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EXPENSES ON RESEARCH AND DEVELOPMENT (case-study of the experience of India and Uzbekistan)

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Abstract: *One of the factors determining the economic potential of India and Uzbekistan within the framework of global innovative development and pandemic is the expenses on the research and development in relation to the gross domestic product (GDP). In this regard this article is devoted to the research of the experience of two countries and their cooperation in improving their efficiency.*

Key words: *innovation, research and development expenses, ecosystem, intellectual property, Gross Domestic Product, innovation index, new technologies.*

Introduction. It is known that the coronavirus pandemic, which started in China in late 2019, almost completely covered the globe. The economic losses that could be occurred from this disaster are estimated at trillions of US dollars. Most notably, hundreds of thousands of people have fallen victim to this terrible virus. In turn, this virus has put the economy in a difficult position in India as well. The Indian government has decided to allocate 270 billion USD (10 per cent of GDP) to recover the economy within the period of a pandemic in the country. In our country, radical measures have been developed to prevent the spread of koronavirus. It should be noted that 10 trillion. UZS have been directed in Uzbekistan as part of anti-pandemic measures. As a result, the Decree "On priority measures to mitigate the negative impact of the Koronavirus pandemic and the global crisis on the economy", "On comprehensive additional measures to prevent the spread of koronavirus infection in the Republic of Uzbekistan" have been adopted.

The power of the pandemic has almost halted the world economy. Moreover, this unexpected biological disaster for humanity has affected the activities of all the major companies and firms in the world economy. Under the impact of the pandemic, companies also face a number of challenges in making their own operational and strategic management decisions, for example, how these losses are disclosed in the financial statements? Or within the framework of a pandemic, how reliable are the costs incurred by companies, including research and development, in the financial statements? Or what are the minimum requirements for the preparation of financial

statements in these circumstances? Finding solutions to such questions has currently become a very vital necessity for a company leader, manager and accountant.

The economies of many Asian countries, in particular, the economy of India have been growing rapidly in recent years. According to the opinion of international experts, India will triple its GDP in the next 5 years. At the end of 2019, the national GDP of this country has grown by 7,3% and reached the amount of 2 971 billion USD. This factor enabled India to improve its position and rose to 5th place in the world rankings (2nd place in Asia) (In 2018 it occupied 7th place with 2718 billion USD). With this figure, it overtook the UK and France[*]. This achievement has certainly gained worldwide recognition.

The rapid growth of the Indian economy is likely to make it the country with the third largest GDP in the world rankings in the future. In addition, in the popular Bloomberg Innovation Index, India has not changed its position in 2020, ranking 54th with a rating of 49,33[†]. This will definitely create new opportunities for investment and trade in the country to have such high international ratings. This means that Uzbekistan, its close partner in the future, has also created a comprehensive international legal framework for the widespread use of India economic achievements and experience.

Analysis and results. It is known that the relations between Uzbekistan and India have a long history (the Great Silk Road and the Empire of the Baburids). Currently the foreign trade turnover between Uzbekistan and India is growing from year to year and in 2019 it has reached 264,2 million USD, which is an increase of 130,0% compared to the previous 2018 (this figure amounted to 203,5 million USD in 2018). It should be noted that exports amounted to 17,4 million USD and imports amounted to 246,8 mln USD.

There is a huge gap between the GDP of India and Uzbekistan (+2921,8 billion USD in favor of India). However, the figures on the average per capita income of GDP are almost the same (+0.4 thousand USD). The table below illustrates the position of India and Uzbekistan in some international rankings (Table 1).

[*] https://gtmarket.ru/ratings/rating-countries-gdp/rating-countries-gdp-info
[†] https://www.bloomberg.com/news/articles/2020-01-18/germany-breaks-korea-s-six-year-streak-as-most-innovative-nation

Table 1

Common socio-economic indicators[‡]

(as of January 1, 2020)

№	Indicators	Countries	
		India	**Uzbekistan**
1.	Gross Domestic Product, bln. USD	2,971	49,2
2.	GDP per capita, thousand USD.	**2,2**	1,8
3.	Population, million person	**1357,6**	34,0
4.	Innovation Index (GII 2019), place (rating)	**52 (36,58)**	Didn't participate in the rating
5.	Population Literacy Index (EI 2019), place (rating)	**133 (0,558)**	73 (0,718)
6.	Global Competitiveness Index (GCR 2019), role (rating)	**68 (61,4)**	Рейтингда қатнашмаган
7.	Human Development Index (HD 2019), place (rating)	**167 (0,647)**	108 (0,710)

The process of globalization requires a further increase in the cost of creating intellectual property, including research and development. Therefore, currently economically developed countries are trying to create new intellectual property and to raise the exepenses on the research and development in relation to their GDP. For example, this is an average of 2,4% of the GDP of North America and Western Europe, 2,1% in East Asia and the Pacific, 1,0% in Central and Eastern Europe, and 0,7% in Latin America and the Caribbean, 0,6% in Arab countries, 0,5 % in South - West Asia, 0,4 % in Africa and 0,2 % - in Central Asia[§]. It should be noted that India occupies a special place and ranks the 2nd among the countries of East Asia and the Pacific (2,1%). This is due to the fact that recently the Gross Domestic Product of the country has a tendency to increase its spending on research and development.

If we look at the data globally, almost 38% of the USA Gross Domestic Product is generated from the innovative products created in reliance upon the intellectual property. The volume of the created software increased by 31% in 2018, and its market value accounted for 8,2 billion USD. This figure is expected to constitute 29,9 billion USD in 2020 and in an increase of 105,8 billion USD is expected till 2025[**].

The main share in the financing of innovative developments in the world belongs to the business sector. In terms of financing research and

[‡] https://gtmarket.ru/ratings/global-competitiveness-index/info

[§] http://uis.unesco.org/apps/visualisations/research-and-development-spending/

[**] Statistics from the World Intellectual Property Organization. https://www.wipo.int/portal/en .

development, South Korea has the share of 78,0 % (or 57,2 billion USD), Japan - 77,5% (or 131,8 billion USD), China - 77,3% (286,5 billion USD), the USA - 71,4 % (340,7 billion USD), and this indicator in India accounts for 17,0 billion USD (35,0 %). However, the share of the funds allocated on the research and development by the state is significantly bigger and constitutes 29,0 billion USD or 60,0%. The same situation is observed in Uzbekistan, where public share of funds on the research and development is also relatively high and accounts for 166 million or 48,6%.

Table 2

Innovative developments in the countries throughout the world[††]

№	Countries	Business		State		Education		Others	
		billion USD	%	billion USD	%	billion USD	%	billion USD	%
1.	India	17,0	35,4	29,0	60,0	1,9	3,9	-	-
2.	United States	340,7	71,5	54,1	11,3	62,3	18,2	19,2	4,0
3.	China	286,4	76,9	58,6	15,7	25,5	6,8	-	-
4.	Japan	131,8	77,7	14,1	8,2	21,3	12,4	2.2	1,3
5.	Germany	74,1	67,8	16,0	14,6	19,4	17,4	-	-
6.	South Korea	57.2	78,0	8,2	14,3	6,6	9,0	1,1	1,5
7.	Israel	9,9	84,6	0,217	1,8	1,5	12,8	0,116	0,9
8.	Argentina	0,924	28,8	1,4	43,7	0,977	30,5	0,58	1,8
9.	Luxembourg	0,382	53,6	0,212	29,7	0,117	16,7	-	-
10	*Uzbekistan*	*0.108*	*31,6*	*0,166*	*48,6*	*0,64*	*18,7*	*0,3*	*0,8*

According to the Global Innovation Index (2019 Global Innovation Index), India has made great efforts and achieved considerable progress in innovation development. Although the country is included in the list of low-income countries (including India, Georgia, Kenya, Mongolia, Philippines, Ukraine, Vietnam, Moldova), it is admitted as a country with higher than expected levels of innovation and has become one of the leading countries in Asia.

Table 3

Rating of Global Innovation Index (GII)[‡‡]

№	Country	Years				
		2017	2018	Growth	2019	Growth
1.	India	60	57	+ 3	52	+ 5
2.	Uzbekistan	Didn't participate in the rarting				

India has strengthened its position in the GII rankings by 5 points in 2019. In this regard, India is nowadays a leader among South and Central Asian countries. Unfortunately, Uzbekistan does not participate in this

[††] http://uis.unesco.org/apps/visualisations/research-and-development-spending/
[‡‡] https://www.wipo.int/export/sites/www/pressroom/ru/documents/pr_2019_834_annex1.pdf

international ranking (although in this ranking, Kazakhstan - 79th, Kyrgyzstan - 90th and Tajikistan - 100th).

As far as we know, the process of global innovative development is also making great investments in India to upgrade and develop new technologies. Most importantly, the state guarantees this, that is, it assumes responsibility to encourage investment in new innovative developments. As a result, the competitiveness of India's national economy has a rising trend.

In India, 60% of the expenses on the research and development are covered by the state and the rest percentage - by private business, local governments, universities. Unlike the United States (where spending in the country is mainly focused on innovative development in the military area), India spends most of its public funds on social sectors, i.e., research and development that facilitate enhancling the well-being of humanity.

Table 4

Dynamics and forecast of the share of expenses on the research and development in GDP in India and Uzbekistan , %

Country	2016	2018	2020	forecast	
				2025	2030
India	0,6	0,8	1,5	1,8	2,0
Uzbekistan	0,2	0,18	0,6	1,9	2,1

According to analytical data, last year India spent approximately 48,0 billion USD on research and development (IT and TC-innovative developments), which constitutes 0,8% of the GDP. In this regard, Uzbekistan, which has close ties with India in all respects and has fruitful cooperation, differs in these indicators. Expenditures on innovative developments in Uzbekistan amounted to 0,2% of the GDP (or 341 million USD).

Table 5

Expenses on the innovative developments in India and Uzbekistan

№	Country	Expenses on the innovative development, billion USD	In relation to the GDP, %	GDP, billion USD
1.	India	48,063	0,6 - 0,8	2,726,322
2.	Uzbekistan	0,341	0,18 - 0,2	50,499.92

It should be noted that in Uzbekistan it is highly recommended to increase public spending on research and development and to raise this figure up to 0,8% of the GDP by 2021. This means that according its Development Strategy until 2030, Uzbekistan is expected to spend about 1,4 billion UZS on

innovative developments. The main aim for this is to enable Uzbekistan to join the top 50 countries in the Global Innovation Index by 2030[§§].

It should be noted that the position of India and Uzbekistan is not the same when analyzing the level of scientific and technological development in terms of clusters.

Table 6

The role of India and Uzbekistan in the innovation development cluster[***]

№	Distribution of the world countries by clusters
1	***By cluster I:***
	Sweden, Japan, USA, UK, Germany, Italy, Belgium, Netherlands, Finland, Norway, Iceland, Ireland, Austria, France, Israel, Canada
2	***By cluster II:***
	China, South Korea, India, Spain, Australia, Portugal, New Zealand, Taiwan, Singapore, Slovenia
3	***By cluster III:***
	Poland, Hungary, Estonia, Czech Republic, Slovakia, Mexico, Croatia
4	***By cluster IV:***
	Russia, Ukraine, Belarus, Thailand, Macedonia, Romania, Kazakhstan
5	***By cluster V:***
	Bulgaria, Georgia, Azerbaijan, Uzbekistan, Armenia, Tajikistan, Kyrgyzstan

The table presented above illustrates that Uzbekistan is at the bottom of the cluster distribution for innovative development. However, practical activities being implemented in our country on the transition to innovative development have the potential to enhance this ranking. To achieve this aim it is necessary to pay a particular attention to the public support of scientific developments, formation of an intellectual property ecosystem and a national innovation system in our country. Just in 2020 declared as the "Year of Science, Enlightenment and Development of the Digital Economy", the President of the Republic of Uzbekistan Sh. Mirziyoyev emphasized the following: "As the wise men of the East say, the greatest wealth is intelligence and knowledge, the greatest heritage is good upbringing, the greatest poverty is ignorance!"[†††]. Therefore, the acquisition of digital knowledge and modern information technologies has been identified as a prerequisite for the acquisition of modern knowledge, true enlightenment and high culture in Uzbekistan.

[§§] Resolution of the President of the Republic of Uzbekistan "On approval of the Strategy of innovative development of the Republic of Uzbekistan for 2019-2021" PR-5544, as of September 21, 2018. https://lex.uz/ru/docs/3913188?otherlang=1

[***] https://www.worldbank.org/

[†††] Resolution of the President of the Republic of Uzbekistan PR-5953 "On the state program for the implementation of the strategy of actions in the five priority areas of development of the Republic of Uzbekistan in 2017-2021 in the "Year of Science, Education and Digital Economy" as of March 2, 2020 https://lex.uz/docs/4751561

It should be noted that Uzbekistan has risen by 8 places in 2019 according to the International Information and Communication Technologies Development Index, but still lags far behind. In this regard position of India is in the top 50 (48th place, rating - 56077).

The result of expenditures on research and development is, definitely, represented by creation of intellectual property in the country. The following table shows the legal and statutory framework for intellectual property in India and Uzbekistan. In both countries, there are agencies engaged in the legal protection of intellectual property, including in India:

- *By copyright:* Copyright department Department of Industrial Policy and Promotion Ministry of Commerce and Industry Government of India;

- *By industrial sample:* Office of the Comptroller-General of Patents, Designs and Trademarks Department of Industrial Policy Assistance Ministry of Commerce and Industry Government of India[‡‡‡].

As for Uzbekistan, Intellectual Property Agency under the Ministry of Justice of the Republic of Uzbekistan is the only agency established to protect intellectual properry rights[§§§].

Table 7

Legal basis of regulating intellectual property

Normative bases regulating intellectual property objects
India:
Copyright Law (1957), Copyright Rules (1958), Patent Law (1970), Trademark Law (1999), Geographical Indication of Goods Law (1999), Design Law (2000)
Uzbekistan:
Civil Code (2013), Law on Inventions, Utility Models and Industrial Samples (2002), Law on Selection Achievements (2002), Law on Trademarks, Service Marks and Appellations of Origin (2017), Law on Company Names (2006)

In addition, it should also be noted that in 2019, India joined the tripartite agreement of the World Intellectual Property Organization (Nice, Vienna and Locarn), designed to simplify the search for trademarks and industrial designs. This shows support of India for the multilateral work being done within the framework of the World Intellectual Property Organization.

Objects of intellectual property in India include: trademarks, domain names, copyrights, patents, inventions, designs, geographical names of goods, developments in the complex, legal protection of farmers and producers, biodiversity, confidential information and trade secrets[****]. In Uzbekistan,

[‡‡‡] http://www.ipindia.nic.in, registrar.copyrights@gov.in
[§§§] http://ima.uz/uz/
[****] Intellectual Property India, History of Indian Patent System. © Copyright 2015. http://www.ipindia.nic.in/history-of-indian-patent-system.htm. Intellectual Property Law in India. Legal,

according to the Civil Code: objects of intellectual property are: works of science, literature and art, performances, phonograms, broadcasts or broadcasts, programs and databases for electronic hijab machines, inventions, utility models, industrial designs, selection achievements, undisclosed information, including production secrets, company names, trademarks (service marks), place of origin of goods, know-how[††††].

Currently India and Uzbekistan occupy different positions in the rankings published by the World Intellectual Property Organization.

Table 8

Rating indicators on applications submitted for intellectual property objects[‡‡‡‡]

№	Country	Rating		
		Patent	Trade mark	Industrial sample
1.	India	12	9	13
2.	Uzbekistan	60	66	70

According to the data, India is in the top 20 in the overall ranking (10th place in the world, 4th place in Asia) (even in the top 10 brands). Performance of Uzbekistan in this situation is below average (59th place in the world, 15th place in Asia).

When analyzing the dynamics of international applications for inventions, industrial designs and utility models from India and Uzbekistan (by the Intellectual Property Offices) to the World Intellectual Property Organization, we can observe a growing trend in 2018 compared to 2017.

Table 9

Applications submitted by intellectual property offices to the World Intellectual Property Organization[§§§§]

№	Countries	Applications	
		Number, pcs.	in relation to 2017, %
Patent (invention and industrial sample):			
1	India *(top 10 offices)*	50055	+ 7,5
2	Uzbekistan *(of selected low- and middle-income countries)*	650	+ 17,5

Regulatory & Tax. Nishith Desai Associates. http://www.nishithdesai.com/IProperty. IND AS 38 Intangible Assets. http://mca.gov.in/Ministry/pdf/ INDAS 38.

[††††]Civil Code of the Republic of Uzbekistan (National Legislation Database, 2017, № 16, article 265). http://lex.uz/docs/180552.

[‡‡‡‡] https://www.wipo.int/edocs/pubdocs/en/wipo_pub_941_2019.pdf

[§§§§] Source: WIPO Statistics Database, August 2019. https://www.wipo.int/edocs/pubdocs/en/wipo_pub_943_2019.pdf

The table shows that the number of patent applications submitted in India is +7,5% higher than in 2017, which enables to own +49 405 or 77 times more patents than in Uzbekistan. However, according to the applications submitted, in 2018 Uzbekistan increased in volume by +17,5%. This can be assessed as the best result in countries with below-average incomes.

Conclusion. Therefore, we consider it relevant to ensure the efficiency and raise the cost of innovative developments, as well as the wide application of the experience of India in this area in the implementation of the tasks determined in the Action Strategy of Uzbekistan. In our opinion, the following measures are considered to be appropriate:

- development of modern mechanisms for assessing and strengthening of intellectual property created as a result of expenses on research and development;
- ratification of agreements of the World Intellectual Property Organization in the field of protection of intellectual property rights in reliance upon the experience of India and bringing them in compliance with the national legislation;
- lending to the development of research in the country in compliance with the strategy, including raising the volume of innovation funding (improving the position of the Global Innovation Index on "Development of the domestic lending market");
- enhancing the innovative activity of businesses such as Indian companies ("Hindustan unilever limited", "Asian paints limited", "Tata Motors") and accelerating the emergence of new innovative companies.

In conclusion, while the global pandemic has resulted in the development of intellectual property, especially in the medical field, on the other hand, it has reduced the ability to adequately assess the financial condition of companies. However, the radical measures undertaken in each country will enable companies to strengthen themselves economically. Thus in future humanity will live under conditions of frequent biological disasters, and resisting it requires constant vigilance by each of us.

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