Firms and Markets

The ICT Landscape in BRICS Countries
5. Russian Federation (*)

Valentin MAKAROV
President Russoft Association

Stefan SCHANDERA
Development expert, Research fellow, DBFZ

Jean-Paul SIMON
Director, JPS Public Policy consulting, Sevilla,

With 17,098,242 sq km, the Russian Federation is the largest country in the world. The Russian economy is the world's ninth largest by nominal GDP and sixth largest by purchasing power parity. Russia is one of the world's fastest growing major economies [1]. Russia is ranked 7th in terms of GDP (PPP: $2.414 trillion) [2]. In 2011, Russia became the world's leading oil producer; Russia is the second-largest producer of natural gas. Russia was badly hit by the crisis and GDP growth fell from 5.2% in 2008 to -7.9% in 2009, then started increasing again in 2010 and is expected to be growing at an average of 4 to 5% [3].

(*) This is the fifth article of a series on ICT in emerging economies based on IPTS research. The IPTS prepared reports on ICT in BRIC countries. A first report focuses on Brazil, India and China, available at: http://is.jrc.ec.europa.eu/pages/ISG/PREDICT/BRIC.html.

[1] Source: http://en.wikipedia.org/wiki/Russia

[2] Source: https://www.cia.gov/library/publications/the-world-factbook/geos/rs.html

[3] EITO Special Report, 2010. 4.4 estimated for 2011: UNCTAD, 2011. Estimated at 4%: http://www.oecd-ilibrary.org/economics/country-statistical-profile-russian-federation_20752288-table-rus

The size of the communications sector

The size of the domestic market of BRIC countries offers some kind of buffer to face the economic crisis. However, Russia is less sheltered from price and demand shock given the structure of its output (Global Competitiveness Report, 2009) with exports providing a large proportion of its GDP but dominated by energy exports: 65% in 2011 [4].

Russia shares with South Africa (OECD: KELLY, 2011) a deteriorating revealed competitive advantage in communications trade. Affected by the economic downturn, the total ICT sector went through a decrease in 2009 but recovered in 2010 reaching 45.5 billion euros in 2010 (EITO, 2010). The ICT share of GDP decreased from 4.6% in 2009 to 4% in 2010 but this relative decrease is linked to a quick growth of GDP triggered by the oil price explosion; as noted by IDC [5], ICT expenses in Russia steadily followed the oil price dynamics (Russoft, 2011 Survey: 12). However, the ICT sector, for whatever reasons, failed to outpace the country's 4% growth of GDP in 2010 [6].

Russian IT industry dates back to the 1940s and 1950s, focusing on industrial and military applications. In the 1980s, computer use was still mainly limited to academia and R&D.

Telecommunications stands for almost 70% of the total and displayed some resistance to the economic crisis due to the size of the domestic market. Russia is Europe's largest mobile market by connections (229 million in Q2, 2012, GSMA, 2012), and has been growing strongly in recent years, usually adding more subscribers per quarter than any other country in Europe. In 2012, the Russian mobile market was the 6th largest global market (GSMA, Wireless Intelligence: Q2 2012). Mobile penetration levels are not evenly distributed across the country, showing some digital divide between urban centres (such as Moscow and St. Petersburg) where the penetration is as high as 210 percent but in most regional areas (see figure 1 e-readiness) close to 150 percent.

---

[4] Source: The World Bank, *Russia Overview 2011*.

[5] IDC Black Book, Energy Information Administration, quoted by MAKAROV, 2011.

[6] http://www.ewdn.com/2011/05/20/russian-ict-market-totaled-68-6-billion-in-2010-government-report/

Figure 1 - e-readiness by region

%	Russian average	Moscow	Tomsk Oblast	Bryansk Oblast
Active SIM cards/100 people	140.6	197.2	123.2	110.4
Internet users (adults)	32.0	59.0	37.0	24.0
People w higher education	26.9	49.7	24.9	22.1
PC workplaces online	11.8	31.1	16.6	5.0
Local authorities w website	11.3	71.0	31.3	6.7
Companies w website	29.9	62.6	37.5	18.5
Companies w ERP system	N/A	14.4	10.2	2.3
Schools w website	59.7	89.9	89.3	25.2

Source: S.SCHANDERA, regional e-readiness index in the Russian Federation 2008- 2009;
Institute for the Development of the Information Society, Moscow, 2010

Three leading companies dominate the market (MTS, Megafon, Vimpelcom) with respective shares of 31%, 27%, 25% (Q1 2012, estimate, Wireless Intelligence). MTS, Beeline (Vimpelcom), Megafon are major players in the mobile telecommunications market. These leading Russian mobile communication providers, MTS and Beeline, have been expanding rapidly in the CIS region in recent years. MTS (Mobile TeleSystems) for example through its subsidiaries holds a market share of 32.4% in the Russian Federation, 36.1% in Ukraine, 66% in Armenia and 43.4% in Belarus [7]. They are now aiming at the global market (India, Laos, Vietnam, …). Vimpelcom ranks 6th in terms of number of connections (but only 14th in terms of revenues despite an 87.9% increase from 2010 [8]) and MTS ranks 15th among the 20 global telecom giants (GSMA, 2011). International competitors play a secondary role (Tele 2: 9% market share) or get a minority share in joint ventures (Megafon, Beeline).

The country's mobile penetration rate topped 160 percent (Q1, 2012) [9] but having reached such a threshold, Russia's three largest mobile operators (MTS, Megafon, Vimpelcom) are now losing some connections. Nevertheless, the Internet is also going mobile, Internet access services and

---

[7] Source: MTS corporate website http://www.mtsgsm.com/about/; visited 10 August 2012).

[8] Partly due to the US$6 billion acquisition of Wind Telecom in March 2011. http://www.wirelessintelligence.com/analysis/2012/05/chinese-sales-soar-on-3g-take-up/. Wind is the third largest mobile operator and second largest fixed line operator in Italy with operations in Algeria, Canada, Egypt, …

[9] Source: GSMA. http://www.wirelessintelligence.com/analysis/2012/06/russia-hits-mobile-saturation-point/. Telegeography (2012) reports nearly 180% as of March 2012.

mobile data services are boosting the market. The big three operators – plus national broadband operator Rostelecom – agreed to unite behind the LTE network being built by former WiMAX player Yota, avoiding the need for the participants to build-out their own networks. Yota is planning to provide high-speed mobile broadband services across 180 Russian cities, covering a total population of more than 70 million citizens, by 2014. MTS and VimpelCom left the agreement for another deal between the two companies in 2011. MegaFon maintained the agreement and was the first to launch commercial 4G services in Moscow, Krasnodar and Novosibirsk. However, further development depends on conversion of frequencies from Defense to Civil and on liberalization of the market. In 2009, smartphones accounted for 5% of the markets (out of 32.19 million units) but reached 21% in 2011 - out of 40.92 millions (BAKER, 2012).

In 2010, the ICT sector accounted for 4.6% of the Russian business enterprise sector employment (1, 291 million employees. Within the sector, the largest employer is telecommunications, at 37%, followed by the manufacturing of ICT equipment (almost one third of the total sector's employment), ICT services (25%), and wholesale trade (7%) (Information Society Outlook, 2012: 21).

The IT sector (figure 2) suffered more but recovered quickly with a 14% growth, reaching 23 billion US $. Further growth was expected: 14.6% in 2011 [10], 15.8% in 2012, and 18.1% in 2013 (Russoft, 2011). Indeed, the IT market in Russia went up by 15% in 2011 [11]. Its software segment, despite being hurt by the crisis, also went through a profound transformation through three different phases. The 1st phase (1990-2000) was characterised as quality engineering but Russian companies were lagging behind the rest of the developed world in quality assurance and in their understanding of international business. During the second phase (2000-2005) Russian software service companies reached leading position in Europe in QA and became global, able to manage distributed development in their offices worldwide. During the last phase, (2005-2010) Russian companies reached a much better understanding of business needs that yielded some success stories: Auriga got rating n°1 among engineering companies (See box 1. DataMonitor, 2011), Kaspersky Labs (a leading firm for security software) appeared in the list of the World's 100 biggest IT companies ranking 68 (Russoft: 12), As a result, the Russian software industry ranks now at third

---

[10] PMR (2012) reports 15.4% for IT product sales and services.

[11] http://www.ictrussia.com/wp_1087/Russian-IT-market-to-hit-8364-16bn-in-2012-July-2012.shtml

place after the US (35 companies) and India (31 companies) with nine companies classified in the 2011 Global Service 100 rating. The exports of both – packaged software and IT-services are growing fast.

Figure 2 - The size and structure of the IT sector

PC	IT services	Software	Telecom equipment	Smartphones	Other hardware
36%	17%	17%	10%	10%	10%

Source: IDC, 2011

Box 1: Auriga, Inc.:

Founded in 1990, Auriga (www.auriga.com) was the first Russian company to provide software R&D offshore/nearshore services to EU/US customers. The list of provided services covers all aspects of SW product engineering for a broad range of knowledge areas from embedded and mobile software to enterprise and Web apps. Auriga focuses on clients' business interests and convenience as its main driving strategy. The client list includes IBM, Draeger Medical, LynuxWorks, Dialogic, Pigeon Point Systems BroadVision, KIVA Systems, Yandex, Barclays, Sberbank Rossii and many others. The 300 employee company is headquartered in the US.

*Source: http://www.russoft.org/directory/?profile=65*

The Russian language ranks 8 among the top 10 languages on the Internet (2009). The two Russian Internet leading IT companies, Mail.ru and Yandex succeeded on the global fund market through IPOs respectively in 2010 and 2011. Like in the case of China, with IT companies like Tencent and Baidu, these Russian IT companies managed to retain a strong advantage over Google measured by the number of users (Russoft: 9). Russia is a rare country (alongside USA, China and South Korea) with its own national Internet-search engines of a global scale (mail.ru, yandex.ru) (MAKAROV, 2011). Yandex released a Turkish version of the web search engine, in Turkey in September 2011.

However, Russia is still slightly behind the European Union for Internet penetration. Internet penetration reached 39.8% in 2010 with broadband Internet Access: 26.4% (MAKAROV, 2011]. By 2014 Russia will have more Internet-users than any other country in Europe, overtaking Germany: 3% of all Internet-users in the World with 2% of global population. The size of the Internet-enabled economy is estimated to US $19.3 billion (MAKAROV, 2011).

R&D in transition

Gross domestic expenditure on research and development (GERD) almost doubled during the period 1998-2008 (Unesco, 2010: 216), one of the highest growth rates for R&D investment. However current GERD has still not climbed back to 1991 levels. R&D expenditure stood at just 1.03% of GDP in 2008, down from a peak of 1.28% in 2003. Public funding including from majority state-owned companies (IET 2006) contributes with 86% to fixed R&D sector assets; and consumed 98% of budgetary R&D funding. However ICT R&D is declining (IPTS 2012: figure 3), and the output of R&D measured by patents follow the same trend (SCHANDERA, 2011: figure 4).

Figure 3 - Share of ICT research in total research in Russia and EU 27 (1990-2008)
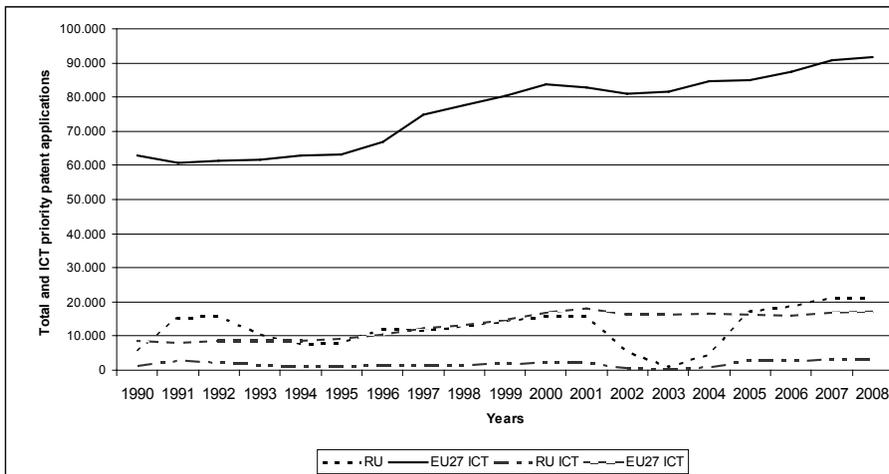
Source: G. de Prato, elaboration based on JRC-IPTS, source Patstat rev. April 2012

The situation of the traditional State investment in ICT R&D contrasts with the practice of Skolkovo Foundation (created under the order of President Medvedev in 2010 for construction of the "City of Innovations" in a small village called Skolkovo, near Moscow). Almost 50% of all grants issued by Skolkovo Foundation in 2011 were granted to IT-startups (MAKAROV, 2011). With its transparent grants allocation procedures Skolkovo Foundation represents a sound alternative to the traditional State R&D investment.

As of 2011, 1.2 million people were employed in R&D (down from 1.6 million 1995), 0.5 million researchers. The country enjoys a strong global position in space research, nuclear power generation, and laser

technologies. Boeing, Intel, Motorola, IBM, Oracle, EMC, HP, Siemens and many others operate R&D centres in Russia.

As noted by the Unesco report, ICTs have been a persistent priority. Information technologies, space and telecommunications were key elements of the President's Modernization Program, "Go Russia" introduced in 2009. The government has launched an "Information Society Program. 2011-2020" to replace the previous one, Electronic Russia (2002-2012), deemed a failure.

Figure 4 - Share of ICT patents on total patents
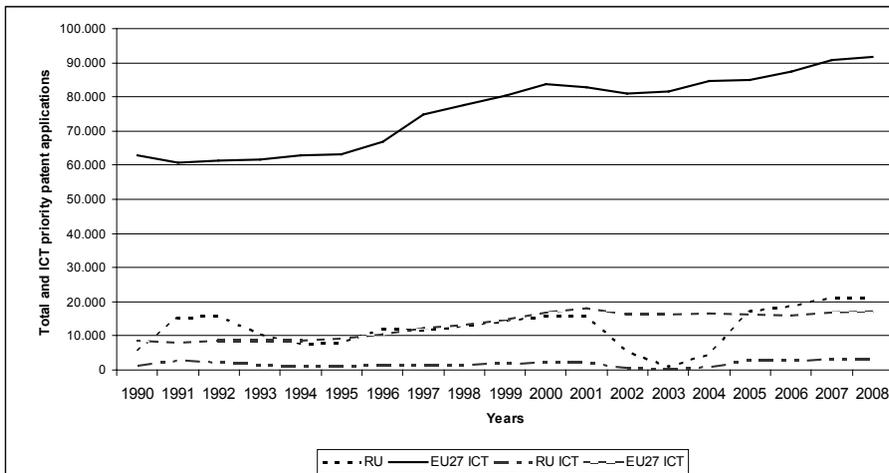
Source: SCHANDERA, 2011 based on Almanac Science, InnovaKon, EducaKon 2008

Conclusion

In 2011, the OECD released a report, critical of Russia's innovation system, which it claims is undermined by low levels of R&D and innovative initiatives in firms, lack of competition, corruption and weak infrastructures and regulations. The report also cited the unbalanced emphasis on high tech at the expense of low tech and service sectors as a liability for the economy at large. The conclusions were similar to the conclusions of the Unesco report stressing the need to substantially improve the national science and technology sector and innovation policies. By the same token, the president of the Russian Chamber of Commerce and Industries stated at a conference in 2011: "Innovation driven development is problematic in Russia, as the

country has no innovation market". The Russian government seems aware of the issue.

However, as noted by SCHANDERA (2011), there are some pending questions about the ability of the government to stimulate innovations into the industry. The software segment (Russoft, 2011) claims that the best results achieved by this subsector are linked to its lack of dependence from the State, generating less corruption and stronger competitiveness. Among the strategic options left to the government, according to S.Schandera, there is a choice between global integration of the sector or some regional protectionism.

The software sector may be showing the way, as highlighted. Russian software programmers, both working for national software vendors and service providers as well as for international companies demonstrate one of the few successful examples of full integration. The role of ICT (software) as a driver for a business culture marked by innovation and global competitiveness should not be underestimated. To some extent, in all the former SU, the software industry is actually almost an island within the sea of other business sectors with different features (less transparent, highly monopolized…). The ICT sector is also characterized by a low level of market distortion by oligarchs.

References

BAKER, S., (2012): "The Russia Smartphone Market: Results of 2011 and Key Trends", Mobile World Congress Barcelona, February 26, IDC CEMA, IDC.com.

GOKHBERG L. & LEONARD C. (Eds) (2012): *Information Society Outlook 2012*, Institute for Statistical Studies and Economics of Knowledge (ISSEK), National Research University – Higher School of Economics (HSE), Moscow. http://www.hse.ru/en/primarydata/niio2012

GSM wireless intelligence (Q2 2012): http://www.mobilebusinessbriefing.com/wi

KELLY, T. (2011): "ICT Landscape in the BRICS", presentation at the IPTS BRICworkshop, Johannesburg, October 5. http://is.jrc.ec.europa.eu/pages/ISG/PREDICT/BRIC.html

MAKAROV, V. (2011): "ICT Landscape – Russia", presentation at the IPTS BRICworkshop, Johannesburg, October 5. http://is.jrc.ec.europa.eu/pages/ISG/PREDICT/documents/08.Makarov_RUSSIA-ICT.pdf

OECD:
- (2011): *OECD Reviews of Innovation Policy: Russian Federation*. http://www.oecd.org/science/innovationinsciencetechnologyandindustry/oecdreviews ofinnovationpolicyrussianfederation.htm
- (2010): *Communications Outlook*.

OLSZYNKA, P. (2012): "Russian IT market to hit €16bn in 2012", PMR. www.ictrussia.com

Russoft (2011): *Russian Software Developing Industry and Software Exports, 8th Annual Survey*. http://russoft.ru/files/RUSSOFT_Survey_8_en.pdf

SCHANDERA, S. (2011): ICT in transition - Setting the scene, Russian Federation, presentation at the IPTS BRICworkshop, Johannesburg, October 5. http://is.jrc.ec.europa.eu/pages/ISG/PREDICT/documents/07.Schandera_Johannesb urg_v1.pdf

TeleGeography (2012): *GlobalComms Database*, Russia.

UNCTAD (2011): Main Aggregates database, and World Economic Situation and Prospects (WESP).

UNESCO (2010): *Unesco Science Report 2010. See* GOKHBERG L. *et al.*, chapter 11, pp. 215-233.

World Economic Forum (2009), *The Global Competitiveness Report*.