



INNOVATIONS IN CHINA: CAPACITY FOR TECHNOLOGY TRANSFER TO KAZAKHSTAN

China as an emerging superpower intensifies its Research & Development (R&D) capabilities day by day. The country's progress in innovations has become possible through the efficient implementation of the Reforms and Opening Up policy over the last 40 years. The Chinese government attaches great importance to the Science & Engineering (S&E) development policy. R&D is really vital for Beijing: the recent economic slowdown of China has shown that the current economic model does not adequately respond to global market and competitiveness demands. Encouraging innovation appears to be the only way to re-establish growth and return to the path of sustainable development. Therefore, innovative development as part of a new stage of modernization is one of the challenges faced by the Chinese economy.

At the meeting with the country's best scientists and researchers at the National Congress of the China Association for Science and Technology (S&T) in 2016, Chinese President Xi Jinping said that China should become one of the most innovative countries by 2020 and the leading innovator by 2030. The purpose is to make China a major power in S&T by 2050. The Chinese government gradually launches scientific development programs, such as the National Medium and Long Term Plan (2006) and Made in China 2025 (2015). R&D aims and scope are also widely addressed in the 13th Five-Year Plan for 2016-2020 and in the documents of the 2017 Two Sessions (the two meetings of the National People's Congress and the Chinese People's Political Consultative Conference). Moreover, the successful implementation of R&D is critical for the viability of the Great Rejuvenation of the Chinese Nation concept introduced by President Xi in 2013. The state support measures aim to enhance such areas as green energy, data analytics, the Arctic Science Observatory, national cyber security, interplanetary space exploration, genetic research, quantum communications, and artificial intelligence. Year 2019 marks the 70th anniversary of the People's Republic of China, and this date is a significant occasion to showcase Chinese achievements in innovations. For instance, China achieved much progress in the development of digital economy. According to McKinsey, China is a leading nation in e-commerce and digital payments (more than 70% coverage of the population), and home to one-third of the world's most effective start-ups valued at over \$1 billion. Baidu, Alibaba, and Tencent, or BAT as they are informally known, are giant global-access Internet companies generating a multifaceted, multi-industry digital environment that penetrates every aspect of lives of Chinese consumers. China's innovations are not limited to e-commerce and public services, as the most internationally competitive and recognized elements of Chinese innovations

are supercomputers and the country's space program.

China ranks second globally behind the United States in terms of R&D expenditures. According to the Chinese government report published in January 2018, China's total R&D spending increased by 12.3% in 2017 to a record \$254 billion. China has the largest number of engineers in the world. Thus, according to the U.S. National Science Board, from 2000 to 2014, the number of S&E bachelor's degrees awarded in China rose by more than 350%. In 2016, for the first time in history, China bypassed the United States by the annual number of scientific and engineering publications – more than 426,000 compared to about 409,000. Thus, the development of R&D is a key strategic direction of China's policy aiming at sustainable economic development and a moderately prosperous society in all respects.

Today, as China has become one of Kazakhstan's major economic, trade and investment partners, Kazakhstan considers China as a main source of technology transfer to the country. This topic is repeatedly raised during bilateral negotiations, with Astana pushing Beijing to invest in the non-commodity sectors of the Kazakh economy. Chinese technologies are now widely used in the country's telecommunications, security systems (for example, surveillance cameras), the agricultural and food processing industries, etc.

As formulated by former Vice Minister of Education and Science of Kazakhstan Aslanbek Amrin, Kazakhstan can use its lag in technology as an advantage: the country lacks time to invest in technologies that are already becoming obsolete, so it is easier for Kazakhstan to skip some stages and focus on newly emerging innovations. In his opinion, to foster technological development, the country needs to identify promising niches, in which standards are absent or just being formed. For example, Kazakhstan has good prospects in the extraction of thorium and such rare earth element as neodymium, and this may become a mutually beneficial area of cooperation with China that would allow the transfer of the most advanced processing technologies, along with the production of higher value added products. To achieve this, it is necessary to set up technology transfer institutes.

Recently, cooperation between the Kazakh National Agency for Technological Development (NATD) and the Chinese National Eastern Technology Transfer Center (NETTC) has been established. In May 2018, the NATD and the NETTC signed a memorandum of understanding in Shanghai, laying the groundwork for collaboration in the field of innovations. The NETTC has 11 branches and five foreign representative offices – in the United States, Great Britain, the Netherlands, Canada and Singapore. To

date, over 5,000 enterprises have passed through the center's business incubators. Under the memorandum with the NETTC, the NATD becomes a bridge linking Kazakh incubators with the Chinese ones. Cooperation with the NETTC is relevant for Kazakhstan in connection with the country's ongoing Business Road Map 2020 program aimed primarily at developing and supporting small and medium entrepreneurship.

Chinese universities are the main implementation mechanisms of the county's innovative development. Kazakhstan's universities also aim to reach the University 4.0 model that meets the demands of the Fourth Industrial Revolution, therefore the successful experience of the PRC higher education institutions will be useful for them. In 2015, at a meeting with President of China Xi Jinping, President of Kazakhstan Nursultan Nazarbayev proposed to create an IT park based on the Silicon Valley model at the Al-Farabi Kazakh National University (KazNU). Following this proposal, KazNU, in conjunction with the University Alliance of the Silk Road, established an international IT park. The core of this park will be a supercomputer obtained under a grant from the Chinese government. It is planned that the park will serve as a single data processing center for universities of Kazakhstan and members of the Alliance, as well as provide digital services and carry out high-performance calculations for research projects. It should be noted that KazNU's supercomputer worth \$10 million should become a powerful computing resource included in the world's top-500. KazNU also established cooperation with the Aerospace Information Research Center of China by signing a memorandum of cooperation in 2018. The parties intend to train specialists and conduct joint research projects in the field of space engineering and technology. The mission of the projects is to create a scientific school on small spacecraft.

In conclusion, it seems rational that China can and should be Kazakhstan's important partner in S&T. Obviously, coherent cooperation between technology transfer providers and recipients at different levels is still at an early stage. Moreover, the issue of creating systemic mechanisms of scientific collaboration between Kazakhstani and Chinese universities, such as research centers, labs, and professional development opportunities, should be considered at the highest level. As China's economy and technology leadership will expand, the need for technological partnership will grow. The two countries should find a common ground on R&D cooperation, which will be beneficial for both sides; at the same time, it should not compromise national security interests of Kazakhstan.

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Politics, Foreign Affairs, and Security

- The U.S. State Department officially notified Moscow that Washington suspends its compliance with the INF Treaty and will withdraw from this arms control agreement in six months if Russia fails to destroy its treaty-violating missile systems. In response, President Putin also suspended Russia's participation in the treaty and ordered to develop new missiles without increasing the defense budget.
- The CSTO state parties held consultations in Moscow to agree a draft order of information exchange of the CSTO Crisis Response Center. The document will help improve the organization's work on collecting and analyzing information on the military and political situation in the CSTO area of responsibility, as well as on forecasting future developments in order to identify preconditions for crisis situations.
- The Senate of the Parliament of Kazakhstan ratified the Convention on the Legal Status of the Caspian Sea signed in August 2018. The convention regulates issues related to the delimitation of national zones, jurisdictions and sovereignty, the rights to subsoil use, transit and transportation, laying of underwater pipelines and cables, environmental protection and biological resources of the Caspian Sea.
- The delegations of Tajikistan and Uzbekistan held a regular meeting in Dushanbe to discuss organizational and legal issues related to the demarcation of the border between the two countries. During the talks, the parties prepared relevant normative and technical documents, which will form the basis for launching the negotiation process on demarcation activities.
- During the Iran-Turkmenistan political consultations at the level of deputy foreign ministers in Tehran, the delegations of the two countries discussed prospects of cooperation in the political, trade and economic spheres and exchanged views on regional and international issues of mutual interest. In addition, the parties held the 14th meeting of the intergovernmental commission on consular, border and customs issues.
- During his visit to Turkmenistan, EU Special Representative for Central Asia Peter Burian held talks at the country's Ministry of Foreign Affairs. The parties exchanged views on the new EU strategy for Central Asia, discussed strengthening cooperation in the areas of logistics, transport and energy, and addressed the prospect of opening an EU representative office in Ashgabat.
- During his two-day working visit to Russia, President of Moldova Igor Dodon held meetings with a number of high-ranking Russian officials, including President Putin. The parties discussed major issues of their bilateral agenda focusing on possible solutions for the transit of Moldovan goods to the Russian market through the territory of Ukraine.

Economy, Finance, and Energy

- The heads of government of the Eurasian Economic Union (EAEU) member states participated in the meeting of the Eurasian Intergovernmental Council held in Almaty. The parties discussed the macroeconomic situation in the EAEU and other issues, including the union's digital agenda and mechanisms for its implementation, and signed a number of documents promoting economic and trade cooperation.
- Uzbekistan ranks 140th among the world's 180 countries in the 2019 Index of Economic Freedom released by the U.S. think tank Heritage Foundation. Compared to the previous ranking, Uzbekistan moved 12 positions up due to the improvements in the business environment, property rights, fiscal, trade and labor regulations, but the country's economy remains in the "not free" category.
- The EU allocated €5 million to Uzbekistan to support a project on the country's accession to the World Trade Organization (WTO) that will be implemented by the International Trade Center, the joint agency of the WTO and the UNCTAD. The EU is also interested in supporting the activities of the Multi-Partner Human Security Trust Fund for the Aral Sea Region.
- Azerbaijan's state oil company SOCAR acquired EWE Turkey Holding, owned by the German energy company EWE AG, thus entering the Turkish gas distribution market. SOCAR also acquired the holding's assets – Bursagaz, Kayserigaz, Enervis, EWE Enerji and Millicom. The deal will be completed after approval by Turkey's anti-monopoly authority and other responsible government agencies.
- SOCAR will use the Satti jackup rig of Kazakhstan's national oil and gas company KazMunayGas in its projects, as envisaged by a memorandum of understanding signed by the two companies. The jackup rig will be delivered to Baku where it will be upgraded and later used for drilling work in the Azerbaijani sector of the Caspian Sea.
- The Joint Strategic Planning Group under the High Level Strategic Council between Turkey and Ukraine held its 7th meeting in Odessa chaired by Ukrainian Foreign Minister Pavlo Klimkin and his Turkish counterpart Mevlut Cavusoglu. During the meeting, the parties discussed opportunities for deepening mutual cooperation, including the introduction of a free trade area, and exchanged views on regional and international issues.
- According to China's General Administration of Customs, Russia remains the country's largest supplier of oil for three years in a row. Out of 462 million tons of oil imported by China in 2018, Russia accounted for 71.5 million tons, or 15.47% of the total imports, which is 19.7% higher than in 2017 (59.8 million tons).

Society and Culture

- President Nazarbayev signed a law ratifying the intergovernmental agreement between Kazakhstan and Tajikistan that extends the period of stay for Kazakh citizens in Tajikistan and Tajik citizens in Kazakhstan without registration to 30 days. The agreement signed in March 2018 was ratified by Tajikistan in July 2018.
- In the 2019 ranking of the world's safest countries released by the Global Finance magazine, Kazakhstan, Tajikistan and Kyrgyzstan are ranked 44th, 68th and 89th, respectively. The ranking that evaluates 128 states based on the three factors – war and peace, personal security, and natural disaster risk – does not include Uzbekistan and Turkmenistan.
- The First Forum of PR specialists of Turkic-speaking Countries held in Baku brought together PR practitioners representing public and private sectors of Azerbaijan, Kazakhstan, Kyrgyzstan, Turkey, and Uzbekistan. The event provided a platform for experience sharing, expanding mutual cooperation, and contributing to the development of the public relations industry in these countries.
- According to the survey conducted by the U.S. National Democratic Institute in Georgia, 92% of Georgians believe that living in a democratic country is important, but only 43% of them think that Georgia is currently democratic. 78% of respondents support the country's membership in NATO, which is the highest approval rate since 2013, while 83% are in favor of the EU membership.
- According to the 2018 results of the annual study titled Social and Political Trends in Turkey, which measures the Turkish public opinion on political, social, economic, security and cultural issues, Azerbaijan is perceived as the friendliest country to Turkey, with 63.6% of approval. 81.9% of respondents named the United States as the country posing the biggest threat to Turkey, an increase of 17.6% compared to 2017.
- According to the Turkish Statistical Institute, in 2018, the population of Turkey increased by 1.193 million and reached 82.3 million people. Men account for 50.2% of the Turkish population, while 49.8% are women. 92.3% of Turks live in cities, and only 7.7% reside in the countryside. 18.4% of the country's population live in Istanbul.
- President of the International Turkic Academy, the Turkic World Educational and Scientific Cooperation Organization (TWESCO), Darkhan Kydrali met with the academics of Tatarstan in Astana. The parties discussed ways to strengthen partnership relations between TWESCO and Tatarstan's scientific organizations, including through carrying out joint research projects. The TWESCO president informed the guests on the preparations for such upcoming events as the World Congress of Turkologists and the 750th anniversary of the Golden Horde.