

CAPITAL IDEAS

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Digital Ruble: alternative
or inevitability?

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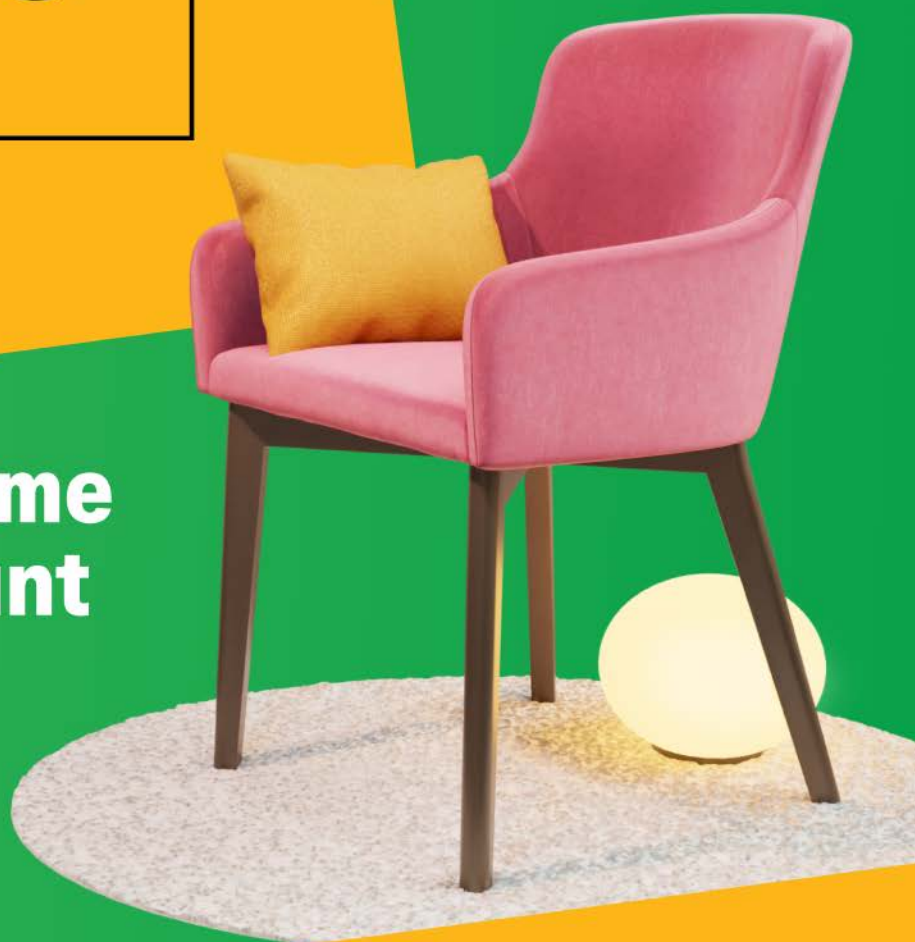
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DIGITAL RUBLE: ALTERNATIVE OR INEVITABILITY?

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Digital ruble is a digital currency, issued by the Central Bank of the Russian Federation. More than one hundred countries are now in various stages of implementation of their own digital national currencies - CBDC (Central Bank Digital Currency). CBDCs have been implemented and are fully operational at the Bahamas (Sand Dollar) and in Jamaica (JAM-DEX); CBDCs are in various testing stages and are partially implemented in Uruguay (e-Peso), Saudi Arabia and UAE (Aber), Canada (Jasper), China (e-CNY), France (France CBDC), SAR (Khokha), Singapore (France & Singapore CBDC) etc.

CBDC is the reverse side of such a new global phenomenon as cryptocurrencies, its antagonist. If bitcoin and altcoin philosophy is based on decentralized issue, lack of hierarchical banking system and absence of control, with certain reservations, by most powerful players, then CBDCs imply a common issuing center and tight control over movement of funds. In most cases no provision exists for a public and transparent blockchain, decentralized CBDC architecture. The digital ruble involves use of a digital register with secure data storage, backups and protection against modification of previous entries, but this is not blockchain. Use of blockchain for state finances makes no sense whatsoever. A CBDC system cannot be decentralized and anonymous.

Central banks and states that back them up intend to push back against classic cryptocurrencies in time; oust them from gray areas, and ideally, squeeze them out of circulation altogether. This scenario is being implemented in two ways:

The first way involves adoption of legislative measures, tightening the rules for the terms of decentralized currency use, based on distributed ledger technologies (up to a total ban). This option is already in place in China and is gaining momentum in the USA. But most countries are taking a more cautious approach to avoid excessive bans and limitations, since the impact of cryptocurrencies on the financial sector is still unclear. Aggressive and ill-considered bans may set a state back in global competition with other players in this field.

The second way to influence the cryptocurrency world would be to enter the process with an alternative offering, i.e. with CBDCs; in other words, to bring new technologies under control for own purposes by creating proprietary digital currencies. This would be an attempt to offer to financial system players a product that is similar in a number of parameters, but still different in essential features: total control and availability of a common issuing center. Despite these significant

limitations, this form of money has a very important advantage. Unlike decentralized currencies, this currency would not be subject to their extremely high volatility, because it always equals a national currency rate. At the same time CBDCs cannot be considered stablecoins (value of which is also pegged to fiat currencies or any other assets), because digital money is secured directly by a central bank. Globally speaking, these are not coins, issued by a central bank and secured by paper money, these are a fully functional part of money supply; it is the third form of state-issued money in addition to cash and non-cash money.

As compared to cash and non-cash money, a CBDC also has a number of advantages, including low transactional costs, high rate and transparency of transactions. Moreover, unlike traditional cashless transactions, "tied" to a commercial bank, a digital ruble, issued by the CB, is "kept" at proprietary central bank servers. However, natural persons and legal entities can transfer digital funds without any mediation by commercial banks and payment providers. This means that transfer fees and acquiring become a thing of the past.

Concurrently, digital currencies could present a major threat for commercial banks in the form of potential liquidity outflows (now depositor funds can be held in electronic wallets at CB servers, as opposed to accounts of a specific commercial bank) and lower profits due to reduction of their share of intermediary services. And there is historic logic in this: increased share of cashless settlements and cash turnover reduction led to growing influence of financial institutions, but further movement from cash towards non-cash transactions enabled contemplation of a third form of money, once again reinforcing position of central banks and states.

Digital ruble provides governments with direct access to transactional data for people and enterprises, increasing tax base transparency, helping track transactions for their legality, fighting capital outflows and money laundering.

All of the abovementioned aspects have a reverse side: when a fiat currency provides a certain degree of freedom, a digital currency rules out freedom completely. Authorities get direct access to user wallets, and programmable functions of money can be used against undesirable individuals or as a weapon in an economic war. Integration with social rating systems offers even broader opportunities for punishment and rewards.

As for decentralized cryptocurrencies, when CBDCs are introduced, their function will increasingly transform towards an investment asset and an infrastructure solution for launching financial projects, and away from a generally accepted payment facility.



NEW HIGH-TECH FACTORIES LAUNCHED IN TECHNOLIS MOSCOW

Three more high-tech production lines were launched in the Technopolis Moscow Special Economic Zone (SEZ); the opening ceremony was attended by Moscow Mayor Sergei Sobyenin and Denis Manturov, Deputy Prime Minister-Minister of Industry and Trade of the Russian Federation.

The new enterprises will manufacture EVM PRO electric trucks based on Russian UAZ chassis, lasers and laser-related equipment, and devices using high-tech data transmission solutions.

Today, it is the flagship of the present-day Moscow manufacturing and is home to more than 200 enterprises, including 90 high-tech companies with the resident status, which employ more than 13,500 people in addition to 1,400 new jobs created in three quarters of 2022; their accumulated investments are already in excess of RUB 120 billion.

Three high-tech clusters, such as pharma, automotive, photonics & microelectronics, were created in the SEZ in 2022.



YUAN OUTPERFORMS THE DOLLAR IN RUSSIAN TRADING

The Chinese yuan in February and March 2023 overtook the dollar in terms of trading volumes on the Moscow Exchange. The trading volume of the US dollar on the Moscow Stock Exchange in March amounted to 1.7 trillion dollars, while market participants traded the Chinese yuan for 2 trillion dollars.

The main volume of operations falls not on retail investors, but on companies that are reorienting to the East, and sanctioned banks.

In fact, an increase in the share of the yuan's turnover is an increase in the share of the economy under sanctions, says Bloomberg Economics economist Alexander Isakov. A large category of buyers of the yuan in the domestic market are companies and banks under sanctions, for which



transactions with other currencies are impossible. Therefore, if the trend to expand sanctions lists continues, then the share of the yuan in foreign exchange trading will continue to grow. Although there are applicants for the place of a suitable currency for savings and settlements on formal grounds among other currencies (Turkish lira, South African rand, etc.), their chances are limited by low liquidity, the risk of secondary sanctions, and the unpredictable monetary policy of issuing central banks Isakov explains.

For the first time, the yuan surpassed the US dollar in daily trading volume on the Moscow Stock Exchange in October 2022 and in February 2023, in terms of monthly trading volume.

Export control is a basic sanction policy method. It implies bans or restrictions on supply of specific goods, services or technologies to a country. But these restrictions in today's interdependent world have gained special significance.



EXPORT CONTROL DANGERS

Many existing manufactured goods are produced under broad international cooperation. Bans even on individual links may lead to disruptions of operations in a whole supply chain. Over the last year the Russian business bore the brunt of export control consequences. A volume of sanctions, unprecedented even for the Cold War era, was introduced against Russia. The sanctions include bans on supply of high-tech and industrial goods. The US, the European Union and other Western players initiate such measures. Their bans also apply to third country products, manufactured in line with technologies or with use of equipment from countries that initiated sanctions. In other words, friendly countries are also taken hostage by export control of the US and its allies. Currently export control measures are starting to apply to consumer goods, including household appliances and electronics. Foreign sanctions are supplemented by informal boycotts of Western companies, leaving Russia.

The Russian government has taken a number of measures to mitigate impact of foreign sanctions. Along with long-term import-substitution projects, parallel imports options were made available for individual product categories and for products by certain brands. This measure

seems to be the most effective reaction to corporate boycotts. But in the case of export controls, foreign suppliers even in friendly countries may be reluctant to deliver, justifying their refusal by risks of criminal or administrative liabilities imposed by Western countries. Shipments of western goods or products containing western components could also bear liability risks both suppliers and end customers in Russia. As export control measures ramp up, numbers of such shipments will grow: risks for trade participants will increase proportionally. At present the USA and EU countries are ramping up their capabilities for tracking violations of their export control measures, and also for further criminal and administrative prosecution of violators at all phases of a transaction.

The criminal prosecution of Oleg Nikitin, a Russian national, and his foreign partners, who made an attempt to deliver to Russia a Vectra 40 G turbine even before the start of the Special Military Operation, is a textbook case. According to the US authorities, this transaction was a

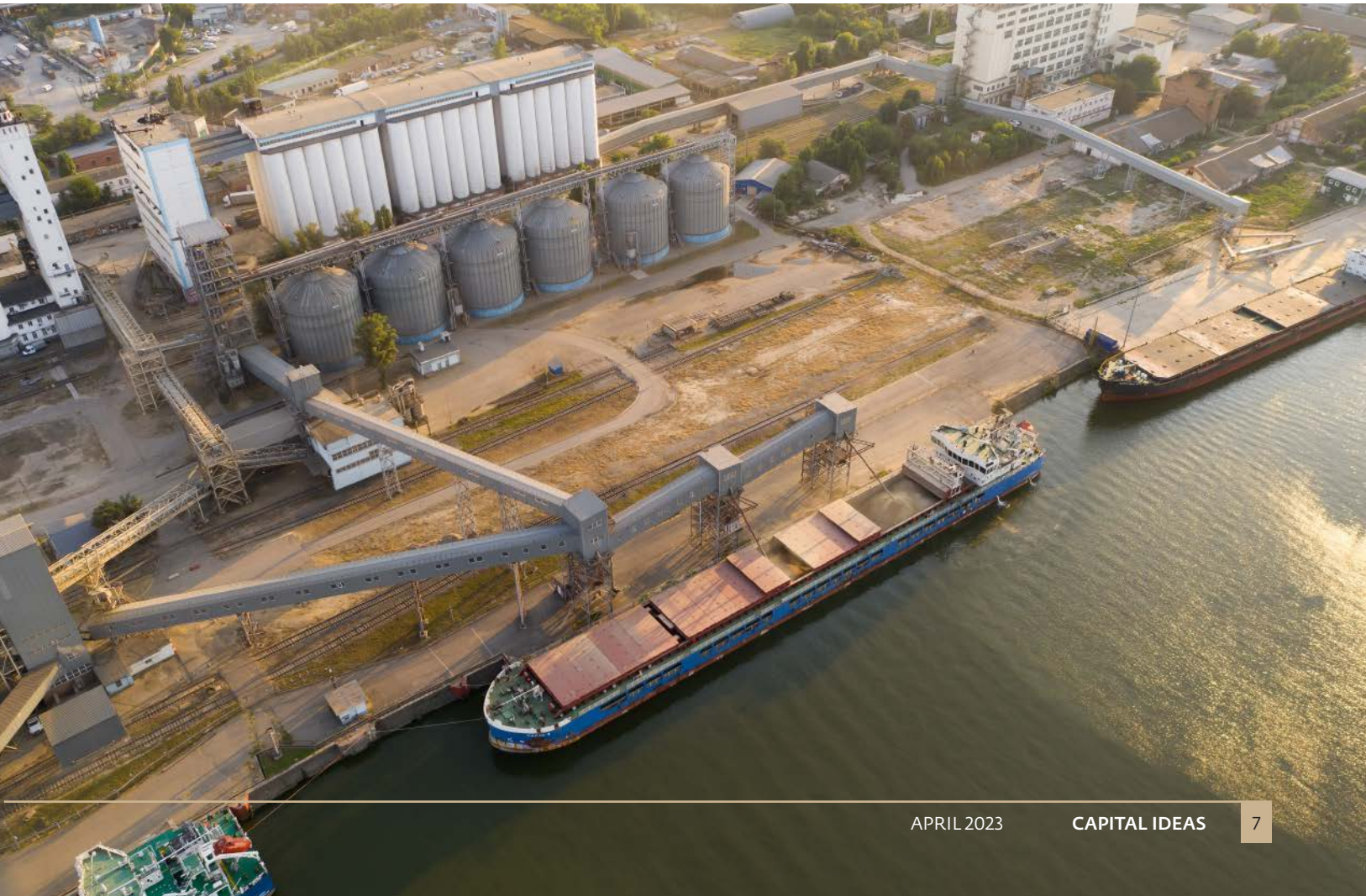
Ivan Timofeev,

Head of Russian
International Affairs
Council (RIAC)

willful attempt to violate export control regulations. Both the Russian citizen and his foreign intermediaries were detained in the USA and then sentenced to prison terms. The “turbine case” demonstrated that Americans can prosecute all participants of a transaction, regardless of their nationality. Another case involves indictment of Ilias Sabirov, a Russian national, and his Bulgarian partners. The US authorities accuse them of shipping American chips through Bulgaria to bypass export control restrictions. They were put on the “black list” of the Department of Trade. They also face the threat of criminal prosecution. The number of similar cases started growing over the last year. For instance, criminal charges were filed against US nationals Kirill Buyanovsky and Douglas Robertson for equipment supplies from the USA through third countries to their Russian counterparties. Potentially, charges against the Russian counterparties have been prepared, but pending publication when the time is right. A lot of media attention was attracted to the arrest of Russian nationals Artem Uss and Yuri Orekhov, who were detained in Italy and Germany correspondingly. The USA pressed for their extradition, accusing them of violating bans on delivery of high-tech products. The European Union also has such practices, and the number of ongoing criminal cases against Russia has grown significantly. Speaking of administrative liabilities, one of the latest high-profile incidents was the administrative fine by the US Department of the Treasury on Microsoft for providing software to sanctioned Russian persons.



These conditions lead to the so-called “excessive compliance” requirements by foreign suppliers, when they refuse to transact even when there are no export control requirements or any other sanctions in place, or they drive up the cost of risk, and the factor of sanctions is often exaggerated to overcharge for supplies. The Russian business should put more effort into exploring legal mechanisms and their practical application by foreign regulators. This expertise is required to control risks of criminal or administrative liability abroad, and also to efficiently assert one’s negotiating positions with foreign counterparties.



ATYPICAL CRISIS

Many experts expected the Russian economy to crumble if not at once after the introduction of the first sanctions, then over a short-term period. What helped the economy to keep its ground? How are Russia's regions managing? Natalia Zubarevich, Professor at the Department of Economic and Social Geography of Russia, Faculty of Geography, Lomonosov Moscow State University, answers the questions.

Natalia Vasilievna, could we say that the Russian crisis of 2022 is atypical, as compared to all the previous crises?

Indeed, we could, and it is atypical because it unraveled very slowly, despite expectations of a crash. What were the contributing factors? First, the outstanding efforts of businesses to find alternative product markets and alternative suppliers. The Russian business is remarkably tough. It has survived six post-Soviet crises, it has tremendous experience and understanding of what needs to be done. Business activity is what matters most.

Second, the government has undertaken several effective measures, including the clearance to use parallel imports. Moreover, increased budget-funded investments supported the economy. For instance, the construction volume in 2022 went up by 5%. Residential housing construction showed growth too, and not due to state budget investments, but on the back of subsidized mortgage lending, extended throughout the year of 2022. These measures propped up the construction companies.

Furthermore, as early as in the spring of the last year, business started active investments into equipment and spare parts, increasing stocks to mitigate the negative effect of the sanctions. What is atypical of this crisis is that investments soared by almost 5%. During a crisis, investments usually take a plunge, but it did not happen in 2022 for the following reasons: a) state budget-funded investments soared; b) business ensured it was stocked up on spare parts and equipment.

Third, there was no collapse of household income due to state support to low-income households and pensioners. The state budget allocated very large amounts of funds specifically to prop up low-income population groups and elderly voters. These measures paid off. The real income decline was small, 1% only; and the spread of poverty even contracted a bit.

Natalia Zubarevich,

Russian economist-geographer specializing in socio-economic development of the regions, social and political geography, Doctor of Sciences (Geography), Professor at the Department of Economic and Social Geography of Russia, Faculty of Geography, Lomonosov Moscow State University.



The fourth atypical feature of the 2022 crisis is the reduction of unemployment. This applied not only to unemployment but to underemployment as well, which displayed almost no growth. The typical adaptation of the Russian labor market to crises is not growing unemployment, but increasing underemployment, when people work shorter hours and get lower pay. Underemployment grew slightly in the second quarter of 2022, but the growth rates were incomparable to those under the COVID crisis, when due to lockdowns the underemployment rate in the second quarter of 2020 grew by almost 4 times versus the last quarter of 2019. At the early stage during the 2022 crisis, this growth was very limited, and it started falling from the third quarter of the year. What were the reasons?

The first, primary reason for this was that currently there are very few young people, aged 20-24, on the labor market. Their number is almost by 30% lower than the number of people aged 30-34. This is determined by the Russian age pyramid. The young people, born in the late 1990s, when there was a long slump, are now hitting the labor market, and they are few in number. A large number of retirement age people are leaving the market, and the disbalance is obvious. The second reason would be the 300 thousand mobilized military personnel. The third reason, at least half a million of people who left the country. By the end of 2022, there was visible shortage of

blue collars, meaning workers, especially highly skilled workers. There is an acute shortage of workers in construction and manufacturing industries for many job openings. This is why there was no unemployment growth. The unemployment rate went down in accordance to the ILO methodology and by registered unemployment numbers.

All these atypical features seem to imply a question: "What crisis? Investments are on the rise, income shows little decline, poverty rates aren't going higher, unemployment is going down." However, it must be understood that the results of 2022 are reflective of survival, and not of development. Parallel imports work more or less for imports of consumer goods only. The situation for component parts is worse, it is even more complicated for equipment, especially high-tech, let alone dual-use equipment. When the time comes for equipment replacement, there will be the unavoidable question of where to get all these things? Not everything can be bought in China. Therefore, in 2022 we had a soft start of the crisis, while many risks got carried over to 2023.

Were there any other reasons for Russia to have a very soft landing during the 2022 crisis? Soft landing was facilitated by tremendous extra oil and gas revenues, received by the federal budget. It's hard to recall any similar rise in revenues ever. Oil and gas prices soared and imports nosedived in May by almost 40%. By the end of the year, imports almost recovered and the slump amounted to about 10%. The giant gap between imports and exports of about \$330 bn at the year's end led to a drastic strengthening of the ruble. This would be the fifth atypical feature of the crisis – the ruble had plunged in March and started swift recovery by summer, and we lived with the strong ruble until December.

At present, the situation is quite different. For certain, the Russian state budget won't have such tremendous oil and gas revenues in 2023. The 2023 deficit, adopted in the federal budget law, will most likely be significantly higher. The state budget crisis will continue.



The sixth atypical feature shows a very small decline in manufacturing, less than 1%, in 2022. The numbers for the processing industry are slightly lower, a decline of 1.4%, and the mining industry even displayed minimal growth. Oil production rose by 2%, coal production did not slump even with the sanctions in place. Only natural gas production showed a major contraction by 13%, because Russia had cut its exports on its own. In January–February 2023, there was no reduction in oil production, oil is being sold to Asian markets, oil products are heading towards the same markets as well. The Russian business with the support from the state managed to buy a lot of tankers to ship oil and oil products, bypassing sanction restrictions. Yet, exports revenues are now significantly lower than in 2022, this is why the federal budget is taking a hit.

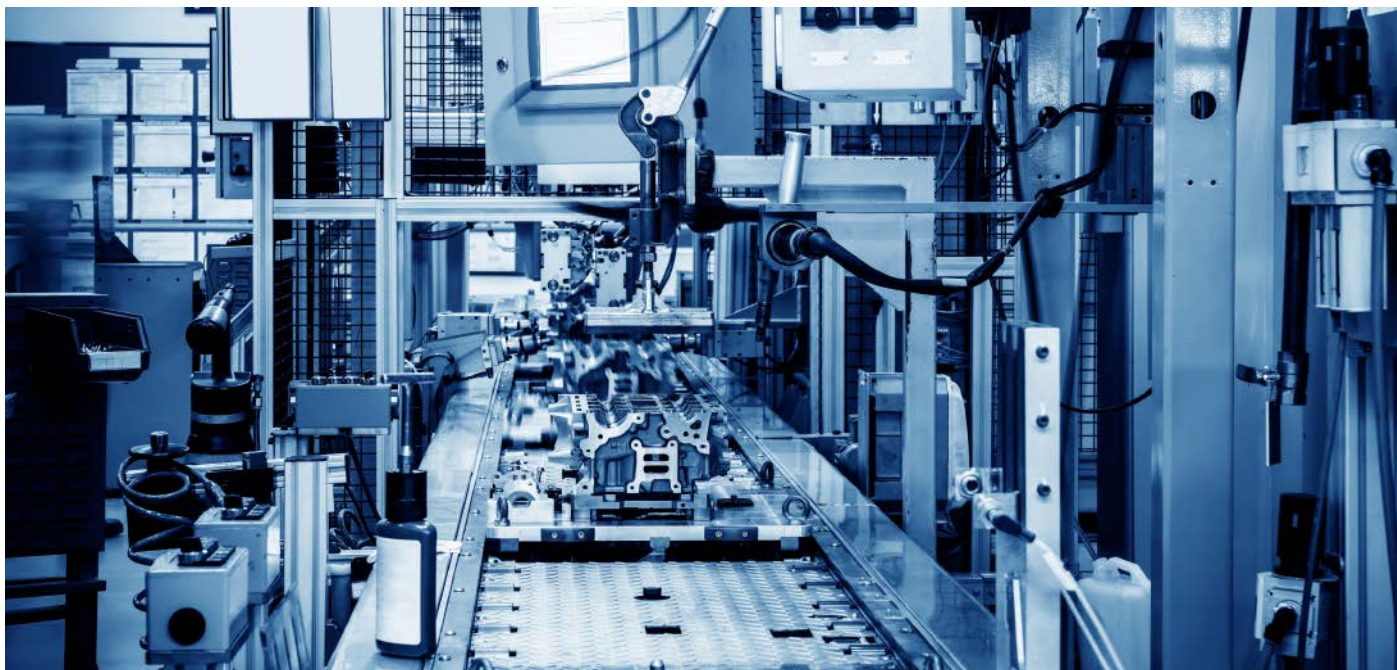
In 2023, there will be no growth of unemployment or a significant slump in household income. The state budget allocates huge amounts of funds to support low-income families with children. There will be no plunge in industrial manufacturing, business is adapting to the changing conditions. Nevertheless, the results of the year in terms of investments and budget revenues at all budget levels will be highly questionable.

Are there any issues concerning further oil exports?

Yes, there are. After the introduction of the sanctions, there has been no reduction in production volumes, oil companies have found alternative markets, bought tankers, etc. Still, there is a big issue. Russia is a country dependent on oil revenues. Last year, about 50% of total federal budget revenues came from oil and gas exports. Hydrocarbon exports value is going down, and it is having a negative impact on the federal budget revenues. At the same time, budget expenditures are growing fast. What are the sources to counterbalance them? Currently, we witness a growing deficit.

Which regions, do you think, are successfully powering through all restrictions and hardships?

In 2022, these were oil-producing regions, they did not see any production volume plunges, except for Sakhalin. However, this year a contraction is imminent. Timber processing regions, primarily the North-West, have significantly reduced their production volumes, because they exported up to 80% of their products to European markets. The sanctions



started out in the summer and by the year's end, Karelia and Arkhangelsk region encountered huge problems.

There was no contraction in coal production, but its exports plunged by 7%. There are increasing risks for Kemerovo region, since it is the major Russian coal mining region. Kuzbass will hardly be able to ship out all of its production volumes. In 2022, owing to high coal prices, the budget revenues of Kemerovo region showed fast growth, but in 2023 global prices for power generating coal started going down.

Sanctions have led to declining production volumes in steel industry, especially in the regions of the European part of the country. The processing industry in Lipetsk and Vologda regions fell by 6%, and the steel industry is the primary industry in these regions. There are ongoing issues in mineral fertilizer-producing regions, these are Perm, Novgorod and Murmansk regions. Global product prices are high, but exports are limited due to vessel charter and payment issues. The volume of mineral fertilizer production went down by 10% in 2022.

Regions, specializing in food industry, are stable; last year they saw sustainable growth. The fastest growth is displayed by regions with a large share of defense industries in their industrial structure: these are Bryansk, Tula, Ryazan, Vladimir, Penza, Kurgan, Kirov, Omsk regions and the Republic of Udmurtia.

What about the traditional auto industry regions?

There was a major processing industry slump, down to 20% in Kaluga and Kaliningrad regions over 2022. Samara and Ulyanovsk regions experienced a less drastic decline (6-8%), because AVTOVAZ in Samara region resumed production of older car models, and the region has other processing industries, petro chemistry, etc. Cars by UAZ are also not very modern, they require only but a few imported parts. These regions took a significant plunge and their recovery will be slow.

Could reselling help out in the short-term period?

No, it couldn't. Production facilities have to be reconfigured to make Chinese models. This cannot be done fast. There are also uncertainties in terms of demand. For now, the population is repairing whatever cars they have. I have no idea what will be the demand for Chinese cars, assembled in Russia. The car industry, primarily passenger car manufacturing, has been dealt a major blow, but it is not related to the sanctions. It is related to the exit of global companies.

How are things going for retail?

Moscow, Saint-Petersburg and Moscow region saw a drastic decline in non-food retail due to the exit of global retail chains and the car sales slump. In 2022, Moscow recorded minus 14%, Saint-Petersburg and Moscow region – 16-17%. Shopping malls show vacant storefronts, because there are no replacements for the global retail chains that have gone. Recovery is slow. All major agglomerations took major hits in non-food retail.



Reformatting Global Value Chains

Nina Tsvetkova,

Ph.D (Econ), leading researcher, the Institute of Oriental Studies of the Russian Academy of Sciences



THE RISING ROLE OF GLOBAL VALUE CHAINS (GVC) HAS BECOME AN IMPORTANT MANIFESTATION OF GLOBALIZATION. THESE CHAINS ARE UNDER THE INFLUENCE OF TRANSNATIONAL CORPORATIONS. COVID AND GLOBAL ECONOMY FRAGMENTATION MADE ADJUSTMENTS TO GLOBALIZATION PROCESSES AND CREATED CONDITIONS FOR REFORMATTING GLOBAL VALUE CHAINS.

Modern global economy has been increasingly building around global value chains, or simply put, global value chains, GVCs. These are understood as a sequence of key business functions or production cycle phases – design, production, marketing, after-sales customer services. It was even proposed to view the global economy as the sum total of global value chains. This, of course, would be an exaggeration. This kind of international division of labor, where different production process stages and R&D are located in different countries, is not typical for all economy sectors. But in a number of industries GVCs play a leading role– for example, in digital equipment production. R&D operations for computer and smartphone production are concentrated in developed countries (primarily in the USA, a Designed in California inscription on gadgets comes to mind), manufacturing of components is located in Taiwan, the Republic of Korea, Japan, China, in some cases – in Singapore, Malaysia, Thailand. Until recently most devices have been assembled in China. For instance, Apple's iPhones were initially put together by a Taiwanese Hon Hai (Foxconn) company, to be followed later on by China-based branches of such Taiwanese companies as Pegatron (another unit of this company manufactures products under its own Asus brand) and Wistron. The GVC for iPhone production looked like a smiley emoticon. The largest part of added value corresponded to the start of the smiley (design, research) and to its end (marketing, advertisement, after-sales services in iPhone importing countries). And production of components, assembly of final products take up the lower part of the smiley, their share in added value is small.

However, the start of the coronavirus pandemic demonstrated significant changes. Introduction of lockdowns, factory stoppages – China was the first to do it in February 2020 – led to disruption of regular supply, fine-tuned within global value chains. Disruptions occurred in deliveries of electronic components to Western European enterprises of various economic sectors.

And this was just the beginning. In 2022, as the geopolitical situation had become more acute, the issue with global value chains got more aggravated. It turned out that almost all countries depend on supplies of critical electronic components – microchips, integral circuits, and some specific microchip types are manufactured only by individual companies and countries, particularly, Taiwan Semiconductors Manufacturing Corporation and its factories in Taiwan.

In 2023 China's dependence on imports of microchips (integral silicon chips) remains very high. In terms of value the country spends on microchip purchases more than it spends on buying oil. China is focused on developing its own production, it adopted relevant programs back in 2020. There is also ongoing reshoring, where production facilities move back to countries of TNC origin: the USA, the home country for such microelectronics leaders as Intel, Qualcomm, which previously moved manufacturing to those countries where labor is cheaper than in the US, now is striving to ship microchip production back to its territory. In 2022 the US passed 'CHIPS for America Act' [the Creating Helpful Incentives to Produce Semiconductors and Science Act of 2022], providing for \$280 bn in investments in order to ramp up microchip production, speed up R&D, create regional hubs, increase numbers of competent specialists. TSMC is helping the US in bringing back production of microchips. Apple is no more reliant on China-based companies only for assembly of its iPhones. Now iPhones are assembled in India by the very same Taiwanese Foxconn, Pegatron and Wistron companies. India has set a goal of establishing its own microchip production. A widely used component of the XXI century, microchips, has become a most critical resource in the world, it is called the new oil. Over the next 10 years, microchip production volumes are deemed to exceed a trillion dollars, higher demand is driven by development of Artificial Intelligence technologies, cloud computing, electromobility. Governments of many countries are trying to build a microchip manufacturing ecosystem in their territories. India joined the race as well and in December 2021 it passed an India Semiconductor Mission (ISM) manufacturing program. One of microchip production projects is being implemented by a joint company of Indian Vedanta and Taiwanese Foxconn companies.

Today they are increasingly often talking not of the globalization, which will take the mankind to the global consumption society, but of fragmentation of the global economy. For example, this is stated by the International Monetary Fund. This is why we are facing the phenomenon of reformatting of global value chains.

The global geopolitical situation has made this process imperative.

STRESS TEST YEAR FOR AUTO INDUSTRY

It is obvious that the auto industry is undergoing a shock restructuring. The year of 2022 hit hard the industry. Have the major issues been resolved or lean years are still ahead of us? What challenges have been handled, and what problems are yet in the making?

Yes, the year 2022 was indeed a shocking year: all major players left the Russian market and correspondingly, production cycles of almost all assembly plants were finalized. In fact, since the last year only Russian brands are formally present on the Russian market. Speaking of passenger cars, these are Lada and UAZ brands. As for light commercial and heavy truck segments – we have KAMAZ, Sollers and also Chinese brands. Haval has its own assembly line in Russia. Imported cars also come solely from China. All other brands officially ceased collaborating with Russia. This was the situation last year.

The year 2023 was marked with the start of a recovery. Production facilities are going back online; some have already resumed assembly operations. Avtotor, a Kaliningrad-based plant that used to assemble BMW, Hyundai and KIA, has signed a cooperation agreement with Kaiyi: screw-driver manufacturing began this year. Kaiyi is a new Chinese brand. In April 2023, they also pitched the BAIC production lines, it is also a Chinese brand. And there is an agreement with another, third brand from China. Manufacturing will start very soon. It amounts to the following conclusion: Avtotor resumed its operations with new partners. Renault and Nissan assets went over to the state, represented by NAMI. Last year, a Renault factory was relaunched under Moskvich brand. In fact, these are cars made by Chinese JAC company. One car model with a gasoline or electric motor is already being assembled (Moskvich 3/3e), and a second one will go into production very soon (Moskvich 6). And Ford Transit production facilities are now used to assemble three car models by Sollers.

Were there shifts in consumer preferences?

If we scan the market structure, i.e. the composition of the demand and sales, this is the picture we see: about 40% are domestic cars (primarily Lada), 40% are brands from China and 20% represent everything else, made up from cars imported before last year's February and the so-called parallel (or alternative) import. This means the following choices for customers: if you don't want a Chinese car or LADA or UAZ, then you either have to order a car from a car dealer, just like back in the 90s, so that a car will be delivered from Europe or Republic of Korea, or choose a pre-owned car with small mileage, or a brand new car, which is also a possibility. However, all these options have become significantly more expensive. Prices are many times higher than they were before February 24, 2022. Consumers do not have much of a choice. They have to choose from what's available: purchase a Made



Sergey Tselikov

director, AUTOSTAT analytical agency, provided insight on the current state of the Russian automotive market

in China car or place a customized order. There are dealers that have already started large-scale deliveries, with China as the primary source. This applies even to famous car brands: Volkswagen, Mazda. During the last year, there were leftover stocks from Kazakhstan dealerships and some cars from Georgia and UAE, but now there's little choice of that can be imported into Russia. That's about 20% of leftover stock.

So, this means the remaining options are either to import individual cars just like back in the 90s, or to choose a Russian or a Chinese-made car?

China is the only country to continue official deliveries of cars. Of course, it is not the country but carmakers. The Chinese auto industry is very robust, the country makes over 30 million passenger cars per year, so the demand of the Russian market for a half a million or a million cars per year could be easily satisfied by Chinese car brands. China is a clear beneficiary under the current circumstances.

It is often reported that the current situation will revive the Russian auto industry. Is it fair to say the industry is coming back to life, when Moskvich production is essentially based on Chinese models?

On the one hand, one could say "yes", we can potentially bring it back to life. On the other hand – it's rather complicated. I can tell you one thing: rehabilitation of the Russian car industry will be complex, long-term and costly. But we have no other choice, we will have to restore and rebuild our car industry.

It was reported that dealers were bringing in Iranian-made cars as well...

There are two manufacturers in Iran that are ready to enter our market - Iran Khodro and Saipa. However, the scale of Iranian auto industry is rather limited. For example, China makes 30-35 million cars per year, and Iran makes just 1 million, which, by the way, is about the same as Russian production volumes. To enter the Russian market, the Iranian auto industry has to significantly increase its production capacity to deliver volumes, and it does not have the potential for this. There will be Iranian cars on the Russian market, maybe at some point there will be assembly production lines, but these volumes will be low. Iran has been living under sanctions for quite a long time, and all of its car industry was built around what they had at the time of introduction of sanctions. As such, these are car models by Peugeot-Citroen and Toyota concerns, which were present in Iran at the time, and which were used as baseline models for Iranian cars. These are 20-30-year-old models, meaning basic models, which are the backbone of their auto industry. Subsequently, there will be deliveries, but these cars, speaking frankly, are inferior to Chinese models. China has made a great move forward. Cars from the Celestial Empire are now on par with Korean cars. They are comparable to products of European and Asian makers.

How is replacement of Western car parts makers going?

Look, initially the Soviet auto industry was represented by AVTOVAZ, Moskvich, UAZ, GAZ. These companies had strong market positions, they had their own car component and parts suppliers. Over the latest 20 years, Russia has followed a specific concept of industrial assembly. The development strategy for the domestic auto industry was based on entry of global manufacturing corporations to the Russian market. For example, Volkswagen had built a plant in Kaluga and a whole cluster of component manufacturers grew around it. In Saint-Petersburg, at the same time with the start of Hyundai and KIA operations there was Hyundai Mobis, which was the primary supplies integrator, with a cluster of suppliers around it. Everything was built around those manufacturers assembling cars. Now, the global

corporations are gone, as well as spare parts makers. Over these years, only a few domestic companies remained operational, they had been ousted by global players. There are bits and pieces of the domestic component industry left. It will take years to rebuild domestic production. But we can be helped out by China, which currently is a major maker both of cars and of components, and it will be no big deal for the Chinese industry to replace any components of global car corporations. That's why all our hopes are centered on our Eastern neighbor. Everybody is looking to China. If it helps us out, then everything is going to be all right, and if for some reasons China takes a different turn, then everything is going to end in dire straits.

Will the Chinese buy out the production facilities left in Russia after the exit of Western component manufacturers, or will they make their entry under some specific conditions?

This is a very tough question. Each case is considered individually. China has little need in these production facilities, they can simply set up deliveries of required parts. The Celestial Empire can deliver any component parts, from electronics to gearboxes. They have everything. Chinese manufacturers are rather reluctant to invest into production facilities in Russia, unless Russian authorities put forward relevant incentives. Such turn of events is also possible.

Are there any cases where Russian businessmen try to buy out factories for production of car parts?

The current situation is so complicated that there are no obvious moves on this track. The market has been waiting for a resolution of the situation for a very long time. I have described the state of affairs. What's next? It's hard to say, because the Russian market is waiting for the upcoming developments.

Apart from the news of Moskvich purchase or rather buy out, there aren't any similar prominent cases?

The state acquired the Moskvich company for €1, because it's a landmark enterprise. Similar events have been happening related to car tyre makers, assets are being handed over. Every company is in a unique situation.



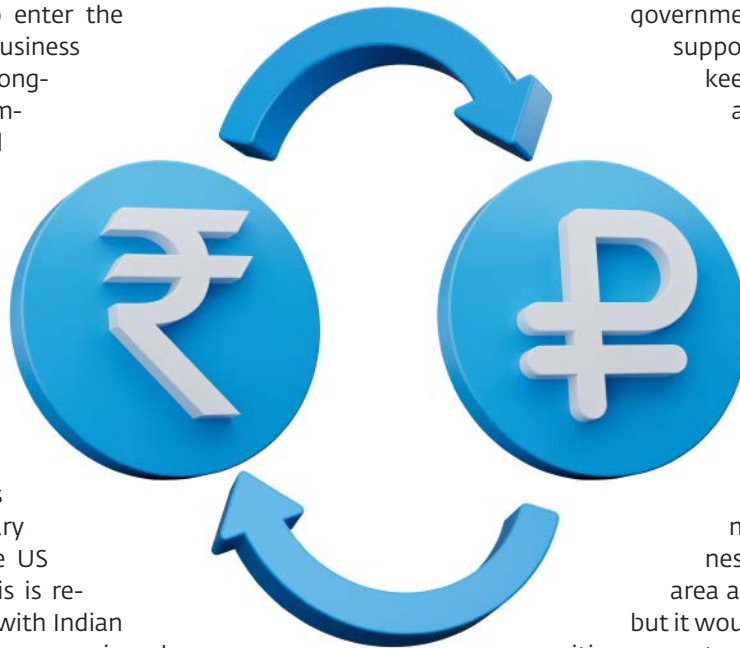
India is becoming a quintessential partner of Russia. Both Russian and Indian business people show increasing interest in mutually beneficial cooperation. Andrei Terebenin, managing partner of Sistema Asia Fund, reveals what is hidden under the hood of the Indian market.

TWO SIDES TO INDIAN MARKET COIN

Today, Russian business people are on the lookout for new suppliers, new target markets and new partners. How comfortable is India for Russian business?

There are two sides to this coin. On the one hand, from a political perspective India is a country that is friendly to Russia. At present, there are hardly any regulatory hurdles for operations of Russian companies in India. This is a major advantage, because a significant number of countries we traditionally dealt with, now make reservations when dealing with Russian business partners, to put it mildly, and scaled down their cooperation to a minimum. The second side of the coin is that India is a difficult market, with specific mindset and business practices. It is easy to enter the Indian market but not so easy to exit it, moreover, building sustainable interaction with business partners inside India is a very tough task. Business people with experience in the Western market find it hard to understand which drivers work in India at the stages of decision-making and keeping business relations steady going. In fact, there are plenty of these drivers. They are most versatile, it would be hard even to catalogue these drivers, and correspondingly, it would be not be easy to take them all into account while building relations with Indian partners. This market needs to be researched, and subtle details of doing business and developing business relations in the country must be properly understood. Accordingly, on the one hand, you can perform routine operations quite freely, but on the other hand, there is the challenge of overcoming the complexity of building long-term relations.

The most important thing that we always say to our colleagues, who enter the Indian market – here the business focuses exclusively on the long-term game. In India, it is impossible to come, strike and get one-off deal done and walk away, happily wagging your tail. Most likely, this achievement will never happen again. This is the golden rule. The second factor, the other side of the coin is that regulators allow collaboration with Russian companies, but many Indian businesses are apprehensive of secondary sanctions introduced by the US and European countries. This is reflected in practical relations with Indian entrepreneurs, because here everyone is making its own decision on how far he or she is prepared to go. There were cases when a deal was in its latest stages, and then, all of a sudden someone or something would barge into the process, and the deal would fall through. This factor is omnipresent and it is a major obstacle, of course. It usually happens “in the shadows”, but India is itself navigating “in the shadows” in many respects, and today, this is even more evident. Nevertheless, one should and need to engage with India.



In the long term, India will become our true major economic partner. The country imports a lot of oil and rupees are accumulated at accounts in Indian banks or at accounts of our banks, operating in India. There is a big issue of unbalanced trade between India and Russia. We supply mostly oil, and import very little from India, at least at present. Why is that? It is due to various circumstances. Maybe these are not the products that the Russian Federation, our companies, our population need and are keen to import. On the other hand, maybe, the products we would like to have and get delivered, do not get approval by suppliers. Indians are primarily worried about issues with payments going through. Now, Russian banks are doing their best to get this issue resolved by building a different payment system, bypassing SWIFT. This will make financial settlements easier. Due to the current situation with ruble and the lack of access of Russian banks to US dollars, a standalone independent settlement channel needs to be devised. Active work on this track is underway, and if it leads to solid practical results, it would be a major achievement that would accelerate and increase the trade turnover between the two countries.

Which areas of Indian business have the most favored treatment for Russian companies?

We should leave aside specific industries and review the overall government of India approach to the development of economic relations with Russia. This is being emphasized at all economic forums, bilateral conferences, where business people from the two countries articulate their interest in the development of economic ties, and government representatives pledge full support. Further on, a lot of details keep popping up, but it is important that positive intentions are in place. India offers opportunities for doing business. One can start building business relations and resolving issues, including payment issues, without haste and waste. Russian companies are now actively operating in the country. There is very strong cooperation in pharmaceuticals, medical equipment supplies, etc. Many business people are working in this area and are achieving good results, but it would be unfair to say that authorities support a specific industry since it is not customary in India. Even state-owned companies determine their policies and priorities on their own.

Foreign investors, coming to China, are required to establish joint ventures with local businesses. This approach enables transfer of technologies to Chinese companies. Are there any similar practices in place in India? How accommodating are Indian laws in this respect?



There are no such laws in place. In India, you can establish your own company, 100%-owned by a foreign entity. Moreover, there are special mechanisms for this purpose. For instance, there is a project called Gujarat International Finance Tec-City (GIFT City). This is a free economic zone that makes financial settlements easier. It means that the tax regime is designed specifically for your benefit as a foreign investor, enabling you to enter the market and set up a 100%-owned company. India offers a favorable and quite simple registration process and tax regime for you to start operations. If you want a 100%-owned company set up with Russian investment, you are free to do so, there are no restriction on the part of the state.

Are Indian partners reliable?

There's no such notion as reliable or unreliable, just the same as there are no good or bad people. India is a large and complex country, and various situations are possible in any large and complicated country. To achieve success, relevant policies and adequate actions are required. It is not Europe; things are much more intricate here. If you sign a contract, you must understand that if it is breached for any reason and you go to court, you will be put on a waiting list. At present, courts are hearing cases that are about 5 years old; correspondingly, your case might be dealt with approximately in

5-6 years. This system is traditional: legal foundations and thorough preparation of contracts are very important in India too. A contract is a contract, wherever you are, but in this country, things are strongly determined by relationship. You have to understand your partner's motivation, respect partner's position and protect your interests in line with national peculiarities and your current state of affairs. This is why working in India requires people with special training, who are interested in and motivated to work here. What matters most, people must enjoy the country where they are staying. Partners immediately detect the token signs of sympathy. India requires building long-term partnership relations and learning every minute detail: habits, business rules, and then you will feel yourself comfortable. Then the day will come when you would eagerly admit: "Yes, we entered the Indian market and we can expand our presence here, because we understand the way things work here."

Please, give us some examples of successful Russian-Indian cooperation

This is a good question. There are such examples, but it is not common to discuss them. This is a rather specific market, and no one will ever tell you: "You know, we made good money in India." Here people do not like showing off or boasting of their success stories."

MOSCOW
interior
and design
week

May 6-9, VDNH

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DEPARTMENT
OF ENTREPRENEURSHIP
AND INNOVATIVE DEVELOPMENT
OF MOSCOW

THE MOST ANTICIPATED SEASON EVENT IN THE INTERIOR AND DESIGN INDUSTRY

The Moscow Interior and Design Week Exhibition is the most significant annual event in the interior, furniture making, and comfortable environment design industry.

Moscow Interior and Design Week Exhibition will be held on May 6-9, 2023 in Moscow at the VDNH venue. The event will bring together more than 400 leading domestic brands that will present the best samples of furniture, interior items and finishing materials.

Visitors will be able to purchase suitable products from a huge assortment. There will also be a business program –

open lectures and master classes by well-known manufacturers, designers, and architects.

The first Moscow Design and Interior Week was held in November 2022. It was attended by over 350 companies, including 17 international brands from 9 countries. The exhibitions were visited by 213 thousand people, and more than 70 % of the presented products were sold.

The exhibition showed that the goods of Russian manufacturers are not inferior in quality to foreign ones. Entrepreneurs were able to increase their customer base, find new partners at home and abroad.

THE ONE-STOP SHOP FOR FOREIGN TRADE

The government approved the main directions for the development of the «One Stop Shop» system in the field of foreign trade in 2023-2024

The document was developed considering internal and external challenges for the development of the country's foreign trade. The main task is to simplify the receipt and increase the availability of services for exporters and importers.

To achieve the goals, it is planned to form a complete list of services and support measures at the federal and regional levels in the field of foreign trade and improve the work of state information systems that provide access to such services. The «One Stop Shop» system will be integrated with the information systems of state authorities and organizations to promptly notify users of the support mea-

asures available to them and the results of the provision of services. A regulatory and technological basis will also be developed for the prompt and convenient interaction of entrepreneurs with departments. Moreover, a unified register of participants in foreign trade activities will be created to more effectively support exporters and importers based on specific business situations.

The Ministry of Economic Development and the Russian Export Center will coordinate the development of the system.

Now more than 80 services operate in the system, including the provision of state support measures, obtaining licenses for the export of several goods and export permits, as well as business services of export development institutions and commercial organizations.

MOSCOW INNOVATION CLUSTER FUND



THE MOSCOW INNOVATION CLUSTER (MIC) WAS ESTABLISHED IN 2019 TO SUPPORT COOPERATION OF MANUFACTURERS, RESEARCHERS, EDUCATORS, STATE-OWNED CORPORATIONS, SMES, IT COMPANIES AND TO PROMOTE IMPLEMENTATION OF NEW INNOVATIVE PROJECTS.





35 000

As of February 2022, there were over 35 000 participants and partners of the cluster from Moscow and 81 regions of the Russian Federation.

The i.moscow digital platform is a key element in the innovative ecosystem of the cluster serving as a one-stop shop for the world of innovations for the business community. The platform offers remote access to 15 free services, including an OEM manufacturing exchange, rental of premises, a prototype factory and a support program navigator. Cluster participants can also use the i.moscow platform to search for investors, undergo training, select pilot platforms for their startups and apply for participation in development programs for launching and scaling up proprietary innovative ideas.

15 intersectoral clusters are set up for implementation of cooperation projects in the Moscow Innovation Cluster in the following areas: microelectronics, sports industry, auto sports, biopharmaceuticals, traumatology and orthopedics, laser and radiation technologies, composite materials, artificial intelligence, photonics, environmental solutions, electric transport and unmanned vehicles. These clusters feature over 900 companies.

Regular accelerator programs and technology competitions are implemented for establishment and development of technology companies. Participation in these projects enables innovative business people to go through educational tracks, run pilot projects testing their technology solutions, engage investors and other partners.

As of today, there have been 23 technology competitions in such areas as Social Tech (with Skillaz, HH, TealTech as partners and investors), SportTech (World Class, ASB, Spartak, Russian Rugby, Sportecs, Strategium, STIG), Game innova-

PARTNERS OF THE CLUSTER FROM MOSCOW AND 81 REGIONS OF RUSSIA.

15

INTERSECTORAL CLUSTERS



DIGITAL PLATFORM

i.moscow



23

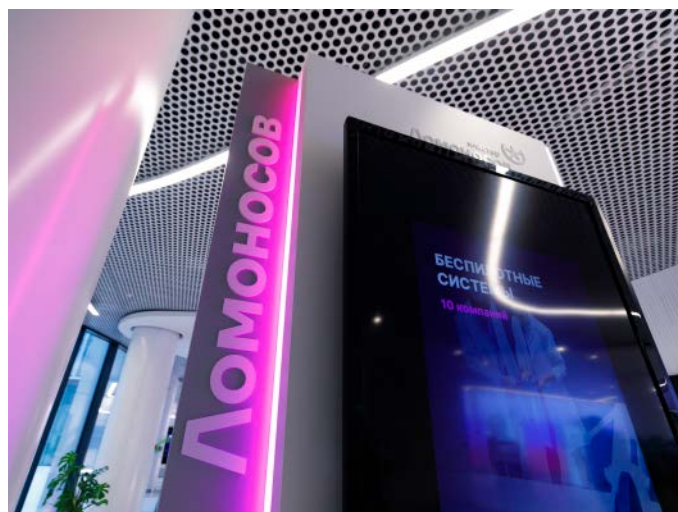
TECHNOLOGY COMPETITIONS





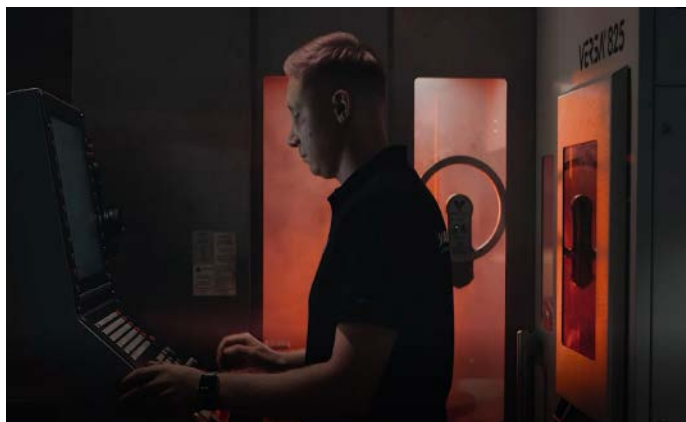
tors (Mail.ru Group, Wargaming, Beeline, Esforce, TealTech), EdTech (Innopraktika, Rostelecom, Skyeng, ED2) and Industry 4.0 (Krastsvetmet, MTS). The total number of applications for participation in the competitions went over 5800, more than 650 projects got involved in competition, over 240 pilot projects were implemented jointly with corporations, over 1,3 bn in investments were raised for participant projects. Over 100 corporations were partners for the competitions.

THE MOSCOW INNOVATION CLUSTER SUPPORTS IMPLEMENTATION OF THE PROGRAM FOR PILOT TESTING OF INNOVATIVE PRODUCTS, ENABLING REAL-LIFE TESTING OF INNOVATIVE SOLUTIONS AT MUNICIPAL AND COMMERCIAL PLATFORMS, AND EXPERT ASSESSMENT OF INNOVATION EFFICIENCY AND ASSISTANCE IN TAKING PRODUCTS TO THE MARKET. CURRENTLY OVER 200 PLATFORMS HAVE JOINED THE PROGRAM.



The cluster performs comprehensive preparation of projects for raising investments free of charge. Innovative companies from Moscow can apply for “Investment Packaging” service. The service assists startups in development of a proper investment presentation and a financial model for a product.

In December 2021, the Cluster together with Sber acted as a key partner in the launch of the Syndicate, a club for private venture investors, bringing together those who are interested in investing into promising technology projects of the City of Moscow. Over 400 participants get access to unique projects and can balance out their financial load, reduce risks and receive essential knowledge. This will help create a new impetus to development of the venture market of Moscow.



At another point, a Venture Academy for studying rules for investment into innovative companies was opened in January 2021. Education in the academy is free of charge, but is based on competitive access. Educational activities provide participants with information on how to increase initial investment capital, make a profitable financial deal, open an investment fund, find partners to set up a syndicate, determine venture trends that would be leading in the next few years, and on how to reduce investment risks.

Today, the Cluster brings together over 70 thousand innovators. Focusing on people, seeking to create their own technology business, the Innovator Academy, a practice-oriented program, was opened in November 2021. The program, offering support of experienced business people, helps as-

30 MILLION FOR EQUIPMENT PURCHASE 



sess viability of ideas, test product hypotheses, put together a project team, and features lectures, networking events, meeting with mentors and many other opportunities. The first program of the Academy involved over 600 innovators, who set up 100 project teams. The program ultimately raised more than 30 million for participant projects. Soon, the second stream of participants of the Innovator Academy 2.0 will start their practice activities.

The issue of intellectual property rights protection has been very acute lately. This is why participants of the Cluster are accommodated with the Patent Exchange service, helping build efficient operations with intellectual property results. The service page features over 1,7 million patents. Moreover, now there is Search for invention and useful model patents function available, and Trademark Search is available as well.

Along with these, MIC participants may get patenting grants for inventions and/or useful models abroad and for patenting in the Russian Federation (up to 2 million and 75 thousand correspondingly).

New conditions call for active support measures for domestic industry. So, for example, Moscow companies have access to grants for setting up import-substitution production in the amount of up to 100 million, for equipment purchases (up to 30 million).

The MIC plays a significant role in establishment of special infrastructure for development of cooperation between aca-



demical community and business. In January 2023, the Science and technology innovation center "Vorobyovy gory" (STIC) opened its Lomonosov cluster with the total area of 65 thousand m². The platform brings together companies, performing research and technology operations, and ensures proper conditions for development of breakthrough innovative products, providing tax relief and other preferences to residents of the center. Moreover, for the first 10 years a resident company shall be exempt from profit tax, property tax and value added tax; it will be reimbursed for customs duties, it will not require a permit for educational activities, and insurance rates will be lowered to 14%. At present, there are 60 companies that received the status of a Lomonosov Cluster Resident.

70 THOUSAND INNOVATORS WORK TOGETHER



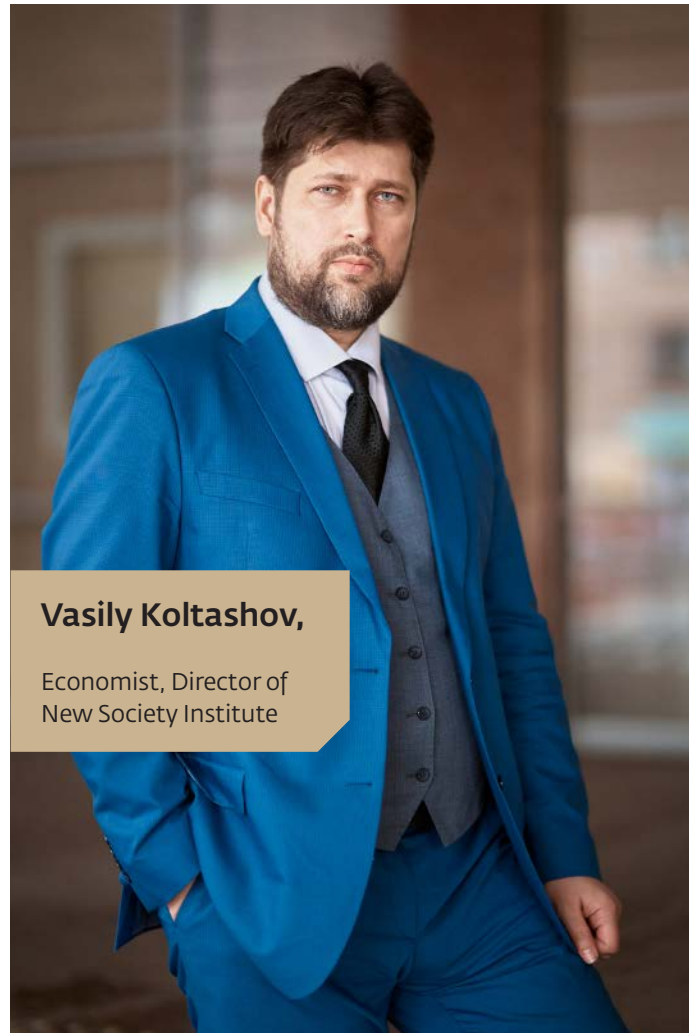
END OF INNOVATIONS?

If you open a textbook on economics, forced upon students in many different countries, you can come across encouraging thoughts: innovations are what moves the global trade forward and finishes crises. And innovations cannot exist without startups and their supporters. However, life teaches us not to put our trust in such “generalizations”. Experience tells us that innovations and appetite for them could more likely lead to market crashes, rather than elevating markets to new highs and even giving birth to a new economic miracle.

What is to follow next? How does all this work in the sphere of innovations? What determines the current situation?

The bankruptcy of Silicon Valley Bank (SVB) and the subsequent banking crisis in the USA led to major concerns about prospects of the innovations sector. Now there are stronger suspicions that the crash of this leading US financial institution, which specialized in the high-tech industry, tells the market of major issues with venture capital startups. And this brings new problems for these startups, but now due to financial issues in the economy. Analysts are correct to point out that SVB was a preferred US bank for innovative projects and was 16th on the list of major American banks.

What should authors of business projects based on innovations expect? The FRS rate has gone up to 5% and this hit SVB hard, and the bank was neither efficient nor sustainable due to the fact that it had invested into the “future”. Innovations and faith therein dragged the business under as soon as the price of borrowed money reached its normal level in the economy. The EU is worried: higher ECB rate brings about the threat of defaults both for traditional and seemingly innovative companies. In Q1 2023 IT companies in the US fired about 120 thousand employees, lots of jobs are cut by high-tech production firms. The EU and the UK are preparing for a rerun of American events.



Vasily Koltashov,

Economist, Director of
New Society Institute

But aren't innovative projects supposed to turn economies around? Why are they dragging the economy down?

A few years ago at the Cambridge University Siddharth Saxena, a physics professor, and the author of this article had a very long discussion on innovations that are most important for the modern economy, on breakthrough technology solutions. These solutions are not related to management digitalization and rationalization, because these measures are most likely a response to lower profitability. These solutions have nothing to do with alternative power generation, wind and solar farms, or with the failed and now purposefully buried in the EU idea of production development and use of biofuels. All these solutions are expensive. Software solutions that are so popular in California, also do not offer any hope for a new economic boom. The crash of SVB only confirms this.

So, what are the innovations that are actually capable of turning the world around and maybe revitalize the real sphere and the sector of services in the West? Saxena was positive that one of these innovations would be revolution-

ary batteries: devices of a new type, capable of long-term storage of huge amounts of energy, which would not cost a fortune. There is ongoing research in this area in England, Japan and other countries. The purpose of this research is to cut electric power transmission costs. Yet another solution could be offered by revolutionary ways of power generation.

By 2020 my opinion of the situation in the capacity of an economist had been as follows: waves of a major economic crisis had failed to accelerate the processes, which have no direct dependence on commodity price fluctuations and shocks to households; it should be expected that 2020s-2030s will leave the energy revolution cause with the fierce dream of drastically cheaper generation at the stage of immaturity, and that energy storage means will continue to evolve without devaluing energy as a resource. The years of 2021-2022 have demonstrated that global hydrocarbons prices could grow explosively. In April 2023 the OPEC+ decision to reduce oil production by 2 million barrels per day drove oil prices almost up to \$87 per barrel, following their plunge under pressure from growing loan rates of Western central banks.

2020-2030s promise to be the time of expensive resources, especially oil and gas. Industrial development will be tied to spread of robotized production lines, though manual labor in construction, transportation and service spheres will be rather essential, even though increased automation levels are expected in transportation, warehousing and large retail operations. Automation will go further in shipping and handling operations. The replacement of human operators in banking phone consultations with robot software is by and large just a toy (which annoys customers, because it wastes more of their time), and not a revolutionary novelty. Software shall be applied over material innovations, and the role of digitalization will ultimately be secondary, though a very important one.

Lab experiments with reciprocating internal combustion engines had gone on for decades, until the end of the XIX century, when the world got the engines that are familiar to all of us. The steel industry revolutions of 1870s had been preceded by smelt furnace experiments of 1850s-1860s and by chemical theory progress. In 1869 Dmitry Mendeleev presented in Europe his periodic table of chemical elements. Was he aware of the importance of the table for curbing the crisis of 1873-1880, which hadn't even started yet?

The year of 2023 began with discussions of loss-making innovations that have sunk a major American bank. Innovations are still viewed as something new, arising as a result of investments, an implemented novelty of any kind. We are still expected to treat new technology solutions seriously; we need to quit thinking that the information field is the primary area for innovations. Biotechnologies show promise of remaining very essential, just like chemical industry technologies: more materials and cheaper production of composite materials are required. New ways to synthesize and new syn-


thesized products are needed. This is where new opportunities for engineers are, without any doubt.

Old innovations, that are obsolete in spirit and of low significance for production, are crushing hopes for replicating the economic reality of the years of 1983-2008. We cannot expect any repetition of features of the old wave of development for the sole reason that there is an upcoming outbreak of 3D-printing and small companies, based on application of new devices, improvement of these companies and their operational methods. There is great potential for small businesses in this. But will it be a replay of the old situation, with increasing numbers of service offices and expansion of service "industry"? Can we expect that production of intangible products would be as important for the economy and would fuel expansion of fictitious capital – the sphere of origination and circulation of securities?

A new economic era will by all means bring a company establishment boom and waves of companies going bust. These waves will be followed by disillusion in some or other innovations. It has always been the case. The role of state in an economy shows promise to be very significant. The term "neo-mercantilism", which is related to "mercantilism", described as a whole plethora of eras of capitalism establishment and development in the XVI-XIX centuries, has been introduced for a reason. Is the first half of the XX century an outlier? Has the recent "age" of "free trade" slogans been a long one? A new mercantilism — patriotic protectionism — was announced by Donald Trump in February of 2023 as the basis for his policy.

Russia, China and India have been following this route without any declarations. This does not mean that over the next two decades there will be less market and small-scale business. Now old bubbles are being burst and many old-fashioned startups are going bust. But we will see success of solutions of the new type, and possibly, rise of new leaders. End of some innovations means start for other innovations and genesis of more remote solutions. This process is distributed across various states in a different way every time. This time old leaders will hardly be in leading positions once again.

2021-2023 will probably sometime later be called as the time of evolvement of a new economic development wave, of a new large development cycle. The end of one thing here shall mean the start of another. A new economic upturn will not evolve automatically, without any pain and it will not be independent from global policy. In 2023 some projects and nations will pass the test successfully and will focus on the future, and others will stall or quit the race. This is the logic of change, where people find their true identity and create their own success. This atmosphere should foster respect for those who engage in a technological or a commercial experiment, keeping in mind the words of philosopher Jean- Paul Sartre that human progress goes on from failure to failure.

A portrait of Denis Dudkin, a man with short dark hair, wearing a dark blue plaid suit jacket, a white shirt, and a patterned tie. He is looking directly at the camera with a neutral expression. The background is a solid dark grey.

Could Artificial Intelligence (AI) replace humans? Should we be afraid of it or, on the contrary, rejoice at breakthrough discoveries in this area? Denis Dudkin, commercial director, “ITELMA Positioning Systems”, provided answers to Capital Ideas on this intricate matter.

ARTIFICIAL INTELLIGENCE CAN BE APPLIED UNIVERSALLY

Mr. Dudkin, where artificial intelligence is in most demand now?

Let's start with terminology. Artificial intelligence is a system or a machine, which could demonstrate human behavior while performing some tasks and gradually learning by using collected information, or in line with the current fashion, information that is "fed" into those machines or systems. What are areas of demand for it? It is in demand absolutely everywhere. Essentially, this is an attempt to replace humans. But I would say that this is rather an attempt to help a person in performing tasks in some areas, absolutely everywhere, and I wouldn't limit it to anything in particular. Artificial intelligence could be used absolutely anywhere: starting from unmanned taxi cabs, which are currently developed by Yandex, and finishing with artificial intelligence diagnosing patients, let alone neural networks. Artificial intelligence is used in multiple industries, particularly, in agriculture, banking, auto transport etc. Currently, there are neural network development activities underway in agriculture, where neural networks will be capable of determining path of action in various situations, depending on condition of plants, filmed by drones. Speaking of unmanned self-propelled agricultural machines, artificial intelligence technologies have been in use in this industry for a long time and will see further expansion in the future.

What are the global ranking positions of Russian artificial intelligence developers assessed by the level of implemented technologies?

I cannot attribute a specific position to them, since there is no ranking table, like they have in sports: first, second, third place etc. I can tell you one thing for sure, we definitely occupy one of the leading positions. If we look around, then all our major Russian companies in all industries, starting from Gazprom and ending with MTS, Sber, Yandex etc., absolutely all of them use artificial intelligence technologies. Let us look at banking. It is commonplace to use virtual assistants, which are also artificial intelligence-based, when a bank customer instead of visiting an office enters a query in an app on his smartphone for a service or for an issue to be resolved. All and everyone are trying to implement one or another artificial intelligence technology to automate their processes, for troubleshooting purposes and ultimately for financial gains.

Do you think artificial intelligence could be dangerous and better not be implemented? Any particular risky areas?

Let me give you an outside of the box answer: I would not use artificial intelligence technologies in information circulation, in mass media. That's because all the information fed to these neural networks, chat bots, whatever you may call it, depends on what has been "fed" into it. So, if you feed it some made-up data, fakes or just erroneous information, then further on its algorithms will be built based on it. The output information will be fundamentally wrong. This could be used to distort opinions of people, their conscience or to feed biased information to companies, politicians, etc. A human can think logically, compare facts and differentiate truth from lies, but artificial intelligence cannot do this. It cannot be taught to differentiate. However, such research and developments are ongoing.

ITELMA Positioning Systems

ITELMA Positioning Systems is a Russian developer and manufacturer of equipment and software for agriculture, road construction and geodesics, designing and manufacturing hardware and software suites, based on spatial positioning technologies, sensors and sensor data processing, machine vision, artificial intelligence and cloud technologies, including development of highly automated and unmanned transport vehicles.

The team of ITELMA Positioning Systems (ITELMA PS) features developers and engineers with previous experience in such major international companies as Trimble, Raven, Topcon, John Deere and CNH Industrial, having extensive experience in development and hands-on implementation of automated solutions for agriculture and road construction, and also high-precision innovative solutions for geodesics and infrastructure projects on the Russian market. Technologies by the company make machines smarter and perform better, make life and work conditions easier, increase production profitability.

A part of NPP ITELMA, a leader in production of digital components for transport, agriculture and infrastructure projects for almost 30 years.

Let look into the most discussed topic of today - GPTchat. Is this really cool or are its capabilities overhyped?

ChatGPT is really cool! But what is ChatGPT? Essentially it is a neural network or a ChatBot with artificial intelligence, as it is called, built upon natural language processing algorithms and developed by American OpenAI company. There has been a lot of hype around it: people use it to write term papers, develop software code, try to draw pictures. And with every generation ChatGPT evolves, writes in a more "thought through" way, recognizes things better. And yes, I would agree that in some instances ChatGPT operates faster than a human brain, but nevertheless at this stage I would say that the product is still raw and it should be used as an assistant, and not the final authority. This is a good tool to help a person systematize data, to automate routine processes. But it is not an independent mind. Once again, if we look at what was demonstrated by experts and testers of the system, it makes quite a lot of errors. As a result, "human factor" errors are replaced by "machine factor" errors.

Moreover, it is hard to use ChatGPT in Russia due to the need to use VPN and initial registration with a Russian phone number.

Now let's go to artificial intelligence implementation prospects. For instance, there are multiple IT solutions, including those based on artificial intelligence, that are implemented at agricultural enterprises. Is our national legislation prepared for it?

Let's look at unmanned vehicles. They are used both in agriculture and in auto industry, the only difference being that cars mostly drive on public roads, and agricultural equip-

ment operates in fields. Unmanned systems have recorded long-term and successful use in agriculture. Today, we could create an ecosystem, including artificial intelligence-based solutions, that would integrate all control elements, starting from automatic driving and ending with corporate financial streamlining.

As for legislation, the Presidential Decree № 490 of 2019 was the key driver for artificial intelligence development in Russia. Essentially, the Decree outlines a national strategy, a roadmap for artificial intelligence and robotics development in Russia. Then, from the level of the President, it goes on to the Government of the Russian Federation. There is a relevant government resolution to approve a development concept, regulation of relations in the area of artificial intelligence and robotics technologies. This means a roadmap and a national strategy in this area are being developed, and this issue is in focus. Every year or several times a year there are government meetings, attended by the President, where development issues for the industry are reviewed. The national strategy is used to make adjustments to national projects. Russia has a national digital economy project. Naturally, key persons, stakeholders of the process are appointed, including representatives of Roscosmos and such institutions as the Higher School of Economics, Skolkovo and relevant corporations, industry leaders. All of them take an active part in the process. At present, the development stage is underway, both in artificial intelligence development and tackling legal regulation issues. We are

About GPTchat

ChatGPT is a language model developed by OpenAI, designed to respond to text-based queries and generate natural language responses. It is part of the broader field of artificial intelligence known as natural language processing (NLP), which seeks to teach computers to understand and interpret human language. ChatGPT is built using a deep learning architecture called the Transformer, which enables it to learn patterns in language and generate text that is coherent and human-like. It has been trained on a massive corpus of text data and can therefore generate responses to a wide variety of prompts, from general knowledge questions to more complex conversational topics. One of the main applications of ChatGPT is in chatbots, where it can be used to provide automated customer service, answer FAQs, or even engage in more free-flowing conversations with users. However, it can also be used in other NLP applications such as text summarization, language translation, and content creation. Overall, ChatGPT represents a significant advancement in the field of NLP and has the potential to revolutionize the way we interact with computers and digital systems.

witnessing the birth of a new industry, and geopolitics play a major role in this, and the first champion in this area will, essentially, rule the world.



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