FIIA
BRIEFING PAPER

DECEMBER 2021 / 327

RUSSIA'S QUEST FOR DIGITAL COMPETITIVENESS

THE ROLE OF PRIVATE BUSINESSES IN SECURING STATE INTERESTS

Andrey Indukaev

FIIA
FINNISH
INSTITUTE
OF INTERNATIONAL
AFFAIRS

RUSSIA'S QUEST FOR DIGITAL COMPETITIVENESS

THE ROLE OF PRIVATE BUSINESSES IN SECURING STATE INTERESTS

- The Russian leadership prioritizes digital technology for the country's security and international standing, but also for its economic and technological success and development. These diverse goals are closely intertwined within the logic of geoeconomic competition.
- The Russian authorities have increased their involvement in the ICT sector over the years and this has led to the hybridization of business and state logic of action at all levels.
- While the state has an upper hand in the relationship, this does not exclude the possibility of mutually beneficial partnerships. Moscow-based start-up NtechLab's close collaboration with the city of Moscow is a case in point.
- For private businesses, the Russian state's proximity is a mixed blessing that creates business development opportunities but also major risks. These risks limit the state's capacity to make digital technology the driver of the modernization of the country's economy.

ANDREY INDUKAEV

Postdoctoral Researcher

University of Helsinki

ISBN 978-951-769-711-8

ISSN 1795-8059

Language editing: Lynn Nikkanen

Graphics: Kaarina Tammisto

Cover photo: Pixabay

This Briefing Paper is part of a research project titled 'Russia's technological policy and know-how in a competitive global context', funded by the government's analysis, assessment, and research activities (2021).

FIIA FINNISH INSTITUTE OF INTERNATIONAL AFFAIRS

Arkadiankatu 23 b
POB 425 / 00101 Helsinki
Telephone +358 (0)9 432 7000
Fax +358 (0)9 432 7799

www.fiia.fi

RUSSIA'S QUEST FOR DIGITAL COMPETITIVENESS

THE ROLE OF PRIVATE BUSINESSES IN SECURING STATE INTERESTS

INTRODUCTION

Western observers have drawn increasing attention to Russia's ambitions in the technological sphere, with the primary focus on the country's quest for its place in the global order. Mainstream reporting of Russian state activity in the technological sphere highlights hostile actions in cyberspace, and its military capacity. In this context, digital technology in Russia is often perceived as a domain where governmental actors' activities prevail, and military and security applications dominate the field.

There are many reasons to widen the scope from merely governmental strategies and policies to private actors when studying civil digital technology in Russia. First, the major actors in the Russian information and communication technology (ICT) sector are private, globally competitive firms. Second, a significant degree of state effort in technologically intensive fields consists of supporting start-ups and established private firms which develop innovative products that are competitive in international markets. Third, the very categories of public and private should be used with a country-specific understanding of the context. State-owned economic actors have as much in common with private firms as they do with bureaucratic organizations, and many governmental actors are skilled at partnering with businesses. The private firms, respectively, take state logic into account for both business and political reasons.

This Briefing Paper aims to add nuance by zooming out from a picture of digital technology in Russia as a mere prop for hostile action abroad and defence capacity. A wider perspective is essential for understanding Russia's potential in the development of digital technology, and its possible implications for the country's global standing. Geoeconomics is not simply geopolitics by other means, and its logic is less confrontational and more accommodative. Russia has pioneered a competitive geoeconomic strategy, and has effectively blended commercial and strategic goals for decades.[1]

The paper will firstly outline key features of the Russian private ICT sector: namely, that it is competitive internationally and employs highly competent professionals. This will be followed by an examination of the main goals that the Russian state seeks to achieve with the help of digital technology. Russia's strategic considerations pertaining to security and its international standing are very often intertwined with the push for economic and technological development. In this context, private digital economy actors become essential for the state's realization of its ambitions, and the state has significant capacity to build partnerships with private businesses, where state interests such as having control and acquiring data are blended with economic logic.

POLICY GOALS: SECURITY, MODERNIZATION AND ECONOMIC SUCCESS

The Russian government uses digital technology to pursue multiple goals, including modernization of the government, economic growth and, in particular, the strategic goals of national security and Russia's international standing. Sometimes, these goals are mutually exclusive but more often they are intertwined.

Some of the Russian state's goals pertaining to security and international standing are unrelated to economic development objectives and could be at odds with them. The most widely known example concerns Russia's hostile cyber actions abroad. The hostile uses of digital technology by formally private actors such as the infamous Internet Research Agency – linked with "Putin's chef", Evgeni Prigozhin – became mediatized worldwide after the US presidential election.

Despite the importance of the hostile operation on foreign grounds, a great deal of Russia's security-related activities in the digital sphere are framed in the official Russian discourse as defensive acts of protecting sovereign "information space" under attack from Western powers.[2] This translates into activities that aim at controlling the internet infrastructure and concentrating

1 Mikael Wigell and Antto Vihma, 'Geopolitics versus geoeconomics: the case of Russia's geostrategy and its effects on the EU', *International Affairs*, 92 (3), (2016): 605–627.

2 Mari Ristolainen, 'Should 'RuNet 2020' Be Taken Seriously? Contradictory Views about Cyber Security between Russia and the West', *Journal of Information Warfare*, 16(4), (2017): 113–131.

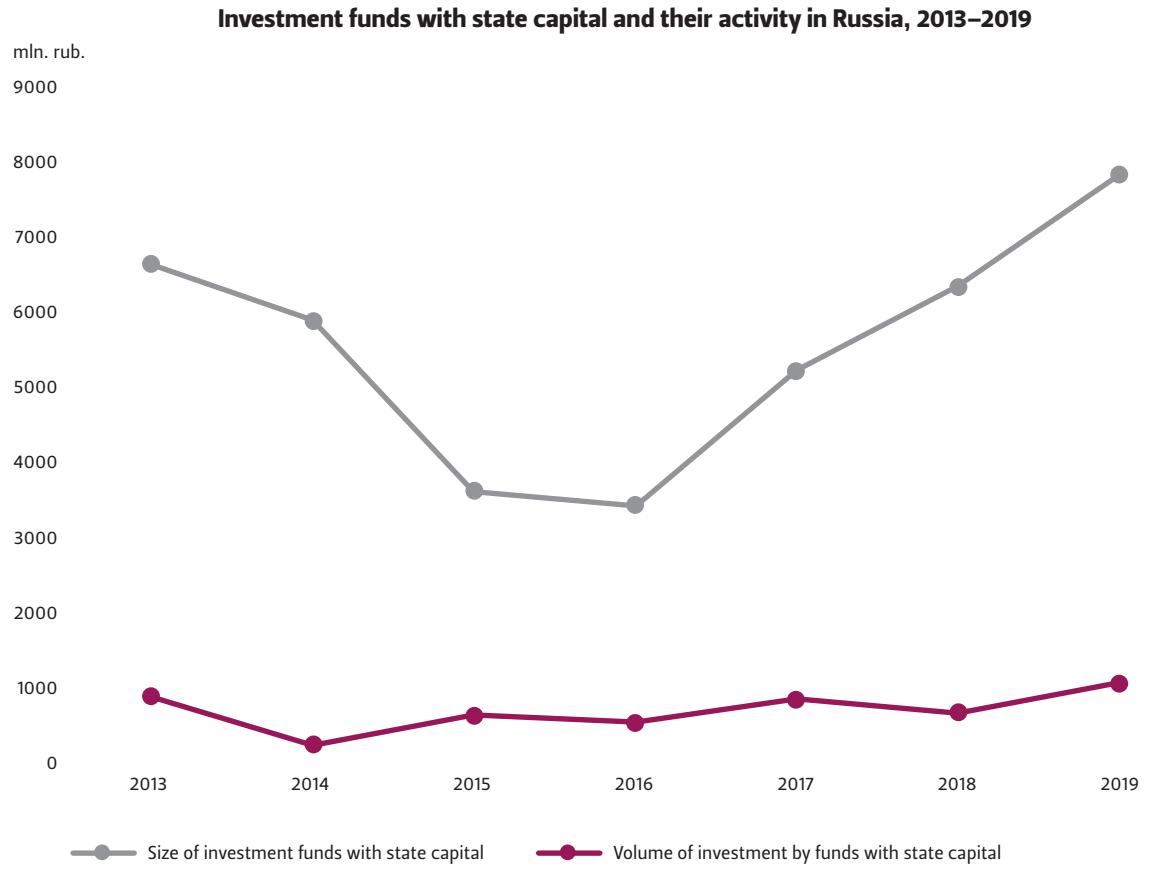

Figure 1. Investment funds with state capital and their activity in Russia in 2013–2019.
Source: Russian Venture Capital Association

it within national borders. This is supposed to reduce the risk of internet functioning being disrupted by an attack, but also to give authorities the levers to control public expression online – Russia's second key security-related preoccupation. While these ambitions have an economic afterthought, namely supporting national actors in charge of internet infrastructure such as data centres, the state is ready to sacrifice growth for control if it comes to the crunch.

In many cases, security and international standing are associated with economic success and development for Russia. The conception of competitiveness that economic and technological development brings is based on evolving visions of the global economy, and Russia's role in it. During the 2000s, the "sovereign globalization" approach[3] implied that integrating the Russian economy into global markets would not only bring prosperity, but also provide levers for exerting geopolitical influence. During Medvedev's presidency, the economic and technological development was valued less for creating levers for power politics, and more as a strategic goal per se. That implied a non-confrontational and optimistic vision of the global economy. Joining the club of Western developed countries by integrating into the global economy thanks to innovation and technological progress was seen as a path to Russia's geopolitical success.

Medvedev's departure from the presidency rendered irrelevant the idea that technological progress and innovation would fuel West-leaning modernization. However, it did not, in the long run, jeopardize the overall strategic importance of economic development fuelled by innovation. On the eve of Putin's fourth term, technology and innovation became the government's top priority – focusing primarily on digital technology. This time, the economic development agenda was rooted in a vision of a global economy seen more as a hostile environment where a country fights for its standing or even survival. This increased the importance of security and geopolitical considerations in economic and technological projects, but also the relative priority of the latter compared to narrowly focused security activities.

3 Nigel Gould-Davies, 'Russia's Sovereign Globalization: Rise, Fall and Future' [Research Paper], (Chatham House, 2016).

THE RUSSIAN ICT SECTOR

The ICT sector is a positive exception to the limitations of Russia's economic structure. Most of the internationally competitive sectors of the economy are either related to natural resource exports or to the domains inherited from the strategic branches of Soviet industry, such as defence, nuclear or space. Importantly, all of those domains are still state-controlled. However, while Soviet research and development (R&D) provided an impetus for Russian ICT, the sector formed and grew after the union collapsed. Moreover, ICT is almost the only high-tech sector in Russia that become globally competitive while being driven by private actors that were, for years, largely outside the scope of state interest.

The ICT sector's share in the Russian economy is not outstanding, but not negligible either. In 2020, it employed 1.6% of the active population and accounted for 2.9% of GDP. The corresponding number in Finland is 6.1%, 9.6% in the US, and 3.5% in Norway, which, like Russia, has a large extractive sector. Russian IT firms' export volume can be estimated at 13 billon USD in 2019, which accounts for 3% of total exports. If one focuses on ICT service exports, Russia is among the top 20 exporters, scoring higher than in high-tech exports in general (30th place). Since 2019, Russia's export of ICT services has been slightly higher than its import. [4]

When looking at Russian ICT, it is important to consider quality, not quantity alone. Despite not dominating the world's ICT market, many Russian firms are internationally competitive and noteworthy in the domestic market. Russia is one of very few countries where US digital behemoths do not dominate the digital economy. For example, the search engine Yandex and the social network VKontakte have larger market shares in Russia than Google and Facebook respectively. Likewise, a number of small and medium-sized enterprises are also competitive, with many starting out as reliable subcontractors for Western firms and gradually developing their own products and niche specialization. An anecdotal example from a study on the Siberian software industry is revealing: a firm established in Tomsk after the collapse of the USSR, with a staff of just under one hundred employees, had no domestic clients between 1998 and 2007. Quality is also important when talking about the IT sector workforce. While the pool of specialists with more generic skills is not big enough in Russia, the country has many highly skilled ICT specialists thanks to the legacy of the Soviet emphasis on theoretical training in hard science. Even in the context of the underwhelming financing of R&D in modern Russia, local actors are able to produce world-class technology in advanced domains such as AI. [5]

The Russian ICT sector's competitiveness faces some limitations, however. The manufacturing capacity might not be as crucial for the digital as it is for the biotechnology sector, where Sputnik V's early success was hampered by a mere inability to produce enough doses to leverage vaccine development in geoeconomic competition.[6] However, as Russia does not manufacture much hardware, its semiconductor and electronics industries are underdeveloped. This makes Russian digital developments heavily dependent on imports. The adoption patterns of digital technology in the economy are uneven, with a low level of automation in industry. With key assets being non-tangible, ICT businesses are less exposed to the limitations of Russia's business environment, but are still subject to troubles related to corruption and a lack of the rule of law.

PUBLIC-PRIVATE PARTNERSHIPS IN RUSSIA'S ICT POLICIES

The importance of geoeconomic logic in the Russian leadership's thinking about security, the country's international standing, and economic and technological development is in line with the idea that private economic actors play an important role in the state's projects. This is particularly true of the ICT domain, where private actors are key players. The state's reliance on the private sector also takes the form of the hybridization of business and state logic. The way in which private and public interests and actors are intertwined is an essential characteristic of Russia's technology strategy.

To begin with, there were moments when the state sought to achieve its goals associated with economic and technological development, including ICT, by merely enabling the development of private businesses, without attempting to steer and control. Within the

4 See G. Abdrakhmanova, K. Vishnevskiy, L. Gokhberg et al., 'Digital Economy Indicators in the Russian Federation: 2021: Data Book', (National Research University Higher School of Economics, 2021), 70; Russoft, Russian Software Sector: 17th Annual Survey (2014), https://russoft.org/en/analytics/rossiyskaya_softvernaya_otrasl_2020/.

5 See Andrey Indukaev, 'Siberian Software Developers', in M. Biagioli & V. Lepinay (Eds.), *From Russia with Code: Programming Migrations in Post-Soviet Times*, (Duke University Press, 2019), 195–212; Dmitri Zhikharevich, 'Post-Soviet Ecosystems of IT', in M. Biagioli & V. Lepinay (Eds.), *From Russia with Code: Programming Migrations in Post-Soviet Times*, (Duke University Press, 2019), 231–268); Arho Suominen & Santtu Lehtinen, 'Scientific and Technological Development of the Russian Federation: Review of Current Status' [VTT Policy Brief], (VTT Technical Research Centre of Finland, 2021), https://doi.org/10.32040/POLICYBRIEF.2021.SCITECHDEV.

6 Sinikukka Saari, 'Russia's corona diplomacy and geoeconomic competition: A Sputnik moment?', FIIA Briefing Paper No. 315, Geoeconomic Series, (Finnish Institute of International Affairs, 2021).

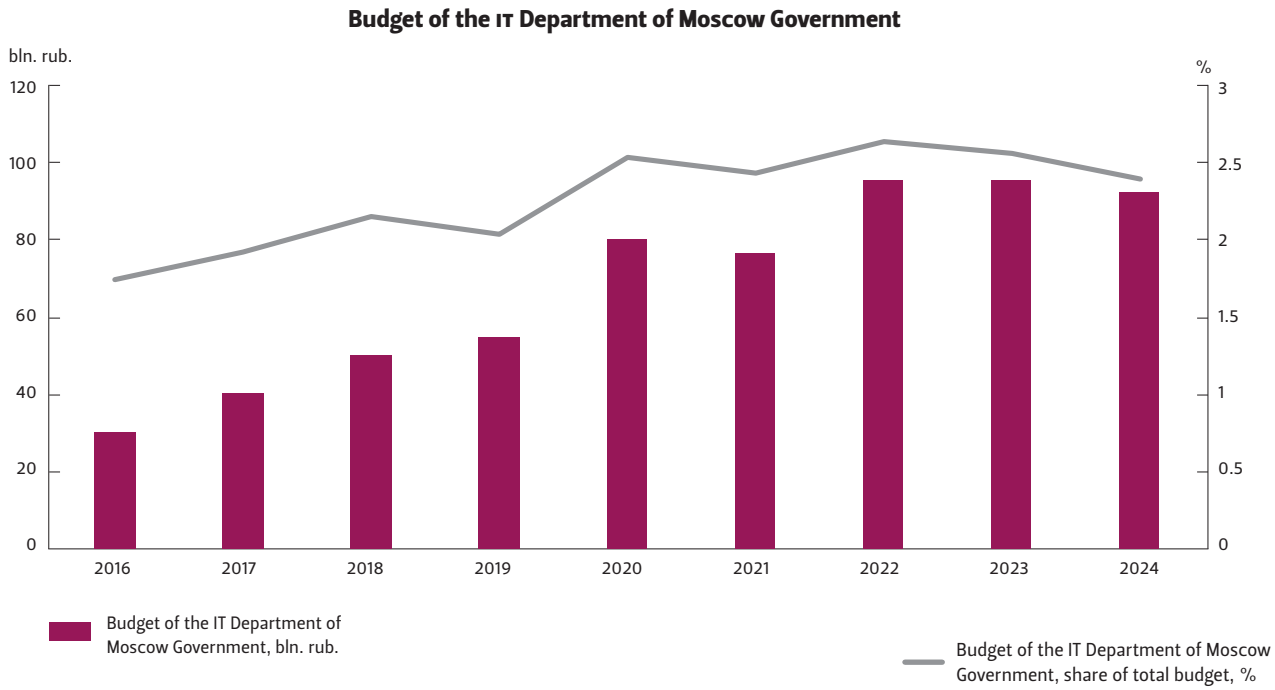

Figure 2. Budget of the IT Department of Moscow Government.
Source: City of Moscow

logic of Medvedev's modernization project, the state's steering power was limited to selecting the widely defined priority areas of economic and technological development. This limited involvement of the state was purposeful, as Medvedev sought the state's role more in building institutions and creating ecosystems, or enclaves where innovative businesses develop unfettered, than in directing the process of innovation.[7] Medvedev's approach did not last very long. In 2013, Putin publicly expressed his reservations towards Skolkovo (the 'Russian Silicon Valley') and Medvedev's approach in general, saying "they do not set goals but create conditions" and "whether it works is an open question".

Conversely, there are those interactions between the state and ICT businesses where the state achieves its goals in the digital sphere by exercising direct control over private actors. The most visible activities of this kind formed part of the state's effort to securitize the Russian internet space. This was accomplished by developing restrictive legislation, securing the support of major national platforms, telecom operators and infrastructure providers in detecting and blocking content declared illegal, and persecuting some Russian citizens for the content they posted, reposted or 'liked' online. It required direct confrontation with some firms, such as popular messaging app Telegram, as well as foreign companies like Google. It is important to note that restrictive actions on businesses, despite media visibility and the unquestionable effect on the business climate, are less frequent than different forms of private-public partnerships.

The Russian state has been systematically making an effort to integrate features of the private sector into its functions, making business logic a part of the administration's institutional logics, and designing policy instruments that follow models from the private sector. This process is facilitated by the fact that state actors are well acquainted with business logic. Many top-level bureaucrats, including the current prime minister, have experience of working in a business environment. This is particularly true of the deputy heads in charge of digital transformation, who have been appointed to every federal executive body in Russia since 2020.

A key example of state integration of business practices and logics is the use of investment funds as policy tools, and the corresponding integration of the investor's perspective by state actors. Venture capital and private equity investment are considered to be important vehicles for the development of high technology businesses

7 Andrey Indukaev, 'Studying Ideational Change in Russian Politics with Topic Models and Word Embeddings', in D. Gritsenko, M. Wijermars, & M. Kopotev (Eds.), *The Palgrave Handbook of Digital Russia Studies* (Springer International Publishing, 2021), 443–464, https://doi.org/10.1007/978-3-030-42855-6_25.

and the digital economy.[8] The Russian state has actively developed such investment funds and encouraged the creation of corporate funds by big state-owned and private companies. The Russian Direct Investment Fund, a Russian sovereign fund operating as a private equity fund, was instrumental in bringing the Sputnik V vaccine to market. The Russian administration also embedded venture capital approaches into the policy instruments that were not directly related to investment, such as Skolkovo and the National Technological Initiative, the latter explicitly supported by Putin.

State-owned firms, as entities bound to combine state interests with profitability and efficiency requirements, embraced the private investor's perspective. Rostec, a major state-owned holding conglomerate of high technology and military firms, planned to issue initial public offerings (IPOs) for many of its companies in the early 2010s, which implied adopting financial accounting and transparency standards, and having profitability as a core objective. Rostec also developed its investment infrastructure, creating two dedicated companies, RT-Invest and RT-Razvitiye Biznesa (business development). This development is clearly not unique, as state actors in the military and security domains actively use investment as one of the tools for securing access to the latest technologies while reducing spending, as exemplified by In-Q-Tel, a venture capital fund launched by the US Intelligence Community.

Russia's integration of private sector practices and logics coincides with the increased capacity to orient private businesses and make them receptive to the logic of state interest. In particular, the Russian state's use of venture capital coincided with systematic efforts by the state to hybridize venture capital logic with that of state interest. This was achieved through formal means by focusing the mandate of state-affiliated investors on priority technologies, such as AI, or regions such as the Russian Far East. At the informal level, many organizations, operating in sectors where the state is present in some form, tend to prefer investments in projects that can be presented as serving the state's interest. Such presentations might not only reduce political risks but also open up economic opportunities via access to state funds or other forms of public support.[9]

This process of hybridizing business logic with that of state interest not only affects investors, but also large firms and start-ups that see the potential for scoring political points and for developing their business by engaging in projects aligned with the state's strategic interests.

CASE STUDY: NTECHLAB AND MOSCOW

Moscow is, in many respects, an uncontested leader among Russian regions in the sphere of digitalization. The city hosts most of the large Russian ICT companies as well as federal and regional infrastructure supporting innovative start-ups, including those specialized in digital technology. In 2018, a United Nations survey ranked Moscow in first place globally for e-government development.

Mayor Sergey Sobyanin has made a massive effort to turn Moscow into a 'smart city' by collecting and using data for smart planning, digitalizing practically all services. The citywide surveillance system relies on CCTV cameras as well as data collected from mobile app operators, taxi and car-sharing services, and free Wi-Fi points. Although the city previously highlighted that surveillance data was anonymized, the administration started using it to track individuals. To leverage CCTV cameras' data the administration has partnered with award-winning[10] local start-up NtechLab offering artificial intelligence-powered facial recognition technology. During the Covid-19 pandemic, the system was used to track down particular individuals and automatically issue fines for violating orders for self-isolation.[11] The Moscow metro has also recently introduced FacePay for completely contactless travel payment.

The Moscow administration considers the implementation of facial recognition technology a success, claiming to have world-class surveillance capacity thanks to the technology. Moscow's use of NtechLab technology was noted by the Kremlin, and Putin's press secretary praised the importance of the facial recognition technology for security. This case reads particularly well as a success story from the standpoint of Russia's technological strategy. NtechLab's advanced technology is not only vital for security

8 Josh Lerner, *Boulevard of broken dreams: Why public efforts to boost entrepreneurship and venture capital have failed and what to do about it* (Princeton University Press, 2009).

9 Andrey Indukaev, 'Revaloriser la recherche en Russie moderne (2000-2018). De la politique de l'innovation à l'entrepreneuriat scientifique?' [Thesis] (Paris Saclay, 2018), http://www.theses.fr/2018SACLN047.

10 It gained international recognition after becoming the surprise winner of an international competition in facial recognition, the MegaFace Benchmark 2015, and continues to keep pace, demonstrating the best performance in many categories of the Face Recognition Vendor Test by the US National Institute of Standards and Technology in 2021.

11 See e.g. 'Moscow subway to deploy facial recognition surveillance system', *Meduza*, July 21, 2020, https://meduza.io/en/news/2020/07/21/moscow-subway-to-deploy-facial-recognition-surveillance-system; Pjotr Sauer, 'Privacy fears as Moscow metro rolls out facial recognition pay system', *The Guardian*, 15 October 2021, https://www.theguardian.com/world/2021/oct/15/privacy-fears-moscow-metro-rolls-out-facial-recognition-pay-system.

applications, but has great economic potential, which Russia actively seeks to stimulate with investments, grants, and other forms of support.

What are the factors behind Moscow's success in procuring cutting-edge technology thanks to NtechLab? Primarily, it is the availability of highly competent specialists, trained not only in programming but also in mathematics. NtechLab was founded by a MS graduate of Moscow State University's Faculty of Computational Mathematics and Cybernetics, a leading training centre in computer science. The founder, Artem Kuharenko, stated in an interview that understanding algorithms and having superior training in mathematics is a key requirement for start-up employees, not coding skills.[12] According to Kuharenko, the company plans to stay in Russia because of the "highly qualified mathematicians and programmers". The high level of competence of NtechLab's founder and employees is pivotal in the firm's success.

In addition to Russian ICT sector features, other factors have helped Moscow to have world-class surveillance technology within reach. First, public support for start-ups could have contributed to NtechLab's motivation to keep the business in Russia, as it established itself in Skolkovo in 2016, and received grants from it as well as from other public funds. More importantly, the NtechLab case shows that multiple public actors demonstrated great capacity to work with the young start-up. For many technological start-ups, product development is a collaborative process, making the first clients partners of sorts, whose input is important for product viability. Moscow's Department of Information Technology (DIT) managed to be such a partner. DIT is an organization that has a 'revolving door' with the private ICT sector and start-up milieu, which contributed to the smooth integration of very innovative technology into the functioning of the city administration.

State corporations' proximity to private-sector logics and practices also contributed to the successful collaboration between NtechLab and Moscow. In 2018, the start-up secured investment from RT Business Development, an investment company of the Rostec state corporation, and from NDF, a private fund. According to NtechLab's CEO, that was "smart" money, as investment arrived together with expertise in accessing specific markets. The NDF fund was instrumental in securing contacts with banking and retail organizations, while Rostec helped in developing and selling solutions to public sector organizations.[13] The fact that a state corporation developed an investment branch with an operation mode akin to that of a private investment fund contributed to bringing advanced technology from a cutting-edge AI start-up to the public sector.

While collaborating with the authorities gave NtechLab access to investments and large clients in the public sector, it is likely to have limited its international expansion plans. While in early interviews, the start-up founder was certain that opening offices in Silicon Valley and Europe was on the agenda, the plan never materialized.

One can speculate that collaboration with the Russian state gave the start-up a questionable reputation in Western eyes, not only due to the mere fact of providing security solutions for an authoritarian regime, but also because of some questionable uses. For example, Moscow police effectively used the system to repress opposition protest activities. Often, demonstrations in Russia are suppressed by heavy-handed riot police, but images of violence mobilize further protests. Recently, police used city surveillance infrastructure instead. They identified protesters on a large scale and imposed hefty fines upon them or administrative detention, successfully dissuading citizens from exercising their constitutional right to protest.

As relations between the West and Russia and China have deteriorated, the mere fact of being a Russian or Chinese firm could be enough for US and many other Western markets to shun the surveillance technology firm. Or, then again, perhaps not: in October 2021 NtechLab was selected at the G20 convention as the world's best start-up in the field of AI.

Moreover, in some markets, being a Russian start-up can even be a competitive advantage. As the firm's CEO said in 2019, the company's specialization in sensitive and security-related technology makes its international market development focus correlate with regional patterns of a "good attitude towards Russia". In particular, the company's solutions are popular in East-Asian countries that see China, another key provider of surveillance technology, as a hostile power, but do not see Russia as a threat. In 2020, NtechLab received funding from Middle Eastern investors with the help of the Russian Direct Investment Fund.

However, it is important to note that operating in Russia and collaborating with the state always poses a significant risk for any firm in the security domain.

12 This and other NtechLab founder quotes come from 'Artëm Kukharenko, osnovatel' kompanii NTechLab — o raspoznavanii lits, potentsiale neyrosetey i biznese', Habr, 19 October, 2016, https://habr.com/ru/post/313076/.

13 This and other quotes in this paragraph from NtechLab's CEO come from '"Ponyatiye privatnosti nuzhno ostavit' v XX veke". Gendirektor NtechLab — o tekhnologii raspoznavaniya lits i "vnutrenney kukhne" kompanii', Rusbase, 4 December, 2019, https://rb.ru/longread/ntechlab-ceo/.

Recently, Ilya Sachkov, the head of Group IB, a leading Russian cybersecurity firm, was arrested on suspicion of treason. While the details of the case are unknown for obvious reasons, it is reasonable to expect Russian companies, especially in the cybersecurity domain, to perceive the risks of doing business in Russia as increasing, and to be motivated to consider moving abroad. While the NtechLab case shows that an innovative company can benefit from the Russian context, especially the favourable conditions of dealing with the public sector, the country limitations can outweigh the benefits for many innovative businesses. The Russian state sees the business success of national companies as contributing to the country's security and international standing, but it can still easily pose a threat to the very same businesses.

CONCLUSION

Russia has managed to advance digital technology with sufficient potential in the private and public sectors, which are flexible and capable of combining a business orientation and technological capacity with an understanding of the state's priorities. The state's objectives are often not at odds with business and the technological priorities of private actors in the digital economy. It is reasonable to expect that the capacity to balance and combine business and strategic interests, even more than the capacity to exert control over private and public actors in the digital economy, will determine the Russian state's potential in the development and strategic uses of digital technologies such as AI.

The case of the implementation of advanced facial recognition technology in Moscow shows that public actors are able to make use of highly advanced and very recent technology, leveraging developments by innovative start-ups. In this way, public actors are helped by multiple organizations that are able to blend business and state interest logic, such as Skolkovo, the Russian Direct Investment Fund, or certain state corporations. However, given the low investment in R&D and the fundamental limitations of the country's economy, one should not expect a radical change in the country's competitiveness thanks to digital technology. Despite this, many governmental actors will continue to succeed in obtaining advanced technology to achieve their goals. /