
Review Essays

Exiles from Their Own Success: How Do Russian Programmers Succeed under Putin and Why Do They Still Continue to Leave?

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In 2013, the European University at Saint Petersburg—a small, independent graduate college started by a group of visionary academics who managed to excel in the social sciences and humanities despite Soviet ideological pressure and isolation, and who, after the USSR collapsed, quickly propelled it to top positions at home (including *the* top in the Russian Ministry of Education official ranking of faculty research productivity) and abroad (as a leading destination for foreign scholars interested in Russia)—embarked on a new project. Headed by leading science and technology studies (STS) professors from Sciences Po and UC Davis, a team drawn from the best young Russian sociologists and anthropologists set out to survey the transformations—over time and across borders—of the globally recognized and globally active Russian community of software engineers. The project was generously supported by a large Russian government grant, awarded through a transparent, NSF-style competition.

Six years later, the team delivered an excellent volume examining crucial trends in globalization and knowledge production in IT through the experience of Russians at home and around the world and probing key theoretical advances in the political economy of the tech industry using unexplored (yet highly informative and globally relevant) cases from several Russian cities.

The European University at Saint Petersburg, meanwhile, was relentlessly attacked by the government, had to temporarily stop admissions and instruction, lost its main building, and barely survived at all, managing to regain its license only after more than a year of litigation and a global solidarity campaign.

This contrast aptly captures the classic Russian paradox at the heart of Mario Biagioli and Vincent Antonin Lépinay's edited volume *From Russia with Code: Programming Migrations in Post-Soviet Times*: Why, even in the relatively rare cases where engineering prowess is matched by entrepreneurial talent, and both genuinely benefit from a competently organized system of government support, does Russia ultimately manage to squander all of it in the hopeless pursuit of ideological or geopolitical gambles?

This question is, of course, not exclusive in Russia to the IT industry and is, therefore, an existential one for the country's future. It also echoes the long quest for the root of Russian economic and political problems, in the venerable tradition of Alexander Gerschenkron, who also examined technology transfer and also emphasized the role of human capital (Gerschenkron 1962). This, in turn, connects this primarily STS book with studies in

economic and political development, and makes it relevant to scholars studying other countries with similar institutional deficiencies and path dependencies.

In an ambitious and insightful attempt to answer this question, *From Russia with Code* makes its greatest contribution by debunking a whole range of myths that surround both the known achievements of Russian IT and its even better publicized failures. That work, however, is left incomplete and partially undone, as the authors fall victim to their narrow methodological toolkit and ignore their own evidence while refusing to consider a wider, country-level context, which ultimately leads them to embrace a different, but similar in kind, set of myths.

Russian IT: Bigger and More Competitive than You Think

Ksenia Tatarchenko starts myth-busting in her brief history of Soviet computing, where she not only disproves the idea that the USSR had no domestic computer industry to speak of, but also shows that, in some respects, it was ahead of its time, with one of its intellectual leaders proclaiming already in the 1980s that “programming [is] the second literacy” (p. 55). Marina Fedorova (in her study of coding rules at Yandex), Alina Kontareva and Andrey Indukaev (in their surveys of the IT industry in the Russian provinces), and Dmitrii Zhikharevich (in his overview chapter) offer a panoply of examples that clearly demonstrate: the modern Russian IT sector, at all levels, from niche subcontractors to widely used search and content platforms, is highly competitive; it is well integrated into global value chains, yet relies on and represents a distinct intellectual tradition; and it leads as often as it follows global trends—not just in technology, but also in services, digital marketing, and content. Indeed, Yandex branched out into many non-search content and offline services earlier than Google did, and Russian online-native news emerged as a strong competitor to web versions of legacy media years before it happened in Europe and the United States; and this competitive edge persists today. And while it is true that entrepreneurship and business skills in Russia (and even of Russians abroad) remain underdeveloped compared to their technical prowess, Aleksandra Masalskaya and Zinaida Vasilyeva (who looked within Russia) and Diana Kurkovsky West and Lyubava Shatokhina (who studied Russian software engineers in Boston and Finland, respectively) show that there are important exceptions and notable heterogeneity, with younger generations getting better in the soft skills and acquiring a taste for business ownership. As the authors note, the strength of the IT sector was one of the key reasons the double external shock of the decline in oil prices and sanctions had a relatively mild impact on the Russian economy after 2014.

The same generational gradient is apparent when it comes to the ease of personal integration into the community (for those going abroad) or adapting to the new corporate culture (for those staying at home). Compared to acquiring entrepreneurial skills, this transformation was probably easier to achieve to begin with. Even for those leaving a truly closed society before or right after the USSR collapsed (as Irina Antoschyuk shows in her study of Russian computer scientists in U.K. universities and Diana Kurkovsky West and Marina Fedorova show in their survey of Russian software engineers in Boston and Israel), the challenges of the transition were eased by the “outward-looking perspectives” (pp. 25, 278) they developed before their departure through limited interaction with foreign colleagues when it was allowed, and constant comparison of domestic technologies with foreign achievements when it was not. It is not surprising that in almost all cases they eventually integrated well, reaching both financial success and professional recognition (with Israel probably being the slowest on this path; yet even there the government has recently begun to recognize the contribution of engineers of Russian origin to its booming tech industry).

For recent waves of emigrants, the integration has typically been so smooth that Shatokhina, who examined Russian coders in Finland, describes relocation as “almost a nondecision” (p. 352). Digging deeper into their

motivations to move, she discovers informed, worldly nomads making realistic calculations about the costs and benefits of moving. These calculations rarely feature exaggerated expectations about the destination country and typically involve prudent assessments of benefits being left behind (such as Russia's low and flat personal tax rate). According to Shatokhina, work-life balance considerations, cultural tastes and values alignment, and the search for new experiences drive both the decision to move and the choice of destination.

This evidence renders trivial probably the most popular question asked about Russian IT professionals in the last few years: Where in the world did Russia get the capability to conduct election interference in the United States with such sophistication? Not only were tens of thousands of Russians hired by top IT companies in the United States, Europe, and Asia for roles ranging from deeply technical to completely nontechnical, such as marketing and design, but hundreds of thousands, if not millions, of other Russians who had moved abroad were already using social media and other services to express themselves before they left¹ and continued to use them to stay in touch with both friends at home and new people they met at their destinations. It is important to point out that, according to Shatokhina's deep ethnographic study of the Russian IT community in Finland, at least the skilled professionals would probably disapprove of using these tools for interfering with foreign elections, as they value most in their new home "the opportunity to peacefully coexist according to well-established and observed rules" (p. 360). But the idea that Russians are somehow incapable of navigating major social media platforms and exploring (or exploiting) the top cultural/political trends in whatever country they happen to live, visit, or become interested in is clearly at odds with everything we know about the Russian media landscape, where the social media are simultaneously the outlet for popular discontent in an otherwise tightly controlled information environment and the testing ground for the most innovative government propaganda techniques (Sanovich 2018).

E-Government—The Best of Russian Governments

Why, then, does this robust ecosystem of small and large IT companies that successfully serve a significant domestic market and are capable of competing at the highest level globally fail to turn over the anemic Russian economy and transform the hierarchical, top-down nature of its society?

On the one hand, *From Russia with Code* suggests, they are not actually failing—they do have a real impact. Both in and out of the book, there is no shortage of examples of domestically developed IT solutions powering all sectors of the Russian economy, from Japanese car parts trade in Vladivostok to TV broadcasting and virtual reality systems development in Siberia to branchless banking now available to Muscovites. Especially when it comes to provincial Russia, the authors emphasize overlooked alternative modes of production and organizational ecologies built by and around small- to medium-sized firms that are focused on maintaining their market share in specialized, high-value-added niches they already occupy rather than pursuing Silicon Valley-style explosive growth and disruption of other industries.

Nonetheless, Yandex (in search and services), Kaspersky (in cybersecurity), and ABBYY (in optical character recognition and computational linguistics), among others, are notable examples of Russian IT companies that embarked on rapid growth trajectories, successfully entering competitive markets abroad and adding new niches at home. As Aleksandra Simonova (in her chapter on the Skolkovo project near Moscow) and Andrey Indukaev (in his chapter on technology parks in Tomsk and Novosibirsk) show, the Russian government is increasingly focused on seeing these success stories replicated, as well as on taking advantage of IT solutions for improving the quality of public administration itself, particularly people-facing, frontline services such as tax collection and issuing various forms of identification. In 2018, Russia had moved from the *high* to the *very high* group in the UN E-Government Development Index (EGDI), with a particularly strong showing in the Online Service Index, where it is in the top 25 globally, behind Luxembourg and Poland, but

ahead of Austria and Switzerland (UN 2019). Not surprisingly, as Alina Kontareva, who examined the IT landscape of Tatarstan and, in particular, its capital, Kazan, attests, “the strong demand for IT technologies and skills generated by the e-government initiative greatly enlivened the local technological market, providing incentives for IT companies” (pp. 149–50).

Comparing favorably with other countries, Russian e-government really shines vis-à-vis offline government services, which are famous for poor quality, low efficiency, high corruption, and, above all, disregard for citizens’ needs and dignity. It is no accident, therefore, that Putin’s last two prime ministers—Medvedev and Mishustin—had IT as cornerstones of their governing agendas and personal brands. Descriptions in the book of various private (e.g., Neuron hackerspace in Moscow by Simonova) and government-run (e.g., Innopolis in Tatarstan by Kontareva) projects associated with Medvedev’s short-lived, IT-based modernization agenda radiate vibrancy and optimism about the possibility of an alternative future for Russia and resemble earlier western accounts of Silicon Valley (before those made—ironically, not without some aid from Russia—a dystopian turn lately).

If considered narrowly, the results of the government’s efforts to grow the IT industry are, in fact, not hopeless. The book offers reasons for cautious optimism but mainly proves that the IT industrial policy of the Russian government does follow the laws of gravity—that is, it succeeds only when it meets the needs of the private sector. Case studies of successful (Academic Technopark in Novosibirsk, by Indukaev) and struggling (Skolkovo near Moscow, by Simonova) state projects coalesce into an informative account of economic and social policy-making in Putin’s Russia that is relevant beyond IT and would be of great interest to all scholars of Russia and economic policy under authoritarianism writ large.

The Poverty of Qualitative Methods: Replacing One Set of Myths with Another

And yet, as Biagioli and Lépinay write in the introduction to the book, “Medvedev’s vision . . . has not materialized, not even by a long shot. . . . [W]hile the Russian IT sector has kept growing, it has not had the transformative effect the former president hoped for” (pp. 16–17). *From Russia with Code* considers a multitude of explanations for this failure, but the authors are surprisingly uncritical toward them, taking many at face value, which prevents them from explicating the reasons why the tech industry has not delivered on its promise in Russia and other countries with an abundance of human capital but weak institutions. This is where the qualitative methods employed in the book—from the performativity of computer code analysis in the chapter on Yandex to sweeping generalizations about the skills and values of Russian-speaking software engineers based exclusively on personal narratives provided by the interviewees to Fedorova in the chapter on Israel—fail the authors and result in perpetuating at least as many myths as they debunk elsewhere.

The authors rightfully reject the popular notion that the “entrepreneurial failures of Russian scientists and engineers [are] . . . the tragic outcome of the . . . creators’ absolute commitment to the integrity of their creations, taking them to their grave to make them die pure rather than grow corrupted.” Surprisingly, they replace it with an equally essentialistic explanation: that “lack of trust in collective modes of organization” is at fault, the result of the USSR collapse making “the very idea of a collective mode of action unpalatable to the post-Soviet generation” (pp. 21–22).

The book itself, however, contains countless examples of cooperation and collective action of various kinds, from an explicitly community-based approach to setting coding standards at Yandex to the cross-sharing of hardware and other resources between residents of IT co-working in Moscow and volunteering by Far East and Siberian IT professionals to update the teaching standards at local universities. Scholarly and nonprofit environments are, by their nature, even more conducive to and reliant on mutual cooperation, and the book offers little evidence of a significant difference in that respect between Russians inside and outside Russia. Irina

Antoschyuk describes how senior computer scientists of Russian origin in U.K. universities help new graduate students and young scholars from Russia to settle in and advance their careers. Ksenia Ermoshina's chapter on civic apps in Russia is about nothing but collective action—first, by core developers who build the apps, and then by users across the country who utilize them for solving quintessential collective action problems, such as election monitoring. In fact, when asked directly by Lyubava Shatokhina what they value in their new home, Russian programmers in Finland chose to emphasize “collectivity, cooperation,” albeit with some caveats (p. 359).

When it comes to assessing the impact of various aspects of the Soviet experience on IT development in Russia, all this broad and valuable evidence is essentially ignored. But at least the authors consider a few alternative mechanisms for the impact of the Soviet legacy. The book's treatment of subsequent developments in Russian history and the effect they had on the birth and growth of Russian IT does not feature alternative explanations at all.

Instead, the authors combine an interpretation of the Russian business experience in the 1990s that is surprisingly similar to Putin's official line on the “wild 1990s” (e.g., “Yandex emerged in a difficult if not hostile business environment” [p. 59]) with the claim that “IT is no exception” to the rule of close connection between state innovation policy and tech industry development (p. 237). Leaving aside the validity of both observations in general, if there was one sector of the Russian economy they did not apply to, it was IT. It was largely ignored both by the “violent entrepreneurs” (Volkov 2002) of the 1990s (naturally, mobsters found it too complicated to manage) and by the oligarchs (for the same reason, plus they were busy dividing up oil, gas, and steel industry giants). IT also benefited mightily from the best industrial policy any sector of the Russian economy could wish for: the government left it to its own devices (McFaul 2018). This policy was famously reaffirmed by Putin at a meeting with IT leaders on the eve of his formal ascension to power (Nossik 2014).

Most puzzling, however, is the authors' choice of Soviet scientific culture and poor business practices in the early 1990s as the go-to explanations for the problems Russian IT faces now. Successful software engineers hesitate to start their own companies? Well, “[t]aking risks . . . was not encouraged in Soviet industry” (p. 313). Existing companies settle for maintaining their niches instead of embarking on an explosive growth trajectory? “The firms' roots in the culture of former Soviet researchers” leave a mark (p. 203). People with money are indecisive around making investments? Of course: “[t]he high degree of collectivism encouraged by the Soviet regime created taboos around individual initiative” (pp. 313–14).

Why Do Russian Programmers Continue to Leave if They Are So Successful at Home?

Not only does this approach overlook the obvious role weak protection of property rights and a poor institutional environment writ large play in both the underperformance of Russian IT and continuing emigration of its workforce, it also does not provide answers to the practical questions of IT development policy the authors are preoccupied with throughout the book. For example, the role spatial proximity plays in business collaboration—a matter of particular importance for the growing number of IT technoparks and incubators—cannot be properly assessed if various requirements that residents collaborate with certain partners (close to or within the government) and avoid others (for example, foreign or otherwise deemed disloyal) are not taken into account.

This approach is equally unhelpful in explaining “the specific kind of attraction that young Russian IT specialists have for the free software movement, for hacker culture” that the editors note in the introduction to the book (p. 13). One need go no further than the story of the biggest CEO demise in the history of the Russian tech sector to understand that this attraction is less an artifact of the peculiar school of thought Russian software engineers belong to or their lack of business acumen and more a lesson they have learned repeatedly under

Putin. Pavel Durov followed the very path of a prototypical Silicon Valley star entrepreneur that authors of the book claim is unappealing to Russian IT specialists: from student-founder at 22 to billionaire CEO at 29. VKontakte, the social network he created, did start as a Russian version of Facebook and had benefited from the loose treatment of pirated content but later managed to outperform Facebook in some technical metrics and proved capable of successfully competing with it even after rules around content ownership were tightened. However, when, during the height of the Russian-Ukrainian conflict in 2014, Durov refused to implement censorship and surveillance requirements imposed on him by Russian security services, he was promptly dismissed as the CEO, lost his ownership of the company, and had to leave the country for good. It is not surprising, in light of this experience, that the code for Durov's next project, Telegram, was mostly open-source, and its server infrastructure was globally distributed and cloud-based. That this choice of architecture was warranted was quickly proven when the Russian government started its (ultimately, unsuccessful) attempt to block access to Telegram in Russia.

While the book doesn't feature this particular story, the cases it does consider provide equally powerful evidence that it is the institutional environment that severely limits the impact Russian IT has at home, as well as its reach abroad. For example, the authors rightfully praise a whole array of web tools and mobile apps developed by Russian software engineers to aid civic organizations and initiatives. These were mostly designed to collect various improprieties (from unfixed potholes to ballot-stuffing at the polls) spotted by volunteers and even the general public, translate this evidence into legally enforceable complaints, and then send them through the appropriate bureaucratic channels. As Ksenia Ermoshina notes, "Russian civic hacking is not about breaking the law but about automating respect for it through the translation of legal texts into programming code" (p. 104) and back "into a language that is not only comprehensible to . . . civil servants, but written in a form that virtually forces them to act on the complaints" (p. 100). However, when she concludes (quite naturally) that "[c]ivic hackers operate clearly within the legal arena" (p. 88), she is quickly challenged by the reality Russian IT companies face every day: You can never be sure that you are on a firm footing, and you can never predict when you might end up on the wrong side of a bureaucrat you have never heard of, fighting for your survival. For example, WebNabludatel, an app Ermoshina examines, was developed under the leadership of the late CTO of Yandex, Ilya Segalovich, for the largest Russian election-monitoring network, "Golos." In 2012, when WebNabludatel was released, "Golos" was a registered NGO in good standing (although it faced pressure when it exposed election rigging). In 2013, however, it was fined for receiving foreign funding and declared a "foreign agent." By 2016, it was forcibly legally dissolved, shifting apptivists (as Ermoshina calls them) who did clearly start "within the legal arena" away from it.

This story is not dissimilar to the reversal of fortune we started with: the transformation of the European University at Saint Petersburg, where research published in this book was done, from a state-approved model of success in bringing top scientists to Russia and the best Russian science to the world into a pariah that barely avoids total destruction. As it turns out, Russian social scientists—or software engineers—can leverage their undeniable strength and perform at the highest level, whether that means creating a world-class university or starting a billion-dollar company. Replicating or even simply sustaining this success is a whole different matter. At present, it often means coming *From Russia with Code*—or with a research paper—to a place where the state doesn't occasionally destroy the fruits of one's labor. Indeed, by my count, out of the 13 Russian authors of the book, at least 12 are no longer in Russia.

Note

- 1 The Russian segment of Wikipedia, for example, is the seventh largest (ahead of Spanish) in the number of articles, and Russia is the fifth largest country on Instagram by user count.

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