



NEW DIGITAL REVOLUTIONS: CURRENT DEVELOPMENTS BASED ON METAVERSE

Internet usage, especially with the COVID-19 pandemic, has almost become an obligatory part of our lives, where we not only spend our free time and carry out various works, but also spend a considerable portion of our daily lives. In this process, we frequently hear the word "Metaverse". The Metaverse can be expressed as a three-dimensional (3D) virtual world in the simplest terms. Our life, which has changed with the beginning of the Internet era, has been moved to the next stage with the development of Metaverse infrastructures and offers us a virtual reality.

When we look at the findings of some research on Metaverse, as a result of the research conducted with people of different ages in the USA, China and UK, it is stated that 93% of the participants consider Metaverse as the technology of the future. In the same research, it was reported that 64% of the participants' social lives depend on technology and informatics, and 61% of participants' income depends on technology and informatics infrastructures. As we can see from these numbers, the concept of the Metaverse is not faced much resistance, and it is likely that it can be adopted by societies to an increasing extent thanks to the opportunities it offers.

Currently, we are witnessing a lot of developments in the virtual world experiences in many different areas ranging from the creation of virtual tours to the museums, and exhibitions due to COVID-19 restrictions to buying virtual land with cryptocurrencies in virtual worlds. Many companies, which are interested in this trend, announce their investments in Metaverse technologies and some even open virtual stores in various virtual worlds. For instance, Facebook's decision to change its company name to Meta and popular companies around the world such as Nike, Adidas, Gucci, H&M and Walmart, express their decisions on opening their virtual branches. On this point, in Turkey, we see that LC Waikiki is also starting a similar initiative.

When the word Metaverse is mentioned, it would be appropriate to perceive it as a general definition given to virtual worlds that are created rather than just a single virtual world. In these virtual worlds that are being created, there is a competitive environment in order to attract attention. In this regard, the leading Metaverse projects are trying to attract the attention of people as potential investors with the economic opportunities they offer. For instance, it is stated that virtual real estate sales in the four big Metaverse worlds, including Sandbox and Decentraland, have reached 501 million dollars in 2021. It is estimated that this number will double in 2022. In addition to these, all the consumption needs which we need in the real-world and more are created in the virtual worlds, and even the competition in the branding process is heating up. Thus, it could be said that the economic system within the Metaverse is also quickly establishing itself.

Like in every new technological development and innovation, expansion of Metaverse infra-

structure would bring positive and negative effects to the environment. Considering the positive aspects, Metaverse will make its contribution to the reduction of transportation-related environmental pollution by allowing people to carry out their work in the virtual environment without leaving their homes. In this regard, it is predicted that the share of transportation in global environmental pollution is around 30-35% and this rate may decrease to 20% with the widespread use of Metaverse worldwide. On the other hand, the negative environmental conditions that will be created by the extraction of chips and other materials, which are necessary for the production of this technological infrastructure and necessary devices, could increase the harmful experiences of the mining sector. In addition to that, an increase in electricity consumption will also cause more production and consumption of energy resources. In short, mining and energy sources have the potential to increase pollution, despite the possible decrease in transportation-related environmental pollution. Moreover, the possibility of causing different health problems due to inactivity should also be considered as an additional negative factor.

With the possibility of creating a copy of our real lives in virtual worlds many opportunities are rising, which puts many individuals and companies in a competition in order to not stay behind this technological innovation. At this point, it is known that many states are interested in Metaverse infrastructure and are working to benefit from its practical advantages. For instance, the South Korean government aims to provide many services from public services to tourism, from city planning to opening new doors of economic income to businesses by investing 187 million dollars in the "Metaverse Seoul" project by moving the capital to the Metaverse. The project is planned to be fully implemented in 2023. The local government in Wuhan, China, accelerating Metaverse studies over the next five years and they announced that they want to integrate the benefits and advantages of these environments into the real economy, by integrating with other large data banks, cloud storage and blockchain studies in the field. The Autonomous Administration of Catalonia aims to introduce a Metaverse project called Catvers, by bringing the important historical and cultural places of the region to the virtual world.

Turkey is among the countries that are interested in Metaverse, and various steps have been taken by both the state and the private sector in order not to be left behind by these technological developments. The Justice and Development Party (AK Party) held the first Metaverse Forum with the participation of President Recep Tayyip Erdogan on March 21st, 2022. Nearly 2,000 academics and experts attended the forum. The usage areas and benefits of Metaverse were discussed in the forum, which was carried out with the slogan "The future belongs to those who designed it". Thus, Turkey has taken its place among the leading countries in the world, showing that it

attaches importance to the Metaverse technological infrastructure at the state level.

According to the opinions of experts, Metaverse will rapidly and primarily be growing in the field of entertainment and education, and then it will expand its use in other areas. Therefore, Metaverse is frequently referred to as the 3D version of the internet or its successor. When we look at the studies in Turkey in these two prominent areas, we can see that many universities offer Metaverse, blockchain and NFT (non-fungible token) courses as electives under the theme of introduction to the virtual universe. Examples of these are "Introduction to NFT" at Ankara University and NFT and Metaverse courses at Yildiz Technical University. When we look at the contributions of Metaverse in the field of education in general, it has been seen that it can bring significant gains to various business lines by allowing students to gain professional experience thanks to their 3D devices in the virtual environment. Thus, when students reach the real-life experience stage, they will be able to start their work and education with certain knowledge and experience.

On the other hand, one of the important developments in Turkey is that the General Directorate of Land Registry and Cadastre, as a pilot project, adapted all the land registry and cadastre information in Amasya to the digital world and moved Amasya to the Metaverse. A 3D model of the city was created by combining aircraft and satellite images with the land registry and cadastral information. This study was carried out as an initiative of the General Directorate of Land Registry and Cadastre towards adapting to the Metaverse ecosystems, and it is aimed to move all of Turkey to the Metaverse universe in the continuation of the project. Thus, it would be possible to facilitate future studies in areas such as city planning, disaster management and urban transformation through the virtual environment, and the people who would buy a house would have the opportunity to see the location of their houses virtually. In other words, Metaverse will not only provide a completely different virtual world experience but also provide different advantages to various areas of our lives in the real world. In this way, great convenience and advantages will be offered in achieving the desired results when performing studies on Metaverse, that are either not feasible in the real world or costly to carry out.

In summary, innovations such as Metaverse and cryptocurrencies among developing technologies appear as the harbingers of the beginning of a new era. Rather than discussing whether it will be accepted or not, it will be more beneficial for us to focus our research on how it will affect our lives. Therefore, states, international organizations and companies should carry out the necessary studies in the light of these developments and inform society about their positive and negative aspects. It seems highly probable that these concepts, which are currently unfamiliar to most of us, will become an indispensable part of our lives in the near future, just like the Internet.

Politics, Foreign Affairs, and Security

- Minister of Defense of the Kyrgyz Republic, Lieutenant-General Baktybek Bekbolotov, arrived in Uzbekistan for an official visit, the purpose of which was to discuss the state of bilateral relations in the field of regional security and defense. The Minister had a meeting with his Uzbek counterpart Lieutenant-General Bakhodir Kurbanov. The parties discussed issues of strengthening and further expanding cooperation in the political, economic and defense spheres, as well as issues of training military personnel (Kabar, 26.03.2022).
- The President of Tatarstan Rustam Minnikhanov arrived in Uzbekistan on a working visit. It is expected that he would have meetings with business circles and hold talks with representatives of the Government of Uzbekistan. Minnikhanov will participate in the groundbreaking ceremony of the Chirchik Chemical-Industrial Technopark, which was organized in cooperation with Kazan's Khimgrad Technopolis. It is planned to organize the production of petrochemical and chemical products in accordance with international quality standards in the territory of the Technopark (Kun.uz, 23.03.2022).
- The Heads of State and governments of NATO member-states met to address Russia's aggression against Ukraine. The participants unanimously condemned the invasion of Russia and Belarus to Ukraine in the strongest possible terms and called on President Putin to immediately withdraw military forces from Ukraine. In response to Russia's actions, NATO activated a defense plan, deploying elements of the NATO Response Force, and placed 40,000 troops on the eastern flank of the Alliance, along with significant air and naval assets (Nato.int, 24.03.2022).
- The President of Uzbekistan Shavkat Mirziyoyev held a telephone conversation with his Russian counterpart Vladimir Putin. The presidents summed up some results of bilateral cooperation and also paid attention to international politics. The leaders noted that Uzbek-Russian relations have risen to an unprecedented high level of strategic partnership and alliance. In particular, since the beginning of 2022, bilateral trade has grown by 50%. The parties considered new prospects and plans for strengthening multi-vector bilateral cooperation between the two countries (Centralasia.news, 22.03.2022).
- On the sidelines of the 48th session of the Organisation of Islamic Cooperation (OIC) Council of Foreign Ministers, the head of the Foreign Ministry of the Kazakh Republic, Mukhtar Tleuberdi, met with his Pakistani counterpart, Mahmud Qureshi. The parties discussed topical issues of further development of bilateral relations focusing on the need to strengthen mutually beneficial cooperation in trade, communications, tourism and permanent contacts. The sides also reaffirmed their commitment to further development of cooperation in all areas of mutual interest, including on the premises of such international organizations as the UN, OIC, Shanghai Cooperation Organisation and Economic Cooperation Organization (Centralasia.news, 22.03.2022).
- The Minister of Defense of Azerbaijan, Colonel General Zakir Hasanov has met with Chief of Army Staff of Pakistan Army, General Qamar Javed Bajwa. During the meeting, the sides discussed issues of development of bilateral relations and emphasized the need to further develop cooperation in the military, military-technical, military-educational and other areas. The parties also held a detailed exchange of views on trilateral joint military cooperation with the participation of Azerbaijan, Pakistan and Türkiye (Azertag.az, 23.03.2022).

Economy, Finance, and Energy

- According to data from the Central Bank of Uzbekistan the gross external debt of the country has risen by 16% or \$5.4 billion since the beginning of the year and as of January 1, 2022, amounted to \$39.6 billion. The state external debt increased by 11% or by \$2.4 billion and amounted to \$23.7 billion, and non-state foreign debt surged by 24% or \$3 billion reaching \$15.8 billion. Private-sector debt was driven by borrowings from the banking and energy sectors (UzReport, 26.03.2022).
- First Deputy Minister of Investments and Foreign Trade of the Republic of Uzbekistan Aziz Voitov recently announced that Uzbekistan agreed with Azerbaijan, Georgia and Turkmenistan on providing discounts for the transit of goods. Voitov added that there was also an agreement on reducing transport costs by 50% with the ports of Turkmenbashi and Baku. He mentioned that deliveries of goods from the ports of Azerbaijan and Georgia were already cheaper by 30% (Turkmenportal, 24.03.2022).
- Ambassador of the Kyrgyz Republic to Japan Mirlan Arstanbaev had a meeting with the mayor of the city of Hamura Hashimoto Hirokata in the Embassy of the Kyrgyz Republic in Japan. During the meeting, the parties discussed the prospects for bilateral cooperation and Arstanbaev provided detailed information on the possibilities of cooperation in the field of importing organic agricultural products from the Kyrgyz Republic to Japan, as well as in the field of employment of citizens of Kyrgyzstan in Japan (Kabar, 23.03.2022).
- China's natural gas imports from Turkmenistan continue to increase. According to statistics from the General Customs Administration of China, in January-February 2022 the country imported natural gas from Turkmenistan worth \$1.44 billion. The import increased by 1.47 times. Turkmenistan continues to rank first in the export of pipeline natural gas to China. Russia remains the second exporter (\$526.9 million), followed by Myanmar (\$224.6 million), Kazakhstan (\$105.1 million) and Uzbekistan (\$48.4 million) (Orient, 21.03.2022).
- The Central Bank of Russia recently announced that in 2021, about 94.3% of money transfers of individuals from Russia to Tajikistan were in rubles, 5.6% - in US dollars and 0.1% - in euros. The share of ruble transfers has grown by 9.1 percentage points from 85.2% in 2015. The total volume of money transfers of individuals from Russia to Tajikistan in 2021 amounted to \$1.8 billion, which was 3.4% more than in 2020 (ASIA-Plus, 25.03.2022).
- According to the Ukrainian Agrarian Policy and Food Ministry, as of March 23, 2022, the projected area of spring crop plantations for 2022 was 5,990 million hectares, which was 1,689 thousand hectares lower compared to the same period last year. All categories of households have already sown 22.5 thousand hectares with spring wheat compared to the projected area of 157.4 thousand hectares. Sugar beets were sown on 3.3 thousand hectares, while the projected area was 201.9 thousand hectares (Ukrinform, 25.03.2022).

Society and Culture

- The United Nations International Children's Emergency Fund (UNICEF) delivered 541,000 doses of measles, mumps and rubella vaccine to Tajikistan. The supply worth about \$840,200, was part of the TEC-19 project set up to support the Tajik government to fight the pandemic. The vaccines were delivered in accordance with an agreement between the Ministry of Health and Social Protection of Tajikistan and UNICEF (Centralasia.news, 24.03.2022).
- During the 48th meeting of the OIC Ministerial Council, the OIC and the Islamic Development Bank signed the founding charter of the Humanitarian Trust Fund for Afghanistan. The fund was established to collect donations to improve the living conditions of the Afghan people. The creation of the fund was one of the main outcomes of the 17th Extraordinary Session of the Council of Foreign Ministers of the OIC, held on December 19, 2021, in the capital of Pakistan (Centralasia.news, 24.03.2022).
- According to the Minister of Labor, Social Security and Migration of Kyrgyzstan, 25.4% of the population of Kyrgyzstan live below the poverty line. The Ministry is currently actively working to reduce poverty in the country. Thus, within the framework of the pilot project of the Ministry and the UN World Food Program, 100 low-income families in the Batken region received 100,000 soms (\$1060.51) each (Kabar, 24.03.2022).
- The press service of the Ministry of Ecology, Geology and Natural Resources of Kazakhstan announced that the volume of water in the Aral Sea has increased by 11.5 km³. This was achieved thanks to the "Regulation of the Syrdarya River and Preservation of the Northern Part of the Aral Sea", which is one of the largest projects being implemented in the region. As a result of the implementation of the first phase of the project, the carrying capacity of the Syrdarya riverbed increased from 350 to 700 m³/s (bb-ctv.com, 25.03.2022).
- The Minister for the Development of Information Technologies and Communications of Uzbekistan Sherzod Shermatov held a meeting with the Secretary-General of the Organization of Turkic States Baghdad Amreyev. The sides discussed promising areas of cooperation within the framework of the activities of the Organization of Turkic States. Particular attention was paid to the development of Business Processing Outsourcing (BPO) and Knowledge Process Outsourcing (KPO) services (UzDaily, 25.03.2022).
- The Council of Foreign Ministers of the OIC adopted a resolution on "Destruction of cultural and historical monuments related to Islamic culture in the territory of Azerbaijan as a result of Armenia's aggression". The document condemns the destruction, acts of vandalism and appropriation of Islamic historical and cultural monuments on the territories of Azerbaijan during the period of occupation. The resolution also confirms the right of Azerbaijan to demand compensation for the damage caused to it and the obligation of Armenia to pay this compensation (Azernews.az, 24.03.2022).