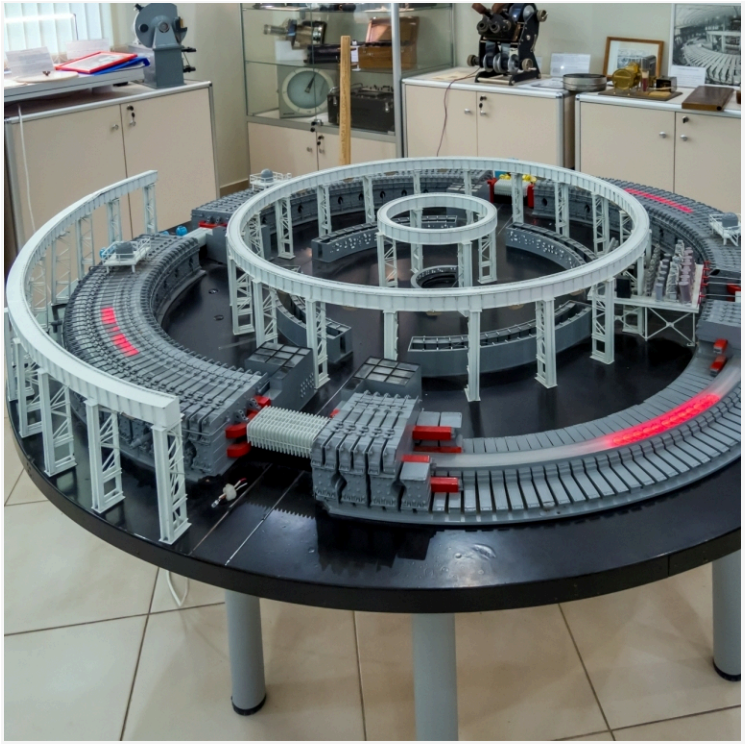

23.03.2026

New Reality: Tech Independence And State Sovereignty In Today’s World

The world has entered an era of profound changes. It is not only about breaking down the old unipolar world order, but also about shaping a new one that is expected to be free from the political and economic dictates of the powerful.

Changes are affecting every facet of modern statehood, covering technology, science, education, and culture...

Pre-requisite

Alexander Shirov, Director of the Institute of Economic Forecasting of the Russian Academy of Sciences and a Doctor of Economics, is convinced that the 'demand for technological sovereignty' is becoming increasingly important. Under the modern high-tech development trend, lack of sovereignty in this area rules out self-reliance and stability in the majority of other areas, ultimately including the political sphere.

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Breaking Down Old System

A new global technological paradigm is emerging nowadays. It will bring about a breakdown of the old system, based on the science and technology supremacy of the West, allowing it to extract super profits and oppress other countries, preventing their progress.

A number of countries have already broken away from technological dependence. India, China, Indonesia, Malaysia, and Vietnam have emerged as world-level leaders in many technological sectors.

“Containment” Led To Inspiration

Russia is likewise swiftly closing the gap and reducing its dependence on Western technologies, which originated in the late 20th century.

The crisis of 2014 gave Russia a strong impetus to accelerate scientific and technological development. Back then, the West embarked upon a course for the economic and technological "strangulation" of Moscow and correspondingly, aimed to break down the country. Western elites were under the illusion that Russia was completely dependent on their “benevolent” attitude and that it would have been enough to restrict trade, provision of technologies and services, and the country would crash as a “colossus with feet of clay”.

Western theories about the "clay colossus" have been around for some time, and though Russia has already proven the inconsistency of these theories more than once, the West, with a persistence worthy of a better cause, falls into the rancid swamp of its delusions, getting a lot of bumps in the process.

In 2014 Western companies, which held a dominant position in a number of Russian economic sectors, began to voluntarily withdraw from Russia. They wrapped up their production, refused to provide technologies and services despite immense

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financial and reputation losses. The West had assumed that it would more than make up for its losses when Russia crashes.

“At that time, large Russian companies, primarily in the financial sector, began considering replacing foreign software (SW) with domestic developments to mitigate risks. 2015 marked the beginning of import substitution in state agencies, which were banned from purchasing foreign software, if the Domestic SW Register featured similar Russian software. In 2018, similar processes started out at state-owned corporations.

The Russian Ministry of Digital Development ("Mintsifry") recommended in 2021 that entities operating Critical Information Infrastructure (CII) switch to domestic products. As a result, in 2022 demand for domestic software increased by 300% year-on-year”, - recalls Roman Volkov, CEO of Russian ITFB Group.

In 2023, Russia adopted the Concept of Technological Development until 2030. It covers 9 national projects affecting 15 sectors of the economy. The priority sectors are new materials and chemistry, advanced space systems, food security, unmanned systems, bioeconomy, transportation mobility, production and automation equipment, healthcare, energy, and so on.

In 2024, Russia invested over ₽65 billion (about $1 billion) in technology sovereignty projects. As of last year, the total volume of open credit lines alone reached ₽2,7 trillion (approximately $40 billion).

Targeted investments drove superior growth, significantly exceeding industry-wide figures. For instance, in 2025, the IT sector saw a growth of around 15%, with computer, electronics, and optical products manufacturing up by 13%.

According to the Russian Ministry of Economic Development, accelerated growth in high-tech industries will continue up to 2028. Production volumes in these industries will increase by 30%.

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Technology Revolution Fruits

Such are the dry facts of plans and statistics. These seem impressive, but only specific achievement cases can provide an insight into the scale of an industrial breakthrough, currently implemented by Russia.

Here are some examples for 2025 only:

Russia has joined the ranks of an elite "digital club" previously comprised only of the US and China. Now Russia also has its own search engine, messengers and social networks.

But the most significant achievement in this area is that an interconnected digital ecosystem is operating in the country. Other members of the 'club' cannot boast of this.

“Few nations can claim that their digital environment acts as a cohesive organism. Some countries are trying to accelerate its development; some are still arguing about standards. We have all of these in place. Nowadays the strength of a state is also determined by its capability to provide modern digital comfort to its citizens. Russia has demonstrated its capability to do this. And this is its real competitive advantage, now recognized worldwide“, — says Armen Gasparyan, Member of the Public Council under the Ministry of Digital Development, Communications and Mass Media of the Russian Federation.

Today, Russia is actively establishing genuine technological sovereignty and developing unique, globally competitive, high-tech products. Moreover, the country has returned to the ranks of states that set the trends in scientific and technological progress.

Russia holds a unique position as the only country to have both built and operated small modular reactors and floating nuclear power plants.

Rosatom specialists have developed a plasma rocket engine, slashing travel time to Mars to just 1–2 months, down from the

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usual year.

Russia is the undisputed leader in building nuclear-powered ships, boasting the world's most powerful icebreaker fleet.

In 2025 Russia became a leader in artificial intelligence development among the BRICS countries, created a unique scanning vortex microscopy method with ten times the resolution of existing methods, the country is actively developing unmanned transportation applications.

Last year a new Alzheimer's disease medication and cancer vaccines were developed in Russia, and a NICA collider was launched in Dubna.

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Moscow’s New Industrial Paradigm

The above list of Russian science and technology achievements of 2025, which is far from exhaustive, and a significant share of victories belongs to scientists, designers and innovative companies of Moscow. Overall, the metropolitan city accounts for over 17,5% of Russian high-tech companies and a third of jobs in the domestic research sector. Forty percent of Russian patents

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have been granted to Moscow-based companies and researchers.

A molecular NGS panel for personalized cancer therapy was developed in Moscow. The panel can analyze more than 500 genes, when its existing foreign counterparts can process only about 300.

Another example of Moscow’s achievements last year is the 3D bioprinting technology for customized implants to repair the eardrum. Doctors have already successfully conducted over 40 surgeries on patients with severe hearing impairment.

A smart neural network-based system, providing for quick and precise decision making for urban infrastructure and metropolitan development, has been created in Moscow. Last year, Moscow ranked second in the world Smart Cities index, falling just 0.1 points behind Singapore.

Moscow's innovation ecosystem, among the first in Russia to embrace high-tech, now includes nearly 30000 industrial enterprises, almost 42000 IT companies, over a thousand of research organizations and educational institutions, more than 1700 infrastructure assets: technoparks, shared equipment centers, engineering centers, pilot testing sites etc.

Breakthrough Ecosystem

“Moscow’s technological development is based on a cluster approach. This approach works better than a distributed innovation environment, where every developer has to search for opportunities to implement his ideas on his own”, - says Dmitry Kulish, Director of the Center for Entrepreneurship and Innovation at Skoltech.

Cluster is no longer a fashionable term, but a tool that really accelerates production growth. Co-locating developers, component manufacturers, labs, logistics, and service providers shortens the technological cycle and reduces product development and time-to-market costs.

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The innovation ecosystem created in Moscow allows companies of various specializations to seamlessly transition from one project stage to another, promptly find partners, and enter target markets. Moscow's extensive, multi-faceted support system enables the development of new products and technologies at any stage of readiness.

Organizations such as the Moscow Innovation Cluster fund serve the goals of technological development. The Cluster connects the city, major businesses, investors, research teams and start-up companies. The cluster drives innovation and serves as a support resource for Moscow's tech sector.

The 'Innovators Academy' program helps startups develop and refine their technological ideas with the support of experienced mentors.

To design, produce, test, and certify any product or component, you can reach out to the “Prototype Factory” – the service offers free search for contractors.

Then, products can be tested under a pilot testing program for innovations, receive feedback from users and assess project potential. For this purpose, Moscow has set up a world’s largest pilot testing network, comprising 236 sites.

By implementing a consistent policy of supporting innovation, Moscow has emerged as the driver of Russia's technological progress over the last decade. The city has achieved major successes in such areas as digitalization, genetics, microbiology, cybernetics, transport, robotization and other sectors.

Today, every third enterprise in the city is high-tech, and some companies are unique worldwide. Moscow Photonics Center is the unique production facility for photonic integrated circuits in the world.

53 Moscow’s technoparks and the Special Economic Zone (SEZ) “Technopolis Moscow” have become the centerpiece of the new industrial policy of the city.

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The Government of Moscow is not just striving to increase the number of production facilities, but is developing a forward-looking industry. A new urban economy model, based on high-tech, flexible and sustainable, is clearly visible now. Today it accounts for 42% of all industrial revenue of Moscow. This number will exceed 50% over the next few years.

Nikolay Sergeyev

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