**  
USD

Growth in the average monthly salary

**9,44%**  
for 2018-2021

Average annual export growth

**6,6%**  
over the last 5 years

Share of services in exports

**20%**

Uzbekistan in the Doing Business ranking, 2020

**69**  
69 out of 190

innovative industries. As one of these measures, the IT Park of Uzbekistan was created in 2019 – it is a technology park unique in the country that offers resident companies doing business in information technology unprecedented benefits and state

support measures, including exemption from VAT, social tax, income tax, reduced tax on income from wages, etc. The creation of an IT Park made it possible to withdraw companies operating in the local market from the «shadow» sector of the

economy, as well as to bring large international IT companies into the country, who are interested in these conditions. More detailed information about the ICT industry and IT companies in Uzbekistan is presented in the following sections of the report.

Tashkent **2,9**

million people

February 2023

## Major cities

1 Namangan  
**293** thousand people



2023

2 Samarkand  
**573** thousand people



2023

3 Andijan  
**352** thousand people



2023

## ▲ APPROXIMATE FLIGHT TIME FROM TASHKENT TO OVERSEAS CITIES

New York

USA



**13** hours  
**10** minutes

Los Angeles

USA



**17** hours  
**35** minutes

**Amsterdam**

NETHERLANDS

 **7** hours  
**50** minutes**Berlin**

GERMANY

 **7** hours  
**5** minutes**Moscow**

RUSSIA

 **4** hours  
**10** minutes**Beijing**

CHINA

 **8** hours  
**45** minutes**London**

GREAT BRITAIN

 **7** hours  
**40** minutes**Dubai**UNITED ARAB  
EMIRATES **3** hours  
**40** minutes**New Delhi**

INDIA

 **3** hours**Seoul**

SOUTH KOREA

 **6** hours  
**30** minutes**Tokyo**

JAPAN

 **7** hours  
**35** minutes

## General information

The Republic of Uzbekistan is located in the central part of Central Asia and shares borders with Kazakhstan, Turkmenistan, Tajikistan, Kyrgyzstan, and Afghanistan. The feature of the geographical position of Uzbekistan is that the country is doubly landlocked, meaning it has borders exclusively with countries that also do not have access to the sea.

The capital of the country, Tashkent, is the largest city in Central Asia by population (2.9 million as of February 2023), as well as an economic and educational centre. Most of the IT companies in Uzbekistan operate in Tashkent. Tashkent is one of the

oldest cities in Central Asia (the 2200<sup>th</sup> anniversary of the city was celebrated in 2009).

Administratively, Uzbekistan is divided into 12 regions (viloyats), and also includes the Republic of Karakalpakstan. Other large cities of the country, in terms of population figures, are Namangan (293,000), Samarkand (573,000), and Andijan (352,000).

The official language of the country is Uzbek, but Russian is also used as a spoken language. The study of foreign languages, especially English, is gaining popularity in the country.

Uzbekistan is in the UTC+5 time zone.

The geographical position of Uzbekistan is such that it manifests a fairly long flying time to the world's largest economic and technological centres.

Uzbekistan has a developed air communication system. The country has six international airports located in main cities, including the largest one in Tashkent. The other five airports provide regional air traffic.

Uzbekistan is a member of many international organizations, including the UN, the SCO and the CIS, and has observer status in the EEU. Uzbekistan is also working to join the WTO.

## Visa regime

As of May 10, 2021, citizens of 90 countries have been granted a visa-free regime in the Republic of Uzbekistan. Visa-free entry is also granted to foreign citizens under the age of 16, accompanied by legal representatives and having a biometric travel document, for the duration of the accompanying person's visa (but not more than ninety days from the date of entry

into the country).

In addition, citizens of about 60 countries have the opportunity to apply for an online visa in a simplified manner, and for citizens of a number of countries transiting through the international airports of the Republic of Uzbekistan (if they have an air ticket to a third country), short-term visa-free entry

to the Republic of Uzbekistan is possible for a period not exceeding five days. This procedure applies to transit air passengers who wish to see the sights of Uzbekistan.

Complete list of countries is available on the official website of the Ministry of Foreign Affairs of the Republic of Uzbekistan.

## Demography

### Population

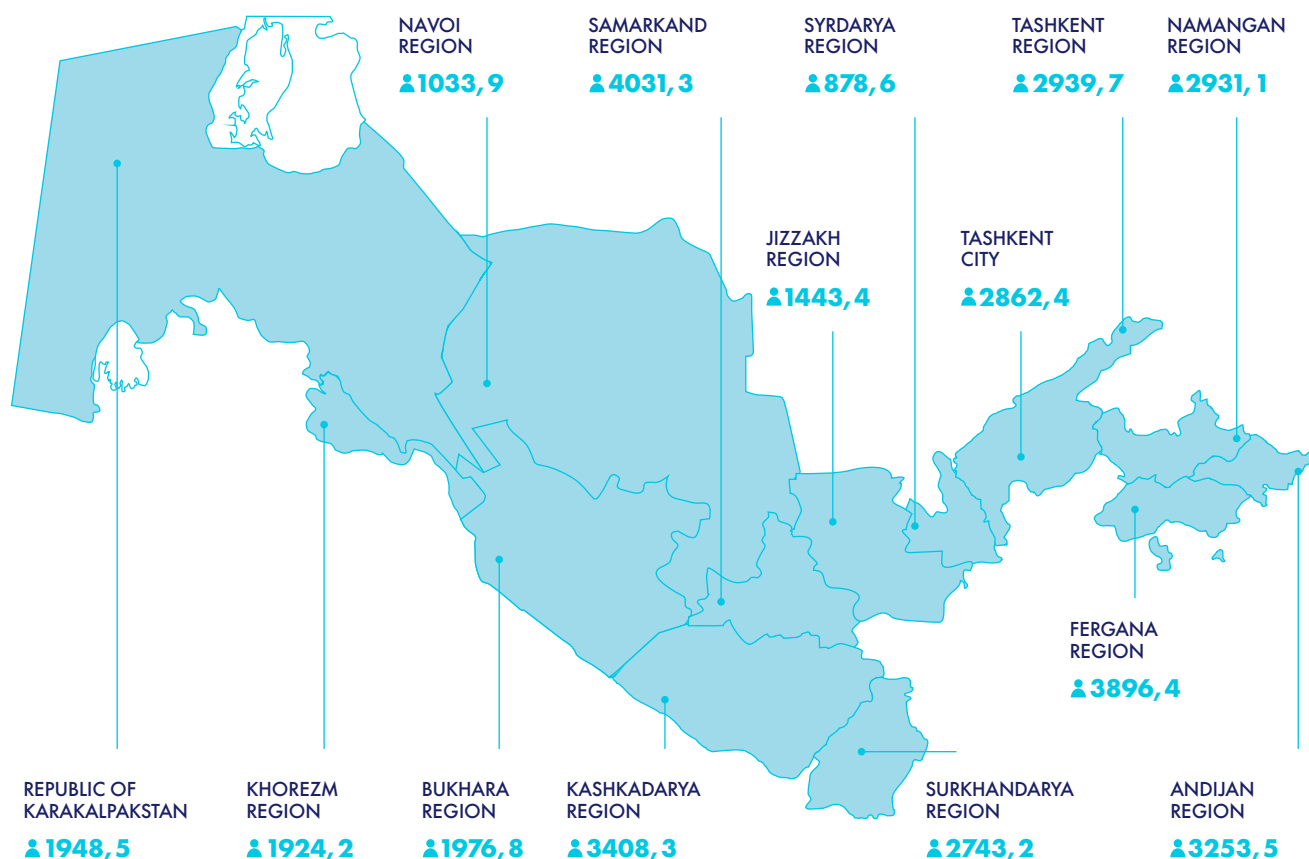
According to the latest available data (February 2023), the population of Uzbekistan is 36 million people, which significantly exceeds the corresponding population figures in other countries of Central Asia, and is associated with an increase in the birth rate over the past 10 years. The urban population is slightly more than the rural population

(50.8% to 49.2%, respectively). Since 2000, there has been a steady increase in the population of the country, and the urban, as well as rural population, is growing in approximately the same proportion. Over the past 6 years, the average annual population growth rate was 1.86%.

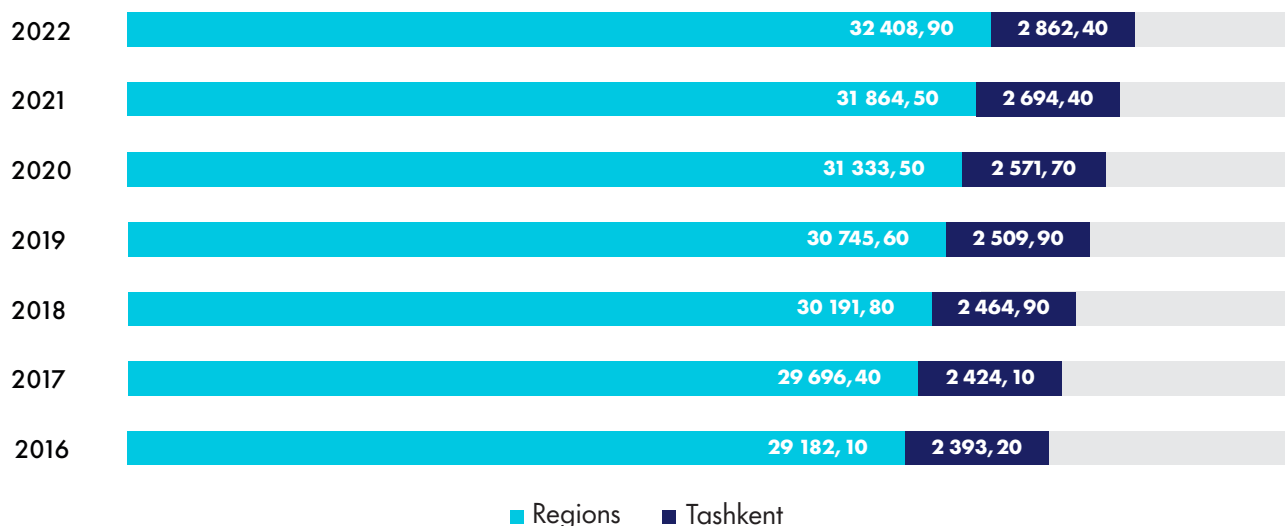
As of 2022, the permanent population of Uzbekistan is growing by 2% per year. It is growing at the same rate for all regions, except Tashkent region being an exception due to migration of internal population to Tashkent, thus pegging the Tashkent population growth rate in the last two years at 11%.



## Number of the permanent population by region in Uzbekistan (at the beginning of the year)



## The number of permanent population by region of Uzbekistan (at the beginning of the year)



■ Regions ■ Tashkent

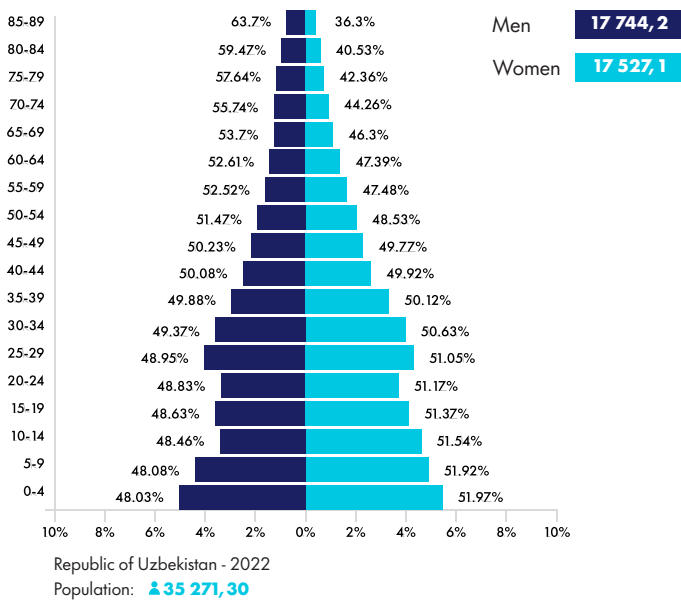
## Age and gender structure of the population

As of the beginning of 2022, the 0-39 age group is dominated by the male population, while the 40-85+ age group is dominated by the female population. The male-

to-female ratio is maximum 1.082 in the 5-9 age group and minimum 0.569 in the 85+ age group.

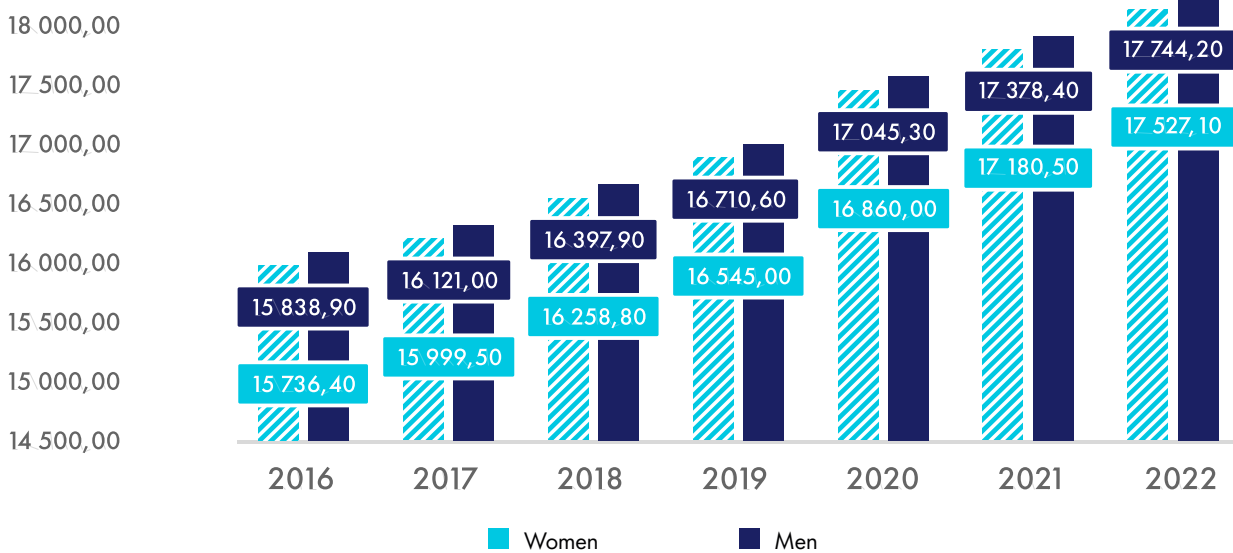
The average annual growth dynamics of the total female population for the period from 2016 to 2022 was 1.8%, and for the male population - 1.9%.

### The number of permanent population by regions of Uzbekistan (at the beginning of the year)

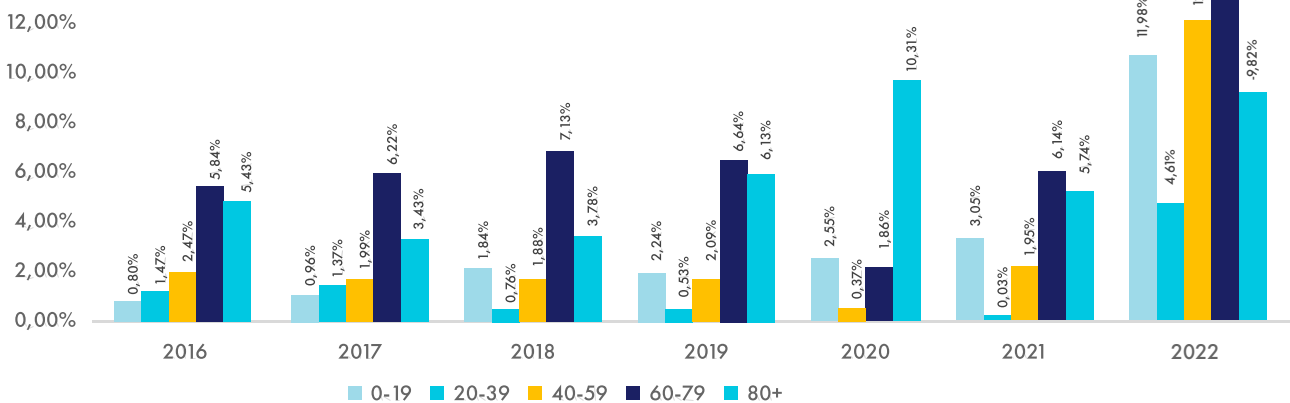


More than half of the country's population is under 29 (from 53.8% at the beginning of 2016 to 50.8% at the beginning of 2022). The overall population growth was 11.7%. In the enlarged age groups, the largest increase of 50.38% was observed in the age group of 60-79 years. Also, the increase above the general population growth was shown by the age groups 0-19 years old (11.98%) and 40-59 years old (12.89%). At the same time, despite the large growth in the age group 0-19 years old, the population of age 20 to 39 years old is practically not growing - from 2018 to 2021, the increase in this age group was less than 1% per year.

### Distribution of population by gender, at the beginning of the year



### Population growth by age groups

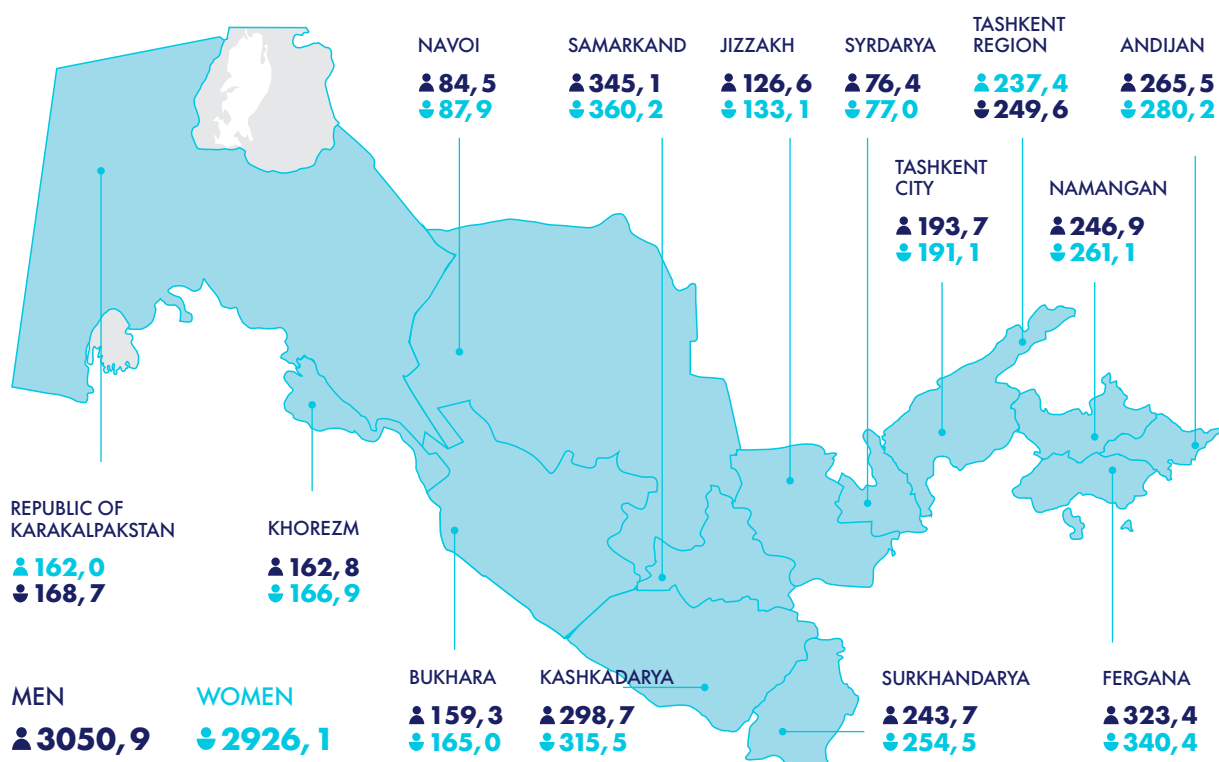


The main age group for the IT industry - 20-29 years old people is 5,977.06 thousand, and decreased by 5.8% at the beginning of 2021, compared to 2016, which is 17.3% of the total population of Uzbekistan. In Tashkent, in the age group of 20-29 years, in 2021, there is a

positive population growth compared to 2020, which is 2.5% (the increase in the female population of age 20 to 29 is 2.2% and the male population 2.8%). The above dynamics are explained primarily by the migration to Tashkent or other countries of the young population

for study or work. At the beginning of 2021, 384.80 thousand people between ages of 20-29 live in Tashkent, which is 14.3% of the total number of city residents. The majority of the population between the ages of 20-29 in the Kashkadarya, Samarkand and Fergana regions of Uzbekistan.

### Population ages 20-29 years by region, at the beginning of the year



## Human Resources

In 2021, the economically active population<sup>1</sup> amounted to 14,980.74 thousand people, which is 43.35% of the total population of Uzbekistan. The percentage of the economically active population of the total population in 2021 decreased by 1.06% compared to 2016, while the increase in the economically active population was 6.83%. The average annual growth rate of the economically active population for 2016-2021 is 1.33%.

The number of employed people in 2021 amounted to 13,538.88 thousand people. The share of employed people in the total population in 2021 decreased by

2.94% compared to 2016, the growth of the employed population amounted to 1.81%. The overall growth of the economically active and employed population is associated with a high proportion of the young population and an overall positive population growth trend. The share of employed in the total number of employees is declining due to the greater growth of the total population in the age groups 60+ and under 15 years old.

The number of unemployed registered with the labor authorities is growing. In 2021, their number reached 98.69

thousand people.

The largest number of employees are involved in type of activity such as «Agriculture, forestry and fisheries», in 2021 their number was 3,502.12 thousand people, which is 25.87% of the total number of employed people. At the same time, the number of people employed in this type of activity decreased from 2016 to 2021 by 3.96%. The largest increase in the number of employed people was observed from 2016 to 2021 by type of economic activity such as «Health care and social services» and amounted to 9.55%. At the end of 2021, the share of the

economically active population employed in ICT (included in the category «Other activities») amounted to 0.34% of the total number of the employed population, and the average annual growth rate of this category for 2016-2021 was 9.08% per year. Thus,

employment in ICT is growing faster than in any other economic activity at the macro level.

In 2021, the share of the employed population in the non-state sector amounted to 80.7% of the total employed population, respectively, 19.3% of the

employed work in the public sector. For the period from 2016 to 2021, the average annual growth of the employed population in the public sector was 2.28%, while the share of the employed population in the non-state sector decreased by an average of -0.07% per year.

### Economically active population and employment

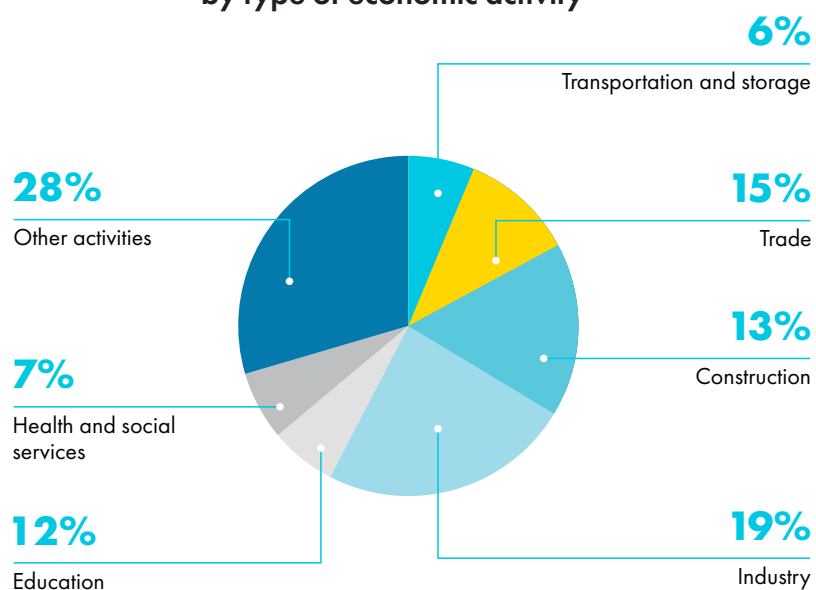
Identifier	2016	2017	2018	2019	2020	2021
<b>Economically active population</b>	14 022,40	14 357,30	14 641,70	14 876,40	14 797,40	14 980,74
<b>Employed population</b>	13 298,40	13 520,30	13 273,10	13 541,10	13 236,40	13 538,88
<b>including: by type of economic activity</b>						
Agriculture, forestry and fisheries	3 646,70	3 671,30	3 537,20	3 544,60	3 499,20	3 502,12
Industry	1 802,40	1 826,80	1 802,90	1 821,50	1 809,50	1 883,33
Building	1 263,60	1 290,00	1 205,50	1 324,60	1 305,60	1 286,75
Trade	1 452,40	1 480,20	1 401,80	1 436,40	1 405,40	1 537,18
Transportation and storage	638,20	654,90	645,20	646,10	610,50	648,48
Education	1 105,60	1 106,60	1 111,70	1 134,40	1 158,20	1 178,35
Health and social services	601,60	602,60	604,00	616,70	669,50	659,05
Other activities	2 787,90	2 887,90	2 964,80	3 016,80	2 778,50	2 843,62
including in the field of ICT	32.50	35.80	37.10	42.70	44.70	50.20
<b>Distribution of the Employed Population by Forms of Ownership</b>						
Government sector	2330.40	2,338.30	2427.00	2463.30	2483.10	2608.97
Non-state sector	10,968.00	11 182.00	10,846.10	11,077.80	10,753.30	10,929.91
Unemployed registered with labor authorities	5.00	14.40	32.30	57.87	37.11	98.69

Economically active population (labor force) – people employed in any type of labor activity that generates income, as well as the unemployed population who need employment. The economically active population covers both the civilian economically active population and persons serving in the Armed Forces.

The economically inactive population is the able-bodied population that is not part of the labor force:

- pupils and students, students and cadets of educational institutions (including academic lyceums, vocational colleges, technical schools, universities, courses, as well as day postgraduate and doctoral studies), who are trained with a break from the job;

### Economically active population and employment by type of economic activity



- people receiving old-age pensions on preferential terms, disabled people of groups I and II, as well as disabled people of group III who do not want to work;

- people engaged in housekeeping, caring for children, or sick relatives, who do not have the desire or opportunity to start work that generates income, if this work is offered to them;

- voluntarily unemployed persons who do not wish to work, as well

as persons who wish to work, but do not take any action to obtain employment or provide themselves with an independent income.

The working-age population in 2021 amounted to 19,345 thousand people, 54.8% of whom are urban residents. For the period from 2016 to 2021, the number of able-bodied urban population increased by 7.8%. However, about 45% of the working population lives in rural areas. The average growth rate of the able-bodied population for urban

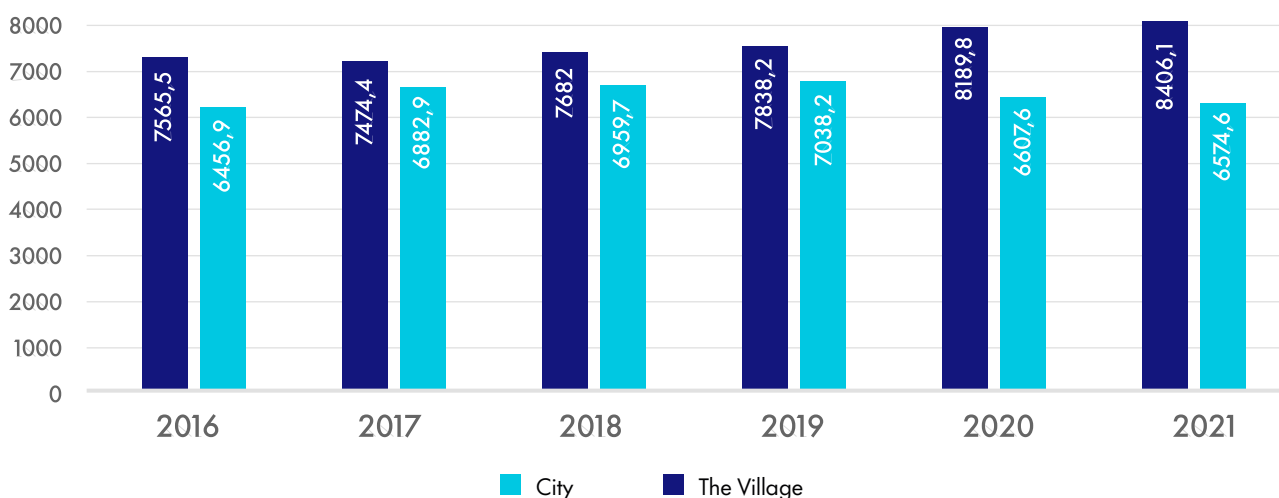
areas for 2016-2021 is 1.5%.

During the period from 2016 to 2021, the increase in the economically active population living in cities amounted to 11.1%, and for those living in settlements - 1.82%. The average annual growth rate for urban areas among the economically active population was 2.1%, and for the village - 0.36%. Thus, the urban population plays an increasingly important role in the economy, and the need for labor resources in cities is growing much faster.

### Distribution of labor resources for the economically active and inactive population

Identifier	2016	2017	2018	2019	2020	2021
<b>Total workforce</b>	18 488,90	18 666,30	18 829,60	18 949,00	19 158,20	19 345,00
town	9 843,30	9 949,50	10 032,50	10 052,70	10 471,70	10 609,20
as a percentage of the total	53,20	53,30	53,28	53,05	54,66	54,80
village	8 645,60	8 716,80	8 797,10	8 896,30	8 686,50	8 735,80
as a percentage of the total	46,80	46,70	46,72	46,95	45,34	45,20
<b>economically active population</b>	14 022,40	14 357,30	14 641,70	14 876,40	14 797,40	14 980,70
town	7 565,50	7 474,40	7 682,00	7 838,20	8 189,80	8 406,10
as a percentage of the total	54,00	52,10	52,47	52,69	55,35	56,10
village	6 456,90	6 882,90	6 959,70	7 038,20	6 607,60	6 574,60
as a percentage of the total	46,00	47,90	47,53	47,31	44,65	43,90
<b>economically inactive population</b>	4 466,50	4 309,00	4 187,90	4 072,60	4 360,80	4 364,20
town	2 277,80	471,10	2 350,50	2 214,50	2 281,90	2 203,00
as a percentage of the total	51,00	57,40	56,13	54,38	52,33	50,50
village	2 188,70	1 833,90	1 837,40	1 858,10	2 078,90	2 161,20
as a percentage of the total	49,00	42,60	43,87	45,62	47,67	49,50

### Distribution of labor resources of the economically active population



## GDP by economic activity type

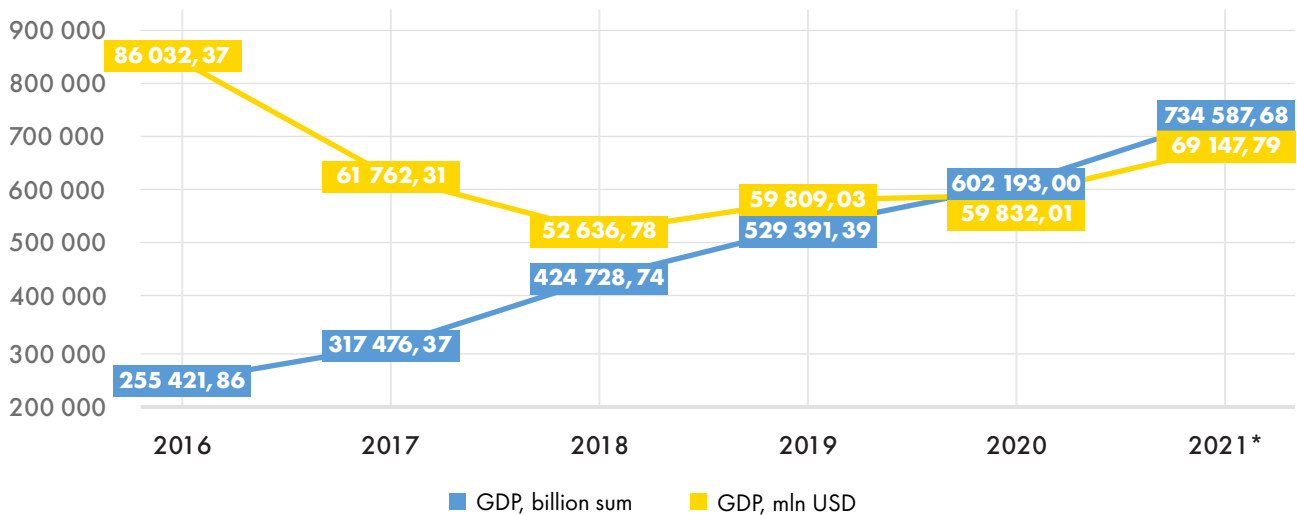
As of 2021, the country's GDP was \$69.1 billion. For the period from 2016 to 2021 the indicator changed unevenly, the largest increase was recorded in 2018 - 33.78%, and the smallest - 13.75%, in 2020. The average annual GDP growth rate in the national currency was 23.53%.

The dynamics of GDP in US dollars are significantly different. As a result of the devaluation of the national currency on September 5, 2017, the exchange

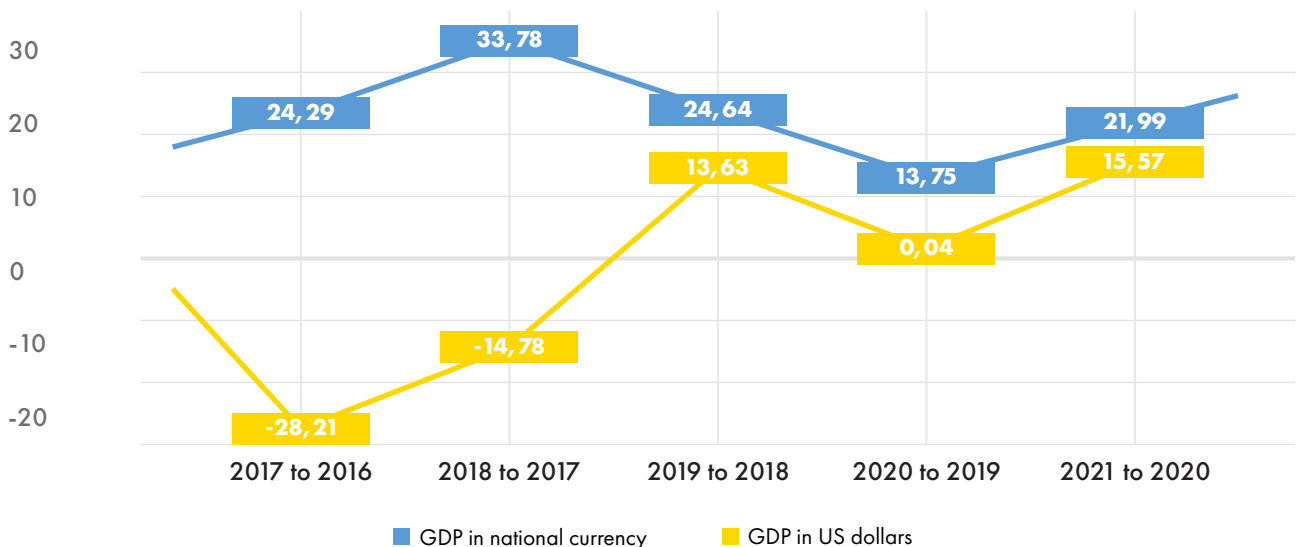
rate of the national currency against the US dollar changed from 4210.35 sum per US dollar to 8100 sum per US dollar. Taking this into account, it is reasonable to consider the dynamics of the main economic indicators in US dollars after 2017, since the transfer at the exchange rate before the devaluation may not objectively reflect the real comparable amounts in US dollars. As a result, GDP in US dollars in 2017, calculated at the average annual US dollar

exchange rate, decreased by 28.21% compared to 2016. The positive dynamics of GDP in US dollars recovered in 2019, the over several GDP growth rate for 2018-2021 amounted to 9.52%, and in 2021, GDP amounted to 69,147.79 million US dollars. The decrease in GDP growth dynamics in 2020 compared to the previous period is associated with the SARS-CoV-2 pandemic. GDP growth in 2021 amounted to 15.57%, which indicates a positive trend in economic recovery.

### The volume of the gross domestic product of the Republic of Uzbekistan (in current prices)

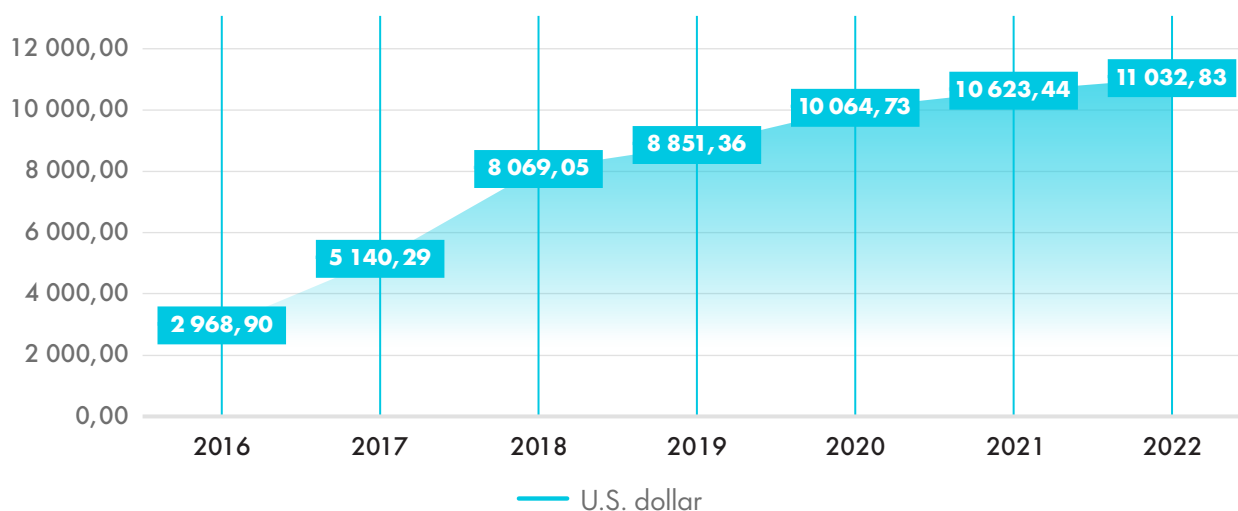


### Nominal GDP growth annually, %



Further in the report, for the convenience of users, all economic indicators from sum are converted into US dollars at the average annual exchange rate against the US dollar in the period from 2016 to 2021 and the average exchange rate for the first half of the year for 2022.

### The average annual exchange rate of the Uzbek sum against the US dollar, set by the Central Bank of the Republic of Uzbekistan



\*On September 5, 2017, the exchange rate of the national currency against the US dollar changed from 4210.35 sum per US dollar to 8100 sum per US dollar.

In the structure of GDP in 2021, industry occupies the largest share - 27.8%. The share of the Information and Communications category was 1.7% of the GVA or 1.59% of the GDP.

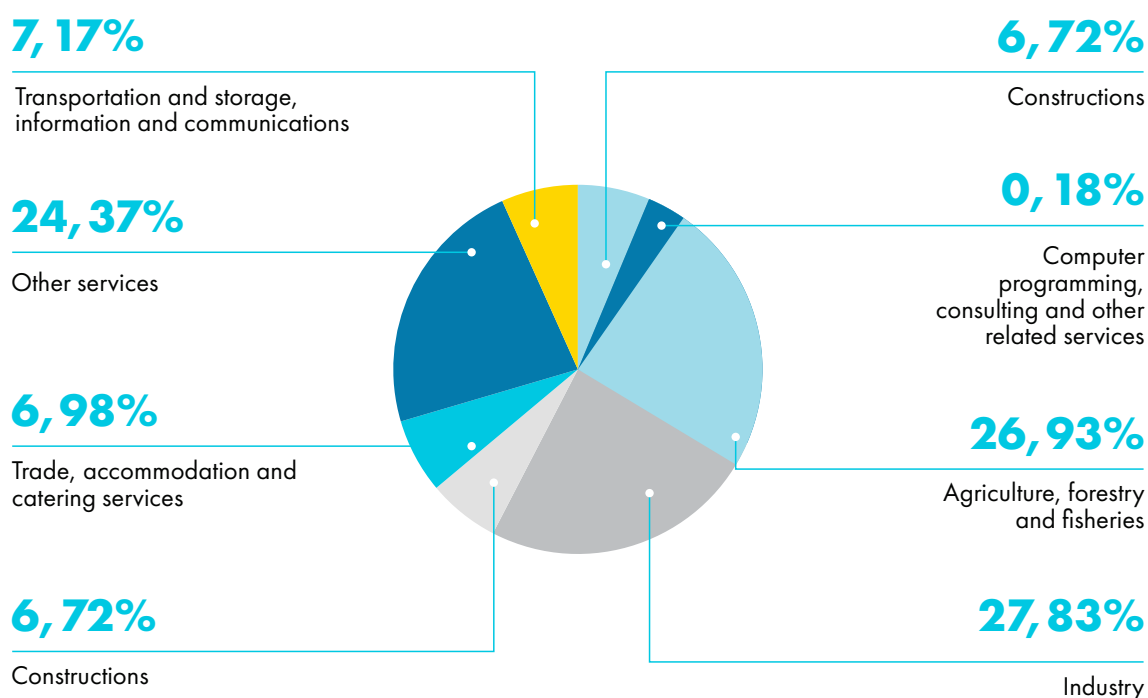
Compared to 2020, in 2021, according to preliminary data, the largest increase in GDP was shown by the sphere «Housing and Catering Services» (an increase of 31%), in general, the sphere «Trade, Accommodation and Catering Services» increased by 20.7%.

### The gross domestic product of the Republic of Uzbekistan by type of economic activity, for 2020-2021 (for 2021 preliminary data), USD million

Identifier	Volume, in million US dollars		Structure, in %	
	2020	2021	2020	2021
Total for the economy	59 832,01	69 147,79	100,00	100,00
including:	55 424,39	64 143,39	92,63	92,76
Gross value added - total	4 407,62	5 004,40	7,37	7,24
Net taxes on products				
Gross value added - total	55 424,39	64 143,39	100,00	100,00
agriculture, forestry and fisheries	15 030,66	17 274,86	27,12	26,93
industry	15 220,27	17 847,96	27,46	27,83
mining and quarrying	2 247,31	2 717,47	4,05	4,24
manufacturing industry	11 749,01	13 812,29	21,20	21,53
electricity, gas, steam and air conditioning	1 114,83	1 189,12	2,01	1,85
water supply; sewerage, waste collection and disposal	109,12	129,08	0,20	0,20
building	3 730,70	4 311,41	6,73	6,72
trade, accommodation and food services	3 710,11	4 478,54	6,69	6,98
wholesale and retail trade; repair of motor vehicles and motorcycles	3 423,78	4 103,56	6,18	6,40
accommodation and food services	286,33	374,98	0,52	0,58
transportation and storage, information and communications	3 887,42	4 598,45	7,01	7,17

transportation and storage	2 956,59	3 500,90	5,33	5,46
information and communications	930,83	1 097,54	1,68	1,71
Publishing	49,88	-	0,09	-
Production of motion pictures, television programs, phonograms and musical recordings	6,37	-	0,01	-
Programming activities and broadcasting	63,45	-	0,11	-
Connection	658,94	-	1,19	-
Computer programming, consulting and other related services	101,01	-	0,18	-
Information service activities	51,18	-	0,09	-
Other service industries	13 845,22	15 632,17	24,98	24,37

### Gross Domestic Product of the Republic of Uzbekistan by Economic Activity, 2020-2021 (for 2021 preliminary data), USD million



### The gross domestic product of the Republic of Uzbekistan by type of economic activity, for 2020-2021 (for 2021 preliminary data), UZS billion

Identifier	Volume, in billion sum	
	2020	2021 *
Total for the economy	602 193,00	734 587,68
including:		
Gross value added - total	557 831,49	681 423,72
Net taxes on products	44 361,50	53 163,96
Gross value added - total	557 831,49	681 423,72
agriculture, forestry and fisheries	151 279,55	183 518,49
industry	153 187,93	189 606,80
mining and quarrying	22 618,59	28 868,88
manufacturing industry	118 250,65	146 734,06
electricity, gas, steam and air conditioning	11 220,44	12 632,56
water supply; sewerage, waste collection and disposal	1 098,24	1 371,31



building	37 548,50	45 802,07
trade, accommodation and food services	37 341,30	47 577,55
wholesale and retail trade; repair of motor vehicles and motorcycles	34 459,45	43 593,94
accommodation and food services	2 881,86	3 983,61
transportation and storage, information and communications	39 125,85	48 851,34
transportation and storage	29 757,32	37 191,66
information and communications	9 368,53	11 659,68
Publishing	502,08	-
Production of motion pictures, television programs, phonograms and musical recordings	64,09	-
Programming activities and broadcasting	638,59	-
Connection	6 632,07	-
Computer programming, consulting and other related services	1 016,64	-
Information service activities	515,07	-
other service industries	139 348,36	166 067,47

## ▲ GDP per capita

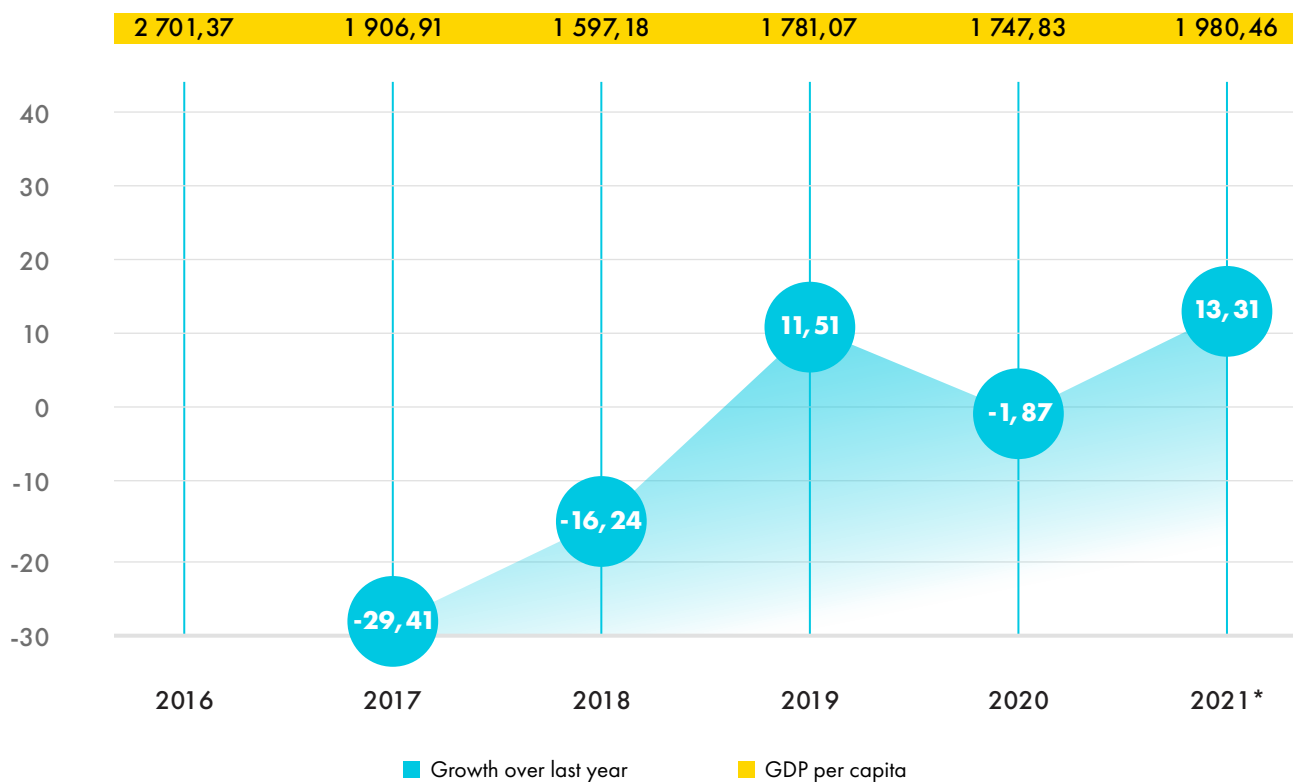
As of 2021, GDP per capita was \$1,980.46. The average annual decline in GDP per capita in US dollars in 2017-2018, associated

with the devaluation of the national currency, amounted to 23.1% in 2016-2018. Nevertheless, already in 2019,

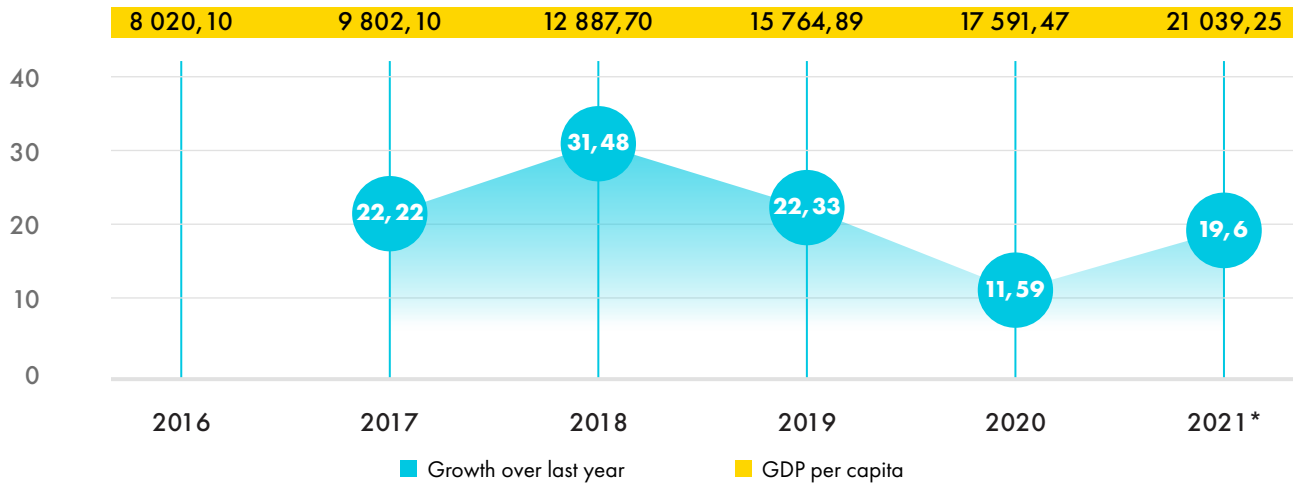
there is an increase in GDP per capita compared to 2018 at 11.51%. The average annual GDP growth per capita for the period 2018-2021 amounted to 7.4%.

### The volume of gross domestic product per capita of the Republic of Uzbekistan (for 2021 - preliminary data)

#### GDP per capita in USD



## GDP per capita in thousand UZS

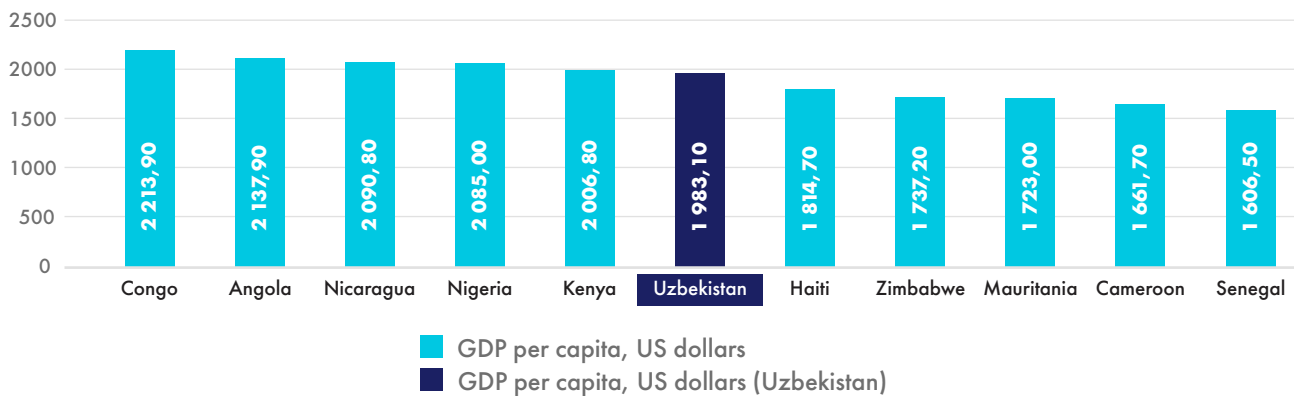


According to the World Bank, in 2021 Uzbekistan in terms of GDP per capita is in the ranking between Kenya and Haiti, and

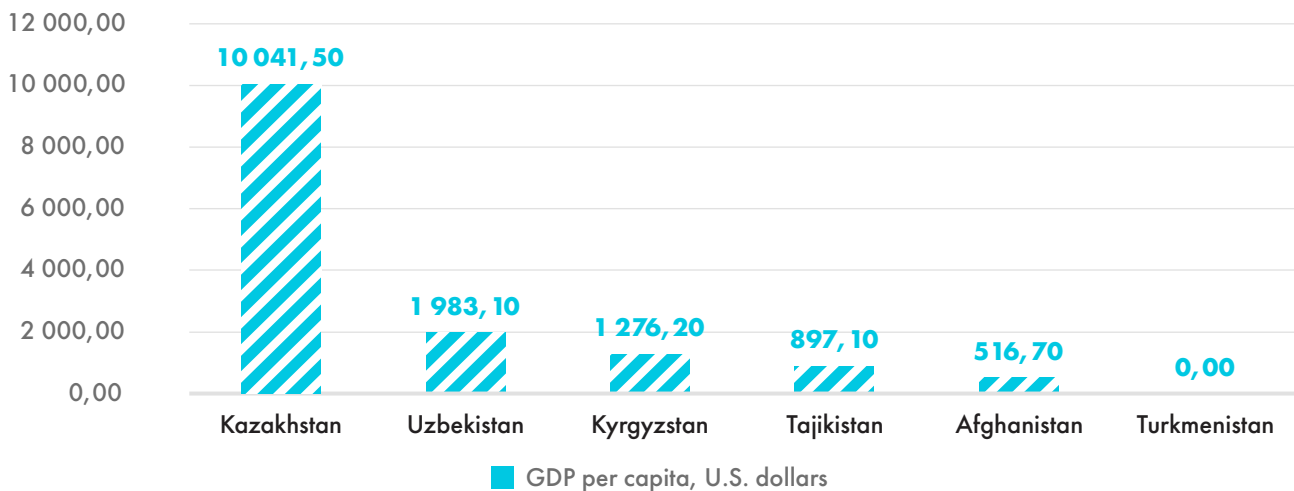
around that of Nicaragua, Nigeria, Zimbabwe and Mauritania. Regarding neighbouring countries,

Uzbekistan is in 2nd place, second only to Kazakhstan, and surpassing Kyrgyzstan, Tajikistan and Afghanistan (data for Turkmenistan is not available).

## The countries closest to Uzbekistan in terms of «Gross Domestic Product per capita» for 2021, USD



## Gross Domestic Product per capita for neighboring countries for 2021, USD



## ▲ Average annual exchange rates, inflation, consumer price index

The average annual exchange rate of the US dollar in 2021 amounted to 10,623.44 sum for one US dollar, and the euro - 12,533.89 sum for one euro.

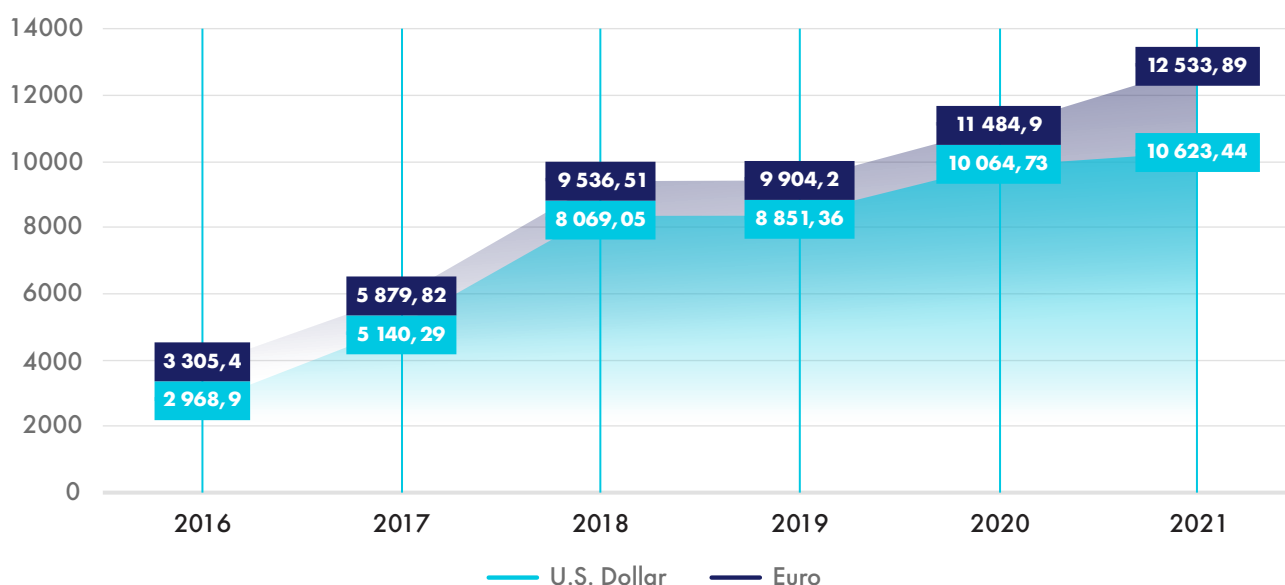
The largest increase in foreign exchange rates occurred in 2017

and 2018. During this period, there was a 73.1% increase in the average annual exchange rate of the US dollar from 2016 to 2017, and another 57% from 2017 to 2018, for the euro this figure was 77.9% and 62.2%, respectively. These fluctuations were due to the

devaluation of the national currency carried out by the National Bank of the country.

For the period from 2016 to 2021, the average annual growth rate of the average annual exchange rate of the US dollar was 29.04% and 30.55% for the euro.

**The average annual exchange rate of the Uzbek sum compared to foreign currencies, established by the Central Bank of the Republic of Uzbekistan**

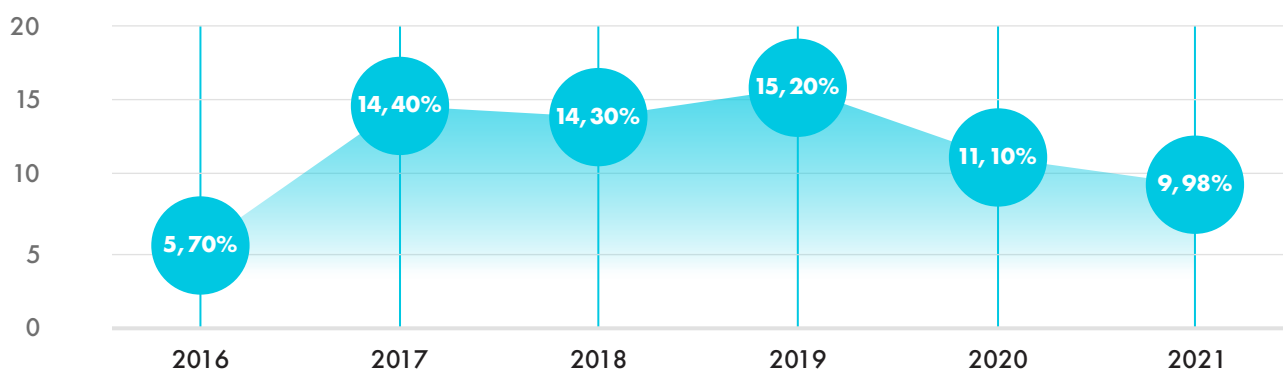


For the period from 2016 to 2021 inflation showed undulating dynamics. Inflation peaked in

2019 at 15.2%. In 2020 and 2021, a decrease is observed. As of 2021, the inflation rate is

9.98%. The average annual inflation rate for 2016-2021 amounted to 11.7%.

**Inflation rate by consumer price index, %**



## Foreign trade of the Republic of Uzbekistan

In 2021, the volume of exports in Uzbekistan amounted to 16,662.8 million US dollars. The average annual export growth rate for the period from 2016 to 2021 amounted to 6.62%. From 2016 to 2019 exports have been on the rise, but in 2020 exports are down 13.5% year-on-year due to challenges in international and local logistics, difficulty in obtaining orders, and rising trade barriers caused by the pandemic. In 2021, compared to 2020, the increase in exports amounted to 9.99%, until reaching the level of 2019.

In 2021, exports of goods

amounted to 14,081.1 million US dollars, or 84.5%, and exports of services, 2,581.7 million US dollars, or 15.5%.

For the period from 2016 to 2019, the export of goods showed growth, and in 2019 it reached a maximum point and amounted to 14,023.8 million US dollars. In 2020, there was a decrease compared to 2019, equal to 6.6%, and an increase in the volume of exports of goods in 2021 compared to 2020 amounted to 7.5%. Exports of services show a wave-like change with a maximum in 2019, which amounted to 3,434.8 million US

dollars.

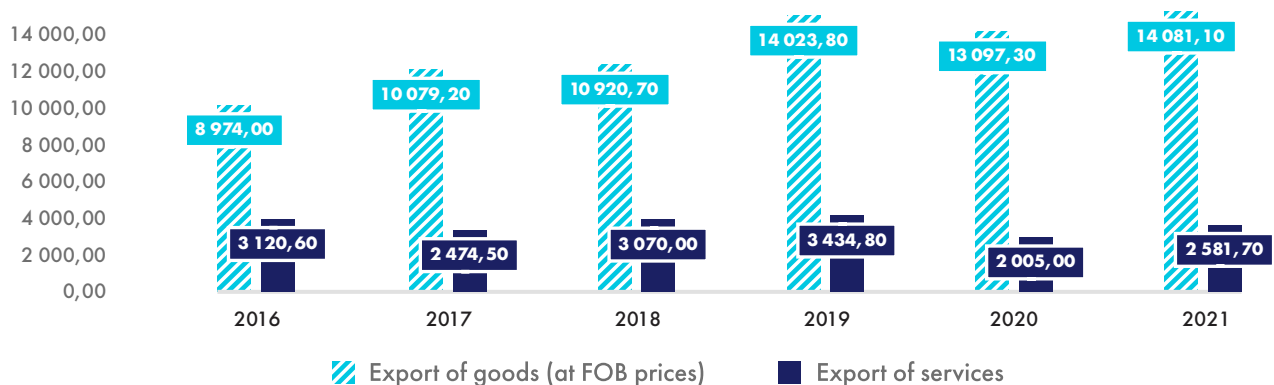
The largest share in the export of goods is «Gold», its share in 2021 amounted to 29.2% - this is the most significant export category for the entire period under review. In the export of services, the largest share in the entire period under review is «Transport» (67.8% in 2021).

In the export of goods for the period from 2016 to 2021, the Non-Ferrous Metals and Machinery and Equipment categories showed the largest growth, equal to 165.14% and 218.44%, respectively.

Foreign trade, export of goods and services, USD million

Identifier	2016	2017	2018	2019	2020	2021
Export of goods and services, commodity	12 094,6	12 553,7	13 990,7	17 458,7	15 102,3	16 662,8
Export of goods (at FOB prices)	8 974,0	10 079,2	10 920,7	14 023,8	13 097,3	14 081,1
Gold	2 807,60	3 260,00	2 909,50	4 918,30	5 804,40	4 109,80
Food	694,5	875,9	1 097,80	1 529,90	1 443,80	1 471,80
Non-ferrous metals	553,3	761,9	851,5	951,3	924,4	1 467,00
Chemical products and products from them	841,1	883,7	905,3	878,1	873,2	1 225,30
Energy and oil products	1 713,80	1 607,60	2 666,80	2 528,90	659	914,8
cars and equipment	220,7	354,8	212,8	427,1	442	702,5
Black metals	155,3	152,8	320,3	302,7	317,5	184,6
Cotton	637,3	477,1	222,1	281,6	146,9	136,6
Other	1 350,4	1 705,3	1 734,5	2 206,0	2 486,1	3 868,7
Export of services	3 120,6	2 474,5	3 070,0	3 434,8	2 005,0	2 581,7
Transport	1 511,40	1 600,70	1 687,90	1 765,70	1 426,10	1 744,10
Tourism	1 252,50	546,9	1 041,10	1 313,00	255,8	422,1
Building	63,8	37,1	36,7	41,9	42,3	14,6
Other services	292,9	289,8	304,3	314,2	280,8	400,9

Foreign trade, exports of goods and services, USD million



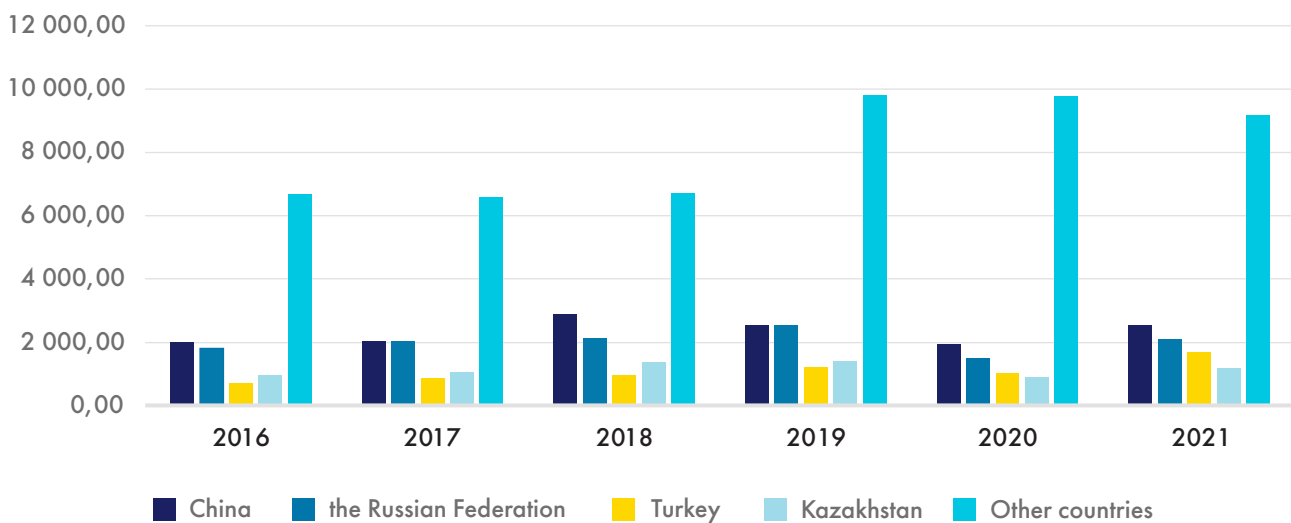
In 2021, the maximum volume of exports fell on China and Russia - 15.18% and 12.53%, respectively.

The highest average annual growth rate for the period from 2016 to 2020 showed the export of goods and services to Canada, Kyrgyzstan and Ukraine - 197.07%, 45.5% and 35.35% respectively.

### Export of goods and services of the Republic of Uzbekistan by country, USD million

Regions	2016	2017	2018	2019	2020	2021
<b>Total</b>	<b>12 094,65</b>	<b>12 553,74</b>	<b>13 990,75</b>	<b>17 458,69</b>	<b>15 102,28</b>	<b>16 662,80</b>
China	1 999,27	2 025,48	2 875,39	2 528,75	1 937,05	2 529,09
the Russian Federation	1 794,90	2 019,16	2 117,29	2 531,87	1 485,76	2 088,24
Turkey	686,21	877,81	944,76	1 217,63	1 018,99	1 692,38
Kazakhstan	945,02	1 057,58	1 352,17	1 392,96	908,42	1 178,38
Kyrgyzstan	121,45	178,26	269,74	669,64	760,46	792,04
Afghanistan	517,26	615,61	602,50	616,96	776,74	667,48
Tajikistan	164,85	186,07	237,49	327,56	405,12	501,90
Ukraine	51,19	106,05	100,12	119,43	123,85	232,55
Canada	0,86	2,11	4,92	6,49	142,32	199,79
Turkmenistan	79,50	69,90	59,54	144,33	126,07	191,89
Other countries	5 734,12	5 415,71	5 426,83	7 903,06	7 417,49	6 589,07

### Export of goods and services of the Republic of Uzbekistan by country, USD million



In 2021, the volume of imports into Uzbekistan amounted to 25,507.7 million US dollars. Between 2016 and 2019 there was an increase in imports, but in 2020 there was a decrease in imports compared to the previous year, which amounted to 12.92%. In 2021, compared to 2020, the increase in exports amounted to 20.58%. The volume of imports of goods amounted to 23,740.4 million US dollars or 93.07%, and imports of services - 1,767.3 million US

dollars, or 6.93%.

For the period from 2016 to 2019 imports of goods demonstrated growth, and in 2019 reached a maximum point and amounted to 21,866.5 million US dollars. In 2020, there was a decrease compared to 2019, equal to 8.84%, and an increase in the volume of imports of goods in 2021 compared to 2020 amounted to 19.1%. The import of services also showed growth and

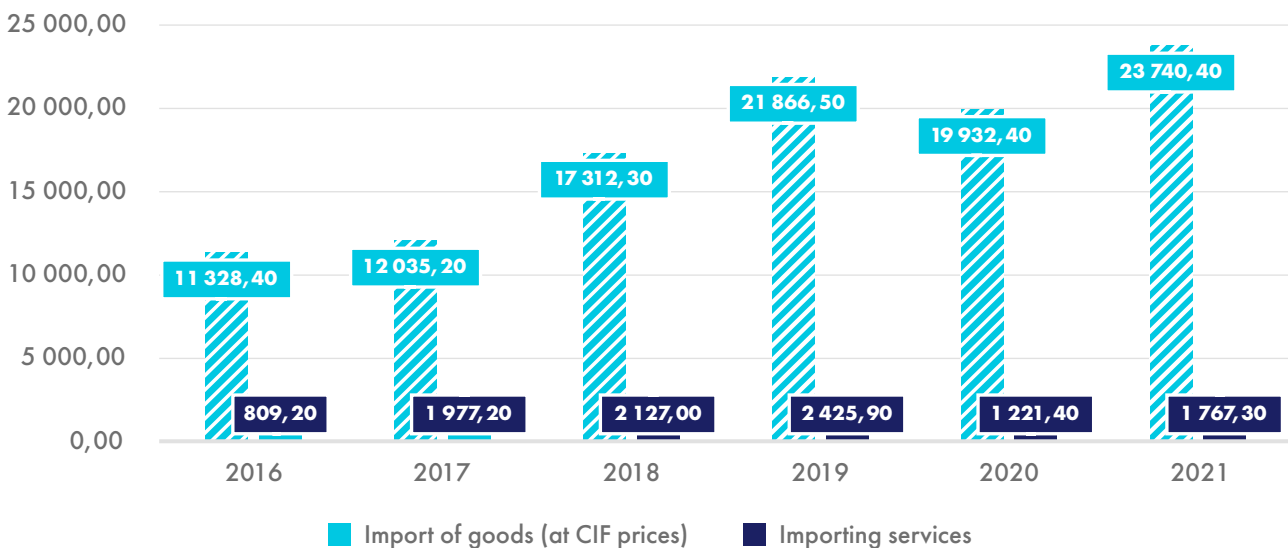
reached its maximum in 2019, amounting to 2,425.9 million US dollars, but in 2020 there was a decrease, which amounted to 49.65%.

In 2021, the largest share of imports of goods fell into the category «Machinery and equipment» and was 39.82%. For the import of services, the category «Tourism» accounted for the largest share with a value of 50.18%.

## Foreign trade, import of goods and services, USD million

Identifier	2016	2017	2018	2019	2020	2021
Import of goods and services	12 137,6	14 012,4	19 439,3	24 292,3	21 153,8	25 507,7
Import of goods (at CIF prices)	11 328,4	12 035,2	17 312,3	21 866,5	19 932,4	23 740,4
Cars and equipment	5 018,00	4 997,00	8 366,10	10 633,40	8 904,20	9 454,00
Chemical products and products from them	2 119,60	2 187,00	2 527,60	3 201,70	3 436,70	4 259,60
Food	1 439,70	1 273,90	1 581,60	1 885,00	2 159,60	2 925,80
Black metals	813,8	1 135,70	1 579,80	1 843,40	1 473,60	1 986,30
Energy and oil products	589	742,1	879,5	940,6	1 106,90	1 556,80
Non-ferrous metals	106,7	139,3	193,5	273,5	277,7	328,4
Other	1 241,6	1 560,2	2 184,1	3 088,9	2 573,7	3 229,4
Services import	809,2	1 977,2	2 127,0	2 425,9	1 221,4	1 767,3
Tourism	345,4	1 358,90	1 506,90	1 651,50	442,5	886,9
Transport	255,8	303	383,7	415,1	165,6	211,1
Building	3,8	102,6	14,7	27,4	107,2	135,6
other services	204,2	212,6	221,7	331,9	506,1	533,7

## Foreign trade, imports of goods and services, USD million



In 2021, the largest share of imports of goods and services was 21.41% and accounted for goods and services from the Russian Federation, while the share of

imports of goods and services from China was 19.3%.

The highest average annual growth rate in the volume of

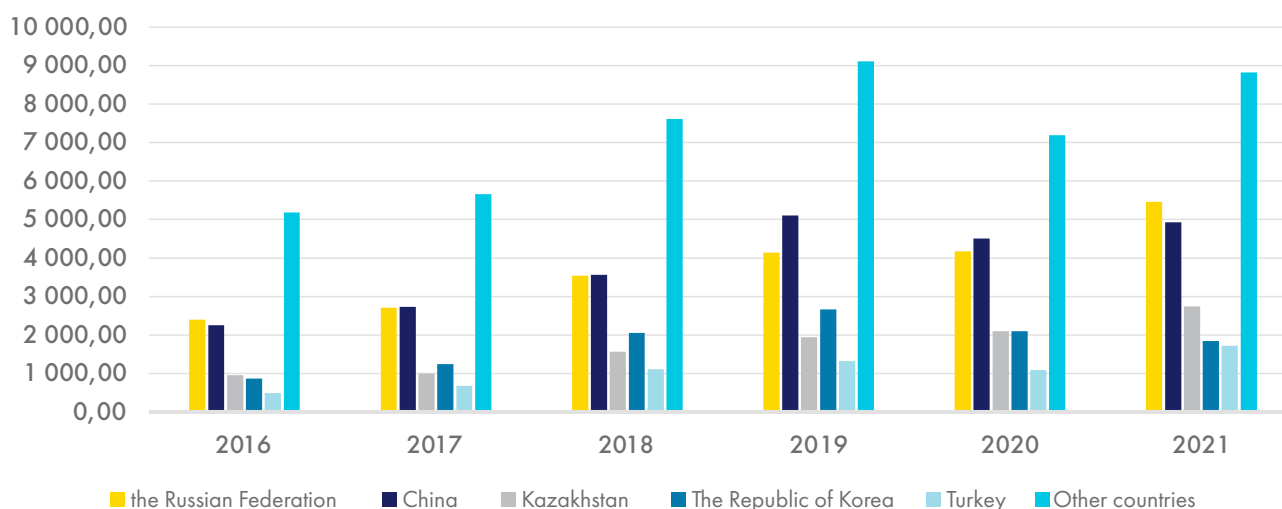
imports of goods and services for the period from 2016 to 2021 was recorded for Turkmenistan and Turkey, and amounted to 40.53% and 28.75% respectively.

## Import of goods and services into the Republic of Uzbekistan from different countries, USD million

Regions	2016	2017	2018	2019	2020	2021
Total:	12 137,57	14 012,37	19 439,26	24 292,32	21 153,77	25 507,72
the Russian Federation	2 397,83	2 709,50	3 538,60	4 137,69	4 173,78	5 462,24
China	2 254,30	2 728,74	3 558,14	5 108,63	4 501,22	4 923,42
Kazakhstan	953,89	998,16	1 567,44	1 942,01	2 097,35	2 742,18

The Republic of Korea	868,66	1 244,29	2 050,47	2 664,82	2 099,37	1 841,06
Turkey	485,50	674,66	1 112,78	1 326,41	1 087,27	1 717,58
Turkmenistan	129,55	108,01	243,26	410,07	412,12	710,14
Germany	492,23	587,50	725,05	927,53	759,37	693,51
Ukraine	202,57	183,96	327,15	264,40	315,59	472,62
India	318,20	291,14	261,41	330,57	423,03	460,57
Lithuania	278,05	259,54	278,64	444,98	472,82	438,71
Other countries	3 756,80	4 226,70	5 776,12	6 734,87	4 811,52	6 045,68

### Imports of goods and services of the Republic of Uzbekistan by country, USD million



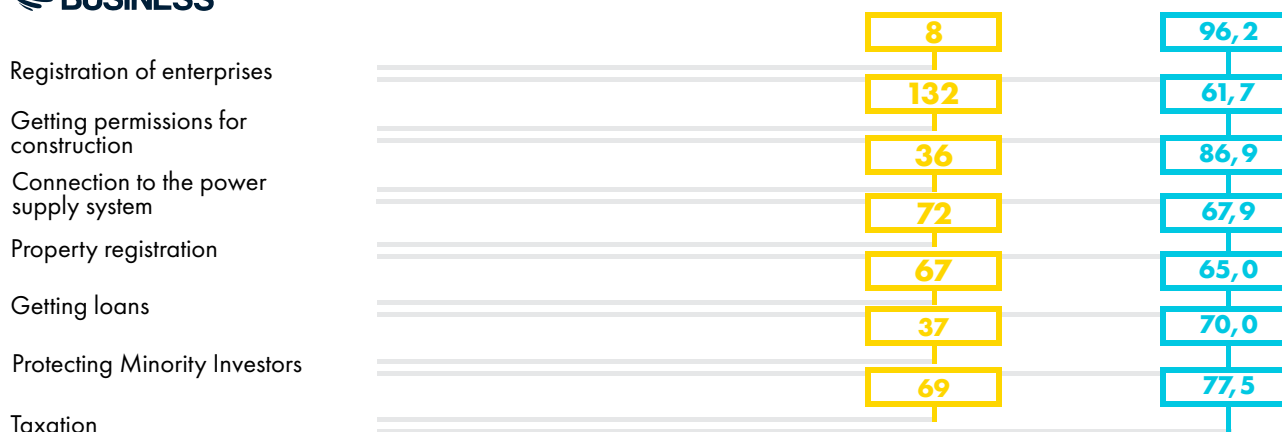
## Doing Business in Uzbekistan

In the Doing Business 2020 ranking, which was compiled by the World Bank Group (since 2021, the ranking is not calculated), Uzbekistan took 69th

place out of 190 analyzed economies. The country received the best marks in the categories «Registration of enterprises» (8th place) and «Enforcement of

contracts» (22nd place). The lowest scores were obtained in the categories «Obtaining a Building Permit» (132nd place) and «International Trade» (152nd place).

### Place of Uzbekistan in the Doing Business rating categories





More detailed information about the general conditions for Doing Business in Uzbekistan can be found in the publication «Doing Business in Uzbekistan. An introductory guide to tax and legal issues» which contains practical guidance on legal and tax issues that a foreign investor may face when starting a business

in Uzbekistan.

To understand the cost of Doing Business in Uzbekistan, you can read the publicly available publication «The cost of Doing Business in Uzbekistan 2021» which provides an overview of the main costs of a business, including the cost of registering a business,

labor, taxes and tax preferences, licensing, foreign trade procedures, customs duties and preferences, business services, logistics, and other types of business information. References to these publications are provided in the sources at the bottom of the page.



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## 2 GENERAL INFORMATION ABOUT THE ICT INDUSTRY

Share of the Information and Communication sector in GDP, 2021

 **1,6%**  
2021

Number of companies in the Information and Communications sector, 2021

 **9 287**  
2021

Share of ICT in GDP, 2021

 **1,4%**  
2021

Average annual GDP growth in ICT

 **3,3%**  
for 2018-2021

Number of ICT employees, 2021

 **50,2**  
thousand people

Average annual increase in the number of ICT employees

 **9,7%**  
for 2018-2021

The volume of information and communication services, 2021

 **1,7**  
billion US dollars

Volume of computer services, 2021

 **256,2**  
million US dollars

Share of computer services in industry revenue

 **15,3%**

Average annual increase in the volume of computer services

 **80,2%**  
for 2019-2021

Export of ICT services, 2021

 **180,7**  
million US dollars

Share of computer services in ICT export

 **9%**  
in Q1, 2022

Share of export in the volume of computer services

 **4,5%**  
in 2021

Net imports of computer services, 2021

 **-4,39**  
million US dollars

## General information

The total volume of information and communication services provided in 2021 amounted to 1.7 billion US dollars. 9,287 companies are operating in this type of economic activity, or 2.24% of the total number of legal entities operating in Uzbekistan, these companies form 1.6% of the GDP. In the total volume of information and communication services in 2021, telecommunications services account for 67.3%, computer services: 15.3%, and information services: 7.7%. Information and communication services include publishing services, motion picture and television production services, sound recording and music publishing services, programming and broadcasting services, telecommunications services, computer programming services and information services. The last three services make up the ICT industry.

The share of the ICT industry in GDP is 1.42%. The number of employees working in the ICT industry in 2021 amounted to 50.2 thousand people. The ICT industry is growing, with an average annual increase in the number of employees of 9.7% during 2018-2021, and GDP of 3.3% in the same period. The industry of Uzbekistan works mainly for the domestic market and exports in 2021 amounted to 12.2% of the total volume of services in 2021. Over the past 5 years, the average annual growth rate of exports of ICT services was 4.15%, while import growth was 21.1%.

Computer Services (IT Services) are the foundation of the IT sector and include the key activities of IT companies such as the development of software, IT services and IT products. Computer services account for 1% of total services provided in 2021. At the same time, the volume of

computer services has been growing since 2019 at an average annual growth rate of 80.2%. So far, the role of computer services in the economy is insignificant, but in the future, it can make up a significant share of the country's GDP and export indicators. The development of computer services is the most priority direction for the development of the ICT industry and contains the greatest export potential. The level of export of computer services is an indicative indicator of the current level of demand and competitiveness of IT companies from Uzbekistan in the world market and has significant growth potential.

The increase in the number of employees and the growth in the volume of computer services provided are associated with the creation of an IT Park for IT companies and companies in the field of business process outsourcing in 2019. The IT Park of Uzbekistan is a unique technology park for the country, offering resident companies Doing Business in the field of information technology, unprecedented benefits, and government support measures, including exemption from VAT, social tax, income tax, reduced tax on income from wages boards, etc. The establishment of an IT Park made it possible to withdraw companies operating in the local market from the «shadow» sector of the economy. Also, let them bring large international IT companies to the country that were interested in these conditions. For example, EPAM Systems (NYSE: EPAM), an international company, has become the largest employer in the computer services market.

So far, the export potential of computer services in Uzbekistan has not been fully realized. The export share in computer services from 2016 to 2021 was a maximum of 8.9% and decreased

to 4.5% in 2021, most of the computer services are consumed by the domestic market. In the analyzed period from 2019 to 2021, the balance of foreign trade in computer services in Uzbekistan remains negative. Thus, the benefits for export growth provided by the IT Park for resident companies are not fully realized. When working on the domestic market, the use of the provided tax incentives increases the efficiency and profitability of the business in a single sector of the economy but does not provide clear advantages for export-oriented companies that compete for labor resources in the local market.

The development of the IT sector is supported by the education system. In 35 state universities and their branches, there are areas of study related to IT. There are 11 branches of foreign universities in the country, which provide training in specialities related to IT. About 30,000 students study at state universities in specialities.

Currently, the potential of the IT sector has not yet been fully disclosed. Favourable conditions have been created in Uzbekistan for the functioning of companies thanks to the activities of the IT Park. The IT education system is actively developing, taking into account the needs of IT companies and using favourable demographics. All this has led to an influx of foreign IT companies, which will allow the IT sector of Uzbekistan to maintain significant growth rates in the coming years. At the same time, many characteristic features of a mature IT industry, such as product companies, serial IT entrepreneurs, and venture financing, are still at the stage of their emergence, which in the future will open up additional opportunities and points of growth.

## ▲ Economic indicators of «Information and Communications» activity type

In 2021, the GDP of Uzbekistan amounted to 69,147.79 million US dollars. The ICT industry in macroeconomic statistics falls into the structure of GDP in the type of economic activity «Information and Communications». In 2021, the share of «Information and Communications» was 1.59% of the GDP. After the fall caused by the devaluation of the national currency, GVA for this type of economic activity decreased until 2019, the positive dynamics were

restored in 2020. In 2017, the exchange rate of the national currency against the US dollar changed from 3239.62 sum per US dollar to 8120 sum per US dollar. In this regard, the comparison of indicators before 2018, which are calculated at the old US dollar rate, with indicators calculated at the market rate, may not be correct. For example, in 2021, the level of 2017 has not yet been numerically reached (1,097.54 million US dollars

against 1,099.09 million US dollars). At the same time, in terms of its dynamics, «Information and Communications» in the period 2019-2021 overtake the dynamics of GDP growth, which was negatively affected by the SARS-CoV-2 pandemic. GDP growth in 2020 was less than 1%, while for the type of activity «Information and Communications» the increase was 11.5%. In 2021, GDP growth amounted to 15.57% compared to 17.91% growth in this type of activity.

### Gross domestic product of the Republic of Uzbekistan, USD million (for 2020 - 2021 preliminary data)

Types of economic activities	2017	2018	2019	2020	2021
<b>GDP</b>	<b>61 762,31</b>	<b>52 636,78</b>	<b>59 809,03</b>	<b>59 832,01</b>	<b>69 147,79</b>
<b>Gross value added</b>	<b>54 993,82</b>	<b>46 988,56</b>	<b>54 695,4</b>	<b>55 424,39</b>	<b>64 143,39</b>
Agriculture, forestry and fisheries	17 700,13	14 086,01	14 721,68	15 030,66	17 274,86
Mining and quarrying	2 029,79	2 485,67	3 540,45	2 247,31	2 717,47
Manufacturing industry	8 532,95	8 547,70	10 704,54	11 749,01	13 812,29
Electricity, gas, steam and air conditioning	928,50	727,46	1 023,00	1 114,83	1 189,12
Water supply; sewerage, waste collection and disposal	97,67	112,18	108,54	109,12	129,08
Building	2 962,59	2 739,00	3 456,58	3 730,70	4 311,41
Wholesale and retail trade; repair of motor vehicles and motorcycles	3 805,35	3 003,26	3 311,04	3 423,78	4 103,56
Accommodation and food services	385,19	311,61	360,91	286,33	374,98
Transportation and storage	3 823,89	2 926,15	3 303,77	2 956,59	3 500,90
<b>Information and communications</b>	<b>1 099,09</b>	<b>868,09</b>	<b>834,61</b>	<b>930,83</b>	<b>1 097,54</b>
Financial and insurance activities	1 795,68	1 553,09	2 106,88	2 942,31	2 879,96
Operations with real estate	4 266,15	3 337,30	3 459,08	3 414,56	3 624,75
Professional, scientific and technical activities	437,53	445,08	598,93	664,24	758,78
Activities for the management and provision of support services	751,78	648,44	726,80	693,77	844,70
Public administration and defence; compulsory social security	1 764,29	1 867,55	2 268,79	2 307,06	2 916,78
Education	3 315,27	2 609,67	3 367,96	3 150,66	3 834,49
Health and Social Service Delivery	1 227,24	1 016,78	1 422,19	1 698,72	1 843,12
Arts, entertainment and recreation	138,38	134,99	181,56	175,95	234,78
Provision of other types of services	711,14	556,82	645,15	532,95	701,96
Indirectly measured financial intermediation services (-)	-778,80	-988,32	-1 447,08	-1 735,01	-2 007,14
<b>Net taxes on products</b>	<b>6 768,48</b>	<b>5 648,23</b>	<b>5 113,64</b>	<b>4 407,62</b>	<b>5 004,40</b>

**The gross domestic product of the Republic of Uzbekistan (in current prices),  
US trillion (for 2020 - 2021 preliminary data)**

Types of economic activities	2017	2018	2019	2020	2021
<b>GDP</b>	<b>317 476,37</b>	<b>424 728,74</b>	<b>529 391,39</b>	<b>602 193,00</b>	<b>734 587,68</b>
<b>Gross value added</b>	<b>282 684,37</b>	<b>379 152,95</b>	<b>484 128,71</b>	<b>557 831,49</b>	<b>681 423,72</b>
Agriculture, forestry and fisheries	90 983,86	113 660,73	130 306,93	151 279,55	183 518,49
Mining and quarrying	10 433,71	20 056,98	31 337,77	22 618,59	28 868,88
Manufacturing industry	43 861,86	68 971,77	94 749,71	118 250,65	146 734,06
Electricity, gas, steam and air conditioning	4 772,78	5 869,89	9 054,95	11 220,44	12 632,54
Water supply; sewerage, waste collection and disposal	502,04	905,21	960,70	1 098,24	1 371,31
Building	15 228,58	22 101,15	30 595,44	37 548,50	45 802,07
Wholesale and retail trade; repair of motor vehicles and motorcycles	19 560,62	24 233,48	29 307,23	34 459,45	43 593,94
Accommodation and food services	1 980,00	2 514,43	3 194,52	2 881,86	3 983,61
Transportation and storage	19 655,93	23 611,27	29 243,00	29 757,32	37 191,64
<b>Information and communications</b>	<b>5 649,63</b>	<b>7 004,72</b>	<b>7 387,40</b>	<b>9 368,53</b>	<b>11 659,68</b>
Financial and insurance activities	9 230,30	12 531,93	18 648,74	29 613,53	30 595,11
Operations with real estate	21 929,28	26 928,83	30 617,54	34 366,67	38 507,28
Professional, scientific and technical activities	2 249,04	3 591,40	5 301,35	6 685,36	8 060,84
Activities for the management and provision of support services	3 864,37	5 232,28	6 433,14	6 982,60	8 973,60
Public administration and defence; compulsory social security	9 068,97	15 069,36	20 081,86	23 219,96	30 986,27
Education	17 041,48	21 057,57	29 811,07	31 710,50	40 735,50
Health and Social Service Delivery	6 308,37	8 204,47	12 588,32	17 097,20	19 580,25
Arts, entertainment and recreation	711,31	1 089,25	1 607,19	1 770,89	2 494,18
Provision of other types of services	3 655,46	4 493,02	5 710,46	5 364,03	7 457,20
Indirectly measured financial intermediation services (-)	-4 003,24	-7 974,77	-12 808,62	-17 462,37	-21 322,77
<b>Net taxes on products</b>	<b>34 792,00</b>	<b>45 575,80</b>	<b>45 262,67</b>	<b>44 361,50</b>	<b>53 163,96</b>

<sup>1</sup>Gross domestic product is a summary general indicator of the development of the economy, which is the final result of production activities in a certain period. GDP = gross value added + net taxes on products that are not allocated to activities.

At the beginning of 2021, the number of legal entities operating in the Information and Communication sector was 9,287 or 2.24% of the total number of operating legal entities. The growth rate of the number of legal entities operating in the field of

«Information and Communication» amounted to 21.16% compared to 2020. In the period from 2018 to 2021, the number of legal entities operating in the field of «Information and Communication» increased with an average annual growth rate of 14.37%.

**Number of business entities - legal entities, by type of economic activity  
(excluding farms and dekhkan farms), at the beginning of the year**

Indicator	Registered				Operating			
	2018	2019	2020	2021	2018	2019	2020	2021
<b>Total</b>	<b>244 930</b>	<b>278 556</b>	<b>356 477</b>	<b>440 202</b>	<b>231 989</b>	<b>265 016</b>	<b>337 096</b>	<b>414 186</b>
Agriculture, forestry and fisheries	22 241	25 621	31 287	44 198	20 633	24 084	28 965	40 895
Industry	51 260	59 198	74 188	88 651	49 078	56 753	70 519	83 467
Building	25 516	30 458	38 080	43 13	24 105	29 097	36 176	40 917
Trade	67 374	75 073	106 853	140 162	63 187	70 884	101 063	132 175
Transport and storage	12 480	13 818	16 055	18 171	11 963	13 294	15 321	17 263

Accommodation and meals	18 130	20 971	27 345	32 411	17 052	19 732	25 559	029
<b>Information and communication</b>	<b>6 561</b>	<b>7 171</b>	<b>8 206</b>	<b>9 946</b>	<b>6 208</b>	<b>6 776</b>	<b>7 665</b>	<b>9 287</b>
Health and social services	4 577	5 538	6 600	7 904	4 478	5 424	6 446	7 677
Other types	36 791	40 708	47 863	55 624	35 285	38 972	45 382	52 476

## ▲ Economic indicators of the Information Economy and E-Commerce Sector

For the purposes of analysis, in the structure of the GDP (GVA) of Uzbekistan, the Information Economy and E-Commerce Sector are also allocated separately. In 2020, the GVA of the Information Economy and E-Commerce sector was 1,105.04 million US dollars, of which the information and communication

technology (ICT) sector was 84.51%. The average annual growth rate during 2018-2020 The information economy and e-commerce sectors amounted to 6.01%, and the ICT sector - 3.32%. In 2021, the GVA of the Information Economy and E-Commerce Sector increased to \$1,669.77 million. The volume of

gross value added in the ICT sector increased by 23.97% compared to 2020, while its share in the gross value added of the Information Economy and E-Commerce Sector decreased to 69.3% due to a significant increase in the share of the e-commerce sector, which increased from 59.81 to 369.80 million US dollars (424%).

### Information about the volume of gross value added in the information economy and e-commerce sector, USD million

Indicators	2016	2017	2018	2019	2020	2021
Information Economy and e-commerce sector	1 673,24	1 240,75	983,26	983,06	1 105,04	1 669,77
Information and communication technologies sector (ICT)	1 541,07	1 137,87	874,82	848,28	933,89	1 157,70
ICT production	42,84	46,36	38,08	32,05	54,77	73,15
ICT trade	76,80	54,78	29,79	33,78	26,01	35,90
ICT services	1 421,43	1 036,73	806,95	782,45	853,11	1048,65
Content and Media Sector	132,17	100,91	95,15	104,88	111,34	142,26
Electronic commerce	0,00	1,97	13,29	29,90	59,81	369,80

### Information on the volume of gross value added in the information economy and e-commerce sector, UZS billion

Indicators	2016	2017	2018	2019	2020	2021
Information Economy and e-commerce sector	4 967,70	6 377,83	7 934,01	8 701,38	11 121,90	17 738,72
Information and communication technologies sector (ICT)	4 575,30	5 849,00	7 059,00	7 508,43	9 399,33	12 298,79
ICT production	127,20	238,30	307,30	283,69	551,24	777,15
ICT trade	228,00	281,60	240,40	299,01	261,75	381,36
ICT services	4 220,10	5 329,10	6 511,30	6 925,73	8 586,33	11140,29
Content and Media Sector	392,40	518,69	767,74	928,29	1 120,58	1511,33
Electronic commerce		10,15	107,27	264,66	601,99	3928,60

Although in 2019 the share of the Information Economy and E-commerce sector in GDP decreased from 2.09% to 1.8% compared to 2018, in 2020 this share in GDP increased and amounted to 1.99%, showing an

increase compared to 2019 equal to 10.56%.

The share of the information and communication technology (ICT) sector in the GVA in 2019 compared to 2018 decreased and

amounted to 1.55%, and in 2020 this share increased to 1.68%, showing an increase compared to 2019, equal to 8.39%. The positive dynamics continued in 2021: the share of value added in the ICT sector increased to 1.8%.

### Share of value added in the field of the information economy and e-commerce in GDP, % of GVA

Indicators	2016	2017	2018	2019	2020	2021
Information economy and e-commerce sector	2,13	2,26	2,09	1,80	1,99	2,6
Information and communication technologies (ICT) sector	1,96	2,07	1,86	1,55	1,68	1,8
ICT production	0,05	0,08	0,08	0,06	0,10	0,1
ICT trade	0,10	0,10	0,06	0,06	0,05	0,1
ICT services	1,81	1,89	1,72	1,43	1,54	1,6
Content and Media Sector	0,17	0,18	0,20	0,19	0,20	0,2
Electronic commerce		0,00	0,03	0,05	0,11	0,6

## Economic indicators of ICT services

The volume of services rendered in Uzbekistan in all sectors of the economy in 2021 amounted to 26,748.9 million US dollars, an increase was 22.39% compared to 2020. The volume of information and communication services provided in 2021 amounted to USD 1,671.3 million, its share of the total volume of services provided was 6.2%, an

increase compared to 2020 was 21.4%. The largest share in the structure, which is 25.5%, belongs to trade services. In the structure of services, the share of information and communication services in the period under review reached the highest value in 2017 (6.9%), and the lowest value in 2019 (5.6%). In the period from 2016 to 2019, the volume of services rendered of

the «Information and Communication» type decreased, but in 2020 it increased by 11.8% compared to 2019. The growth dynamics of information and communication services for the period 2018-2021 are lower than the growth dynamics of the total volume of services (30.5% for the period versus 43.0% for the period, respectively).

### The volume of services rendered by main types of economic activities, USD million

Indicators	2016	2017	2018	2019	2020	2021
Services - total	32 688,80	23 113,70	18 699,80	21 883,40	21 856,40	26 748,90
information and communication services	2 124,30	1 594,60	1 280,50	1 230,50	1 376,30	1 671,30
Financial services	3 334,00	2 922,80	2 639,30	3 845,40	4 548,90	5 622,80
transport services	10 312,80	7 045,70	5 42,707	6 154,30	5 331,80	6 329,30
including: motor transport services	6 472,70	3 936,10	2 700,00	2 884,00	2 829,10	3 412,20
accommodation and food services	1 023,50	710	579,2	670,4	539,7	788,4
trade services	9 218,30	6 226,70	4 925,40	5 507,40	5 720,20	6 822,90
real estate-related services	1 146,90	783,3	613,4	672,3	597,8	760,7
educational services	1 099,10	856,4	671,3	809,5	848,4	1 131,60
healthcare services	477	331	275,1	350,7	336,5	480,6
rental and rental services	764,6	503,7	408,6	421,8	412,2	503,7
computer and household goods repair services	736,9	453,1	326	361,5	332,6	440,6
individual services	982	609,8	458,6	516,9	500	636,7
services in the field of architecture, engineering surveys, technical testing and analysis	381,5	313,5	366	513,3	487,6	593,7
other services	1 087,80	763	683,7	829,5	824,3	966,6

## The volume of services rendered by main types of economic activities, UZS billion

Services - total	2016	2017	2018	2019	2020	2021
<b>Services - total</b>	<b>97 050,00</b>	<b>118 811,00</b>	<b>150 889,80</b>	<b>193 697,80</b>	<b>219 978,50</b>	<b>284 165,40</b>
<b>information and communication services</b>	<b>6 306,80</b>	<b>8 196,70</b>	<b>10 332,60</b>	<b>10 891,70</b>	<b>13 852,30</b>	<b>17 755,10</b>
Financial services	9 898,40	15 023,80	21 296,30	34 036,60	45 783,00	59 733,30
transport services	30 617,80	36 217,20	44 159,40	54 473,50	53 662,90	67 238,60
including: motor transport services	19 216,70	20 232,90	21 786,80	25 527,50	28 474,10	36 249,30
accommodation and food services	3 038,70	3 649,60	4 673,30	5 933,60	5 431,70	8 375,40
trade services	27 368,20	32 006,90	39 743,40	48 748,20	57 572,70	72 483,30
real estate-related services	3 405,10	4 026,50	4 949,20	5 950,70	6 016,90	8 081,10
educational services	3 263,00	4 402,00	5 416,50	7 164,90	8 539,40	12 021,80
healthcare services	1 416,30	1 701,50	2 220,00	3 104,30	3 386,70	5 105,90
rental and rental services	2 270,10	2 589,20	3 297,40	3 733,50	4 149,00	5 351,00
computer and household goods repair services	2 187,80	2 329,20	2 630,70	3 200,10	3 347,80	4 680,50
individual services	2 915,50	3 134,40	3 700,60	4 575,60	5 032,20	6 764,10
services in the field of architecture, engineering surveys, technical testing and analysis	1 132,60	1 611,70	2 953,60	4 543,10	4 907,50	6 306,80
other services	3 229,70	3 922,30	5 516,80	7 342,00	8 296,40	10 268,50

Computer-aided design, consulting and other related services (hereinafter referred to as computer services) showed no growth on average from 2016 to 2019. However, after 2019, there is a significant increase in the share of computer services - in the period from 2019 to 2021, it increased by 3.25 times and in 2021 amounted to 256.2 million US dollars. The average annual growth rate in this period was 80.2%. This growth is due to the

creation in 2019 of the IT Park, a special legal regime aimed at stimulating the development of the IT industry and the export of services.

The IT Park of Uzbekistan is a unique technology park for the country, offering resident companies Doing Business in the field of information technology, unprecedented benefits and government support measures, including exemption from VAT,

social tax, income tax, reduced tax on income from wages boards, etc. The creation of an IT Park made it possible to withdraw companies operating in the local market from the «shadow» sector of the economy, as well as to bring large international IT companies to the country that were interested in these conditions. Detailed information about the companies of the IT Park and the conditions for Doing Business in it is presented in section 7.

## The volume of information and communication market services rendered, USD million

Indicators	2016	2017	2018	2019	2020	2021
<b>Total</b>	<b>2 124,29</b>	<b>1 594,60</b>	<b>1 280,52</b>	<b>1 230,51</b>	<b>1 376,32</b>	<b>1 671,3</b>
publishing services	128,87	91,16	72,39	69,80	73,65	78,7
motion picture and television production services, sound recording and music publishing services	13,14	9,12	9,28	13,92	8,89	16,0
programming and broadcasting services	61,81	50,06	46,78	49,63	64,67	65,6
telecommunication services	1 826,09	1 351,44	1 039,66	974,31	1 016,79	1 125,6
computer programming services, consulting and other related services	63,22	63,32	82,55	78,88	141,90	256,2
information services	31,16	29,49	29,85	43,97	70,41	129,3

## The volume of provided market information and communication services in actual prices, UZS billion

Indicators	2016	2017	2018	2019	2020	2021
<b>Total</b>	<b>6 306,8</b>	<b>8 196,7</b>	<b>10 332,6</b>	<b>10 891,7</b>	<b>13 852,3</b>	<b>17 755,1</b>
publishing services	382,6	468,6	584,1	617,8	741,3	836,2



motion picture and television production services, sound recording and music publishing services	39	46,9	74,9	123,2	89,5	169,8
programming and broadcasting services	183,5	257,3	377,5	439,3	650,9	696,7
telecommunication services	5 421,5	6 946,8	8 389,1	8 624	10 233,7	11 957,3
computer programming services, consulting and other related services	187,7	325,5	666,1	698,2	1 428,2	2 721,5
information services	92,5	151,6	240,9	389,2	708,7	1 373,6

## ▲ Economic indicators of ICT goods

In 2021, the total gross industrial output amounted to USD 42,512.95 million, of which the gross output of the manufacturing industry was USD 35,301.99

million or 83.04%, and the gross output of the ICT (production of computer, electronic and optical products and electrical equipment) amounted to 1,562.51 million US

dollars or 3.68%. For the period from 2016 to 2021, the increase in the gross output of the ICT sector amounted to 93.23% with an average annual growth rate of 14.08%.

### Gross output of goods and its structure, USD million

Indicators	2016	2017	2018	2019	2020	2021
Production of industrial products, total	37 680,36	28 950,88	29 165,86	36 439,11	36 636,87	42 512,95
Manufacturing industry	30 813,72	23 478,61	23 502,48	28 793,41	30 396,11	35 301,99
Manufacture of computer, electronic and optical products	151,80	164,13	128,95	226,14	343,55	558,83
Production of electrical equipment	656,83	627,53	865,69	833,01	857,99	1 003,68

### Gross output of goods and its structure, UZS billion

Indicators	2016	2017	2018	2019	2020	2021
Production of industrial products, total	111 869,38	148 815,99	235 340,71	322 535,77	368 740,16	451 633,87
Manufacturing industry	91 482,98	120 686,94	189 642,61	254 860,89	305 928,61	375 028,67
Manufacture of computer, electronic and optical products	450,67	843,68	1 040,51	2 001,62	3 457,72	5 936,72
Production of electrical equipment	1 950,05	3 225,70	6 985,28	7 373,28	8 635,39	10 662,50

## ▲ Export, import of ICT goods and services

The analysis of exports and imports of ICT goods and services was carried out according to the

list of 15 countries in which the maximum total values of the corresponding indicators were

recorded for the period from 2016 to 2021.

## ▲ Export and import of ICT goods

In 2021, the export volume of ICT goods in Uzbekistan amounted to 22,442.28 thousand US dollars. From 2016 to 2021, the average annual growth rate of ICT goods

export volume was 34.91%. The main trading partners of Uzbekistan in 2021 in this area were Kazakhstan (38.97%) and Azerbaijan (30.71%).

The volume of exports of ICT goods relative to the gross output of ICT goods in Uzbekistan for the period from 2016 to 2021 increased from 0.62% to 1.44%.

## Export of ICT goods of the Republic of Uzbekistan, USD thousand

Country	2016	2017	2018	2019	2020	2021
<b>Total:</b>	<b>5 022,45</b>	<b>10 599,19</b>	<b>12 297,64</b>	<b>18 132,94</b>	<b>23 873,58</b>	<b>22 442,28</b>
Kazakhstan	898,40	3 491,17	3 543,00	5 602,61	8 101,03	8 746,69
Azerbaijan	1 636,47	2 757,60	4 599,55	3 954,78	5 202,99	6 891,95
The Russian Federation	1 410,24	1 803,68	2 056,34	4 634,95	5 115,33	2 349,17
Kyrgyzstan	394,01	1 087,57	505,58	1 072,20	1 948,16	1 339,83
Ukraine	48,84	489,52	993,88	1 893,36	1 108,16	484,50
Tajikistan	3,05	413,09	227,27	282,42	767,53	618,64
Armenia	0,00	37,95	253,62	196,69	187,92	501,35
China (including Hong Kong)	0,84	0,73	0,00	0,00	816,16	78,05
Turkmenistan	0,00	15,26	0,00	7,43	108,40	543,51
Latvia	364,92	0,95	3,51	116,18	40,71	31,80
Georgia	95,42	21,03	10,89	6,85	156,96	225,91
The Republic of Korea	1,96	247,69	0,00	0,32	35,17	40,71
Afghanistan	49,71	103,00	89,97	6,47	13,13	0,00
United Arab Emirates	12,53	0,00	0,47	145,45	0,00	98,67
Germany	8,06	0,00	0,00	0,00	0,94	225,76
Other countries:	98,00	129,95	13,59	213,23	270,99	265,76

In 2021, the volume of imports of ICT goods of Uzbekistan amounted to 979,155.80 thousand US dollars. From 2016 to 2021 there was an increase in

the volume of imports of ICT goods, the average annual growth rate was 18.42%. The main trading partner of Uzbekistan in

the entire period under review in this direction was and remains China (50.98% of total imports of ICT goods in 2021).

## Import of ICT goods of the Republic of Uzbekistan, USD thousand

Country	2016	2017	2018	2019	2020	2021
<b>Total:</b>	<b>420 450,61</b>	<b>306 367,77</b>	<b>345 458,78</b>	<b>644 849,31</b>	<b>777 849,76</b>	<b>979 155,80</b>
China (including Hong Kong)	233 379,88	151 699,35	160 522,67	220 487,83	418 045,77	499 173,21
The Republic of Korea	9 919,51	10 081,81	22 339,47	63 757,40	61 023,48	43 215,77
Vietnam	1 338,21	4 125,66	9 673,84	34 609,52	54 593,95	96 449,77
The Russian Federation	28 185,08	13 803,69	14 987,20	29 894,49	24 705,86	81 723,39
United Arab Emirates	4 017,94	8 708,96	21 280,73	40 148,41	28 183,85	60 748,64
Lithuania	13 872,10	26 633,78	9 933,22	78 432,21	16 109,87	17 624,45
Czech Republic	7 345,65	8 022,37	7 594,51	26 694,89	22 949,89	32 070,93
Germany	14 325,82	14 746,45	31 993,65	12 578,42	12 579,18	15 556,94
Japan	21 667,91	7 334,32	1 160,92	19 384,11	13 957,51	452,68
Israel	2 860,96	9 087,21	16 026,11	7 858,02	19 535,72	6 256,54
United States of America	11 752,68	5 645,34	7 247,45	4 961,86	5 912,94	19 725,47
Hungary	874,10	2 759,63	1 275,11	3 854,83	26 071,07	10 584,61
Netherlands	8 368,65	944,15	3 706,38	12 123,27	7 959,06	7 014,43
France	17 812,62	5 162,09	948,26	3 038,83	1 869,55	3 550,58
India	9,38	87,11	197,49	8 055,93	7 425,43	12 619,14
Other countries	44 720,13	37 525,87	36 571,77	78 969,31	56 926,63	72 389,26

The negative balance of foreign trade in ICT goods in 2021 amounted to -956,741.92

thousand US dollars. Between 2017 and 2021 there is an increase in the negative balance

of foreign trade in ICT goods, the average annual growth rate was 34.1%.

### Balance of foreign trade in ICT goods of Uzbekistan, USD thousand

Country	2016	2017	2018	2019	2020	2021
Export of ICT goods	5 022,45	10 599,19	12 297,64	18 132,94	23 873,58	22 442,28
Import of ICT goods	420 450,61	306 367,77	345 458,78	644 849,31	777 849,76	979 184,2
Balance of foreign trade in ICT goods	-415 428,15	-295 768,58	-333 161,14	-626 716,37	-753 976,17	-956 741,92

The main share in the export of ICT goods is the category «Household electronic equipment», 87.7% of the total export of ICT goods in 2021.

### Export of ICT goods of the Republic of Uzbekistan, USD thousand (for 2021 preliminary data)

Name	2016	2017	2018	2019	2020	2021*
Electronic household equipment	3 021,37	8 731,23	10 830,09	15 941,00	20 984,03	19 678,21
Components	1 591,62	1 654,08	1 299,81	1 827,00	1 337,30	1 358,78
Computer and peripheral equipment	149,63	6,02	12,56	233,29	1 104,18	738,89
Communication equipment	246,18	164,65	60,04	73,47	348,54	492,34
Other goods	13,66	43,21	95,15	58,15	99,54	174,06

The main share in the import of ICT goods is the category «Communication equipment», 49.6% of the total import of ICT goods in 2021.

### Import of ICT goods of the Republic of Uzbekistan, USD million (for 2021 preliminary data)

Name	2016	2017	2018	2019	2020	2021*
Electronic household equipment	11,16	25,43	36,46	56,05	56,37	79,56
Components	42,36	35,79	49,39	64,05	50,30	117,84
Computer and peripheral equipment	116,38	125,31	125,12	246,76	240,16	264,64
Communication equipment	228,45	101,83	108,20	233,19	392,23	485,41
Other goods	22,10	18,01	26,29	44,80	38,80	31,73

Between 2016 and 2021 Tashkent city accounted for the largest share of exports of ICT goods. In

2021, the volume of exports of ICT goods in Tashkent amounted to 20,648.06 thousand US dollars

or 92.01% of the total exports of ICT goods.

### Export of ICT goods by region, USD thousand

Region	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	5 022,45	10 599,19	12 297,64	18 132,94	23 873,58	22 442,28
Republic of Karakalpakstan	16,72	0,00	110,60	39,83	0,00	37,99
Andijan	21,05	3,80	6,39	38,08	29,66	568,10
Bukhara	0,00	0,00	5,99	191,67	0,00	0,55
Jizzakh	0,99	64,08	29,14	627,60	5,69	0,00
Kashkadarya	0,00	0,00	0,00	0,62	0,32	157,80
Navoi	0,00	107,33	0,00	21,86	91,20	0,00
Namangan	0,00	0,00	4,65	23,12	29,41	2,96
Samarkand	0,00	0,00	0,00	0,00	0,00	55,19
Surkhandarya	0,00	0,00	0,00	0,00	0,00	0,00
Syrdarya	0,00	0,00	0,00	0,00	0,00	6,61
Tashkent	0,00	5,58	0,00	1,73	5 409,65	950,92
Ferghana	0,00	0,00	0,00	0,00	0,00	0,00
Khorezm	0,00	0,00	0,00	0,00	3,00	6,01
Tashkent city	4 983,69	10 418,40	12 140,88	17 188,43	18 304,65	20 648,06
Republican significance	0,00	0,00	0,00	0,00	0,00	8,12

In 2021, the import volume of ICT goods in Tashkent amounted to 866,007.80 thousand US dollars, or 88.44% of the total imports of ICT goods.

### Imports of ICT goods by region, USD thousand

Region	2016	2017	2018	2019	2020	2021
<b>The Republic of Uzbekistan</b>	<b>420 450,61</b>	<b>306 367,77</b>	<b>345 458,78</b>	<b>644 849,31</b>	<b>777 849,76</b>	<b>979 155,80</b>
Republic of Karakalpakstan	1 199,07	810,94	8 410,27	14 923,76	12 006,68	7 103,63
Andijan	5 531,15	7 419,00	18 103,03	39 843,20	49 550,04	51 744,39
Bukhara	193,29	199,72	2 566,25	1 314,53	376,66	796,51
Jizzakh	5 321,44	6 872,27	11 905,95	2 532,50	13 010,73	2 377,57
Kashkadarya	1 955,25	2 016,03	1 305,18	2 214,74	1 470,11	1 095,49
Navoi	4 813,69	7 166,49	9 818,41	5 959,44	7 955,73	6 099,38
Namangan	1 549,90	2 707,79	1 532,22	2 503,34	1 830,11	1 662,46
Samarkand	2 227,56	804,72	2 261,47	1 450,83	2 667,99	5 292,50
Surkhandarya	924,61	12 857,54	2 644,79	2 576,91	124,03	494,58
Syrdarya	871,72	125,67	532,25	462,24	865,49	353,46
Tashkent	22 212,19	14 866,48	6 088,11	13 737,17	23 829,67	18 204,19
Ferghana	813,05	3 445,93	5 980,16	7 276,45	10 439,94	15 479,18
Khorezm	113,73	208,36	177,49	2 122,35	863,27	1 704,08
Tashkent city	372 723,98	246 866,81	274 133,22	547 447,28	652 802,59	866 007,80
Republican significance	0,00	0,00	0,00	484,57	56,73	740,59

## Export and import of ICT services

In 2021, the export volume of ICT services of Uzbekistan amounted to 180,739.40 thousand US dollars. From 2016 to 2021 there was an increase in the volume of exports of ICT services, the average annual growth rate was 4.15%.

The main trading partners of

Uzbekistan in 2021 in this area were the Russian Federation (21.96%), Switzerland (13.73%) and the United Kingdom of Great Britain and Northern Ireland (12.56%). However, for the period from 2016 to 2021 the share of the Russian Federation in the total volume of exports of ICT services decreased from 81.88%

to 21.96%, and the export of ICT services itself from USD 120,774.17 thousand to USD 39,695.49 thousand. At the same time, the share of EU countries in the export of ICT services increased from 1.58% to 31.70%, and the volume of exports of ICT services from USD 2,327.23 thousand to USD 57,301.92 thousand.

### Export of ICT services of the Republic of Uzbekistan, USD thousand

Country	2016	2017	2018	2019	2020	2021
<b>Total:</b>	<b>147 502,56</b>	<b>150 650,08</b>	<b>159 685,34</b>	<b>167 496,35</b>	<b>169 510,67</b>	<b>180 739,40</b>
The Russian Federation	120 774,17	121 137,06	107 794,31	77 781,66	51 749,31	39 695,49
Germany	428,72	331,60	4 720,71	11 527,65	36 845,12	15 576,21
Kazakhstan	6 440,30	9 567,78	15 100,17	10 454,05	7 861,39	12 166,31
Czech Republic	11,68	43,13	71,64	9 033,93	27 983,85	17 800,31
Switzerland	1 750,68	3 720,99	5 414,63	7 764,33	9 747,77	24 818,40
United Kingdom of Great Britain and Northern Ireland	690,57	651,99	2 492,14	5 322,07	5 433,31	22 696,17
United States of America	4 432,55	1 813,50	5 071,88	3 624,61	6 655,51	10 629,60
China (including Hong Kong)	1 728,96	1 120,85	1 867,43	12 370,05	5 008,95	4 952,72
Latvia	13,36	11,18	2 778,27	12 858,19	1 800,31	1 620,89
Bulgaria	45,63	40,35	52,48	15,69	1 038,14	17 099,34
Afghanistan	117,30	126,77	432,82	3 250,44	5 485,89	4 998,28
The Republic of Korea	909,29	1 145,43	2 787,85	2 556,87	3 427,60	1 248,20
Cyprus	932,54	1 453,58	1 061,73	1 647,19	2 198,55	2 117,16
United Arab Emirates	512,24	667,74	1 304,45	1 479,43	372,89	246,89

Netherlands	174,63	77,70	379,36	1 173,96	547,75	1 603,12
Other countries	8 539,95	8 740,41	8 355,47	6 636,22	3 354,32	3 470,32

In 2021, the import volume of ICT services of Uzbekistan amounted to 142,539.87 thousand US dollars. From 2016 to 2021 there was an increase in the volume of imports of ICT

services, the average annual growth rate was 21.09%.

The main trading partners of Uzbekistan in 2021 in this area were Germany (16.13%), Czech

Republic (13.01%), Bulgaria (11.99%). In the period under review, the share of the Russian Federation dominated in the structure of imports (76.1%), but during the analyzed period it decreased to 11.34%.

### Import of ICT services of the Republic of Uzbekistan, USD thousand

Country	2016	2017	2018	2019	2020	2021
<b>Total:</b>	<b>54 756,45</b>	<b>59 736,44</b>	<b>47 640,11</b>	<b>72 587,14</b>	<b>132 273,79</b>	<b>142 539,87</b>
The Russian Federation	41 669,88	44 330,60	24 599,72	12 897,38	16 101,16	16 165,72
Germany	906,78	1 280,33	5 835,95	10 801,40	43 977,91	22 997,20
Czech Republic	10,61	3,30	10,07	7 995,13	29 987,30	18 549,44
Kazakhstan	4 159,10	5 869,79	3 481,56	5 178,66	5 047,08	10 186,52
United Kingdom of Great Britain and Northern Ireland	718,00	1 135,90	1 993,51	5 030,34	5 137,70	15 746,14
Switzerland	1 211,57	1 156,24	1 130,02	1 238,33	2 857,24	12 476,22
Bulgaria	3,56	19,79	30,45	4,03	1 039,31	17 084,00
Latvia	212,06	189,94	1 886,93	10 963,25	1 921,11	1 910,98
United States of America	825,69	626,09	733,54	1 577,55	6 842,33	6 308,77
China	4,53	6,81	115,25	8 052,87	3 680,91	82,95
Singapore	224,69	393,63	440,61	624,94	1 717,88	6 773,33
Austria	958,08	1 239,08	1 688,12	2 951,65	452,80	379,22
Netherlands	393,67	409,39	1 257,84	929,86	905,48	2 314,93
Belgium	501,18	336,24	873,62	450,63	1 564,80	1 847,43
Belarus	81,06	67,28	407,26	747,60	2 822,45	1 309,78
Other countries	2 876,01	2 672,05	3 155,66	3 143,49	8 218,33	8 407,25

The balance of foreign trade in ICT services in 2021 amounted to USD 38,199.53 thousand. Despite the steady growth in

exports of ICT services, a more significant increase in imports has led to the fact that from 2018 to 2021 there was a decrease in the

balance of foreign trade in ICT services, although it remains positive. The average annual rate of such decline was -16.26%.

### Balance of foreign trade in ICT services of Uzbekistan, USD thousand

Country	2016	2017	2018	2019	2020	2021
Export of ICT services	147 502,56	150 650,08	159 685,34	167 496,35	169 510,67	180 739,40
Import of ICT services	54 756,45	59 736,44	47 640,11	72 587,14	132 273,79	142 539,87
Balance of foreign trade in ICT services	92 746,10	90 913,64	112 045,23	94 909,21	37 236,89	38 199,53

An analysis of the structure of exports and imports of ICT services was carried out using the balance of payments data of the Central Bank of the Republic of Uzbekistan (given below). Due to the difference in the approaches and methodologies used for collecting statistical data by various bodies, the total amount of exports and imports of ICT services in Uzbekistan differs slightly (in some years - a

deviation of up to 3%) compared to the above geographical structure of exports and imports of ICT services.

In the structure of ICT services export, the largest share is historically occupied by telecommunications services. In the analyzed period, this share decreased from 96% in 2018 to 81.7% in the 1<sup>st</sup> quarter of 2022. At the same time, the share of computer services in the export of

ICT services is growing from 3.1% in 2016 to 9% in the 1<sup>st</sup> quarter of 2022. The export of computer services showed the greatest dynamics in 2020, having increased by 58.2% compared to 2019, after which in 2021 there is a decrease of 17.2%. Based on quarterly data, we can expect an even greater increase in exports of computer services in 2022, since the value for Q1 2022 already exceeds the value for Q1 2021 by 89.1%.

## Export and import of ICT services of the Republic of Uzbekistan, USD million

Export	2016	2017	2018	2019	2020	2021	1Q2022
Telecommunication, computer and information services	147,50	150,65	156,55	165,38	166,48	176,27	39,34
Telecommunication services	141,11	143,17	150,22	156,56	151,58	156,32	32,13
Computer services	4,50	5,62	5,10	6,96	11,01	9,12	3,53
Information Services	1,88	1,86	1,22	1,86	3,89	10,83	3,68
Import							
Telecommunication, computer and information services	54,76	59,74	47,49	71,75	129,98	138,75	30,18
Telecommunication services	49,42	51,39	34,22	56,30	93,80	104,39	21,63
Computer services	2,77	5,45	9,45	12,00	19,74	13,51	4,46
Information Services	2,56	2,90	3,82	3,46	16,44	20,85	4,09

Despite the positive dynamics in the export of computer services, it should be noted that since 2018, a negative balance of foreign trade in computer services has been maintained. The establishment of an IT Park in 2019 was reflected in the dynamics of the export of computer services in 2020 compared to 2019, however, the impact of the creation of an IT

Park on the export of computer services is much lower than in general on the volume of services (including for domestic market). The outstripping growth of exports expected in the future compared to imports of computer services and domestic market consumption has not yet been observed at this initial stage of development of the IT industry. Although over the past

5 years industry has shown export growth with an average annual growth rate of 4.15%, against the same background, the growth in imports of ICT services is 21.1%, at the same time, a slightly positive balance remains in foreign trade in ICT services. The dynamics of imports testifies to the growing need of the Uzbek economy for ICT services.

## Balance of foreign trade in computer services of the Republic of Uzbekistan, USD million

Foreign trade balance	2016	2017	2018	2019	2020	2021	1Q2022
Computer services	1,73	0,17	-4,35	-5,04	-8,73	-4,39	-0,93

The share of exports of ICT services relative to the total volume of ICT services provided in Uzbekistan for the period from 2016 to 2019 increased from 7.68% to 15.07%, reaching a maximum value. Between 2020 and 2021, there was a decrease in the share of exported ICT services to a value of 12.20%. The share of exports of computer services relative to the volume of services provided in Uzbekistan has decreased from 8.82% to 4.52% since 2019. The level of computer services export is an important indicator for the development of the industry as a whole and an indicator of the current level of demand and competitiveness of IT companies from Uzbekistan in the world market. So far, in the analyzed period from 2019 to 2021, the balance of foreign trade in computer services in Uzbekistan remains negative, that is, the country consumes more computer

services from abroad than it exports. Thus, the benefits provided by the IT Park for resident companies have not yet been fully realized, since when working on the domestic market, the use of the provided tax benefits simply increases the efficiency and profitability of a business in a particular sector of the economy, without giving obvious advantages to the state.

Thus, comparing the dynamics of the main indicators of the IT industry since 2019, we can conclude that the creation of an IT Park was primarily a stimulating factor in the growth of production in the IT industry, which generally outpaced the overall macroeconomic dynamics of economic growth, but did not lead to a significant increase in exports. The industry remains focused primarily on the domestic market, where, due to economic growth, the demand for information

technology is constantly growing. Resident companies that were already operating in the Uzbek market appreciated the benefits of tax incentives provided by the special legal regime of the IT Park, but their business models were usually focused on local clients. At the same time, several large international companies entered the Uzbek market, that were wastered in the conditions of the IT Park and the potential for the development of the industry. The business model of such companies is always focused on exports and foreign markets, the volume of which is incomparable with the local market, and the solvency of customers is higher. In the future, the driver of development and the main point of growth in the number of people employed in the IT industry will be precisely exporting companies, the growth opportunities of which are not limited by demand in the local market of Uzbekistan.

International clients are more paying, which will allow exporting companies to more successfully compete on wages for qualified IT professionals, further widening the

development gap between them and local companies. In the future, the driver of development and the main point of growth in the number of people employed in the

IT industry will be precisely exporting companies, the growth opportunities of which are not limited by demand in the local market of Uzbekistan.

### Export and volume of ICT services of the Republic of Uzbekistan, USD million

Export of services	2016	2017	2018	2019	2020	2021	1q2022
Telecommunication, computer and information services	147,50	150,65	156,55	165,38	166,48	176,27	39,34
Telecommunication services	141,11	143,17	150,22	156,56	151,58	156,32	32,13
Computer services	4,50	5,62	5,10	6,96	11,01	9,12	3,53
Information Services	1,88	1,86	1,22	1,86	3,89	10,83	3,68
Scope of services							
Telecommunication, computer and information services	1 920,47	1 444,26	1 152,07	1 097,16	1 229,10	1 444,87	
Telecommunication services	1 826,09	1 351,44	1 039,66	974,31	1 016,79	1 125,55	
Computer services	63,22	63,32	82,55	78,88	141,90	201,57	
Information Services	31,16	29,49	29,85	43,97	70,41	117,08	
Share of exports of telecommunications, computer and information services in the total volume of ICT services provided	7,68%	10,43%	13,59%	15,07%	13,54%	12,20%	
Share of exports of computer services in the volume of computer services rendered	7,12%	8,88%	6,18%	8,82%	7,76%	4,52%	

The export volume of «Computer software» service from 2020 to 2021 decreased from USD 5,798.58 thousand to USD 4,638.73 thousand with a growth rate of -20.00%.

### Export of the service «Computer software» of the Republic of Uzbekistan, USD thousand

Country	2020	2021
The Republic of Korea	121,20	128,80
The Russian Federation	353,21	42,18
United Kingdom (UK)	192,50	493,25
USA	4 761,33	2 841,26
Other countries	370,34	1 133,25

The export volume of «Other computer services» service from 2020 to 2021 decreased from USD 8,313.63 thousand to USD 4,479.04 thousand with a growth rate of -46.12%.

### Export of the service «Other computer services» of the Republic of Uzbekistan, USD thousand

Country	2020	2021
Cyprus	2 183,60	-
Latvia	682,00	-
The Republic of Korea	2 979,37	175,36
The Russian Federation	1 663,72	-
Other countries	804,93	4 303,67

The export volume of «Licenses to reproduce and/or distribute software» service from 2020 to 2021 decreased from USD 7,581.77 thousand to USD 6,484.15 thousand with a growth rate of negative 14.48%.

### Import of the service «Licenses for reproduction and/or distribution of software» of the Republic of Uzbekistan, USD thousand

Country	2020	2021
Georgia	200,33	2 913,09
Ireland	400,54	-
China	967,38	-
The Russian Federation	5 054,81	2 022,11
Other countries	958,71	1 548,96

The import volume of «Computer software» service from 2020 to 2021 decreased from USD 13,655.01 thousand to USD 7,837.81 thousand with a growth rate of -42.60%.

### Import of the service «Computer software» of the Republic of Uzbekistan, USD thousand

Country	2020	2021
Belgium	840,31	1 222,56
China	3 667,80	-
Latvia	1 142,19	1 246,58
The Russian Federation	1 824,29	1 279,95
USA	2 902,36	1 488,71
Other countries	3 278,06	2 600,01

The import volume of «Other computer services» service from 2020 to 2021 decreased from USD 6,283.82 thousand to USD 5,674.45 thousand with a growth rate of -9.70%.

### Import of the service «Other computer services» of the Republic of Uzbekistan, USD thousand

Country	2020	2021
Austria	451,04	376,90
Netherlands	160,20	406,21
The Russian Federation	1 544,38	628,63
USA	2 531,30	2 370,87
Ukraine	726,77	877,25
Other countries	870,12	1 014,59

Between 2016 and 2021 Tashkent city accounted for the largest share of ICT services export volume. In 2021, the volume of exports of ICT services in Tashkent amounted to 180,415.75 thousand US dollars, or 99.82% of the total exports of ICT services.

### Export of ICT services by region, USD thousand

Region	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	147 502,56	150 650,08	159 685,34	167 496,35	169 510,67	180 739,40
Republic of Karakalpakstan	0,00	0,00	0,00	0,00	0,00	0,00
Andijan	0,00	0,00	0,00	0,00	0,00	0,00
Bukhara	0,00	0,00	0,00	0,00	0,00	0,00
Jizzakh	0,00	0,00	0,00	0,00	0,00	0,00
Kashkadarya	0,00	0,00	0,00	0,00	0,00	0,00
Navoi	0,00	0,00	0,00	0,00	0,00	0,00
Namangan	0,00	0,00	0,00	0,00	0,00	0,00



Samarkand	0,00	4,67	85,95	88,35	161,94	0,00
Surkhandarya	0,00	0,00	0,00	0,00	0,00	0,00
Syrdarya	0,00	0,00	0,00	0,00	0,00	0,00
Tashkent	2,24	8,22	6,19	7,80	3,45	3,55
Ferghana	246,00	180,80	103,03	128,77	160,90	245,30
Khorezm	123,40	171,60	58,33	95,23	84,20	74,80
Tashkent city	147 130,92	150 284,79	159 431,84	167 176,20	169 100,18	180 415,75

In 2021, import volume of ICT services in Tashkent amounted to 137,887.44 thousand US dollars, or 96.74% of the total imports of ICT services.

### Import of ICT services by region, USD thousand

Region	2016	2017	2018	2019	2020	2021
<b>The Republic of Uzbekistan</b>	<b>54 756,45</b>	<b>59 736,44</b>	<b>47 640,11</b>	<b>72 587,14</b>	<b>132 273,79</b>	<b>142 539,87</b>
Republic of Karakalpakstan	0,00	0,00	36,14	32,34	30,71	0,00
Andijan	32,50	409,30	75,72	185,31	4 408,13	1 587,35
Bukhara	489,17	460,58	0,00	831,04	1 013,21	1 256,30
Jizzakh	0,00	0,00	0,00	0,00	0,00	0,00
Kashkadarya	0,00	0,00	0,00	0,00	0,00	0,00
Navoi	93,23	155,73	205,20	363,11	105,83	125,37
Namangan	34,04	0,00	0,00	0,00	0,00	0,00
Samarkand	3,20	3,80	16,97	62,40	0,00	3,68
Surkhandarya	0,00	0,00	0,00	0,00	0,00	0,00
Syrdarya	0,00	0,00	0,00	0,00	0,00	0,00
Tashkent	2,15	0,76	0,93	0,94	0,00	0,00
Ferghana	174,56	46,87	168,16	1 685,88	1 983,79	1 679,73
Khorezm	0,00	0,00	0,00	0,00	0,00	0,00
Tashkent city	53 927,60	58 659,40	47 137,00	69 426,13	124 732,12	137 887,44

## ▲ List of sources used:

12. The State Committee of the Republic of Uzbekistan on Statistics, <https://stat.uz>, 2022.
13. Order of the Cabinet of Ministers of the Republic of Uzbekistan dated August 1, 2006 № 344, <https://lex.uz/docs/1285591>, August 2006
14. Data provided by the IT Park, June 2022
15. The Central Bank of the Republic of Uzbekistan, <https://cbu.uz/ru/statistics/bop/660388/>, June 2022

## 3 IT EDUCATION SYSTEM

Population in the 15-19 age group

 **2,6**  
million people in 2022

Population growth in the group under 19 years old

 **2,3%**  
in 2018-2021

UNDP Education Index Ranked

 **71**  
out of 189 countries in 2020

Share of economically active population with higher education

 **15,92%**  
in 2022

Number of the economically active population with higher education

 **2,4**  
million people in 2022

Number of applications for admission to public universities

 **1,8**  
million in 2020

Number of higher education institutions

 **161**  
in 2022

Accepted to universities

 **236**  
thousand people at the beginning of the 2021/2022 academic year

University students

 **808**  
thousand people at the beginning of the 2021/2022 academic year

Number of students per 10,000 population

 **229**  
at the beginning of the 2021/2022 academic year

Growth in the number of universities in 2016-2021 by

 **2.2**  
times

Number of IT students in public universities

 **29 799**  
people in 2022

Higher education institutions with IT specialities

 **46**  
in 2022

Share of students enrolled in IT specialities

 **3,69%**  
in 2022

Number of basic IT schools

 **100**  
in 2021

Share of employees of IT Park companies with higher education

 **75%**  
in 2022

The educational system of Uzbekistan largely retains features similar to other CIS countries (Azerbaijan, Armenia, Belarus, Kazakhstan, Kyrgyzstan, Moldova, Russian Federation, Tajikistan and Uzbekistan). The education system is based on state educational institutions - schools, lyceums, technical schools and higher educational institutions. Private universities and branches of foreign universities, as well as private secondary schools operate in the country.

The average annual growth rate of the country's population over the past 6 years was 1.86%. The population under the age of 19 is growing at a faster pace. During 2020-2021, the growth in this age group was 2.5% and 3% per year. This demographic situation against the backdrop of economic growth in recent years determines the high demand for education.

In the ranking of the United Nations Development Program (UNDP) on the educational index, Uzbekistan in 2020 allocated 71<sup>st</sup> place out of 189. Among the countries of Central Asia, Uzbekistan overtakes Turkmenistan (111 place), Tajikistan (96<sup>th</sup> place), Azerbaijan (80<sup>th</sup> place) in this indicator, is inferior to Kyrgyzstan (70<sup>th</sup> place), Armenia (64<sup>th</sup> place), Kazakhstan (35<sup>th</sup> place). The index takes into account the overall adult literacy rate and the cumulative share of students at all levels of the education system.

From 2019 to 2021, the coverage

of the population with higher education in Uzbekistan has tripled (up to 28%). In 2019, the Concept of the development of the higher education system of the Republic of Uzbekistan until 2030 was approved, one of the goals of which is to increase the share of the population with higher education up to 50% by 2030. The number of economically active population in Uzbekistan with higher education amounted to 2,384.3 thousand people or 15.92%.

Uzbekistan's higher education system is responding to rapidly growing demand and is constantly expanding.

As of May 2022, there are 161 higher educational institutions in Uzbekistan (including branches of foreign universities). In 35 state higher education institutions (universities and their branches) there are areas of study related to IT. For the first four years, students study at the bachelor's degree, after which graduates have the opportunity to enroll in a master's degree and continue their study in the chosen specialty for another two years. Eight universities additionally provide the possibility of distance learning, six universities also have evening departments and one university has a distance learning form.

Education in the field of information technology is one of the priority areas. In 2021, 100 basic IT schools operated in Uzbekistan, where the in-depth study of information and communication technologies is

being conducted. The selection of students for these schools starts from the 5<sup>th</sup> grade; at the beginning of 2022, more than 4 thousand people study in these schools. IT technical schools have been opened in all regions of Uzbekistan, in which 2,619 people study at the beginning of 2022. IT students make up 3.69% of all students in Uzbekistan. For 2022, in 35 state higher educational institutions (the figure also includes branches), 29,799 students are trained in IT specialities, 33.54% of students in Uzbekistan study in Tashkent, followed by Samarkand (8.75%) and Fergana (7.71%).

According to the results of a survey of companies-residents of the IT Park, specialists with higher education are most in-demand in companies, 75% of all respondents have such an education. According to a survey among IT Park resident companies, 40% of employees are Tashkent University of Information Technologies alumni.

In the largest branches of foreign universities (Inha and Amity), in 2022, 2 027 students are studying in IT specialities in total. These universities have quite high competition for a place, and their graduates are in demand in IT companies. In 2022, the IT Park University, established by the IT Park and the international company EPAM Systems (NYSE:EPAM), the largest IT company in Uzbekistan and a resident of the IT Park, also began its work.

## ▲ Current demographic situation

In Uzbekistan, over the past five years, with an overall stable population growth, there has been an increase in the total number and proportion of young people

under the age of 19, while in the age group of 20-29 years there has been a decrease in the population. This may be due to both long-term demographic

trends (decrease in natural population growth in 2000-2004) and population migration from the country for work or study.

### Population of Uzbekistan by age groups (at the beginning of the year)

Age group	2016	2017	2018	2019	2020	2021	2022
0-4	3310,74	3401,12	3464,84	3551,73	3646,96	3756,11	3932,32
5-9	3070,94	3144,44	3178,30	3202,43	3257,92	3341,35	3432,47
10-14	2574,08	2619,92	2700,97	2845,76	2965,40	3078,37	3153,69
15-19	2773,83	2658,52	2593,03	2557,15	2558,98	2569,71	2616,24

20-24	3238,98	3175,80	3097,95	2985,37	2890,72	2758,84	2644,95
25-29	3105,14	3151,95	3182,83	3203,11	3212,53	3218,22	3156,98
30-34	2642,70	2770,69	2892,77	2987,34	3037,48	3081,37	3130,62
35-39	2177,94	2230,54	2310,37	2395,36	2492,19	2617,69	2747,57
40-44	1943,40	1980,95	1997,53	2034,56	2097,71	2151,24	2205,01
45-49	1663,78	1712,87	1776,54	1820,23	1871,23	1911,00	1949,08
50-54	1590,87	1589,44	1581,98	1593,97	1595,99	1622,30	1671,46
55-59	1315,44	1391,28	1451,40	1486,62	1515,65	1528,09	1527,50
60-64	857,16	920,56	978,74	1067,43	1148,73	1226,10	1298,02
65-69	504,60	559,28	617,47	670,72	726,29	762,47	820,72
70-74	265,71	260,29	274,77	310,63	359,51	468,74	503,15
75-79	280,49	279,18	274,05	249,25	216,23	246,06	247,37
80-84	130,46	142,69	148,55	156,91	172,46	148,71	161,16
85+	129,10	130,96	134,56	136,98	139,28	72,55	73,01
0-19	11729,59	11824	11937,14	12157,07	12429,26	12745,54	13134,72
0-29	18073,70	18151,75	18217,92	18345,54	18532,50	18722,58	18936,65

### Dynamics of population growth in 2000-2007

Index	2000	2001	2002	2003	2004	2005	2006	2007
Population growth per year, people.	527 580	512 950	532 511	508 457	540 381	533 530	555 946	608 917

For the period from 2017 to 2021, there was an annual increase in the number of births (average

annual growth rate for the period from 2016 to 2021 amounted to 4.5%), as well as an annual

increase in the birth rate. In 2021, the birth rate reached 25.9.

### Birth rate statistics by years

Index	2016	2017	2018	2019	2020	2021
Number of births per year (people)	726 170	715 519	768 520	814 960	841 817	905 211
Birth rate (per 1000 population)	22,80	22,10	23,30	24,30	24,60	25,90

From 2016 to 2019 there was a decrease in the population in the 15-19 age group, while an increase was observed in the 10-14 age group. In 2020, in the age group of 15-19 years old, an

increase of 0.08% was recorded compared to the previous year, the average annual growth rate for the period from 2020 to 2022 was amounted to 1.11%. As a result, while maintaining

current trends in the period up to 2040, the demand for higher education will grow, with a constant increase in the number of both applicants and graduates.

## General information on the education system

According to the United Nations Development Program (UNDP), the educational index of Uzbekistan for 2020 is 0.729, in the UNDP ranking the country occupied 71<sup>st</sup> place out of 189. The Education Index in the countries of the world (Education Index) is a combined indicator of UNDP. The index is regarded as one of the key indicators of social development and is used to calculate the Human Development Index, issued as part of a special

series of reports by the United Nations (UN) on human development. The index measures the achievements of a country in terms of the level of education achieved by its population in two main indicators:

1. literacy index of adults (2/3 of the weight)
2. index of the cumulative proportion of students receiving primary, secondary and higher

education (1/3 of the weight)

Among the nearest countries of Central Asia, Uzbekistan overtakes Turkmenistan (111<sup>th</sup> place), Tajikistan (96<sup>th</sup> place), Azerbaijan (80<sup>th</sup> place) in this indicator, concedes to Kyrgyzstan (70<sup>th</sup> place), Armenia (64<sup>th</sup> place), Kazakhstan (35<sup>th</sup> place).

In 2019, the Decree of the President of the Republic of Uzbekistan «On approval of the

Source: <https://stat.uz/ru/ofitsialnaya-statistika/demography>, July 2022.

Source: UN Education Index, <https://gtmarket.ru/ratings/education-index>, July 2022.

Source: Decree of the President of the Republic of Uzbekistan on approval of the concept for the development of the higher education system of the Republic of Uzbekistan until 2030, <https://lex.uz/docs/4545887#4549324>, October 2019.

concept for the development of the higher education system of the Republic of Uzbekistan until 2030" was issued.

According to the Decree, a roadmap was adopted for the implementation of measures aimed at increasing the share of the population with higher education to 50% by 2030.

At the same time (according to UNESCO data), in Uzbekistan for the period from 2019 to 2021, the

coverage of the population with higher education increased three times (up to 28%).

According to the latest available data, the number of the economically active population of Uzbekistan with higher education amounted to 2,384.3 thousand people or 15.92% of the total economically active population. The number of economically active population with secondary specialized education is 4,680.9 thousand people (about twice as

much). Most of the economically active population with higher education is located in the Fergana region - 34.19% of the total in the country. At the same time, the largest share of the economically active population with higher education of the total number of economically active population in the region is in the Fergana region (49.45%), the smallest - in the Syrdarya region (0.27%).

### Education of the economically active population

Region	Average	Secondary special	Higher
<b>The Republic of Uzbekistan</b>	<b>4784,90</b>	<b>4680,90</b>	<b>2384,30</b>
Republic of Karakalpakstan	12,70	54,60	32,70
Khorezm region	774,70	464,80	309,90
Navoi region	157,34	27,78	11,25
Bukhara region	330,60	371,90	124,00
Jizzakh region	621,00	599,10	121,30
Samarkand region	15,50	43,00	41,30
Surkhandarya region	682,00	609,40	159,60
Syrdarya region	12,50	11,17	1,01
Tashkent region	588,00	691,30	252,30
Namangan region	16,49	25,70	5,36
Andijan region	795,00	765,00	257,00
Fergana region	326,10	482,15	815,25
Tashkent city	453,00	534,90	253,20

As of May 2022, there are 161 higher education institutions in Uzbekistan (including branches of foreign universities). In 35 public higher education institutions (HEIs and their branches) there are areas of study related to IT. The first four years students' study at the bachelor's degree, after which graduates have the opportunity to enter the master's program and continue their studies in their chosen specialty for another two years. Eight universities additionally provide distance learning opportunities, and six universities also have evening departments.

There are 11 branches of foreign universities in the country, which provide training in specialties related to IT:

- Turin Polytechnic University in Tashkent
- Inha University in Tashkent (IUT)
- Yeosu Technical Institute in Tashkent (YTIT)
- Amity University in Tashkent
- Webster University Tashkent
- Westminster International University in Tashkent
- Branch of Moscow State University Lomonosov in Tashkent
- Management Development Institute of Singapore in Tashkent
- Japan Digital University in Tashkent
- Sharda University in Andijan
- Binary International University in Urgench

The higher education system of Uzbekistan is developing and expanding, responding to the growing demand generated by the existing demographic dynamics. For the period 2016-2021, the number of universities increased by 2.2 times, while foreign branches - by 3.57 times. At the same time, the total number of students increased by 3 times, for full-time departments - 2.1 times, for correspondence departments - 570 times, for evening departments (starting from 2018) - 22.1 times. The number of accepted students per year increased by 3.85 times, and the number of students per 10,000 people increased by 2.73 times.

### Total number of students in universities (at the beginning of the academic year)

Indicators	2016 / 2017	2017 / 2018	2018 / 2019	2019 / 2020	2020 / 2021	2021 / 2022
Number of universities, units	70	72	98	119	127	154
including foreign units	7	7	10	16	18	25
number of students there, people	268 300	297 700	360 200	441 000	571 500	808 400
-day-time departments	267 900	287 500	313 000	360 100	441 900	553 900
-evening-time departments	-	-	1 200	7 300	11 500	26 500
-distance learning departments	400	10 200	46 000	73 600	118 100	228 000
Number of students admitted to universities, people.	61 200	63 000	114 500	138 100	174 900	235 900
University students per 10,000 population, people	84	93	110	130	165	229

For the 2021/2022 academic year, 33.54% of students in Uzbekistan study in Tashkent, followed by Samarkand (8.75%) and Fergana (7.71%). The average number of students per

one thousand inhabitants in the republic is 22.92 people. The first three places are occupied by Tashkent city (94.8 people), the Republic of Karakalpakstan (23.9 people) and Bukhara region

(22.24 people), the last three are Kashkadarya (12.97 people), Namangan (14.27 people) and Surkhandarya (14.55 people) regions.

### Number of university students by region (at the beginning of the academic year)

Regions	2016 / 2017	2017 / 2018	2018 / 2019	2019 / 2020	2020 / 2021	2021 / 2022
<b>The Republic of Uzbekistan</b>	<b>268 281</b>	<b>297 689</b>	<b>360 204</b>	<b>440 991</b>	<b>571 512</b>	<b>808 439</b>
Tashkent city	100 767	108 688	121 562	147 283	185 512	271 182
Samarkand	26 846	29 125	34 930	41 093	54 827	70 772
Ferghana	18 335	21 466	27 176	35 819	48 415	62 332
Andijan	17 585	19 184	21 718	26 036	30 895	47 651
Republic of Karakalpakstan	17 545	19 447	22 272	25 442	35 487	46 585
Kashkadarya	14 303	15 883	18 391	22 452	27 835	44 222
Bukhara	13 990	15 939	20 895	24 771	35 625	43 959
Tashkent	7 286	8 089	14 882	20 914	28 509	42 828
Namangan	11 495	13 319	16 742	20 109	25 989	41 829
Surkhandarya	7 430	9 275	15 070	20 131	25 628	39 909
Jizzakh	10 872	12 530	14 732	18 000	23 391	29 955
Khorezm	9 101	10 450	13 382	16 216	22 787	28 741
Navoi	8 822	9 683	11 641	13 636	17 015	21 710
Syrdarya	3 904	4 611	6 811	9 089	9 597	16 764

For the 2021/2022 academic year, 33.15% of Uzbekistan's graduates are in Tashkent, followed by Fergana (8.92%) and Samarkand (8.21%). The average

number of graduates per one thousand inhabitants in the republic is 2.95 people. The first three places are occupied by Tashkent city (12.04 people), the

Republic of Karakalpakstan (3.32 people) and Navoi region (3.77 people), the last three - Tashkent (1.26 people), Surkhandarya (1.31 people) and Kashkadarya (1.73 people) regions.

## Number of university graduates, by region (at the beginning of the academic year)

Regions	2016 / 2017	2017 / 2018	2018 / 2019	2019 / 2020	2020 / 2021	2021 / 2022
<b>The Republic of Uzbekistan</b>	<b>64 133</b>	<b>67 448</b>	<b>70 325</b>	<b>70 793</b>	<b>83 905</b>	<b>103 898</b>
Tashkent city	25 464	26 065	26 168	26 104	27 520	34 440
Ferghana	4 657	4 769	4 557	4 778	5 833	9 266
Samarkand	5 986	6 417	6 869	6 842	7 165	8 528
Republic of Karakalpakstan	3 939	4 358	4 484	4 312	5 475	6 475
Andijan	4 039	4 209	4 791	4 293	4 622	6 403
Bukhara	3 376	3 409	3 523	3 770	4 784	6 214
Kashkadarya	3 111	3 559	3 842	3 908	5 193	5 909
Namangan	2 734	2 948	3 004	3 218	4 113	5 524
Khorezm	1 984	2 163	2 229	2 426	3 229	4 216
Navoi	2 097	2 197	2 300	2 374	3 107	3 895
Tashkent	1 797	1 745	2 710	2 787	4 041	3 694
Surkhandarya	1 705	1 891	1 962	2 086	3 329	3 583
Jizzakh	2 261	2 732	2 872	2 850	3 862	3 561
Syrdarya	983	986	1 014	1 045	1 632	2 190

Also, 65 academic lyceums, 211 colleges and 176 technical schools (technical schools) operate in the education system of Uzbekistan.

For the period 2016-2021 the number of students in vocational

colleges decreased by 23.8 times, which was caused by the modernization of the vocational education system launched in 2019 and the resulting cessation of admission to colleges in the 2019-2020 academic year.

Modernization of the professional personnel training process involves taking into account the requirements of the labor market, as a result of which each college graduate will be sent to a specific place of work after graduation.

## Number of students in vocational colleges (at the beginning of the academic year)

	2016 / 2017	2017 / 2018	2018 / 2019	2019 / 2020	2020 / 2021
Number of students, people.	1 358 064	1 077 364	656 297	239 239	56 959

## International cooperation in the education system of Uzbekistan

The Republic of Uzbekistan has been planning to join the Bologna process since 2017, but as of August 2022 it is still in observer status.

Currently, educational exchange programs are operating in the country with the support of the US Embassy in Uzbekistan:

- the Fulbright program for foreign students-citizens of Uzbekistan provides the opportunity to travel to the United States of America for a period of up to two years to study and obtain a master's

degree in all areas of study (except medical sciences)

- the international student exchange program Global UGRAD, conducted by the Bureau of Cultural and Educational Affairs of the US Department of State, provides an opportunity for 1-3-year students to study in the USA during one academic semester in various disciplines (including in the field of IT)

Uzbekistan also has a representative office of the Erasmus+ program, an

educational initiative of the European Union aimed at developing cooperation between higher education institutions in Europe and beyond. As part of the program, students and teachers are exchanged with foreign universities; over the past few years, about a thousand students have studied at European universities.

In addition, several higher educational institutions in Uzbekistan are developing joint programs with universities from other CIS countries and neighbouring countries.

Source: <https://stat.uz/ru/ofitsialnaya-statistika/social-protection>, June 2022.

Sources: <https://edu.uz/ru/otm/index>, June 2022., [https://itvisa.uz/files/guide\\_Uzbekistan.pdf](https://itvisa.uz/files/guide_Uzbekistan.pdf), June 2022.

Source: <https://kun.uz/ru/news/2020/02/04/budet-li-priyem-v-kolledji-v-novom-uchebnom-godu-kommentariy-predstavitelya-ministerstva>, February 2020.

Source: <https://www.podrobno.uz/cat/obchestvo/uzbekistan-ustranyaet-pobelye-v-obrazovanii-strana-planiruet-prisoedinitiya-k-bolonskoy-deklaratsii/>, March 2017.



## International accreditation of educational institutions in Uzbekistan

In 2022, state universities teaching IT specialities do not yet have international accreditations.

Nevertheless, there are representative offices of foreign universities in the country that are included in the rankings of the world's leading universities. For example, Turin Polytechnic University, and Inha University are in the top 1000 universities according to QS World University

Rankings: Top global universities and Center for World University Rankings (CWUR).

Among the non-governmental universities of Uzbekistan, the Yeoju Technical Institute in Tashkent has certificates of international accreditation for educational programs. KAZSEE accreditation, among others, was received by the educational direction «Design of information

systems».

The representative office of the American Webster University in Uzbekistan also has accreditations from the US Higher Learning Commission (HLC) and the American association ACBSP (Association of Collegiate Business Schools and Programs), which apply to all branches of this educational institution around the world.

## Demand for the higher education system

Among the countries of Central Asia, Uzbekistan has the largest population, while the number of young people who have reached the age for entering universities is increasing every year. Thus, the demand for higher education is growing at a faster pace than the capacity of existing universities allows. At the same time, the size of the existing quotas for enrolling students leads to high competition

and does not allow a significant proportion of the population of the corresponding age to study at universities at the expense of the government budget.

From the 2016/2017 to the 2021/2022 academic year, university admission quotas increased annually, however, in the plans for the 2022/2023 academic year, the quotas were

reduced by 30.1% for undergraduate and 14.1% for master's programs compared to the previous academic year. The number of places in the evening form of education was reduced by 60.7%, however, at the same time, the enrollment of students for distance learning was opened in an amount that practically compensates for this reduction.

### Student admission quotas

	2016 / 2017	2017 / 2018	2018 / 2019	2019 / 2020	2020 / 2021	2021 / 2022	2022 / 2023
Undergraduate	58 022	66 586	80 965	102 400	139 950	157 755	110 278
full-time education	57 907	66 316	69 200	80 430	103 575	113 530	76 728
extramural studies	115	270	11 765	19 985	31 350	37 675	27 365
evening-time education	-	-	-	1985	5025	6 550	2 575
distance learning	-	-	-	-	-	-	3 610
Master's degree	5000	5000	5903	7695	10425	12 900	1 182

For the period from 2016 to 2020 the number of applications for admission to undergraduate universities has been constantly growing, the average annual

growth rate was 28.26%. In 2020, the number of applications for undergraduate admission at public universities was 1,820,342. The increase compared to 2019

was 57.25%. The largest share of applications in 2020 (34.67% of the total) fell on the city of Tashkent.

### The number of applications for admission to undergraduate universities for all types of education by region for all forms of education at the beginning of the year (excluding private ones)

Regions	2016	2017	2018	2019	2020
The Republic of Uzbekistan	672 640	786 121	813 593	1 157 634	1 820 342
Republic of Karakalpakstan	37 218	45 086	46 587	73 439	82 695

Andijan	60 493	75 723	60 113	78 366	174 194
Bukhara	31 410	33 171	37 815	43 546	64 376
Jizzakh	40 796	44 748	42 285	55 845	70 333
Kashkadarya	49 873	62 484	62 156	83 805	100 860
Navoi	24 896	30 981	27 405	30 063	47 599
Namangan	39 860	45 827	47 821	59 664	73 020
Samarkand	60 324	63 269	74 113	117 402	141 834
Surkhandarya	37 676	50 213	66 302	71 402	108 809
Syrdarya	18 348	19 684	26 888	38 075	48 692
Tashkent	19 339	25 051	34 911	47 653	84 176
Ferghana	70 266	78 181	79 793	115 309	132 290
Khorezm	21 314	28 649	32 824	44 248	60 325
Tashkent city	160 827	183 054	174 580	298 817	631 139

In one of the most demanded universities from the point of view of the IT industry, the Tashkent University of Information Technologies, the dynamics described above are confirmed.

After an increase in the number of accepted Tashkent university of information technologies: students in 2016-2019, which reached 1,645 people, admission in 2020/2021 decreased to 1,353.

At the same time, the number of applicants is increasing annually with an average annual growth rate of 51.59% for 2018-2021 academic years.

### Admission quotas to Tashkent university of information technologies

Year	Admission quotas	Number of applications
2016 -2017	1335	
2017 -2018	1500	
2018 -2019	1645	11 295
2019 -2020	1145	15 843
2020 -2021	1353	25 957

Due to the lack of places to study, a significant number of people choose to study in other countries. So, for example, according to the Ministry of Science and Higher Education of the Russian Federation, as of January 2022, 48,700 students from Uzbekistan study in Russian universities.

## IT education

In 2020, 14 basic IT schools were opened in Uzbekistan, in which an in-depth study of information and communication technologies is being conducted, in 2021 another 86 such schools began their activities. The selection of students for these schools starts from the 5th grade; at the beginning of 2022, more than 4 thousand people study in them. In 2023, it is planned to increase the number of such schools to 205 units, over 30 thousand students will study digital technologies in them.

IT technical schools have been opened in all regions of Uzbekistan, in which about 8 thousand people study at the beginning of 2022. Teaching in IT technical schools is conducted in the following subjects:

- software engineering

- computer engineering
- information Security
- telecommunication technologies

Graduates who successfully complete their studies have the opportunity to continue their studies at universities from the second year without entrance exams (based on an interview).

In state universities, students receive knowledge in the following specialties related to information technology:

- Computer Engineering
- information systems and technologies (including in agriculture)
- information security management

- informatics and programming technologies
- computer systems and their software
- computer engineering
- software engineering
- multimedia technologies
- IT service
- information systems and technologies
- cryptography and cryptanalysis
- artificial intelligence
- mechatronics and robotics

Many branches of foreign universities also have areas of study related to IT:

Source: <https://stat.uz/ru/ofitsialnaya-statistika/social-protection>, March 2022.

Sources: <https://Tashkent University of Information Technologies.uz/ru/qabul-kvotalari4>, June 2022.,

<https://Tashkent University of Information Technologies.uz/ru/2019-2020-oquv-yili-qabul-kvotasi>, June 2022., abt.uz, June 2022.

Source: <https://minobrnauki.gov.ru/press-center/news/mezhdunarodnoe-sotrudnichestvo/46158/>, June 2022.

Source: <https://mitc.uz/ru/news/3577>, January 2022.

Source: [https://itvisa.uz/files/guide\\_Uzbekistan.pdf](https://itvisa.uz/files/guide_Uzbekistan.pdf), 2022.

- Turin Polytechnic University in Tashkent, polito.uz

Automatic control and computer engineering (Control and Computer Engineering)

- Inha University in Tashkent (IUT), inha.uz

Computer and software engineering (Computer and Information Engineering)

- Yeosu Technical Institute in Tashkent (YTIT), ytit.uz

Information systems design, Mechatronics

- Amity University in Tashkent, amity.uz

Information Technology (Information Technology)

Informatics and engineering (Computer Science & Engineering)

- Webster University Tashkent, webster.uz

Management Information Systems

- Westminster International University in Tashkent, wiut.uz

Business Information Systems

- Branch of Moscow State University Lomonosov in Tashkent city, msu.uz

Applied Mathematics and Computer Science

- Management Development Institute of Singapore in Tashkent, mdis.uz

Computer Information Systems for Business

- Japan Digital University in Tashkent, uzswlu-international.uz

Programming

Computer graphics and design

- Sharda University in Andijan, shardauniversity.uz

Computer science and engineering

- Binary International University in Urgench, biu.uz

Informatics (BSc (Hons) In Computer Science)

As an element of the system the government has created 205 digital technology training centers

(IT- centers), including those operating on the basis of regional branches of the IT Park, in which training is conducted in the following courses:

- computer literacy
- frontend development
- backend development
- graphic and web design
- creation of mobile applications
- mobile robotics
- SMM
- IT English

As of 2021, more than 65 thousand people have been trained in IT centers, and more than 46 thousand people have been trained in 2022.

Also, in 2021, 2022, more than 33 thousand civil servants took advanced training courses in the field of information technology throughout the Republic.

### The number of students who trained in IT centers

Name of the region	Total number of students trained in 2020	Total number of students trained in 2021	Total number of students trained in 2022
Republic of Karakalpakstan	1 001	2 301	3 826
Andijan	1 446	3 327	2 228
Jizzakh	1 821	7 381	3 052
Bukhara	1 692	3 297	2 119
Kashkadarya	1 004	2 622	2 454
Navoi	1 539	2 714	1 316
Khorezm	1 041	3 760	3 697
Namangan	1 275	7 151	3 004
Samarkand	1 588	5 191	6 837
Surkhandarya	828	2 530	2 642
Syrdarya	1 319	6 923	1 602
Tashkent region	520	14 679	6 810
Fergana	1 110	3 606	6 571
Tashkent city	222	102	326
<b>Total:</b>	<b>16 406</b>	<b>65 584</b>	<b>46 484</b>

## Higher education in IT

As of 2021, 29,799 people (3.69% of the total number of students in Uzbekistan) were studying at 35 state universities

(the figure also includes their branches) in IT specialities in various forms, 1,187 of which were studying at the master's

program (3.98% of the total number of students in itspecialitiess).

### Number of students in state universities in IT specialities

Learning phase	Form of study	Population
Undergraduate	full-time	18 814
	distance learning	4 836
	evening	716
	remote	4 246
Master's degree	full-time	1 187
<b>TOTAL:</b>		<b>29 799</b>

### The number of students studying in the largest private universities in IT-related specialities (at the beginning of the year)

Name of educational institution	Name of specialities	Number of students
Inha University	Computer and software engineering	1638
Amity University	Information technology / Informatics and engineering	389
IT Park University (ITPU)	Software Engineering	321

In 2022, the number of graduates of state universities in IT specialities amounted to 4351 people, of which 571 are masters (13.12% of the total number of graduates).

### Number of graduates of state universities in 2021/2022 who studied in IT specialities

Educational institution	Number of graduates
<b>Andijan State University, adu.uz</b>	<b>38</b>
Undergraduate	38
<b>Bukhara State University, buxdu.uz</b>	<b>45</b>
Undergraduate	45
<b>Bukhara Engineering and Technology Institute, bmti.uz</b>	<b>135</b>
Undergraduate	110
Master's degree	25
<b>Karshi branch of Tashkent University of Information Technologies, Tashkent University of Information Technologies:.uz/ru/qarshi-filiali</b>	<b>259</b>
Undergraduate	259
<b>Namangan Civil Engineering Institute, www.nammqi.uz</b>	<b>45</b>
Undergraduate	45
<b>The National University of Uzbekistan, nuu.uz</b>	<b>134</b>
Undergraduate	119
Master's degree	15
<b>Nukus branch of Tashkent University of Information Technologies, Tashkent University of Information Technologies:.uz/ru/nukus-filiali</b>	<b>269</b>
Undergraduate	254
Master's degree	15
<b>Samarkand branch of Tashkent University of Information Technologies, Tashkent University of Information Technologies:.uz/ru/samarqand-filiali</b>	<b>460</b>

Undergraduate	425
Master's degree	35
<b>Tashkent State Technical University, tdtu.uz</b>	<b>49</b>
Undergraduate	49
<b>Tashkent University of Information Technologies:.uz</b>	<b>2015</b>
Undergraduate	1595
Master's degree	420
<b>Urgench State University, urdu.uz</b>	<b>34</b>
Undergraduate	34
<b>Urgench branch of Tashkent University of Information Technologies, Tashkent University of Information Technologies:.uz/ru/urganch-filiali</b>	<b>316</b>
Undergraduate	292
Master's degree	24
<b>Ferghana State University, fdu.uz</b>	<b>123</b>
Undergraduate	123
<b>Fergana branch of Tashkent University of Information Technologies, Tashkent University of Information Technologies:.uz/ru/fargona-filiali</b>	<b>429</b>
Undergraduate	392
Master's degree	37
	<b>Total, bachelors: 3780</b>
	<b>Total, masters: 571</b>
	<b>Total: 4351</b>

Tashkent University of Information Technologies (including its branches) graduated 3217 bachelors and 531 masters, which accounted for 86.14% of all IT graduates.

Inha and Amity Universities in IT specialities in 2022 produced 359 and 98 bachelors, respectively.

In 2022, the IT Park University (IT Park University, itpu.uz), established by the IT Park and the international company EPAM

Systems (NYSE:EPAM), the largest IT company in Uzbekistan and a resident of the IT Park, began its work. The University trains IT specialists on a paid basis under the 3-year Software Engineering training program. After completing their studies, graduates receive a bachelor's degree; for 2022, there are no master's programs at the university yet.

Despite the availability of training opportunities in institutions of various levels of education, the

most in demand for work in the IT industry are specialists with higher education. This thesis is confirmed by the results of a survey of companies - residents of the IT Park: 75% of company employees have higher education, and another 22% - secondary specialized. At the same time, in 35% of companies, more than 90% of employees received higher education, in another 6% of companies the share of employees with higher education is less than 50%.

### The level of education of employees of IT Park companies

The level of education	Number of employees, people	Share, %
Higher	3619	75
Specialized secondary	1054	22
Average	127	3

Also, according to the results of a survey of residents of the IT Park, it turned out that among graduates of universities of Uzbekistan working in the surveyed companies, 40% are graduates of the Tashkent University of Information Technologies, 24% are graduates of Inha University (Tashkent branch), 15% are graduates of Westminster International University in Tashkent.

### Distribution of university graduates among employees of IT Park companies, %

University Name	Share
Tashkent University of Information Technologies	40%
Inha University (Tashkent)	24%

Westminster International University in Tashkent	15%
The National University of Uzbekistan named after Mirzo Ulugbek	6%
Tashkent State Technical University	5%
Turin Polytechnic University (Tashkent)	4%
Branch of Lomonosov Moscow State University in Tashkent	1%
Amity Indian University in Tashkent	1%
Other universities in Uzbekistan	5%

The results of answers to the question about the significance and influence of factors on the activities of the IT industry in Uzbekistan show that very important factors for IT companies are the availability and accessibility of in-demand technical specialities in universities, as well as the quality of training students of technical specialities by universities - these survey items were ranked in importance 2nd and 3rd place out

of 42 respectively.

When asked about the significance of factors affecting the prospects for the development of the IT industry in Uzbekistan, survey participants noted the high importance of the «Quality and relevance of the knowledge gained» factor (4<sup>th</sup> place out of 17 proposed parameters).

These answers show that both for the activities and the development

of the IT industry in Uzbekistan, the quality of IT education plays, if not the most important, then a very important role.

In 2022, 14 secondary specialized educational institutions train specialists in IT specialties in Uzbekistan, the number of graduates in 2022 amounted to 394 people.

### The number of students in IT specialties in secondary vocational schools

Nº	Name of educational institution	Number of students
1	Agro IT College of the Republic of Karakalpakstan	164
2	Andijan Technical College of Information Technologies	102
3	Bukhara Technical College of Information Technologies	48
4	Jizzakh Technical College of Information Technologies	148
5	Kashkadarya Technical College of Information Technologies	141
6	Navoi College of Information Technologies	127
7	Yangiurgan Technical College of Information Technologies	254
8	Samarkand Technical College of Information Technologies	288
9	Syrdarya Technical College of Information Technologies	88
10	Surkhandarya Technical College of Information Technologies	85
11	Technical College of Information Technologies of Tashkent region	298
12	Fergana Technical College of Information Technologies	150
13	Urgench Technical College of Information Technologies	126
14	Tashkent College of Information Technologies	600
	<b>TOTAL:</b>	<b>2 619</b>

For 2022, 6 academic lyceums in Uzbekistan train specialists in disciplines related to the IT field. The number of graduates in 2022 was 884 people.

Nº	Name of educational institution	Number of students
1	Academic Lyceum of Tashkent University of Information Technologies	476
2	Academic Lyceum of the Karshi branch of the Tashkent University of Information Technologies	299

3	Samarkand branch of the academic lyceum of the Tashkent University of Information Technologies	411
4	Academic Lyceum of the Fergana branch of the Tashkent University of Information Technologies	323
5	Nukus branch of the Academic Lyceum of the Tashkent University of Information Technologies	423
6	Urgench branch of the Academic Lyceum of the Tashkent University of Information Technologies	392
	<b>TOTAL:</b>	<b>2 324</b>

## State Programs for Teaching Technical and Digital Skills

In 2019, a programming training program «One Million Uzbek Programmers» was launched in Uzbekistan, allowing everyone to study for free on the online portal [uzbekcoders.uz](http://uzbekcoders.uz) in 4 areas:

- data analytics (Data analysis);
- android development (Android);
- front-end development;
- full stack development.

### Distribution of participants in the One million Uzbek coders program by direction, %

List of course	Share
Android development	41,30
Full stack development	31,70
Front end development	16,20
Data Analytics	10,80

As of August 2021, more than 500 thousand people were registered on the portal. As of June 2022, the number of students registered for the program is 2,503,060. Of these, 1,557,977 received participation certificates

and 1,175,933 received certificates of completion. At the same time, 90% of the total number of participants are schoolchildren, and 47% of the project participants are girls. Also, within the framework of this

project, a distance learning methodology is being introduced in secondary schools, in which schoolchildren independently study materials on the platform and perform labor work.

### Distribution of participants in the One million Uzbek coders program by age, %

Age	Share
Less than 12 years old	73,22
13-17	10,45
18-24	7,11
25-34	4,13
35-44	2,72
45-64	2,32
65+	0,05

### Distribution of participants in the One million Uzbek coders program by region, %

Region	Share
Andijan	16,70
Namangan	15,52
Samarkand	14,13

Source: Data provided by the IT Park, June 2022.

Source: Research of the IT Park «Human potential in the field of digital development of Uzbekistan», June 2022.

Sources: <https://it-park.uz/ru/itpark/news/na-proekte-one-million-uzbek-coders-uzhe-500-tysyach-uchastnikov>, August 2021.,

<https://nuz.uz/nauka-i-tehnika/1245761-zavershilsya-proekt-odin-million-uzbekskih-programmistov-i-opredeleny-ego-pobediteli.html>, June 2022.

Ferghana	9,97
Navoi	9,36
Khorezm	9,07
Surkhandarya	5,53
Republic of Karakalpakstan	4,17
Jizzakh	3,80
Tashkent city	3,06
Tashkent	2,69
Bukhara	2,59
Kashkadarya	2,12
Syrdarya	1,23

In 2021, IT Park, together with the Ministry of Employment and Labor Relations, launched the Future Skills Uzbekistan project, which aims to increase the number of highly qualified IT specialists

through a comprehensive information technology training program. Within the framework of the project, in each region of the project, in each region of Uzbekistan, training of school

graduates, applicants and unemployed persons for professions in demand in the information technology market was organized.

### Specializations of the Future Skills Uzbekistan program by region

Region	Specialization
Andijan	Front-end programming; Back-end programming
Bukhara	Front-end programming; Back-end programming
Jizzakh	Front-end programming; Back-end programming; Mobile robotics
Kashkadarya	Front-end programming; Back-end programming
Navoi	Front-end programming; Graphic design; 3D modeling
Namangan	Front-end programming; Graphic design; 3D modeling; Mobile robotics
Republic of Karakalpakstan	Front-end programming; Back-end programming
Samarkand	Front-end programming; Graphic design; 3D modeling
Syrdarya	Front end programming
Surkhandarya	Front end programming
Tashkent	Front-end programming; Back-and-programming; Development of mobile applications; Development of mobile games; Graphic design; 3D modelling
Tashkent	Front-end programming; Back-end programming
Ferghana	Front-end programming; Back-end programming
Khorezm	Front-end programming; Back-end programming



## Unemployed youth studying under the Future Skills Uzbekistan project, persons

Region	Man
Bukhara	100
Samarkand	97
Navoi	86
Kashkadarya	83
Tashkent	66
Namangan	64
Khorezm	63
Jizzakh	46
Surkhandarya	45
Syrdarya	36
Republic of Karakalpakstan	29
Andijan	20
Tashkent city	8
Ferghana	0

In 2020, Andijan launched the Digital City technopark, which is the second technopark in the country after the IT Park in Tashkent. Within the framework of this project, basic courses on information technologies will be

held in the districts of the region. Selected participants will be trained in English in Digital City and prepared to provide IT services. In general, it is planned to train more than 2 thousand people a year in the technopark.

The Digital City project, designed to support information technology, innovative projects and export of software products, is the second implemented project after the IT Park in Tashkent and the first in the region.

## ▲ Digital Skills Training Programs for Young Entrepreneurs

Measures are being taken in the Republic of Uzbekistan to develop and support youth entrepreneurship. On April 21, 2021, the Decree of the President of the Republic of Uzbekistan «On measures to organize the activities of youth industrial and entrepreneurial zones, as well as support entrepreneurial initiatives of young people» was issued, which provides for the creation of a Fund for Supporting Young Entrepreneurs, as well as youth industrial and entrepreneurial zones, provides for the possibility of lending to preferential terms for people of age 18 to 30 to launch start-up projects aimed at the production of innovative products, including in the field of ICT.

At the end of 2021, the Yashnabad Innovation Technopark under the Ministry of Innovative Development launched a three-month Business Incubator program

for young entrepreneurs. During the program, participants received practical knowledge, including in the field of digitalization and the effective use of electronic platforms. This project was successfully completed, in 2022 a new recruitment of program participants began.

In 2022, the National Bank for Foreign Economic Affairs of the Republic of Uzbekistan received \$100 million from the Reconstruction and Development Fund, intended to support the projects of young businessmen. During the implementation of the program, designed for 2022-2024, young entrepreneurs, after completing free training courses on building business skills and entrepreneurship training (including online format), will be able to apply for preferential loans for business development.

In 2022, with the help of USAID, a program was launched to support the development of women from rural areas of the country (SUPPORTING UZBEKISTAN'S RURAL WOMEN). The pilot project of this program is the IT Women - Karakalpakstan project, the purpose of which is to train girls and women in Karakalpakstan with IT skills, which will subsequently help them find employment or engage in entrepreneurial activities.

Since 2017, the annual international technological competition for girls Technovation Girls Uzbekistan has been held in Uzbekistan. The project aims to increase the interest of girls of age 10-18 in technical fields of activity, the development of entrepreneurship and programming skills.

Source: Research of the IT Park «Human potential in the field of digital development of Uzbekistan», June 2022.

Sources: <https://www.spot.uz/ru/2020/05/22/digitalcity/>, May 2020.,

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Source: <http://www.technovation.uz/>, June 2022

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## 4 ICT INVESTMENT

Foreign direct investment volume, 2021

**\$ 2**  
billion USD

Foreign direct investment in ICT, 2021

**\$ 165,9**  
million USD

The average annual increase in foreign direct investment in ICT

**↑ 43,5%**  
for 2019-2021

Total investment in ICT, 2021

**\$ 434,8**  
million USD

Amount of investment in PPP projects in ICT

**\$ 22**  
million USD

Venture funds in Uzbekistan

**11**

According to the World Bank, the volume of foreign direct investment in the economy of Uzbekistan in 2021 amounted to 2 billion US dollars. The main areas for foreign investment are industry, trade, construction and agriculture. The main countries in terms of investment in Uzbekistan are China, Turkey, Germany, and Russia.

Foreign direct investment in the ICT industry was US\$165.9 million in 2021. Direct foreign investment in

ICT has been growing since 2018, with an average annual growth rate of 43.45%. The main investor countries in the ICT industry for the period 2016-2021 were China, the Netherlands, Russia and Japan.

In 2019, the Law on Public-Private Partnership (PPP) was adopted. Since 2019, 4 projects have been implemented within the framework of PPP in the field of ICT, the total investment amounted to 22 million US dollars.

Decree that was adopted in 2018 «On additional measures to improve the mechanisms for financing projects in the field of entrepreneurship and innovation», allowed the development of venture infrastructure in Uzbekistan. In 2019, the first IT Park Venture Fund was created based on the IT Park of Uzbekistan. There are currently 11 venture funds operating in the country.

## General information about foreign investments

According to the World Bank (<https://databank.worldbank.org/source/world-development-indicators#>) net inflow of foreign direct investment in Uzbekistan in 2021 amounted to 2,041.83

million US dollars. Compared to 2020, the indicator increased by 18.9%. The size of net foreign investment as a whole is determined by the inflow, and

outflow in the period from 2016 to 2021 was insignificant. Foreign direct investment inflows ranged from 1.2% of GDP in 2018 to 3.9% of GDP in 2019.

## Dynamics of the volume of foreign direct investment during 2016-2021

Indicator	2016	2017	2018	2019	2020
Net foreign direct investment (balance of payments, US\$ million)	1 657,07	1 790,14	622,68	2 313,39	716,94
Foreign direct investment, inflows (% of GDP)	1,93	2,90	1,19	3,87	2,89
Foreign direct investment, inflows (balance of payments, US\$ million)	1 662,89	1 798,30	624,69	2 316,48	1 728,25
Foreign direct investment, outflow (% of GDP)	0,01	0,01	0,004	0,01	0,02
Foreign direct investment, outflow (balance of payments, mln USD)	5,82	8,16	2,01	3,09	11,31

According to the World Bank, in 2020, relative to neighboring countries, Uzbekistan ranked second in terms of attracted net direct investment, second only to Kazakhstan. In 2021, Uzbekistan overtook Kazakhstan in this indicator, there are no complete data for other countries.

## Dynamics of net foreign direct investment (inflow-outflow) of neighboring countries during 2016-2021, USD million

Country	2016	2017	2018	2019	2020	2021
Afghanistan	79,59	40,27	80,63	-2,92	-24,26	
Kazakhstan	13 749,21	3 800,89	4 992,57	5 904,43	5 831,03	1 703,33
Kyrgyzstan	578,97	-78,14	139,27	336,66	-582,41	
Tajikistan	206,52	63,10	249,15	189,60	36,20	36,34
Uzbekistan	1 656,07	1 790,14	622,68	2 313,39	1 716,94	2 041,83

The number of enterprises with foreign investment in January 2021 more than doubled compared to January 2017 and exceeded 11,800. Foreign capital in Uzbekistan comes from more than 37 countries, most often investments come from Russia, China, Turkey, South Korea, Kazakhstan.

## Distribution of enterprises with foreign participation by country, 2020

Country	Share of enterprises, %
Russia	18,00
China	15,00
Turkey	13,00
South Korea	8,00
Kazakhstan	8,00
Other	38,00

In terms of foreign investment in 2020, China is leading, followed by Turkey, Germany, and Russia.

## Distribution of foreign direct investment by country, 2020

Country	Share of investments, %
China	27,0
Turkey	20,9
Germany	14,1
Russia	11,1
USA	11,0
UAE	6,5
South Korea	6,4
France	3,1

In the entire period under review from 2017 to 2021, there is an increase in the number of investment projects with an average annual growth of 64.46%. The main sectors for foreign investment are industry, trade, construction and agriculture.

### Number of investment projects during 2016-2021

	2017	2018	2019	2020	2021
Number of projects	111	300	345	645	812

### Number of enterprises with foreign capital by industries

Industry	Number of enterprises
Industry	3943
Trade	3113
Building	955
Agriculture, forestry and fisheries	673
Housing and food services	498
Transport and storage	316
Information and communication	315
Health and social services	169

## Foreign investment in ICT

According to the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan and the Ministry of Investments and Foreign Trade, the volume of foreign direct investment differs from the data of the World Bank given above, therefore they are given separately. However, the data of the Ministry for the Development of Information Technologies and Communications of the Republic of

Uzbekistan and the Ministry of Investments and Foreign Trade make it possible to separate investment in the ICT industry in the structure of foreign investment.

According to the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan (<https://mitc.uz/ru/>) in 2021, FDI in the ICT industry amounted to USD 165.88 million or 5.84% of total FDI. In the

period from 2018 to 2021, there is an increase in the volume of foreign direct investment in the field of ICT, the average annual growth rate was 43.45%.

In 2021, the total investment in the ICT sector amounted to 434.79 million US dollars, an increase compared to 2020 was 116.76%. Between 2018 and 2021, total ICT investment increased at a CAGR of 35.99%.

### Dynamics of changes in the volume of investments in the field of ICT during 2016-2021

Indicator	2016	2017	2018	2019	2020	2021
Foreign direct investment, billion sum	5 091,90	12 395,20	14 660,40	37 171,30	28 740,50	30 149,20
Direct foreign investments, million USD	1 715,08	2 411,38	1 816,87	4 199,50	2 855,57	2 837,99
Foreign direct investment in the field of ICT, million USD	259,34	238,55	56,20	97,16	141,36	165,88
Total investment in ICT, million USD	287,12	308,45	172,90	177,47	200,59	434,79

The main investor countries in the ICT industry for the period 2016-2021 were China, the Netherlands, Russia and Japan.

## Structure of incoming foreign investments in ICT sector by country during 2016-2021, %

Investor country	Share of investment
China	37,00
Netherlands	31,00
Russia	15,00
Japan	13,00
Other countries	4,00

## ▲ The main directions of investments in fixed assets

In 2021, investments in the amount of USD 23.06 billion were attracted to the fixed capital, of which USD 0.7 billion or 3.04% accounted for information and communication activities. In the period from 2018 to 2021, there is an increase in the volume of investments in fixed assets,

including in the field of «Information and Communication», the average annual growth rate was 20.14% and 85.31%, respectively.

In 2021, the volume of foreign investment and loans in fixed assets amounted to 9.83 trillion.

US dollars, of which 2.03% were foreign investments and loans for the activities of «Information and Communication». The share of foreign investment and loans in total investment in fixed assets in 2021 amounted to 42.63%, which is twice as much as in 2016.

### Dynamics of changes in the volume of investments in fixed assets by type of activity «Information and Communication» (for 2021, preliminary data), USD billion

Indicator	2016	2017	2018	2019	2020	2021*
Total investments in fixed assets, of which	16,67	11,81	13,30	15,14	20,07	23,06
in the type of activity «Information and communication»	0,40	0,37	0,11	0,24	0,48	0,70
Foreign investments and loans in fixed assets, of which	3,64	3,15	3,89	5,94	8,60	9,83
in the type of activity «Information and communication»	0,27	0,29	0,06	0,14	0,20	0,20

### Dynamics of changes in the volume of investments in fixed assets by type of activity «Information and Communication» (for 2021, preliminary data), UZS trillion

Indicator	2016	2017	2018	2019	2020	2021*
Total investments in fixed assets, of which	49,50	60,70	107,30	134,00	202,00	244,96
in the type of activity «Information and communication»	1,20	1,90	0,90	2,10	4,80	7,42
Foreign investments and loans in fixed assets, of which	10,80	16,20	31,40	52,60	86,60	104,46
in the type of activity «Information and communication»	0,80	1,50	0,50	1,20	2,00	2,14

In the structure of investments in fixed assets in 2019-2021 the largest share is the category «Machinery and equipment», in 2021 its share was 47.5%. Investment in ICT equipment ranged from 1.6% to 3.5%, investment in computer software is less than 0.1%.

### Structure of investments in fixed capital by types of fixed assets

Fixed assets	2019	2020	2021
residential buildings	10,5%	11,0%	12,5%
non-residential buildings	17,1%	18,2%	21,2%
Other structures	11,8%	12,9%	12,6%
Land improvements	0,1%	0,1%	0,1%
Machinery and equipment, total	54,8%	52,6%	47,5%
Transport equipment	8,5%	5,9%	6,1%
Information, computer and telecommunications (ICT) equipment	1,6%	3,5%	2,2%
Other machines and equipment	44,7%	43,2%	39,2%
Resources of animals that bring products on a regular basis	1,2%	1,4%	1,5%

Resources of trees, crops and plantations that produce products regularly	0,2%	0,4%	0,4%
Costs associated with the transfer of ownership of non-produced assets	0,1%	0,1%	0,1%
Computer software and databases	0,02%	0,01%	0,04%
Original entertainment, literary and artistic works	0,0%	0,0%	0,0%
Scientific research and development	0,0%	0,0%	0,0%
Exploration and evaluation of mineral reserves	0,4%	0,0%	0,0%
Other intellectual property products	0,2%	0,1%	0,1%

### Structure of investments in fixed capital by types of fixed assets, UZS trillion

Fixed assets	2019	2020	2021
<b>Total</b>	195,93	210,20	239,55
residential buildings	20,62	23,20	29,85
non-residential buildings	33,41	38,17	50,89
Other structures	23,15	27,04	30,29
Land improvements	0,13	0,29	0,28
Machinery and equipment, total	107,31	110,49	113,86
Transport equipment	16,59	12,42	14,57
Information, computer and telecommunications (ICT) equipment	3,19	7,35	5,33
Other machines and equipment	87,52	90,73	93,96
Resources of animals that bring products on a regular basis	2,42	2,84	3,66
Resources of trees, crops and plantations that produce products on a regular basis	0,37	0,88	0,84
Costs associated with the transfer of ownership of non-produced assets	0,20	0,23	0,14
Computer software and databases	0,03	0,03	0,10
Original entertainment, literary and artistic works	0,004	0,002	0,001
Scientific research and development	0,01	0,09	0,03
Exploration and evaluation of mineral reserves	0,76	0,03	0,10
Other intellectual property products	0,33	0,23	0,29

## State support of investments in the ICT industry

On January 9, 2020, Decree of the President N°PP-4563 «On measures to implement the Investment Program of the Republic of Uzbekistan for 2020-2022» was adopted, which provides for the implementation of a number of large investment projects. During 2020-2022 in the field of information technology and communications, it was planned to attract \$676.8 million investments.

In 2019, the Law on Public-Private Partnership (PPP) was adopted. For the period from 2019 to 2022, 4 projects were implemented in the field of ICT on the principles of PPP:

1. project for the establishment, operation and maintenance of the National Information System for Monitoring Labeling and Traceability of Products «Asl belgisi»;

2. project to create an online platform «Kundalik» in the system of the Ministry of Public Education;

3. project to create an electronic system for tracking student attendance (face ID) in schools in the city of Tashkent;

4. project to create an automated information system «Ishonchli Hamkor» in the system of the Tax Committee of the Republic of Belarus.

### Statistics on public-private partnership for 2020-2022

Index	2020	2022
Total number of PPP projects in the field of ICT, units	3	1
Total cost of PPP projects in the field of ICT, mln USD	22,20	0,02



As of September 2022, there are 852 ICT enterprises with government participation in Uzbekistan. In 2022, 9 transactions were made to privatize ICT enterprises with government participation for a total of \$9.34 million.

According to IMF experts, the adoption of a new law on privatization, designed to streamline the sale of state-owned enterprises and banks based on transparent and competitive

procedures, will help speed up the privatization process in order to reduce the role of the state in the economy. At the same time, the abolition of state guarantees for state-owned enterprises and the adoption of new procedures for approving large borrowings by state-owned enterprises will improve financial discipline.

The current stage of privatization is characterized by the fact that the government of Uzbekistan deliberately reduces the role of the

state in the economy. In particular, eight times more state assets were privatized in 2021 than in 2020. This exceeds the previous four years by more than three times.

As part of Decree of the President №PP-168 «On additional measures to further reduce government participation in the economy and accelerate privatization» the decision was made to privatize 130 information technology enterprises through public auctions.

## ▲ Venture infrastructure of Uzbekistan

In November 2018, the Decree «On additional measures to improve the mechanisms for financing projects in the field of entrepreneurship and innovation» was issued, which was the beginning of the development of venture infrastructure in Uzbekistan. The first IT Park Venture Fund was established in

2019 on the basis of an IT Park in Uzbekistan. This fund invests in venture projects in the field of information technology. The average investment for each project is from 25 to 100 thousand US dollars, depending on the stages of development of start-up projects (pre-seed stage, early growth stage). The next step in the

development of the venture infrastructure of Uzbekistan was the creation in January 2020 of the Venture Capital Investment Association of Uzbekistan (AVUz).

At the moment, 11 venture funds are represented in Uzbekistan, which invest in start-ups.

### Venture funds of Uzbekistan

Company	Link
Semurg Ventures	<a href="https://semurg.vc/">https://semurg.vc/</a>
Altergate	<a href="https://www.crunchbase.com/organization/altergate-vc">https://www.crunchbase.com/organization/altergate-vc</a>
Uzcard Ventures (there is also Uzcard FinTech Accelerator)	<a href="https://uzcard.vc/">https://uzcard.vc/</a>
UzVC	<a href="https://nationaluzvc.uz/en/3-2/">https://nationaluzvc.uz/en/3-2/</a>
RB ASIA	<a href="https://www.rbasia.uz/">https://www.rbasia.uz/</a>
YELLOWROCKETS.VC	<a href="https://yellowrockets.vc/">https://yellowrockets.vc/</a>
Sturgeon Capital	<a href="https://www.sturgeoncapital.com/">https://www.sturgeoncapital.com/</a>
Fort Ross Ventures	<a href="https://review.uz/post/amerikanskiy-venchurny-fond-fort-ross-ventures-zainteresovan-v-investiciyax-v-uzbekskie-startap">https://review.uz/post/amerikanskiy-venchurny-fond-fort-ross-ventures-zainteresovan-v-investiciyax-v-uzbekskie-startap</a>
IT Park Venture Fund	<a href="https://it-park.uz/index.php/en/itpark/startups/venture">https://it-park.uz/index.php/en/itpark/startups/venture</a>
Aloqa Ventures	<a href="https://aloqaventures.uz/en/">https://aloqaventures.uz/en/</a>
MOST Ventures	<a href="https://mostfund.vc/ru">https://mostfund.vc/ru</a>

Startups in Uzbekistan are at the initial level of their formation and there is a great demand for funding. Often startups need funding from venture capital funds in significant amounts.

In 2021, several Uzbek startups successfully attracted investments. Among them are:

- IMAN, which combines investment and wealth

management services, installment purchases and a marketplace. In 2021, the startup reached the final of the international investment competition Seedstars World Competition 2021, and then raised \$2 million with the help of an American fund;

- Zip24, a startup from the Tashkent-based company Data Site Technology, is based on a SaaS B2B system for managing

logistics, supply chains and fulfillment in the field of e-commerce. Its technologies make it easier to do business by automating processes. The startup raised \$1.2 million in funding from UK fund Sturgeon Capital;

- Tass Vision, which is an intelligent video surveillance system that helps to increase work productivity in companies and provides services for recording

Source: IMF experts believe that in Uzbekistan the role of the state in the economy should be significantly reduced (kun.uz), April 2022

Source: <https://www.gazeta.uz/ru/2022/07/08/davaktiv/>, July 2022

Source: <https://www.dentons.com/en/insights/articles/2022/april/27/uzbekistan-accelerating-the-privatization-of-state-assets>, April 2022

Source: Self-development, June 2022

employees' working hours, collecting customer data, building a «heat map» (heat map) of the most visited places in the building. Tass Vision raised \$500,000 from MOST Ventures;

- Girgitton, a startup delivering food from cafes and goods from stores. USD 500,000 was invested in this project by MOST Ventures;

- Micros24, a participant in the

startup acceleration program from IT Park. The startup is developing several areas: electronic document management, online cash registers, multibanking and verification of counterparties. Micros24 raised a \$120,000 investment from venture capital fund Semurg VC;

- Kiva Sesame, a natural food startup that develops cost-effective oilseed varieties and organizes

their processing, received 1.4 billion sum (\$131.78 thousand) from the Ministry of Innovative Development;

- Aico Cybernetics, a startup developing products based on artificial intelligence, machine learning and data storage technologies. The startup raised 1.1 billion sum (\$103.54 thousand) from the Ministry of Innovative Development.

## Factors affecting investment in Uzbekistan

To assess the investment attractiveness of the economy of Uzbekistan, it is advisable to analyze the amount of net foreign direct investment per capita in comparison with other countries in

the region. Using the total amount of investments for the period allows you to smooth out fluctuations in the indicator in individual years. According to this

indicator, Uzbekistan is approximately on the same level with Armenia and is inferior to the leaders - Kazakhstan, Turkmenistan and Azerbaijan.

### Foreign direct investment, net inflow per capita for 2016 - 2020, USD dollars

Country	2016	2017	2018	2019	2020	Soum
Kazakhstan	967,95	263,75	19,33	201,52	383,58	1 836,13
Turkmenistan	396,15	362,29	341,37	358,36	193,90	1 652,07
Azerbaijan	461,13	291,00	141,15	150,03	50,25	1 093,56
Armenia	113,69	85,83	90,41	33,91	19,77	343,61
Uzbekistan	52,21	55,52	18,96	68,98	50,49	246,16
Kyrgyzstan	101,85	-17,30	22,81	62,55	-61,02	108,90
Tajikistan	27,89	20,93	24,27	22,83	11,17	107,08

The relative actual amount of foreign investment per capita correlates with the position of Uzbekistan compared to other countries in the region in the main

international ratings considered in the analysis of the country's investment attractiveness - Global Attractiveness Index, Doing Business, Corruption perception

index. The exception is Turkmenistan, which, due to the peculiarities of the economy, is not included in the ranking.

### Ratings of investment attractiveness of countries

Country	Global Attractiveness Index, 2021	Doing Business, 2020	Corruption Perceptions Index, 2021
Kazakhstan	56	25	102
Turkmenistan	-	-	169
Azerbaijan	62	34	128
Armenia	78	47	58
Uzbekistan	76	69	140
Kyrgyzstan	89	80	144
Tajikistan	123	106	150

Thus, one can pay attention to the factors taken into account when compiling these ratings, and the dynamics of Uzbekistan on them.

The Global Attractiveness Index reflects the attractiveness profile of the countries of the world for doing, growing and optimizing

business. When calculating it, several predominantly quantitative indicators are used that represent various aspects of the

Source: <https://weproject.media/articles/detail/8-startapov-uzbekistana-kotorye-privlekli-investitsii-v-2021-godu/>, December 2021

Source: <https://databank.worldbank.org/source/world-development-indicators#>, June 2022

Sources: [https://acadmin.ambrosetti.eu/dompdf/crea\\_wmark.php?doc=L2F0dGFjaGllbnRzL3BkZi9nYWktcmVwb3J0LTlwMjEtZW4tMjAyMTA5MDMxMjUwZGY%3D&id=14183&moid=corporate](https://acadmin.ambrosetti.eu/dompdf/crea_wmark.php?doc=L2F0dGFjaGllbnRzL3BkZi9nYWktcmVwb3J0LTlwMjEtZW4tMjAyMTA5MDMxMjUwZGY%3D&id=14183&moid=corporate), June 2022,

<https://openknowledge.worldbank.org/bitstream/handle/10986/32436/9781464814402.pdf> June 2022,

<https://www.transparency.org/en/cpi/2021>, June 2022

Source: <https://www.doingbusiness.org/content/dam/doingBusiness/country/u/uzbekistan/UZB.pdf>, June 2022

attractiveness, dynamism and stability of the country, and an analysis is made of the attractiveness of doing business, taking into account a number of internal and external factors.

The World Bank Group's Doing Business2020 rating provides a high-level assessment of the business environment and

legislation related to business regulation in Uzbekistan.

In 2020, Uzbekistan ranked 69 out of 190 economies in the ranking. The government of Uzbekistan continues to take measures to improve the position in the ranking, as well as to stimulate the development and conditions for Doing Business in

promising, knowledge-intensive and innovative industries. The country received the best marks in the categories «Registration of enterprises» (8<sup>th</sup> place), «Enforcement of contracts» (22<sup>nd</sup> place). The lowest scores were obtained in the categories «Obtaining a Building Permit» (132<sup>nd</sup>) and «International Trade» (152<sup>nd</sup>).

### Place of Uzbekistan by Doing Business rating categories

Rating Category	Uzbekistan	Ease of Doing Business Indicator
Registration of enterprises	8	96,2
Getting permissions for construction	132	61,7
Connection to the power supply system	36	86,9
Property registration	72	67,9
Getting loans	67	65,0
Protecting Minority Investors	37	70,0
Taxation	69	77,5
International trade	152	58,2
Enforcement of contracts	22	71,9
Resolution of insolvency	100	43,5

According to the Corruption Perceptions Index in 2021, Uzbekistan is in 140<sup>th</sup> place out of 180, sharing this position with Pakistan, Mauritania and Myanmar. Uzbekistan is improving its position in the ranking compared to the data of 2016 and has risen by 16 positions.

### Corruption perception index by years

Parameter	2016	2017	2018	2019	2020	2021
Position in the ranking	156 (out of 176)	157 (out of 180)	158 (out of 180)	153 (out of 180)	146 (out of 180)	140 (out of 180)
Number of points (out of 100)	21	22	23	25	26	28

According to the results of a survey of IT companies conducted in October 2021 by the IT Park, as well as a survey of IT Park resident companies in July 2022, participants noted the following negative factors related to the conditions for Doing Business in

Uzbekistan:

- bureaucratic barriers;
- problems in obtaining permits and licenses (long duration of obtaining, ambiguity in requirements);

- unsatisfactory state of IT infrastructure and communication channels in the regions;
- restriction of the use and blocking of Internet services by the regulator;
- non-transparent tendering.

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## ▲ 5 DIGITAL ECONOMY AND THE LEVEL OF DIGITALIZATION

Uzbekistan in the Mobile Network Development Index, 2021

★ **123**  
(out of 193)

Uzbekistan in the Global Innovation Index, 2021

★ **86**  
(out of 132)

Number of Internet subscribers, 2021

👤 **22,99**  
million

Number of Internet subscribers connected via mobile communications, 2021

👤 **17,95**  
million people

Number of mobile communication stations, 2021

📶 **45,89**  
thousand units

Number of mobile subscribers, 2021

👤 **29**  
million

Average speed of broadband Internet connection

🌐 **59,15**  
Mbps,  
August 2022

Average cost of Internet connection per month for individuals, 2021

💰 **14,78**  
USD

Average mobile Internet connection speed, August 2022

🌐 **28,55**  
Mbps

Average cost of Internet connection per month for legal entities, 2021

💰 **136,79**  
USD

Electronic services available on the SPSI portal, September 2022, USD

⚙️ **349**

Submitted applications on the SPSI portal, September 2022

👤 **56,4**  
million

In recent years, Uzbekistan has been systematically improving its positions in various rankings that characterize the use and development of digital technologies in the country, such as the ICT Development Index, the e-Participation Index, the e-Government Development Index, the Global Innovation Index, etc. In parallel with this, the country is developing a communication infrastructure, mobile networks and data networks.

In 2020, the «Digital Uzbekistan-2030» strategy was adopted, within the framework of which it is planned to carry out various projects aimed at increasing the level of digitalization in the country, including improving the quality and speed of connecting to the Internet.

In 2021, the total length of fiber-optic communication lines in Uzbekistan amounted to 81.7 thousand km. and increased by 75.32% compared to 2020. The number of subscribers with Internet access in 2021 reached 19,981,003, of which the number of individuals was 19,241,333, or

96.3%. The share of subscribers with broadband Internet access is only 5.41% of the total as of the beginning of 2021.

Most of the subscribers (89.92%) are connected via mobile communications. The total number of Internet users from 2016 to 2021 has been constantly increasing with an average annual growth rate of 15.34%.

The number of mobile subscribers in the country is growing and at the end of 2021 was 29 million subscribers. Average annual growth rate for the period from 2018 to 2021 amounted to 9.75%. The number of network communication subscribers per 100 population is also growing from 2018 to 2021 with an average annual growth of 7.67%, that is, the coverage of the population with mobile communications is increasing.

As of June 2022, the average mobile connection speed was 28.55 Mbps, which is half the average broadband speed of 59.15 Mbps.

Between 2018 and 2021 the capacity of the international data transmission network remained unchanged and equaled 1,200 Gbps, in 2022, according to the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan, this figure reached 1,800 Gbps. As a result, between 2019 and 2021 the average cost of connecting to the Internet per month for legal entities decreased by an average of 38% per year and in 2021 amounted to \$136.79.

Initiatives for the development of e-government are actively developing in Uzbekistan. The country has a Unified Portal of Interactive Public Services (UPIPS), which, as of September 2022, provides 349 different services, 2.3 million users are registered, and 56.4 million applications have been submitted.

For 6 months of 2022, 1,101,042 users used the services of SPSI. The total number of services provided through the SPSI was 6,758,694.

## General information about digitalization and ICT development

For the period 2016-2021 Uzbekistan has systematically improved its positions in key international digital and ICT rankings.

### Position of Uzbekistan in international digital and ICT ratings

Rating	Year					
	2016	2017	2018	2019	2020	2021
Index of development of information and communication technologies	103 (out of 176)	95 (out of 176)				
e-participation index	47 (out of 193)		59 (out of 193)		46 (out of 193)	
eGovernment Development Index	80 (out of 193)		81 (out of 193)		87 (out of 193)	
Global Innovation Index					93 (out of 131)	86 (out of 132)
Mobile Network Development Index	134 (out of 170)	132 (out of 170)	127 (out of 170)	124 (out of 170)	130 (out of 170)	127 (out of 170)

Sources: International Telecommunication Union: Measuring the Information Society, <https://www.itu.int/net4/ITU-D/idi/2017/index.html>, June 2022, UN Study: E-Government, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2016>, June 2022, UN Study: E-Government, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2018>, June 2022, UN Study: E-Government, <https://publicadministration.un.org/egovkb/en-us/Reports/UN-E-Government-Survey-2020>, June 2022, World Intellectual Property Organization: Global Innovation Index 2020, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2020.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf), June 2022, World Intellectual Property Organization: Global Innovation Index 2021, [https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2021.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2021.pdf), June 2022, International Association of Mobile Operators: Mobile Telecommunications Index 170 countries, <https://www.mobileconnectivityindex.com/>, June 2022, United Nations Educational, Scientific and Cultural Organization: a study of the level of spending on R&D in the countries of the world, <https://gtmarket.ru/ratings/research-and-development-expenditure>, June 2022, International Telecommunication Union: «Global Cybersecurity Index 2017» <https://www.itu.int/>, June 2022, International Telecommunication Union: «Global Cybersecurity Index 2018» <https://www.itu.int/>, June 2022, International Telecommunication Union: «Global Cybersecurity Index 2020» <https://www.itu.int/>, June 2022, International

The level of spending on R&D in the countries of the world	74 (out of 89)	76 (out of 91)	64 (out of 71)		
Telecom Infrastructure Index	119 (out of 193)		114 (out of 193)		123 (out of 193)
Global Cyber Security Index		93 (out of 165)	52 (out of 175)		70 (out of 182)

In general, Uzbekistan improves its position in most indices, with the exception of the e-Government Index, where Uzbekistan ranked 80th in 2016 and 87th in 2020

(out of 193 countries participating in the rating). At the same time, despite the deterioration of the position, the value of the index itself increased from 0.54 to 0.67.

This may indicate a slower development of e-government in Uzbekistan compared to other countries participating in the rating.

## Strategy «Digital Uzbekistan»

An important role in the development of digitalization and the digital economy is played by the Strategy «Digital Uzbekistan-2030», approved by the Decree of the President of October 5, 2020. The decree also approved programs for the digital transformation of the country for 2020-2022 and over 220 projects to improve the e-government system, further develop the domestic software and information technology market, organize IT Parks in all regions of the country, improve the situation with the provision of qualified personnel.

As part of the digital transformation of territories and industries in 2020–2022, it was planned to:

- increase the number of settlements connected to the Internet (including broadband access ports) to 2.5 million (from 78 to 95 percent of their total number) by building 20 thousand kilometers of fiber-optic communication lines and developing mobile communication networks;
- within the framework of the One Million Programmers project, organize training in the basics of computer programming covering 587,000 people, including 500,000 young people;
- to introduce more than 280 information systems and software products to automate management, production and logistics processes at enterprises in the real sector of the economy;

· to train 12 thousand employees in the areas of information technology and information security to improve the digital literacy and skills of khokims, employees of state bodies and organizations in the regions, with the involvement of relevant higher educational institutions.

The roadmap for the implementation of the Strategy «Digital Uzbekistan-2030» for 2020-2022 provides for the implementation of the following projects in the field of e-government development:

- from January 1, 2021, within the framework of the Digital Tashkent program, upon receipt of an identification ID-card, individuals are provided with access to the personal account of the user of electronic services, with the help of which they get the opportunity to interact with government bodies and organizations in electronic form;
- from July 1, 2021, on the Open Data Portal of the Republic of Uzbekistan, state bodies and organizations provide online placement of information on public procurement, registration of patents, medicines and medical products, public transport, as well as the use of land resources and other publicly available statistical information;
- From August 1, 2021, individuals and legal entities are allowed to pay online for all established state duties, fees, fines and other obligatory payments using electronic payment systems.

In the development of the digital industry, the following changes were also planned:

- from November 1, 2020, for legal entities that are residents of the Republic of Uzbekistan and provide services for training in information technology, development and implementation of hardware and software, robotics, export of information services via the Internet, as well as in the field of data storage and processing, it is possible to receive the status of an IT Park resident;
- until January 1, 2022 - completion of the digital transformation of commercial banks by ensuring that they provide a wide range of online services, including the implementation of credit products, remote opening of deposits and current accounts.

In the field of development of digital education, it is envisaged:

- from January 1, 2021 - the introduction of a compensation system for up to 50 percent of citizens' expenses for obtaining international IT certificates in system administration, database and cloud platform management, information security and other popular areas;
- until September 1, 2021 - the opening in each district and city based on existing infrastructure facilities of centers for training the general population, especially youth and women, in digital technologies;
- by the end of 2023 - the phased

· by the end of 2023 - the phased creation in all districts and cities on the basis of existing educational institutions of more than 200 specialized schools with in-depth study of computer science and information technology.

In the field of digital infrastructure development:

· by the end of 2022 – ensuring the ability to connect each locality of the country to the Internet with a

data transfer rate of at least 10 Mbps;

· until January 1, 2022 - providing all popular tourist places with high-speed Internet.

## ▲ Dynamics of development of telecommunication infrastructure

In 2021, the total length of fiber-optic communication lines in Uzbekistan amounted to 81.7 thousand km. and increased by 75.32% compared to 2020. The

number of mobile base stations in 2021 compared to 2020 increased by 44.58% and amounted to 45.89 thousand. From 2016 to 2021 the average

annual growth rate of the length of fiber-optic communication lines and the number of mobile communication base stations amounted to 35.48% and 20.96%, respectively.

### Dynamics of development of telecommunications infrastructure

Index	2016	2017	2018	2019	2020	2021
Total length of fiber-optic communication lines (thousand km)	17,90	20,30	24,50	36,60	46,60	81,70
Number of mobile base stations (thousand units)	17,72	19,99	24,08	26,10	31,74	45,89

## ▲ Internet access

At the beginning of 2021, the number of subscribers with Internet access reached 19,981,003 (the total population of Uzbekistan is 34,558,900 people), of which the number of individuals was 19,241,333, or 96.3%, and the number of those connected to the

Internet through mobile communications - 17,946,542, or 89.82%. Number of broadband Internet access subscribers from 2018 to 2021 increased with an average annual growth rate of 29.39% and reached 1,080,029 at the beginning of 2021. At the

same time, the number of Internet users is estimated at 24.7 million people. with a growth rate of 9.78% compared to 2020. From 2016 to 2021 the number of Internet users increased with an average annual growth rate of 15.34%.

### Number of subscribers with access to the Internet (at the beginning of the year), USD million

Index	2016	2017	2018	2019	2020	2021
<b>Number of subscribers with Internet access</b>	<b>8,34</b>	<b>9,63</b>	<b>11,17</b>	<b>13,32</b>	<b>16,39</b>	<b>19,98</b>
The number of subscribers of individuals connected to Internet	8,07	9,28	10,76	12,88	15,75	19,24
Number of subscribers of broadband access to the Internet	0,47	0,51	0,50	0,62	0,73	1,08
<b>Number of subscribers connected to the Internet via mobile communications</b>	<b>7,79</b>	<b>9,02</b>	<b>10,26</b>	<b>12,67</b>	<b>15,65</b>	<b>17,95</b>
Number of internet users	12,10	14,70	20,00	22,00	22,50	24,70

At the end of 2021, the number of mobile subscribers was 29 million with an increase of 11.75% compared to 2020, of which 6.3

million subscribers, or 21.79%, were in Tashkent. Between 2018 and 2021 there is an increase in the number of subscribers of

mobile networks, the average annual growth rate for the period from 2018 to 2021 amounted to 9.75%.



### Number of mobile communication network subscribers by region (at the end of the year), thousand units

Regions	2015	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	20 666,10	21265,40	22 504,50	21 954,50	23 846,70	25 971,30	29 022,36
Tashkent city <sup>1</sup>	4 534,40	4 732,30	4 990,00	4 598,10	4 471,30	5 126,00	6 323,41
Ferghana	2 159,40	2 229,60	2 333,80	2 333,80	2 578,30	2 858,90	3 026,22
Samarkand	1 972,60	2 023,40	2 109,30	2 095,90	2 263,30	2 449,70	2 774,19
Andijan	1 747,30	1 806,30	1 904,30	1 829,80	2 003,40	2 166,90	2 498,37
Namangan	1 484,00	1 546,50	1 671,40	1 651,40	1 831,10	1 941,20	2 212,27
Kashkadarya	1 566,00	1 581,40	1 687,40	1 692,30	1 857,80	1 996,80	2 068,16
Tashkent	560,2	589,8	607,6	662,5	1 191,60	1 405,10	1 672,03
Surkhandarya	1 201,80	1 234,20	1 327,00	1 313,70	1 457,50	1 515,60	1 608,37
Bukhara	1 182,90	1 210,50	1 253,50	1 247,60	1 350,50	1 404,80	1 488,84
Republic Karakalpakstan	1 202,70	1 201,90	1 295,80	1 262,70	1 332,20	1 377,70	1 427,43
Khorezm	1 064,60	1 084,30	1 180,10	1 144,10	1 227,30	1 281,50	1 315,15
Jizzakh	727,7	746,6	777,9	782,8	838,3	917,1	958,48
Navoi	738,9	754,3	776,7	785,2	850,8	915,4	944,33
Syrdarya	523,6	524,3	589,7	554,6	593,3	614,6	705,11

Uzbekistan lags behind the CIS countries in terms of mobile subscribers in the total population and is at the average level in terms of the share of Internet users. Comparative data is available as of early 2022.

### Indicators of the development of the digital economy in some countries at the beginning of 2022

Country	Mobile subscribers, in % of the population		Internet users		Active social media users media	
	million	%	million	%	million	%
Uzbekistan	29,59	86,60	24,05	70,04	6,25	18,30
Belarus	11,64	123,30	8,03	85,10	4,35	46,10
the Russian Federation	227,3	155,80	129,80	89,00	106	72,70
Kazakhstan	24,42	127,90	16,41	85,90	13,80	72,30
Moldova	4,44	110,50	3,06	76,10	1,87	46,50
Azerbaijan	11,91	116,10	8,32	81,10	5,30	50,70
Armenia	3,90	131,10	1,98	66,50	2,05	69,00
Kyrgyzstan	10,61	158,80	3,41	51,10	3,60	53,90
Turkmenistan	4,92	79,90	2,35	38,10	0,34	5,50
Tajikistan	10,43	105,90	3,95	40,10	1,43	14,50

At the end of 2021, the number of network communication subscribers per 100 population reached 83.12 with a growth rate of 9.52% compared to 2020. From 2018 to 2021 there is an

increase in the number of subscribers of cellular networks per 100 people with an average annual growth rate of 7.67%.

At the end of 2021, in the Navoi

district and the city of Tashkent, the number of subscribers of cellular networks is 100 people higher than in Uzbekistan, and amounts to 92.24 and 224.28 thousand, respectively.

### Number of cellular network subscribers by region per 100 people (at the end of the year), thousand

Regions	2015	2016	2017	2018	2019	2020	2021
Tashkent city <sup>2</sup>	190,30	196,50	204,10	184,90	176,00	194,00	224,28
Navoi	80,30	80,70	81,70	80,80	86,10	91,00	92,24
<b>The Republic of Uzbekistan</b>	<b>66,00</b>	<b>66,80</b>	<b>69,50</b>	<b>66,60</b>	<b>71,00</b>	<b>75,90</b>	<b>83,12</b>
Syrdarya	66,80	65,80	72,90	67,40	70,80	72,00	81,07
Ferghana	62,10	63,10	65,00	63,90	69,40	75,50	78,44
Andijan	60,60	61,50	63,80	60,20	64,70	68,60	77,57
Namangan	57,50	58,80	62,50	60,60	65,80	68,40	76,30
Bukhara	65,70	66,20	67,50	66,40	70,70	72,60	75,89
Republic of Karakalpakstan	67,70	66,60	70,80	68,00	70,70	72,10	73,73
Samarkand	55,60	55,90	57,20	55,70	59,00	62,60	69,54
Khorezm	61,50	61,50	65,90	62,90	66,30	68,20	68,90
Jizzakh	57,60	57,90	59,20	58,50	61,30	65,70	67,17
Kashkadarya	52,30	51,70	54,10	53,20	57,20	60,40	61,34
Surkhandarya	50,40	50,60	53,30	51,70	56,10	57,10	59,31
Tashkent	20,20	21,00	21,40	23,00	40,80	47,60	57,32

Including volumes of «UNITEL» and «RUBICON WIRELESS COMMUNICATION» of Tashkent region

At the end of 2021, the number of subscribers with Internet access reached 22,987 thousand with a growth rate of 15.05% compared

to 2020, of which 4,275.40 thousand Internet users, or 18.60%, accounted for Tashkent. From 2016 to 2021 the number of

subscribers with access to the Internet is increasing at an average annual growth rate of 19.01%.

### Number of subscribers with Internet access by region (at the end of the year), thousand units

Regions	2015	2016	2017	2018	2019	2020	2021
<b>The Republic of Uzbekistan</b>	<b>8 339,10</b>	<b>9 626,80</b>	<b>11 168,00</b>	<b>13 321,70</b>	<b>16 386,20</b>	<b>19 981,00</b>	<b>22 987,20</b>
Tashkent city <sup>3</sup>	2 465,30	2 858,30	3 169,70	3 359,90	3 550,60	4 620,90	4 275,40
Ferghana	751,90	881,40	1 048,00	1 245,50	1 552,30	1 937,40	2 872,30
Samarkand	758,20	865,00	1 018,70	1 225,70	1 505,90	1 795,40	2 132,50
Andijan	621,50	731,10	842,00	991,30	1 236,50	1 484,20	1 790,60
Kashkadarya	489,30	578,50	702,50	877,80	1 162,40	1 440,90	1 696,20
Namangan	523,50	621,40	749,80	961,50	1 198,30	1 379,50	1 637,00
Tashkent	273,60	353,10	352,30	506,70	1 007,70	1 255,20	1 483,80
Surkhandarya	372,20	433,50	551,50	721,40	958,60	1 151,50	1 323,50
Republic of Karakalpakstan	501,30	526,40	606,80	767,90	922,30	1 071,90	1 234,20
Bukhara	430,90	482,60	547,30	694,00	855,20	1 011,20	1 204,50
Khorezm	391,80	448,50	573,30	710,20	872,10	1 012,90	1 185,90
Jizzakh	270,90	304,40	371,30	468,20	569,10	667,20	794,10
Navoi	276,20	312,70	350,40	442,50	553,80	647,10	761,80
Syrdarya	212,40	229,80	284,60	349,10	441,40	505,70	595,40

At the end of 2021, the number of subscribers with Internet access per 100 people reached 65.84 thousand with a growth rate of 12.74% compared to 2020. From 2016 to 2021 there is an increase

in the number of subscribers with access to the Internet per 100 people with an average annual growth rate of 16.87%.

At the end of 2021, in Navoi,

Syrdarya, Fergana regions and the city of Tashkent, the number of subscribers with Internet access is 100 people higher than in Uzbekistan, and is 74.41, 68.45, 74.45 and 151.64 thousand, respectively.

## Number of subscribers with Internet access by region per 100 people (at the end of the year), thousand units

Regions	2015	2016	2017	2018	2019	2020	2021
<b>The Republic of Uzbekistan</b>	<b>26,60</b>	<b>30,20</b>	<b>34,50</b>	<b>40,40</b>	<b>48,80</b>	<b>58,40</b>	<b>65,84</b>
Tashkent city <sup>1</sup>	103,50	118,70	129,70	135,10	139,70	174,90	151,64
Ferghana	21,60	24,90	29,20	34,10	41,80	51,20	74,45
Navoi	30,00	33,40	36,90	45,60	56,00	64,40	74,41
Syrdarya	27,10	28,80	35,20	42,40	52,70	59,20	68,45
Republic of Karakalpakstan	28,20	29,20	33,20	41,40	49,00	56,10	63,75
Khorezm	22,60	25,50	32,00	39,00	47,10	53,90	62,13
Bukhara	23,90	26,40	29,50	36,90	44,80	52,20	61,39
Namangan	20,30	23,60	28,00	35,30	43,10	48,60	56,46
Jizzakh	21,40	23,60	28,30	35,00	41,60	47,80	55,65
Andijan	21,50	24,90	28,20	32,60	39,90	47,00	55,60
Samarkand	21,40	23,90	27,60	32,60	39,20	45,90	53,45
Tashkent	9,90	12,60	12,40	17,60	34,50	42,50	50,87
Kashkadarya	16,40	18,90	22,50	27,60	35,80	43,60	50,31
Surkhandarya	15,60	17,80	22,20	28,40	36,90	43,40	48,80

<sup>1</sup>Including volumes of «UNITEL» and «RUBICON WIRELESS COMMUNICATION» of Tashkent region

The number of individuals connected to the Internet in the period from 2016 to 2021 increased from 8.07 million units.

up to 19.98 million units and in 2021 amounted to 55.67% of the total population of Uzbekistan. However, the share of subscribers

with broadband Internet access of the total number of subscribers is only 5.41% as of the beginning of 2021.

## Dynamics of the number of Internet subscribers (at the beginning of the year)

Index	2016	2017	2018	2019	2020	2021
Total population of Uzbekistan, million people	31,58	32,12	32,66	33,26	33,91	34,56
Number of subscribers connected to the Internet, mln.	8,34	9,63	11,17	13,32	16,39	19,98
Number of individuals connected to the Internet, mln.	8,07	9,28	10,76	12,88	15,75	19,24
Number of subscribers of broadband access to the Internet, mln.	0,47	0,51	0,50	0,62	0,73	1,08
Share of individuals connected to the Internet in the total population	25,55%	28,89%	32,95%	38,73%	46,45%	55,67%
Share of subscribers with broadband access to the Internet out of the total number of subscribers connected to the Internet	5,64%	5,30%	4,48%	4,65%	4,45%	5,41%

According to a sample survey conducted by the State Committee of the Republic of Uzbekistan on

Statistics, the number of households with access to the Internet for the period 2017-2020

grew and in 2020 reached a value of 93.6% of their total number.

## Share of households with access to the Internet (according to sample surveys of households), %

	2017	2018	2019	2020
The Republic of Uzbekistan	79,90	80,40	81,20	93,60

## Internet usage

For the period 2016-2021 In Uzbekistan, there is a positive trend in almost all indicators related to Internet connection. However, according to UNICEF

study conducted in 2020, 53.9% of young people of age from 14 to 30 do not use the Internet at all, while only 25.4% of the total number of study participants use

the Internet daily. There is a significant difference between the data obtained from the survey of the urban and rural population.

Frequency of Internet use by type of settlement, %

Index	Town	Village	General
Never / Don't use	46,70	60,60	53,90
Less than once a month	2,60	2,70	2,70
1-2 times a month	6,10	6,80	6,50
Weekly	12,20	10,40	11,30
Daily	32,20	19,30	25,40
No answer	0,40	0,30	0,30

Frequency of Internet usage by age groups, %

Index	14-18	19-24	25-30
Never / Don't use	59,60	51,90	50,30
Less than once a month	3,60	2,20	2,20
1-2 times a month	6,80	5,80	6,90
Weekly	13,30	11,00	9,60
Daily	16,50	28,90	30,50
No answer	0,30	0,20	0,40

## Development of infrastructure for Internet providers

Between 2018 and 2021 the capacity of the international data transmission network remained unchanged and equaled 1,200 Gbps, in 2022, according to the Ministry for the Development of

Information Technologies and Communications of the Republic of Uzbekistan, this figure reached 1,800 Gbps.

The cost of tariffs for Internet

services (external channel) for providers in 2021 compared to 2016 has significantly decreased and in 2021 amounted to 3 USD per 1 Mbps.

Dynamics of changes in the speed and cost of Internet services

Index	2016	2017	2018	2019	2020	2021
Throughput of the international network, Gbps	25,70	64,20	1 200,00	1 200,00	1 200,00	1 200,00
The cost of tariffs for Internet services (external channel) for providers, USD	157,60	91,50	30,30	10,10	5,50	3,00

## Cost and speed of Internet access for individuals and legal entities

Between 2019 and 2021 the average cost of connecting to the Internet per month for legal entities decreased with an average annual growth rate of -38.00%

and amounted to USD 136.79 in 2021.

For individuals, the average cost of connecting to the Internet per

month in the period from 2016-2018 increased and from 2019-2021 decreased. In 2021, the average cost of an internet connection per month was \$ 14.78.

## The cost of connecting to the Internet for individuals and legal entities

Indicator	2016	2017	2018	2019	2020	2021
The average cost of connecting to the Internet per month for legal entities, thousand sum	-	-	-	3 150,00	1 817,14	1 453,18
Average cost of connecting to the Internet per month for legal entities, USD	-	-	-	355,88	180,55	136,79
The average cost of connecting to the Internet per month for individuals, thousand sum	100,83	149,29	272,25	214,57	194,40	157,00
Average cost of connecting to the Internet per month for individuals, USD	33,96	29,04	33,74	24,24	19,32	14,78

According to the speedtest.net service, as of August 2022, the average speed of a broadband (fixed) Internet connection in

Uzbekistan was 59.15 Mbps, and the average speed of a mobile connection was 28.55 Mbps,

showing an average annual increase of 55.53% since 2018 year.

## Dynamics of indicators of average Internet speed in Uzbekistan, Mbps

	2018	2019	2020	2021	08.2022
Broadband (fixed) Internet speed indicators	10,11	22,49	36,85	49,8	59,15
Mobile internet speed indicators	9,97	9,51	13,89	19,84	28,55

Based on the results of a survey of IT Park resident companies on issues related to ICT infrastructure, it can be noted that most companies assess the importance of these factors for the industry as

average, while companies characterize the current state of ICT infrastructure and communication channels in the regions most negatively and restrictions on the use and

blocking of Internet services and data exchange protocols at the regulator level, and the cost and condition of the ICT infrastructure in Tashkent is generally assessed as neutral.

## Distribution of the importance and influence of infrastructure factors on the activities of the IT industry in Uzbekistan by respondent companies, units

Factor	Significance			Influence		
	Low	Medium	High	Negative	Neutral	Positive
The current state of IT infrastructure and communication channels in Tashkent	2	34	11	6	35	6
The current state of IT infrastructure and communication channels in the regions	2	34	11	11	34	2
Internet access cost	2	34	11	3	38	6
Restrictions on the use and blocking of Internet services and data exchange protocols at the regulator level	1	35	11	11	36	

Source: Data provided by IT Park, June 2022

Sources: <https://www.gazeta.uz/ru/2021/05/05/research/>, May 2021,  
<https://www.spot.uz/ru/2021/12/28/broadband-internet/>, December 2021,  
<https://www.speedtest.net/global-index/uzbekistan#fixed>, August 2022

Source: Results of a survey conducted among residents of the IT Park, July 2022

## ▲ The development level of e-government

One of the priority areas of digital reforms in Uzbekistan is the development of electronic government (E-government). To implement the main directions of reforms in the digital economy and improve the E-government system under the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan in 2020, the E-

Government Project Management Center (e-gov.uz) was established.

Areas of activity of the Center:

- ensuring a unified technological approach to the development of e-government;
- development of priority areas for digital development in

government bodies and organizations;

- introduction in state bodies and organizations of a unified interdepartmental electronic system of performing discipline;
- coordination of stages of implementation of projects and programs in the field of e-government.

### Indicators of e-government projects

Index	Meaning
Number of priority projects coordinated by the eGovernment Project Management Center	2000
Percentage of public services provided through the portal of interactive public services	58%
Number of public services implemented on the portal of interactive public services	320

In August 2022, the data center of the E-government system was also launched in the Tashkent region. At the moment, the data center ranks first in Uzbekistan in terms of performance and has a Tier III certificate from the Uptime Institute.

From the beginning of 2023, the Unified Government Portal Platform will start working at the center's facilities. Official websites and resources of government agencies will be placed on it step by step .

Among the most significant projects within the framework of the E-government we can note the Unified Identification System for Citizens OneID (id.gov.uz). With its help, citizens can access various government electronic resources while maintaining the security and confidentiality of their data. The system has a simplified user registration system and is integrated with the ID-card issuance system. The number of users of the system has already exceeded 820 thousand. The ID-card is a document proving the

identity of the owner and the citizenship of the Republic of Uzbekistan, and is used on the territory of the country.

Also, in Uzbekistan, individuals and companies have the opportunity to use digital signatures. To receive them, one should just apply for an EDS service through the public services portal, after which can get online access to them at the Registration Center or at public service centers in the form of an electronic document with a private key and a corresponding certificate.

## ▲ Position of Uzbekistan in international e-government ratings

The ongoing reforms in the field of e-government have affected the position of Uzbekistan in the relevant ratings. In the Open Data Inventory Ranking - ODIN, Uzbekistan climbed 125 positions up and took 44th position in the world, better than other Central Asian states. In the UN study on the level of development of e-government, according to the rating of the Global Open Data Index, Uzbekistan ranked 41st

among 193 countries of the world.

According to the UN study «Electronic Government 2020», the Republic of Uzbekistan ranks 46 out of 193 Member States of the United Nations in terms of OSI (Online Services Index). The OSI metrics are based on a study that covers many aspects of Internet presence for all 193 Member States. The study evaluates the technical characteristics of

national websites, as well as e-government policies and strategies applied in general and in specific service delivery sectors. The current OSI of the Republic of Uzbekistan is 0.7824. Among the 54 countries with very high OSI scores, only Uzbekistan and India have a high HCI (Human Potential Index) and an average TII (Telecommunications Infrastructure Index).

Source: e-Government Project Management Center, e-gov.uz, June 2022.

Source: <https://www.spot.uz/ru/2022/08/27/egov-center/>, August 2022

Source: [https://plusworld.ru/daily/cat-news\\_regulators/v-uzbekistane-vodyat-id-karty-vmesto-pasportov/](https://plusworld.ru/daily/cat-news_regulators/v-uzbekistane-vodyat-id-karty-vmesto-pasportov/), September 2020

Source: <https://uza.uz/ru/posts/o-merakh-po-dalneysheму-sokrashcheniyu-byurokraticheskikh-ba-10-12-2019>, December 2019

Source: <https://mitc.uz/ru/news/2510>, May 2021

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## List of public services that can be provided remotely

Uzbekistan also has a Unified Portal of Interactive Public Services (UPIPS) - [my.gov.uz](http://my.gov.uz). UPIPS operates on the basis of the «Electronic Government» system, informational, methodological, technical support and administration of which is carried out by the Center for the Development and Implementation of Computer and Information Technologies «Uzinfocom» of the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan.

As of September 2022, 349 different services are presented on the portal, the portal can also be accessed using the UPIPS mobile application.

Services are provided in the following areas:

- citizenship
- family and Children
- education
- the youth
- health and social protection
- justice
- culture and sports
- housing and communal services
- real estate
- transport
- economics and business

- licensing
- taxes
- customs
- information and communication
- ecology and geology
- issuance of various certificates

In December 2021, it was announced that a digital profile of a citizen's passport will appear in Uzbekistan in the form of a gov pass application. The application will contain digital versions of various documents - for example, a passport, diploma, work book, driver's license, etc.

## Number of users of electronic services

As of September 2022, 349 services have been launched on the Unified Portal of Interactive Public Services, 2.3 million users have been registered, and 56.4 million applications have been submitted.

As of the end of the second quarter of 2022, 1,101,042 users used the services of the UPIPS, of which 905,835 or 82.27% are individuals (or 2.57% of the population of Uzbekistan at the end of 2021) and 195,207 or

17.73 % - legal entities. The total number of services provided in the first half of 2022 through the UPIPS amounted to 6,758,694, with an average of 1,126,449 services provided per month.

### The number of services provided through the UPIPS, for the 1st half of 2022, units

Month	Individuals	Legal entities	Not specified	Total
January	1 052 924	57 028	60	1 110 012
February	1 220 190	67 476	156	1 287 822
March	882 577	66 142	1045	949 764
April	1 057 302	71 106	517	1 128 925
May	1 004 464	61 573	20	1 066 057
June	1 145 321	70 730	63	1 216 114

The number of applications processed through UPIPS in the period from 2017-2021 grew from

2,983 applications per year to 9.2 million. The share of applications processed through

UPIPS in 2021 amounted to 56.10% of the total number of completed applications.

### Dynamics of changes in the number of applications submitted through the Unified Portal and Public Services Centers, million

	2018	2019	2020	2021	2q 2022
Applications through the Unified Portal	1,3	2,8	3,1	9,2	6,0
Applications through the Public Service Centers	2,9	7,9	6,3	7,2	3,2

## ▲ The level of user satisfaction with electronic services

The Portal for assessing the quality of public services to citizens of the Republic of Uzbekistan is [baho.gov.uz](http://baho.gov.uz). Today in test mode in Tashkent 223 institutions have been connected to the portal, in which special QR codes have been installed. In particular, you can leave your feedback about the public service in:

- 44 institutions of the Ministry of Internal Affairs (centers for replacing passports with ID-cards, issuing exit passports, obtaining a

driver's license, mandatory technical inspection of vehicles, obtaining state numbers of vehicles);

- 167 healthcare institutions (scientific and practical medical centers of the republican level, family polyclinics and hospitals);
- 12 branches of «Khududiy Elektr Tarmoklari» JSC (power supply companies).

As of the beginning of 2022, the total number of ratings on a five-point scale recorded on the

platform was 13,215, of which 8,091 were positive, 5,124 were negative, and the average rating was 3.6.

The IT Park collected its own feedback from resident companies using a survey. According to a survey conducted by IT Park in 2021, 17% of respondents reported problems when applying on the E-Harid/D-Harid public service portals. 30% of respondents also reported having difficulty connecting to government databases and accessing their APIs.

## ▲ Digitalization of the financial sector

In February 2020, the Law of the Republic of Uzbekistan «On Payments and Payment Systems» came into force, regulating, among other things, the use of electronic money and payment systems.

In general, the penetration of digital technologies into the financial sector can be assessed by the following indicators:

- 37.1% of the country's residents have accounts in financial institutions (36% of men and

38.3% of women);

- 0.6% own credit cards (0.6% of women and 0.5% of men);
- 24.1% own debit cards (22.1% of women and 26.4% of men);
- 34.2% made or received digital money transfers in 2021 (32.7% women and 35.9% men);
- 1.9% made online purchases in 2021 (0.4% of women and 3.4% of men);
- 6.7% used online banking

systems in 2021 (5.2% of women and 8.5% of men);

- 6.4% used the Internet to pay bills in 2021 (3.6% of women and 9.4% of men).

Based on the above-mentioned data, we can conclude that the penetration of digital financial technologies and the digital transformation of the sphere of finance and payments are still at the initial level. Digital wallets are gaining popularity in the country.



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## 6 IT LABOR MARKET

Number of employees in the ICT industry, 2021

 **50,2**  
thousand

Estimated number of self-employed by IT-related activities, 2022

 **66 000**  
thousand

Average annual increase in the number of employees in the ICT industry

 **11,63%**  
for 2019-2021

Average annual increase in the number of employees of IT Park residents

 **46,59%**  
for 2019-2021

Number of employees of IT Park resident companies, 2021

 **9,85**  
thousand

Average monthly salary in the ICT industry, 2021

 **453,5**  
USD

Average monthly salary, 2021

 **250,58**  
USD

Average monthly salary for employees of IT Park residents, 2021

 **941,3**  
USD

Average annual wage growth in the ICT industry

 **9,1%**  
for 2018-2021

Average annual salary increase for employees of IT Park residents

 **44,32%**  
for 2019-2021

Number of vacancies in the ICT industry, 2022

 **21 000**

Median salary of a Middle-developer among IT Park residents

 **From \$600 to \$1150**

Average age of employees of IT Park residents

 **30**  
years

Estimated share of women working in IT Park resident companies, 2022

 **16,8%**

In the IT labor market in 2021, about 50 000 people work in organizations in the ICT industry, and about 28 000 IT specialists work in organizations in other industries. 60% of all employees of the ICT industry work in Tashkent. The average annual growth rate of employees in the ICT industry was 11.63% for the period from 2019 to 2021.

The number of employees of the companies-residents of the IT park resident companies is 9.85 thousand people and over the past year this number has grown by 64.17%, outpacing the dynamics of the industry. The average age of employees of IT Park resident companies is about 30 years. The total number of women working in IT companies in Uzbekistan is 16.8% of the total number of employees.

From the point of view of the development prospects of the IT industry, IT Park resident companies are of the greatest interest, since they have the opportunity to work in foreign markets with large foreign customers. Thus, these companies have significant potential for growth and are a preferred employer for employees than companies limited to the local market.

The number of open vacancies in the labor market in IT is constantly growing. According to hh.uz, one of the largest job search sites, in January-July 2022, employers posted about 4.5 thousand IT vacancies, which is 70% more than in 2021 and three times more than in 2020. At the same time, 62% of IT Park companies

experience problems in finding and hiring IT specialists. According to the results of a survey conducted among residents of the IT Park in June-August 2022, more than 30% of residents indicate that the qualifications of specialists in the market meet the needs of the company and the filling of vacancies by qualified specialists as the biggest problems associated with human capital in companies. In a situation where the demand for qualified IT specialists exceeds their supply, wages in IT will continue to grow, because companies will always be able to provide qualified employees with work. At the same time, the largest international IT companies operating for export are the drivers of growth in the number and level of wages, since foreign clients allow for maintaining a higher average level of wages compared to companies operating in the local market.

As the labor market grew, the average monthly salary in the ICT industry in 2021 was \$453.5 and was 80% higher than the average monthly salary in the country. The median salary of Middle-level specialists of IT Park resident companies exceeds the average salary level in the ICT industry. The median salary for business analysts is between \$600 and \$1,100, developers between \$600 and \$1,150, QA specialists between \$600 and \$1,000, and project management specialists between \$650 and \$1,300. The average monthly salary in 2021 of employees of IT Park resident companies was \$941.30.

In the coming years, as the size of the business of IT Park resident companies involved in the export of computer services grows, they will actively attract IT specialists with sufficient qualifications from the ICT industry, other industries and employees of IT companies operating in the local market of Uzbekistan.

The possibility of registering as self-employed professionals appeared on September 1, 2019. Among the 68 activities that the self-employed can engage in, 4 activities are related to information technology. The total number of self-employed professionals and self-employed professionals in IT is growing. As of September 2022, the number of self-employed in IT-related activities is about 66 thousand people. Uzbekistan is interested in developing the market of self-employed specialists and annually improves its position in the Index of readiness to enter the freelance market by developing infrastructure and creating favorable conditions for such specialists. The state considers this as one of the measures to increase employment in order to reduce unemployment and ensure economic growth. At the same time, a significant number of self-employed IT specialists may be the consequences of the shadow development of IT, when development teams were formed on the basis of informal connections from individual specialists, who thus legalized their relationship with the customer. In the medium term, most of these specialists are likely to join IT Park resident companies.

## ▲ General information about the labor market in IT

The number of employees working in the ICT industry of Uzbekistan in 2021 amounted to more than 50 thousand people and has grown by 45.48% since 2017. The average annual growth rate was 9.73% for the period from 2018 to

2021. Significant increase (+18.5%) in the number of employees of companies was observed in 2020, which may be due to the creation of an IT Park, which contributed to the exit of companies from the «shadow»

sector of the economy. Also, as of June 2022, about 28 thousand IT professionals are employed in organizations outside the ICT industry, which is 20% of the total number of ICT industry specialists.

## Number of employees of companies in the ICT industry by region, people

Regions	2017	2018	2019	2020	2021
The Republic of Uzbekistan	34478	37958	40248	47697	50157
Republic of Karakalpakstan	1051	1134	1031	1233	1302
Andijan	1279	1413	1397	1560	1702
Bukhara	1417	1428	1506	1693	1770
Jizzakh	563	636	731	1012	1113
Kashkadarya	785	887	927	1152	1052
Navoi	1003	1112	1219	1175	1328
Namangan	989	1086	1234	1303	1491
Samarkand	1143	1364	1503	1603	1871
Surkhandarya	758	855	855	1063	1031
Syrdarya	624	624	211	721	776
Tashkent	1472	1746	1865	1933	2713
Ferghana	2661	1959	2341	2442	2661
Khorezm	873	1015	1039	1133	1205
Tashkent city	19860	22699	24389	29674	30142

60.1% of all employees of companies in the ICT industry are concentrated in Tashkent, and a

significant number of employees are located in the Fergana and

Tashkent regions (more than 5% in each).

## Distribution of employees of companies in the ICT industry by region, %

Regions	2017	2018	2019	2020	2021
Republic of Karakalpakstan	3,05	2,99	2,56	2,59	2,60
Andijan	3,71	3,72	3,47	3,27	3,39
Bukhara	4,11	3,76	3,74	3,55	3,53
Jizzakh	1,63	1,68	1,82	2,12	2,22
Kashkadarya	2,28	2,34	2,30	2,42	2,10
Navoi	2,91	2,93	3,03	2,46	2,65
Namangan	2,87	2,86	3,07	2,73	2,97
Samarkand	3,32	3,59	3,73	3,36	3,73
Surkhandarya	2,20	2,25	2,12	2,23	2,06
Syrdarya	1,81	1,64	0,52	1,51	1,55
Tashkent	4,27	4,60	4,63	4,05	5,41
Ferghana	7,72	5,16	5,82	5,12	5,31
Khorezm	2,53	2,67	2,58	2,38	2,40
Tashkent city	57,60	59,80	60,60	62,21	60,10

The number of employees of companies that are residents of the IT Park in 2021 amounted to 9.85 thousand people. Compared to

2020, this figure increased by 64.17%. The average annual increase in the number of employees of IT Park residents for

the period from 2019 to 2021 amounted to 46.59%, which significantly exceeds the same indicator in the ICT industry.

## Number of employees of IT Park resident companies, people

Parameter	2019	2020	2021
Number of employees	4 584	6 000	9 850

The average age of employees of IT companies in Uzbekistan is about 30 years. According to the

results of a survey conducted among residents of the IT Park, in 25% of the surveyed companies

the average age of employees is below 26 years, and only in 10% of companies - above 35.

### Distribution of employees of IT Park resident companies by age

Percentile, %	Age
25	26
50	30
75	33
90	35

According to the results of a survey conducted among the residents of the IT Park, the total number of women is 16.8% of the

total number of employees. In 16% of the surveyed companies, the proportion of women is less

than 1%; in most respondent companies, the proportion of women ranges from 11% to 35%.

### Gender distribution of employees of IT Park resident companies

Share of companies, %	Share of women, %
16	less than 1
38	1-10
41	11-35
4	36-50
2	51-80

According to the latest available estimates for September 2022, about 66 thousand self-employed professionals are engaged in activities related to information technology.

In the next few years, qualified self-employed IT specialists and IT specialists from other sectors of the

economy can serve as a talent pool for the growing ICT industry and, first of all, for IT Park resident companies, which the preferential tax regime makes it possible to provide more competitive wage conditions, than companies in other sectors of the economy can afford. Also, self-employed IT professionals can be Source of

new IT entrepreneurs who want to legalize their activities as an IT Park resident company, when the positive experience of the functioning of such companies convinces existing and still working in the «shadow» sector of entrepreneurs of the appropriateness of such actions.

## ▲ Dynamics and directions of population migration

A characteristic feature of the labor market in Uzbekistan as a whole is the significant effect of the migration of specialists. For the period from 2016 to 2021 there is a wave-like change in the number of emigrants. From 2016 to 2019

the flow of departing citizens was declining, but already in 2020 it began to grow. As a percentage of the total population, the dynamics is smoothed out due to the growth of the total population.

The maximum ratio of migrants to the economically active population was observed in 2016, from 2016 to 2019 the ratio decreased, and in 2021 the ratio increased again.

### The number of people who left the Republic of Uzbekistan for foreign countries per year, people

Regions	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	28 069	20 772	17 579	13 229	13 648	20 140
Republic of Karakalpakstan	4 035	3 738	3 689	3 590	1 951	5 878
Andijan	156	124	68	107	866	313
Bukhara	339	253	316	115	413	205
Jizzakh	412	248	236	222	413	220

Kashkadarya	244	208	91	118	923	242
Navoi	2 312	2 320	2 061	1 336	510	1 030
Namangan	158	126	152	124	1 041	240
Samarkand	981	556	442	403	990	626
Surkhandarya	134	99	77	51	774	313
Syrdarya	649	349	229	259	348	350
Tashkent	6 739	5 169	4 117	3 126	2 224	5 096
Ferghana	1 035	634	452	282	1 027	518
Khorezm	365	226	244	259	543	398
Tashkent city	10 510	6 722	5 405	3 237	1 625	4 711

### The ratio of the number of dropouts to the number of the economically active population

Index	2016	2017	2018	2019	2020	2021
Number of economically active population, thousand people	14 022,40	14 357,30	14 641,70	14 876,40	14 797,40	14 980,74
The number of people who left the Republic of Uzbekistan for foreign countries per year, people.	28 069	20 772	17 579	13 229	13 648	20 140
The ratio of the number of retired to the number of economically active population	2,00	1,45	1,20	0,89	0,92	1,34

According to the study of the labor market of Uzbekistan for 2021, conducted by the recruiting company Antal, 59% of the study participants wanted to move to another country for the sake of a career, another 27% do not exclude such a possibility. The main directions of potential migration are the USA/Canada,

Western Europe and the CIS. The Antal survey included 1,498 mid- and senior-level professionals and managers, 61% of whom work for companies in the following industries and sectors: ICT, FMCG, professional services, pharmaceuticals, and construction. From 2016 to 2019 there was an

increase in the number of people arriving in the Republic of Uzbekistan. The largest number of arrivals, 2850 people, was recorded in 2018. The drop in the number of immigrants in 2020 may be due to the SARS-CoV-2 pandemic. In 2021, the number of arrivals increased by 69.7% compared to the previous year.

### The number of people who arrived in the Republic of Uzbekistan from abroad for the year, people

Regions	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	1 821	2 173	2 850	2 543	1 105	1 875
Republic of Karakalpakstan	250	258	211	220	136	180
Andijan	16	10	31	22	16	16
Bukhara	27	26	38	18	18	13
Jizzakh	27	24	59	58	4	8
Kashkadarya	15	9	14	15	2	14
Navoi	128	107	61	121	46	40
Namangan	5	5	12	60	8	28
Samarkand	123	145	111	93	20	7
Surkhandarya	27	19	9	6	9	19
Syrdarya	46	49	142	179	65	52
Tashkent	563	832	1 080	788	395	701
Ferghana	71	71	341	332	100	16
Khorezm	74	64	75	32	2	7
Tashkent city	449	554	666	599	284	774

Source: <https://stat.uz/ru/ofitsialnaya-statistika/demography>, May 2022

Sources: <https://stat.uz/uz/rasmiy-statistika/labor-market-2>, April 2022, <https://stat.uz/ru/ofitsialnaya-statistika/demography>, May 2022

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Source: <https://stat.uz/ru/ofitsialnaya-statistika/demography>, May 2022

Attracting highly qualified foreign IT specialists is an important factor in the development of the IT sector in Uzbekistan. According to the results of a survey conducted by IT Park in October 2021, it was revealed that 17% of respondents have problems attracting foreign specialists to work. The main difficulties that the respondents pointed out are the complicated and expensive procedure for obtaining a permit, short visa validity periods (six months), the

company's responsibility for the family members of a foreign worker, as well as tax fees.

According to the results of a survey conducted among residents of the IT Park in June-August 2022, IT companies no longer experienced significant difficulties in attracting foreign specialists. This was facilitated by the programs adopted in Uzbekistan to attract IT specialists, including the provision of visas for up to 3

years to foreign investors, founders of IT Park residents and IT specialists. Visa holders can obtain a residence permit in Uzbekistan in a simplified manner, as well as access to social services (medicine and education) on an equal basis with citizens of the republic, it is allowed to stay in any region of Uzbekistan without the need for re-registration, family members of an IT visa holder are provided with a visitor visa for that same term.

## Structure and level of competencies of IT specialists

To analyze the skills that are in demand for IT specialists in Uzbekistan, the results of a survey conducted among residents of the IT Park are used.

According to the results of the

survey, the most demanded technologies among IT specialists in companies are Java (72% of respondents), HTML/CSS/JavaScript (67%) and Python (51%). Mobile

development for the Android and iPhone platforms are equally in demand - 46% and 44% of the surveyed companies, respectively, noted these technologies as the main ones in their activities.

### Technologies used in companies in Uzbekistan (respondents were given the opportunity of multiple choice)

Technology	Share of respondents, %
Java	72
HTML / CSS / JavaScript	67
Python	51
Android	46
MacOS / iPhone	44
PHP	44
.NET	33
1C	28
C / C++	26
SAP	10
Ruby	8
Other	41

Also, according to the results of the survey, knowledge of foreign languages is in demand in IT companies. 46% of respondents noted that most of the employees speak the necessary foreign languages, and in 24% of companies, almost all employees

are fluent in foreign languages. Another 16% of respondents noted that employees working with foreign customers are well-versed in foreign languages.

As a rule, a low level of knowledge of foreign languages is

characteristic of small companies, for example, 88% of companies that have noted an insufficient level of knowledge of foreign languages as a negative factor in their activities employ less than 50 people.

### Levels of foreign language proficiency (respondents were given the opportunity of multiple choice)

Level of knowledge of foreign languages	Share of companies, %
Most of the employees speak the necessary foreign languages	46
Almost all employees are fluent in foreign languages	24
Foreign languages are well spoken by employees working with foreign customers, and the level of knowledge of other employees is not mandatory and remains at an average level	16



The level of knowledge of the language requires significant improvement	14
Some employees are fluent in foreign languages, and for interaction with foreign customers it is necessary to involve them	6
All employees periodically undergo foreign language testing	6
When hiring, employees undergo written and oral testing of a foreign language	4

The results of the survey regarding the measures taken by the company to improve the level of foreign language proficiency showed that 30% of companies do not take any measures to increase the level of knowledge of foreign languages in the company.

Among other companies, the following approaches are common:

- 44% of companies train employees in-house with the help of in-house specialists of the company or by providing online

courses and training within the company;

- 26% of companies send their employees to specialized courses;
- 20% of companies engage external specialists to train their employees.

### Measures taken to improve the level of foreign language proficiency (respondents were given the opportunity of multiple choice)

Foreign language teaching measures	Share of companies, %
We do nothing	30
Sending employees to specialized courses	26
Training by in-house specialists of the company	22
Online courses and trainings in the company	22
Training with the help of involved specialists	20
Partial compensation to employees of their own training costs	10

## Demand and supply in the labor market in IT

The high growth rate of the ICT industry is creating a demand for skilled IT professionals. On the hh.uz website, one of the most popular for job searches, in January-July 2022, employers posted about 4.5 thousand vacancies in the IT field. This is about 70% more than the previous year and three times the vacancies

of 2020. According to available analytical information, as of June 2022, about 21,000 vacancies were open in the ICT industry.

At the end of 2021, the most popular specializations in the field of Information Technology, Internet, Telecom were programming and development

(54% of posted vacancies), engineer (23%), system administrator (20%). The same specializations are also leading in terms of the number of applicants (22%, 17% and 10% of the total number of resumes, respectively). The majority of applicantsmen, their share is 75%, the average age of applicants is 26-35 years.

### The most demanded specializations in the field of «Information technology, Internet, telecom» for 2021, %

Specialization	Among employers	Among applicants
Programming, development	54,00	22,00
Engineer	23,00	17,00
System Administrator	20,00	10,00
webmaster	17,00	
web engineer	15,00	9,00
Project management		6,00

The increase in the number of vacancies is accompanied by an even greater increase in the number of applicants. So, according to hh.uz, in 2021, more than 40 thousand resumes were

posted on the service, in the first half of 2022 this number tripled and amounted to more than 120 thousand.

As of September 2022, about 26% of applicants have more than

6 years of work experience, less than 6 years - 38.5% of the total number of applicants, which is comparable to the number of applicants without experience (35.4%).

## Work experience of applicants

Work experience, year	Number of applicants, %
Total Applicants	100%
More than 6	26,1%
3-6	17,3%
1-3	21,2%
Without experience	35,4%

According to available analytical estimates, salary offers for IT workers in 2021 increased by 24%. In turn, the salary expectations of IT specialists increased by 3.5 times over the year (+256%), which is due to the high demand for them at the same time - the number of vacancies over the same period increased by 79% and amounted to about 4.5 thousand as of July 2022.

According to the results of a survey conducted by IT Park in October 2021, it was revealed that 62% of respondents experience problems in finding and hiring IT specialists. Respondents voiced such problems as shortage and low

qualification of personnel, lack of practical experience among specialists, high salary requirements, turnover of engineering and technical staff and the lack of a unified portal for finding IT specialists.

Resident companies of the IT Park indicate as difficulties associated with human capital, the correspondence of the qualifications of specialists in the market to the needs of the company and the filling of vacancies by qualified specialists. More than 30% of companies indicated the highest priority for these factors. As other factors with which there are difficulties, companies cite high competition

for personnel between companies and wage growth.

Among the factors that cause the least personnel difficulties are staff turnover, filling vacancies with young specialists, organizing the process of transferring knowledge and skills, and ensuring maximum utilization of labor resources.

Thus, we can conclude that IT Park resident companies can ensure the necessary workload of personnel and their involvement in the company's activities, which means that the trends in competition for qualified personnel and an increase in the average salary in the industry will continue and develop.

## Distribution of factors related to human capital, with which the respondent companies experience difficulties by priority, %

Activities	Priority		
	largest	Tall	Average
Compliance of the qualifications of specialists in the market with the needs of the company	32%	24%	2%
Filling vacancies with qualified specialists	34%	8%	8%
High competition for personnel between companies	20%	12%	10%
Wage growth	10%	12%	14%
Emigration of specialists from Uzbekistan	14%	10%	4%
Level of knowledge of foreign languages	10%	2%	16%
Employee motivation for development and professional growth	4%	6%	14%
Migration of specialists between companies in Uzbekistan	12%	6%	4%
Availability of information about job seekers on job search sites	10%	6%	6%
Staff turnover	8%	6%	6%
The level of costs for recruitment and recruitment of personnel	6%	4%	10%
Filling vacancies with young professionals	8%	4%	6%
Organization of the process of transferring knowledge and skills	2%	2%	6%
Ensuring maximum utilization of labor resources	2%	0%	8%

According to the results of a survey of residents of the IT Park, the greatest difficulty for IT companies is the search for specialists in the development,

development and maintenance of software, DevOps, business analysis and IT managers. The least difficult is the search for server and data centre

administrators, user and workstation support specialists, as well as administrative personnel (human resources, accounting, etc.).

Source: [https://hh.uz/?hhtmFrom=resumes\\_catalog](https://hh.uz/?hhtmFrom=resumes_catalog), June 2022

Source: <https://www.spot.uz/ru/2022/08/04/it-positions/>, August 2022

Source: Results of a survey conducted among residents of the IT Park, July 2022

## Difficulty rating search for specialists among IT companies in Uzbekistan, %

Competencies	Highest Priority	Very high priority	Medium priority
Development, development and maintenance of software	30%	8%	10%
Devops	20%	6%	2%
Business analysis	16%	6%	12%
IT management	14%	8%	8%
IT process management	16%	4%	10%
Project management	14%	6%	12%
Product Management	14%	2%	8%
Data management	14%	2%	4%
QA/software testing	12%	4%	16%
Automated software testing	10%	6%	10%
Data analysis	8%	8%	12%
Team management	2%	12%	4%
DBMS administration	6%	4%	4%
IT sales management	8%	0%	8%
Web design	6%	2%	8%
User Interface Designers (UX/UI Designer)	4%	4%	4%
Software administration	4%	4%	2%
Network device administration	2%	6%	4%
Server and data center administration	4%	0%	8%
User and workstation support (L1)	2%	2%	4%
Administrative staff (human resources, accounting, etc.)	0%	4%	10%

According to the results of the survey, 50% of the surveyed companies use internships or internships for students to find and train new employees. Also, 29% of the surveyed companies have their own educational courses. At the same time, lectures and laboratories at universities are not yet common ways to find and train

new employees: only 4% of surveyed companies have opened their laboratories at universities, and representatives of 9% of surveyed companies give lectures at universities.

IT companies and universities have significant potential for increasing the degree of cooperation,

including IT companies can be involved in the educational process and educational programs for training specialists. This approach, among other things, allows companies to identify and train talented students at an early stage, offering them internships and jobs.

### Interaction with universities (respondents were given the opportunity of multiple choice)

How to find employees	Share of companies, %
Lectures at universities	9
Laboratories in universities	4
Internship or internship for students	50
Own courses	29
Own training center	16
Not implemented	23
Other	2

## ▲ The level of salaries of IT specialists

The nominal accrued average monthly wage in Uzbekistan for 2021 was \$250.58. Over the past few years, there has been an increase in the average monthly

salary in dollar terms - by an average of 6.74% per year for the period from 2019 to 2021.

The highest average monthly

wages in 2021 were recorded in such economic activities as financial and insurance activities (\$737.23) and information and communications (\$455.9). In

2021, the average monthly salary in the Information and Communication category

exceeded the average monthly salary in Uzbekistan by 81.93%, and its growth compared to 2020

was 18.27%, the average annual growth rate for the period from 2018 to 2021 was 9.1%.

### Nominal accrued average monthly wages by type of economic activity, USD

Type of economic activity	2018	2019	2020	2021
Average monthly nominal accrued wages	191,17	219,94	221,28	250,58
Agriculture, forestry and fisheries	125,94	154,66	149,20	156,79
Industry	252,83	269,16	273,11	303,57
Building	169,73	192,54	186,76	215,23
Trade	152,78	157,87	144,35	158,08
Transportation and storage	229,04	246,85	253,48	305,73
Accommodation and food services	94,77	100,57	88,26	113,24
Information and communication	350,42	378,62	385,48	455,90
Financial and insurance activities	415,42	518,56	593,47	737,23
Education	171,12	192,40	195,89	217,22
Health and Social Service Delivery	142,65	164,35	174,86	197,42
Arts, entertainment and recreation	194,34	211,27	215,76	242,74
Other types	201,14	265,96	256,16	306,64

The level of salaries of employees of ICT companies varies significantly between regions. Thus, in Tashkent, wages are on

average 2.5 times higher than in other regions and amount to 571.8 US dollars as of 2021. Among the regions, Jizzakh

(\$259.05), Tashkent (\$255.2) and Syrdarya (\$232.45) regions are leading in terms of wages.

### Nominal accrued average monthly wages in the ICT industry, USD

Regions	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	466,55	353,38	311,35	352,08	386,78	453,50
Republic of Karakalpakstan	269,76	197,81	188,50	208,71	203,31	223,05
Andijan	219,29	159,58	149,34	169,73	169,72	199,70
Bukhara	260,84	202,99	175,01	202,48	212,16	227,79
Jizzakh	237,93	177,84	148,50	201,52	228,89	259,05
Kashkadarya	259,81	189,73	168,53	182,65	197,85	210,54
Navoi	276,62	198,16	162,83	179,09	170,52	230,60
Namangan	269,53	190,05	182,88	215,09	202,44	223,70
Samarkand	235,36	158,16	137,00	163,62	177,51	227,88
Surkhandarya	230,25	169,32	151,62	164,03	194,42	202,79
Syrdarya	278,30	200,33	68,79	199,14	195,87	232,45
Tashkent	272,43	219,62	189,17	188,84	204,71	255,20
Ferghana	185,88	174,46	157,21	176,99	171,98	191,84
Khorezm	250,94	187,56	165,06	176,27	180,21	207,53
Tashkent city	624,13	460,36	397,84	442,30	502,24	571,81

### Nominal accrued average monthly wages of employees of legal entities in the ICT industry, UZS thousand

Regions	2016	2017	2018	2019	2020	2021
The Republic of Uzbekistan	1 385,13	1 816,50	2 512,29	3 116,36	3 892,87	4 817,74
Republic of Karakalpakstan	800,89	1 016,81	1 521,02	1 847,38	2 046,24	2 369,57
Andijan	651,04	820,29	1 205,02	1 502,34	1 708,23	2 121,54
Bukhara	774,42	1 043,43	1 412,15	1 792,21	2 135,32	2 419,91
Jizzakh	706,39	914,16	1 198,29	1 783,75	2 303,72	2 752,01
Kashkadarya	771,34	975,26	1 359,84	1 616,72	1 991,28	2 236,67
Navoi	821,27	1 018,62	1 313,91	1 585,19	1 716,28	2 449,81

Namangan	800,22	976,91	1 475,67	1 903,88	2 037,46	2 376,44
Samarkand	698,75	812,98	1 105,43	1 448,30	1 786,57	2 420,85
Surkhandarya	683,58	870,37	1 223,46	1 451,86	1 956,76	2 154,37
Syrdarya	826,24	1 029,78	555,11	1 762,69	1 971,42	2 469,38
Tashkent	808,81	1 128,91	1 526,44	1 671,48	2 060,34	2 711,07
Ferghana	551,86	896,76	1 268,53	1 566,57	1 730,92	2 037,96
Khorezm	745,02	964,10	1 331,90	1 560,22	1 813,77	2 204,73
Tashkent city	1 852,98	2 366,41	3 210,20	3 914,99	5 054,93	6 074,62

Depending on the position, the largest salary growth in the IT sector from 2019 to 2021

recorded among line managers (41%). A smaller increase in wages was observed among top

management and specialists (39% and 36%, respectively).

### Change in salaries in the IT sector depending on the level of positions for 2019-2021, %

Specialization	Salary change, %
Top management	39,00
Line managers	41,00
Specialists	36,00

The average monthly salary for 2021 of employees of IT Park resident companies was \$941.30,

an increase compared to 2020 was 18.42%. The average annual

increase for 2019-2021 was 44.32%.

### Average monthly wages of employees of IT Park residents, USD

Index	2019		2020		2021	
	1st half	year	1st half	year	1st half	year
Average monthly salary	395,42	451,91	695,50	794,85	800,10	941,30

According to the results of a survey conducted among residents of the IT Park, the lowest wages are offered to junior specialists, especially junior specialists involved in business process outsourcing (BPO) and other junior technical specialists (median

value - from 200 to 500 USD). At the same time, senior level professionals involved in business process outsourcing (BPO) are among the highest paid. On average, wages in BPO companies are slightly lower than wages in IT companies.

Middle-level professionals can generally qualify for salaries over \$1,000, regardless of specialization. Senior Developers and Business Analysts can claim salaries in excess with Senior Project Managers earning the highest salaries.

### Nominal accrued average monthly salary of business analysts of respondent companies in the ICT industry, USD

Level	Specialization	Min		25% quartile		Median		75% Quartile		Max	
		from	before	from	before	from	before	from	before	from	before
Junior	Business analysis	100	200	150	500	200	550	400	800	500	1000
Middle	Business analysis	200	500	500	812,5	600	1100	775	1500	1000	2000
Senior	Business analysis	500	800	837,5	1625	1150	2000	1575	3000	5000	5000

### Nominal accrued average monthly salary of QA specialists of respondent companies in the ICT industry, USD

Level	Specialization	Min		25% quartile		Median		75% Quartile		Max	
		from	before	from	before	from	before	from	before	from	before
Junior	Quality assurance	100	274	207,25	400	300	550	475	875	1000	1500
Middle	Quality assurance	274	274	425	800	600	1000	775	1500	2000	2500
Senior	Quality assurance	500	700	800	1375	1150	2250	1625	3000	2500	4000

Source: Data provided by IT Park, June 2022

Source: <https://www.spot.uz/ru/2021/12/04/hr/>, December 2021

Source: Results of a survey conducted among residents of the IT Park, July 2022

### Nominal accrued average monthly salary of project management specialists of respondent companies in the ICT industry, USD

Level	Specialization	Min		25% quartile		Median		75% Quartile		Max	
		from	before	from	before	from	before	from	before	from	before
Junior	Project management	150	300	280,5	500	300	600	375	775	500	1000
Middle	Project management	457	640	500	1000	650	1300	825	1500	1000	2000
Senior	Project management	640	914	1037,5	2000	1350	2000	1500	3000	5000	10000

### Nominal accrued average monthly salary of development specialists of respondent companies in the ICT industry, USD

Level	Specialization	Min		25% quartile		Median		75% Quartile		Max	
		from	before	from	before	from	before	from	before	from	before
Junior	Development	100	150	200	414,25	300	600	450	1000	1000	1500
Middle	Development	150	250	478,5	1000	600	1150	900	2000	1500	3000
Senior	Development	250	500	978,5	1850	1175	3000	2000	3500	3000	5000

### Nominal accrued average monthly salary of other technical specialists of respondent companies in the ICT industry, USD

Level	Specialization	Min		25% quartile		Median		75% Quartile		Max	
		from	before	from	before	from	before	from	before	from	before
Junior	Other technical specialists	50	183	125	350	200	500	300	600	900	1000
Middle	Other technical specialists	183	457	425	700	500	1000	550	1200	1000	2000
Senior	Other technical specialists	457	548	548	1375	1000	1750	1200	2250	2000	3000

### Nominal accrued average monthly salary of BPO specialists of respondent companies in the ICT industry, USD

Level	Specialization	Min		25% quartile		Median		75% Quartile		Max	
		from	before	from	before	from	before	from	before	from	before
Junior	Professionals involved in business process outsourcing (BPO)	100	400	150	450	200	500	200	600	200	700
Middle	Professionals involved in business process outsourcing (BPO)	400	1000	475	1000	500	1100	625	1500	1000	1500
Senior	Professionals involved in business process outsourcing (BPO)	366	1500	1000	2000	1400	2300	1500	2500	1600	3000

According to the hh.uz study, the average salary in the IT sector for the first half of 2022 increased by 45% compared to the same period in 2021, thus the average

salary of an IT specialist in Uzbekistan amounted to \$816.

In addition to salaries, companies use various tools to retain

employees, as well as to attract them. According to the results of a survey conducted among IT Park residents, the most common way to motivate employees among

respondent companies is the payment of annual/monthly/quarterly bonuses, bonuses and other monetary rewards. This method of motivation is used by 59% of respondents, another 13%

would like to use it. 50% of companies use irregular cash payments (for example, for the time worked in the company, based on the results of completed projects, etc.)

Options and other similar profit-sharing tools are used by 20% of companies, another 21% of companies would like to use this method of motivating employees.

### Ways to motivate employees

Way	Share of using companies, %	Share of interested companies, %
Regular, such as yearly/monthly/quarterly bonuses, bonuses and other cash payments	59	13
Irregular cash payments (for example, for time worked in the company, based on the results of completed projects, etc.)	50	11
Non-monetary forms of encouragement (payment for education, certificates, courses)	41	16
Options and other similar profit-sharing instruments	20	21

## Information about self-employed IT professionals

The possibility of registering as self-employed professionals appeared on September 1, 2019. Not only citizens of Uzbekistan, but also foreign citizens can register as self-employed. According to the Ministry of Employment and Labor Relations of the Republic of Uzbekistan, by the end of July 2021, the number of self-employed people was 940,776. As of January 2022, the total number of self-employed people was about 1.2 million.

Freelance platforms have been created to help freelancers find work. The list of freelance platforms is given on the official website of the IT Park.

The Decree of the President of the Republic of Uzbekistan fixed 68 types of activities that self-employed persons can engage in, as defined in the List of types of activities (works, services) that self-employed persons can engage in. 4 of these activities are related to IT:

- repair and adjustment of computers, installation of licensed software for individuals;
- creation and processing of multimedia, design and art materials (web designer, graphic

designer, computer game designer, interior designer, landscape designer, fashion designer, retoucher, photo collagist, vector graphics editor, architect, visualization designer, information designer, interface designer, technical designer, motion designer, banner maker, print designer, flasher, 3D designer, video editor, videographer, composer, sound director, arranger, announcer, photo editor, etc.);

- development and technical support of software, information systems, mobile applications and websites (programmer, software testing specialist, web page layout designer, web analyst, website optimization specialist);

- activities in social networks (PR-manager, Internet marketer, promotion and advertising of goods (works, services) in social networks (SMM), administrator of pages in social networks, account manager, marketer, link manager, targetologist, contextual advertising, director, media planner, SMO-specialist).

The number of self-employed engaged in IT activities is growing rapidly. According to the study «Human potential in the field of digital development of

Uzbekistan» by UNDP, in 2021 the number of self-employed in the field of IT and related activities amounted to 2,225 people.

In July 2022, according to the President of Uzbekistan Shavkat Mirziyoyev, the number of self-employed IT specialists reached 43 thousand people. As of September 2022, according to the IT Park, there are 66,000 self-employed IT professionals registered in the country.

The Institute for Forecasting and Macroeconomic Research regularly assesses the readiness of Uzbekistan to enter the freelance market. To conduct the assessment, a calculation methodology was developed based on 27 indicators, which were divided into 4 blocks: the availability and quality of talent, costs, infrastructure and the creation of an enabling environment. Using this methodology, the index of readiness to enter the freelance market in Uzbekistan for 2015-2020 was calculated. The developed methodology allows assessing the state of the market of self-employed specialists in Uzbekistan and ensuring the improvement of their activities.

As a result of the measures taken

in the country, the Readiness Index of Uzbekistan to enter the freelance market has been

growing regularly since 2015. Improvements in the indicators of

the Infrastructure block had the greatest impact on this.

### Index of readiness of Uzbekistan to enter the freelance market

Parameters	2015	2016	2017	2018	2019	2020
Block 1 «Availability and quality of talent»	47,70	47,90	51,00	49,20	50,00	54,20
Block 2 «Expenses»	45,80	49,30	46,50	48,50	53,40	56,50
Block 3 «Infrastructure»	40,50	44,10	46,70	51,40	55,70	61,60
Block 4 «Creating an enabling environment»	48,80	50,30	51,50	50,40	44,80	54,30
Composite index	45,70	47,90	48,90	49,90	51,00	56,60



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## 7 IT COMPANIES IN UZBEKISTAN

Number of companies in the field of computer services, 2021

 **3 972**

Volume of computer services (IT services)

 **445,4**

million USD, 2022

Number of IT Park residents

 **1122**

2022

Number of employees of IT Park residents, 2022

 **18**

thousand people

Average annual increase in IT Park revenue

 **200%**

for 2019-2021

Export of IT Park resident companies, 2022

 **140**

million USD

Share of revenue of resident IT companies in the volume of computer services in Uzbekistan, 2021

 **82,8%**

2021

IT Park export growth in 2022

 **182,6%**

2022

Average monthly salary for IT Park residents, 2022

 **1,10**

thousand USD

The number of computer service companies (IT companies) in Uzbekistan has grown from 1,924 in 2016 to 3,972 in 2021. The most common activities among IT companies are activities in the field of computer programming (22.6% of companies) and other activities in the field of information technology and computer systems (36.1% of companies). The volume of services of these companies in 2022 amounted to 445.4 million US dollars. In the total volume of services for all types of economic activities, computer services in 2021 account for about 1%.

A significant increase in the number and volume of services of IT companies occurred after 2019. The average annual revenue growth rate from 2019 to 2021 was 80.2%. The largest increase in the number of companies also occurred in 2020 compared to 2019 (+20.2%). In general, in this period, the company's revenue increased by 3.25 times.

The increase in the number of companies and the growth in their revenue is associated with the creation in 2019 of an IT Park, a special legal regime that provides resident companies with significant

tax benefits aimed at stimulating the development of the IT industry and the export of services. Residents of the IT Park are exempt from value added tax (VAT), income tax, social tax, and also use a preferential rate of 7.5% (instead of 12%) on payroll income tax.

Since 2019, there has been a steady increase in the number of resident companies. As of the end of 2022, 1122 companies were residents. Simultaneously with the increase in the number of companies, the number of employees is also growing from

4.5 thousand at the end of 2019 to 9.9 thousand at the end of 2021. The revenue of the IT companies of the park is 82.8% of all computer services in Uzbekistan in 2021. The export of the IT Park for 2021 amounted to 46 million USD, of which 17.50 million USD is the export of IT companies, the increase in exports compared to 2020 was 182.21%.

The average monthly salary in IT Park resident companies increased from \$395.42 in the first half of 2019 to \$941.30 at the end of 2021. The average annual growth was 138%.

In order to analyze the activities of IT Park resident companies, in addition to the statistical information provided by the IT Park administration, a survey of resident companies was conducted. 56 companies took part in the survey, with a total number of 2703 people, which is 23% of the total number of employees of IT companies - residents of the IT Park. The results of the survey are described later in this section.

The IT industry of Uzbekistan is at an early stage of its development. 90% of IT companies - residents of the IT Park have less than 50 employees. 97% of employees of IT Park residents working in Uzbekistan are located in Tashkent. 61% of resident companies focus on the local market of Uzbekistan. The export of IT companies accounts for 8.2% of their revenue.

A typical IT company in Uzbekistan is a small company founded in the last 10 years, which operates in the local market, providing services to clients from the financial sector, government agencies or state-

owned companies. The main development priority of such a company is to improve technologies and software development processes, and the main expectations are that the existing legal regime will not deteriorate. Such a company plans to grow, but cannot invest heavily in working with students, so it has difficulty hiring and retaining qualified specialists, and considers the quality of graduates of the IT education system unsatisfactory. The company is not interested in developing its own products, does not feel the need to attract investment, technology partnerships or certification of processes to international standards, and uses its own equipment located in Uzbekistan. The main languages used are Java and Javascript, the main services offered are custom development, development of CRM and ERP systems.

Thanks to the creation of an IT Park, large international IT companies come to Uzbekistan, which are interested in the offered conditions and opportunities of the country and which in the coming years will significantly transform the industry. Such companies are focused on the global market; therefore they are not limited by the demand of local customers, and therefore their growth rates will be higher. Such companies are primarily interested in volumes, so they will actively increase the number of their development centers in Uzbekistan, attracting qualified IT specialists from smaller IT companies or other industries, as well as organizing work with students on a larger and more systematic basis.

Against the backdrop of

geopolitical events taking place in the CIS region (including Belarus, Russia, Ukraine) in 2020-2022, Uzbekistan has become one of the important locations for many IT companies in the region with large offices in the CIS countries.

International companies are ready to pay more to experienced employees, which has already affected the dynamics of the average salary of IT Park residents. From the point of view of the state and the industry, such companies have a higher value due to greater opportunities to attract export earnings than companies focused on working in the domestic market, since they provide export earnings and invest their own funds in the development of the industry, infrastructure, education system.

The IT Park was able to interest such companies, and, according to the results of the survey, companies that began to actively grow in Uzbekistan are satisfied with the activities of the IT Park, which not only acts as a regulator and administrator of preferential treatment, but also proactively assists companies in relocation, opening offices, business organization.

In addition to IT companies, non-IT business process outsourcing (BPO) companies are residents of the park. This area was included in the permitted areas of activity for residents, since it is also associated with the export of services provided remotely based on IT technologies and uses the human capital of Uzbekistan. VR companies in 2021 accounted for 11% of the IT Park's revenue, a separate section of the report is devoted to them, they will not be considered in detail in this section.

## Summary characteristics of companies in the ICT industry

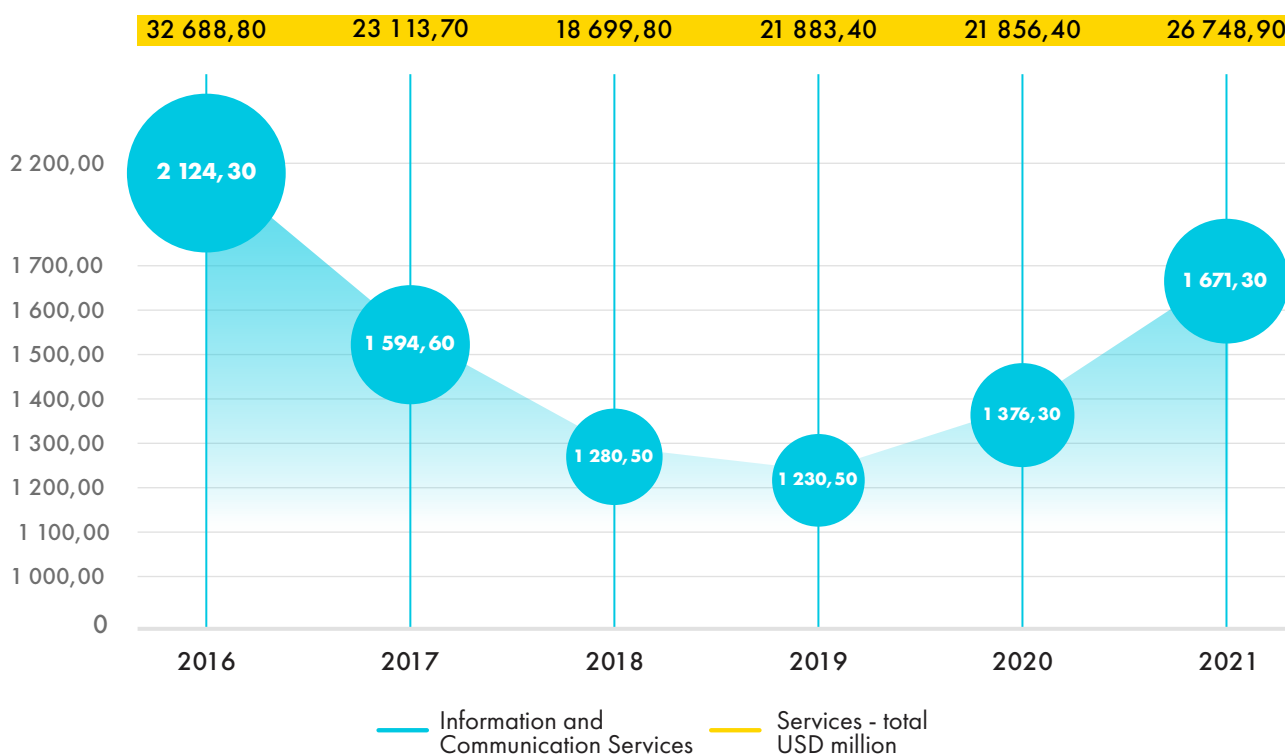
The activities of IT companies at the macroeconomic level fall into the type of economic activity «Information and Communication». The volume of information and communication services provided in 2021 amounted to USD 1,671.3 million,

its share of the total volume of services provided was 6.2%, an increase compared to 2020 was 21.4%. In the structure of services, the share of information and communication services in the period under review reached the highest value in 2017 (6.9%), and

the lowest value in 2019 (5.6%). The largest share in the volume of information and communication services provided is occupied by telecommunications services, while their share is declining: from 86% in 2016 to 67.3% in 2021.

## The volume of services rendered by main types of economic activities, USD million

Indicators	2016	2017	2018	2019	2020	2021
<b>Services - total</b>	<b>32 688,80</b>	<b>23 113,70</b>	<b>18 699,80</b>	<b>21 883,40</b>	<b>21 856,40</b>	<b>26 748,90</b>
<b>information and communication services</b>	<b>2 124,30</b>	<b>1 594,60</b>	<b>1 280,50</b>	<b>1 230,50</b>	<b>1 376,30</b>	<b>1 671,30</b>
Financial services	3 334,00	2 922,80	2 639,30	3 845,40	4 548,90	5 622,80
Transport services	10 312,80	7 045,70	5 472,70	6 154,30	5 331,80	6 329,30
Including: motor transport services	6 472,70	3 936,10	2 700,00	2 884,00	2 829,10	3 412,20
Accommodation and food services	1 023,50	710	579,2	670,4	539,7	788,4
Trade services	9 218,30	6 226,70	4 925,40	5 507,40	5 720,20	6 822,90
Real estate related services	1 146,90	783,3	613,4	672,3	597,8	760,7
Educational services	1 099,10	856,4	671,3	809,5	848,4	1 131,60
Healthcare services	477	331	275,1	350,7	336,5	480,6
Rental and rental services	764,6	503,7	408,6	421,8	412,2	503,7
Computer and household goods repair services	736,9	453,1	326	361,5	332,6	440,6
Individual services	982	609,8	458,6	516,9	500	636,7
Services in the field of architecture, engineering surveys, technical testing and analysis	381,5	313,5	366	513,3	487,6	593,7
Other services	1 087,80	763	683,7	829,5	824,3	966,6



## The volume of services rendered by main types of economic activities, UZS billion

Indicators	2016	2017	2018	2019	2020	2021
<b>Services - total</b>	<b>97 050,00</b>	<b>118 811,00</b>	<b>150 889,80</b>	<b>193 697,80</b>	<b>219 978,50</b>	<b>284 165,40</b>
<b>information and communication services</b>	<b>6 306,80</b>	<b>8 196,70</b>	<b>10 332,60</b>	<b>10 891,70</b>	<b>13 852,30</b>	<b>17 755,10</b>
Financial services	9 898,40	15 023,80	21 296,30	34 036,60	45 783,00	59 733,30
Transport services	30 617,80	36 217,20	44 159,40	54 473,50	53 662,90	67 238,60
Including: motor transport services	19 216,70	20 232,90	21 786,80	25 527,50	28 474,10	36 249,30
Accommodation and food services	3 038,70	3 649,60	4 673,30	5 933,60	5 431,70	8 375,40

Trade services	27 368,20	32 006,90	39 743,40	48 748,20	57 572,70	72 483,30
Real estate related services	3 405,10	4 026,50	4 949,20	5 950,70	6 016,90	8 081,10
Educational services	3 263,00	4 402,00	5 416,50	7 164,90	8 539,40	12 021,80
Healthcare services	1 416,30	1 701,50	2 220,00	3 104,30	3 386,70	5 105,90
Rental and rental services	2 270,10	2 589,20	3 297,40	3 733,50	4 149,00	5 351,00
Computer and household goods repair services	2 187,80	2 329,20	2 630,70	3 200,10	3 347,80	4 680,50
Individual services	2 915,50	3 134,40	3 700,60	4 575,60	5 032,20	6 764,10
Services in the field of architecture, engineering surveys, technical testing and analysis	1 132,60	1 611,70	2 953,60	4 543,10	4 907,50	6 306,80
Other services	3 229,70	3 922,30	5 516,80	7 342,00	8 296,40	10 268,50

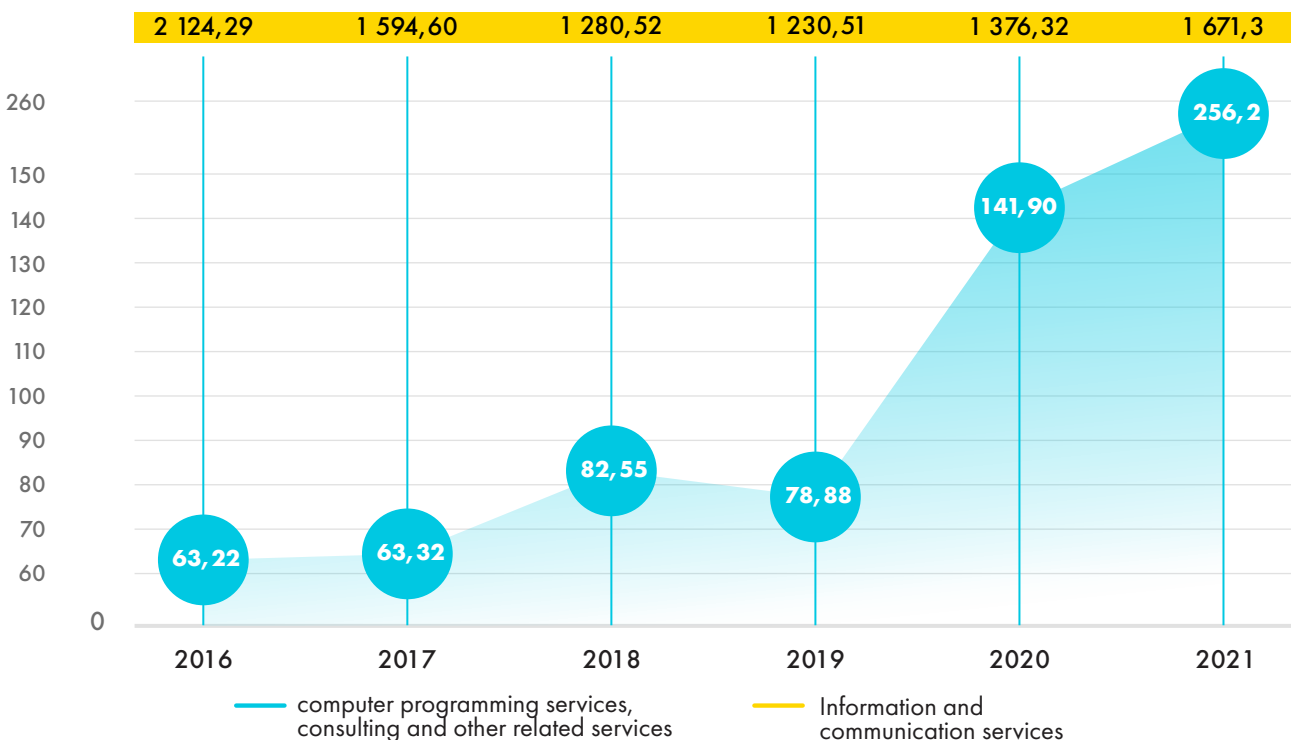
Computer-aided design, consulting and other related services (hereinafter referred to as computer services) showed no growth on average from 2016 to 2019. However, after 2019, there

is a significant increase in computer services - between 2019 and 2021 they grew by 3.25. The volume of services in 2021 amounted to 256.2 million US dollars. The average annual

growth rate in this period was 80.2%. In the total volume of services for all types of economic activities, computer services in 2021 account for about 1%.

### Volume of rendered information and communication services, USD million

Indicators	2016	2017	2018	2019	2020	2021
<b>Total</b>	<b>2 124,29</b>	<b>1 594,60</b>	<b>1 280,52</b>	<b>1 230,51</b>	<b>1 376,32</b>	<b>1 671,3</b>
Publishing services	128,87	91,16	72,39	69,80	73,65	78,7
Motion picture and television production services, sound recording and music publishing services	13,14	9,12	9,28	13,92	8,89	16,0
Programming and broadcasting services	61,81	50,06	46,78	49,63	64,67	65,6
Telecommunication services	1 826,09	1 351,44	1 039,66	974,31	1 016,79	1 125,6
<b>Computer programming services, consulting and other related services</b>	<b>63,22</b>	<b>63,32</b>	<b>82,55</b>	<b>78,88</b>	<b>141,90</b>	<b>256,2</b>
Information services	31,16	29,49	29,85	43,97	70,41	129,3



## The volume of information and communication services provided in actual prices, UZS billion

Indicators	2016	2017	2018	2019	2020	2021
<b>Total</b>	<b>6 306,8</b>	<b>8 196,7</b>	<b>10 332,6</b>	<b>10 891,7</b>	<b>13 852,3</b>	<b>17 755,1</b>
Publishing services	382,6	468,6	584,1	617,8	741,3	836,2
Motion picture and television production services, sound recording and music publishing services	39	46,9	74,9	123,2	89,5	169,8
Programming and broadcasting services	183,5	257,3	377,5	439,3	650,9	696,7
Telecommunication services	5 421,5	6 946,8	8 389,1	8 624	10 233,7	11 957,3
Computer programming services, consulting and other related services	187,7	325,5	666,1	698,2	1 428,2	2 721,5
Information services	92,5	151,6	240,9	389,2	708,7	1 373,6

## Companies in the ICT industry

In 2021, 9517 companies were operating in Uzbekistan engaged in the type of economic activity «Information and Communication». This type of activity includes companies in the ICT industry, including IT

companies that provide computer services. The total number of companies has increased by 49.4% since 2016. Analyzing the dynamics of companies of different types of activity, it can be noted that during this period the

number of companies providing wireline communication services and radio broadcasting services has decreased, while the number of companies providing any category of computer services has constantly increased.

### Number of organizations by type of economic activity «Information and Communication» (as of the beginning of the year), units

Industries	2016	2017	2018	2019	2020	2021
<b>Information and communication - total</b>	<b>6 370</b>	<b>6 427</b>	<b>6 403</b>	<b>6 975</b>	<b>7 901</b>	<b>9 517</b>
Book publishing	84	87	114	122	145	193
Publication of directories and lists	21	15	5	7	7	8
Newspaper publishing	106	267	308	315	315	337
Publishing of magazines and periodicals	39	117	143	154	176	182
Other publishing activities	216	220	223	231	270	358
<b>Release of computer games</b>	<b>82</b>	<b>171</b>	<b>83</b>	<b>90</b>	<b>109</b>	<b>136</b>
<b>Release of other software</b>	<b>122</b>	<b>109</b>	<b>201</b>	<b>206</b>	<b>248</b>	<b>315</b>
Production of motion pictures and television programs	115	161	184	205	227	293
Post-production stage of production of film-video-films and television programs	12	23	39	44	42	53
Distribution of motion pictures, videos and television programs	46	43	44	50	46	49
Movie screenings	95	82	87	87	95	99
Activities for the publication of phonograms and musical recordings	125	100	88	71	76	84
Broadcasting	227	389	109	93	87	88
Activities for the creation and broadcasting of television programs	99	81	76	91	92	106
Provision of wired communication services	845	640	547	542	457	463
Provision of wireless services	1 025	1 255	1 020	1 065	1 127	1 382
Provision of satellite communication services	16	11	7	8	20	24
Provision of other telecommunication services	368	245	538	606	805	1 017
<b>Activities in the field of computer programming</b>	<b>370</b>	<b>379</b>	<b>387</b>	<b>561</b>	<b>710</b>	<b>896</b>

Consulting services in the field of computer technology	169	175	249	272	309	387
Computer equipment management activities	66	93	89	122	149	198
Other activities in the field of information technology and computer systems	1 020	972	1 018	1 051	1 217	1 433
Data hosting and processing services	92	107	224	317	396	510
Web portals	3	-	17	49	70	97
Activities of news agencies	454	253	215	207	188	175
Other information service activities n.e.c.	553	432	388	409	518	634

The number of companies providing computer services has grown from 1,924 in 2016 to 3,972 in 2021. The overall growth for the period amounted to 106.4%. The most common activities among IT companies in 2021 are activities in the field of computer programming (22.6% of

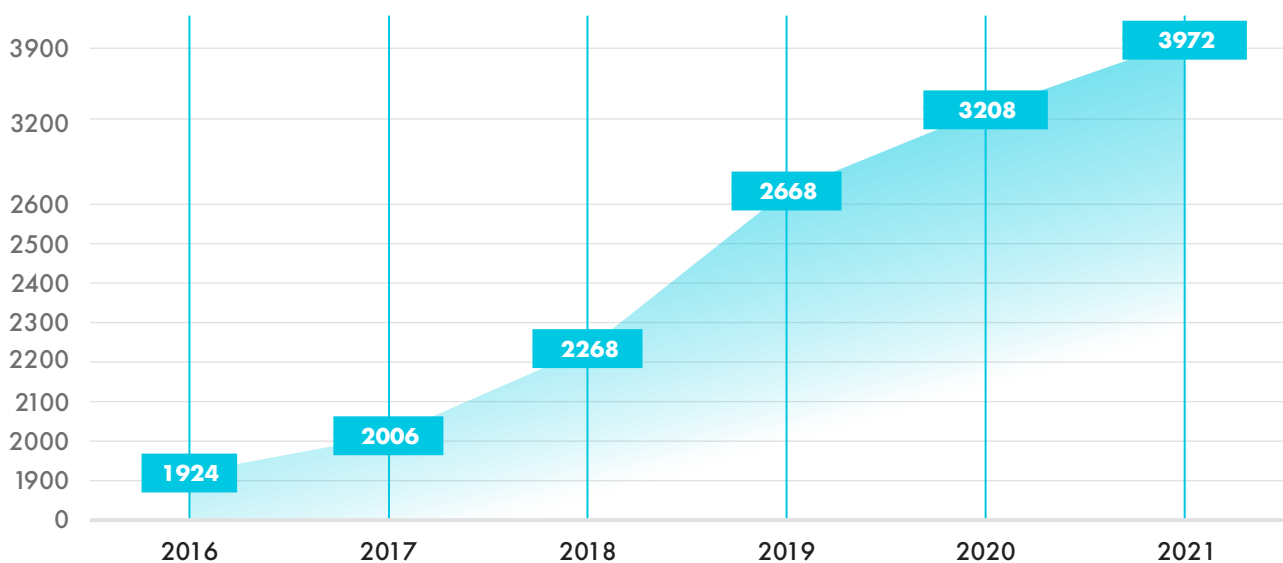
companies) and other activities in the field of information technology and computer systems (36.1% of companies).

The largest increase in the number of companies occurred in 2020 compared to 2019 (+20.2%). The increase in the number of

companies and the growth in their revenue is associated with the creation in 2019 of an IT Park, a special legal regime that provides resident companies with significant tax benefits aimed at stimulating the development of the IT industry and the export of services.

### Number of companies providing computer services (IT companies) (as of the beginning of the year), units

Industries	2016	2017	2018	2019	2020	2021
Release of computer games	82	171	83	90	109	136
Release of other software	122	109	201	206	248	315
Activities in the field of computer programming	370	379	387	561	710	896
Consulting services in the field of computer technology	169	175	249	272	309	387
Computer equipment management activities	66	93	89	122	149	198
Other activities in the field of information technology and computer systems	1 020	972	1 018	1 051	1 217	1 433
Data hosting and processing services	92	107	224	317	396	510
Web portals	3	0	17	49	70	97
<b>Total:</b>	<b>1924</b>	<b>2006</b>	<b>2268</b>	<b>2668</b>	<b>3208</b>	<b>3972</b>



## Information about the IT Park of Uzbekistan

The IT Park of Uzbekistan was created on January 10, 2019 to support and promote IT companies, develop and train specialists in the field of IT and outsourcing, and support promising start-up projects. The IT Park was created based on the innovation center for the development and implementation of information technologies Mirzo Ulugbek Innovation Center, which in turn was created on August 25, 2017.

At the end of 2022, the construction of the first stage of the IT-Park complex was completed; in September last year, 6 office buildings, a conference hall and a parking lot for 1,800 cars were completed.

At the moment, active work is underway on the construction of the second stage, which is scheduled to be completed by 2024, so the total building area will be 7 hectares of land.

The residents of the IT Park are IT companies and business process outsourcing (BPO) companies. In addition, the IT Park maintains 200 IT training centers for IT professionals and 14 BPO training centers throughout the country.

Residents of the IT Park are exempt from value added tax (VAT),

income tax, social tax, and also use a preferential rate of 7.5% (instead of 12%) on payroll income tax. Residents are required to make deductions from monthly revenue in the amount of 1% to the IT Park, prepare a quarterly report once a quarter and an audit report of the established form once a year. Additionally, residents of the IT Park are provided with the following preferences:

- payment of dividends in foreign currency for foreign founders;
- payment of wages in foreign currency for foreign employees;
- no work permit is required for foreign specialists;
- a resident can export services without an export contract;
- monthly deductions of residents are reduced from 1% to 0.5% with annual exports over 20 million US dollars.

Since 2019, there has been a steady increase in the number of resident companies. As of the end of 2021, 523 companies were residents. Simultaneously with the increase in the number of companies, the number of employees is also growing from 4.6 thousand at the end of 2019

to 9.9 thousand at the end of 2021. The growth for the period amounted to 115%.

The revenue of IT Park residents for 2021 amounted to 239.28 million USD, of which 212.17 million USD was the revenue of IT companies. The increase in revenue compared to 2020 amounted to 130.99%. The revenue of the IT companies of the park is 82.8% of all computer services in Uzbekistan in 2021.

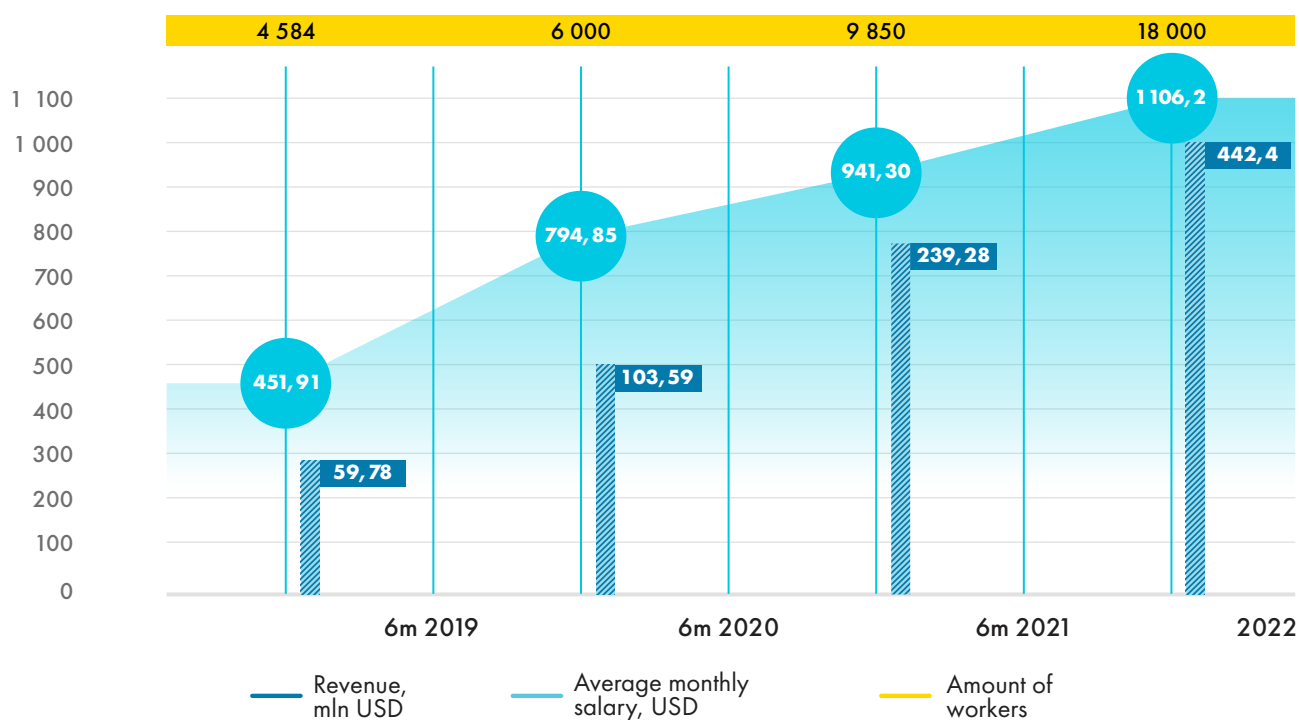
The export of the IT Park for 2021 amounted to 46 million USD, of which 17.50 million USD is the export of IT companies, the increase in exports compared to 2020 was 182.21%.

Against the background of geopolitical events that occurred in the first half of 2022 in the CIS region (including Belarus, Russia and Ukraine), the importance of Uzbekistan as one of the locations for IT companies in the region has increased. At the end of 2022 according to the IT Park, residents' exports have already exceeded the results of 2021 and amounted to more than 140 million dollars, the number of employees increased by 82%, the average salary by 25% and the revenue for the half year was 84% of the last year.

### Information about the residents of the IT Park

Index	2019 year	2020 year	2021 year	2022
Number of companies	369	411	523	1 122
<b>Amount of workers</b>	<b>4 584</b>	<b>6 000</b>	<b>9 850</b>	<b>18 000</b>
Revenue, billion sum	529,10	1 042,60	2 542,00	5 100,0
<b>Revenue, million USD</b>	<b>59,78</b>	<b>103,59</b>	<b>239,28</b>	<b>442,4</b>
Export, million USD	6,20	16,30	46,00	140
Average monthly salary, million sum	4,00	8,00	10,00	12,5
<b>Average monthly salary, USD</b>	<b>451,91</b>	<b>794,85</b>	<b>941,30</b>	<b>1 106,2</b>





### Information about IT companies, residents of the IT Park (without BPO companies)

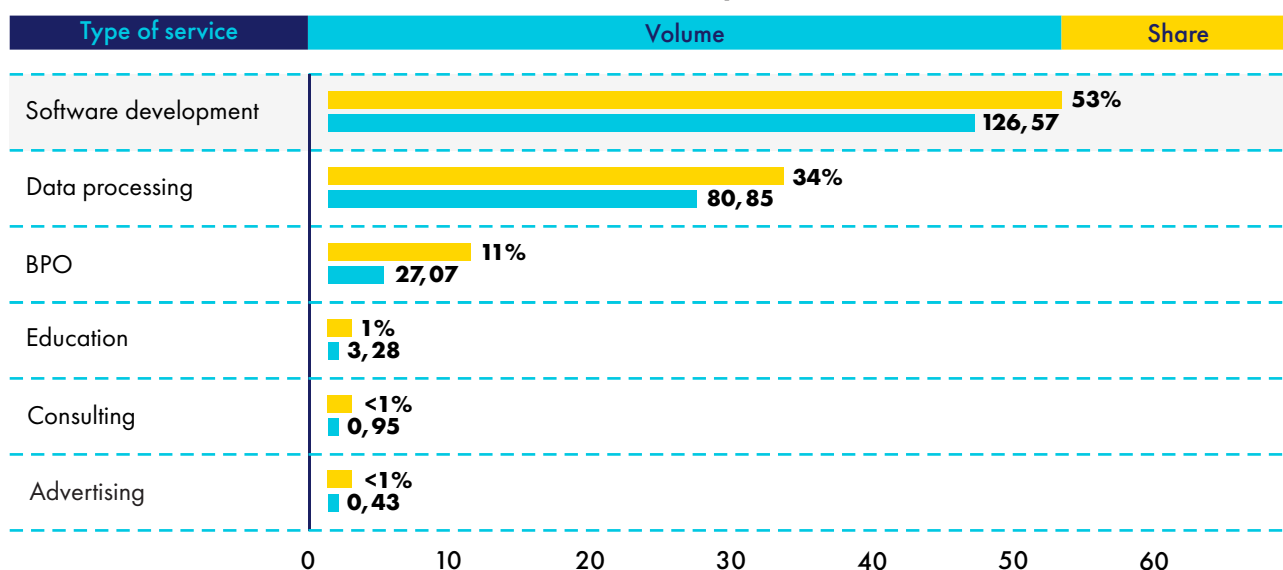
Parameter	2021	
	1st half	year
Number of companies	372	478
Amount of workers	6 135	8 350
Revenue, billion sum	855,10	2 254,00
Revenue, mIn USD	80,49	212,17
Export, million USD	5,40	17,50

Software development accounts for the largest share (53%) in the structure of revenue by lines of business. Data processing also

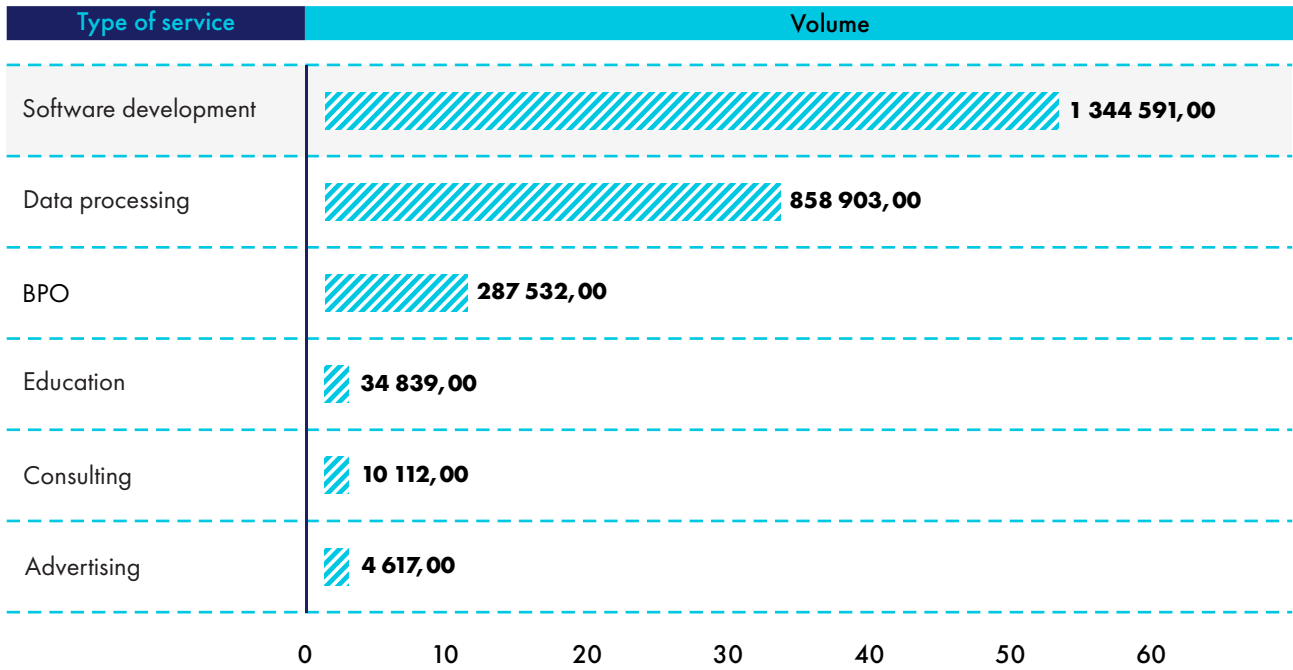
stands out, with a share of 34%. The volume of services provided by BPO companies still occupies a

much smaller share compared to the services of IT companies (11%).

### The volume of services rendered by residents, USD million



### Volume of services rendered by residents, UZS million



The average monthly salary in IT Park resident companies increased from \$395.42 in the first half of 2019 to \$941.30 at the end of 2021. The average annual growth was 138%. This level of average salary exceeds the average salary in the ICT industry, which was

\$524.99 in 2021 by 79.3%. The growth of wages of IT Park residents is evidence of 2 trends. Firstly, the appearance of the IT Park attracted international IT companies to the country and contributed to the development of its own exporting companies.

These companies operate in the global market with wealthier customers and can afford higher wages for the skilled workers they need. Secondly, the growth of the IT Park stimulates the demand for qualified IT professionals in the industry.

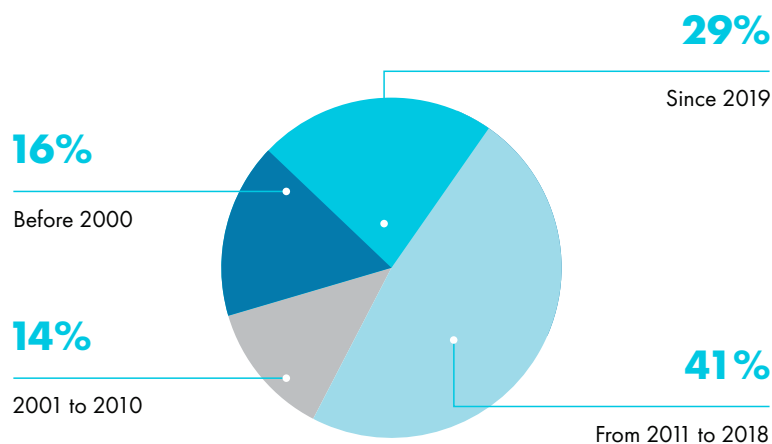
### General information about IT Park resident companies

For a more detailed study of the features and key factors of activity of IT Park resident companies, a survey was conducted in June-August 2022, in which 56 resident companies took part with a total number of 2703 people, which is

27% of the total number of employees of IT companies - residents of the IT Park. Further in this section, the results of the survey will complement the statistical information received from the IT Park or other

government agencies and departments. Most of the IT Park resident companies are relatively young, 70% of companies were founded after 2010, of which 29% – after the opening of the IT Park in 2019.

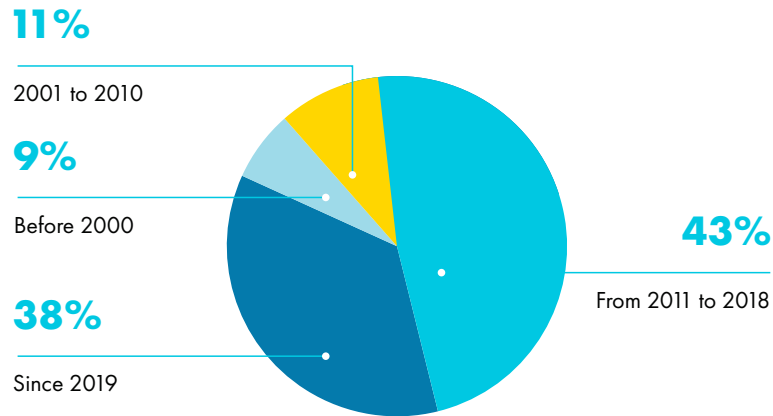
### Distribution of IT companies by year of foundation



Source: Data provided by IT Park, June 2022  
 Source: Results of a survey conducted among residents of the IT Park, July 2022

International companies operating in the Uzbek market more actively came to the Uzbek market after the opening of the IT Park, 38% of companies opened an office after 2019.

### Distribution of IT companies by year of opening an office in Uzbekistan

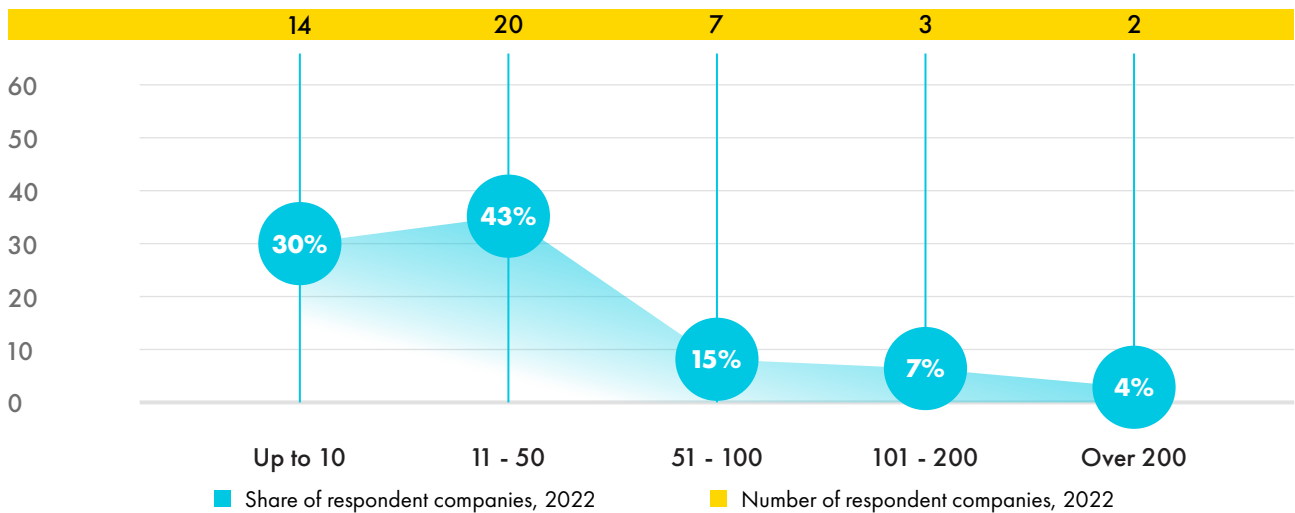
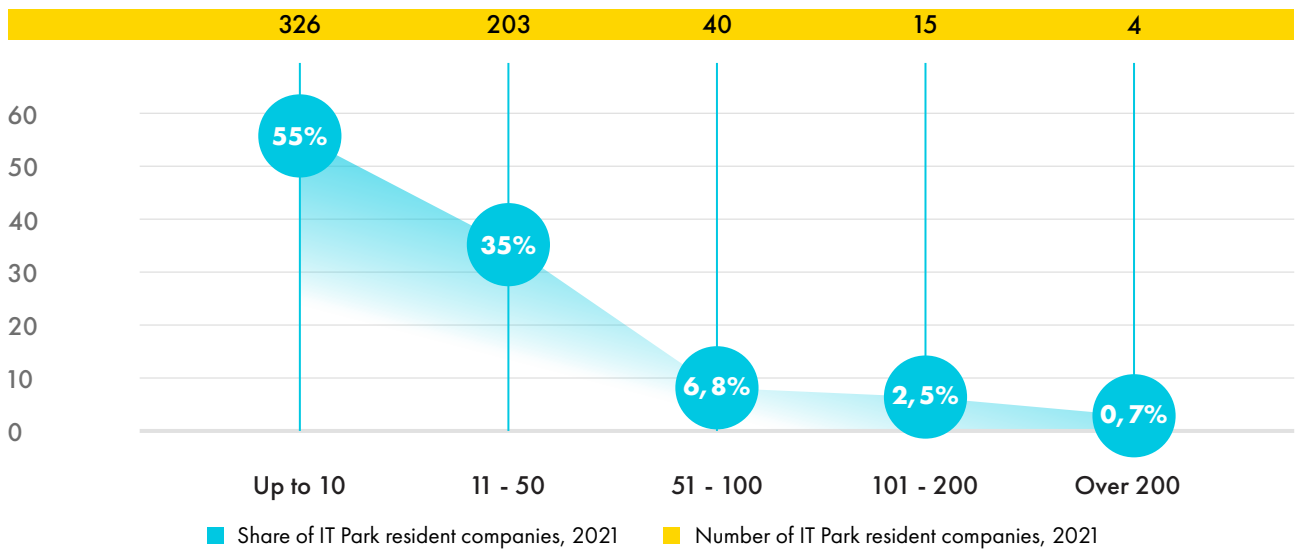


As of the end of 2021, 90% of IT Park resident companies had less than 50 employees, and 55% of companies had less than 10 employees. Only 4 companies had more than 200

employees. At the time of the survey in June-August 2022, due to the active growth of international companies in the first half of the year, 2 survey respondents had

more than 200 employees. In general, the distribution of survey respondent companies by number is quite representative of the general state of IT Park companies.

### Distribution of IT companies by number of employees



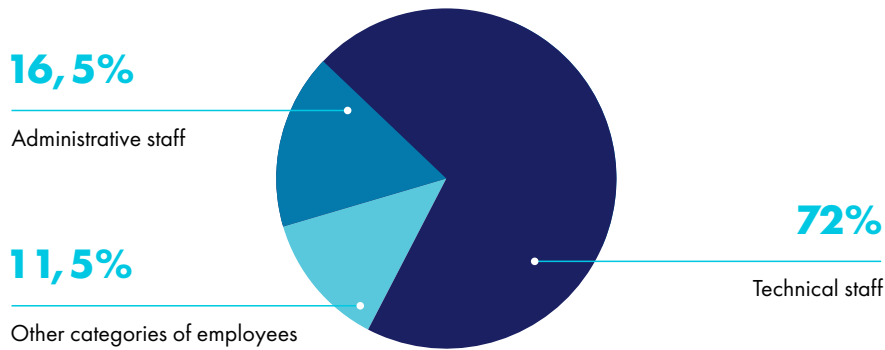
Source: Results of a survey conducted among residents of the IT Park, July 2022  
 Source: Source: Data provided by the IT Park, June 2022 results of a survey conducted among residents of the IT Park, July 2022

According to the results of the survey, 72% of the employees of resident companies are technical staff. The administrative staff makes up 16.5% of the total number of employees. This

distribution is typical for IT companies engaged in the provision of IT services. With the further development of the industry through the re-emergence and

growth in the number and size of product companies, the share of technical specialists in the total number of employees will decrease.

The structure of the number of IT companies, %



97% of the total number of employees of surveyed IT companies operating in Uzbekistan are located in Tashkent. IT Park resident companies are more concentrated in Tashkent compared to the average for the ICT industry.

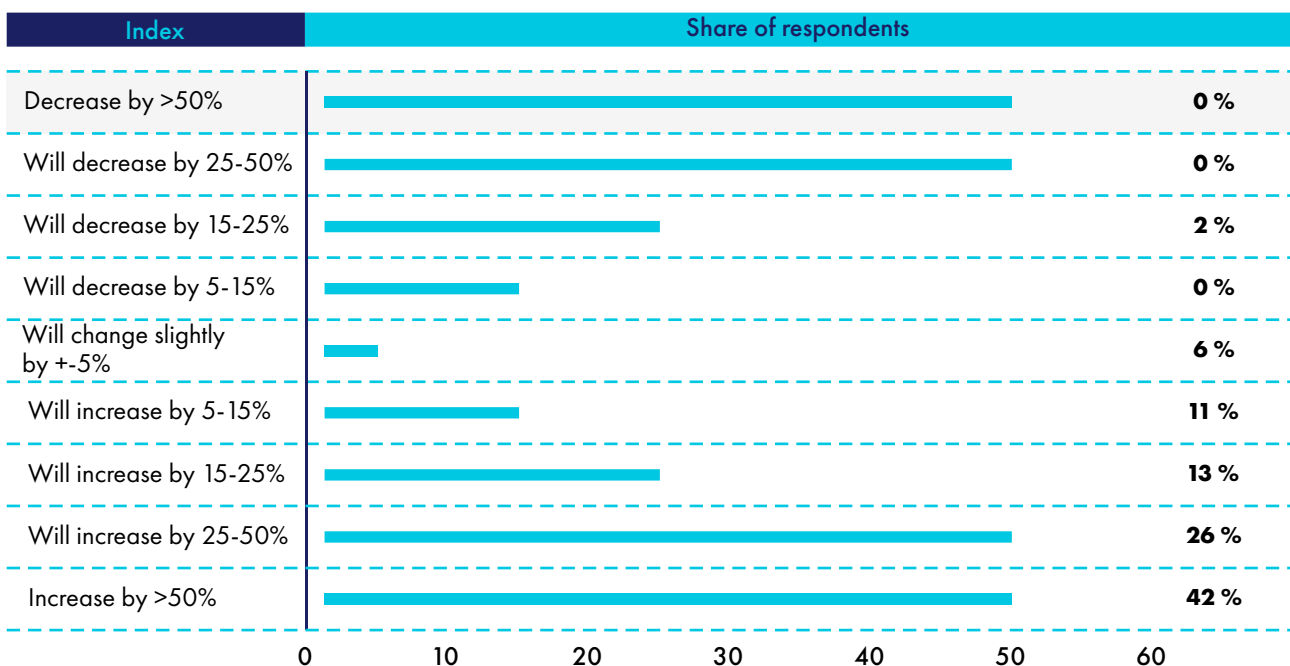
The proportion of women in the total number of employees of resident companies is 16.8%. The largest proportion of women is noted among non-technical personnel. Thus, 27% of respondents indicated that the

proportion of women among non-technical personnel is more than 40%, another 9% of respondents indicated a value from 30% to 40%. At the same time, 87% of respondents indicated that the proportion of women among technical staff is less than 40%.

Most of the IT Park resident companies set themselves the task of increasing the number of employees. 42% of the surveyed companies plan to increase their staff by more than 50% in the next

2 years. 68% of respondents plan to increase their staff by more than 25% in the next 2 years. Such plans are indicative of the opportunities that IT companies see in the Uzbek market and a positive outlook on the future activities of companies and are generally in line with the expected dynamics of the industry. The total number of employees of resident companies will have a higher dynamic than indicated in the table due to the entry of new companies into the IT Park.

Expected change in the number of personnel of the surveyed IT companies for the next 2 years, %



Source: Results of a survey conducted among residents of the IT Park, July 2022

## International activities of IT Park resident companies

Despite the fact that the IT Park was created primarily to develop the export of services, the domestic market still dominates the revenue of companies. According to the results of 2021, although the export of IT Park resident companies grew by 182.2% compared to 2020, it accounts for 19.2% of the revenue of resident companies. The level of export of computer services is an important indicator for the development of the industry as a whole and an indicator of the current level of demand and competitiveness of IT companies from Uzbekistan in the world market. Thus, the benefits for export growth provided by the IT Park for resident companies are

not fully realized. When working on the domestic market, the use of the provided tax incentives increases the efficiency and profitability of a business in a particular sector of the economy,

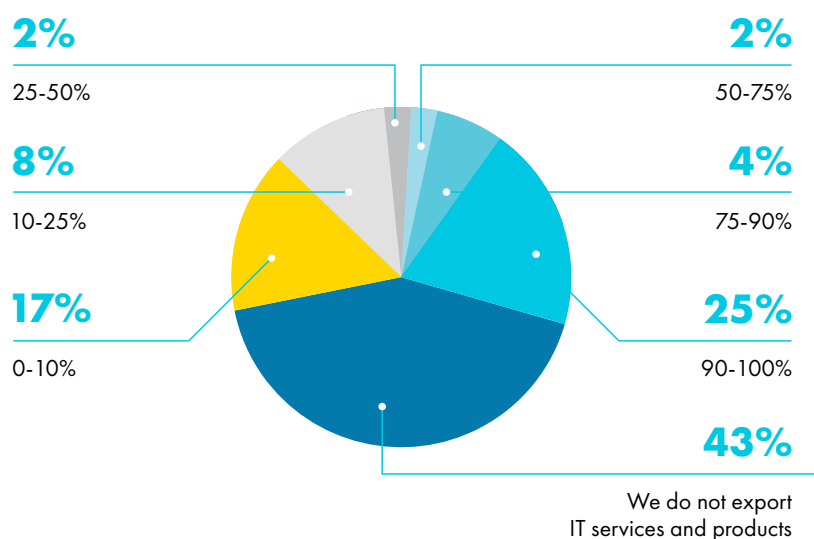
In the export structure by country in 2021, the largest share fell on the United States and amounted to USD 38,252.64 thousand, or 83.10%. Among the neighboring countries, the largest export was recorded to Kazakhstan - 572.65 thousand US dollars, or 1.20%.

In February 2022, IT Park launched a large-scale TashRush - a relocation program with a number of free services, which

provides support to foreign companies and IT specialists in opening legal entities and bank accounts, finding housing, offices and recruiting personnel. Thanks to the program, more than 3,000 foreign IT specialists have relocated to Uzbekistan.

At the same time, IT-Park launched an IT-Visa, which provides foreign IT-specialists with a number of preferences, such as unhindered entry and exit to the territory of Uzbekistan for up to 3 years, obtaining social benefits and other services. At the end of 2022, the total number of processed IT visa applications amounted to more than 350 applications.

The share of exports in the revenue of resident companies, %




According to the results of a survey of companies-residents of the IT Park, 43% of respondent companies do not export IT services and products. At the same time, in 25% of the surveyed companies, the share of exports in revenue ranges from 90% to 100%.
















According to the survey results, 61% of the surveyed companies provide services in the local market of Uzbekistan. 18% of companies operate in the CIS market, and 16% of companies operate in the North American market. 36% of companies plan to enter the market of the CIS and

Central Asia, 29% of companies would like to enter the market of Western Europe. The domestic market of Uzbekistan remains a significant source of income and experience for many companies, but a significant proportion of companies are already planning to enter typical markets for IT companies.

## Export by country of IT Park resident companies for 2021, USD thousand

	USA	83,10%	<b>38 252,64</b>
	Great Britain	5,20%	<b>2 395,58</b>
	Russia	3,20%	<b>1 476,29</b>
	Korea	2,10%	<b>966,93</b>
	Kazakhstan	1,20%	<b>572,65</b>
	Sweden	1,10%	<b>500,27</b>
	UAE	1,10%	<b>495,24</b>
	Israel	0,90%	<b>393,76</b>
	Ireland	0,60%	<b>258,44</b>
	Hong Kong	0,40%	<b>175,44</b>
	Bulgaria	0,30%	<b>135,80</b>
	Netherlands	0,20%	<b>86,21</b>
	Cambodia	0,10%	<b>69,00</b>
	Tajikistan	0,10%	<b>48,5</b>
	Australia	0,10%	<b>39,38</b>
	France	0,10%	<b>36,48</b>
	Germany	0,10%	<b>33,42</b>
	Saudi Arabia	0,10%	<b>30,00</b>
	Estonia	0,00%	<b>20,13</b>
	Other	0,10%	<b>45,69</b>
	<b>Total</b>		<b>46 031,87</b>

## Export by country of IT Park resident companies for 2022, USD thousand

	USA	81%	113 181,3
	Great Britain	4%	5 612,7
	Germany	2%	2 849,5
	Russia	2%	2 626,3
	Ireland	1%	2 078,8
	UAE	1%	1 536,3
	Sweden	1%	1 317,9
	Lithuania	1%	1 263,3
	China	1%	1 124,5
	Kazakhstan	1%	1 109,6
	Estonia	1%	940,4
	Latvia	1%	732,7
	Korea	0,5%	700,7
	Israel	0,5%	697,8
	New Zeland	0,5%	649,2
	Other	3%	3 579,0

**Total**

**140 000,0**

## Main markets of resident companies, %



— Share of employees in the market

— Share of those planning to work in the market

Major markets require companies to open offices near their customers. According to the survey, among 40 companies headquartered in Uzbekistan (that















is, most likely based in Uzbekistan), only 6 companies have representative offices or partnerships in other countries. At the same time, foreign offices of

such IT companies are most often located in Russia. Most of the companies that have overseas offices are originally international companies.









## Representative offices and partnerships of IT companies in Uzbekistan, %

Country	Main office	Development Center	Own representation	Partner company	Commercial agent
Uzbekistan	82%	61%	18%	12%	8%
Russia	4%	4%	4%	6%	0%
Kazakhstan	4%	2%	8%	2%	0%
USA	4%	2%	2%	4%	2%
Great Britain	4%	2%	4%	0%	2%
Kyrgyzstan	0%	2%	2%	2%	2%
Belarus	2%	2%	2%	2%	0%
Ukraine	0%	4%	2%	0%	0%
Poland	0%	4%	2%	0%	0%



	Georgia	0%	4%	2%	0%	0%
	Czech Republic	0%	4%	0%	0%	0%
	Lithuania	0%	0%	2%	0%	0%
	Tajikistan	0%	0%	0%	2%	0%
	Germany	0%	0%	0%	2%	0%
	Israel	2%	0%	0%	0%	0%
	India	0%	2%	0%	0%	0%
	Ireland	0%	0%	0%	2%	0%
	UAE	0%	0%	0%	0%	2%
	Turkmenistan	0%	0%	2%	0%	0%
	Turkey	0%	2%	0%	0%	0%
	Cyprus	0%	0%	0%	0%	2%
	Mexico	0%	2%	0%	0%	0%
	Hungary	0%	2%	0%	0%	0%

### Representative offices and partnerships of IT companies in Uzbekistan headquartered in Uzbekistan, units

Country	Development Center	Own representation	Partner company	Commercial agent
	Russia		2	
	Kazakhstan	1		
	USA		1	
	Great Britain	1		
	Kyrgyzstan			1
	Czech Republic	1		
	Ireland	1		
	Turkey	1		

## Clients, projects and products of IT Park resident companies

According to the results of the survey, companies are more focused on private companies in the local market (49% of companies indicated this type of client as the most priority), as well as companies outside the

technology sector in foreign markets (42% of respondents). Least of all, IT companies are interested in providing services to individuals (only 16% of respondents indicated this type of client as the most priority) and

start-ups (10% of respondents). This confirms the dominance of IT service companies in the industry, which, unlike product companies, are not inclined to work with individuals.

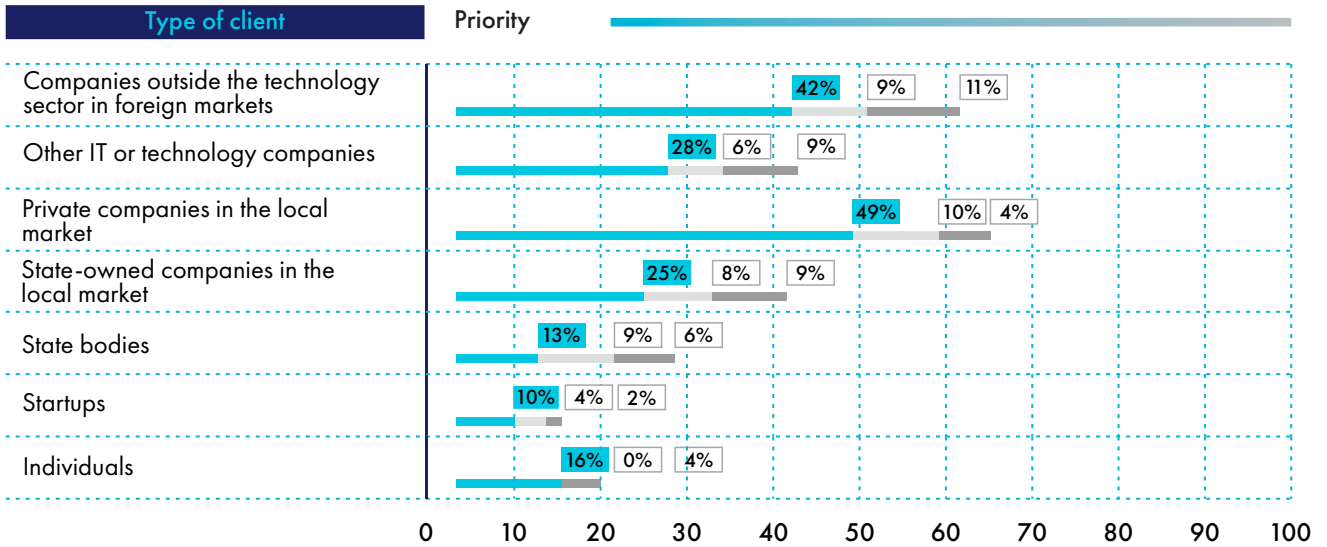
Despite the relatively small number of respondent companies focused on providing services to state organizations in the local market (25% of surveyed companies) and government agencies of Uzbekistan (13% of respondents), 40% of the total number of

employees of the surveyed companies work in such companies. As a rule, larger companies are guided by state bodies as customers.

It should also be noted that the number of companies focused on

providing services to state bodies of Uzbekistan is significantly less than the number of companies focused on providing services to state companies in the local market. Government bodies are a more significant client than state-owned companies.

### The highest priority types of customers, by number of employees, from low to high

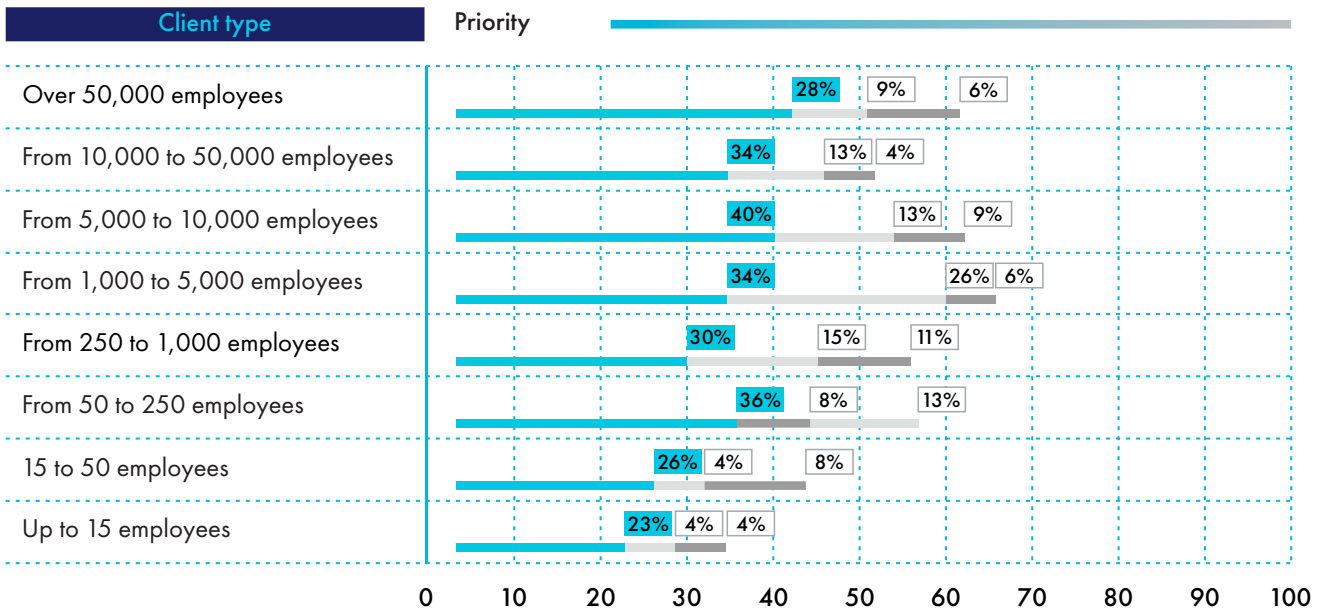


Most IT companies in Uzbekistan target customers with a total

headcount of 5,000 to 10,000 employees. In general, the focus

of work on relatively large customers can be traced.

### The highest priority types of clients, in descending order of priority



52% of surveyed IT companies believe that their main competitive advantage in the domestic market is the experience of completed projects. Also among the

competitive advantages, companies name customer recommendations (45%), expertise in market-demanded competencies (43%) and unique

services and products (43%). Among the competitive advantages that help to distinguish from other companies in the foreign market, in addition to

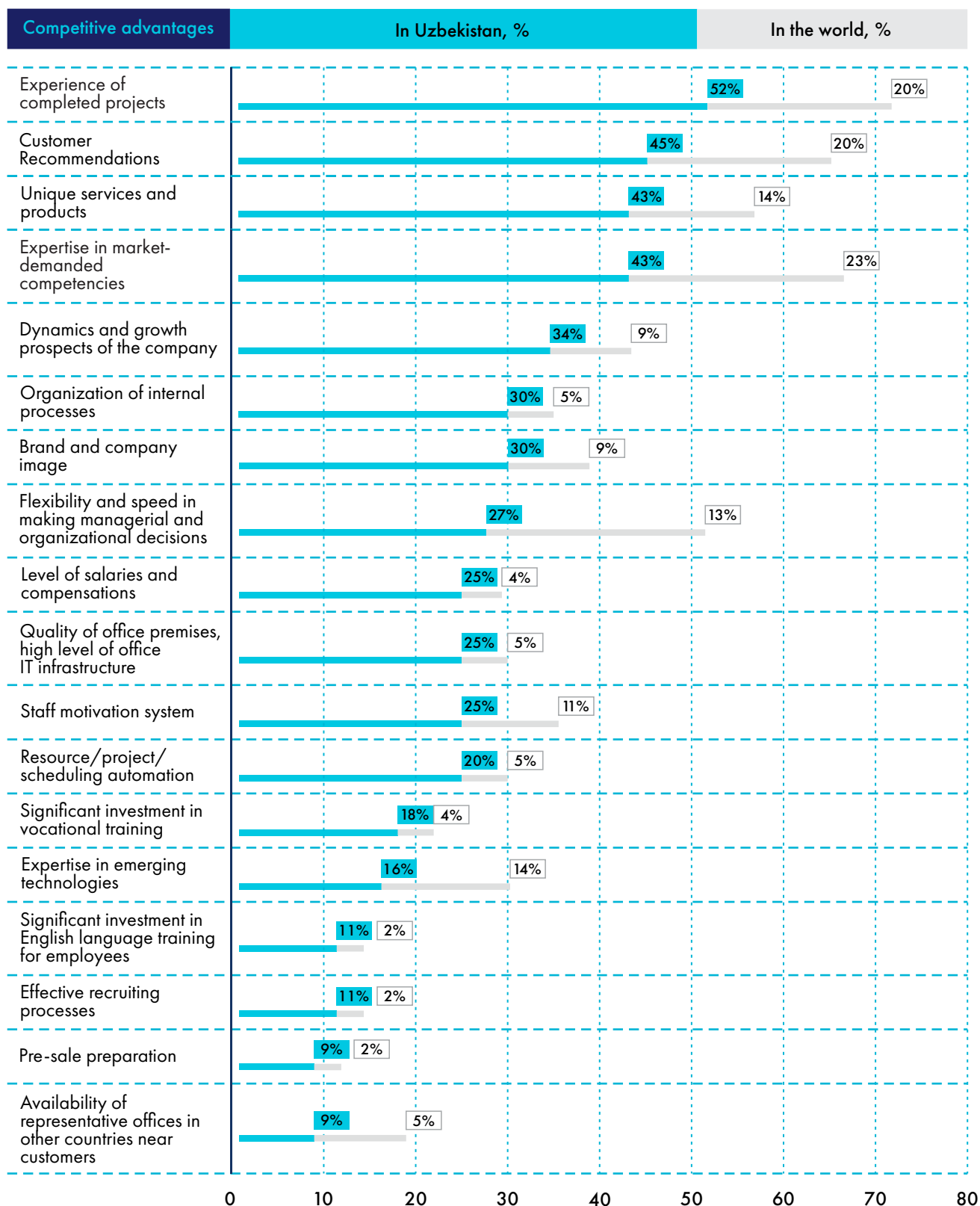
those listed above, there are also expertise in the latest technologies (emerging technologies) and flexibility and speed in making managerial and organizational

decisions.

On average, a noticeably smaller proportion analyze their competitiveness in the foreign

market compared to the domestic market, which generally corresponds to the industry's focus on local customers and the domestic market.

### Competitive advantages of companies that help to distinguish themselves from other companies in the domestic (in Uzbekistan) and external (in the world) markets



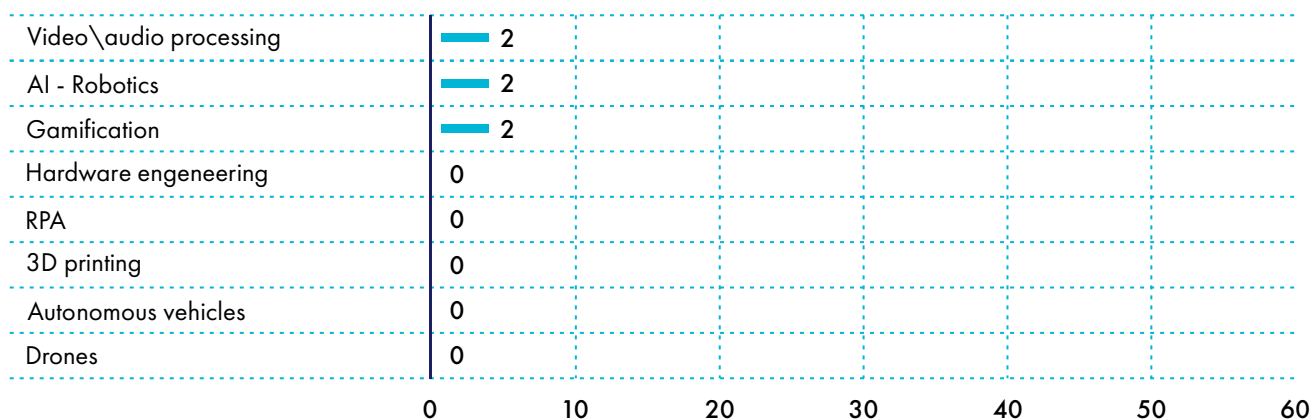
According to the results of the survey, the most common competencies among IT companies in Uzbekistan are CRM systems (52% of companies), ERP systems (50% of

companies), financial management systems (37% of companies) and mobile development (37% of companies). None of the respondents mentioned promising, but more

related to the physical equipment areas, such as drones, 3D printing and autonomous vehicles, which indicates the company's focus on software development.

### The share of competencies in the IT industry of Uzbekistan (respondents were given the opportunity of multiple choice)

Expertise	Share of respondents, %
CRM	52
ERP	50
Finance management	37
Mobile	37
E-commerce	35
Payments, Digital money	35
Web & Intranet	30
IT Service management	30
Analytics, DWH, BI	28
BPM	26
Project management tools	26
Software development tools and processes	22
Chatbots	20
Cloud	13
AI - Machine learning	13
Blockchain	13
Logistics & SC	11
Risk management	9
Talent & HR	9
IT infrastructure maintenance	7
Information security tools and processes	7
AI - Speech	7
AR\VR	7
CRS - Reservation systems	4
ECM / EDM / Search	4
AI - Expert systems	4
AI - NLP	4
AI - Vision	4
IoT	4
EAM	2
OSS/BSS	2
Geo systems	2



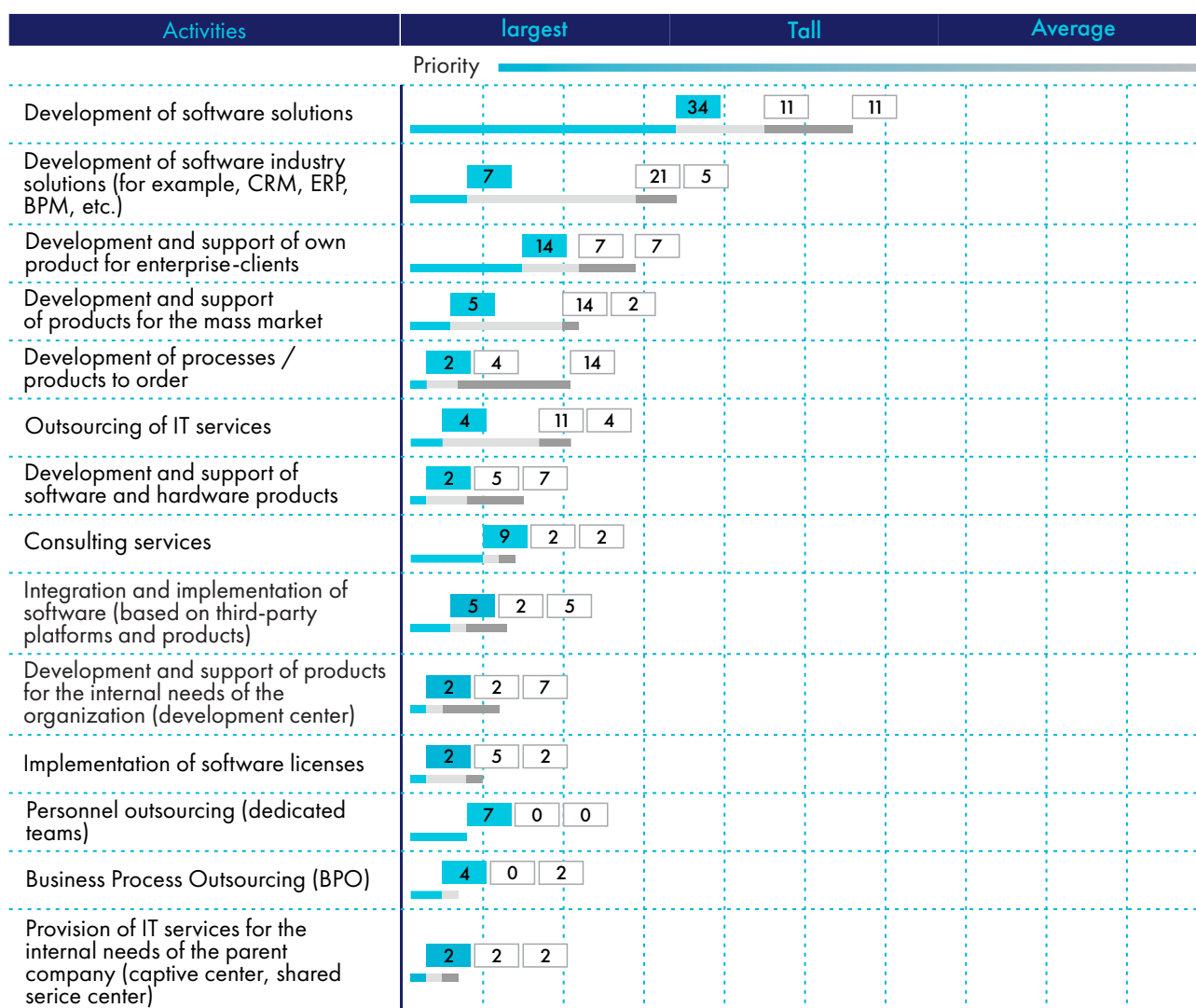
According to the results of the survey, the most demanded areas of activity for IT companies in Uzbekistan are the development of software solutions (34% of the surveyed companies noted this area of activity as the highest priority), the development of software industry solutions (for

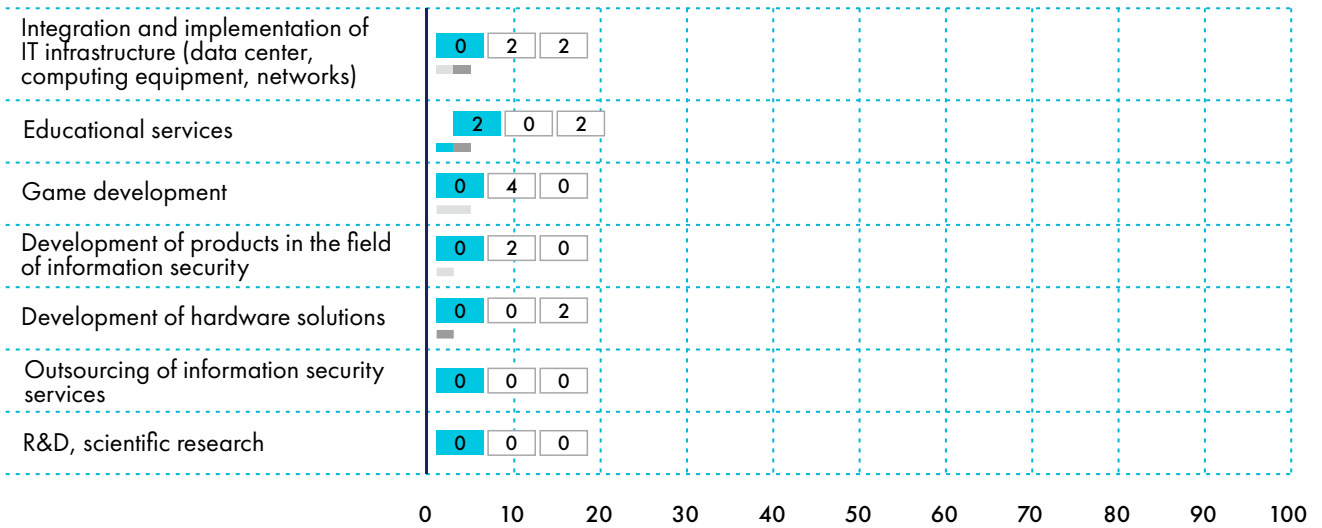
example, CRM, ERP, BPM, etc., 21% of the surveyed companies marked this area of activity as a high priority and another 7% of companies - as the highest) and the development and support of their own product for enterprise-clients (14% of the surveyed

companies marked this area of activity as the highest priority).

Among the least demanded areas of activity are the development of hardware solutions, outsourcing of services in the field of information security and scientific research.

### Distribution of areas of activity of IT companies by respondent companies by priority, %



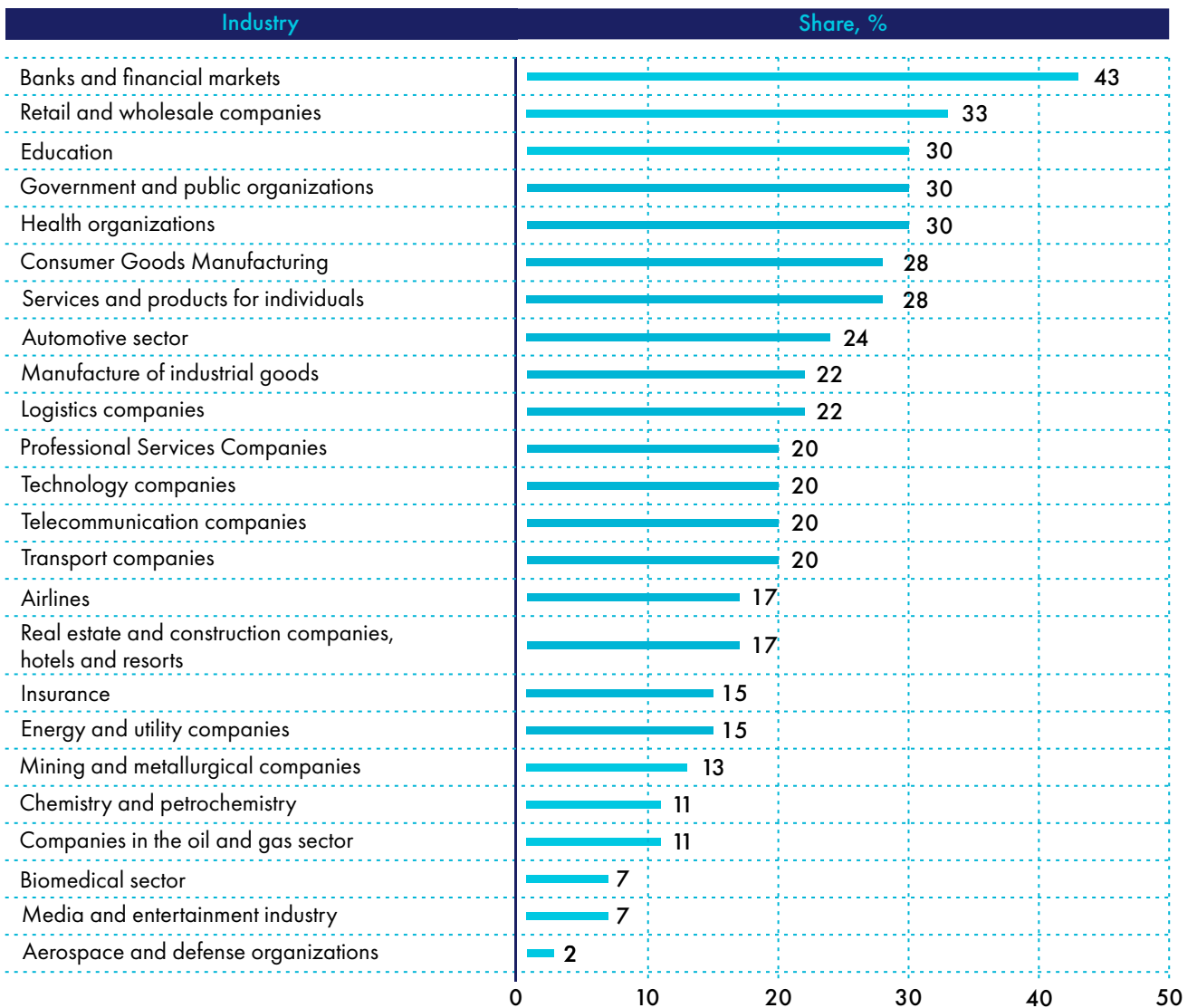


According to the survey results, the most common clients of IT companies in Uzbekistan are organizations in the banking and

financial sector (43% of respondents), wholesale and retail trade (33%), education (30%),

healthcare (30%) and government and public organizations (30%).

### Distribution of clients of IT companies by industry

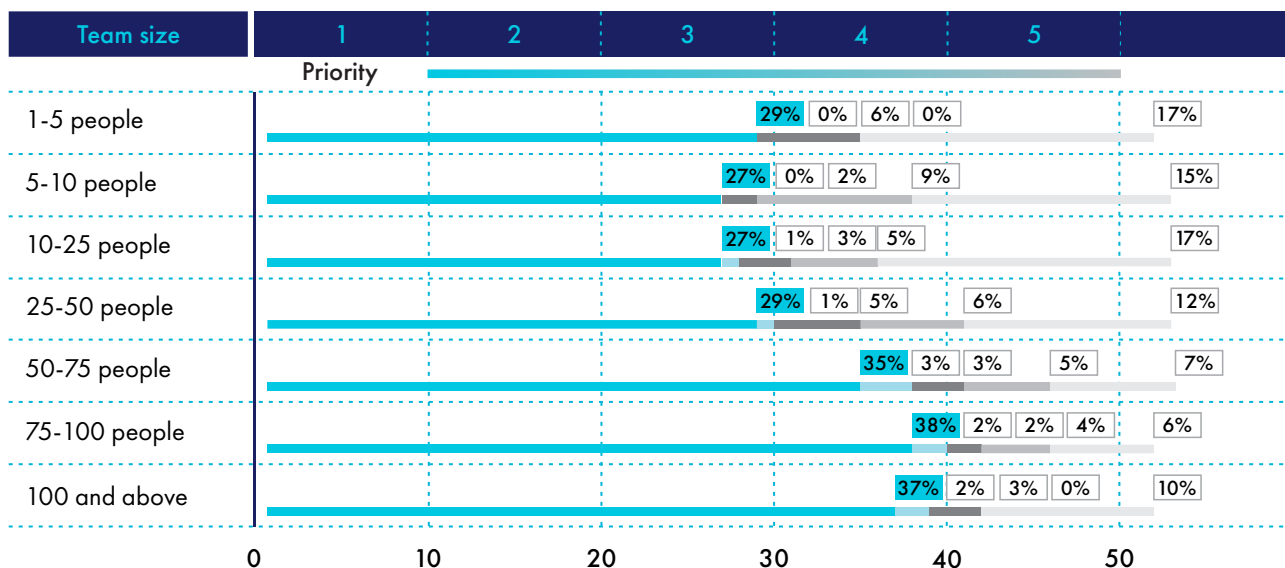


According to the survey results, the projects that require the involvement of teams of up to 25 people are of the greatest interest to Uzbek IT companies. This answer, in principle, corresponds to the size of the respondent

companies. At the same time, 18% of the surveyed companies indicated that they are most interested in projects that require the involvement of teams of more than 100 people. This reflects the

share of IT companies that are development centers of larger international IT companies, where the local team works within the company's larger international teams from different offices.

### Distribution of respondent companies by those interested in projects depending on the size of the team, where 1 - low interest, 5 - high, units



A separate line of work for modern IT companies is the development of mobile applications and their monetization through the App

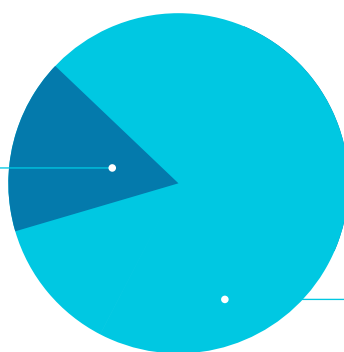
Store and Google Play. According to the survey, 88% of companies do not receive revenue from mobile applications, and only 12% of companies that receive it

do so directly in Uzbekistan, which indicates the low popularity of the mobile application development segment in general.

### Experience of IT companies in receiving revenue from mobile applications from marketplaces (App Store, Google Play)

12%

We receive such revenue in Uzbekistan as a legal entity directly



88%

We do not receive revenue from mobile applications

In the process of providing services to customers, companies need to protect intellectual property rights for their solutions. According to the results of the survey, 43% of respondents use the existing intellectual property

protection mechanisms for program code in Uzbekistan and believe that this is enough. Another 34% of respondents do not use intellectual property protection mechanisms, because

they believe that their companies do not have such a need. Only 15% of respondents noted that the existing intellectual property protection mechanisms in Uzbekistan are not enough.

## Use of intellectual property protection mechanisms

**43%**

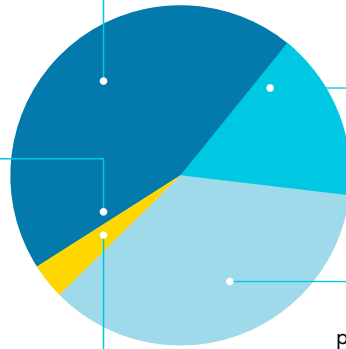
We use the existing intellectual property protection mechanisms for program code in Uzbekistan, and they are enough for us

**2%**

We do not use the intellectual property protection mechanisms existing in Uzbekistan for the program code, we have a need for the protection of intellectual property rights, which has not yet been satisfied

**6%**

We do not use the intellectual property protection mechanisms existing in Uzbekistan for program code, we register intellectual property rights in another jurisdiction (not in Uzbekistan)



**15%**

We use the existing intellectual property protection mechanisms for program code in Uzbekistan, but they are not enough for us

**34%**

We do not use the existing intellectual property protection mechanisms for program code in Uzbekistan, and we do not have such a need

## Factors affecting the activities of IT Park resident companies

As part of a survey among residents of the IT Park, an analysis was made of the influence of various factors on the IT industry. According to respondents, the factors with the greatest significance and the greatest negative impact are:

- the quality of training of students of technical specialties by universities;
- the number of available experienced professionals in the labor market;
- unsatisfactory state of IT infrastructure and communication channels in the regions;
- restriction of use and blocking

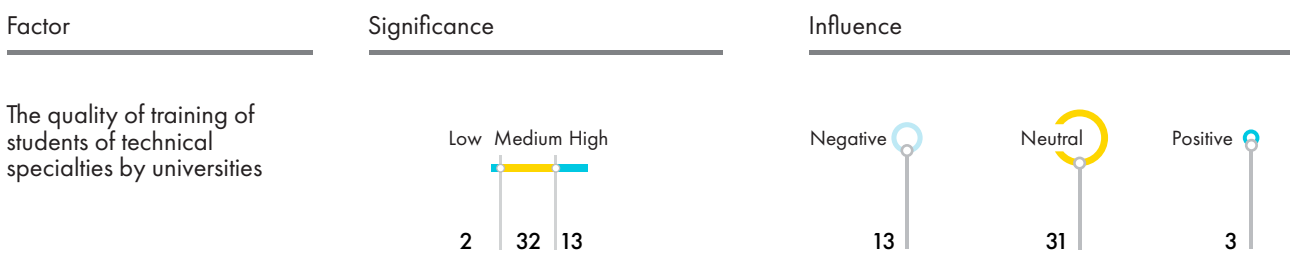
of Internet services by the regulator in the country.

The availability and accessibility of in-demand technical specialties in universities, which directly affects the quality of student training, is considered by respondents to be one of the most significant factors in the IT industry, while 17% of respondents noted the negative impact of this factor, and 19% of respondents noted a positive one, which can talk about the lack of specialties in universities that are in demand by some companies.

In general, the lack of available experienced specialists in the labor market will always be

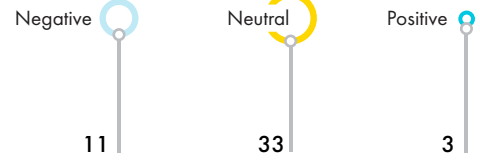
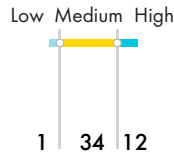
characteristic of the industry, since with the natural development of the industry, the demand for such specialists will always grow. Companies will compete for available experienced specialists, but the systemic growth of the industry will occur due to the training of new specialists coming from the education system. In this regard, the negative factor in the quality of training students of technical specialties will force companies to invest more in interaction with universities and training specialists in parallel with educational institutions, as well as invest in further training of graduates.

### Distribution of factors most negatively affecting the activity of the IT industry of Uzbekistan, by respondent companies, units

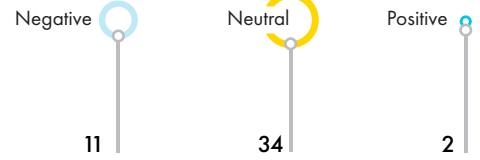
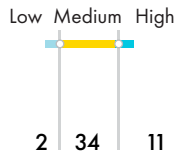




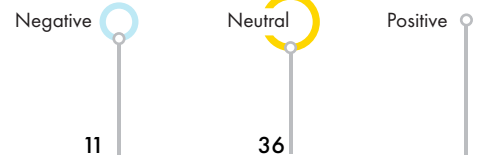
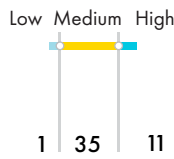
Number of experienced professionals available in the labor market



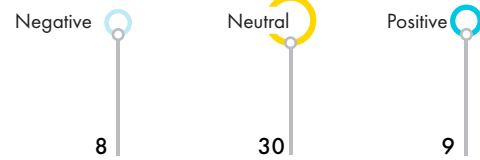
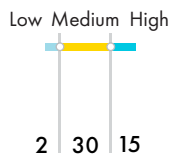
The current state of IT infrastructure and communication channels in the regions



Restrictions on the use and blocking of Internet services and data exchange protocols at the regulator level



Availability and accessibility of in-demand technical specialties in universities



The most significant factors positively influencing the activity of the IT industry Uzbekistan are:

- the current state of tax legislation;
- the current state of legislation in general;

- interaction with the administration of the IT Park;
- promotion of Uzbekistan for business communities in the international market.

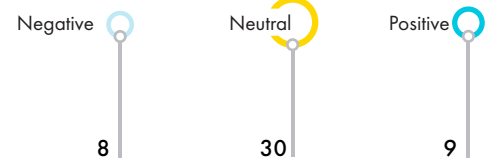
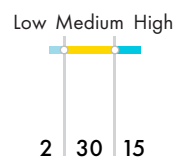
In fact, all these factors are related

to the conditions provided to residents by the IT Park, as well as the actions of the IT Park administration. Thus, it can be seen that the respondent companies highly appreciate the opportunities offered to them by the legislative conditions.

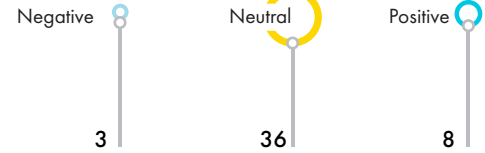
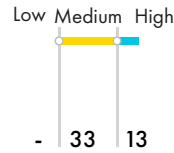
### Distribution of factors most positively influencing the activity of the IT industry of Uzbekistan, by respondent companies, units

Factor	Significance	Influence																
The current state of tax law	<p>A horizontal bar chart showing significance levels from Low to High. The bar is divided into three segments: Low (0), Medium (29), and High (18).</p> <table border="1"> <tr> <th>Significance Level</th> <th>Percentage</th> </tr> <tr> <td>Low</td> <td>0</td> </tr> <tr> <td>Medium</td> <td>29</td> </tr> <tr> <td>High</td> <td>18</td> </tr> </table>	Significance Level	Percentage	Low	0	Medium	29	High	18	<p>A vertical gauge chart showing influence levels: Negative (2), Neutral (31), and Positive (14). The Neutral segment is highlighted in yellow.</p> <table border="1"> <tr> <th>Influence Level</th> <th>Percentage</th> </tr> <tr> <td>Negative</td> <td>2</td> </tr> <tr> <td>Neutral</td> <td>31</td> </tr> <tr> <td>Positive</td> <td>14</td> </tr> </table>	Influence Level	Percentage	Negative	2	Neutral	31	Positive	14
Significance Level	Percentage																	
Low	0																	
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Influence Level	Percentage																	
Negative	2																	
Neutral	31																	
Positive	14																	
Interaction with the administration of the IT Park	<p>A horizontal bar chart showing significance levels from Low to High. The bar is divided into three segments: Low (1), Medium (33), and High (13).</p> <table border="1"> <tr> <th>Significance Level</th> <th>Percentage</th> </tr> <tr> <td>Low</td> <td>1</td> </tr> <tr> <td>Medium</td> <td>33</td> </tr> <tr> <td>High</td> <td>13</td> </tr> </table>	Significance Level	Percentage	Low	1	Medium	33	High	13	<p>A vertical gauge chart showing influence levels: Negative (1), Neutral (33), and Positive (13). The Neutral segment is highlighted in yellow.</p> <table border="1"> <tr> <th>Influence Level</th> <th>Percentage</th> </tr> <tr> <td>Negative</td> <td>1</td> </tr> <tr> <td>Neutral</td> <td>33</td> </tr> <tr> <td>Positive</td> <td>13</td> </tr> </table>	Influence Level	Percentage	Negative	1	Neutral	33	Positive	13
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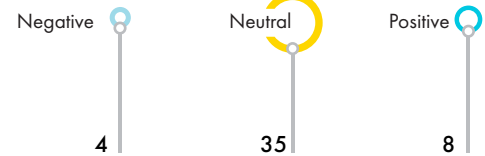
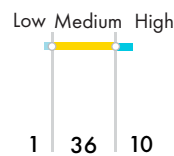
Availability and accessibility of in-demand technical specialties in universities



Current state of legislation (not including tax laws)



Promotion of Uzbekistan for business communities in the international market



General statistics for all analyzed factors with ratings are shown in the table below.

### Distribution of significance and influence of business and business environment factors on the activities of the IT industry of Uzbekistan by respondent companies, units

Factor	Significance			Influence		
	Low	Medium	High	Negative	Neutral	Positive
Current state of legislation (not including tax laws)	-	33	14	3	36	8
The current state of tax law	-	29	18	2	31	14
Frequency of legislation changes	2	39	6	10	33	4
Functioning of the judiciary	1	38	8	5	40	2
Inspections of regulatory authorities	2	40	5	5	37	5
Intellectual Property Protection Issues	3	34	10	4	38	5
Issues of registration and control of the execution of transactions and contracts	1	39	7	2	37	8
Issues of customs legislation (export/import of equipment)	2	28	7	4	41	2
Activities of business unions representing the interests of the IT industry	2	40	5	3	39	5
The current state of the infrastructure for supporting and developing entrepreneurship	2	37	8	6	37	4
Interaction with the administration of the IT Park	1	33	13	1	33	13
Image of Uzbekistan in other countries and in the world media	2	37	8	6	36	5
Promotion of Uzbekistan for business communities in the international market	1	36	10	4	35	8
Domestic market volume	3	37	7	5	38	4
Geographical position	5	39	3	3	43	1
business culture	3	40	4	4	40	3
Cultural differences / closeness with customers	3	38	6	4	41	2

### Distribution of significance and influence of financial factors on the activities of the IT industry of Uzbekistan by respondent companies, units

Factor	Significance			Influence		
	Low	Medium	High	Negative	Neutral	Positive
Attracting debt financing	2	39	6	4	39	4
Attraction of venture financing	-	42	5	4	40	3
Attracting investments from other sources	1	41	5	2	42	3

### Distribution of significance and influence of human capital factors on the activities of the IT industry of Uzbekistan by respondent companies, units

Factor	Significance			Influence		
	Low	Medium	High	Negative	Neutral	Positive
Availability and accessibility of in-demand technical specialties in universities	2	30	15	8	30	9
The quality of training students of technical specialties by universities	2	32	13	13	31	3
Availability and accessibility of in-demand technical specialties in IT centers	2	36	9	5	38	4
The quality of trainees training in IT centers	1	39	7	9	35	3
Number of students trained in technical specialties in universities	3	37	7	9	34	4
The cost of getting an education	1	38	8	9	37	1
Difficulty in getting an education	1	40	6	5	41	1
Number of available young professionals in the labor market	1	36	10	6	37	4
Number of experienced professionals available in the labor market	1	34	12	11	33	3
Qualifications of engineers and other technical specialists	1	35	11	9	36	2
Project Manager Qualifications	2	37	8	6	39	2
Business Analyst Qualification	2	38	7	5	40	2
Sales Specialist Qualifications	1	40	6	5	40	2
The state of the labor market in the IT industry in the regions of Uzbekistan	1	36	10	10	36	1

### Distribution of significance and influence of infrastructure factors on the activities of the IT industry of Uzbekistan by respondent companies, units

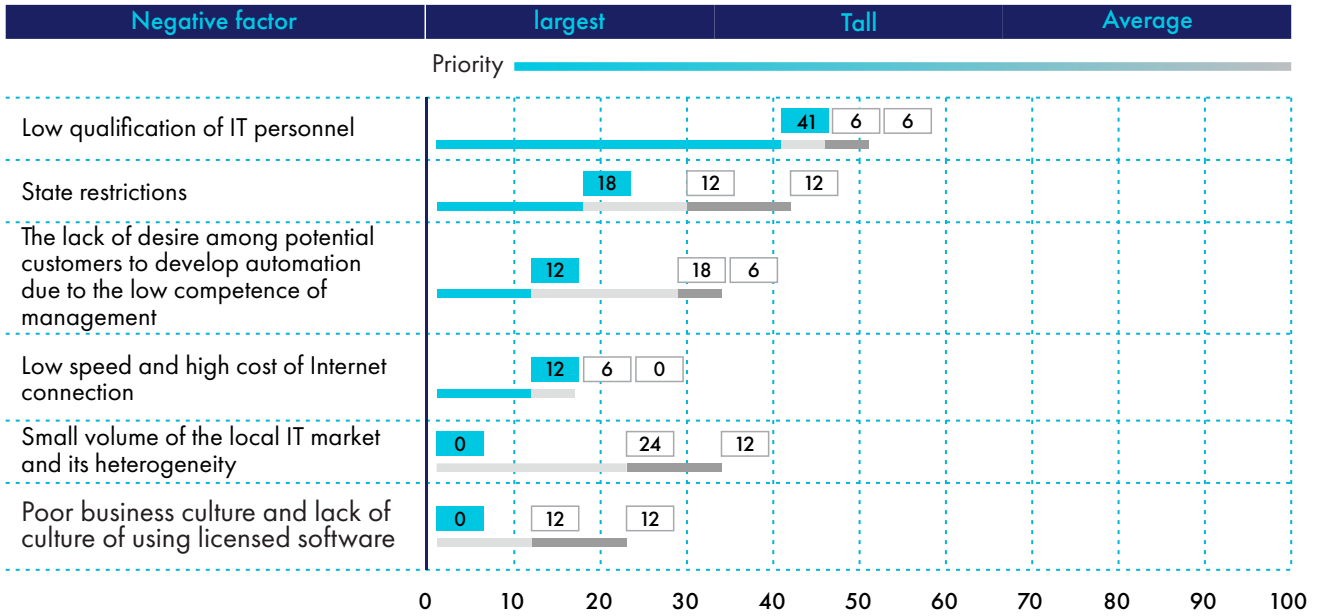
Factor	Significance			Influence		
	Low	Medium	High	Negative	Neutral	Positive
The level of overhead costs (offices, services, equipment) that the company incurs	2	36	9	5	37	5
Availability and accessibility of office space of the required quality in Tashkent	2	35	10	8	35	4
Availability and affordability of office space of the required quality in the regions	1	36	10	5	40	2
The current state of IT infrastructure and communication channels in Tashkent	2	34	11	6	35	6
The current state of IT infrastructure and communication channels in the regions	2	34	11	11	34	2
Internet access cost	2	34	11	3	38	6
Restrictions on the use and blocking of Internet services and data exchange protocols at the regulator level	1	35	11	11	36	

Separately, factors were considered that, according to companies, negatively affect work in the domestic and foreign markets. 12% of companies believe that there are no factors negatively affecting work in the

domestic market. For the rest, the most significant factor is the low qualification of the staff (41% of respondents), and restrictions on the part of the state (non-transparent tendering, corruption

and others - 18% of respondents). 24% of respondents consider the small volume of the local IT market and its heterogeneity to be a negative factor, but the significance of this factor is lower.

**Significance of factors negatively affecting the work of IT companies in the domestic market, %**

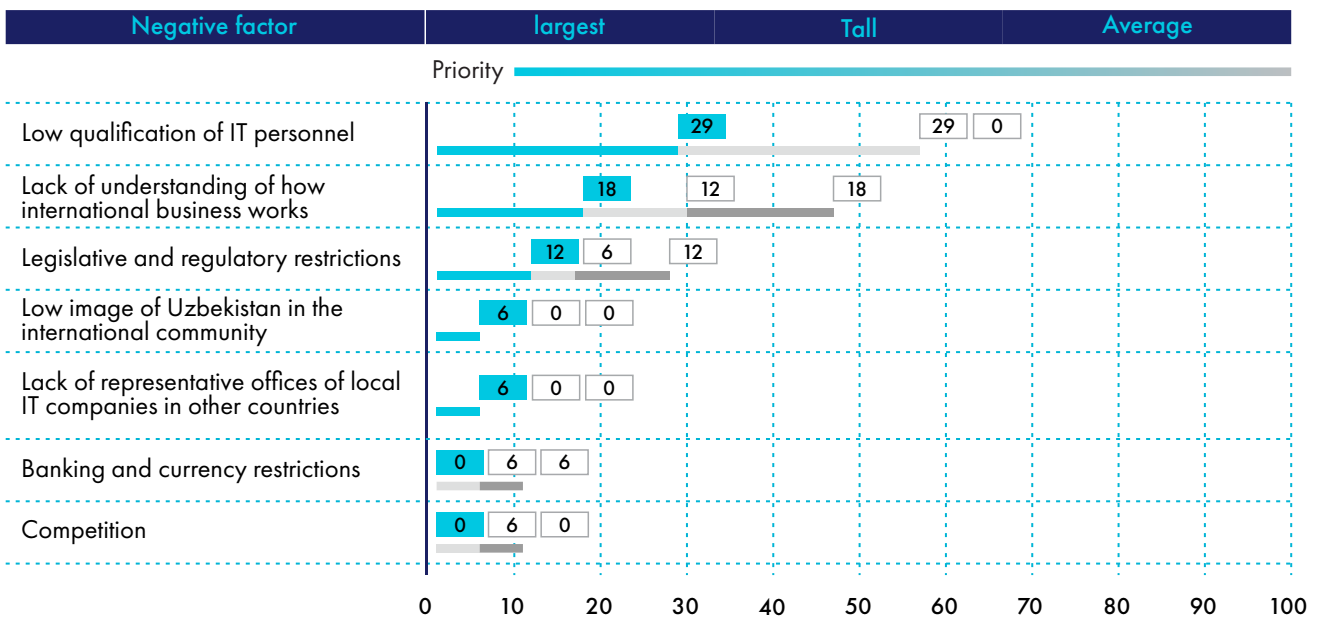


In foreign markets, 29% of companies believe that there are no factors negatively affecting work in foreign markets. For the rest, the most significant factor is also the low qualification of the

staff (29% of respondents). In addition, 18% of respondents indicated as the factor with the highest significance such a factor as «lack of understanding of the

mechanisms of international business». Companies do not consider banking and currency restrictions as a significant negative factor.

**Significance of factors negatively affecting the work of IT companies in foreign markets, %**



## Prospects for the development of companies-residents of the IT Park

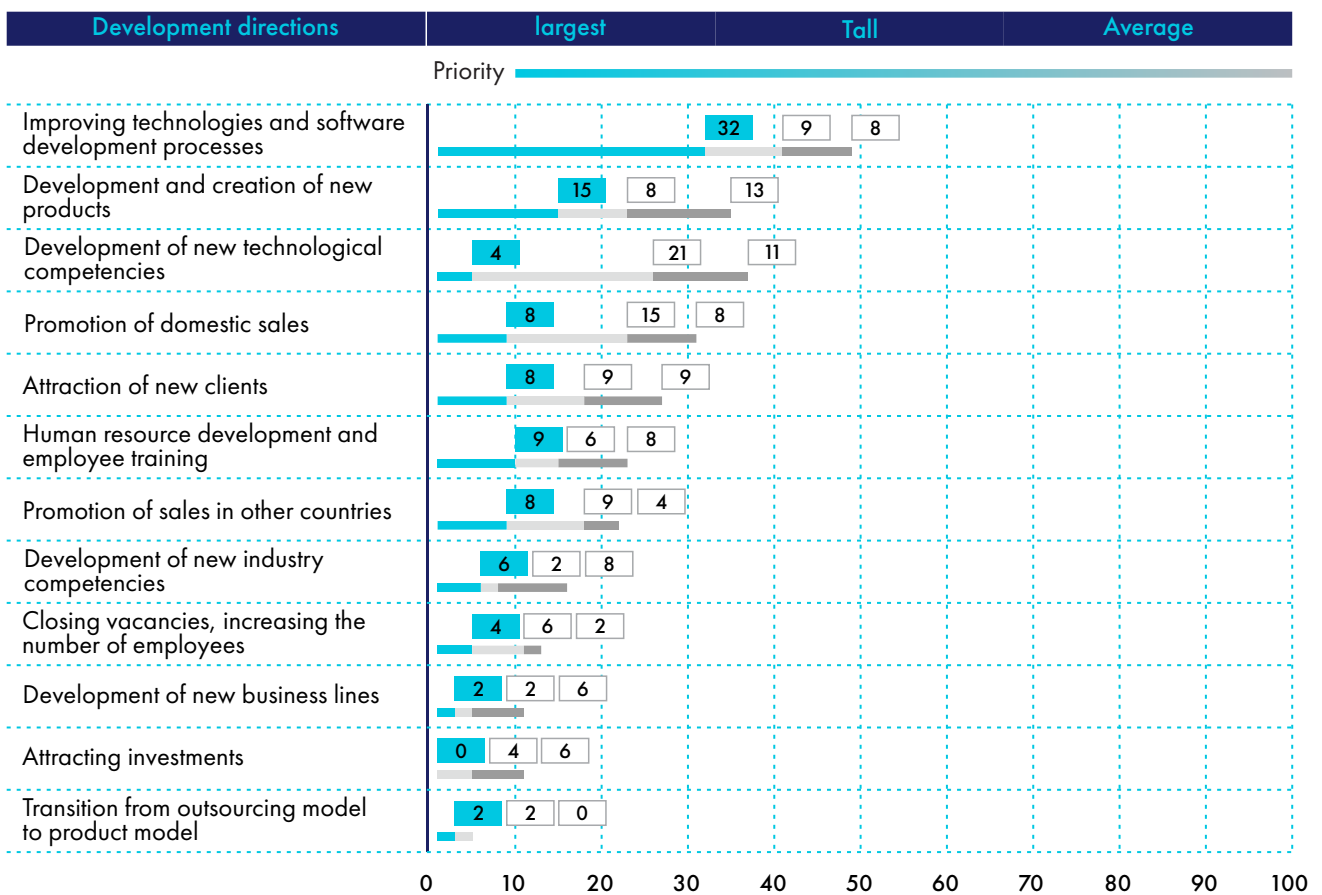
The highest development priority for the study participants is the improvement of technologies and software development processes. Thus, 32% of the surveyed companies noted this area as the highest priority, another 9% - as a high priority. The development and creation of new products also have a high priority (15% of companies indicated as the

highest priority, another 8% as a high priority), the development of new technological competencies (4% - the highest priority, 21% - high) and sales promotion in the domestic market (8% - the highest priority, 15% - high). Among the least priority areas were the development of new business areas, the transition from an outsourcing model to a product

model, and attraction of investments.

The responses received well characterize the current early level of maturity of the industry, when technological tasks for companies are of higher priority than business tasks. CEOs in the industry are still more technical than managers, and prioritize tasks related to business growth to a lesser extent.

Directions for the development of IT companies, %



As part of the survey, companies were asked to rank the factors most significant for the development of the industry, and indicate their expectations for changes in these factors. The most significant factor was the existing tax incentives for companies in the IT sector (51% of respondents indicated high importance), while 60% of respondents expect that the benefits will not change, and 38% that they will improve. The

next most important factor was additional (non-tax) benefits for companies in the IT sector, here again 60% of respondents expect that they will not change, and 40% that they will improve.

The factors that companies most expect to improve are the volume of the domestic market (36% of companies expect improvements) and the quality and availability of communication channels (34%). In

terms of importance, these factors are in 3rd and 6th place.

For none of the factors, the number of respondents who expect deterioration did not exceed those who expect improvement. Even on the most negative factor, changes in the economy of the CIS region, only 11% of companies expect deterioration, while 19% expect improvements, and 70% do not

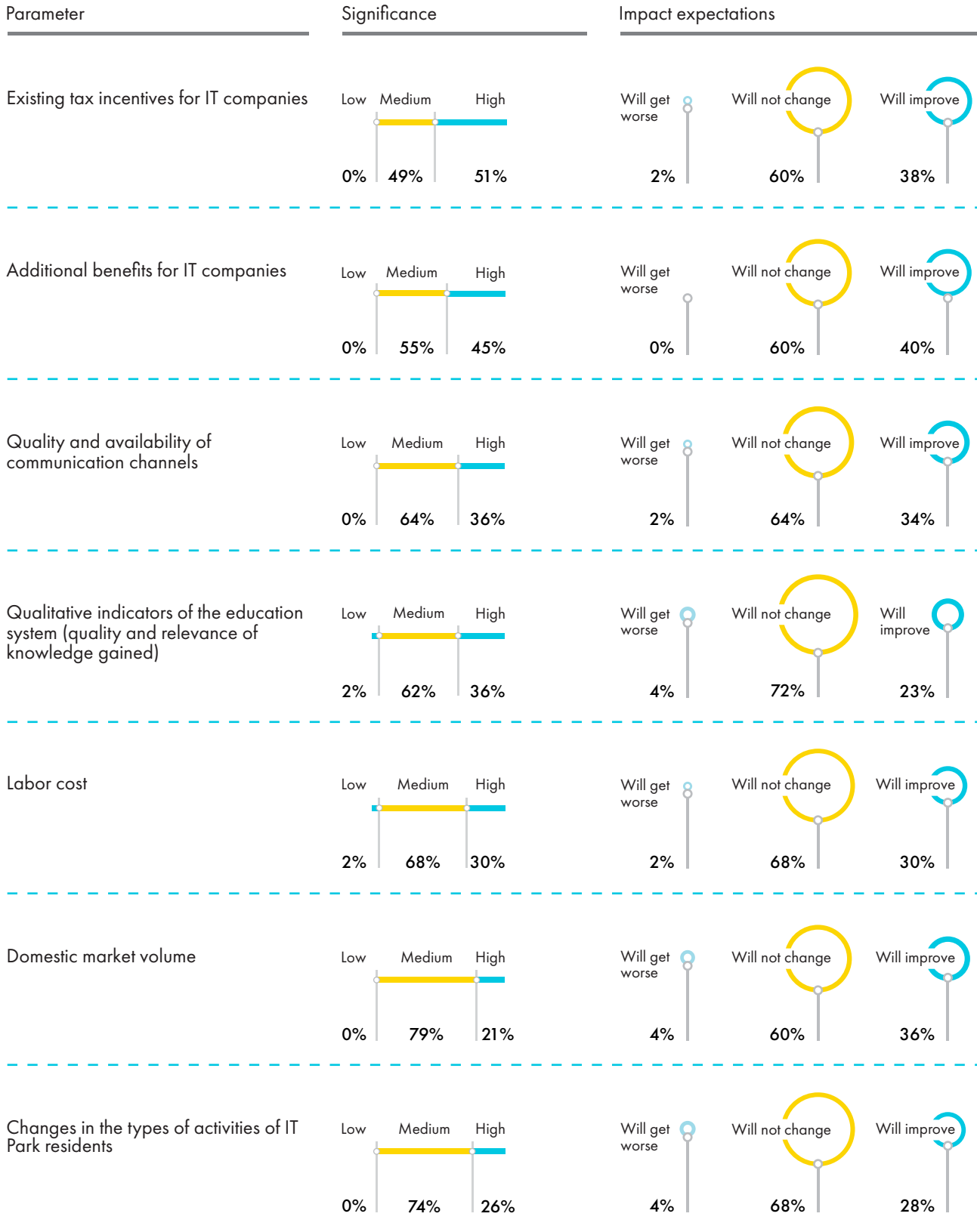
expect significant changes. Among all the regions under consideration, companies expect the most positive changes from the economy of Central Asia, here

26% of companies expect improvements.

In general, on this issue, it can be noted that companies, for most

factors, do not expect a change in the current conditions and rather positively assess their future prospects.

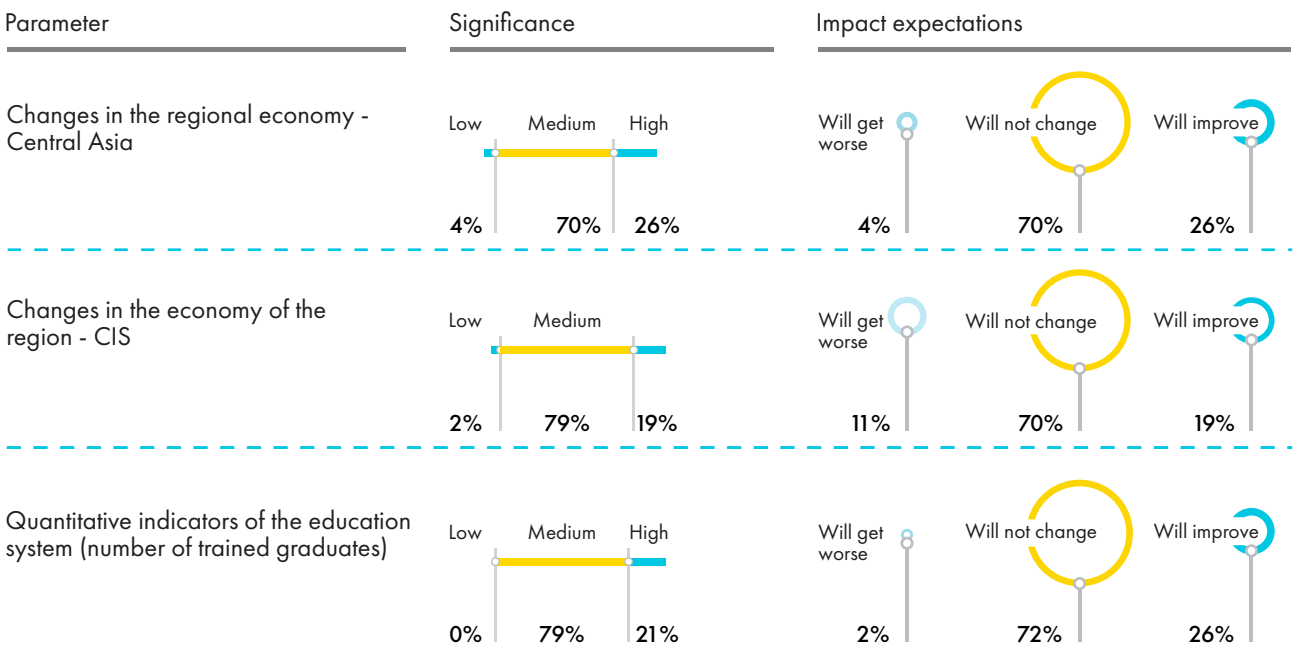
### Vision of the development of the IT industry by companies in Uzbekistan, internal factors



Source: Results of a survey conducted among residents of the IT Park, July 2022

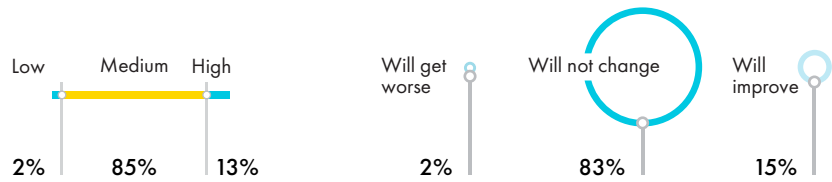


**Vision of the development of the IT industry by companies in Uzbekistan, external factors**

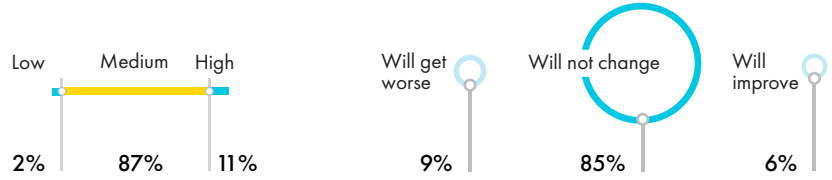


Source: Results of a survey conducted among residents of the IT Park, July 2022

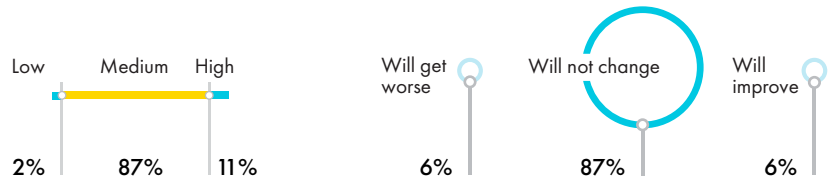
Economic Changes in the Region - Middle East



Changes in the region's economy - EU



Economic Changes in the Region - North America

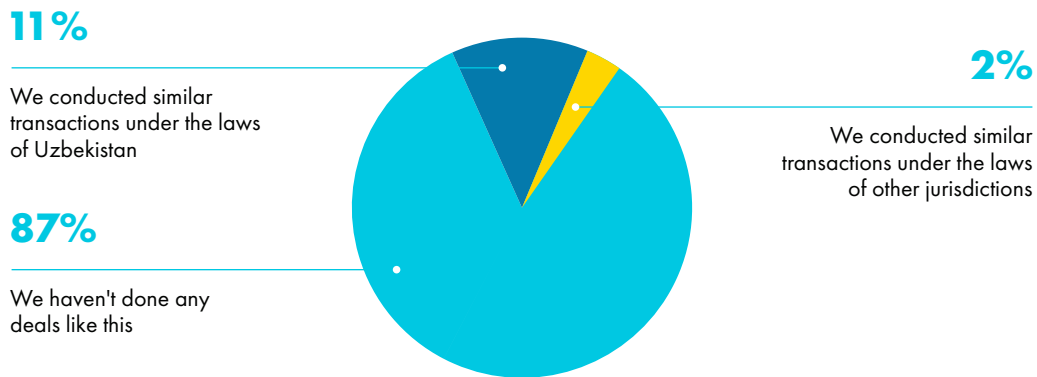


One of the main mechanisms for the growth and development of companies, in addition to organic growth, are mergers and acquisitions (M&A). 87% of survey respondents did not

conduct such transactions, and 5 out of 6 IT companies that made M&A transactions did so under the laws of Uzbekistan. Most likely, this is because the transactions were carried out between two

local companies, international companies, as a rule, choose special jurisdictions for such transactions, the legal norms in which are specially prepared for such transactions.

**Experience of IT companies in M&A (merger of companies, sale/acquisition of companies, acquisition / sale of shares in companies) transactions in Uzbekistan**



**Approaches to the provision of services and organization of processes of IT Park resident companies**

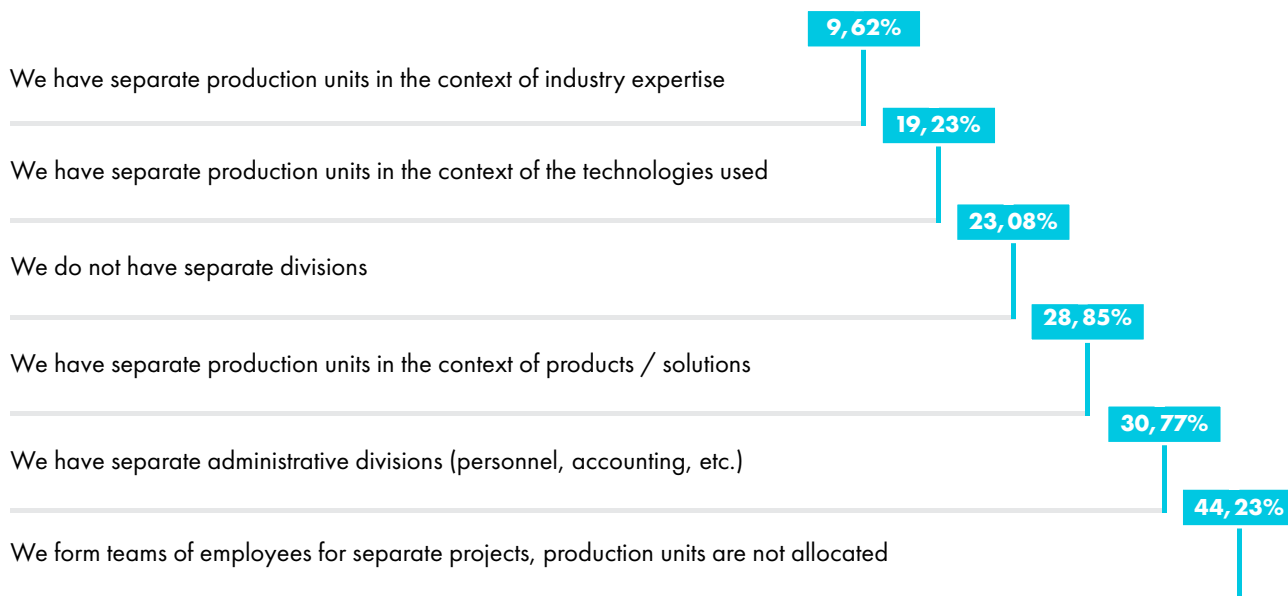
For the most efficient delivery of services, IT companies can organize their internal processes in different ways. The most common process organization model for IT Park resident companies is the

formation of teams of employees for separate projects without separating production units, which is typical for small companies, this approach is used by 44% of respondents. 29% of companies

distinguish production units in the context of products or solutions. At the same time, only 31% of companies provide administrative divisions.



## Organization of processes in companies

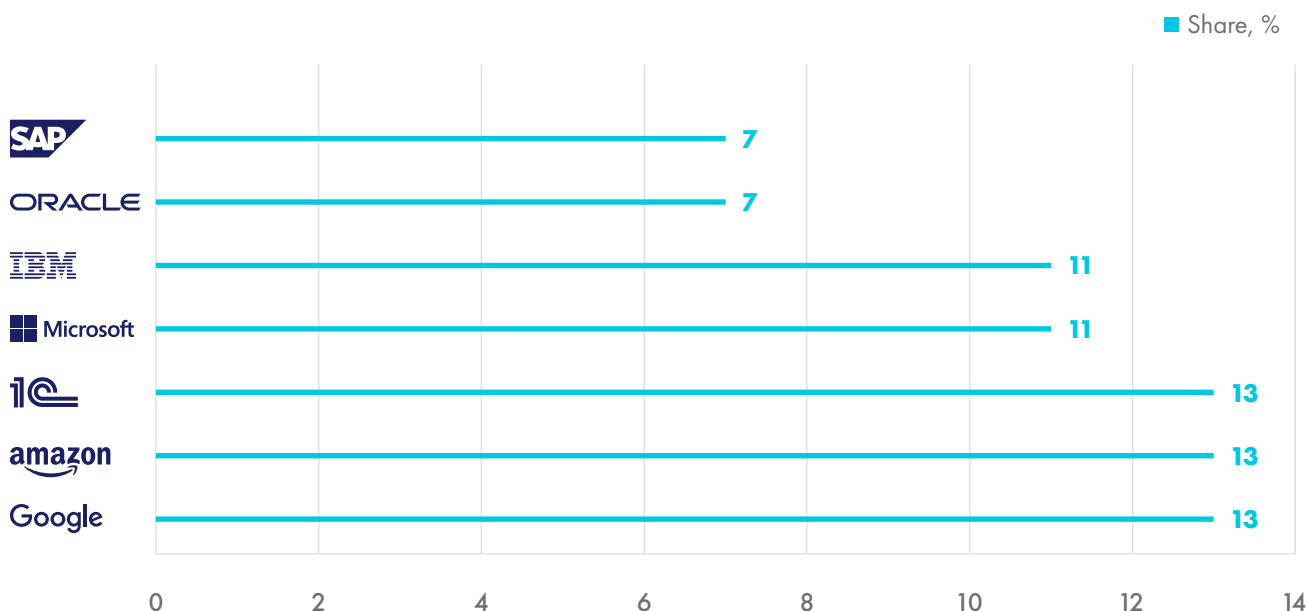


IT companies often use technology partnerships to improve their technology competencies. According to the results of the survey, most often IT companies in Uzbekistan are partners with Google (13% of the surveyed

companies), and among the most frequent partnerships are 1C (13% of the surveyed companies), Amazon (13% of the surveyed companies), Microsoft (11% of the surveyed companies) and IBM (11% of surveyed companies). At

the same time, the most common status of partnership with 1C is franchising. Technological partnerships are not yet widespread in the IT industry of Uzbekistan.

## Tech companies with which the largest number of partnerships among surveyed IT companies in Uzbekistan

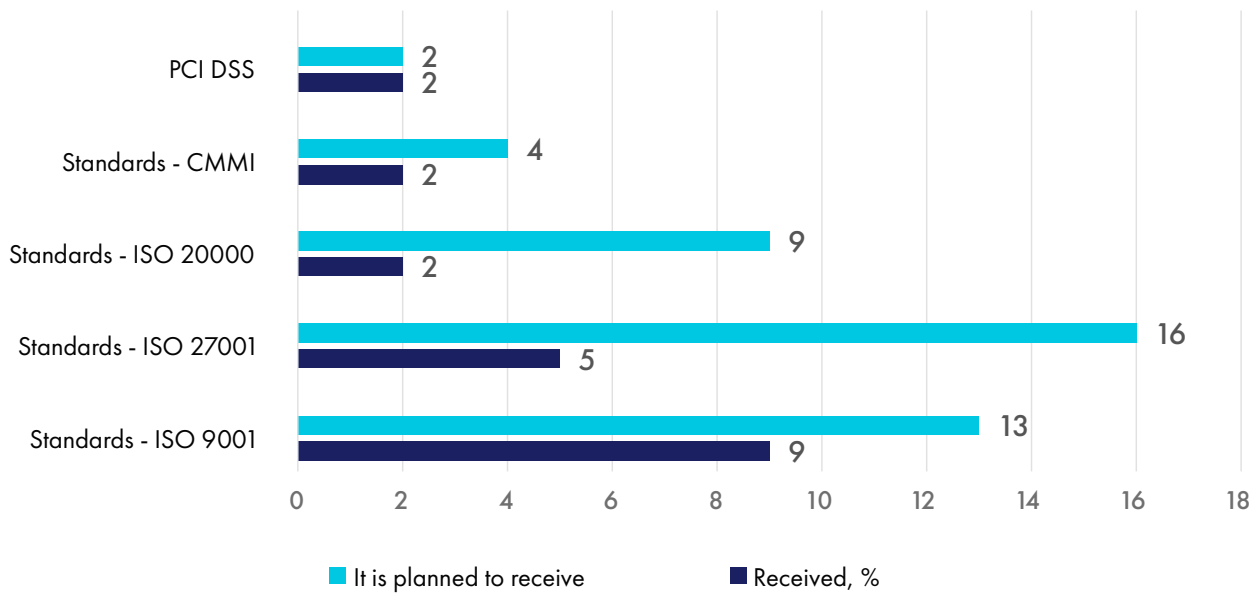


IT companies in Uzbekistan practically do not use international standards to certify their processes. According to the survey results, only 9% of respondents

received, another 13% plan to receive ISO 9001 certification, 5% of respondents received, another 16% plan to obtain ISO 27001 certification, the rest of the

certificates are even less in demand. A similar situation is expected for an industry dominated by small companies.

### The most demanded standards against which the processes of the surveyed IT companies are certified

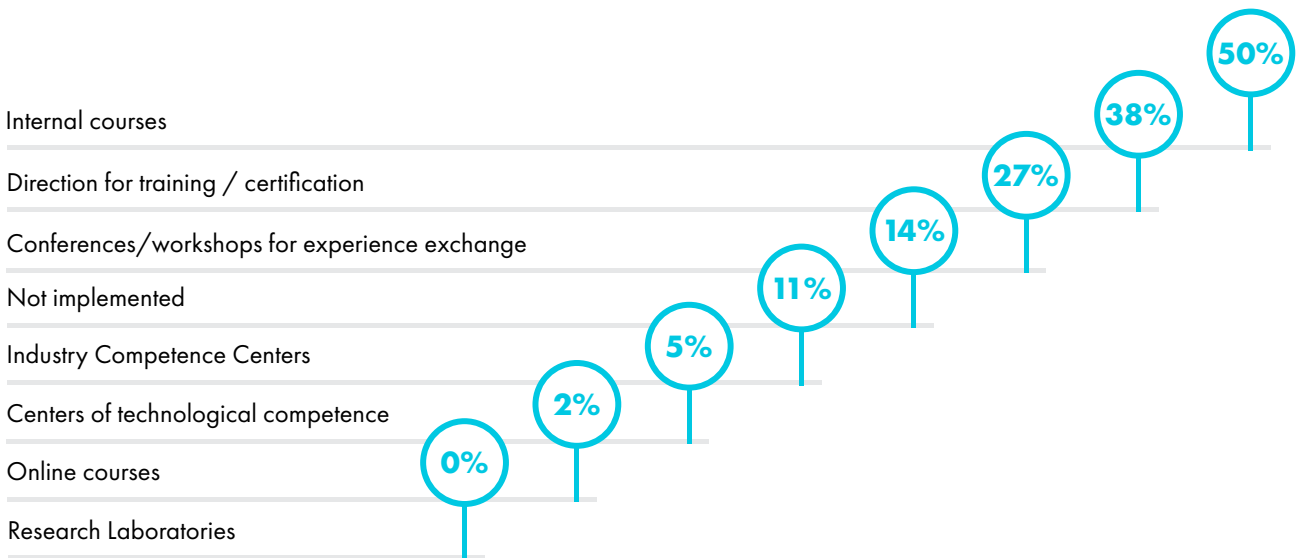


According to the survey, 50% of IT companies, where the survey is conducted, use internal courses to improve the skills of current employees. Also, among the popular ways to improve the skills of employees, respondents noted

the direction of training/certification and conferences/seminars for the exchange of experience (38% and 27% of respondents, respectively).

Professional development of employees is usually carried out in the areas of programming, project management and sales. The largest share fell on the direction of programming and amounted to 9%.

### Areas of activity to improve the skills of existing employees



## IT infrastructure of IT Park resident companies

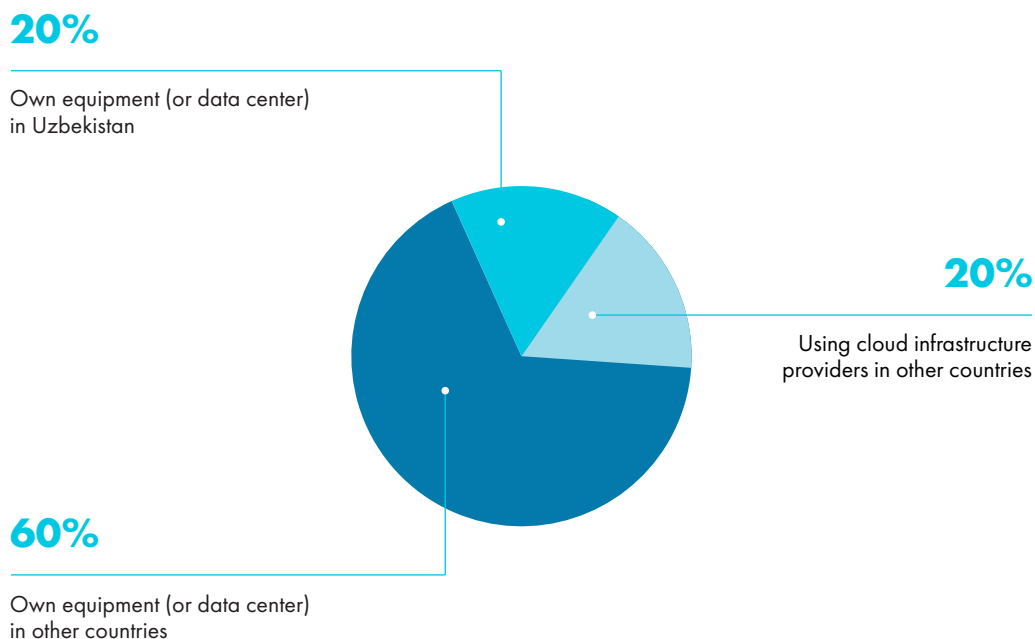
According to the results of a survey of IT companies, 47% use only their resources for their IT infrastructure, and 66% of companies have their facilities in Uzbekistan.

## Distribution of companies-respondents by capacity for their IT infrastructure, %

Index	Share, %
Companies with 100% own capacity in Uzbekistan	47
Companies with 100% capacity in Uzbekistan	66
Companies with less than 100% ownership capacities in Uzbekistan	53

Foreign companies prefer to place equipment in other countries, while about 20% of their capacities are located in Uzbekistan.

## Used types of data centers among foreign companies



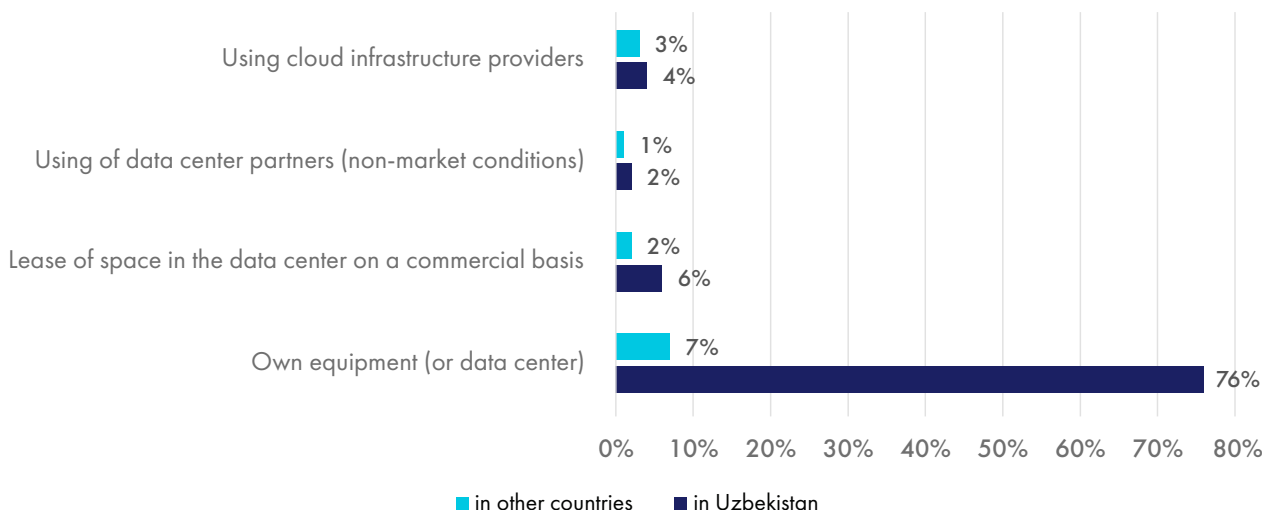
76% of the capacities of local companies (companies headquartered in Uzbekistan) are their equipment located in their own data center in Uzbekistan. Another 7% of capacity is own

equipment located in its own data center in other countries.

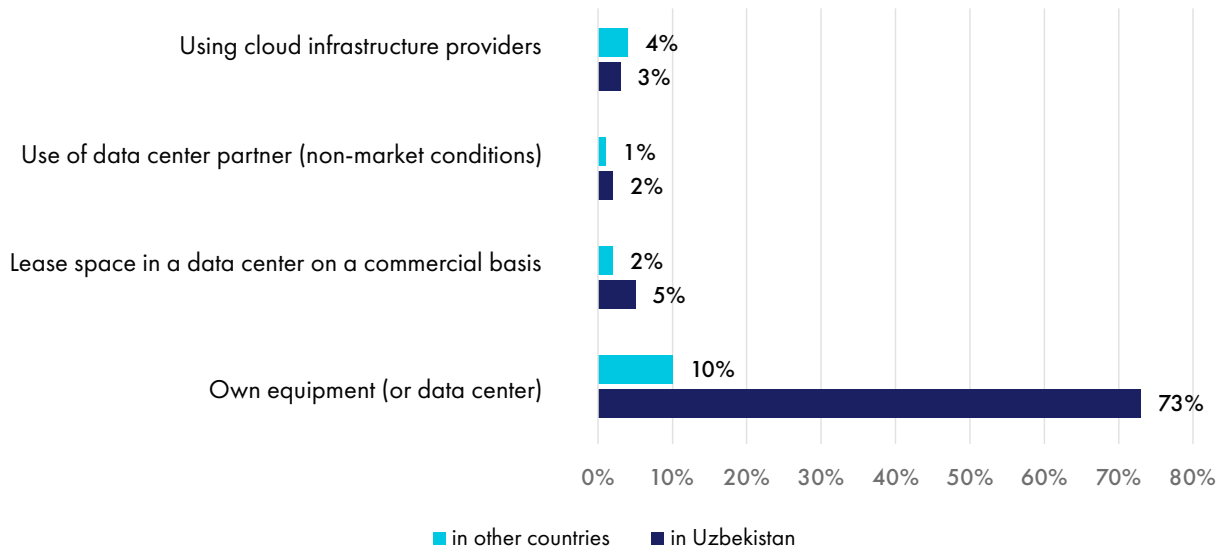
The use of rental data centers is much less common, only 6% of the capacity of local companies is

located in rental data centers located in Uzbekistan, 4% of the capacity is hosted by Uzbek cloud providers, and only 3% of the capacity is hosted by cloud providers in other countries.

## Used types of data centers among local companies in Uzbekistan



### Used types of data centers among all companies

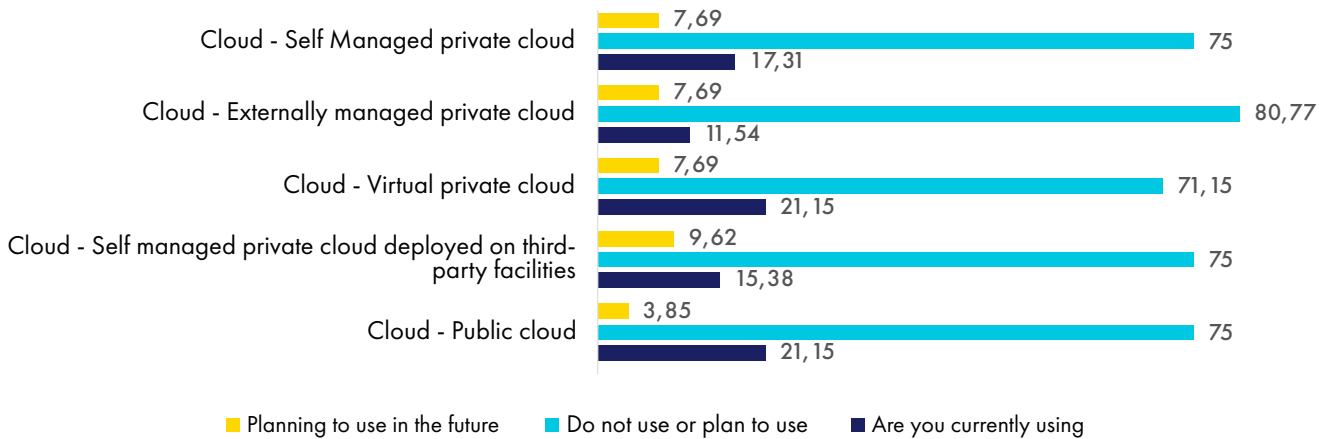


According to the survey results, the most demanded type of cloud technologies among survey participants is a virtual private

cloud. Thus, 21% of respondents already use this type of cloud technology and another 8% plan

to use it in the future. Overall, 56% of respondents use cloud computing in one form or another.

### Distribution of companies in the context of the use of cloud technologies, %



## ▲ List of sources used:

1. The State Committee of the Republic of Uzbekistan on Statistics,  
<https://stat.uz>, 2022
2. Data provided by the IT Park, June 2022
3. Results of a survey conducted among residents of the IT Park, July 2022

## 8 INNOVATION POTENTIAL

Number of implemented technological innovations, 2021

 **3 936**

Average annual growth rate of the number of implemented technological innovations

 **16,83%**  
for 2016-2021

Number of enterprises and organizations implementing technological innovations, 2021

 **1 098**

Average annual growth rate of the number of enterprises and organizations implementing technological innovations

 **4,22%**  
for 2016-2021

Innovation spending, 2021

 **1 664,32**  
million US dollars

Share of spending on innovation in GDP

 **2,41%**  
2021

The volume of manufactured innovative products (goods, works and services), 2021

 **2 577,19**  
million

Uzbekistan is implementing a unified state policy in the field of innovative and scientific and technological development of the country. The Ministry of Innovative Development of the Republic of Uzbekistan is responsible for the implementation of the policy in the field of innovation and innovative activity, the main directions of which are described in the «Strategy for Innovative Development of the Republic of Uzbekistan for 2022-2026».

In 2021, Uzbekistan ranked 86 out of 132 participating countries in the Global Innovation Index, which reflects innovation activity in the countries of the world. Uzbekistan is systematically

improving its position in this ranking, government programs are planned to get into the first 50 positions in the ranking by 2030.

In October 2020, Uzbekistan adopted the «Concept for the Development of Science until 2030», which defines the main directions, tasks, medium and long-term stages in the development of science and scientific activity. The concept is the basis for the development of targeted programs and comprehensive measures in this area.

Over the past two years, Uzbekistan's spending on innovation has been growing and,

according to the State Committee on Statistics, in 2021 reached 1,664.32 US dollars, which amounted to 2.41% of GDP. Over the past 4 years, the volume of manufactured innovative products (goods, works and services) has been decreasing and in 2021 amounted to USD 2,577.19 million.

The startup ecosystem of Uzbekistan is relatively young and continues to develop. Most startups in Uzbekistan are in the early stages of development. The main support in the development of start-ups is provided by state organizations, in particular, the Ministry of Innovative Development of the Republic of

Uzbekistan. In recent years, there has been a growing number of non-governmental organizations

and private sector organizations that have an increasing influence

on the development of the startup ecosystem.

## Uzbekistan in the ranking of the Global Innovation Index

The Global Innovation Index (GII) reflects the dynamics of innovation activity in the countries of the world. To get an idea of the level of innovative development for each country, about 80 indicators are taken into account when calculating it, including political conditions, education, the state of infrastructure, the amount of knowledge created, etc. The Global Innovation Index has been

calculated since 2007.

Uzbekistan was included in the ranking «Global Innovation Index» in 2012 and took 127th place out of 141 participants. In the period 2016-2019 the index was not calculated due to insufficient data, Uzbekistan returned to the ranking in 2020, taking 93rd place. In 2021, the country's position in the ranking

improved: Uzbekistan took 86th place out of 132 participating countries.

According to the rating calculation methodology, Uzbekistan belongs to the group of countries with lower-middle income and is included in the group of 10 countries in the Central and South Asia region. In both of these groups, the position of Uzbekistan is above average.

### The position of Uzbekistan in the international ranking «Global Innovation Index» (GII) for 2020-2021

Index	2020	2021
Global Innovation Index	93 (out of 131)	86 (out of 132)
Lower middle income group, place	12 (out of 29)	10 (out of 34)
Central and South Asia region, place	4 (out of 10)	4 (out of 10)

In 2021, among the 10 CIS countries present in the ranking, Uzbekistan took eighth place, ahead of Kyrgyzstan (98th place) and Tajikistan (103rd place).

### Positions of the CIS countries in the Global Innovation Index for 2020-2021

Country	2020	2021
Russia	47	45
Ukraine	45	49
Belarus	64	62
Moldova	59	64
Armenia	61	69
Kazakhstan	77	79
Azerbaijan	82	80
<b>Uzbekistan</b>	<b>93</b>	<b>86</b>
Kyrgyzstan	94	98
Tajikistan	109	103

## Innovation management in Uzbekistan

The Ministry of Innovation operates in Uzbekistan, which implements a unified state policy in the field of innovative and scientific and technological development of the country, evaluates innovative activities based on indicators of its effectiveness and is the sole customer of state scientific and

technical programs and projects implemented by research, educational and other institutions.

According to the Ministry of Innovative Development, in Uzbekistan for the period from 2019 to 2026. it is planned to carry out 43 scientific projects related to the field of ICT, of which

17 are innovative. 3 of these projects are related to foreign cooperation with China, India and other countries.

In July 2022, Uzbekistan also approved the «Strategy for Innovative Development of the Republic of Uzbekistan for 2022-2026». Its goals are the

Source: [https://www.wipo.int/global\\_innovation\\_index/en/](https://www.wipo.int/global_innovation_index/en/), June 2022

Sources: [https://www.wipo.int/edocs/pubdocs/ru/wipo\\_pub\\_gii\\_2021\\_exec.pdf](https://www.wipo.int/edocs/pubdocs/ru/wipo_pub_gii_2021_exec.pdf), June 2022,  
[https://www.wipo.int/edocs/pubdocs/en/wipo\\_pub\\_gii\\_2020.pdf](https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf), June 2022

Source: [https://grant.mininnovation.uz/projects/List\\_of\\_scientific\\_projects\\_implemented\\_within\\_state\\_programs.pdf](https://grant.mininnovation.uz/projects/List_of_scientific_projects_implemented_within_state_programs.pdf), June 2022

acceleration of innovative development, the widespread introduction of innovations and technologies in all sectors of the economy, the development of human capital, scientific and innovative areas.

The Strategy states the main directions of development:

1. Implementation of support for startup initiatives through formation and expansion of innovation infrastructure (creation of innovation centers and technology parks, technology transfer centers, innovation clusters, startup gas pedals and incubators). In addition, the government provides financial support to startups through various contests and hackathons.

2. increase the share of innovation-active organizations by improving state support for innovation

3. ensuring accelerated socio-economic growth of the regions by increasing the innovative activity of small businesses

4. stimulation of demand for innovations through the provision of an integrated system for the creation of new types of products and innovative technologies. Creation of a constantly updated online platform «Bank of innovative ideas», covering all regions and sectors of the economy of the republic

5. formation of a system for reorientation of the created capital towards «disruptive» innovations

6. Attracting additional financial resources in cooperation with major foreign partners. IT Park Uzbekistan is working to attract foreign funds to the country in order to increase investment in local startups and companies.

The strategy also set the goal of entering the Republic of Uzbekistan by 2030 into the top 50 countries in the world according to the Global Innovation Index. The Strategy sets several target indicators for the number of innovative projects planned for implementation; the Ministry for Development of Information Technologies and Communications is responsible for the implementation of projects in the field of ICT.

### Forecast indicators for the implementation of projects for the development of the production of scientific and innovative products based on new developments and technologies implemented by the Ministry for Development of Information Technologies and Communications in 2022 - 2026

Organization	Number of projects, 2022	Amount, billion sum	Amount, mln USD	Forecast indicators (number of projects)				Total number of projects
				2023	2024	2025	2026	
Ministry for Development of Information Technologies and Communications	21	2 189,34	198,44	26	29	33	38	147
Association «Uzeltexsanoat»	15	22,49	2,04	16	17	19	20	87

According to the «Strategy for Innovative Development of the Republic of Uzbekistan for 2022-2026» for period from 2022 to 2023 the list of «Concrete

sustainable projects to be implemented by industries of the real sector of the economy to launch the production of new

innovative products” was approved. Out of 265 projects, IT projects accounted for 21 projects or 7.92%.

### List of projects to be implemented by industries of the real sector of the economy to launch the production of new innovative products in 2022-2023 in IT

Project	Responsible executors	Project cost, million sum	Project cost, thousand USD
Creation and implementation of information systems for managing distance education and educational content at the Tashkent University of Information Technologies named after Muhammad al-Khwarizmi	Tashkent University of Information Technologies	850,00	78,43



Creating a prospect for the development of 5G mobile communications in the Republic of Uzbekistan	State unitary enterprise «UNICON.UZ»; Ministry for Development of Information Technologies and Communications; State University «UNICON.UZ»	1 920,00	177,16
Development and research of multimedia services on the IMS platform	State unitary enterprise «UNICON.UZ»	700,00	64,59
Development of standards for quality indicators of telecommunication and postal services and methods for their assessment	State unitary enterprise «UNICON.UZ»	840,00	77,51
Development of an authentication algorithm based on artificial intelligence methods	State unitary enterprise «UNICON.UZ»	1 110,00	102,42
Studying the possibility of receiving broadcasting programs on mobile digital receivers of the DVB-T2 standard	State unitary enterprise «UNICON.UZ»	2 140,00	197,46
Development of an adaptive interpolation method for resizing and resizing images based on artificial intelligence	State unitary enterprise «UNICON.UZ»	960,00	88,58
Studying the criteria for harmonization of radio frequency connections used or planned for use by land mobile radio communication stations of Uzbekistan and neighbouring countries in radio frequency bands up to 5 Ghz	State unitary enterprise «UNICON.UZ»	560,00	51,67
Sharing study of the radio frequency band 3600-4000 MHz of geostationary networks (space-to-earth) of the international mobile electric loco system IMT and the fixed satellite radio service	State unitary enterprise «UNICON.UZ»	560,00	51,67
Study of the compatibility of the mobile service with other services in the frequency range 6425-7125 MHz in connection with the preparation of the World Radiocommunication Conference of the Republic of Uzbekistan in 2023	State unitary enterprise «UNICON.UZ»	680,00	62,74
Increase in the content of the Internet encyclopedia Wikipedia in the national language for 2022	UZINFOCOM LLC is the only integrator for the creation and support of state information systems	990,00	91,35
Development of a new version of the only interactive portal of public services (my.gov.uz)	UZINFOCOM LLC is the only integrator for the creation and support of state information systems	7 750,00	715,1
Development of the platform of Unified information resources of state bodies based on the government portal	UZINFOCOM LLC is the only integrator for the creation and support of state information systems	2 850,00	262,97
Creation of an information system for entering orphans and children deprived of parental care into the «Mehrbook» and identifying information about children entered into the «Mehrbook» through the system integration platform «Electronic Government»	UZINFOCOM LLC is the only integrator for the creation and support of state information systems	840,00	77,51

Development and technical support of the digital information platform of e-government	UZINFOCOM LLC is the only integrator for the creation and support of state information systems	500,00	46,14
Creation of an electronic database for maintaining a unified record of international contracts, inventory and control over their implementation	UNIKON-SOFT LLC	450,00	41,52
Creation of a permanent platform for the exchange of experience and the transfer of innovations of experts and IT specialists in building «smart cities»	OOO «Directorate of technopark of handicrafts and information technologies»	600,00	55,36
Implementation of digital marking and barcodes (SAP, ERP programs) throughout the entire technological chain of textile industry production	LLC «Art Soft Nolding»; LLC «Indorama»; LLC «Posco International»	800,00	73,82
Creation of a unified site «Uzbtexile map» of local textile products	Textile Marketing and Advertising Agency (TPMA)	100,00	9,23
Creation of a database and an interactive map of enterprises in the textile and clothing and knitwear industry	Union «Uztokimachilik sanoat»	360,00	33,22
Implementation of intelligent control systems at the 5th and 7th MMC based on digital technologies	JSC «NKMK»	5000,00	461,35

According to the «Strategy for Innovative Development of the Republic of Uzbekistan for 2022-2026», a list of innovative projects implemented by higher educational institutions in 2023-2026 has been approved.

### List of innovative projects, planned for implementation by the Tashkent University of Information Technologies in 2023-2026, UZS million

Project	Responsible executors	Project cost, million sum	Project cost, thousand USD
Creation of the national geoinformation system «Geological data»	Ministry for Development of Information Technologies and Communications; Tashkent University of Information Technologies	500,00	46,14
Creation of a system based on artificial intelligence technologies for identifying human biometric data (speech, image, video).	Ministry for Development of Information Technologies and Communications; Tashkent University of Information Technologies	1 200,00	110,73
Identification of small-scale harmful effects based on video materials, creation of a decontamination system using laser devices	Ministry for Development of Information Technologies and Communications; Tashkent University of Information Technologies	1 500,00	138,41

According to the «Strategy for Innovative Development of the Republic of Uzbekistan for 2022-2026», in 2022-2023, scientific organizations will implement projects to create and introduce new products and technologies.

## List of projects for the creation and implementation of new products and technologies, planned for implementation by the Research Institute for the Development of Digital Technologies and Artificial Intelligence in 2022-2023

Project	Responsible executors	Project cost, million sum	Project cost, thousand USD
Creating software that translates text to speech (text to voice) and voice data to text (speech to text)	The ministry for development of information technologies and communications. The Research Institute for the Development of Digital Technologies and Artificial Intelligence	5 000,00	461,35
Development of integrated software for an intelligent system for ensuring the safety of participants and monitoring compliance with traffic rules at unregulated pedestrian crossings with traffic lights	The ministry for development of information technologies and communications. The Research Institute for the Development of Digital Technologies and Artificial Intelligence	2 000,00	184,54
Creation of an intelligent electronic platform for creating 3D models of human organs based on MSCT data	The ministry for development of information technologies and communications. The Research Institute for the Development of Digital Technologies and Artificial Intelligence	2 000,00	184,54
Creation of a software product for continuous monitoring of traffic accidents	The ministry for development of information technologies and communications. The Research Institute for the Development of Digital Technologies and Artificial Intelligence	1 200,00	110,73
Creation of software products for digital design of machining processes with high accuracy	The ministry for development of information technologies and communications. The Research Institute for the Development of Digital Technologies and Artificial Intelligence	1 600,00	147,63
Creation of an automated information system for prompt response to information security incidents and network traffic filtering	Ministry for Development of Information Technologies and Communications; The Research Institute for the Development of Digital Technologies and Artificial Intelligence	2 600,00	239,9

Also, in October 2020, the «Concepts for the Development of Science until 2030” were adopted in Uzbekistan, which

defines the main directions, tasks, medium and long-term stages in the development of science and scientific activity. The concept is

the basis for the development of targeted programs and comprehensive measures in this area.

### Target indicators and indicators of the Concept for the development of science until 2030

Targets	Indicators							
	2020	2021	2022	2023	2024	2025	2027	2030
Share of funds directed to science in relation to gross domestic product, %	0,20	0,50	0,80	1,00	1,10	1,20	1,60	2,00
Share of funds allocated by the private sector for research and development work in the total volume of science funding, %	8,00	12,00	15,00	17,00	18,00	20,00	25,00	30,00

The share of Uzbekistan in the total number of articles published in international scientific journals indexed in the international scientific database «Web of Science», %	0,01	0,02	0,03	0,04	0,04	0,05	0,10	0,20
The number of foreign references to one article published by Uzbek scientists in international scientific journals indexed in the international scientific database «Web of Science», pcs.	0,500	0,700	1,00	1,20	1,30	1,50	2,50	3,00
Number of articles published by 100 Uzbek scientists in international scientific journals indexed in the international scientific database «Web of Science», pieces	-	3	4	4	5	6	8	10
Average age of applicants, age	51	49	47	46	46	45	43	39
Share of applicants under the age of 39 in the total number of applicants, %	46,20	47,00	48,00	49,00	50,00	52,00	56,00	61,00
The share of highly qualified scientists (candidates of science, doctors of philosophy, doctors of science) in the total number of applicants under the age of 39, %	11,00	13,00	15,00	17,00	19,00	20,00	25,00	30,00
The share of applicants under the age of 39 in the total number of applicants sent for scientific internships in foreign scientific organizations and universities, %	30,00	35,00	40,00	44,00	47,00	50,00	60,00	70,00
The share of innovative products (goods, works and services) in the total volume of sold products (goods, works, services) in the field of research and development, %	1,10	3,00	5,00	7,00	9,00	10,00	15,00	20,00
Coefficient of inventive activity (number of patent applications for domestic inventions filed in the country per every 10,000 population), units	0,14	0,35	0,50	0,70	1,00	1,20	1,50	2,00
The share of the cost of machines and equipment with a service life of up to 5 years in the total cost of existing machines and equipment in research and development organizations, %	12,00	15,00	20,00	24,00	27,00	30,00	40,00	50,00
Share of expenditures on technological innovations implemented by own efforts in the total expenditures on technological innovations in the field of research and development, %	7,00	11,00	15,00	17,00	21,00	25,00	35,00	65,00
The share of expenses for the purchase of machinery, equipment and software in the total amount of expenses for technological innovations, %	54,00	52,00	50,00	48,00	45,00	40,00	30,00	15,00
Share of new sales markets for innovative goods, works and services in the volume of innovative products (goods, works, services) in the field of research and development, %	5,00	6,00	7,00	8,00	9,00	10,00	12,00	15,00

According to the roadmap for the implementation of the «Strategy for Innovative Development of the Republic of Uzbekistan for 2022-

2026», in 2022-2024, new innovative academic enterprises specializing in the production of scientific products (goods and

services) will be created in higher educational institutions in promising areas of innovative activity.

### List of new academic enterprises by directionsIT-related innovation activities planned for implementation in 2022-2024

Direction of innovative enterprises	Responsible executors	Source of financing, million sum		Source of financing, thousand US dollars	
		State scientific programs	Initiator	State scientific programs	Initiator
Creation of an innovative company KAKTUS NUB LLC to visualize construction sites in virtual reality and manage the construction process using artificial intelligence	Administration of the Bukhara region; LLC «CACTUS NUB»; Ministry of Innovative Development	1 286,70	1 196,00	118,73	110,36
Expansion of activities of LLC «WEBEST» to create a new type of innovative service for tourists by creating 3D and VR models of historical monuments of the Bukhara region	Administration of the Bukhara region; LLC «WEBEST»; Ministry of Innovative Development	953,50	517,20	87,98	47,72
Creation of an innovative enterprise E-Investment LLC, which includes a unified digital database of investment objects in Uzbekistan, provides a convenient information base for local and foreign investors, and provides digital consulting services	Tashkent State University of Economics; Ministry of Higher and Secondary Specialized Education	-	300,00	-	27,68

## ▲ Dynamics of the number of implemented innovations

In 2021, the total number of innovations introduced in Uzbekistan, according to the State Committee of the Republic of Uzbekistan on Statistics, reached 4,148, of which 3,936 or 94.89% are technological innovations. The average annual growth rate of the

number of implemented innovations for the period from 2016 to 2021 amounted to 16.83%. However, between 2016 and 2019 one can also observe an increase in both the total number of implemented innovations and

the number of technological innovations with an average annual growth rate of 35.0% and 34.6%, respectively. In 2020 and 2021 there was a decrease in the total number of introduced innovations (including technological ones).

### Number of implemented innovations for 2016-2021, units

Indicators	2016	2017	2018	2019	2020	2021
Number of implemented innovations:	1 906	2 046	2 558	4 689	4 290	4 148
Technological	1 816	1 946	2 482	4 427	4 011	3 936
Marketing	51	62	42	128	202	145
Organizational	39	38	34	134	77	67

## ▲ Dynamics of the number of organizations implementing innovations

In 2021, the total number of enterprises and organizations that introduced innovations reached 1,151, of which 1,098 or 95.40% accounted for technological innovations.

The average annual growth rate of the number of enterprises and organizations implementing

innovations and technological innovations for the period from 2016 to 2021 amounted to 4.29% and 4.22%, respectively.

Between 2016 and 2019 there is an increase in both the total number of enterprises and organizations that introduced innovations, and technological

enterprises and organizations with an average annual growth rate of 19.37% and 19.24%, respectively. Similar to the decrease in the number of implemented innovations, in 2020-2021 there was a decrease in the number of enterprises and organizations that introduced innovations (including technological ones).

### The number of enterprises and organizations implementing innovations for 2016-2021, units

Indicators	2016	2017	2018	2019	2020	2021
Number of enterprises and organizations implementing innovations:	933	1 023	1 024	1 587	1 217	1 151
Technological	893	975	982	1 514	1 148	1 098
Marketing	20	22	17	28	37	29
Organizational	20	26	25	45	32	24

## ▲ The share of costs associated with innovation in the total turnover of the economy

In 2016-2021, the share of spending on innovation in the country's GDP increased, and in 2021 it reached 2.41% of GDP (USD 1,664.32 million). The average annual growth rate of innovation spending for the period from 2016 to 2021 amounted to 13.95%.

### Innovation costs for 2016-2021

Indicators	2016	2017	2018	2019	2020	2021
Innovation costs, billion sum	2 571,40	4 162,30	4 707,20	6 603,50	6 830,00	17 680,80
Innovation spending, mln USD	866,11	809,74	583,36	746,04	678,61	1 664,32
GDP, mln USD	86 032,40	61 762,30	52 636,80	59 809,00	59 832,00	69 147,80
Share of spending on innovation in GDP, %	1,01%	1,31%	1,11%	1,25%	1,13%	2,41%

## ▲ Research and development costs

In 2021, the share of research and development costs in the country's GDP was 0.13%. In the period from 2016 to 2019, there was a decrease in the share of spending on research and development in the country's total GDP. The maximum percentage of research and development costs was observed in 2016 and amounted to 0.18%.

### Expenses on research and development from GDP for 2016-2021, %

Country	2016	2017	2018	2019	2020	2021
Uzbekistan	0,18	0,16	0,12*	0,11	0,14	0,13

For the period from 2016 to 2021, the maximum number of organizations performing research and development was recorded in 2018 and was equal to 668. After 2018, their number began to decline and in 2021 it was already equal to 254.

However, since 2018, there has been an increase in the volume of completed research and development projects - in 2021 it amounted to 100.69 million US dollars, nevertheless not reaching the maximum for the period 2016-2021 value recorded in 2016

(\$143.53 million).

The growth rate in the period from 2018 to 2021 the volume of completed research and development work amounted to 6.11%.

Source: <https://stat.uz/ru/ofitsialnaya-statistika/social-protection>, July 2022

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### Research and Development for 2016-2021

Index	2016	2017	2018	2019	2020	2021
<b>Number of organizations that carried out research and development, units</b>	<b>437</b>	<b>389</b>	<b>668</b>	<b>304</b>	<b>254</b>	<b>254</b>
Research work	313	284	456	195	195	179
Fundamental	133	118	188	113	112	66
Design and technological	31	31	54	28	17	27
Production of prototypes, batches, products (products)	20	19	33	16	9	10
Design work for construction	10	8	33	6	6	6
Scientific and technical	143	118	219	126	91	89
<b>The volume of research and development projects carried out, mln USD</b>	<b>143,53</b>	<b>87,53</b>	<b>84,28</b>	<b>96,42</b>	<b>98,56</b>	<b>100,69</b>
Research work	98,62	58,41	41,70	60,47	65,89	70,10
Fundamental	20,71	16,01	11,06	18,39	17,69	21,95
Design and technological	8,06	7,18	4,80	11,03	7,39	8,06
Production of prototypes, batches, products (products)	1,04	0,78	0,95	0,71	0,40	0,48
Design work for construction	14,74	6,06	9,63	6,17	6,78	8,52
Scientific and technical	21,07	15,09	27,41	18,13	18,11	13,54

### Research and Development for 2016-2021

Index	2016	2017	2018	2019	2020	2021
<b>Number of organizations performing research and development, units</b>	<b>437</b>	<b>389</b>	<b>668</b>	<b>304</b>	<b>254</b>	<b>254</b>
Research work	313	284	456	195	195	179
Fundamental	133	118	188	113	112	66
Design and technological	31	31	54	28	17	27
Production of prototypes, batches, products (products)	20	19	33	16	9	10
Design work for construction	10	8	33	6	6	6
Scientific and technical	143	118	219	126	91	89
<b>The volume of completed research and development, billion sum</b>	<b>426,12</b>	<b>449,91</b>	<b>680,04</b>	<b>853,40</b>	<b>992,03</b>	<b>1 069,68</b>
Research work	292,80	300,25	336,48	535,21	663,15	744,69
Fundamental	61,49	82,28	89,25	162,80	178,05	233,19
Design and technological	23,92	36,89	38,71	97,64	74,35	85,62
Production of prototypes, batches, products (products)	3,09	4,03	7,68	6,32	3,98	5,07
Design work for construction	43,75	31,17	77,69	54,63	68,25	90,48
Scientific and technical	62,57	77,57	221,21	160,51	182,30	143,81

## ▲ The volume of new products developed and/or introduced by domestic manufacturers

For the period 2016-2021, the minimum value of the volume of manufactured innovative products (goods, works and services) fell on 2021 and amounted to

2,577.19 million US dollars. In 2021, compared to 2020, there was a decrease in the growth rate of the volume of manufactured innovative products by 16.71%.

The average annual growth rate of the volume of manufactured innovative products for the period from 2016 to 2021 amounted to (-6.47%).

## Innovative volume and costs of enterprises and organizations for 2016-2021

Indicators	2016	2017	2018	2019	2020	2021
The volume of manufactured innovative products (goods, works and services), billion sum	10 688,20	18 543,30	28 871,50	26 811,40	31 142,80	27 378,60
The volume of manufactured innovative products (goods, works and services), mln. USA	3 600,05	3 607,44	3 578,06	3 029,07	3 094,25	2 577,19

## Number of employees, their composition and areas of work in R&D

In 2021, the number of people employed in R&D amounted to 34.6 thousand people, most of whom are researchers (30.3 thousand people or 87.57%).

In 2019 and 2020 the number of

employees employed in R&D decreased, the growth rate in 2019 and 2020 compared to 2018 was (-16.40%) and (-18.55%), respectively. In 2021, the number of employees

employed in R&D increased with a growth rate of 14.19% compared to 2020. Average annual growth rate of people employed in R&D for the period from 2016 to 2021 amounted to (-1.33%).

### The number of employees employed in research and development for 2016-2021, at the end of the year, thousand people

Indicators	2016	2017	2018	2019	2020	2021
Total	37,00	36,80	37,20	31,10	30,30	34,60
Researchers	32,00	31,90	32,10	26,30	25,50	30,30
Technology	2,00	1,50	1,60	1,50	1,60	1,60
Support staff	1,70	2,00	1,90	1,70	1,80	1,70
Other	1,30	1,40	1,60	1,60	1,40	1,00

In 2021, the number of employees employed in R&D with higher education amounted to 30.9 thousand people. The largest share of them is also made up of researchers, whose number is 29.3 thousand people, or 94.82% of the total number of such employees.

In 2019 and 2020 the number of

employees employed in R&D and with higher education was decreasing, the growth rate in 2019 and 2020 compared to 2018 was (-17.01%) and (-10.05%), respectively. In 2021, the number of such employees increased at a growth rate of 14.02% compared to 2020. The average annual growth rate of people employed in R&D with

higher education for the period from 2016 to 2021 amounted to (-1.54%).

The share of people employed in R&D with higher education in the total number of people employed in R&D in the period from 2016 to 2021 changed slightly (from 90.27% to 89.31%, respectively).

### The number of employees with higher education, engaged in research and development for 2016-2021, at the end of the year, thousand people

Indicators	2016	2017	2018	2019	2020	2021
Total	33,40	33,40	33,50	27,80	27,10	30,90
Researchers	31,70	31,60	31,70	25,80	25,20	29,30
Technology	0,60	0,40	0,40	0,40	0,50	0,60
Support staff	0,60	0,80	0,80	0,70	0,80	0,60
Other	0,50	0,60	0,60	0,90	0,60	0,40



## Support for startups in Uzbekistan

The start-up ecosystem of the country plays an important role in the development of innovations in the Republic of Uzbekistan. As of 2022, the main support in the development of startups is provided by the state - in particular, the Ministry of Innovative Development of the Republic of Uzbekistan regularly holds various competitions for innovative startup projects (including in the field of IT). According to the Ministry of Innovative Development of the Republic of Uzbekistan, in the

period 2019-2022, 10 competitions for financing startups were announced, and as a result, 155 projects were financed in the amount of 104 billion sum, which as a result created 1,279 new jobs.

At the initiative of the Ministry of Innovative Development, to provide support to young entrepreneurs and enterprises starting activities in the field of innovation, specialized technology parks were also created in six regions of the

country; by the end of 2023, it is planned to create such technology parks in all regions of the republic.

The state venture fund UzVC, the corporate venture funds Uzcard Ventures and Aloqa Ventures and the private venture fund Semurg VC were also used to provide financial support to startup projects. In addition, six more foreign representative offices of venture capital funds from Southeast Asia, America, Europe and Kazakhstan systematically operate in Uzbekistan.

## Startup Support Ecosystem

In 2019, to support innovation in IT, an IT Park was created, which runs startup incubation and acceleration programs aimed at launching and bringing promising startup projects to the market. IT Park provides accounting, legal, marketing and educational support to young IT entrepreneurs.

By the end of 2022, more than 200 new startups have already been launched in IT Park. IT Park regularly holds contests, hackathons, ideathons, trainings and workshops to stimulate young people's interest in the IT sphere.

Since 2017, the Yashnabad Innovation Technopark has been operating in Tashkent, the residents of which work in the following areas: chemical technology, biotechnology, information and communication technologies and other areas. In November 2021, the Yashnabad Technopark, together with the Ministry of Innovative Development, launched the

Business Incubator program aimed at supporting start-ups, and in 2022 it is also planned to launch a competition of joint start-up projects with the Iranian Pardis Technopark in the amount of \$2 million. USA.

As of June 1, 2022, 42 enterprises have become residents of the Yashnabad Technopark, 441 new jobs have been created, products worth 71.8 billion sum have been produced, exported - worth 418.5 thousand US dollars. In addition, from August 1, 2022 to August 1, 2025, residents of the Yashnabad Innovation Technopark will pay VAT at a reduced rate (1%).

Technopark Inno, located in Tashkent, is one of the largest technology parks in Uzbekistan and also provides opportunities for launching and developing startups. Currently, the technopark covers about 4,000 people, created 11 start-up enterprises and 81 new jobs, developed 11 innovative products and 24

prototypes of innovative ideas. From August 1, 2022, the Inno technopark and its residents are exempt from all taxes, except for social taxes, and customs benefits will apply to the equipment, components and parts they import.

Also, since 2018, the Youth Union of Uzbekistan has been implementing the "Yoshlar - kelajagimiz" program, within the framework of which a special fund was created that provides loans and leasing property through commercial banks for the implementation of youth business initiatives, start-ups, ideas and projects at fixed rates. The Fund provides an opportunity to undergo retraining and improve qualifications, teaches professions that are in demand on the labor market, and participates in the construction of co-working centers to provide young entrepreneurs with preferential terms for renting premises, office equipment and consumables, and access to the Internet.

## Non-state support for startups

Despite the large share of state participation in supporting and developing the startup movement in the Republic of Uzbekistan, in recent years the number of non-governmental organizations and private sector organizations has been growing in the country,

which has an increasing influence on the development of the startup ecosystem.

The Startup Innovation Group (StartupFactory.uz) is engaged in holding startup conferences and events, seminars on generating

ideas (Ideathon), organizing startup acceleration programs, selecting mentors, etc. The company is developing its own platform for tracking startups Accelerator.uz, as well as a platform for organizing mentoring programs Central Asia Mentoring

Platform (mentoringplatform.org).

Startup Factory partner is Idea Lab startup accelerator (idealab.startupfactory.uz) startup factorygaged in testing startup ideas at an early stage of their development. Participants of the pre-accelerator program receive services for developing a startup idea, legal and financial advice, after which the best projects go to the startup accelerator StartupFactory.uz and can be recommended to investors.

Non-governmental non-profit organization Tech4Impact (tech4impact.uz) - established in 2019, the field of activity is the development of innovations, information technologies, start-ups, human capital, green technologies, youth and women's

entrepreneurship in Uzbekistan and the Central Asian region,

ZIYO FORUM Foundation (<https://ru.ziyoforum.uz/>), operating since 2019. Support for start-ups and business ideas, holding conferences and forums are declared among its goals.

Important participants in the startup ecosystem of Uzbekistan are foreign universities with branches in the country. One of these universities is Westminster International University in Tashkent (WIUT), which specializes in training young entrepreneurs. The university operates the «InnoWIUT» laboratory (<https://ino.wiut.uz/aboutus>), which provides support to innovators in the implementation

of ideas and the development of their entrepreneurial skills.

Other universities, such as in Inha University Tashkent (IUT), Management Development Institute of Singapore in Tashkent (MDIS Tashkent) and TEAM University, also have an impact on the startup ecosystem of Uzbekistan, as they have incubation centers that promote the development of startups.

Various co-working spaces can also be called part of the startup ecosystem (for example, GROUNDZERO (<https://groundzero.uz/>), offering, among other things, start-up companies services for providing jobs and obtaining a legal address, etc.

## Examples of start-up companies in Uzbekistan

In 2021, several Uzbek companies successfully attracted investments. Among them are:

- IMAN, which combines investment and wealth management services, instalment purchases and a marketplace. In 2021, the startup reached the final of the international investment competition Seedstars World Competition 2021, and then raised \$2 million with the help of an American fund;
- Zip24, a startup from the Tashkent-based company Data Site Technology, is based on a SaaS B2B system for managing logistics, supply chains and fulfilment in the field of e-commerce. Its technologies make it easier to do business by automating processes. The startup raised \$1.2 million in funding from Uthe K fund Sturgeon Capital;
- Tass Vision, which is an intelligent video surveillance system that helps to increase work productivity in companies and provides services for recording employees' working hours, collecting customer data, building

a «heat map» (heat map) of the most visited places in the building. Tass Vision raised \$500,000 from MOST Ventures;

- Girgitton, a startup delivering food from cafes and goods from stores. USD 500,000 was invested in this project by MOST Ventures;
- Micros24, a participant in the startup acceleration program from IT Park. The startup is developing several areas: electronic document management, online cash registers, multibanking and verification of counterparties. Micros24 raised a \$120,000 investment from venture capital fund Semurg VC;
- Kiva Sesame, a natural products startup focusing on the creation of cost-effective varieties of oilseeds and the organization of their processing, received 1.4 billion sum (131.78 thousand dollars) from the Ministry of Innovative Development;
- Aico Cybernetics, a startup developing products based on artificial intelligence, machine

learning and data storage technologies. The startup raised 1.1 billion sum (\$103.54 thousand) from the Ministry of Innovative Development.

SmartChain, which created the NazzAR mobile application based on augmented reality technologies, can also be mentioned as one of the successful IT start-up projects in Uzbekistan. As of December 6, 2021, the software solution built on the NazzAR platform took 2nd place in the top 10 most popular AppStore applications in its category downloaded in Iceland.

According to a survey conducted by the Uzbekistan Venture Capital Association in 2020, startup founders identify the following main challenges they face when developing their projects:

- lack of capital offered on the market for development (63%)
- disinterest of large companies in innovative technologies (53%)
- lack of qualified specialists (47%).

Source: [https://www.researchgate.net/publication/352479108\\_Startup\\_ecosystem\\_of\\_Uzbekistan](https://www.researchgate.net/publication/352479108_Startup_ecosystem_of_Uzbekistan), June 2021

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## ▲ 9 BUSINESS PROCESS OUTSOURCING (BPO)

Number of companies operating in the field of BPO, 2021

 **18**

Average salary level of specialists of BPO companies, 2022

 **600-1300**

USD

Revenue of BPO companies, 2021

 **28,85**

million

The volume of exports of companies operating in the field of BPO, 2021

 **28,52**

million

The business process outsourcing (BPO) industry is at the initial stage of formation in the economy of Uzbekistan. The industry is based on several success stories of individual companies that carved a market niche for themselves by initially providing logistics services in the US market. This type of activity was included in the List of activities permitted for implementation by residents of the IT Park as an additional source of export of services related to the

use of technology and human capital.

Since 2021, there has been an increase in the number of companies operating in the field of BPO. By the end of the first half of 2022, their number reached 31, and the total number of employees was 1,227 people. Companies grow by actively hiring young people with a good knowledge of foreign languages

and training them in the necessary specializations, based on the business processes they handle. The area of activity of companies from the moment of formation is expanding and covers new areas of BPO.

Specialists involved in business process outsourcing have a significantly higher average monthly salary compared to the national average.

## ▲ General information about companies providing business process outsourcing services

For 2022, the main areas of work of Uzbekistan companies in the field of business process outsourcing (BPO) are:

- software development and support;
- logistics;
- call center services, customer

support;

- creation of advertising;
- bookkeeping;
- other.

These types of activities are included in the List of activities permitted to be carried out by

residents of the IT Park as the provision of services to non-residents of the Republic of Uzbekistan for the development, management (implementation) of administrative and business processes (business process outsourcing) using software (hardware and software).

residents of the IT Park as the provision of services to non-residents of the Republic of Uzbekistan for the development, management (implementation) of administrative and business processes (business process

outsourcing) using software (hardware and software).

In 2021, 18 residents providing services in the field of BPO were registered in the IT Park, and by the end of the first half of 2022

their number increased to 31. The number of employees of BPO companies at the end of 2021 was 895, at the end of the first half of 2022 this number increased to 1,227 people.

### Residents of the IT Park operating in the field of BPO

Parameter	2021	1 <sup>st</sup> half of 2022
Number of outsourcing companies (BPO), units	18	31
Number of employees, people	895	1 227
Revenue, billion sum	306,45	315,67
Revenue, mln USD	28,85	29,71
Export, mln USD	28,52	29,38

## ▲ The attractiveness of Uzbekistan for companies providing BPO services

In 2022, the Ministry for the Development of Information Technologies and Communications signed an agreement on cooperation in the field of IT and BPO, as well as on the creation of a joint BPO corporation with the American Access Capital Management Corp. The agreement provides for the creation of 1100 jobs in the

BPO field within 3 years.

BPO Plug and Play Center are also planned to open by the end of 2022. It is a leading innovation platform bringing together startups, corporations, venture capital firms, universities and government agencies. The launch of this platform in Uzbekistan can give impetus to the development

of BPO in the country.

IT Park also launched the TashRush program, under which foreign companies and specialists are provided with services for opening legal entities (on the OneStopShop principle), finding offices, recruiting personnel, and IT specialists - assistance in adapting and finding employment in IT Park resident companies.

## ▲ Working conditions of companies providing BPO services

Tax benefits and preferences for residents of the IT Park also apply to BPO companies that are its residents. Also, BPO-companies can use the preferences of programs aimed at improving the working conditions of IT companies in Uzbekistan and supporting the development of the IT sector in the country as a whole.

According to the analysis of statistics collected by the IT Park, in 2022, the average salary level for specialists of BPO companies amounted to 600-1300 US dollars per month.

To create a competitive market for BPO services in Uzbekistan, a large number of workers with at least basic digital skills are

needed. Recently, the situation with the study of foreign languages in the country has been improving, young people are primarily interested in learning English, as a result of which companies are actively growing and recruiting people.

However, at the moment there is a low prevalence of digital skills among the population of Uzbekistan. According to a UNICEF\* survey conducted in 2020, 49.2% of respondents of age 25 to 30 answered that they did not have any computer skills, another 30.3% answered that they had some good computer skills. At the same time, the share of such answers among respondents of

age 14-18 was already 24.9% and 50.8%, respectively. This distribution of answers indicates that there is a gradual spread of computer literacy and digital skills among the population of Uzbekistan.

\*The study, conducted between 2018 and 2020, was focused on young people between the ages of 14 and 30 in 12 regions of Uzbekistan, the city of Tashkent and the Autonomous Republic of Karakalpakstan. A mixed approach was used to collect data, consisting of a quantitative survey with 4,458 respondents and a qualitative survey with a total of 24 focus group discussions.

## Evaluation of the desire to learn how to use a computer or learn more about it, by age groups

Answer	Age groups			General
	14-18 years old, %	19-24 years old, %	25-30 years old, %	
Yes	92,90	84,50	83,30	86,90
No	6,50	13,10	15,30	11,70
Don't know	0,60	2,00	1,00	1,20
No answer		0,30	0,50	0,30

Also, according to UNICEF research, 53.9% of young people of age 14 to 30 do not use the Internet at all, while only 25.4% of the study participants use the Internet daily. At the same time, there is a significant difference between the urban and rural populations.

## Frequency of Internet use, by type of population, age 14-30

Answer	Type of population		
	Urban	Rural	General
Never / Don't use	46,70	60,60	53,90
Less than 1 time per month	2,60	2,70	2,70
1-2 times a month	6,10	6,80	6,50
Weekly	12,20	10,40	11,30
Daily	32,00	19,30	25,40
No answer	0,400	0,30	0,30

The active spread of digital skills among the young population can significantly increase the number of available specialists for IT and BPO companies, which, in turn, will allow these companies to actively develop and increase the volume of services provided in international markets.

The Government of Uzbekistan is implementing a consistent policy

to develop digital skills among the population and create digital jobs in Uzbekistan. With the support of the IT Park and the Ministry for the Development of Information Technologies and Communications of the Republic of Uzbekistan, BPO schools were opened in the country, where young people learn to work in the field of BPO. The centers operate in Tashkent and 8 other districts of

the country, in the near future it is planned to open BPO schools in all regions of the republic. The main goal of such schools is to employ the young population of Uzbekistan, create opportunities for working with foreign companies and increase the export of services. The admission plan for the 2022/2023 academic year is 255 students.

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