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Introduction

Some five years ago, the Pan-European Institute (PEI) started to study the Russian innovation system in the framework of the research project funded by the Academy of Finland. This project generated an idea to collect short articles related to the modernisation and the innovation reform in Russia, and publish them in the Baltic Rim Economies review, which is distributed to tens of thousands of organisations in over 80 countries. During these past five years, several important contributions related to the aforementioned theme have been published in our review. We decided to collect them into a single publication.

*Ms **Hanna Mäkinen**, Senior Researcher of the PEI, has chosen close to 100 articles on the topic. These columns deal with the modernisation in Russia, the country's innovation policy, regional innovation systems, and most importantly, Russia's co-operation in the field of innovation with the EU and its member states. These articles have been written, for instance, by President of the European Commission, deputies of parliaments, representatives of ministries and regional administrations, policy advisers, diplomats, leading academics and other key thinkers in the field.*

These articles do not carry one common message, but instead, they offer a variety of perspectives into one phenomenon. The views expressed in these articles sometimes compete with each other, and sometimes, even conflict each other. Despite such a variety, or perhaps just because of it, this publication may offer an insight into the future of Russia.

Even if there are many views on the Russian modernisation, one can be sure that the Russian leadership is serious with its modernisation goals, and will invest a lot of money and time to succeed in this process. The EU and its members could play a significant role in this process, if we manage to create co-operative synergies benefitting all the parties involved.

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Bringing EU-Russian relations to a new level

By Jose Manuel Barroso

Relations between Russia and the European Union have been growing in importance and their dialogue has been improving in quality. Indeed, in this new rapidly changing and globalised world, the EU and Russia are increasingly interdependent. We have a common cultural heritage forged throughout the long course of Europe's history. European and Russian culture from music, to arts and literature have been influencing each other to the point of being one and the same. Europe and Russia also share the same continent and have a strong interest in stability and harmonious development from the European peninsula to Asia. Economically, our industries are set to benefit significantly from a greater integration of trade, investment and technology exchange. In the field of energy, we also have a lot to gain from an increased security of supply and transit, a diversified set of suppliers and clients and improved efficiency.

In the past two decades this relationship has been considerably strengthened, as illustrated by increased dialogue on strategic issues, growing cooperation on security and defence e.g., within the EUFOR Chad FCA and greater bilateral trade flows. Russia was the EU's third-largest supplier and fourth-largest client in 2010. The EU is Russia's most important trading partner by far, accounting for 50% of its overall trade in 2010. It is also the biggest investor in Russia and 75% of Russian FDI stocks come from EU Member States. The key question, therefore, is not whether the EU and Russia are interdependent on a wide range of political and economical issues, but rather how that interdependence will be managed.

There will certainly be a great many difficulties to overcome, as the 2008 crisis in Georgia and the erection of trade barriers after the first phase of the economic crisis have shown. However, both Russia and the EU have important "assets" which will help keep efforts on track. I would like to mention three of them.

Firstly, we share a strategic goal: a strong and results-oriented bilateral relationship is in the long term interest of European and Russian citizens and is necessary in order to address global macro-economic issues and societal challenges of mutual concern.

Secondly, our relationship is rooted in both official and informal contacts between our administrations and societies. The EU and Russia have succeeded in working on a common agenda and in defining joint projects. This pragmatic approach is based on a solid legal background and an intense network of formal or informal working groups, joint councils and summits.

Finally, our relationship is having a transformative impact. The support provided by the EU's strengthening of trade and technological cooperation is also improving the rule of law in Russia and facilitating contact between civil society on both sides; both are essential for making the modernisation effort sustainable in the long term.

Combining a strategic view of our future with a pragmatic and transformational agenda is certainly the most efficient way to improve EU-Russian relations. This was precisely our main goal when I agreed with President Medvedev the idea of a "modernisation partnership".

This partnership was formally launched at the Rostov summit in June 2010 and draws heavily on the achievement of

the EU-Russian "common spaces": Economy, Freedom, Security and Justice, External Security, Research and Education. It is a broad platform which also encompasses the strengthening of the rule of law and citizens' rights. In this respect, the EU is working together with Russian authorities on a Russian-wide judicial appeal system, and we have welcomed the creation in March 2011 of an independent EU-Russian civil society forum.

This is also a joint effort on the EU side and complements the partnerships being developed by Member States at national level. More importantly, the partnership has already started to deliver practical results - cooperation in the space sector was demonstrated by the successful launch of a Soyuz from an EU space port, as part of the Galileo programme last October; technical regulations are being aligned in several sectors; and discussions on a visa-free short-term travel regime are in progress - all of which reflect a common vision of the future.

The fact that the EBRD and the EIB are also associated to the finance of modernisation initiatives means that concrete financial support will be given to projects in both the private and public sector. This is a significant achievement.

Russia's accession to the WTO which the EU and in particular the Commission, has been very actively supporting is another building block of the modernization agenda that both the EU and Russian authorities are working on. It is clearly in the interest of the EU, Russia and the rest of the world to see this last major world player joining the multilateral trading system. Following the agreement between Georgia and Russia, the EU looks forward to seeing Russia's accession finalised at the WTO ministerial meeting mid-December. Russian accession would strengthen world trade and hopefully contribute towards consolidating EU-Russian relations and closer bilateral economic ties.

The years to come will also be crucial for proving Russian commitment to the consistency, predictability and values necessary for the country's development, notably after the Duma and Presidential elections. A new impetus regarding domestic reforms is needed as well as in the negotiation of our future Partnership and Cooperation Agreement. Dialogue on energy policy should also be increased, and an attempt should be made to find common ground on the Energy Charter and how to implement it.

Involving the business sector and our civil societies will also be crucial. European companies have played an important role in rebuilding the Russian economy and meeting consumer needs there. Contacts between our universities, artists, entrepreneurs also need to be fostered. We can provide the platform to facilitate the emergence of these trends, but it will be businesses and their leaders, our students and researchers and civil society at large that will have the main role in the next chapter of European and Russian relations.

Jose Manuel Barroso

President of the European Commission

Russia and the European Union – a multilayered relationship

By Nina Vaskunlahti

“The EU has spent the last four years wishfully thinking that Putin’s successor as president, Dmitry Medvedev, would slowly transform Russia into a modern country and therefore a better partner”, write Ben Judah, Jana Kobzova and Nicu Popescu in a recently published paper on Russia (European Council on Foreign Relations, November 2011). During the last four years the European Union and its Member States have pursued active policies with Russia – the EU has just not spent time idly wishing for something to happen. Or better partners to appear.

It is in the interest of the European Union that the relationship with Russia develops on all levels. Since 2008 the European Union has been negotiating a New Agreement with Russia to replace the Partnership and Cooperation Agreement. The New Agreement would create a legally binding framework for the cooperation and bring the contractual relationship to the 21st century. The negotiations have not been easy. It takes time for the 27 Member States to tune their voices, and Russia for its part has chosen to be choosy in its approach proposing e.g. a series of sectoral agreements. The chapters on energy, trade and investment have been difficult to negotiate, and there has practically been a standstill situation. We have had long debates on human rights, common values and interests and how to find the best ways to respond together on global challenges. The views do not always meet but that does not mean that we would leave the negotiating table.

Russia has now successfully concluded its long WTO accession negotiations. The EU was a tough partner in these talks. The Russian chief negotiator was through out the whole 18 year period the same official, Maxim Medvedkov but on the EU side, many faces came and went. Our line, however, did not slip. Both Russia and the EU have a lot to gain as Russia finally – hopefully by autumn 2012 – becomes a member of the World Trade Organization. The EU is the most important trading partner for Russia: in 2010 alone the total volume of trade between the EU and Russia was nearly 250 bln € and c. 80 % of the foreign investment in Russia is of European origin. The WTO accession should also pave the way for concluding the open chapters in the New Agreement.

Mobility is an important issue in the EU Russia relationship. The ultimate goal is visa freedom but there is still a way to go. It took Russia almost seven years to agree on “common steps on visa free short term travel” with the EU. These common steps define criteria and preconditions - such as border controls, document safety, biometric passports, registration requirements etc. - to be fulfilled and implemented before the EU can even think of the next steps: a mandate for actual negotiations on visa waiver agreement.

The EU and Russia do not always see the world in the same way. We often have different objectives and

perceptions regarding foreign policy or global issues. Russia’s foreign policy is often directed by fairly dogmatic principles, and Russia prefers status quo. The EU, for its part, is more prepared for change and has a vast tool kit to deal with transition. The weight of “soft power” is still a relatively unknown in Russian thinking.

Differences should not, however, prevent us from seeking ways to cooperate and addressing issues of joint concern. Both have the right to own internal decision making procedures but the ever more globalising world is putting new demands which can only be responded together. Russia is not an isolated island safeguarded by endless energy reserves. It can only claim to be a global player by acceding to global rules and respecting its neighbours, individually and together.

Partnership for Modernization with Russia is a concept that was launched two years ago. It is a tool for the European Union to advance wide ranging reforms in Russia – and together with Russia. Modernization is not something that can be built in an overnight but it requires systemic approach and profound changes in the society. There will be no lasting modernization without rule of law and civil society or tackling the corruption from the top to the bottom. This is something most Russian partners also know even though acknowledging it can be more difficult.

The EU and Russia have already gone a long way together. The relationship is still challenging even though it has matured quite a lot. A mature relationship should also mean that difficult issues can be openly tackled and discussed – be it the essentials for a modern open society, human rights, cooperation with the neighbours or energy routes. The European Union has no interest to compete with Russia but to work together. But, as always, it takes two to the tango.

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The EU-Russia modernisation partnership – what's in it?

By Knut Fleckenstein

Modernisation has become the new buzzword since the Russian President launched his big modernisation campaign in November 2009 when publishing his article "Go Russia!" in a Russian online newspaper. He later reiterated his main ideas in his second annual state-of-the-nation address to the Federal Assembly.

Russia is looking back onto a long list of famous modernisers and reformers, the most prominent being probably Peter the Great. He initiated a radical reform agenda when he undertook to completely change his compatriots' lifestyle and turn them into Europeans. Today's Russia is not perceived as being far from its other European partners anymore. On the contrary, trade and economic relations have become so close that economic disturbances in the EU or Russia almost immediately affect the respective other partner. For the EU, Russia is the third most important trade partner, after the United States and China. Russia is also one of its main energy suppliers. As for Russia, almost half of its imports and exports are with the 27 EU member states.

When talking about the need of modernisation, the Russian President stressed the necessity of economic diversification. Due to the financial crisis and its economic repercussions, it has become more than obvious that Russia, by mainly basing its economic growth on revenues from its natural resources, has built its economic progress on an unstable ground. In order to gain more independence from developments on the oil and gas market, Russia has to diversify its economy. Other areas of interest to a comprehensive modernisation have been added quickly: technological development, financial sector reform, infrastructure investment and social policies.

At the second last EU-Russia summit in Stockholm in November 2009 the Russian President Medvedev and the President of the European Commission Barroso spontaneously agreed that the EU would lend its support to Russia's modernisation project. Maybe, the EU draw some inspiration from its recent 2020 Strategy which defines political priorities for the next decade in order to make the EU more fit for global competition but also more social towards its citizens.

As always, the devil is in the detail: When trying to agree on concrete modernisation projects which could be implemented by the EU and Russia jointly, different understandings of the term 'modernisation' appeared. While Russia seems to centre its modernisation around the economy, EU member states quickly adopted the point of view that modernisation should also touch upon the civil and social sphere.

Indeed, it seems obvious that a sustainable modernisation can only be reached by modernising not only the economy itself but also its social environment. Modernisation is an extremely comprehensive objective which cannot succeed without modernising the framework conditions for doing business. For example, the state must encourage the private sector to undertake innovation, to invest, to take entrepreneurial risks.

The challenge of modernisation does not lie in the missing political resolution which has been expressed by the Russian President at many occasions. A successfully modernised economy needs a stable and efficient framework for its activities: rule of law, control of red tape, fight against corruption, energy efficiency as well as strong human resources and free entrepreneurship.

However, modernisation is not a topic for Russia alone. Therefore the partnership for modernisation between Russia and the European Union would serve the interest of both partners. Whereas negotiations on a new cooperation agreement between the EU and Russia are currently advancing only very slowly, the partnership for modernisation would allow doing some small steps forward in the meantime.

The interest of the EU-Russia modernisation partnership lies in the fact that it is a very pragmatic tool presenting several advantages: It can help to re-establish confidence and reliability in the cooperation between the two partners and it can contribute to reaching concrete and visible results which would benefit the citizens.

Thus the modernisation partnership can be used not only for modernising one partner but also for modernising the relations between the two of them. The EU and Russia should seize this opportunity and take it as a starting point on their way away from a purely declaratory strategic partnership. If the end result of the partnership for modernisation were cooperation on concrete terms - beyond all declarations and on the basis of common interests and values - this would surely give a boost to the general relations between Russia and the EU.

Knut Fleckenstein

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The Russia-EU Partnership for Modernisation

By Vladimir Chizhov

The Russia-EU summit in Rostov-on Don in June 2010 launched a new area of cooperation Partnership for Modernisation. Why this choice?

The modern world is an arena of ever-increasing and widening globalisation. That means no country, nor even a group of countries, can succeed in social, economic, scientific and technological development on its own, without diverse international relationships. The global financial and economic crisis has demonstrated quite vividly the interdependence of the modern world. Under these circumstances, the optimal way is to move forward jointly through mutually reinforcing diversity. And in the case of Russia and the EU there is every reason and opportunity to achieve this.

The decision to engage in joint work was not taken by chance. For Russia the importance of enhancing cooperation with the EU is quite evident. The EU is Russia's largest trade partner, its closest neighbour, a powerful scientific and technological centre, and a serious player on the international political stage.

In its documents the EU defines as key aims those similar to the ones put forward by the Russian leadership. The long-term "Europe-2020" development strategy distinguishes three main priorities: developing an economy based on knowledge and innovation, promoting a more resource-efficient, greener and more competitive economy, and fostering a high-employment economy delivering social and territorial cohesion. Russia faces the same tasks.

Russia has on the whole successfully passed the test for a responsible internal and external economic policy in the face of the global financial and economic crisis. The growth rate of Russia's GDP, expanding trade relations, latest steps in promoting foreign investment, accession to the WTO clearly testify to this. We are certainly aware of the weak points of the Russian economy, its predominantly raw materials-oriented nature – though in some areas of research and development results achieved in Russia are at the level of best world standards, and sometimes outstrip them. That is why the country's leadership has put in the forefront of internal economic policy a programme to shift economy to innovative development.

Russia does not need to be convinced, or lesser still, to be coerced to modernise. We know from our own past that political and economic stagnation leads to catastrophic results. Obviously it would be naive to sit idle waiting for a possibility to blindly import modernisation recipes from abroad. Therefore, the Russian side sees the Partnership for Modernisation as an important addition contributing to serious internal work undertaken in this direction. It can not replace own efforts either by Russia or by the EU in this area, but building up on a synergy may substantially increase the effectiveness of our joint work.

The Partnership for Modernisation did not take off from square one. It builds on results achieved so far in the context of the four Russia-EU Common Spaces. Sectoral dialogues have become the key implementation instrument for the initiative, providing framework for mutually beneficial projects. A permanent working mechanism was set up to define priority areas for cooperation and check the progress achieved.

A Work Plan for activities within the Russia-EU Partnership for Modernisation was adopted in December 2010. The rolling Work Plan is an informal working tool and is being regularly updated.

The Partnership has brought a new mutually beneficial result-oriented philosophy into our cooperation and has quickly progressed from a virtual undertaking into practical joint projects. In the energy field, for example, both sides are engaged in substantial dialogue on a Roadmap on energy cooperation for the period until 2050. In the area of promoting a low-carbon and resource efficient economy, we agreed to enhance the exchange of experience in the regulation of industrial activities. A major

conference with the participation of the private sector on waste-reduction as a business opportunity is planned.

The Russian component of a shared environmental information system has been launched. A seminar to review the experiences of application of the Convention on assessment of environmental impact in transboundary context (the Espoo Convention) on the Nord Stream gas pipeline and possibility to use it for other projects has been held.

The dialogue on public health has been refocusing on clinical trials of pharmaceuticals, on fight against counterfeit medicines, and on communicable diseases. In the framework of Regulatory Dialogue concrete arrangement has been achieved on alignment of technical regulations.

Russian and EU scientists actively participate in research programmes of each other. On October 21, 2011 a Russian Soyuz launch vehicle made its maiden flight from the European spaceport at Kourou in French Guyana and put into orbit the first two satellites of the "Galileo" global navigating system. The Roskosmos-European Space Agency cooperation programme envisages as many as fifty such launches.

The successful outcome of Russia's WTO accession negotiations is also duly included in the Partnership for Modernisation record.

Our Partnership does not limit itself to economic, scientific and technological areas. Anti-corruption cooperation is emerging. A list of Common Steps towards Visa-Free Short-Term Travel of Russian and EU citizens was approved and thus gets us closer to starting formal negotiations on a Russia-EU visa waiver agreement.

The list of what has been achieved is far from exhaustive. Russian and the European Union leaders took note of a detailed progress report on the Partnership for Modernisation at their 28th summit in Brussels in December, 2011.

Interest in the Partnership for Modernisation projects emanating from business circles in Russia as well as in the EU – gives ground for optimism regarding the Partnership's future. Vnesheconombank of Russia, the European Bank for Reconstruction and Development and the European Investment Bank have committed to provide financial support (up to EUR 2 billion) for modernisation projects under the Partnership.

The Russia-EU Partnership for Modernisation is complemented with "modernisation partnerships" between Russia and individual EU Member States. Up to now relevant bilateral memoranda have been signed with 19 EU member states. This multi-level scheme of cooperation provides for effective use of benefits of the existing industrial and research specialisation between EU member states, contributes to establishing and deepening of regional cooperation.

We fully realise that a lot of work lies ahead. Difficulties may arise along this road: this is quite natural, as interests and priorities can not coincide everywhere, especially taking into account the fact that in some areas Russia and the EU are and will continue to be competitors. But the most important thing is that we have a joint aim to achieve results and are ready to work together, as there is no alternative today to modernisation for a successful development.

Vladimir Chizhov

Ambassador

Permanent Mission of the Russian Federation to the European Union

Russia-EU partnership for modernisation – words and reality

By Frank Schauff

The modernisation of society and the economy has become a hot topic on the Russian political agenda. As a result the attitude towards overseas companies has changed. Unlike in the past, European investors are seen not only as profit takers, but also the drivers of much needed technological innovation. Nowadays, it is easier for European companies to operate in the country. However, the Russian government must provide further support to foreign investors to make their words a reality.

What Russia desperately needs is modernization. Despite this, some foreign investors think Russians seem to be less interested in technological progress when oil prices go up. Membership in the WTO, which could stimulate competition and economic growth, is just one of the proposals for modernisation. Hopefully the WTO accession process will be completed sooner or later. However, many sectors, such as the automotive industry, are already competitive thanks to a number of state programmes supporting foreign investors and joint Russia – EU ventures.

Power of ideas: modernising Russia's government

The term “modernisation” was introduced to the Russian political discourse in 2009, after the global recession cut prices for Russia's major exports, such as oil and gas. Since 2005 Russia has been in talks with Germany over a “modernisation alliance,” which could go beyond a few state supported infrastructure projects, such as the Nord Stream gas pipeline. However, it was the global crisis that gave Russia a final push towards a closer cooperation with the EU.

The concept of a modernisation partnership has definitely helped European companies to facilitate a dialogue with Russian authorities. Because of this western industries have already benefited from the idea of technological innovation as such. It has given them an opportunity to develop more co-operative relationships with local governments. In some regions, such as Kaluga, the changes were dramatic and they resulted in the rapid development of several different industries. Beginning in 2006, this new policy has attracted over \$4 bn of foreign investments.

According to the State Statistics Service, in 2010 Kaluga saw industrial growth of more than 43 percent (the national average in Russia is around 4 percent). Volkswagen, Samsung, General Electric and many other companies came to Kaluga to implement their projects. Furthermore, European business is still expanding in the area. In September 2011 Volvo Construction Equipment said it would invest approximately \$52 mln to build a new 20,660-square-meter excavator plant in Kaluga on the 15 hectares of land the company acquired in 2007. Volvo plans to begin production in the first quarter of 2012.

Can innovation thrive in isolation?

No doubt, Russia cannot be modernised without European companies, even though a few years ago the Russians had ambitions to develop the necessary technologies on their own. However, later they realised it is more expensive and time-consuming than to purchase them abroad. According to the Russian nanotechnology corporation Rosnano, the share of enterprises introducing new technologies in Russia is only 9.6 percent compared to 40-50 percent in most countries in Europe.

There are a number of obstacles for modernisation within the country, and most of them are obvious. Firstly, there is a brain drain: starting in the end of 90s, qualified people began leaving the country. Secondly, the system of education cannot meet the expectations of modern business. Unlike in the west, Russian universities are only educational institutions, not research institutions which are linked to industries to fulfill their needs. Thirdly, the state budget for research is rather low in comparison with most European states. Only 1 percent of new technologies are sponsored by the government. Russian state spends 0.5 percent of GDP on science compared to 3.5 percent of GDP in neighbouring Finland.

However, there is another problem. In Germany, for example, the idea would be that the universities should work closely with the best foreign institutions to generate innovation. Russia, however, is not included in the international dialogue. Why? The Cold War and the isolation of the Soviet past, as well as a language problem might be some of the reasons. Also, for quite a while the Russian government has been focusing on the major state projects, such as Skolkovo and Rosnano, ignoring small and medium size business ventures.

Gradual change in not progress

At the last Forum of Russian and European businesses in St Petersburg, organised by our Association, most investors were quite sceptical of this policy. SME are the drivers of economic modernisation in the EU, generating 70% of GDP in comparison with 17% in Russia. The chief representatives of E.On Ruhrgas, Enel, Fortum, Roca Rus, Specta, who spoke at our Forum, represent a variety of industries. However most of them expressed similar concerns regarding the need for the right environment for economic modernisation, including reliable institutions, high quality infrastructure and respect for individual initiatives.

The Russian government may have already realised that top-down modernisation is not the best approach. Speaking at the Russia Calling investment forum in October 2011, Vladimir Putin said the state's direct presence in the economy will continue diminishing on a step-by-step basis. He promised the government will gradually withdraw from state-run corporations and privatise its controlling stake. Also, major projects will be supported by an array of developmental institutions, such as Vnesheconombank (the Bank of Foreign Economic Activity) and the Russian Fund of Direct Investments. But only time will show if this “gradual change” Mr. Putin promised can actually help Russia's oil and gas export based economy. Is “slow modernisation” within the current political system enough for an emerging economy still far behind the developed markets? Only time will tell.

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CEO

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The EU-Russia modernisation partnership

By Fraser Cameron

At the end of May, EU and Russian leaders agreed at their summit in Rostov on the Don to work together on a 'modernisation partnership.' Behind the fine words of the summit communiqué, however, there are significant differences about what each side means by 'modernisation'. The situation is even more complicated because there are divisions within the Russian elite as the extent to which modernisation should touch the political system as opposed to economic reform. Igor Yurgens, the head of the Institute for Contemporary Development, a think tank close to President Medvedev, has outlined proposals for a comprehensive reform of Russian society. Those close to Prime Minister Putin prefer a more limited agenda, essentially seeking to make the current economic system work more efficiently.

The European Commission has put forward its own views on what the modernisation partnership should cover. Top of the list is the rule of law. This also reflects the concerns of President Medvedev who has repeatedly drawn attention to the problems of 'legal nihilism' in Russia. The absence of the rule of law not only hampers the development of a modern, civil society but also discourages Western investment in Russia. Russian leaders acknowledge the importance of attracting FDI to help the modernisation process but business leaders are hesitant to invest there without improved legal certainty and a fair dispute settlement mechanism. Guarantees concerning property rights are also essential.

The EU, largely through its support for programmes run by the Council of Europe, already makes some limited contribution to the strengthening of the rule of law in Russia. The EU could also assist Russia in drafting legislation providing for the safeguard of foreign investments. But the main push must come from Russia itself. Change has to start at the top and rhetoric must be followed by action. Many believe that the release of Mikhail Khodorkovsky, the imprisoned former boss of Yukos, would be a good signal of changed attitudes. Fair and effective implementation of the laws is essential. Russia should give priority to the reduction and simplification of legislation affecting business activities.

Russian GDP and exports are highly dependent on energy resources. The Russian leadership has acknowledged the importance of diversifying the economy and increasing its trade. But Russia has given contradictory signals about its willingness and commitment to join the WTO and introduced a number of protectionist measures,

especially non-tariff barriers, during the past twelve months. To reassure the EU and other international partners, Russia needs to give a categorical assurance regarding its commitment to join the WTO as soon as possible.

One area where both sides should see added value by working together is green technology. Russia lags way behind the EU in environmental standards and is one of the worse polluters when it comes to CO2 emissions. Helping Russia achieve greater energy efficiency would be a real win-win development. Such a move would tie in with closer cooperation in science and research where Russia is strong in a number of fields. The EU should increase funding for cooperation in science and research and facilitate Russian involvement in EU programmes. This should be linked to the modernisation partnership.

Another area where Russia could draw on EU experience is regional development. There are huge inequalities between the regions in Russia, a problem compounded by the many 'mono-cities' (dependent on one – usually outdated – industry). Russia would also benefit from EU experience and technology in the renewal of its outdated infrastructure.

Such an ambitious agenda requires much more trust between both sides than is apparent today, especially after Moscow's military adventures in the Caucasus. There needs to be a vast increase in people to people contacts – students, different professions, journalists, lawyers, etc. Russia is keen to see the abolition of visas for visiting the EU. This is a fine objective but it would have a better chance of success if Moscow stopped making EU businessmen register every time they visit a separate region in Russia.

Finally, there should be a new EU budget line for EU-Russia relations with a specific focus on the modernisation partnership. If Russia is serious about modernisation – and there are serious doubts about the political will – then it should recognise that the only real source of outside assistance is the EU.

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Partnership for modernisation – incentive to revise the EU-Russia relations

By Jarosław Ćwiek-Karpowicz

The willingness to enhance the EU-Russia relationship, declared by both sides for years, has not been transformed into political practice so far. The new document specifying the scope and institutional foundations of these relations and replacing old Partnership and Cooperation Agreement (PCA) has been under difficult negotiations for three years now. Also four “common spaces”, which were established between Russia and the EU at the 2003 summit in Sankt-Petersburg have encountered many obstacles. Even in respect of the common economic space, which is relatively the most advanced, the goal of a gradual market integration remains elusive. Russia has taken a highly selective approach and cooperated only in these areas where it stands to gain (e.g. trade in steel products). Prospects for establishing common economic space were also obscured due to Russia's difficulties to become a member of the WTO. In 2009 Russia practically blocked negotiations for almost a year and resumed talks in the second half of 2010.

Serious tensions rose in the EU-Russia energy relations. The Energy Dialogue launched in 2000 produced some results such as improved exchange of information and early warning mechanism, but it also revealed severe conflicts of interests and different perspectives on the future cooperation. The EU wanted to establish a regulatory framework as well as a level playing field for energy trade. In its view reciprocity should be a cornerstone of mutual relations. Yet, Russia chose its hydrocarbon potential as an instrument for regaining its political and economic prominence and started to perceive any efforts to regulate energy trade and transit through multilateral agreements as attempts to its autonomy.

The Russian-Georgian war in August 2008 and the Russian-Ukrainian gas crisis in January 2009 severely damaged the EU-Russia relationship. Both events revealed different understanding of key political questions, first of all how to deal with the post-Soviet space. A few weeks after military intervention in Georgia, new Russian President Dmitry Medvedev announced five points of Russian foreign policy, in which he underlined Russia's right to co-decide about the foreign policy and domestic situation in former Soviet countries. Recognising every country's right to decide freely about joining alliances, the EU rejected the idea of spheres of influence. Moreover, the EU launched Eastern Partnership, a new initiative to support the process of modernization in post Soviet countries. This new idea within the European Neighbourhood Policy provides the EU neighbours with an opportunity to be gradually integrated with the common market and embraced by the EU policies and programmes. It is also supposed to pave the way for transmission of good practices in the field of trade, economy and politics. Despite the fact that Russia rejected the offer of being covered by the ENP in 2003 as it sought to emphasize its special status in relations with the EU, the Eastern Partnership founding documents envisaged the possibility of Russian participation in multilateral projects.

Due to an exceptionally deep recession (GDP dropped by nearly eight per cent and imports plunged by a whopping

27 per cent in 2009) and huge foreign capital outflow (FDI plummeted by more than 45 percent in the first six months of 2009) Russia has changed its policy towards the EU and began to improve its deteriorated relations with some EU member states like Poland, Great Britain and Sweden. Russian leaders have realised that they need the EU's assistance to create an innovated economy and decrease the Russia's heavy dependency on hydrocarbon and raw materials exports. At November 2009 summit EU and Russia signed an agreement on regional cooperation to be financed largely by the European Neighbourhood and Partnership Instrument. At June 2010 summit they launched a Partnership for Modernisation for promoting reform, enhancing growth and raising competitiveness.

Polish experience of political, economic and social transformation in 1990s indicates that adoption of the European model and integration into the EU accelerated the modernization of the former communist bloc countries and effectively reduced the economic distance between Eastern and Western Europe. For Russia this kind of rapprochement with the EU not only is a chance for strengthening economic reforms, but also getting over with deficit of democracy, enhancing of rule of law and good governance. Additionally, it can amplify international position and increase attractiveness of Russia as a political and economic partner.

New EU initiatives towards Eastern Europe, namely Eastern Partnership and Partnership for Modernization, can be utilized as an incentive to revise the EU-Russia relations. They certainly need a new paradigm replacing the old-fashioned prism of geopolitical rivalry by a win-win way of thinking aimed at bridging development gaps between various parts of the continent. As it was demonstrated by Poland's experience, the fastest and most effective way for Russia to accelerate the development and catch up in terms of standard and quality of living of citizens is to adopt *acquis communautaire* to the greatest acceptable extent. Recognition of rational and mutually beneficial principles, such as mutual investment protection or joint dispute settlement mechanism, would represent a step towards restoration of trust in the EU-Russia trade relations, namely in energy sphere. It could be achieved through Russia's WTO accession and introduction of new separate chapter into the future EU-Russia agreement (PCA 2), deriving from provisions of the Energy Charter Treaty.

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The boom and crash of modernisation zeal in EU–Russia relations*

By Sinikukka Saari

The EU–Russia modernisation partnership – looking good!

President Medvedev's plans to boost innovation and modernise Russian economy have been received with a fair amount of enthusiasm in the west. Many in Europe hope that after years of persistent distrust and moping about, a new era of mutually beneficial, constructive cooperation in the primary field of economy and technology is finally kicking off.

In an attempt to seize the positive momentum and demonstrate goodwill towards the Russian leadership, the EU proposed a special 'modernisation partnership' that was agreed between the parties last year.

Although some have criticised that the partnership by claiming it is essentially just re-packaging of cooperation that is already taking place in the framework of four common spaces between EU and Russia, the agreement has nevertheless brought a positive spin on the relationship.

For once, the EU seemed to be responding quickly to developments in Russia and successfully advancing its political agenda by quickly adopting Medvedev's modernisation discourse

Or not.

Yet, I believe that the congratulatory enthusiasm for partnership for modernisation is unfounded. In fact, I would even argue that potentially the partnership for modernisation will even add to the problems of EU–Russia cooperation.

First of all, the EU reacted to mere change of political vocabulary – not to real political developments already taken place. At least for the time being, Medvedev's modernisation zeal is just rhetoric. Time will tell if it is going to develop beyond that.

The danger with this kind of 'ad hoc' cooperation projects is that the EU might embark on something that is not ever going to develop from words to deeds. If that happens, political agility becomes a burden rather than asset. The cooperation agenda gets buried with various projects of different size and shape which at some point sounded like good ideas but never took off the ground. The agenda is likely stay dysfunctional as taking topics off the agenda is even harder than getting them there.

Second, even in the case that Medvedev's modernisation plan is going to take off, problems might emerge. What the Russian political elite – or at least part of it – is proposing is a vertical, carefully managed elite-led modernisation. Innovation and competition are 'invited' from the top when and if considered necessary. It goes without saying that the elite do not believe political competition is needed – at least not before the next round of election (and then the next, and the next?).

Is this kind of vertical modernisation really what the EU should be supporting? After all, such a modernisation is not likely to be successful. In a globalised, interconnected world of today, this kind of restricted and managed modernisation is extremely difficult to pursue.

Even more importantly, supporting Russia's fuzzy modernisation programme is doubtful because that could mean indirectly legitimising the elite's plan to restrict political competition until undefined future. Although, in principle, there may be nothing wrong with gradual democratisation, the sincerity of Medvedev's plea for democracy can be justifiable questioned. For the time being at least, there is no indication that he is serious with it. On the contrary, every time his claimed beliefs have been tested, he has backed off.

It seems that the EU–Russia partnership for modernisation is based on wishful thinking rather than pragmatic, clear-headed analysis on what is going on in Russia. The typical juxtapositioning of idealists and pragmatists distorts the reality:

indeed, often the most 'pragmatic' policies are based on the biggest amount of idealism.

How to get it right?

If the partnership for modernisation is unadvisable way to engage with Russia, what then is the advisable one? How should the EU engage with Russia?

First, (as already mentioned) its policies should be based on long term-strategic thinking rather than ad hocism.

Second, the policy should be open, transparent and geared towards a greater amount of Russians than just the very select group of political elite. Although it may be a good idea to engage with people to some degree in all foreign relations, it is particularly important in the case of non-democratic states such as Russia. By engaging exclusively with the leaders (or appearing to engage only with the leaders) the EU is also indirectly legitimising the way the Russian authorities treat their citizens. The approach should be a more balanced one.

The EU policy with many neighbouring non-democratic states suffers from what in the academic literature has been called a 'joint stability trap'. This means that in EU is 'trapped' between its desire to promote democratic change and to preserve order and stability in its neighbourhood (see e.g. Bilgic 2010). In practical policies, maintenance of order and supporting the Russian government's policies have been given a clear preference.

In principle, the EU is acknowledging the importance of engaging with non-state actors in its neighbourhood. Unfortunately, the practice lacks behind. Although the EU consults non-state actors before the human rights consultations with Russia, these consultations do not receive almost any media coverage. All that is visible to the public are closed doors of summits and human rights consultations.

The EU needs to communicate better and engage more actively with both Russian people and leadership alike. The EU should act publicly in an open and transparent manner. The EU–Russia human rights consultation should be developed into a more open, transparent and public dialogue.

Although currently Russia can be considered a 'stable authoritarian' state (Levitsky and Way 2010) a non-democratic state can hardly ever be considered stable in the long run. The strategy of backing authoritarian leaders in the name of stability will be decreasingly efficient in future.

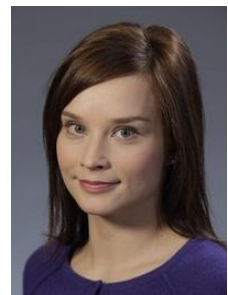
The European documents reflect the awareness that human rights and security are intertwined. Now it is time to update the practices to reflect this awareness – also in the case of Russia.

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* This article is based on my presentation in a seminar at the European Parliament organized by ALDE Group, 9 February 2010

The EU and Russia already have what it takes to succeed

By Hiski Haukkala

Innovations and becoming an innovative information society seems to be the buzzword currently in Russia. Perhaps the most eloquent proponent of the approach has been the President Dmitri Medvedev who tirelessly in his recent speeches has spurred Russia to engage itself in a radical overhaul of its economy and society. The starting gun in this respect was his long article "Forward Russia!", published on the web-pages of *gazeta.ru* in September 2009.

This debate has gathered momentum in recent months. Another important catalyst for the debate was the Moscow-based Institute for Contemporary Development (INSOR) report "Russia in the 21st century: vision for the future" on Russia's future choices in early 2010. In the report a group of Russian intellectuals fleshed out a vision for an open and liberal Russia that would eventually become fully integrated into the main Euro-Atlantic structures, NATO and possibly even the EU included.

This is not the place to discuss the realism of these ideas. The main point is that as a result of these inputs, the Russians are now engaged in a lively domestic debate concerning the prospects of Russia's modernization. In addition to seeking to embrace innovations in the abstract, the Russians are now asking themselves what it actually means in the here and now. This is also forcing them to take a long hard look into the mirror and to concede that they do not particularly like what they see: Russia is seen as lagging behind the rest of the world. In President Medvedev's words, Russia suffers from endemic corruption and backwardness and these are key things that need to be rectified if Russia is to become a modern and successful state in the 21st century.

These debates and intentions are of course highly welcome. In a certain sense, Russia has squandered its first two post-Soviet decades. Although many of the old structures have been dismantled, new industries and new competitiveness have failed to materialize. Now it seems that Russia has set its sights to rectify this shortcoming. The choice is overdue but a correct one. It is also going to be difficult, as the gap between Russia and the rest of the world, including Russia's reliance on the primary sector for economic growth, has only increased during the 2000s.

The domestic debate in Russia has already had an impact also on the country's relations with other actors. When it comes to the EU–Russia relationship the key word now is Partnership for Modernization, or P4M. The concept was launched by the President of the European Commission Jose Manuel Barroso at the EU–Russia Summit in Stockholm in November 2009. The initiative has been received with some enthusiasm on the Russian side. The recent EU–Russia Summit in Rostov on Don in June further endorsed the idea.

On the one hand, the P4M is to be welcomed. In recent years the EU–Russia relationship has been characterized by mutual indifference; it reminds of a strategic partnership adrift. During the recent period of better U.S.–Russian ties this feature has become more striking: The U.S. and Russia have been able to agree on a new START treaty while the negotiations for a new post-PCA agreement have shown only limited progress (to be sure, the new EU–Russia agreement is much more ambitious and wider than the new

START). Yet if the new P4M results in improved atmosphere between the EU and Russia and helps the two to concentrate their minds on actual substance then it is to be welcomed.

But on the other hand the P4M concept raises some questions as well. As was already mentioned, the EU and Russia already have another on-going process: the negotiations for a new post-PCA agreement. Nine rounds of talks have been conducted but the process has been fraught with difficulties mainly due to Russia's unclear stance concerning the WTO membership which for the EU is a *sine qua non* for a deeper economic engagement with Russia. In this respect it would be unfortunate if the P4M concept further diverted energies from the negotiation process or the actual task of bringing Russia's economy closer to Europe.

In the final analysis, the EU and Russia do not really need a new Partnership for Modernization. In fact, it would not be a disaster if they failed to complete a new post-PCA agreement, either. The current PCA is still based on a vision that is sound – Russia's integration and close political cooperation with Europe. What is more, the two parties already engaged themselves five years ago in a detailed exercise to create Four Common Spaces for cooperation and joint road maps to guide their implementation – another useful instrument that seems to be in danger of falling to the wayside.

In this respect it would be unfortunate if the parties invested their best energies into yet another protracted process. There is no need to re-invent the wheel as all the necessary ingredients to succeed are already in place. What is required is determined and persistent implementation to reach these goals. Admittedly, that will be an exercise where the devil may reside not only in the details but all along the way.

At the end of the day the issue boils down to Russia's own choices. Encouragingly, the debate is now there in Russia. Russians are once again pondering the future, which was not the case just a few years ago. So a chance to reinvigorate also EU–Russian relations exists. But no one can ram it down the Russians' throats. The decision can only come from and be made by the Russians themselves.

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The writing reflects personal views and do not necessarily represent the official Finnish position

EU-Russia cooperation in promoting innovation

By Anneli Pauli

Research and innovation are at the top of the political and economic agendas in both Russia and the EU. In June last year, the EU's leaders endorsed the Europe 2020 strategy for the creation of a sustainable market economy. At its heart is the conviction that innovation is central to getting Europe out of the current economic crisis and to build long-term sustainable growth. In essence, it proposes to transform the European Union into an Innovation Union, and to build economic growth on the generation and exploitation of knowledge. There are strong parallels with the Modernisation Programme for the Russian Federation, launched by President Medvedev in late 2009. This Modernisation Programme aims to diversify and modernise Russia's economy and society, and to reduce the country's dependence on oil and gas by creating a smart economy, based on knowledge, innovation, new goods and technologies.

The similarity in thinking is also reflected in the priorities of the Europe 2020 'Innovation Union' Communication and the draft 'Innovative Russia – 2020' strategy drawn up by the Russian Ministry of Economic Development: both call strongly for increased international research cooperation. Collaboration in science, technology and innovation (STI), therefore, plays a prominent role in the EU-Russia Partnership for Modernisation, which was agreed at the EU-Russia Summit in June 2010 and sets out a shared agenda to help bring about economic and societal reform.

The EU and Russia have a strong history of successful and mutually beneficial cooperation in STI both at the level of the European Union and through bilateral actions between Russia and individual EU Member States. The EU funding programmes for research and technological development – the Framework Programmes – are fully open for EU researchers to work in collaboration with international partners. In the current Seventh (FP7) and all previous Framework Programmes, Russian researchers and research organisations have been involved in more successful projects than any other international partner country. In FP7, to date, over 400 Russian research organisations are involved in more than 270 projects receiving over 45 million euro of EU funding. In addition, more than 140 Russian nationals have been awarded Fellowships through the FP7 Marie Curie actions or hold one of the prestigious grants of the European Research Council, including Konstantin Novoselov, the recent Nobel Prize winner for Physics.

At the same time, Russian research programmes and foundations, such as the Russian Federal Targeted Programmes (FTP) for Research and Development, the Russian Foundation for Basic Research and the Foundation for Assistance to Small Innovative Enterprises have increasingly involved EU researchers in their activities. For example, since 2007 European research organisations have participated in over 150 projects funded under the FTP; indeed, there is a greater level of collaboration with EU researchers under the FTP than with any other international partner. It is clear that for collaboration in science and technology, the EU and Russia are natural partners of choice.

This collaboration is underpinned by a robust and structured dialogue, through a sectoral agreement between the EU and Russia for cooperation in scientific and technological research, which has existed since 1999. Several joint thematic working groups have been established for policy exchanges or to discuss research topics of potential mutual interest. These topics are then implemented through calls for proposals under FP7 or through the FTP, or increasingly through coordinated calls where the European Commission and the Russian Ministry of Education and Science issue parallel calls for proposals, with matching financial commitments, to fund projects working in close collaboration. Eight such coordinated calls have been funded to date, in topics including health research, nanotechnology and aerospace, with the EU and Russia each contributing over 30 million euro. Full information on the actions under the Cooperation Agreement is given in a jointly produced 'road-map' for cooperation.

Many EU Member States have concluded analogous bilateral inter-governmental or inter-institutional cooperation agreements with Russia. An overview of the financial support and opportunities that are available for researchers under these bilateral programmes and at EU level is set out in an easy to use guide – the Compendium on S&T Cooperation between the EU and the Russian Federation – drawn up by the EU Delegation in Moscow and the Russian Ministry of Education and Science.

The EU and Russia both wish to build on the strength of the current cooperation and to develop a strategic partnership in research and innovation, to contribute to tackling global and societal challenges of common interest, help with the modernisation of our economies and to strengthen the international dimension of both EU and Russian innovation policies. This will involve stepping up the scale and scope of our cooperation, with a focus on a smaller number of specific STI areas of strategic importance, for increased collaboration and investment. Identifying and agreeing on these areas will be the focus of discussions over the coming year under the S&T Cooperation Agreement, and through the Partnership for Modernisation.

One such strategic area could be support for the establishment and operation of global research infrastructures. EU Member States and Russia are partners in a growing number of international research infrastructures including: the International Thermonuclear Experimental Reactor (ITER); the International Space Station; the European Organisation for Nuclear Research (CERN); and, the Russian Joint Institute for Nuclear Research (JINR). Indeed, work is ongoing, involving both the EU and Russia at G8-level through the Carnegie Group of Science Advisors, to categorise research infrastructures and to identify national research infrastructures which could be opened at international level.

At the same time, we will increase our dialogue on embedding innovation in all aspects of research policy, in line with the Innovation Union and Innovative Russia strategies, to improve the conditions for delivering innovation and reducing the time to market. This could cover for example: industry-led research strategies through collaboration between the Technology Platforms which have been established in both Russia and the EU; the framework conditions for driving innovation, such as in transforming public procurement into a driver for more innovative products and services; collaboration in pre-normative research to establish common standards; or the development of indicators for innovation.

With similar and complementary thinking on the strategic development of STI policy, there is clearly a great potential for the EU and Russia to increase collaboration, develop a mutually beneficial strategic partnership, boost research and innovation in the EU and Russia, and to create smart, sustainable and socially-inclusive societies.

DISCLAIMER: "Please note that the European Commission is not affiliated with this publication and the opinions expressed in this article do not necessarily reflect its position or opinion".

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Modernization of Russia

By Jaakko Iloniemi

The theme – modernization of Russia – is not new. Many of Russia's leaders have had that aim and some of them have been successful in their endeavors. In some cases the method has been to emulate other socially and economically more advanced countries. During the years of Communist rule there was much faith in finding a specific, different Russian form of modernization. Today, modernization is once again the watchword that is repeated in most major political speeches.

What is exactly meant by modernization in the present context is less than clear. Some of the Russian leaders would like to confine it to the economy while others, including President Dmitri Medvedev, see modernization as a wider task. In a recent speech he has emphasized strongly that modernization has also a social and an educational dimension.

It is obvious that in Russia the phenomenon known as "resource scourge" is part of the problem. The sustained, high price of energy, notably gas and oil, has made it easy for the government to replenish its coffers. The recent developments with decreasing demand for natural gas and an increasing awareness of the finality of oil resources have convinced the government that the days of a resource based economy cannot last forever.

A matter of political choice has been the question should the economy be modernized by entrepreneurs themselves accepting the free play of market forces or should that process take place under strict government management. Some sort of combination of these two methods seems to be more likely than either or. However, the main strategic decisions will be made centrally.

The ongoing campaign to modernize the Russian economy and the society has its origins in the article that President Medvedev published in September 2009 called "Go Russia". In the strongest of words he condemned "centuries of corruption" and "paternalistic attitudes". He did acknowledge that "...an innovative economy cannot be established immediately. It is a culture based on humanistic values", he observed. All in all in that speech he showed that he was aware of the many dimensions of a truly modernized society and the complexity of its workings.

The developments since September 2009 show that the issue of modernization is still very much part of the policies of President Medvedev and Prime Minister Putin. Some concrete steps are about to be taken to implement the announced policies. One of them is the plan to create a "Russian silicon valley" in Skolkovo, nearby Moscow.

President Medvedev has said that he is well aware of the fact that the Californian Silicon valley cannot be copied. He says that "Skolkovo should turn into a certain system, which attracts people...and this cannot be reached through decree". A number of major international companies have indicated their interest to locate their facilities in Skolkovo. Such co-operation has been very much the desire of the Russian leadership. Much attention has been given to co-operation with the European Union and, in particular, with Germany. Germany has been traditionally the Western society that has much to offer to Russia. Chancellor Angela Merkel has already indicated that her government is prepared to cooperate. No wonder because German enterprises are keenly interested in exporting machinery and instruments to the emerging new industries in Russia.

In spite of the participation of the private sector, Skolkovo is still a top-down form of modernizing Russia. As president Medvedev very correctly pointed out modernization cannot be

reached by decree, since it is "a culture based on humanistic values." Among such humanistic values is also the rule of law. Most Russians agree that this is a very weak point in their plans. As long as matters, such as intellectual property, or physical investments are not well protected, Western participation in projects of modernization will be half-hearted, at best.

Some observers say that China has succeeded without creating a society based on the rule of law and it prospers without democracy. Therefore it would be a fallacy to believe that these characteristics are a necessity. The beginnings of the Chinese process of modernization are, however, radically different from the Russian case. In the case of China the modernization has been introduced by adapting the economy to co-operate with foreign enterprises by manufacturing products developed elsewhere. Indigenous Chinese products are only now entering the world market. To absorb know-how and business practices from others has been the stepping stone in the Chinese transformation. In Russia their effort is to make a quantum-leap from an extracting economy into a high-tech economy, a leap that is extremely demanding.

No wonder that there are many skeptics who are pessimistic about the likelihood of the chosen approach. They maintain – as does the Russian born Nobel laureate Andre Geim that "this charge requires several generations". It is going to progress very slowly and swim through trickles", he says. There are plenty of others who, while endorsing the goals of the policy, have serious doubts about the way it is executed. Some 2200 Russian scientists have written a letter to President Medvedev saying that his plan for economic innovation is doomed if Russia fails to attract foreign students and teachers into science.

Here is another important difference between the Russian and the Chinese way of modernization. China has benefited enormously from the contribution made by the tens of millions of Chinese living abroad and dedicating their capital and their skills to the Chinese process of transformation. Russia has no similar source to draw upon. China has also been very open in attracting foreign expertise to their institutes of research and higher education. The Russians scientists are aware of this component in the Chinese success story.

It is much too early to tell what the prospects are for a successful modernization of the Russian economy and the society as a whole. If matters such as lack of rule of law and corruption are not weeded out, the prospects are not too good. If truly representative government and full civil rights are not guaranteed the prospects for success are likely to be modest. If the Russian leadership believes in its own clearly stated goals, these things are going to be put right. The earlier the better!

Jaakko Iloniemi

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Dmitry Medvedev's modernisation from above

By Viatcheslav Morozov

As argued by some observers, the fires that devastated many areas in central Russia in the summer of 2010 have put in question the entire political system that has been built over the last decade. The famous "vertical of power" has not been able to prevent the fires or to deal with their destructive consequences. The latter include not just the destruction as such, but also its social and political effects. Local officials, who have learned all too well that they need to stick to the letter of the law, do not rush to deliver on the populist promises made by top political leaders. Compassion to people whose property was destroyed or even to those whose relatives perished in the fires will not be a valid argument in one's defence if one happens to violate any of the numerous and contradictory directives that regulate the ways of spending public money. The economy, the public finances and, in the end, the political institutions have to carry the extra weight of growing food prices. The most logical response of the current centralized system in which the central authorities are responsible for everything, is to introduce price controls. This is an extreme example of a short-term solution that is likely to produce shortages on the market and lead to even greater instability.

These developments bring to light the problems haunting the pet project of the current presidency – modernisation of Russian society and economy. In all his recent statements on the subject, President Dmitry Medvedev has been keen to present the image of Russia as a dynamic society firmly on track towards modernisation, making significant progress in a matter of months, not years or decades. Some would argue that this image is in sharp contrast with the reality of widespread corruption, dysfunctional institutions and semi-authoritarian political system. It is not for this short article to try and assess the relative successes and failures of the modernisation project. What I will try instead is highlighting certain ideological flaws in the political thinking behind the whole project that are likely to be fatal in the longer run, unless they are addressed now. I do not share the pessimism of those who discard the whole idea of modernisation as pure rhetoric and propaganda. On the contrary, I believe that there are chances to change the situation to the better, but one thing that is needed for that is international involvement at a qualitatively new level.

Russian president loves to talk about democracy – indeed, it was obviously his decision to designate the criteria for democracy a key topic of this year's Global Political Forum in Yaroslavl. However, it is evident both from his speeches and from the actions that his administration takes that democracy is understood in the Kremlin in an extremely paternalistic way. The vertical of power remains the key instrument for modernisation: it seems that Russia's top leadership is still daunted by the ghost of the 1990s when both society and the economy were in disarray, while the political process reminded of the Hobbesian war of all against all. To avoid a repetition of this scenario, the Kremlin prefers to keep the "constructive" opposition on a short leash and the "radicals" suppressed, civil society and the media in check, the "strategic" industries and natural resources in state ownership, and the regional and local authorities firmly integrated into the bureaucratic hierarchy. Even when this system does react to the pressures from below, this usually takes place of a single-handed decision by the "first person", such as Vladimir Putin's order to remove the projected oil pipeline away from the Baikal Lake in 2006 or Dmitry Medvedev's suspension of the construction of a new road through the Khimki forest outside Moscow in 2010. The recent departure of the notorious Moscow Mayor Yuri Luzhkov followed the pattern: he was fired by Medvedev's decree after an orchestrated media campaign exposing alleged corruption in the city government.

Unfortunately, it seems that this top-down approach is an innate fault of the modernisation project, integrated its entire philosophy.

Despite his frequent declaration to the contrary, Dmitry Medvedev's approach to modernisation is fraught with paternalistic attitude. This was evident, for instance, in his speech at the Yaroslavl forum, in which he highlighted the state's efficient exercise of policing functions as a key criterion of democracy. Protecting citizens from crimes is a function of any state, and it can be performed in many different ways, including the most authoritarian ones. It cannot therefore be presented as a definitional feature of a democratic society.

This emphasis on security in fact reflects the obsession with control which was one of the distinctive traits of Putin's presidency and which survives into this day. The Russian authorities do not trust any grassroots initiatives and would strongly prefer protecting the citizens from all kinds of social evils rather than letting the citizens protect themselves. This paternalistic attitude is also evident in Medvedev's argument that one of the key tasks in the process of democratic development is to promote high culture, including "political and legal culture, the culture of social behaviour, the culture of civic dialogue". The "low level of culture", on the contrary, goes together with "intolerance, lack of responsibility, aggression", which "destroy democracy".

Here, the references to "culture" are used to legitimize state control over society. The people of high culture, according to Medvedev, would use the freedom of speech and the freedom of assembly in a wise way, whereas the abuse of these freedoms is a sign of barbarianism. The implication is, of course, that it is up to the authorities to differentiate between the civilized and non-civilized forms of political activity, and thus to decide which of them are to be supported and which must be suppressed. Moreover, "the citizens, who acquire a greater range of opportunities and more freedom, must attain greater responsibility". People of high culture are those who behave according to the rules, while everyone who, for instance, stages unauthorized protest, is classified as a barbarian.

I would argue that this mistrust of grassroots initiatives is the main obstacle on the way towards modernisation, much more serious than corruption or technological backwardness. However, so far the situation is not hopeless. It seems that at least some people in the Russian government, including President Medvedev himself, are genuinely interested in using the resources of the West in transforming Russian society, and, moreover, they do take western emphasis on liberal democracy seriously. What they do not like is Russia becoming an object of democracy promotion, but at the same time, they seem to be ready for an open dialogue about the meaning of democracy, in which every voice would be treated with equal respect. This is where international involvement in Russia's modernisation can potentially prove fruitful. Even if there is a degree of cynicism and propaganda involved in the Kremlin's democratic rhetoric, it would still be unwise to ignore this invitation for dialogue – if only because this would be inevitably interpreted to the effect that *no one* is serious and sincere in their advocacy of democratic values.

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“Modernization from above” in historical perspective

By Leonid Polishchuk

“Modernization” is once again a buzzword in Russian policy quarters, and, consistently with the national tradition, the government is the protagonist and sole champion of the campaign. Such continuity makes lessons of history – both remote and more recent – highly relevant in today’s modernization debates.

The economic historian Alexander Gerschenkron in his famous essay *“Economic Backwardness in Historical Perspective”* identified common features of the most famous past waves of Russian modernization – from Peter the Great to Josef Stalin. All of these waves were initiated by powers that be in response to external threat and prospect of Russia’s losing its competitiveness vis-à-vis international rivals and potential adversaries, all relied on heavy borrowing of foreign know-how, and all required extraordinary mobilization of domestic resources at the cost of massive loss of life. Such modernization lapses did the job in the short run, propelling Russia to global leadership, but lost steam soon thereafter, failing to hold Russia from slipping back into backwardness.

A new coil of the Russian modernization spiral that the Russian government is about to unfold differs from the above pattern on one important count – it does not call for an extraordinary resource mobilization and draconian expropriation of income, property, and human life. This is not just impossible in today’s Russia, but luckily not even necessary, since modernization can be funded from resource revenues which are largely under government control. Are there other reasons to expect that this time there will be an exception from the “the Gerschenkron Rule”?

It is expected that the modernization will be powered by large-scale investment projects which the government will support not only financially, but also by offering preferential treatment. Such projects will be placed in “institutional enclaves” with special legal and regulatory regimes, tax and custom rules, etc. This strategy puts general institutional reform and infrastructure development outside of Skolkovo-like “institutional greenhouses” on the backburner as tasks of lesser priority. Anatoly Chubais, one of the key actors and advocates of the modernization-2011, while occasionally lamenting failures of Russian courts to impartially and consistently uphold the rule of law, flatly rejected the idea that modernization should be started from revamping of the *Basmanny* justice system.

And yet sustainable growth in the post-industrial era is hardly possible without open-access institutions providing non-exclusive protection of property and contracts, without infrastructure ensuring access to markets, and in the absence of other material, legal and political foundations of market economies. So why not *start* Russian modernization from laying down such foundations? The answer might well be a political one.

Taking Gerschenkron a step further, the American economists Daron Acemoglu and James Robinson in their recent article *“Economic Backwardness in Political Perspective”* point out that broad-based market modernization is fraught with political instability. Political risks do not stop such modernization in countries where ruling elites are either fully confident in their grip on power or, on the contrary, fiercely compete with each other and hence cannot give political rivals trump cards by delaying overdue reforms. In three empires of the XIX century – Russian, Austro-Hungarian, and Ottoman – ruling classes did not face serious political competition within their ranks, and yet were

justly concerned about their political survival. Modernization of these states was consequently blocked, which eventually sealed their fates.

But is “modernization from above” insulated from its own, perhaps no less serious, political risks? Success of China’s special economic zones is often invoked in support of the “Skolkovo” model. What such argument misses is that, first, these enclaves played albeit significant, but by no means pivotal role in the Chinese “economic miracle”, and second, that capital and innovations were en masse spilling over the boundaries of special economic zones to the rest of the country, where regional and municipal governments vigorously competed with each other for economic resources by offering business-friendly investment climates.

In Russia state support to selected high-tech projects is not synchronized with general improvement of conditions for innovations and doing business economy-wide. This mismatch is bound to leave behind vast human, intellectual and material resources that just happened to be outside the boundaries of the pre-ordained would-be modern sector of the Russian economy. Such discrimination will likely breed social tension – what can better illustrate “enclave modernization” than a German-built super-express train running on an obsolete railroad track past depressed towns and villages, disrupting conventional passenger and freight services and followed with grave glances of those left on the sidewalks...

Mr. Chubais’s conviction that institutional reforms in Russia are of lesser urgency than large-scale innovation projects, and that hence such reforms can be put off until after these priority projects are completed or at least firmly underway, produces a clear sense of déjà vu. Almost twenty years ago Mr. Chubais who was back then in charge of privatizing (not yet technologically modernizing) Russia, with equal confidence maintained that the first order of business was to transfer economic assets from public ownership into private hands. Missing institutional foundations for private property rights were not considered as an obstacle to large-scale privatization – such foundations, it was argued, would come about naturally at a later time. Dismal state of property rights in today’s Russia, two decades since the above scenario was unveiled, refutes the “institutions-could-be-fixed-at-a-later-time” mantra, both in its previous and present versions.

Successful modernization in Russia cannot be sequential, when resources are first concentrated on a relatively few priority projects, and only later, perhaps in a few years, the rest of the national economy will get its chance. Institutional reforms establishing an open economic order, and economic infrastructure development should be given the highest priority. Such reforms make economic growth broad-based and do not upset social and political stability in the country – if anything, they might prove to be the only means to preserve this such stability for foreseeable future.

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Russia and reform

By Joseph Nye

When Barack Obama became president of the United States in 2009, one of his first foreign policy priorities was to “reset” relations with Russia. This came after a campaign in which his rival, Senator John McCain spoke of “expelling” Russia from the G8 because of its poor record on human rights. Obama believed that a healthy relationship with a healthy Russia was essential to global security. Now with the recent ratification of the START Treaty by the Senate and the Duma, it looks like Obama’s policy has succeeded. But just under the surface, problems lurk as evidenced by the recent Khodorkovsy trial, rising ethnic tensions, and the desultory performance in Davos as President Dmitri Medvedev presented his plans for the modernization of Russia.

Americans have often misjudged Russia’s future. In the 1950s, Americans feared that the Soviet Union would surpass the United States as the world’s leading power. The Soviet Union had the world’s largest territory, third largest population, and second largest economy, and it produced more oil and gas than Saudi Arabia. It possessed nearly one-half the world’s nuclear weapons, had more men under arms than the United States, and had the highest number of people employed in research and development. It exploded a hydrogen bomb only one year after the United States did in 1952, and it was the first to launch a satellite into space in 1957. In terms of soft power, following World War II communist ideology was attractive in Europe because of its resistance to fascism and in the Third World because of its identification with the popular movement toward decolonization. Soviet propaganda actively fostered a myth of the inevitability of the triumph of communism.

When Nikita Khrushchev visited the United States, he boasted that the Soviet Union would overtake the United States by 1970 or by 1980 at the latest. In 1976, Leonid Brezhnev told the French president that communism would dominate the world by 1995. Such predictions were bolstered by reported annual economic growth rates ranging between 5 and 6 percent and an increase in the Soviet share of world product from 11 to 12.3 percent between 1950 and 1970. Yet what in fact was happening was that the Soviet Union was failing to cope with the “third industrial revolution.” Its central planning system was optimized for heavy industry, but turned out to be all thumbs and no fingers when it came to the new information revolution. After that, however, the Soviet growth rate and share of world product began a long decline. In 1986, Mikhail Gorbachev described the Soviet economy as “very disordered. We lag in all indices.” A year later, Foreign Minister Eduard Shevardnadze told his officials, “You and I represent a great country that in the last 15 years has been more and more losing its position as one of the leading industrially developed nations.” Reform proved impossible. As he tried to arrest the decline with perestroika and glasnost, Gorbachev inadvertently accelerated the breakup of the Soviet Union.

The end of the Soviet Union left a Russia significantly shrunken in territory (76 percent of the USSR), population (50 percent of the USSR), economy (45 percent of the USSR), and military personnel (33 percent of the USSR). Moreover, the soft power of communist ideology had virtually disappeared. Nonetheless, Russia had nearly 5,000 deployed nuclear weapons, and more than 1 million persons under arms, though its total military expenditure was only 4 percent of the world total (10 percent of the U.S. share), and its global power projection capabilities had greatly diminished.

In economic resources, Russia’s \$2.3 trillion gross domestic product was 14 percent that of the United States, and its per capita income (in purchasing power parity) of \$16,000 was roughly 33 percent that of the United States. Its economy was heavily dependent on export of oil and gas, with high-tech exports representing only 7 percent of its manufactured exports (compared to 28 percent for the United States). In terms of soft

power, despite the attractiveness of traditional Russian culture, Russia has little global presence. In the words of Russian analyst, Sergei Karaganov, Russia has to use “hard power, including military force, because it lives in a much more dangerous world and has no one to hide behind from it, and because it has little soft power—that is, social, cultural, political and economic attractiveness.”

Russia is no longer hampered by communist ideology and a cumbersome central planning system, and the likelihood of ethnic fragmentation, though still a threat, is less than in the past. Whereas ethnic Russians were only 50 percent of the former Soviet Union, they are now 81 percent of the Russian Federation. The political institutions for an effective market economy are largely missing, and corruption is rampant. Russia’s robber baron capitalism lacks the kind of effective regulation that creates trust in market relationships. The public health system is in disarray, mortality rates have increased, and birthrates are declining. The average Russian male dies at fifty-nine, an extraordinarily low number for an advanced economy. Midrange estimates by UN demographers suggest that Russia’s population may decline from 145 million today to 121 million by midcentury.

Many Russian futures are possible. At one extreme are those who project decline and see Russia as a “one-crop economy” with corrupt institutions and insurmountable demographic and health problems. Others argue that with reform and modernization, Russia will be able to surmount these problems and that the leadership is headed in this direction. President Medvedev has issued a sweeping call “for Russia to modernize its economy, wean itself from a humiliating dependence on natural resources and do away with Soviet-style attitudes that he said were hindering its effort to remain a world power.” But as Katynka Barisch of the Centre for European Reform argues, Russian leaders’ concept of modernization is too state led, and problematic because public institutions function so badly. “An innovative economy needs open markets, venture capital, free thinking entrepreneurs, fast bankruptcy courts and solid protection of intellectual property.” Instead there is “wide-spread monopolies, ubiquitous corruption, stifling state-interferences, weak and contradictory laws.” Dysfunctional government and pervasive corruption make modernization difficult. A Russian economist says flatly that “there is no consensus in favor of modernization.”

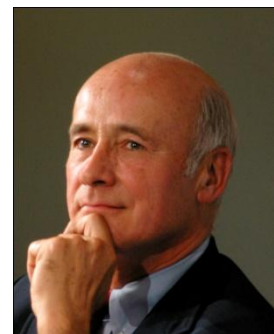
Whatever the outcome, because of its residual nuclear strength, its great human capital, its skills in cyber-technology, its location in both Europe and Asia, Russia will have the resources to cause major problems or to make major contributions to a globalized world. In that sense, Obama was right. We all have an interest in Russian reform.

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Crisis modernisation – lessons of the past and tasks for the future

By Vladimir Mau

In the same way that generals prepare by analysing past wars, economists and politicians prepare by analysing past economic crises. On the whole, this makes sense, and it is not even a bad thing. It makes sense that we can only seriously analyse what is known. It is not a bad thing, as learning lessons from the past allows us to avoid the same pitfalls, but this can never be guaranteed in any country. Over the last one hundred years, many countries, with surprising obstinacy, continue to repeat the same blunders and have been hit repeatedly by the same economic crises – history has no limits and is ready to set the same lessons until they have been grasped by nations and the elite. However, the lessons learnt from the past do not ensure against new challenges (and, in relation to this, new mistakes) – history loves setting new puzzles, the minimum condition for, it would seem, tasks already solved.

One of the key questions for Russia now is the possibility of uniting an anti-crisis agenda with the agenda for modernisation. The last eight years have shown that in economic boom conditions, structural renewal of the Russian economy exists (and even starts). Now we will see if we understand whether this adds to the crisis conditions.

Modernisation is undoubtedly important for the strategic goals of Russian politicians. The experience of our country over the past three hundred years shows that successful and stable modernisation only occurs when it affects all the areas of vital activity of the given society. In the past, Russia periodically succeeded in deciding on individual modernisation projects; however, they were always unstable and were quickly set back. The problem was that the focus was on military, technological or social achievement, whilst ignoring political and economic aspects of modernisation or even taking these into consideration. Modernisation cannot solve the tasks before it if it focuses on some areas and neglects others. The logic of “step by step modernisation”: first the army and defence industry, then, perhaps, politics and social relations, does not provide stable results.

Already, for producing an anti-crisis agenda, it is important to formulate this in a modernisation context. There are two aspects to this problem. On the one hand, priority attention is devoted to measures to resist the crisis, which at the same time promote the renewal of the Russian economy. On the other hand, producing a set of our own modernisation actions which can exist in crisis conditions.

The list below shows some components of the anti-crisis modernisation agenda.

It starts by securing macroeconomic stability. For our budget and money systems there has come a time of complex testing. And we need to come out of this saving our “macroeconomic face”; that is to say without a breakdown in the vicious infinity of budgetary obligations, inflation, default and bartering. For a very long time, and at a painful rate, we got out of all of this in the 1990s; moreover, there was then a certain justification due to the revolutionary destruction of the old system and a deep crisis of state power. Now a return to the situation of monetary and financial collapse would be catastrophic for the future of the country.

With these come the links and contours of the financial policies. It should be built in consideration of the prospects of conversion of the rouble into a regional back-up

currency. Even if this task now seems fanciful to anyone, a solution in the medium term is a total reality, if it is not done in the current period of serious foolishness and errors. Establishing financial policy in crisis conditions does not mean doing what may only distance this prospect (above all having, in terms of a spin off, uncontrolled inflation or introducing currency control). It already makes sense to now develop a programme of steps to strengthen the international position of the rouble with a definition of stages which are not linked to a certain date but naturally and logically follow from one to another.

It is essential, when defining a policy, to reinforce the role of internal demand by promoting economic growth. It is in sectors which promote steady and multiplicative internal demand where all the limited resources that the budget will have should be centred. This type of sector includes residential and industrial construction and also education and health care. Moreover, the author suggests quickly starting to flood them with money. Modernisation requires, above all, institutional renewal of these sectors, which has been discussed to any extent for nearly a decade. Without institutional renewal, financing does not lead to growth in the quality of the goods and services provided, which means to growth in the internal market.

Hence, it would seem that demonopolisation is vital. All attempts to stimulate demand by us up to now have not led to growth of supply and quality but to an increase in prices. Therefore, a distinct and serious programme of demonopolisation (including the developer sector and intrinsic monopolies) is still one of the most important components of modernisation of the agenda. Without demonopolisation of a whole range of anti-crisis measures, it is simply not possible.

When considering the problems of the non-financial sector it is important to understand that serious changes are awaited here. It is not possible to help all companies to stay afloat. As is well known, “strategic” companies are specially monitored by the state. However, the main point of this attention should not be to occasionally (or regularly) give them money, but to not allow them to add to social and economic instability. Moreover, one of the forms of support for these companies by the state should be legal and other help when needed for their financial recovery.

When implementing measures for social stability, it is vital to follow one principle: the state helps people and not companies, not their top managers or owners. Moreover, supporting people should not only result in paying out unemployment benefits: it is vital to have the active involvement of them in different educational projects, targeting professional conversion training or increasing qualifications. The requirement of support of companies (particularly big ones) is often motivated by the amount of employees working in them. However, the aim of structural renewal of the economy does not mean preserving the entire range of existing companies. Here, the support of employees made redundant is a vital part of modernisation policy.

What is needed is staggered reform of the banking system, targeting the creation of a network of stable and effective private banks. Here, it would be very important to preserve a high level of competition in the banking sector, to stop a market crisis, which a few major banks would dominate.

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Modernisation is sometimes related to the theme of prospects which open up for national producers due to the devaluation of the national currency. The low rate of the rouble may give a boost to economic growth. But without the powerful input of oil dollars, this would not work, and the solution for modernisation focusing on the consumers of internal demand is not import substitution. Considering the experience from 1999-2001, this development model for many economists is completely realistic.

A worsening of foreign economic situations is now present, and the amount of oil dollars has considerably dropped. However, major activation of business activity should not be expected. The crisis has arrived, negative trends have appeared, and the rouble has been devalued. However, this other crisis is fundamentally different to that of 1998, and it would be strange to expect the same trends as in the last decade.

It is possible to outline several important features which limit the effect of devaluation on the functioning of the contemporary Russian economy.

First, contemporary Russia is in the investment stage of economic growth, in conditions where growth requires the input of additional capital. In simpler terms: in Russia now, there is practically no free capacity in which one could operate for free. The abundance of unused capacity in 1998 provided a powerful stimulus for economic recovery, especially in the private sector. This was accomplished with practically minimal capital investment (or with minimum investment). Political and macroeconomic stabilisation significantly increased with the safety of individuals and property, and already this (coupled with liberalisation of domestic activity) was enough to spark an economic rebound. Now, despite the crisis, investment is needed which would provide stability for the Russian economy and determine the usual term "modernisation". Investors are nervous about the uncertainty of demand and the lack of low-cost money on the market. Moreover, high interest rates in Russian are now at a level of 12%, which has led to high inflation.

Secondly, the global character of the current crisis. At the end of the 1990s, the crisis was a national one, but characteristic of developing markets. The continued unstable growth of global economies (developing market economies) has generated powerful demand; therefore, even a certain improvement in the macroeconomic parameters and corporate relations in crisis countries quickly led to new growth. Furthermore, as regards developing markets, these were staggered over time – 1997 – Asia, 1998 – Russia, 1999-2000 in Brazil and Argentina. With these crises, thanks to global growth and experience of combating the crisis amassed at the same time occurred in each country at a different time, one crisis began in one region of the world at practically the same time as another region came out of the crisis. In other

words, devaluation against a backdrop of global crisis is not the same thing at all as devaluation in conditions of economic upswing.

Third, this devaluation is less severe than it was in 1998. This time, the exchange rate of the rouble dropped more than the second and is now at a rate of 40 percent. Thus, the scale of its influence on the economy will be less important.

To some extent, this may even be a good thing; whereas, *fourthly*, the result of almost a decade of boom has been its dependence of parts of the national non-financial sector on the supply of foreign components and equipment. This was the price of the transfer from reconstructive growth (on the basis of the involvement of unused capacities) to investment growth. The integration of Russia had continued in global economic relations, the inflow of foreign capital has promoted the development of *know-how* and an increase in the productivity of labour. However, this means an increase in wages for the production of the associated goods.

Fifthly, devaluation in relation to the US dollar has happened not only in Russia, but practically all the currencies of the major trade partners of Russia in Eastern Europe and other former Soviet republics fell. Therefore, they have also increased their competitiveness, and Russian commodities are not as attractive in terms of price in comparison with them. Moreover, the rouble fell less in relation to the Euro, whilst a significant portion of Russia's imports are purchased in this currency.

These arguments do not mean that a lower exchange rate will not exert a positive influence on the economy. In the last few months, many importers have been feeling a lot better. Benefits of the weakened rouble have slowed the pace of the recession and we have already seen increased activity in February and March among some companies operating on the domestic market.

The pace and consequences of the 2009 devaluation show significant weakening in its ability to offer a favourable impact on the condition and dynamics of the Russian economy. We can no longer hope for a repetition of the "1998 Miracle". The conclusion is simple: Russia cannot achieve the strategic tasks in future without fundamental modernisation of its economy. And that reformation must be started now in the midst of a global crisis.

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Russia at another cross-road

By Fyodor Lukyanov

Year 2011 marks the 20th anniversary of the collapse of the Soviet Union, and there will certainly be plenty of analyses about what that meant and where Russia stands two decades later. But one of the most important results became apparent in 2010: Russia made a psychological (although not conscious yet) break with its past and its former status as an empire. While Russia has left its imperial ambitions behind, the main reference point for defining itself is no longer rooted in the Soviet collapse but somewhere in the uncertain future. The main task facing the country is to do everything it can so this future will be stable and prosperous.

Despite all obvious differences between three presidents of Russian Federation – Boris Yeltsin, Vladimir Putin and Dmitri Medvedev – until recently their agenda was similar in terms of objectives. All of them had basically two main goals – to restore Russia as major international player and as principal actor on the post-Soviet space. Means available were very much different from one period to another, Russia-1995 had little in common with Russia-2005, but the framework sustained. Russia's foreign policy attempted to convince the West that the country's weakness throughout the 1990s was a historical accident and that the ascendancy of the West in relation to Russia was a mere coincidence. Until recently, the Soviet collapse served as the main prism through which the country's identity was defined, and the foreign policy of the first three presidents focused on the West. This agenda has been exhausted by late 2008. Georgian war marked Russian readiness and ability to defend "red line" against expansion of Euro-Atlantic structures eastwards. But it also showed limits of real capacities. The latter was boldly confirmed by world financial crisis which stressed vulnerability of Russian economy.

So, the system of priorities, which shaped Russian politics after 1991, has been largely implemented. But now Russia is facing another, much more difficult task – filling its restored status with new content. Its real capabilities for that are limited, and new requirements are now set for foreign policy.

First, major global actors have de facto finally recognized that Russia has priority interests in the former Soviet Union. Neither US, nor EU are keen to intervene. The question now is whether Russia is able to effectively capitalize its newly returned status. Very cautious behavior in Kyrgyzstan last year demonstrated new sense of reality in Russian foreign policy. True, the decision was strongly driven by pragmatism since the risks of intervention far outweighed the chance for success in resolving the situation in Bishkek. But it was also another example that the Kremlin is not willing to take advantage of instability in its backyard to restore – even in part – its lost empire.

Second, Russia's policy has turned towards the East, towards Asia – from the point of view of international relations and in the context of territorial development of Siberia and Russia's Far East. Although past Russian policy toward Asia was meant to show the West that Moscow had an alternative partner, now that policy is independent of other considerations. The problem is that in its relations with Asia, Russia must essentially start from scratch. Even when Russia was at its weakest in the 1990s, it still held considerable political significance for Europe. But for most Asian countries, Russia practically never existed as a regional strategic factor, and this remained true even when it became more powerful in the global arena in the 2000s.

And **third**, Russia has been rethinking its relations with Europe – they have ceased to be strategic and are largely becoming socio-economic. This is because Russia has proclaimed a policy of domestic modernization, which historically has a source in European countries, while Europe is rapidly and apparently irreversibly losing its status of a global political actor. Although Russia continues to see Europe as a source of modernization, Moscow no longer views it as the sole source, looking at Asia as well. The reduction in tensions between Russia and both NATO and the EU is linked to their gradual declines. The stakes in European politics have fallen sharply. Two years ago, it seemed as if the question of keeping the Black Sea Fleet at Sevastopol was almost worth going to war over. But when leaders reached an agreement last spring to keep the fleet in place for many more years, the world hardly noticed.

The global frameworks, within which these three processes, important to Russia, are taking place, are set by actions of the two most influential powers in the world – the United States and China. The growth of China's economic and political influence on the international scene is gradually becoming a dominant of Russia's foreign policy. Russia will have to position itself vis-à-vis its great neighbor. Different options are available from becoming part of "political West" to position of junior partner to Beijing. All are under discussion. The desire to use opportunities offered by the growth of Asia in general and China in particular is mixed with concern that Russia may turn into a second-rate power in Asia, which would entail a decline of its global status.

The shift of the U.S. strategic interest towards South Asia and the Asia-Pacific region requires a new agenda for Russian-U.S. relations. It must be basically different from the present one which was largely inherited from the Cold War times and which, therefore, does not meet the 21st-century reality at all. The New START treaty will probably be the last in the series of Cold War-style disarmament treaties. Most likely, Russia's nuclear strategy in the future will no longer be based on maintaining nuclear parity with the United States. Moscow is beginning to understand that it needs a nuclear arsenal of sufficient size to deter threats from other countries, first of all China. But inertia is very strong both in the U.S. and Russia. Course of Asian affairs can still change previous attitude.

Everything happening now is a result of fundamental shifts in the world order, which were set off by the end of the Cold War's ideological standoff. However, their end – just as the expected configuration of the future international system – is nowhere in sight yet. During last two decades the reference point for all Russian activities was in the past, collapse of 1991 and how to overcome consequences of that. The new reference point is ahead of us – what place will Russia occupy in the 21st century. The answer is open and not at all predetermined.

Fyodor Lukyanov

Editor

Russia in Global Affairs

Russia

Russia's search for modernization

By Markku Kangaspuro

Modernization has already been on Russia's agenda for 300 years roughly speaking. Modernization in its various manifestations has been carried out using all possible methods from violence to huge investments in education and space technology. Typically Russia has focused on economic development while neglecting modernization of the political system.

Today, again, the real question is how modernization be undertaken and on what basis? The whole leadership of the country is speaking about the country's weaknesses while specific challenges of modernization are listed in numerous speeches. President Medvedev has devoted his political efforts and along this also his reputation in promoting modernization. He has focused on problems Russia needs to face: from corruption, the unsatisfactory state of democracy, primitive economic structure, oil and gas dependency and the lack of self-confidence in ideas and visions for the future of the state itself.

However, identifying problems is the easiest part of the task. The real question is how to overcome these problems and from where the reforms should start? Until now the focus has been on the economy translated into the discourse of international economic competitiveness. President Medvedev has determined that the basis of Russian modernization is technological overhaul of the entire sphere of production, which is based on both domestic innovations in special sectors of the economy along with foreign investments and the transfer of technology. Subsequently, he has identified several key sectors in which modernization with the help of investment and technical transfer are to occur: medical technology, the development of aerospace and telecommunications, and the improvement of energy efficiency.

In fact this programme doesn't include anything unexpected or new in terms of policy. Medvedev has said to several audiences that Russia can't trust its future solely to the continued exploitation of country's raw materials base and energy export due to the fact that Russia's capacity to increase or even maintain export at current level is not possible in the long run. Therefore, Russia's future has to be built on the basis of a diversified economy. Until now everything is clear and doesn't cause any major disagreement among enlightened audience.

The second and more complicated question under consideration is, "what is the relation between economic modernization and the existing political system." Again, in principal and at a general level there is nothing unclear. Medvedev has declared that his modernization policy is based on universal democratic values, market economy and respect of human rights. He has defined the overall state of democracy in Russia as developing gradually, but with the system itself possessing some deficiencies, and its evolution is uncompleted. Kremlin ideologist Vladislav Surkov has spoken several times in different tones on the unique features of Russian democracy, all of which are connected one way or other to the idea of the manipulation of democracy. Thus, what does that speech on democratic values mean in this context?

First of all democracy seems to be subordinated to the main ambition of attaining international competitiveness of the Russian economy. In other words that means keeping up the stability of society by all means. This then leads us to the discussion of historical experience of Russia's regime and historical development of Russian democracy, which refer always to the presupposed uniqueness of Russia and demand of strong centralized vertical power as a overthrow of Russia's experience. In regards to this question, President Medvedev has consistently followed his predecessor's line in emphasizing the uniqueness of Russian democracy and society.

To what does this uniqueness refer? At first arguments about Russia's geography predetermining the necessity for a strong central power to keep scattered and differentiated nations/ethnicities

together and Russia strong come into the picture. The second argument is usually based on historical experience which illustrates that without strong central power Russia has always been weak, exploited and subjugated by its neighbors. The third argument, emphasizing the role of strong state, has been state's strategic role concerning long-standing investments in innovations and science.

The difficulty determining the relevance of different discussions is how to define the role of state – private relation. On the one hand the ruling elite is convinced that a strong state is inseparable and an indispensable precondition for the prosperity of Russia. However, the elite it is convinced of the advantages of privatization for economic growth and development. The conflict comes from two different demands. In order to attract foreign investments and high technology from abroad Russia has privatised and attempted to convince investors of the consistency of policy based on private ownership and a limited economic role for the state. However, the lack of private capital for new investments and Russia's desperate need to initiate the country's own scientific-innovative sector in particular demand a strong state role in determining future economic policy. As a consequence the discussion on the role of state in modernization policy circular in nature. From ideological standpoints the Russian elite is inclined to emphasize as small a role for the state as possible, but from a pragmatic point of view they still see the state as an essential actor. It is not out of the question that economic interests of political elite can have also a role in the discussion, but it is difficult to estimate how much it influences opinions.

The final questions concern the type of state and democracy Russia needs and, what does Surkov's sovereign democracy and does it fit within the universal concept of democracy mean? In general Russia's leadership has sworn allegiance to a democratic system of government. However last September's speech in Jaroslav, Medvedev and his closest staff proved in many ways that parliamentary democracy does not fit Russia and that it would be even disastrous to continually refer to Russia's historical experience of the need to maintain strong vertical state power. Medvedev stated that parliamentarism would mean a weak and vulnerable Russia, everything opposite to what Russia needs to become competitive economy on world markets. In this context the concept sovereign democracy was not used and historical development of democracy substituted for it.

My conclusion is that the modernization discourse in Russia is mainly focused on the economy and its international competitiveness. That's probably one reason why the Kremlin is more worried about corruption than any deficit of democracy. Democracy is understood in a quite abstract and formal way. It is perceived as a commitment on the part of Russia's leadership to general principles and democratic institutions outlined in the constitution. Public opinion doesn't see the direct link between Russia's need to modernize the economy and develop democracy. On the contrary, Russia's population seems to support the idea of a strong state as a correlary to all notions of wider democracy even in the sense of developing parliamentarism. As Medvedev said, parliamentarism would mean a weaker Russia.

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Medvedev's new agenda for Russia — reforming a system that can not be reformed?

By Arto Luukkanen

The newly elected president of Russian Federation, Dmitry Medvedev, is now fervently supervised by specialists for Russian studies all over the world. His political agenda for the future is examined by politicians and think-tank specialists. The dilemma under the scrutiny is the obvious unbalance between the hard rhetoric's of old the president and conciliatory speeches given by newly elected president.

Mr. Medvedev - 42-year-old protégé of Mr. Putin - has promised to fight against corruption and has highlighted the need for a long period of construction inside Russia. Together with these fresh openings, Medvedev has promised friendly cooperation with its neighbours including USA and China.

Speaking to foreign reporters, the president elect said that Russia and the United States share common values and have no choice but to cooperate with each other. Moreover, Medvedev has emphasized the need to concentrate to 4 major i's (innovations, institutions, infrastructures, investments) and has promised to transform Russia as a 5th largest economy after 10 years.

But what is more significant is his respective tone towards the civil rights. *"The talk here is about freedom in all of its manifestations: about personal freedom, about economic freedom and at last about freedom of self-expression,"* Medvedev said in his famous speech at Krasnoyarsk, Siberia last February. He added, *"Freedom is inseparable from the actual recognition of the power of law by citizens."* According to Medvedev, freedom, private property and an independent judiciary would be the central planks of his administration. This is something new compared to Putin's sarcastic attitudes towards civil rights and cold interviews with Western reporters.

Then how seriously we should take this? Should we take it as a face value? Are these nice openings made by the president-elect fabricated in order to lure the Western audience or are they just trumped-up stories for the Western armies of think-tank specialists who are busy in making their first deep political analysis concerning the new leader?

A famous Russian historian - Vladimir Shlapentokh - mentioned in his excellent analysis on Soviet system¹, that too eager reformers of the society may put in jeopardy the entire system. Nevertheless, being a true reformer requires bold assumption and true beliefs that there are real alternatives for the existing society. Shlapentokh's speculations and dilemmas dealt mainly with Mikhail Gorbachov and his reforms that destroyed the Soviet Union. As he aptly remarked, Soviet Union enjoyed firm content of its populations and only a small minority demanded changes in the Soviet economic system. According to Shlapentokh, it was Gorbachov and his personality that evidently killed the Soviet beast.

To put it short, Soviet people at large directed their discontent towards bureaucracy but still accepted the Soviet dogma. Also the Western political leaders in 1990's tried, peculiar enough, to preserve the Soviet system. For example, when inspecting the famous speech made by US President George Bush Sr. at Minsk in 1991 it is quite clear that West was not searching moment for a violent vendetta or planning to attack against its weary arch-enemy. On a contrary, it was looking forward to peaceful coexistence with the second nuclear power.

It is therefore rather fascinating to compare striking similarities between the gorbachovian reforms and the reformist rhetoric of Medvedev. When Mikhail Gorbachev came to power his first initiatives continued the political line adopted by Jury Andropov. For example, Gorbachev followed Andropov's policies of cleaning up the party bureaucracy and he also instigated certain neo-Stalinist reforms, which were dedicated to increase workers productivity. When considering the rhetoric and bold initiatives made by Medvedev, it is quite likely, that in the short run, the practical agenda of the new president will follow above mentioned gorbachovian models.

Nonetheless, new demanding openings such as fight against the corruption and tackling with bureaucracy require tightening of the political control. However, the fight against the some part of the new elite requires the policy of involving intelligentsia for a new ally for policy-makers. This will open new perspectives to free media. If and when this happens, it will take place perhaps at the same time when Medvedev does his symbolic "patricide" and dissociates from his predecessor's policies. Perhaps Hodorkovski will be released due to Medvedev new policy.

Gorbachev himself moved from neo-Stalinist reforms to liberal reforms by the beginning of 1987. The reason why this new policy was adopted was linked with the earlier failures of reforming Soviet economy. It was then widely believed among the gorbachovian spin-doctors that the essential modification of the Soviet system would boost the economy thus saving the system itself.

The most burning quandary for nowadays spectators will be: shall Medvedev try to reform system that can not be reformed? Any attempts to adopt real principles of liberal reforms may cause mayhem to the fundamentals of the political system he inherited from Putin. The pillars of the contemporary Russia were cemented to build up new elite - "securocracy" - new ruling elite derived from the security organs. To introduce real democracy to Russia would be a death-blow to the new political order prevailing in that county.

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¹ A Normal Totalitarian Society. How the Russian Union functioned and How it Collapsed". 2001, London.

The role of science in Russia's modernisation

By Levan Mindeli

The process of modernising Russia is understood as a strategy of renovation, the elimination of backwardness, achievement of an up-to-date level of competitiveness comparable to advanced countries, sustainable rates of social and economic development, high living standards, expanded reproduction of the human potential, respect for nature, protection of citizens' rights, and development of democracy and law and order. The orientation of the country to modernisation is associated with radical transformations in the social structure, political activities, public psychology, and other areas of social life. All this suggests organic inclusion of the national economy in the world's newest innovation processes, integration into the global economy, intensive use of a wide range of innovations in all areas society that are impossible without appropriate investments, close interaction between the government and business, and the optimal use of results of scientific, technological, and intellectual activities.

So far, Russia has better positions in research activities than in their further implementation in the form of know-how, industrial prototypes, and trademarks (for example, by 2010 the gap between technology imports and exports amounted to 22.4 billion roubles, whereas by 2007 it had been 11.9 billion roubles). Thus, the field of foreign trade in technology reflects the old disease of the Russian economy: an excessively long path from research to applied development and especially to introduction into production. For its part, the sector of knowledge generation must be capable to flexibly respond to new global trends and needs of the national economy and society, to ensure close co-operation between the research sector and higher education, as well as to effectively implement commercialisation of new technological solutions.

Achieving the purposes of modernisation is possible only on the basis of scientific knowledge, the intellectual capital of society and its creative potential, a system of efficient training of R&D personnel and skilled technicians. However, the most serious problem in Russia is the lack of demand for R&D results from the business enterprise sector of the economy, which will negatively affect the timing of the modernisation. Results proposed by R&D institutions, even those at the global level, find no application because of low overall receptivity to innovation in Russia. Private businesses are reluctant to innovative industries, finding more profitable areas of investment. The lack of incentives and weak competition constrain the redistribution of capital from the primary industries into high technology production and the use of new technologies and the introduction of innovation products. As a consequence, the chronic depletion of the range of exports is a dangerous trend for Russia, as the principal place belongs to hydrocarbons, while the share of high-tech products is only about 9 per cent, mainly the export of arms. It should also be noted that revenues from the export of raw materials can and should be directed to the production sector and contribute to its innovative development. However, we

cannot rely solely on the importation of foreign technologies. Without planning and implementing our own technological breakthroughs it is impossible to modernise Russia, in our opinion.

As the international experience shows, successful modernisation requires common will and understanding of the goals of this process in society at large, not limiting to individual representatives of the state power. However, the so-called manual control cannot be completely excluded. Russia is a specific country with its largely unique history of development, in which the human factor has always played a significant role (just to remember Ivan the Terrible, Peter the Great, Vladimir Lenin, Mikhail Gorbachev, and Boris Yeltsin). The transfer of foreign experiences onto the Russian soil should be very careful because it is necessary to consider both the particular environment where they were formed (Western European, American, etc.), and Russian specifics. This also applies to the projects existing in government circles to shift the centre of gravity of scientific research for solving the problems of modernisation into educational structures that have not yet the necessary infrastructure for these purposes and, which is even more important, scientific schools (that, as well known, provide the basis of research activities and are being formed for decades). The sample is taken from the United States possessing the network of universities that perform the lion's share of basic research, and national academies are voluntary public associations that do not receive budget funding. Science in Western Europe (and later in the United States) has historically occurred at universities as research and education complexes. The Russian Academy of Sciences was an initiative of Peter the Great as exactly a *research institution*. And so far here, in spite of all past and present problems, the most qualified and internationally recognised research workforce is concentrated. It appears that government policy should be aimed at enhancing the role of basic research in solving the problems of modernisation, and the academy sector should maintain its position as the leading research centre in the country.

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Successful scientific and technological 'Modernizatsia' in Russia requires institutional and economic changes

By Eric Brunat

Since the financial collapse of 1998 and up to the present world economic crisis, the Russian economy had made a lively recovery in spite of structural weaknesses. In constant dollars, the gross domestic product has multiplied by a factor of 10 in ten years.

This result is remarkable but it must be put into perspective. The Russian economy constitutes less than 3% of the world economy; the GDP per inhabitant represents 28% and 35% of the GDP per inhabitant of the United-States and of Europe of the 27 respectively. It will be very difficult for Russia to attain its declared objective of 50% of the American GDP per inhabitant in 2020. To get even close to this ambitious objective, it will be necessary in the coming ten years to restore confidence and to boost both domestic and international investment. The principal motors of growth will come from the resilience of the private sector but articulated around a modern and healthy public sector, in education and research, with a restored social sphere and health provision, with modernisation of infrastructures and international cooperation. Apart from the effects of the world crisis, these are all fields of activity suffering adverse effects from the hardening attitudes of the authorities who have not succeeded in stabilising a clear legal framework understood and respected by all or in effectively liberating the economy and society through the democratic give-and-take of true political and industrial competition. The mechanisms of a 'western-type liberal market economy' have been at least partially deployed in a poorly-prepared framework with the ideological conviction that assuming the 'interplay of universal values' would be enough to modify the framework.

In such a context, the weight of natural resources in the economy often has a harmful effect. It has distorted investment flows and not contributed to a sufficient diversification of investment effort. It has led to a concentration of powers in a counter-productive fashion as well as to inefficient product distribution. The adaptation of market mechanisms has been brutal, unequal, and above all has contributed to an effacement of the specific solidarity reflexes of Russian society, modifying in a violent fashion attitudes to money and to work. The result is very negative, pointing to a society consumed by doubt and which is henceforth prone to retreat into nationalist reflexes which are worrying. For all these reasons, one of the primary motors of growth, which is the end consumption of households, can be effectively curbed, calling into question both the recovery from the present crisis but, more seriously, the sustainable character of growth and its transformation in human development terms. To re-launch the process of a modern economic and social transformation based on the positive and specific values of Russian society, the following should be considered:

- The principal problem of the country is its endemic problem of corruption. Many segments of public and private administration are concerned at all levels. Among the countries which are advanced on the technological level but with medium incomes – in the World Bank definition – Russia is among the most corrupt in the world, according to *Transparency International (Russia is ranked 146 out of 180 countries in 2009)*. Moreover, government insiders and private owners (often

under the influence of political and economic advisers –including international-) used private, state and hybrid (composite) institutions as vehicles for personal enrichment, instead of maximizing institutional and social welfare. The legal framework as well as the institutions of the economy (the relations based on respected contacts between the economic agents for example), the social sphere and a certain gradualism in the rhythm of reform process, have been neglected by the promoters of the 'shock therapy' through the 90s.

- Russia needs to lower the transaction costs and raise its global productivity in order to offset speculative trading as well as accept integration into a more diversified world economy. This integration process is indispensable to facilitate modernisation and the management of technological or financial complexities. So far, the protectionist climate, in particular in the numerous industrial sectors considered as 'strategic', but also in agriculture or finance, jeopardizes a rapid entry to membership of the World Trade Organisation which would be a catalyst for structural and institutional reform and a supplementary source for growth which the World Bank estimates at between 0.5 and 1% per year. However this sustainable opening to the outside world must be accomplished with proper respect for individuals, for social balance and for preserving Russian identities.
- A monopolistic State capitalism in Russia now exists alongside a concentrated private capitalism. The share of private and public capital contributes 50% each to the GDP. The competitive mechanisms are not functioning and this contributes to maintaining a level of inflation which is superior to 10% in recent years. Thus, this quasi-absence of competition, high transaction costs, monetary policy and the Ruble exchange-rate policy all have a negative effect on the general level of price increases. In addition, the flight of capital in the periods of declining confidence and the insufficiency of domestic and international investment (even if the latter have increased considerably from 2005 onwards) have contributed to moderate the structural inflation which is therefore not fully reflected in the levels recorded in recent years.
- In 2009, the percentage of investment was below 20% of the GDP in Russia and the overall level of investment still remains far below the level reached in 1990. This crucial point could jeopardize the proactive policy of modernisation and research and development policy announced by the central political power. In comparison, the principal developing countries of South-East Asia and the most successful transition economies have levels of investment superior to 30% of their GDP.
- The infrastructure of transport and communication must become a priority in order to improve competitiveness and reduce the transaction costs. This implies a capacity to develop major projects

attracting heavy financial investments and skills (including international cooperation and investors).

- A significant investment and a political commitment are necessary in the sectors of health, education, research and development towards a knowledge-based economy and society. The industrial surpluses in the private sector must also be in part oriented towards these strategic areas for development. Incentives to the private sector including fiscal ones could strengthen a social and desirable industrial policy.
- The banking system is dominated by several large State banks, which have played a positive role during the world financial crisis by mastering the mechanisms of the public and private finances of an advanced economy. On the other hand, the current system generates high costs and some private competition could prove to increase efficiency in the context of a modern economy.
- The external accounts, registering a surplus, are very dependent on the export of natural resources and on the world oil and gas prices. The structural competitiveness of the economy is not assured. The pressure exercised on short-term resources favours a « rent economy » (the future of which can only be fluctuating and inhibitive to growth), which distorts financial, technological and human investment flows, directing them to the prospection and exploitation of natural resources to the detriment of other branches and sectors of the

economy ('Dutch disease'). Moreover, performances based on energy saving and the environment are not an effective priority. Having for a long time been used to the illusion of virtually free energy, both private and public economic agents must now modify their behaviour towards a greater sense of responsibility for the individuals, the society and the environment.

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Assessing the prospects of Russia's modernization

By Igor Torbakov

"Modernization" appears to be the most important catchword in Moscow these days – similar to glasnost and perestroika twenty five years back. However, the mixed – if not outright confusing – signals concerning Russia's societal transformation coming from the country's top echelons of power suggest that the prospects of Russian reform are dim.

There seems to be a consensus among analysts that the Kremlin started making noises about the need of a thorough modernization of Russia's economic system having been seriously alarmed by the impact of the global crisis. No wonder – as the world-wide economic downturn has hit Russia particularly hard: by the end of 2008 Russia looked more like a fragile and unstable petro-state rather than a mighty energy superpower as its rulers chose to cast it during the pre-crisis "fat years" of the sky-rocketing fuel prices.

It was these new drastic economic circumstances that prompted some forward-looking economists and liberal-minded members of Russian political class to ponder the best possible ways out of the crisis situation – whereby the ad hoc anti-crisis measures would be combined with the comprehensive modernization strategy. Out of that intellectual milieu came President Dmitry Medvedev's now famous essay "Go, Russia!" which some commentators labeled as Russia's "modernization manifesto."

Remarkably, though, Medvedev's piece clearly reflected – in both what it did say about the Russian situation and what it ignored – the formidable obstacles that any thorough transformation of Russia's socio-economic system is likely to be faced with.

Analyzing the current state of Russia's economy, Medvedev did admit in no uncertain terms that the "emperor has no clothes" – Russia's outdated resource-based economic model, he said, is unsustainable and should be replaced by the modern knowledge-based innovative economic system. Missing from his analysis, however, are two key aspects – 1) the discussion of how the resource-based economy feeds the rent-based social system and authoritarian political regime and 2) the idea that there is a vital link between successful economic modernization and the reform of key state institutions.

I would argue that it is precisely the so-called "resource curse" that makes Russia a country that is particularly difficult to "modernize."

As some perceptive analysts have long argued, already since the 1970s, that is, even before the collapse of the Soviet Union, a new and troubling trend has been on the rise whereby the country came to be increasingly dependent on the export of natural resources. The proceeds from the trade in commodities have in no way been connected with either the labor productivity or the country's general economic development. This trend appears to have reached its pinnacle during the so-called "Putin decade" which was blessed with the super-high prices for hydrocarbons – a fact that is reflected in the Kremlin's pet concept of "Russia as an energy superpower."

This same "Putin decade," however, has clearly demonstrated that the political risks of the resource-based economy are too high as one of its most debilitating results

is the degradation of most social institutions. Russia's current political regime – the proverbial *vertical of power* – with its rubber-stamp parliament, phony party system, subservient judiciary and controlled media is intimately interconnected with Russia's economic resource-based model resting, as it is, on three main foundations: rent-seeking, corruption, and monopoly.

Symptomatically, the global crisis seems to have made the resource-based nature of the Russian economy even more pronounced. As some commentators note, most measures adopted by the Russian government in 2009 led to the aggravation of the "resource curse" – Russia's extracting industries have found themselves in even more privileged situation than they were in prior to the global slump.

So we appear to be witnessing the classic case of a vicious circle: the abundance of "cheap money" originating in the oil and gas sector spawns corruption, rent redistribution and patronage networks eventually leading to the degeneration of social institutions – which are vital to the progressive development of other (non-resource-based) industries.

Now, the big question of course is this: are there within Russia's political class the forces which are capable to act as the agents of change? So far, the answer to this question is unclear. There are two reasons why Russian elite seems reluctant to initiate a comprehensive transformation of the country's socio-economic system.

First, Russia's current leaders belong to the generation who lived through the collapse of the Soviet Union. Although they might be ignorant of Alexis de Tocqueville's famous dictum that the "worst times for a bad regime come when it makes attempt to improve itself," but the experience of the erratic reforms of the late 1980s that led to the disintegration of the great state undoubtedly left an indelible mark in their psyche. Second, the Russian rulers presiding over the current authoritarian regime are perfectly aware that any modernization that would encompass the wholesale reform of the state will eventually bring about their own redundancy – like other authoritarian modernizers before them they will have to leave the political stage.

On the other hand, though, the most perceptive members of Russia's political class seem to understand that the only alternative to the country's modernization is its further degradation and geopolitical marginalization.

The mixed signals coming from the Kremlin appear to reflect the confusion of Russia's leaders about the tough choices they are currently facing.

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Russia's modernization – a progress report

By Igor Yurgens

For contemporary Russia, the necessity of modernization has long been a topic of discussion. However, no consensus has been reached yet with regard to the tempo, breadth, means and methods of this modernization.

A year ago 'vertical' modernization was launched in the economic sectors determined to have the greatest innovation potential for Russia. At that time, the following key priorities were declared: energy efficiency, nuclear and space technology, medicine and pharmaceuticals, and information technologies.

Since then Russian authorities have on numerous occasions indicated an understanding of the fact that such focused and regulated modernization is not sufficient to achieve the far-reaching goals set out before the state. Real renewal of the economy can only be achieved through 'horizontal' modernization: a 'rebooting' of regulatory institutions, improvement of economic conditions across the board and total 'de-bureaucratization'.

Both among experts and in society at large there is growing recognition of the fact that a third level of modernization is also necessary. All efforts, even the most inclusive and targeted measures, aimed at renewing the economy will be impotent if not accompanied by a similar all-encompassing and targeted renewal of public and state institutions. Horizontal modernization must develop in an environment of general and integrated modernization of the political culture and social relations, accompanied by a renewal of society and the individuals of this society in accordance to the demands of the contemporary world.

The implementation of information and communication technologies (ICT – which figures as one of the short-listed priorities mentioned above) is a key link capable of lifting Russia's modernization to qualitatively higher levels. It has long been understood that the use of ICT in government, the social sphere and business implies not only the automation of certain functions and process but also the radical reconstruction of the institutions themselves on a new technological foundation. The end result of the implementation of ICT is not the number of computers or programs but rather the new quality of the provision of state and social services, the development of new forms of democracy and innovative ways of doing business.

Furthermore, the realities of an information society represent an important component of the modernization environment. This environment, which serves as a guarantee for the creation of a societal foundation for modernization, allows people to get a sense of what modernization entails and to assess the potential advantages stemming from it.

Both global and Russian experience shows that truly widespread results can only be achieved with the participation of the state, as one of the initiators and regulators of ICT assimilation processes.

There are plenty of examples in Russia of truly effective work in the implementation of ICT, both at the ministerial level and in the regions. However, due to insufficient intergovernmental coordination, a lack of cooperation between regions in the preparation and realization of local projects, the dearth of opportunities for experts to influence state bodies as well as bureaucratic sabotage, examples of ineffective ICT implementation are predominant.

The 'digital rift' between Russia's regions remains. According to the recently published Index of Information Society Preparedness of Russian Regions indicates that the number of computers per person in the outsider-region (Chechnya) lags behind the leader (Chukotka) by more than 40-fold. As it turns out the digital rift also remains critically high in local government (the provision of personal computers in local government offices is three times higher in the Murmansk region than in the

Kemerovo region), in business (the share of businesses using the Internet to accept orders in Moscow, St. Petersburg and the Vladimir region has reached 30% – which is double the EU average, while in Kalmykia only 3% of businesses use the Internet for such purposes), and in society in general (in Chukotka there are 87 computers for every 100 households while in the Trans-Baikal region there are only 19 per 100 households; more than 50% of households in the Russian capital and oil and gas regions of Northern Russia have Internet access while only 5.8% in the Smolensk region, 2.5% in Tuva and 0.2% in Ingushetia have Internet access).

In order change this situation, coordinate state efforts in this area and provide a substantial impulse, two years ago President Dmitry Medvedev signed a decree creating the Presidential Council for Development of Information Society, a sort of higher body for the implementation of information technologies, bringing together the heads of government ministries and departments and leading Russian experts in this field.

In the relatively short period of its existence, the council's efforts have already produced real results. Russia now has a consolidated IT budget in which expenses at various levels of government are tallied. New regional strategies today are much better developed and more serious than the amateurish attempts of the past. The 'Council Factor' has made a substantial contribution to the implementation of unified information systems in medicine and education.

In late September the Information Society Program for 2011-2020 was approved. This state program includes six core focus areas: e-government, improvement of the quality of life and conditions for business, overcoming digital inequality, information security, development of the ICT market, and preservation of cultural heritage. In terms of quantifying the results of this program's implementation, specific targets have been set: the transfer of all state services to an electronic format; the provision of 85% of the population with Internet access at 50 Mb per second; and increasing the share of ICT in the GDP by 2-2.5 times.

The Law on Organization of State and Municipal Services has come into effect. This law for the first time in Russian practice introduces the term "state and municipal services in an electronic format". The legislation foresees the use of such an instrument as a universal electronic card. This card will have federal electronic applications, allowing for identification of the user and access to state services in the system of state medical insurance and pension program, as well as an electronic bank application, as a part of the national payment system.

Will the strong impulse of state efforts to facilitate the implementation of information and communication technologies in Russia continue in the future? Of course, to a certain degree this impulse has a certain "human factor". However, I believe that regardless of who is personally advocating these modernization efforts, this process, at one speed or another, is sure to continue.

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What makes modernization a political project?

By Katri Pynnöniemi

The roots of the current discussion on economic modernization in Russia have two very different branches. On the one hand, the discussion delves deep into the history of economic and political reforms in Russia. On the other hand, the debate rests on the very surface of daily policy-making and is driven by the internal dynamics of elite bargaining in Russia. As noted by Mark Leonard in his recent article, what is at stake here is nothing less than the remodelling of Russia's political-economic system ("What does Russia think?" *Prospect*, November 2010, 53).

In terms of the historical roots, today's call for diversification was in the 1920s and 1930s a campaign for industrialization. If we delve even further back into history, we will find Peter the Great's period of modernization, as well as Westernizers and Slavophiles arguing about Russia's relations with Europe. President Medvedev's description of Russia's economy as "primitive" and "humiliating" echoes these earlier debates. What is at stake in diversification is first and foremost Russia's prestige as a great power. Although oil and gas will provide substantial leverage for the country in its dealings with Europe and in world affairs at large, it is quite clear that without diversification the country will be in a weaker position than it may accept. But making Russia an exporter rather than an importer of advanced technologies requires it to adopt and adapt current international practices. This demands not only activation of the country's human potential, a challenging task given the scale of inertia and mistrust in the society, but also resolving the inherent problems in the current political system.

Reservations expressed towards President Medvedev's campaign for modernization stem from the understanding that far from acting as a catalyst for economic development, the Russian administrative regime is the major stumbling block on the road to a more 'innovative' and modern Russia. The crux of the criticism expressed by the liberal economists and opposition activists is that the inefficiency of the state bureaucracy, corruption and the scale of social inertia should be subject to more complex manoeuvres than politicians simply declaring them the "bad habits" of the people. In other words, thoroughgoing political reforms, strengthening the basic institutions of democracy and market economy are required to put things right.

The authorities respond to this criticism by arguing that economic modernization must start immediately, notwithstanding the existing constraints placed on it. But leaving the issue at that is not an option either, stresses Anatoly Chubais, CEO of the Russian Corporation of Nanotechnologies, RUSNANO. What he means is that economic modernization should not become the end point of the reforms. In fact, disagreement on 'how to go forward' is the key bone of contention between different factions aligning behind Putin and Medvedev.

The political elite is frustrated over the lack of 'bottom-up' demand for 'innovations' or 'modernization'. "Nobody is against [modernization], but nobody needs it either", said Chubais, encapsulating the general atmosphere (Finam.ru 14.9.2010 and Hangesblatt 29.10.2010). It is this sceptical attitude among politicians, regional authorities and the general public towards the government-initiated action plans that stand in the way of Russia's modernization, he concludes. The argument is a rather familiar one, blaming the inefficient bureaucracy and, more generally, the low level of trust in Russian society and distrust towards politics in particular, for faults in the campaign for Russia's 'technological modernization'.

Although Chubais does not go as far as to voice it openly, he seems to be pinning his hopes on the 'revolutionary vanguard' driving the change. The task here is to win over the bureaucracy and mobilize it for the consolidation of the country's democratic institutions as well as the "creative forces" of innovation. Bearing in mind this change, Gleb Pavlovsky has recently proclaimed stability as "the value of the last decade" and the establishment of the Medvedev-Putin tandem as "the final point of the plebiscital epoch

of Russia" (*Russian Democracy: from sustainability to renovation*, Yaroslavl Global Policy Forum, September 9-10, 2010). This may be an overstatement, but it nevertheless reveals how fractured the power vertical has become. Thus, the discussion on 'modernization' and 'innovation' should be viewed in the framework of the intensifying struggle within the elites on the eve of the presidential elections in 2012.

Indeed, some analysts have argued that what we are actually witnessing is the rearrangement of the rent management system originally put into place by Putin. Economists Glifford Gaddy and Barry Ickes write that the main motive for advocating the diversification of the Russian economy is that it is a way to "justify various schemes for rent distribution". In other words, the debate on modernization is a debate "by and among rent-seekers" (G. Gaddy and B. Ickes "Russia after the Global Financial Crisis", *Eurasian Geography and Economics*, Vol. 51, No.3. 2010, 292). The continuation of the rent distribution system in a new form reduces Russia's opportunities to diversify, that is, to change the country's economic structure to conform to the requirements of a post-industrial, innovation-based economy.

As a weak signal of the intensifying struggle between the political elites, in March 2010 Prime Minister Putin became head of the Government Commission on High Technology and Innovation (previously known as the Government Council on Nanotechnology). With its new powers, the Commission oversees the development of the scientific-technical complex and the innovation system and makes decisions that executive agencies (ministries, government agencies, and so on) are obliged to follow. What was thus created was a parallel structure to that of Medvedev's Commission on the Modernization and Technological Development of Russia's Economy. The mandate of the Government Commission is defined broadly enough to include practically everything Medvedev's Commission is about to do.

Since its establishment in May 2009, the Presidential Commission has been instrumental in channelling the public debate on modernization and, more concretely perhaps, the presidential instructions (*porytseniya*) directed at the government and the respective ministries. On closer inspection, the Commission's work shows that concrete instructions given by the president relate to the pharmaceutical industry, energy efficiency, actions aimed at enhancing the technology trade with foreign countries, and the building of the Skolkovo innovation city. The extent to which presidential instructions are actually implemented is rather modest by and large. This has prompted several counter-actions by the president, ranging from the public reprimand of responsible bureaucrats to a recent proposal to clarify the status of the presidential instructions, which are a mere formality nowadays.

It speaks volumes about Russia's transformation that we have on-line access to the discussions taking place during the Presidential Commission meetings. But it would be naive to think that relatively open access to information would guarantee its transparency. Instead, the above-mentioned two organs (and other similar structures) function primarily as venues for reshuffling the rents related to, and generated by, the 'campaign for modernization'. It is in this sense that the debate on modernization is the very battleground for Russia's future model of development.

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Modernisation of Russia – moving beyond rhetoric?

By Félix Krawatzek

Expectations for a turning political wind in Russia were high when President Medvedev came to office more than two years ago. The increasingly used rhetoric of modernisation contributed to optimism amongst domestic as well as international actors about the future of the country. Even though former President Putin stressed already in February 2008 the necessity to modernise the Russian economy and its society, it was with Medvedev that the topic received its current attention. When Medvedev asked rhetorically in 2009: “Should we drag a primitive economy based on raw materials and endemic corruption into the future?” the answer given through his article ‘Go Russia’ and the Speech to the Nation of that same year was clear: “No!”. The article and the speech constitute the core of how Russia’s political elite officially intends to prepare the country in economic, political and social terms for the 21st century. Since then modernisation has made an impressive career in political discourse. The term is not only the *leitmotif* of the Kremlin itself but also widely used by the political opposition and Russia’s international partners.

However, when these actors speak about modernisation they all refer to rather different processes and outcomes. International partners, such as the EU, would like its Eastern neighbour to become more ‘like-minded’, respecting inter alia rule of law or human rights, liberal voices in the country such as Igor Yurgens have emphasised the need for a deep, systemic and decisive modernisation, focussing on social innovation, a renewal of public and state institutions that goes along with a renewal of political culture. The Kremlin itself is advocating a modernisation that goes, in principle, beyond economic or technological aspects related with Medvedev’s key sectors. The role of civil society as well as the importance of deep political reforms are repeatedly stressed as integral part of modernisation. The ‘Partnership for Modernisation’, signed last June between the EU and Russia, reflects upon that and includes a section on the development of people-to-people links. In other words: strengthening civil society in Russia.

Throughout its history Russia has certainly never lacked ideas and attempts of modernisation – however, the success of many of these measures is debatable, to say the least. What has all the current modernisation rhetoric left behind? The list of impressive economic projects that have been launched is long and amongst the better known ones is Russia’s Silicon Valley in Skolkova or cooperation agreements that have been signed between European firms (Siemens or Deutsche Bahn) and Russian partners. In particular the energy sector attracts European firms (EON Ruhrgas or Gaz de France). However, one rightly has to doubt whether modernisation of the country is an importable good. Russia’s efforts that have so far concentrated on diversifying its economy risk being short lived if the nature of the political regime itself remains the same. Political and social modernisation has to come from inside as we can see looking at the transformation of Eastern Europe. Despite the involvement of international actors, the situation in those

countries only changed lastingly, once the domestic situation had evolved and when these countries were themselves willing and able to reform state and society structures.

In Russia however this willingness can hardly be found amongst the political elite. Public debate is having difficulties taking place due as well to restrictions on freedom of assembly and media freedom. Critical journalists live a dangerous life as the recent killing of Kommersant reporter Oleg Kashin illustrated again. The fact that Khodorkovsky and Lebedev have to stay in prison for almost exactly the duration that was requested by the prosecutor raises doubts about the independence of the judiciary system. That list could be continued for a long time and it all illustrates that there are not many things that have been undertaken to help Russian society modernise itself.

If Russia has not made much progress on the comprehensive modernisation, what about potential leverage from outside? The ‘Partnership for Modernisation’ was meant to bring urgently needed new dynamics to the EU-Russia relationship – hard to be confirmed. The last progress report mentioned advances in energy efficiency and transport. Beyond that no tangible progress was noticed. The leverage of the EU on policy dynamics within Russia, in particular beyond the economic sphere, can reasonably be doubted. In particular concerning the enhancement of the cooperation between civil society in Europe and Russia the EU lacks ideas, tools and resources.

The upcoming elections (Parliamentary December 2011, Presidential March 2012) will soon begin to shape the political debate in Russia. If Medvedev’s revolutionary promises of modernisation had translated in corresponding actions, he could have emerged as a genuine political alternative. However, as it stands, he has not proven being any different from Putin wherefore it might not be a major surprise to seeing Putin coming back to office – following the change of the constitution for six years to follow. Eight years of Putin showed what can be expected of him – what can be expected of Medvedev beyond hopeful words remains unclear. These words are unlikely to translate into any political or social change in the country if Russia continues to rely on its current system of personalised rules and weak institutions. In that case the auspicious words of the comprehensive modernisation agenda will not expand beyond political rhetoric and will not contribute to transform society more broadly.

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Russian modernisation – technological or socio-cultural one?

By Jukka Pietiläinen

Modernisation became a key word of Russian discussion in November 2009, when President Medvedev launched it as a programme for the country's technological development. This has also been reflected in the Russian press.

According to the Integrum database, which contains a large collection of Russian newspapers and magazines, modernisation was mentioned over 300,000 times in 2010 as compared to 200,000 times in 2009 or 2008, or to merely 150,000 times in 2005. In the state newspaper *Rossiiskaya gazeta*, the increase has been even more rapid, as modernisation was mentioned in 250 pages of the paper in 2005 and in over 1,000 pages in 2010. Just as the increase in the mention of glasnost and perestroika in *Pravda* in the middle of the 1990s signalled a change in the State policy, the same has occurred with the word 'modernisation' at the end of the 2000s.

Medvedev's view on modernisation is predominantly technological, but modernisation is also related to social changes and to the move toward capitalism, industrialization, secularization, and rationalization, which have taken place in Europe since the Middle Ages. Russia has been on the edge of the modernising centre and the modernising influences have arrived to Russia later, and have interacted with local traditions. As for Russia, as for many other peripheries of Europe, such as Northern Europe, modernising has been often directed by the elite and state leadership. In these countries, some parts of society developed further while others lagged behind.

Russian social scientists and culturologists have discussed the nature of Russian modernisation since the early 1990s. New books and articles with the key word 'modernisation' have appeared regularly, and for example, several of them were published in 2010.

Many Russian scholars see the history of Russian modernisation as cyclic. According to this view, Russian modernisation does not lead from traditional society to a modern one directly and through a clear path, but it remains cyclic: modernisation begins, finds itself in a cul-de-sac and ends, and begins again.

As a consequence, Russian modernisation has been referred to as 'catching-up', 'delayed', 'recidivist', 'conservative' and 'near-modernisation'. Russia has also been described as a 'collapsing traditional society'. All these concepts are related to incomplete or late modernisation. Russia has also been following the processes which have occurred earlier elsewhere. Russian modernisation has included elements of counter-modernisation and recidivist modernisation, and even modernisation without modernity. For Russia, an additional issue has been the conflict between the modernisation led from above and the population which has been only partly modernised. Historically, a move toward modernisation has always been followed by a return to traditionalism.

During the Soviet era, many modern aspects of life were adapted on the surface level only. Whereas the forms were modern, the content remained traditional, even if the traditional forms had been destroyed. These phenomena made some Western scholars in the 1970s believe that the Soviet society has been modernised and would become closer to the Western modern societies. From this point of view, the collapse of the social system was a surprise. But analysing the nature of the Soviet modernisation with the concept of 'fake modernity' first presented by Piotr Sztompka in 1993, the collapse of the Soviet system can be explained

as a failure of this modernisation project. In fact, the society was not modernised even though seemingly modern features existed and many visible manifestations of the traditional forms of culture disappeared. Moreover, the Soviet cycle of modernisation was led from above and achieved with little individual initiative: therefore the vital individual effort for modernisation was lacking.

The post-Soviet era presents a new cycle of modernisation which may have a better chance for success than the earlier cycles. The difference with the post-Soviet modernisation is that the market economy is now in practice and market processes are the ones which act for modernisation. A non-market alternative to modernisation, as was the case in the Soviet era, is gone and the process of modernisation is similar as in other peripheries of the Western world.

In a book published in 2010 by the Institute of Sociology of the Russian Academy of Sciences, the question, which was already found in the name of the book, was: 'Is Russian society ready for modernisation?' These scholars search for the answer by paying attention not only to technology, but to the question of how, by whom and under which conditions the modernisation in Russia can be successful.

The answer is that Russia has a significant socio-cultural potential for modernisation, although there are many paradoxes in the process of modernisation and it is dependent on many situational factors. Russians are characterised by an internal dynamism and a readiness for change. But achieving of this potential is rather complex.

While Russian leadership headed by president Medvedev argues for technological modernisation, social and socio-cultural modernisation is what Russia would mainly need. This would require progress in democracy, civil rights, good governance and the rule of law. Furthermore, Russian citizens have rather different perspective of modernisation as their President does. According to a recent opinion poll, most ordinary Russians see modernisation as equality before the law and as the observation of human rights (41%), fight against corruption (38%), social fairness and justice (31%) and effective innovative economy (by only 24% of Russians). The latter is among the priorities of the State but it might be not easy to attain without the fulfilment of the former elements. In addition, some Russians view modernisation as an enforcing power of the country (21%), as a renewal of Russian values and traditions (14%) or as creating opportunities for free enterprise and market competitions (12%). According to these results, it seems that most Russian citizens connect modernisation with good governance, social development and rule of law rather than with innovations and technology, as president Medvedev would like to see. In this respect, Russians are more realistic: innovations cannot take place if the social conditions do not favour them. This is the key to Russian modernisation.

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Russia's human capital and the task of modernisation

By Julian Cooper

In assessing Russia's prospects for modernisation, an important issue is the state of the country's research potential and the implications of unfavourable demographic trends. It is often argued that one of the advantages of Russia when compared to other emerging economies, or 'growth markets' as they are now termed by Jim O'Neill, the originator of the BRIC acronym, is that it possesses strong human capital in terms of educational standards. This is usually seen as a favourable legacy from Soviet times. However, paradoxically, it could now be argued that human capital has become almost an Achilles heel of present-day Russia, threatening to become yet another obstacle to modernisation, rather than a central component of the solution.

There are several dimensions to this issue. Firstly, there is no question that Russia possesses considerable scientific talent. However, the average age of scientists has been rising steadily and the number of young people wishing to take up a career in research has been relatively modest. All too often, the most talented younger scientists prefer to work abroad. Pay is not usually the main issue. More important is a widespread and justified perception that the research culture in Russia is not conducive to productive research or rapid career advancement of the talented. For scientists in 'exile' it is rather galling to see Russian government measures designed to attract top foreign scientists to work in the country, notably in the Skolkovo enclave. It can only be hoped that the experience of foreign scientists spending time in Russia may help to promote much needed reforms making the lives of indigenous researchers more congenial.

There is another, related, problem. A legacy of the Soviet past is that in Russia much of the nation's high technology industry is found within the defence industry. As Medvedev and Putin now appear to recognise, economic modernisation must also include an upgrading of the capability of the defence sector, not only to permit the development of more advanced armaments, but also to boost civilian high technology. But here there are some difficult personnel issues. With a few exceptions, mainly enterprises successful in exporting their arms, pay levels are still relatively low compared with those of other sectors such as financial services, energy or metals. In addition, the very strict regime of secrecy, a legacy of Soviet times, is not attractive to young people used to the new freedoms of post-communist Russia. In addition, they find that research institutes and design organisations are staffed predominantly by much older personnel, many beyond retirement age.

The situation in the electronics industry is illustrative. According to the then head of the department of the radio-electronics industry of the Ministry of Industry and Trade, V Minaev, speaking in late 2009, the average age of all personnel in the industry was almost 47.5 years, with 16 per cent under 30, but 27 per cent over retirement age. (According to another dependable source, in the late 1980s the average age was in the early about 33). Of scientists, only 18 per cent of candidates of science were under 50 and a mere 4 per cent of doctors of science, but 58 per cent of the former and an astonishing 83 per cent of the latter were working pensioners. And this is in an industry experiencing extremely rapid technological change.

To make matters worse, the labour force is steadily contracting. In the Russian radio-electronics complex, which also includes the communications equipment industry, the number of R&D personnel has fallen from 140,000 in 1997, to 110,000 in 2000 and is now some 80,000. It is perhaps not surprising that since 2004 the volume of output of some important electronic components, in particular integrated circuits, has been declining quite rapidly. The state of the electronics industry is giving rise to mounting concern as the production of military and space equipment is becoming increasingly dependent on imported

components, notwithstanding a strong official commitment to self-reliance. The available data indicates a similar situation of ageing R&D personnel, with very modest new recruitment, in other branches of the defence industry.

At a government level there is also a growing realisation that the quality of higher education at many universities and colleges is not of an adequate level. That this may be a more general issue is shown by Russia's relatively poor showing in the OECD's PISA surveys comparing levels of educational achievement at the school level. Even in maths and science, the relative standing now is not impressive. Furthermore, when efforts are made to secure training in new skills appropriate to the modernisation agenda, the results are not always satisfactory. Recent reports have indicated that some universities have quickly introduced new academic programmes in nanotechnology, but the first graduates are finding it difficult to find jobs, partly because their skills are being found not appropriate to the requirements of the business sector and because the quality of training is not of an adequate level.

Since 1991 the prestige and popularity of science and engineering as disciplines to be studied at universities have fallen sharply, many students preferring economics, business studies or law. The shortage of highly trained engineers is a matter of concern at the government level and the problems of engineering education formed the topic of the March 2011 meeting of Medvedev's Commission for the Modernisation and Technological Development of the Economy.

A major problem in improving the quality of higher education is the relatively weak development of scientific research within the university system. Only fifteen percent of higher educational establishments are engaged in R&D and the majority of lecturers are not personally involved in research activity. Overall, the share of Russian total R&D by spending undertaken in the higher educational sector is less than ten percent, in striking contrast to most OECD countries. Efforts are now underway to boost the R&D contribution of the university system, but this will inevitably be a gradual process. The experience of many developed countries is that interest in research is developed first at the undergraduate level, but in Russia the dominant perception appears to be that it is something that can be left to the stage of postgraduate training.

The skill problem is not only a matter of high level aptitude for research. In high technology sectors, not the least the defence industry, there is an increasingly acute problem of a shortage of highly skilled manual workers. Inadequate skills, coupled with aged production equipment, may explain at least in part an embarrassing series of failures in the military-space sector, e.g. the 'Bulava' submarine-launched strategic missile and the failure to launch satellites required by the GLONASS navigation system.

The problems Russia is now experiencing with human capital suggest that its development has to become a higher priority in developing policy for modernisation. The salience of this issue will mount as negative demographic trends make themselves felt, above all the fall in the cohort of young people which will be a feature of the coming decade.

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Financial constraints on the modernization of the Russian economy

By Richard Connolly

Not for the first time in history has the modernization of the Russian economy been a subject of intense public discussion, both inside and outside Russia. The most recent iteration of this discussion can be traced back to the period immediately before the onset of the Great Recession in 2008. Even as the prices of Russian exports soared in 2007-08, government officials were preparing a blueprint for the future diversification and modernization of the Russian economy, eventually articulated in the 'Concept of Long-term Socioeconomic Development of the Russian Federation to 2020'. However, before the Strategy was even signed into law, the ruptures associated with what was at first primarily a global financial crisis sent Russia into a sharp and deep recession. Of all the G-20 economies, the recession suffered by Russia during 2008-9 was the most severe; not only did the economy contract by 7.9 per cent in 2009, but because its pre-crisis growth rate of 8.1 per cent (in 2007) was so high, the 'swing' in performance over 2007-09 (minus 16 per cent) was among the worst in the world.

The Russian experience of the Great Recession prompted the leadership to address the issue of economic modernization and diversification with increased urgency. This occurred as the factors that had contributed to the rapid pace of expansion before the crisis showed signs of exhaustion: industrial capacity utilization was reaching its limits, signalling an end to the investment-light years of growth; the average productivity level in the economy remained low by international standards, notwithstanding wide regional and sectoral differences; the role of the state in the economy had increased gradually since 2002; the dependency ratio was projected to begin its inexorable rise in 2010, heralding an era of fiscal weakness; and the shortage of modern infrastructure was reaching chronic levels. Added to Russia's well documented institutional weaknesses, the list of challenges facing the Russian economy looks extremely daunting.

There is, however, a common solution to these problems: a sustained increase in the level of private investment. Higher private investment should, all things being equal, facilitate the diversification and modernization of the economy, relieve the pressure on the level of industrial capacity utilization, raise productivity levels, and enable a smaller and older population to generate higher levels of output. Unfortunately, the rate of investment in Russia has been comparatively low. Investment as a proportion of GDP declined over the 1990s, reaching a post-socialist low of 14.4 per cent in 1999, before rebounding to 22 per cent in 2008 after a mini investment boom between 2005-08. Amongst major low- and middle-income countries, only Brazil had a lower rate of investment. If Russia is to modernize, this will have to change.

But what is holding back private investment in Russia? There are a number of apparently plausible explanations, including the poor business environment, declining levels of human capital, and archaic infrastructure. All these explanations, however, are constants in Russia's post-socialist history; as such, it is difficult to sustain the view that they explain the variable rate of private investment in Russia, especially that observed in the years before the crisis. Put simply, if the business environment in Russia

has always been poor, if human capital has been on a downward trend since the 1990s, and if infrastructure that was bad to begin with has only got worse, how can they explain the resurgence in private investment that occurred after 2004? (Incidentally, the year after the Yukos episode.) It is likely that while these obstacles are surely undesirable, and do play an important part in deterring investment decisions in some cases, they are not decisive. A better explanation of what is holding private investment back in Russia needs to explain why investment increased between 2005-08. In short, one needs to identify an explanatory variable that moves in line with investment. The only explanation that satisfies this requirement lies in the poor state of Russia's financial sector, suggesting that restricted access (not necessarily cost) to finance is the binding constraint on private investment in Russia.

An examination of survey data from a variety of sources reveals that firms consistently report that access to finance is one of the most problematic factors for doing business in Russia. Furthermore, the reporters in these surveys are existing firms, with the sample excluding firms that would have *existed had the binding constraint been removed*. As such, reporting firms may have been politically well connected, part of larger financial-industrial groups, or large enough not to have required finance from banks. This suggests that while access to finance is acknowledged to be a problem in existing firms, it may be an even bigger problem for unobserved cases that failed to get started in the first place or, if successful in starting, perished soon after. Moreover, according to data from the World Economic Forum, Russia's financial system is extremely poor by international standards, with Russia ranking 125 out of 139 countries in 2010, with Russia's ranking worsening over time. Evidently the quality of financial intermediation in Russia is extremely poor. Why is this so?

There are four main factors underpinning the weakness of the financial sector in Russia. First, the state plays too large a role in the allocation of surplus savings due to its overbearing presence in the Russian banking sector. Second, the Russian banking system is composed of many small and ineffective banks, and a few large, state-controlled banks, that favour lending primarily to large enterprises, or those from selected regions of the country; in both cases, the recipient firms are often politically well connected. Third, the financial system is bank-centric, with few sources of non-bank finance. Finally, there is a low level of market penetration by foreign banks. Because real interest rates are negative, and because of these structural flaws within the financial system, demand for credit exceeds supply in Russia, leading to credit rationing that favours larger, more established organizations, and discriminates against newer, smaller entrants. As a result, the size of the Russian banking system is extremely small when compared to other emerging economies (see Figure 1).

In the years before the crisis, significant institutional reform and reorganization within the banking system resulted in the constraints on access to finance being relaxed, resulting in an episode of rapid credit expansion that caused investment to rise and drove Russia's pre-crisis economy, more so than even rising prices for Russia's natural resource exports. What is important to

note is that as Russia's banking system began to do what banks are supposed to do – channel savings into profitable investment opportunities – so private investment grew at a healthy rate, an episode that needs to be repeated and sustained if healthy rates of economic growth are to return to Russia in the near future. This also suggests that further reform of the financial sector should be placed at the centre of any strategy for economic modernization, ahead of the expensive and potentially ineffective state-led initiatives to foster knowledge-based industries.

Dr. Richard Connolly

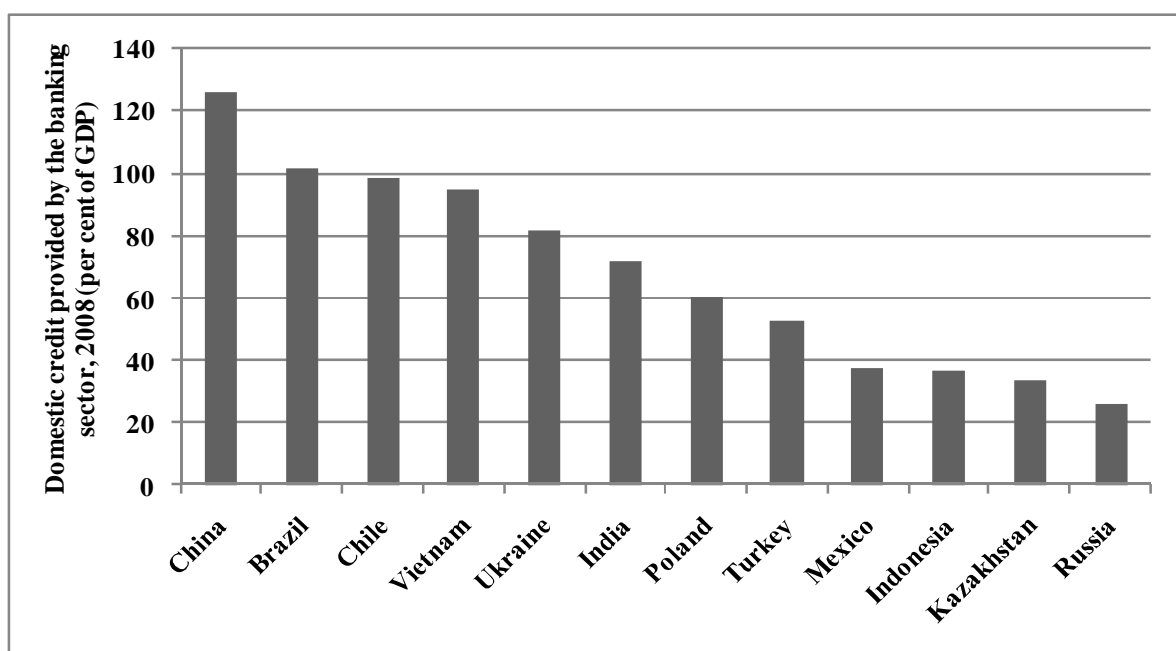
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Figure 1. The Relative Size of the Russian Banking Sector, 2008 (domestic credit provided by the banking sector to the private sector as a percentage of GDP)



Source: World Bank (2010)

Energy security, oil prices and modernization in Russia

By Olga Garanina

Energy security has become a glorious topic in energy debates. Provision of energy security is usually discussed in terms of stable volumes of energy supplies, favourable price conditions and control of hydrocarbons reserves. While energy importing countries are interested in secure and cheap energy supplies, energy exporters are claiming predictable and solvable demand and national control over strategic reserves.

However, while focusing on this debate, we are somehow distancing ourselves from the discussion of country's long-term energy strategy. The latter, from the point of view of a producing country, is to be analyzed in a larger perspective of country's economic strategy. Energy security is determined among other aspects by the degree to which oil and gas exports become the major source of economic growth and contribute to social development.

At present, Russia's international specialization pattern can be at best described by so-called «availability» theory of trade which is stating that a country chooses to export products available in the domestic economy, and which are not available in other countries. Russian foreign trade reflects a situation where energy revenues are translated into increased imports of manufactured products. Up to present, competitive potential of Russian producers has not been revealed. Therefore, gains from international trade remain quite limited, while the economy turns extremely vulnerable to oil price shocks.

The situation in Russia is close to what is described by the "Dutch disease" model. Energy boom hits the economy with currency appreciation and decline of domestic manufacturing. Factors of production (capital and labor) are attracted towards most profitable activities, which are mining industry and provision of services. In this way the economy enters a deindustrialization pattern. At a first glance, Russian economy demonstrates the "Dutch disease" symptoms, in particular ruble appreciation, loss of competitiveness of domestic manufacturers and high growth rates in services going up to 20% per year before the crisis of 2009.

Has Russia really got into a trap of a raw material exporter? In our view, Russian case demonstrates some peculiarities.

At first, Russia's oil and gas sector is facing a challenge of shifting hydrocarbons production areas from exploited zones in Western Siberia to the North and to the East. Giant oil and gas fields in Western Siberia have entered a decline phase a long time ago. On the counterpart, developing new production regions, infrastructures and facilities can lead to positive multiplicative effects for economic growth. In this relation it is important to distinguish between effects of energy price hikes and effects of increasing production volumes. If the latter is taking place, positive effects can be important for connected industries. In particular, in Russia positive effects can be reached given the necessity to develop new production areas. In fact from a long-term analytical perspective energy sector could be analyzed as an industry intensive in technologies and innovations and therefore resource richness can become one of the factors of economic development. At the same time, resource dotation can even be increased via using innovative technologies of exploration and production.

Secondly, from theoretical point of view, "Dutch disease" means accelerated development of service sector (non-tradable goods) to the detriment of manufacturing industries. However, up to the global crisis, most industries including manufacturing registered strong growth rates, which contradicts a deindustrialization model. Moreover, production crisis in some sectors (like light industries or machine-building) can be explained not only by the "Dutch disease" phenomenon but also by weak competitiveness inherited from administered economy. On the contrary, competitive sectors demonstrate strong growth rates. In a similar way, high prices and high growth rates in services can be explained by structural adjustments in a transition economy.

Third, Russian economy has some particular characteristics that influence the propagation of the so-called "Dutch disease". Russia has a diversified economy with a limited degree of economic openness, which attenuates the "Dutch disease" phenomenon. Unemployment and trade protection measures, as well as imperfect resource mobility, constrain the propagation of the Disease.

Finally, the problem of economic vulnerability to oil price shocks can be managed via a wise economic policy aimed at smoothing the economic waves. In particular, this can be achieved via creation of a Stabilization Fund (such Stabilization Fund was created in Russia in 2004). However, while the creation of the Fund is consensually approved, the management of the accumulated funds is a topical debate. In the period before 2008, monetarist approach was dominating. Economic policy measures were aimed mostly at restricting liquidity via accumulation of the resources of Fund labeled in foreign currency, in order to provide for public deficits in low-price periods. After February 2008 the Stabilization Fund was divided into Reserve Fund (aimed to provide for public spending in case of insufficient oil revenues and growing public deficits) and National Welfare Fund (aimed to finance the deficit of the Pension Fund); and investing resources of the Fund for the development goals has seen its beginning. However the economic crisis led to rapid exhaustion of the accumulated funds.

Economic recovery comes with a return of high oil prices after 2010, therefore bringing back to the agenda the issue of using the oil bonanza for the country development goals.

Here it should be stressed that the propagation of the "Dutch disease" depends not only on resource richness per se, but on the quality of the process of oil rent distribution within the state. In this perspective we should take into account a double political renewal in Russia that is the return of Vladimir Putin to the presidency and the civil society uprising occurred in the last months, which could influence the rent distribution process.

Further, on the economic side, increased public spending (in particular given the pre-electoral promises) fits into the Keynesian approach of stimulating demand. However, it is still questionable how the increased internal demand will be transferred into stimuli for *domestic* producers, especially in the period where the WTO membership will impose new policy constraints in terms of external tariffs and prohibition of direct subsidies.

Finally, speaking about the implications for the foreign economic policy, bilateral economic relations based on energy exports should be completed by promoting technological vector of partnership. In particular the cooperation with the EU should be considered as a factor of increasing competitiveness of Russian industries and transfer of technology should be seen as a key characteristic of bilateral projects.

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Economic development based on the economics for quality

By Vladimir V. Okrepilov

International experience suggests that maintaining stable economic growth and high competitiveness are possible only through the innovative development of economy, involving continuous quality improvement. Quality is the key to success, facilitating the reduced costs, production upgrade, promotion of the employees' initiatives, effective reproduction and industrial modernizing, improving the investment attractiveness of not only individual companies but also the entire regions.

Today economy can develop only through innovations. As the president of Russia Dmitry Medvedev highlighted in his article "Russia, go forward!"²: "Within the upcoming decades, Russia shall become a country which welfare is ensured not only by the raw material resources but more by the intellectual ones: "smart" economy, creating unique knowledge, and the export of innovative technologies and products."

Primarily, the above requires establishing conditions that would allow implementation of the scientific, technical and technological developments existing in Russia in order to create products and technologies with high competitiveness.

A strategy for developing science-and-innovation sector, meeting the economy needs, as well as the mechanisms for investing and stimulating innovation process shall be formed.

As an example of such activity at the federal level we should mention the establishment of the "Skolkovo" Innovation Center, initiated by the Russian President Mr. Medvedev.

Strategic objectives of "Skolkovo" are as follows: high-tech industries development and overcoming dependence on natural resources as a driver for economic growth; improving the international competitiveness of Russia through innovation; giving new impetus to entrepreneurship development; changing legislative and investment environment of Russia in order to attract long term investments.

Achievement of these objectives is ensured by the specific legal regime of the "Skolkovo" Innovation Center, which provides tax and customs privileges, as well as simplification of procedures for urban construction, sanitary and fire safety rules, rules of technical regulating and terms of interaction with public authorities.

Total financing of the project is estimated at 120-180 billion rubles. In December 2010 the first 16 projects with the "participant" status were identified, 11 of which have received grants for implementation with a total amount of three billion two hundred million rubles.

Companies of the North-West region are already involved in the "Skolkovo" projects. In particular, in the project on establishing a Research Center on thin-film technology in the energy sector at the Physical-and-technical Institute n.a. Lofe. The second project, to be implemented with the participation of St. Petersburg scientists is the development of original drugs to treat viral etiology infections and methods of viral diseases diagnostics.

Since innovations are aimed at improving quality, when evaluating the economic effects of their implementation, one can simultaneously assess the economic impact of quality improvement. As for the goals of innovative development, particularly of a region, they can be identified based on the objective of improving quality of products, services and activities.

Moreover, using modern methods of the quality science any problem at any level can be solved, regardless of the type of social system, ownership forms, production type, size and number of personnel of a company. Long-term experience of the author in the field of quality within different socio-economic systems (planned economy, transition economy, market economy), convincingly proves the validity of the above thesis.

In particular, using methods and approaches of such scientific field as the economics for quality, topical economic and organizational tasks related with the development of the "Skolkovo" Innovation Center can be achieved.

Economics for quality is a part of economics, which studies the interrelation between the qualitative characteristics of objects or phenomena and the economic indicators, covers all areas of economic science and extensively involves the natural, social and technical disciplines (mathematics, physics, chemistry, sociology, psychology, jurisprudence).

Economics for quality is a unique phenomenon: being one of the branches of the economic science, it is an integral part of all other areas, which focuses on the need on incorporating quality characteristics, studied in various aspects. This also applies to labor economics, economic statistics, regional and sector economy.

The ultimate goal of economics for quality as a science is the formation of models, adequately reflecting the role of quality in the natural, technical, social and legal mechanisms of the economic systems functioning.

Current results of research in the field of economics for quality form the basis for assigning the status of a scientific school to a team of specialists involved in research of the economics for quality problems in relation to key areas of socio-economic development of society.

Implementation of economics for quality methods and approaches, including those developed on the basis of quality management methods, will allow to:

- Ensure optimal use of enormous financial resources, allocated and being invested into the "Skolkovo" Innovation Center, preventing their inefficient spending;
- Efficiently organize the entire process of developing and manufacturing high-tech products of the Innovation Center.

Thus, given the current economy, innovations shall be evaluated not only in terms of scientific and technical level of the project, but also in terms of quality, thereby evaluating the possibilities of implementing a project and the expected effectiveness from its application. This approach is based on the principles of total quality management, which were developed by scientists of many countries within the International Organization for Standardization (ISO). The first step towards implementing the above approach is the introduction of quality management system. Such system allows controlling and effectively organizing the process of innovative products development, the financial resources consumption and, therefore, ensuring a high quality of the results.

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² "Russia, go forward!", published on 10 September, 2009, on the official website of the Russian Federation President: www.kremlin.ru

Russia's innovation policy and modernization agenda

By Natalia Ivanova

Despite impressive growth in Russia's GDP and industrial production, achieved in 2000s before the crisis, the quality of growth reveals the existence of certain problems in the competitiveness of the country. Since late 2008, the deep financial and economic crisis has underlined the importance of many challenges: relatively low level of GDP per capita and even lower level of labour productivity, technological decline in much of the manufacturing, agriculture and service industries; slow modernization due to relatively low industrial investment and innovation activity (both foreign and domestic). Modernization agenda, formulated by president D. Medvedev in September 2009, has been focused on these problems. Actually, innovation and modernization become the two facets of the same fundamental process through which the economy of the country should be renewed.

High-level commitment to innovation has created the conditions for renovating and building new infrastructures in support of S&T and innovation along strategic lines. Creation of the Presidential Commission for Modernization and Technological Development, and of the Government Commission on High Technology and Innovation provides an opportunity to consolidate a nation-wide consensus on the strategic tasks of innovation policy. The key technology priority of Modernization: energy efficiency, nuclear and space technology, medicine and pharmaceuticals, information technologies – has been defined and got new Government's attention and resources. The Skolkovo innovation city is under design as a hub for big high-tech companies. This initiative should become an experimental space for testing and demonstrating arrangements that could be extended to the wider economy and contribute to Russia's modernization.

Basically Government innovation policy objectives and targets has been formulated in several official conceptual and program documents issued in 2002-2006. The necessity to stimulate innovations has been also stressed in several Federal goal oriented and industrial strategies. The most important are "The Energy Strategy of Russia up to 2020", "Federal Space program", "Development of Civil Aviation Technology", and "The Strategies for Development of the Russian Chemical and Petrochemical Industry up to 2015". Although the government has declared a need to create favourable climate for innovation, the actual innovation policy measures implemented are mainly aimed at specific support actions and are largely based on direct financial support of R&D and innovation activity. When a comparison is made of this policy documents, the same list of innovation policy instruments tends to be seen with the predominance of public procurement projects. In effect, a major procurement item is R&D itself, which is largely purchased through the direct R&D financing of branch institutes. At the same time, the use of public procurement to drive innovation in other types of firms, whether public or private, remains under-developed. Firms are not the central objects of these projects and programs as they should be, which distorts the balance of contributions from the public sector to Russian innovation performance. Recently the new version of National Innovation Strategy has been elaborated by the federal Ministry of Economic Development. It is available on the Ministry's web-site and for public discussion and comments.

A major challenge for the Russian innovation policy is to redefine the responsibilities of the various actors within the system in the light of a more dynamic and open market economy and develop new ways of interaction among them. The greatest challenge here is to induce a stronger participation by the Russian business sector in the whole innovation process, including that of conducting and supporting research. In Russia business enterprise expenditure for R&D accounts for nearly two thirds of total Gross Expenditure for R&D. However, the R&D expenditure of the business enterprise sector is to a large extent funded by government, not – as is the practice in high-performing economies – by the business sector itself.

There is also a structural problem in Russia's economy – the predominance of low-tech industries. The significant growth of the Russian economy in 2000's was mainly achieved by raising the rate of production of the oil, gas and mining industries, including their export, and in many respects owing to favourable foreign market conditions for primary goods.

We also observe the most active investment processes in low tech industries: mining and primary metals production, infrastructure sector and services. All technologically advanced industries such as machines and equipment including carmakers, aerospace and defence, invest several time less than mining or transport and communication. And these heavily invested industries are primary exporters while import of machine and equipment is the major article of Russia's import.

Russian companies, being relatively young as private enterprises, are more engaged in the financial restructuring of their business, mainly with the idea of market capitalization growth, and tend to rely on foreign multinationals as a source of new technology and equipment. In terms of their innovation mode they are rather "technology adopters" and innovate primarily by adopting innovations developed by other firms or organizations.

Reorienting the current system towards production-oriented firms as the central players depends on firms' developing the interests and capabilities to innovate and carry out R&D. More favorable framework conditions for innovation, combined with an appropriate mix of financial incentives and other policy measures, will play an important part in this regard. A healthy business environment may be considered a precondition for boosting innovation activities.

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Modernization and innovative development in Russia – what lacks?

By Irina Busygina and Mikhail Filippov

Russia is a rich country which lags behind in technological innovations. It has significantly more researchers per thousand inhabitants than China, Brazil, or India, but it fell far behind China, Brazil and India in registered patents.

By the end of 2010 the evidence was abound that Russian businesses were reluctant to invest in new technologies. The natural resource extraction remains the most active area of investment. Most disturbingly, there is a clear tendency towards putting new investments not into buying new technologies but in repairing and maintenance of the old obsolete equipment. The equipment in use became so old that it was now necessary to divert much of available investments to just keep it running.

In June 2010 president Medvedev instructed the government to set up a “special investment fund” in which government funds will be complemented with private capital. No results of such a new investment strategy have been reported so far. There are a lot of evidences illustrating that state owned corporations created to promote innovation prefer to hold the money in bank deposits instead of investing them in risky high-tech products. Despite these facts, the chief Kremlin ideologist Surkov continued to argue that finding more money was the key to the problem of economic modernization: “methodologically, modernization is a simple thing – one needs money to introduce new technologies”.

Government-proclaimed desire to promote technological innovations and boost economic growth in Russia implies the need for the state to take an active role in economy and to provide the right stimuli and guarantees for investors. Since the Russian state under the current political regime lacks trust and credibility, and since the actions of the state to promote innovative economic development as well as its likelihood to succeed would depend on its type and characteristics, the economic agenda would demand its democratization. For entrepreneurs and investors, the Russian state in its current form is inefficient, ridden by corruption, lacks accountability and is unpredictable. Most importantly, it cannot credibly commit to respect property rights and sustain the rules. The democratic reform, in ideal, could modernize the Russian state and make it simultaneously strong, limited, accountable, conducive to good governance, and, thus, an effective agent of economic modernization.

Yet the same Russian leadership that sees and proclaims the vital importance of economic and technological innovations is reluctant to engage in political modernization, attempting instead to improve the existing model of governance by administrative methods. We explain such reluctance with the heightened political risks from the democratic reform for the stability of the current

political regime. Thus, we are quite pessimistic about the short and medium term perspectives of the economic innovations program in Russia. On one hand, the current political regime cannot provide “good governance” and credible commitment to form and sustain incentives for domestic and international businesses to invest into technological innovations in Russia. The existing political regime is more suitable for the status-quo economy based on natural monopolies exporting raw materials, metals and energy. On the other hand, anticipation of high costs and risks of political reforms make the choice to pursue them rather unlikely, and even less so during the forthcoming electoral cycle of 2011-12. In any case, political reforms would not have their desirable positive effect on the economy for a number of years.

In order to succeed in democratization, Russia needs time and investment of considerable economic and political resources to maintain trajectory until the benefits of reforms begin to emerge. Moreover, transformation process will cause serious political risks. Political reforms require patience – from the population as well as from the key political actors. And they require the initial consensus with regard to the long-term commitment to stay the course.

We could expect the period of instability and inefficiency caused by the initiation of reforms in Russia to be long and painful. The winning coalitions are likely to form half-way into a reform in favor of reversing the direction of institutional change. This suggests that several back-and-forth reversals might be realistically possible in future.

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On innovation activity in Russia

By Ruslan Shafiev

The current state of the Russian economy shows that the development of innovation policy is a priority for the country's development. In spite of the high scientific and educational potential, the export of raw materials dominates in the economy, and the rate of research intensity of major part of the Russian industry is much lower than in the USA and the EU. Russia is also underrepresented in the world of science. Thus, according to the database of the Web of Science, total amount of Russian researches in the scientific magazines worldwide in 2008 was equal only to 2.48% (while in France - 5.53%, in Germany - 7.5%, in China - 9.69%). Russian indicator in this sphere is at the level of Brazil (2.59%) and the Netherlands (2.46%). Russian science is characterized by the low intensity of the scientific researches (6 publications in the scientific magazines indexed in the Web of Science to 100 researchers in 2008, while in the UK - 33, in Germany - 29, in the USA - 23) and on average, by much lower quality of work (total amount of the Russian researches in the global number of publications in the scientific magazines is 2.48%, its share in the global number of citations in the scientific magazines in 2004-2009 is equal only to 0.93 has complicated the implementation of the existed goals, has led to the reduction of the expenditures on innovation by the private sector and has complicated the structural weaknesses of the Russian innovation system.

I would also like to mention that main efforts for the development of applied science is realized in the framework of federal programs aimed at developing of innovative projects in all priority sectors of the economy.

At the same time, high-tech sector programs aimed at technology development in priority sectors of the economy (aviation, shipbuilding, aerospace, nuclear complex, new transport technologies, telecommunications, information security, etc.), in comparison with the interdisciplinary scientific and technological federal programs has received its accelerated development in the recent years.

Our activity in 2011-2013 will be focused not only on main directions of state support for the development of corporate research centers, but also on respective tax measures for the promotion of innovative researches and on the appropriate legislative measures for the clarification of legal status of the foundations for the support of scientific, technical and innovative activity. The Foundation for promotion of small enterprises in scientific and technical sphere as well as the appropriate program of state support of small and medium-sized businesses, as before, will be our main mechanisms aimed to support innovative business and entrepreneurship.

The Foundation's programs for 2010-2013 will be based on funding of the initial stages of the innovation process (if the commercialization of new research results begins in the form of small enterprises) as well as on the participation in pilot programs to promote innovation center Skolkovo, on the promotion of small innovative enterprises engaged in the implementation of priority programs nominated by the Commission on the Modernization and Technological Development of the Russian economy under the President of the Russian Federation.

The development of innovation activity in public corporations and large companies with state participation will be ensured through the implementation of the innovation development programs. In addition to the above mentioned, one of the effective measures should be an effective interaction between companies and leading universities, research institutions, small and medium innovative enterprises in order to use results of their intellectual activity.

For the support of such cooperation between private companies and Russian higher educational institutions and organizations the Government of the Russian Federation will allocate grants amounting to \$ 19 billion. There will also be adopted a package of amendments to tax legislation, establishing preferential conditions for the companies working in information technology sector, for the period of 2011-2019.

Infrastructural development of national innovation system, according to our opinion, is strictly related with the effectiveness of commercialization of intellectual property - the main task of major infrastructure organizations making support to the innovative activities, such as the Foundation for promotion of small enterprises in scientific and technical sphere, the Russian Venture Company, the Russian Nanotechnology Corporation, and the Vnesheconombank (lending of small innovative enterprises).

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Innovation policy in Russia – new trends

By Oleg V. Fomichev

Historic success of the USSR in the XXth century – victory in the Second World War, creation of the nuclear weapon and atomic energy sector, leadership in the space research and military aircraft construction – were to a considerable degree based on the advanced technological achievements of the national science and industry. Our progress was due to the giant concentration of all the country's resources on the solution of technological problems of defense industrial complex. Having switched over to the market economy, Russia has faced new challenges in the XXIst century. These new challenges are stipulated not by military confrontation but by increasing competition with the developed and developing nations for the worthy niche in the world market. Meanwhile, it is obvious that the contemporary base for our economy - raw materials export with low value added – will soon become subject to considerable erosion because of the global economic shift towards “green” and energy-saving technology as well as due to the toughening competition in the raw materials market.

For Russia the only way of further development and raise in standard of living up to the European level is technological development, based on the modernization and innovations. Russia has all capabilities for the “innovation leap” as the country still has considerable scientific and technical potential. In the number of people occupied in research and development Russia ranks third or fourth in the world. Russia is also one of the world leaders in such disciplines as nanotechnology, living systems, environment, nuclear and space systems, energy-saving technologies, supercomputers design and software.

Main obstacles of current Russian technological disadvantage are not only insufficient R&D expenditures but also the inability to convert knowledge into competitive goods and technologies. Unfortunately, our entrepreneurs are mostly used to live without tough market competition catering only for available domestic market which is not characterized by substantial demand for advanced technology products, so they don't want to change this model in future. This is largely related to the bubble in the economy before the crisis which entailed the enterprises' illusion of the possibility to get profit without investment in new products and technologies.

Talking about the entrepreneurs' responsibility for the innovative development of their companies we also must admit the lack of government attention to the restructuring of advanced technology industries. Traditionally we paid more attention to the financing of the research sphere, supposing that high level of research would ultimately lead to high level of innovation activity in the economy.

Tax incentives were mainly given to the extractive industry and did not support sectors with high value added. Another negative factor from our point of view is the absence of effective support of the innovations in the real sector. Government expenditures on science have increased whereas co-financing of innovations in private industries remained extremely low – the share of enterprises getting government financial support for technological innovations in Russia is close to zero in comparison to European countries.

Now it is the time for government policy to focus on the stimulation of innovation activity in real-sector enterprises. Despite the fact that the role of the state in post-crisis recovery have risen, it is precisely business that is to become the principal innovation “driver” at the new stage of economic growth. The backbone of the modernization policy is therefore a stimulation of innovations, creating the class of innovative enterprises, modernization of the scientific sector and engineering.

At the same time we are not going to follow our specific Russian “third way”. In the past few years state has made a lot for creating conditions for innovative development – basic innovation infrastructure (business-incubators, technology transfer centers, industrial parks, special zones); financial development institutions were established like Russian Venture Company and government co-sponsored venture funds, Development Bank, public Corporation

for Nanotechnologies (“Rosnanotech”) etc. Program of support to small and medium size businesses was approved. The law was enacted, that finally granted the right to universities to establish start-ups.

Now there is a need for, so to say, innovative self-identification. Taking into account the crisis aftermath and long-run trends of the global technological development it is crucial to specify our competitive advantages and the path of our future innovative progress. This is the issue for the Innovation Strategy of The Russian Federation that is now under development in the government.

As for practical actions, that government is going to take in short-run to stimulate innovations in state and private sectors, they are as follows:

In the state sector the goal is to utilize giant potential of the public procurement system to create demand for high-tech and innovative goods and services based on the experience of several OECD countries, e.g. Great Britain, Korea.

Another challenge is innovation development in public companies. Our state-owned companies as a rule don't invest in innovations: new technologies or cutting-edge goods and services. Taking into account (still) the large share of state-owned enterprises in the economy it certainly leads to the lack of demand for such products countrywide. The mechanisms of tackling this problem are not totally market-oriented – the biggest public corporations will be obliged to develop the corporate innovation strategies, that will supposedly be discussed and approved by the government.

The situation is more complicated for the private companies – their motivation for the introduction of innovations is defined by the market demand and competition. However, the President has made a decision to support innovation projects of private companies. For high-tech economic sectors, such as IT and engineering companies, selective tax cuts are going to be introduced. State support of start-ups has been almost doubled last year and will grow further.

The efficiency of development institutions (funds and public corporations) will be raised as long as they have considerable financial resources to allocate. They will help to arrange the transfer of promising technological projects from idea to industrial implementation.

Furthermore, the President has made a decision to create new “green-field” innovation center in Skolkovo near Moscow. Interaction with European R&D and venture capital community is a necessary prerequisite for the success of a project and can be profitable for all countries decided to participate.

Wrapping up, technological modernization and innovative development of Russian economy, Russia's successful integration into the global high-tech market is beneficial not only for our country. The truly cutting-edge, disruptive innovations have always appeared at an intersection of different sciences, cultures and peoples. Without innovative Russia the socio-economic potential of Europe and the world would be considerably lower.

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Principles for a new-generation innovation policy

By Leonid Gokhberg

Today the Russian economy is facing long-term challenges, connected with the global rivalry and exhaustion of sources for growth of raw materials exports. These challenges have led to activation of S&T and innovation policies during the last decade. The shift towards innovation-based growth has been declared in Russia as the key objective of the state policy and the only possible development model. During recent years a number of strategic documents was adopted, which were aiming at public support to S&T, integration between science and universities, creation of organizational, legal and economic incentives for innovation, improvement of the IPR regulation, etc. Further policy agenda for innovation is being intensively discussed.

However, a specificity of the Russian situation lies in the resistance to change: the level of enterprises' innovation activity remains inadequately low in the period of economic growth as well as under the crisis pressure. Less than 10% of their overall population in industry are involved in technological innovation. Though even their interest in the "intellectual" end of the innovation processes, such as R&D or acquisition of IPR, is extremely low under the influence of certain reasons (often external to S&T, innovation and production activities). Acquisition of equipment, most frequently by exports, dominates expenditure on technological innovation (59% of the respective total), and this trend inevitably dooms industry to a catching-up trajectory.

In spite of the above-mentioned measures it is still challenging to manage legal, administrative, financial and other deficiencies fully. Structural misbalances and technological underdevelopment of the economy, low innovation capacities of companies, and insufficient output of the R&D sector make global positions of the country extremely vulnerable and inconsistent.

To a great deal, present problems and limitations in the Russian national innovation system (NIS) have systemic roots and must be tackled only within the framework of a comprehensive reform programme. Current problems can be best described as "the inflation of notions" in the Russian innovation policy.

Indeed, there already is a number of major policy instruments available, e.g. tax allowances for innovative companies, technoparks, special economic zones, etc. At the same time, there is a gap between the best international practices which those terms were generally derived from, on the one hand, and the real implementation of those instruments, on the other. This gap can be traced in different elements of NIS: technoparks mostly lease their premises; special economic zones have only fences, and even their construction is sometimes incomplete; tax exemptions are avoided by many enterprises (especially those without strong legal services), as they beware of the risks related to tax enforcement, when if relevant expenses of a company are not recognized as "innovative", the consequences might be extremely severe. Therefore it is required to conduct the instruments' revision, assessment of their regulating impacts and comprehension of the policy mix.

The next issue is the lack of systemic approach in a basket of policy instruments. Existing separately, they are related neither in their aims, nor in implementation mechanisms or effects, and often contradict each other in terms of their impact. This can be considered a manifestation of fragmentation and miscoordination of state authorities — an internationally well-

known process — when they set either too general goals, which are impossible to achieve by a single agency, or do not take into account the impact of their activities on reaching more global goals. It is time to shift from piecemeal strategies of specific agencies to a whole-of-the-government innovation policy model, including formation of a coordinated portfolio of innovation development institutions.

Innovation processes are restrained by the lack of companies and R&D organizations' long-term vision: planning horizons for the former are mostly limited to 3-5 years, while for the latter they do not usually exceed 1-3 years depending on the duration of publicly-funded projects. Poor cooperation between industry and academia is explained by the absence of desired external conditions for businesses and internal resources for long-term R&D investment in companies, whereas science cannot make ready-to-use technologies available for rapid implementation and returns to companies under tough market pressures. For the R&D sector, further consequences include its lagging behind companies' needs, particularly, those which are involved into global competition (not only in external markets, but in the Russian market as well), and technological competitors. Reduction of employment in R&D, ageing of researchers, deterioration of R&D fixed assets continues; as a result the quality of technology supply keeps slashing.

Central place in the policy mix should be occupied by the instruments supporting cooperative linkages between all actors: enterprises, state (at different levels), R&D organizations, universities, and international partners. The state traditionally plays a role of a major sponsor or a proprietor, while its function as a moderator of linkages in the NIS remains underdeveloped. Technological platforms can be a solution, but the governmental policy must become more flexible: as far as innovation projects move towards advanced stages of their life cycles, its function of direct funding should decrease, while that of risks reduction along with legal, organizational and networked support should increase. Training at all stages of the innovation cycle must be within state's priorities as well. In such case its intervention will be a "trigger" for long-term innovation projects, based on efficient linkages between key actors.

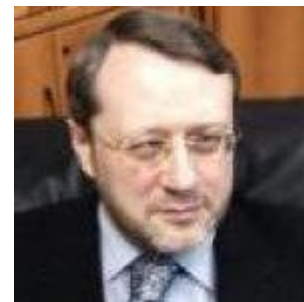
Success of technological platforms will indicate whether the institutions of the Russian economy and the state policy in particular are ready for transition to innovation-based growth de facto. But the capacity of making a breakthrough and stepping to the forefront in this area still remains under the question.

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Innovation policy in Russia during the economic crisis

By Irina Dezhina

The Russian innovation system continues to be in transition during all the post-Soviet period. At the present time it combines elements of Soviet structure (large government sector of science) with new forms (new types of technical and financial infrastructure). In comparison with other developing economies the strength of the Russian innovation system is in the volume of resources, especially R&D personnel, and in the large-scale educational system. The major weakness is mainly in the quality of governance, i.e. in such characteristics as the rule of law, and the quality of government regulations. In addition, Russia is lacking large science-intensive companies, on the one hand, while there is not a sufficient number of small innovative enterprises, on the other hand. One of the serious reasons for low demand for innovations (including R&D) from industry is in the inadequate level of competitiveness and the monopolization of many Russian enterprises. The mechanisms aimed to stimulate companies to invest in R&D (indirect measures, different forms of public-private partnerships, technical regulations and such) are underdeveloped.

As a result, by the knowledge economy index (KEI) that the World Bank calculates annually, Russia is in the group of countries with medium-low income. It occupies the 61st position out of 134 countries for which this index is calculated (data for 2008). This is a decrease in comparison with 1995 – the year when such index was calculated for the first time. The KEI consists of four sub-indices: economic incentive regime, innovation, education, and information-communication technologies development. For Russia the strongest component is education and the weakest – economic incentives regime.

During the latest years the emphasis of the government innovation policy was on the measures that should strengthen or establish linkages between R&D organizations, universities and business in order to stimulate knowledge transfer and commercialization of R&D results. In this area the major initiatives were concentrated in the following areas:

- 1) encouraging cooperation between the R&D sector and private companies through support of joint projects, implemented in the framework of Federal Goal-Oriented Programs
- 2) support of small innovative enterprises through R&D grants and creation of technical infrastructure (such as technology parks);
- 3) introduction of some indirect measures aimed to stimulate innovation in the private sector (a number of tax privileges and tax exemptions – they mostly came into force in 2007-2008 and their effects are not clear yet).

The influence of the economic crisis on the Russian innovation system was the most visible through the indicators of private expenditures on R&D – they started to decrease dramatically. It has happened against the background of quite low business enterprise expenditures on R&D (during the last 4-5 years the share of business enterprise sector was fluctuating around 22-24% of the total intramural expenditures on R&D). Large enterprises that had the biggest expenditures on R&D had cut investments in research as well as their in-house R&D divisions¹. By the end of 2008 private firms' expenditures on R&D have decreased by 80%, business angels financing – by 50%, financing from venture funds – by 40% in comparison with the pre-crisis period².

Evidently the crisis did not stimulate companies to outsource R&D from the government sector of science. Before, outsourcing was gradually developing though many companies with large R&D divisions preferred to support R&D projects in-house or to buy technologies abroad because this was often cheaper than placing orders to government R&D institutes or universities. Companies explain the low demand for outsourcing from government-owned R&D organizations and universities by³:

- the workforce problems that exist in the government sector of science and in universities (lack of researchers in the most productive age of 35-50 years old);
- problems with the rights to intellectual property, especially the one that was created before the start of the project with industry;
- quality of the results: usually it is higher in R&D but not technology.

The crisis also influenced the position of small innovative enterprises. Large and medium companies not only decreased their own expenditures on R&D but they also cut orders to small companies. Simultaneously banks stopped giving credit to small innovative companies⁴. All this created very unfavorable conditions for small firms which may cause sharp decrease in their number.

The government's reaction to the crisis was also in the decrease of its expenditures on R&D. In 2009, depending on the Agency and type of Programs, the cuts in financing of R&D varied from 15% to 30%⁵. In comparison, Western European countries and USA have chosen a strategy to cope with crisis through increased support of R&D and innovations. In the USA the new President has announced that additional financing will be given to science, including support of fundamental research. At the EU countries governments plan to apply more proactive indirect measures stimulating private investments in R&D such as tax privileges. In developing countries (China, India) the crisis is seen as a chance to attract additional financing for R&D from abroad. Thus, governments of these countries put special emphasis on measures that may encourage inflow of foreign investment: reconsidering the intellectual property legislation, giving tax privileges to innovative companies. This, in combination with comparatively inexpensive workforce, indeed attracts foreign investments into local R&D.

In the crisis conditions the strategic approach of the Russian government was not to create new mechanisms but more effectively to use the existing ones. The emphasis is on such measures as support of small innovative enterprises, creation of technical and financial infrastructure for start-up companies, stimulating demand on R&D from the side of industry. Most of these measures are currently under development. Taking into account the general economic environment, budget cuts on R&D, and low efficiency of existing innovative infrastructure, the likelihood that these measures will be instrumental is not high.

Overall, the government has developed about 100 measures to cope with crisis, which are not directly related to innovations⁶. Most of measures are centered on the support of large companies but not in areas of technology modernization, product diversification and such. The implementation of these measures has led to unequal treatment of companies, and, as a result, to deterioration in the competitive environment⁷. Further, the lack of a competitive environment is harmful for innovations. Therefore there is not only delay in the development of anti-crisis measures to support innovations but those economic measures that were so far developed and implemented were anti-innovative by their nature.

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¹ http://strf.ru/science.aspx?CatalogId=222&d_no=17095

² <http://inno.ru/press/news/document33157/>

³ The summary of companies' observations concerning outsourcing is based on personal interviews conducted by Irina Dezhina in June-July 2009 with the top management of a number of innovative companies in Moscow.

⁴ http://www.strf.ru/innovation.aspx?CatalogId=223&d_no=17567

⁵ http://strf.ru/organization.aspx?CatalogId=221&d_no=19448

⁶ Simachev Yu., Yakovlev A., Kuznetsov B., Gorst M., Daniltsev A., Kuzyk M., Smirnov S. Assessment of Policy Measures to Support Russia's Real Economy. Bank of Finland, BOFIT Online, 2009, no.6, p.5.

⁷ Simachev Yu., Yakovlev A., Kuznetsov B., Gorst M., Daniltsev A., Kuzyk M., Smirnov S. Assessment of Policy Measures to Support Russia's Real Economy. Bank of Finland, BOFIT Online, 2009, no.6, p.17.

The economy crisis is the moment of truth for Russia

By Jukka Mallinen

The share of Russia in the world GDP is about 2,5 per cent and it is rather decreasing. The big incomes from raw material export are just a temporary advantage. If Russia is not able to create an innovative economical and social progress, it can fall to the margin.

Economist Jakov Pappé has said, that if now, when world moves over to period of low raw material prices, Russia is not able to increase production, it goes to the road of Indonesia and Nigeria.

Anyway, the Kremlin has in practice admitted, that Russia will not get out of the economic independently. It will wait the rise of the world economy, which then will lift Russia up.

Within the crisis Russia turns out to be more a producer of raw materials. Only the production of oil and gas has grown. All the other branches, investment as well as consumption, have dived.

The share of "the new economics" in Russia is about 3 - 7 per cent, when in the developed countries it is about 50. The Russian economy is still based on Soviet time factories and technologies. It manufactures mostly consumption goods with simple foreign technology.

The new car composition factories etc are even more low degree of production than the export of raw materials. Components, composition lines and technologies, owned and runned by foreigners are just moved inside the custom walls. This does not mean manufacturing progress.

In the current atmosphere of remilitarization and cold war Russia plans to arm itself again to the death. But if raw material resources are an objective factor, deciding for an armament race is not. Particularly the nuclear weapons take a fatal share of Russia's national income.

The Russian economics carries the "gens" of the socialistic command economy. The real competition branches in Russia are just some 5 - 10 per cent. The rest is more or less monopolistic "enterprising", that rather resists development, competition and innovations.

In principal crisis will heal by eating the ineffecient and the over-aged. When weak enterprises die, the effeciency and competition ability grows. But in Russia the state financing crisis is directed for political reasons to the monopolistic enterprises - the inefficiency is supported. Market enterprises don't get state support unlike the companies, controlled by the power elite, that swallow the private owners in trouble.

So the process at the moment is interesting and even fatal. Finance minister Aleksei Kudrin, who defends market mechanism, has been able to keep his mind. The oligarchs have got their loans thus avoiding bankruptcy, but now they are in the pocket of the creditor - the state. The "silovicks" (army and intelligence) couldn't yet turn the economical politics to complete state ownership.

Anyway, "the velvet renationalisation" weakens efficiency and competition capacity. It is possible, that in crisis Russia loses the best companies, not the worst. Parallel, the political orders, type of the command economy, ban the cutbacks in enterprises to increase efficiency in the name of employment and social stability.

So strengthens the Bysantic apparatchik economy, where state money runs. Innovation economy and market mechanism loses. The weathering of efficiency of "Gazprom" is a good example of this.

The Kremlin declares it's direction to the diversification of economy and to innovations. It promises investments to help structural diversification, high tech economy and contemporary service sector.

But the Decree of President on creation of the national innovation system from year 2002 impends to stay a formality. Decisions on monopolist high tech state enterprises in aviation,

shipbuilding, nuclear industry and nanotechnology don't seem to create innovative production.

Now new national investment decisions are cureent in Russia. But they will take at least a year as a minimum. Only after that the entrepreneurs can plan their future.

So will the state or the private business be the locomotive for rising from the crisis? Now the state projects and companies have the priority. Money flows to them, although state has never been able to raise the economy to a quantitatively higher level and growth.

Only the private initiation can save the country from crisis - it increases the efficiency and competition capacity.

Now the harmony between state and entrepreneurs is lost. The state don't trust to the entrepreneurs: it considers capital escape from country, caused by economy crisis, as an embezzlement of national economy. Entrepreneurs, in contrary, don't trust the economical policy and legality: they feel, that they are forced to save their capital abroad.

The development visions of Russia suppose the rise of the middle class from the current 20 per cent to 60 per cent of the population. Middle class would be the carrier of the new life: civil society, enterprising, dynamic. It's will, energy, self discipline would reform the country, that today is still characterized by Soviet time paternalism and passivism. Middle class would activate itself for reaching the western quality of life: democracy, legality, security.

But paradoxally the 1990's turned to the most vulgar materialism. Middle class took for it's ideal the consumption, meaning senseless waste and luxury. The trend was not economy, but hysterical consumption and involvement in debts.

The state was fomenting this, too. It's goal was to raise the consumption level, not to build the basics for a welfare state. Corruption and luxurious life of the elite and officials gave the example for the people. Consumption hysteria individualised and atomised more and more the society, that has not ever been. The constructing political potential for creation of welfare state weakened and consumption superseded it values.

Today Russia needs the ethics of work, meaning the classical spirit of Protestantism by Max Weber. Yet, in Bysantian ortodox feudal East the private entrepreneur has always been hard to outline. Independent ownership has no tradition, property has been political, dependent of the will of the autocrat.

Diversification of economy and the rise of the innovation technology depends on the development of the democratic system and civil society. The state should guarantee and activate the freedoms and legacy.

Last year Russia published a draft for the strategic plan until the year 2025. It seems to based on state centralization, on full control of the Kremlin. But at least it takes the responsibility for the common development of the country. Now it seems to be forgotten.

A "New Deal" for Russia could rise the country from crisis and modernize it. The companies would orientate themselves to the future, innovations, competition capacity.

But this would take power from securocracy, because it would lean on the activity of the population And "the hereditary of the power" has been the most important value also in new Russia.

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Some observations on today's European and Russian innovation process

By Marina Bouianov

Towards a European Innovation Ecosystem

With its noticeable strengthening of efficiency, quality of life, and productive growth of any modern society, innovation in today's European community is a key element of its economical and social policy. The sustainable development of a European Innovation Ecosystem is now at the top agenda of the Europe 2020 Strategy adopted by the leaders of the EU 27 Member States in 2010. A number of various innovation policy-making and operational tools recently initiated by the European Commission (EC) and deployed to start on aim at radically improving the performance of the innovation system. Among them are the Innovation Union Initiative of 2010 driven by the EC, annual European Innovation Summits, the European Cohesion Policy, the European Research Area and the European Innovation Partnership, the next generation of the *Structural Funds post-2013*, and the new *Horizon 2020* Framework Programme for Research and Innovation (from 2014). All these inventions will focus on the actions to take to build adequate coherence across the European research and innovation system, while maintaining local flexibility to allow developing strategies to be tailored to national and regional contexts. This is predominantly important in times of the fiscal austerity and various social challenges, which now European countries are extremely facing with, e.g. the lack of generation replacement with the low fertility, unemployment and poverty issues, social protest movements, migration, multiculturalism etc. The first edition of the Innovation Convention will be opened in early December one year after the adoption of the Innovation Union flagship initiative, the EU's roadmap to turn Europe into a more innovation-friendly and competitive continent.

"Go Russia!" Go Skolkovo!¹

Russia is not an exception in this regard. Russia's innovation programme was proclaimed by the President of the Russian Federation Dmitry Medvedev in 2009 as the Modernisation Programme. It shall enable long-term and stable economic growth in the country based on high technology, knowledge, human capital and innovation. According to this Programme and by the next initiative of Dm. Medvedev the Foundation of the Development of the Centre of Research and Commercialising of New Technologies *Skolkovo* was established as a non-profit organisation in 2010. Skolkovo' financial investments have been steadily growing up from year to year. In 2010, the project funding allocated was 3.991 billion rubles. According to the Ministry of Finance of the Russian Federation, in 2011 this amount will be 15 billion rubles, in 2012 – 22 billion rubles, and in 2013 – 17.1 billion rubles. The goals of the Foundation are to mobilise national resources for advanced applied researches, and to create friendly science environment in five priority directions: energy sector and energy efficiency, space, biomedicine, nuclear science and ICT. The project includes forming the Skolkovo Institute of Science and Technology (SIST), which now actively acts, a number of research and development centres and institutes, business incubators,

¹ D. Medvedev' article *Go Russia!* (10.09.2009). Source: <http://eng.kremlin.ru/news/298>, the official site of the President of Russia.

and centres of technologies transfer and commercialisation. Additionally, world leading companies are welcome to join Skolkovo with opening their representative offices. Specific legislative and investment conditions and highly developed social infrastructure will be ensured for their winning business. According to the Press service of the Skolkovo Foundation², by mid-November 2011 the Skolkovo Foundation resident list has reached 200 participants. Among outstanding international residents are *Nokia Siemens Networks* (Finland), *Siemens* (Germany), *TECHNOPARK® Zurich* of Switzerland, a number of American leading companies (*Microsoft, Boeing, Intel, Cisco, Dow Chemical, IBM*), the Swedish *Ericsson, Alstom* from France, the Netherland' EADS. Skolkovo is starting at precisely the time when Russia vigorously expands its collaboration with the EU community in science, technology and innovation through mutual beneficial strategic partnership and active involving in the EU funding programmes. Representatives of the Skolkovo Foundation boost up negotiations with key government bodies and innovative companies in Europe and over the world as a part of its aggressive policy in broadening international contacts and attracting foreign investments. Skolkovo hastens to be a magnet for many leading scientists and qualified professionals from abroad to demonstrate the charisma of the Russian innovation idea and the prestige of this unique innovation paradise.

Skolkovo: an Oasis in the Desert?

Despite all these facts listed above, it seems that against the background of Russia's economic and social landscape Skolkovo' infrastructure represents a type of a closed self-sustaining system. As noticed by Viktor Galenko, Member of the Flight Safety Foundation, in his expert assessment of the Skolkovo project, "Most likely, in fact this inno-city will very quickly degenerate into the expanded representation of Western industrial and scientific giants, where young scientists work for Western' corporations"³. "Will it be a scientific ghetto or an oasis under the patronage of Western' companies, which no one can access in – it is unlikely to be an intellectual centre, whose decisions could be later adopted across the country", he continues. Here, I completely share Viktor Galenko' opinion.

Nowadays, the concept of innovation is exceptionally complex and heterogeneous. It extends very far beyond the boundaries of the standard definition and operates with such societal processes as generating human capital, enabling knowledge transfer, development of innovation culture and networking private and public sectors. In the broader view, the modern innovation system suggests the inclusion of various political, economic and social aspects of the society to be modernised. The innovation strategy shall directly reflect society' challenges and fit for purposes to meet them. The most important consideration that the innovation strategy shall be actually driven by bottom-top society demands for innovation. Of course, this requires

² Source: <http://www.i-gorod.com/en/newslist/>, the official site of the Skolkovo Foundation.

³ Source: <http://finam.info/currency/news2315400001/default.asp>, the official site of the Information and Analytical Expert Agency FINAM.

more crucial government efforts to bring together the right mix of innovation policy and instruments at the global as well as national and regional levels. But this does not mean the creation of a separate state in the state in a special greenhouse climate that specialises on production of benefits unclaimed by the society. My brief figure review of today' Russian media below clearly proves these concerns.

Snapshot of the Russian "Innovation" Landscape

- The capital flight from Russia in 2011, according to the forecast of the Central Bank of Russia (CB) is likely to exceed \$ 70 billion. According to the Head of the Central Bank Sergei Ignatyev, it is directly related to the heavy investment climate in the country. According to CB, the net outflow in 10 months of 2011 amounted to about \$ 64 billion⁴. To compare: in the crisis year 2009, \$ 57 billion of hot speculative capital went from Russia.
- The influential global civil society organisation *Transparency International* (TI) considers Russia to be the most corrupt of all the major countries in the world, G20. According to TI, Russia in 2010 managed to rank 154th out of 178 countries⁵.
- The annual turnover of corruption in Russia is now estimated at \$300 billion, which is comparable in size to Russia's budget as a whole and represents 25% of the country's GDP⁶. The *Association of Russian Attorneys for Human Rights* has recently reported in its *Corruption 2010* study that Russian corruption generates an amount equivalent to 50% of GDP⁷.
- According to the social survey of the Russian analytical centre, *Levada-centre* conducted in October 2011⁸, the average monthly income per person in Russia is now 9.4 thousand rubles (about 235 EUR), and per family – 23 thousand rubles (about 575 EUR). 50% Russians believe that they have lost from the recent changes in the country. 52% of respondents consider that the level of theft and corruption in the country has increased (in 2007, the figure was only 16%). According to the next survey of the *Levada-centre*⁹, a group of brain drain risk is about 30% of respondents. 3-4 million people have already taken some measures. The most active group includes people with high education and incomes, living in large cities. According to sociologists, in the next 12 years, they see no prospects for themselves in Russia. Their interests are now focused mostly on Germany, USA and the UK.

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DISCLAIMER: The opinions expressed in this article are the author's alone and do not necessarily represent those of the home organisation.

⁴ Source: http://www.ng.ru/economics/2011-11-21/1_kapital.html, *Nezavisimaya Gazeta / The Independent Newspaper*, 20.11.2011.

⁵ Source: http://www.transparency.org.ru/CENTER/cpi_10.asp, the official site of the *Transparency International*.

⁶ Source: <http://www.indem.ru/en/index.shtml>, the INDEM (Information Science for Democracy) Foundation. Study: *Diagnostics of Corruption in Russia: 2001-2005*.

⁷ Source: <http://rusadvocat.com/>, the official site of the *Association of Russian Attorneys for Human Rights*.

⁸ Source: <http://www.levada.ru/14-11-2011/terpet-ne-vredno-rossiyane-ne-zamechayut-uluchsheniya-zhizni-v-strane-bdubin>, the official site of the analytical centre *Levada-centre*.

⁹ Source: <http://www.levada.ru/17-11-2011/ottok-chelovecheskogo-kapitala-bdubin-video>, *Ibid*.

Rosnano and Skolkovo are Russia's best innovation promoting measures, but they are not enough to modernise Russia as a whole

By Kari Liuhto

No money today – no honey tomorrow

Russia spends only 1% of its GDP to research and development (R&D), which is a low figure even compared to China. In monetary terms, Russia's R&D spending is critically small, just about USD 20 billion annually. China invests 4 times more than Russia into its R&D.

Russia has put more emphasis on R&D by founding Rosnano, a major state-owned nanotechnology corporation, in 2007. Rosnano is a mega project in Russia's nano-modernisation. The corporation has close to 100 nanotechnology projects with total investments amounting to USD 8 billion, including USD 3.5 billion investments from Rosnano.

Besides the state investments, Russia needs to seduce the private sector, including foreign organisations, to invest more in R&D. Currently, Russian industry accounts for less than 30% in the country's R&D spending, whereas industry covers around 55-78% of R&D spending in the EU, the USA, China and Japan. This gives indisputable evidence that Russia's R&D is, at the moment, too state-run to form an effective, flexible, and sustainable innovation system. (See Table 1 at the end of the article)

Skolkovo: more special than others?

The World Bank survey ranks Russia's knowledge economy in 60th place out of 146 countries studied. Russia performs extremely poorly in terms of the Economic Incentive Regime, describing Russia's tariff and non-tariff barriers, regulatory quality, and rule of law. As Russia's business environment is harsh in general, it is no wonder why Russia has founded several types of special administrative areas since the collapse of the USSR. (See Table 2 at the end of the article)

Russia has around 100 science towns, techno parks and special economic zones. So far, the results of these privileged administrative areas have been extremely modest. Despite their less than encouraging experience, the Russian leadership has decided to found another science town, Skolkovo, to become Russia's Silicon Valley.

The recent public discussion around Skolkovo leads one to assume that the Russian leadership has learnt from earlier mistakes related to special zones, and hence, it grants Skolkovo sufficient administrative privileges i.e. tax holidays, a right to import technology from abroad without tariffs, and the freedom to operate outside the Russian bureaucracy. Even if considerable administrative privileges aid in designing a globally competitive innovation oasis inside Russia, the organisational skills of the leadership of Skolkovo Innovation City ultimately determine the success of this special zone.

Industrial catch up requires foreign firms

Skoda would obviously have bankrupted without their collaboration with Volkswagen. The Skoda story gives a valuable lesson to Russia's modernisers i.e. it takes far too long for Russian industries to catch up with their Western counterparts alone, and therefore, Russia should do more in attracting leading foreign firms to invest in Russia.

The inward FDI stock-GDP ratio in Russia is around 12.7%, whereas in the Czech Republic it is 52.7%. The difference of 40 percentage points really makes a difference in the future modernisation of these countries. The share of the FDI in the

Russian GDP is absolutely too low to cause a major technology transfer to Russia, particularly when one keeps in mind that at least a fifth of Russia's inward FDI stock is Russian by origin.

According to the Foreign Investment Advisory Council, administrative barriers and other characteristics related to the administration are the main difficulties for foreign firms operating in Russia. (See Chart 1 at the end of the article)

The only way for Russia to attract foreign investment is to create more a competitive (less bureaucratic) business environment and to promote industrial co-operation with foreign firms. Russia has already carried out successful collaboration in the automobile industry, but closer co-operation is needed in other fields of heavy machine building, such as aviation and shipbuilding. To put it differently, Russia does not only need innovations generating growth in the long-term but industrial co-operation generating wellbeing at the moment.

Russia's modernisation should not be regarded as a project with a fixed period but rather a comprehensive non-stop process all over the Russian businesses. Even if Rosnano and Skolkovo are, by far, the best shots in Russia's current modernisation arsenal, they clearly are not enough, and therefore, the Russian leadership should mobilise the whole Russian enterprise population to invest more in research and development. I am afraid that the activation of the enterprise population cannot be done administratively but rather through more intensive competition.

Therefore, Russia needs to intensify its efforts: 1) in supporting privatisation (re-privatising the assets dropped into state hands in the aftermath of the global financial crisis), 2) creating innovation-oriented entrepreneurship (eliminating bureaucratic procedures and dramatically reducing the number of bureaucrats), 3) improving the functioning of the legislative system (making judges financially and politically independent), 4) improving investment climate (liberating the law on strategic sectors passed two years ago), and 5) promoting the internationalisation of Russia's knowledge-intensive organisations (encouraging Rosnano to establish representative offices abroad and financing the internationalisation of Russia's innovation firms).

To end, the EU-Russia Partnership for Modernisation is currently the main political framework to develop the EU-Russia relations in the field of innovation co-operation. This initiative should fast result in concrete actions. One of the concrete actions could be the establishment of the common EU-Russia Innovation Centre in Finland.

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Table 1

Country	R&D expenditure (USD billion)	Share of R&D expenditure in GDP (per cent)	Share of industry in R&D expenditure (per cent)	Number of researchers (1000)
USA	398	2.8	67	1 426
EU27	264	1.8	55	1 448
Germany *	72	2.5	68	291
Finland	7	3.5	68	41
Japan *	148	3.4	78	710
China *	102	1.4	70	1 423
Russia	23	1.0	29	451

Source: OECD, Main Science and Technology Indicators 2009-2.

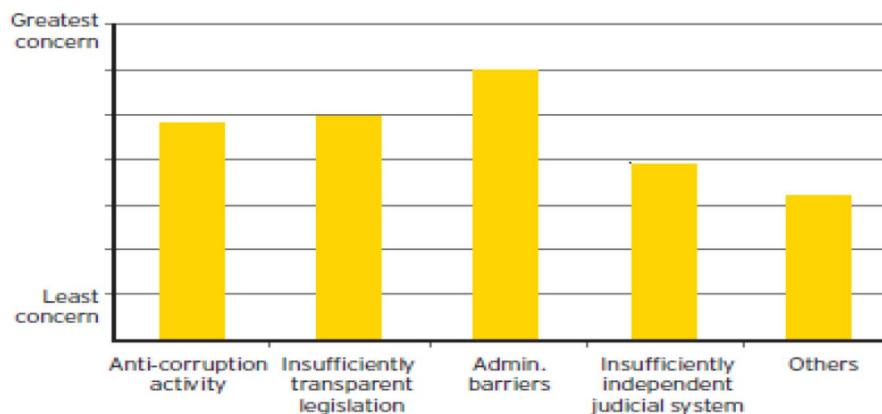
* data of 2007

Table 2

Rank / country	Knowledge Economy Index	Economic Incentive Regime	Innovation	Education	ICT
1. Denmark	9.52	9.61	9.49	9.78	9.21
3. Finland	9.37	9.31	9.67	9.77	8.73
9. USA	9.02	9.04	9.47	8.74	8.83
12. Germany	8.96	9.06	8.94	8.36	9.47
20. Japan	8.42	7.81	9.22	8.67	8.00
60. Russia	5.55	1.76	6.88	7.19	6.38
81. China	4.47	3.90	5.44	4.20	4.33

Source: World Bank, Knowledge Economy Index, 2009.

Chart 1



Source: FIAC, Foreign Direct Investment in Russia 2008.

Building innovation economy in Russia – big ambitions are build by small steps

By Peter Zashev

Everybody who follows regularly the political and economic development in Russia is aware how high in the agenda are such topics as innovations and modernization of the economy. Both Russian Prime Minister and President spoke numerous times about the need to diversify the economy and diminish its humiliating dependence on exporting raw materials, chiefly oil and gas.

That very topic was also at the heart of the President Dmitry Medvedev recent address to the Federal assembly. It seems that there are two substantial problems in achieving these fine objectives. One is that, as history teaches is, the grand vision of the Russian federal authorities often does not match the interests of those that must implement it. The other seems to be in the inability of many Russian policy makers to break a grand vision in a list of concrete small tasks that may sound less grand and breathtaking but are more prone on tangible results.

Innovations can not materialize by a top down issued instruction. Down at the bottom in the real economy there must be scientists and companies finding common interests to cooperate and do something together. The present organizational setup is not inductive for the two parts to seek and develop such cooperation. Instead both sides prefer to wait for the government to offer some form of grant or subsidy etc. This is easy to fix. Building joint projects with companies, raising (partial) financing for projects from the companies should be part of the regular evaluation criteria for universities, research institutes and researchers. This is one example for a small step that has large tangible impact. Equally important is to offer companies some incentives for more actively using the knowledge, skills and available capabilities of universities and research institutes. There are many different alternatives from simple tax breaks on money invested in such R&D projects to more elaborated schemes when the each rouble invested in R&D could be supported by another one paid by the government. To fire up the cooperation between industry and academia should be a top priority.

Instead it seems the government prefers to apply centralized schemes in the form of mega-projects, special economic zones, techno parks etc. Naturally they all have their place and importance. However none of them addresses directly the above described central weakness: industry and academia do not cooperate enough. On the top of it such cooperation will not mean much in the absence for a market for the new products being born, which requires skills and knowledge in commercialization of innovations. For all its size and pre-crisis economic growth rate the Russian market alone is often not big enough for gaining critical sales for new products and technologies. Fortunately in modern times markets are global for those being skilled in international entrepreneurship and marketing etc. Unfortunately at present the Russian way of innovating and commercializing seems to be mostly domestically oriented.

Russian policy makers seem to put their faith in grand projects! Take the nanotechnologies where the main operator is little controlled State Corporation with sizeable financial opportunities. Besides number of Russian cities and

regions setting up their own nanotechnologies centres (doing what!?) it is not clear what are the results so far. At a recent strategists forum in Saint Petersburg the regional authorities together with big names as Finance Minister Kudrin were talking as some kind of a mantra the words of “proryv” (breakthrough) and “nanotechnologies”. The logic perhaps is that what is needed is grand concentrated efforts in one given field leading to breakthroughs.

However the experience of many countries will show that modernization and progress in innovations is gradual process that consists of many small steps in which often nothing grand or revolutionary happens. Although innovative activity is often linked with high technology sectors of the economy, companies in low- and medium technology sectors also innovate, and such innovations are important for the general level of national competitiveness. These companies may innovate in the field of production processes but also organisational and marketing innovations. Russia has plenty of wood. Producing nice design sauna accessories and marketing them to the world as an expensive brand is pure innovation even if it does not sound like launching a satellite. In that respect it may be very useful for many Russian regions to concentrate on what they have and what they may develop with some more simple but more needed innovations and improvements instead of spending their little resources on yet another nanotechnologies centre or techno park.

It is the every day small steps and actions of individuals that achieve the great things. For that to happen the government only needs to send the right signals in the form of concrete incentives and evaluation criteria that aim at results that may be described in qualitative and quantitative terms. As far as the central government believes that it may be simultaneously the main initiator, financer and often user of innovations the other players in the innovation system will deliberately chose to stay idle. Regional authorities will produce (or rather fake) grand innovation initiatives of the type they know pleases most central government. Companies will wait to get and use a state order or money instead of investing in new markets, products and innovations. Academia will continue to complain about inadequate funding for projects that are anyway of little interest to companies. That will be a pity end for the President’s sincere wish for modernization!

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Big projects as a stimulus for innovation development in Russia

By Irina Dezhina

During the last several years there is an ongoing discussion concerning the measures and approaches to stimulate innovation development in Russia. Should the country put its major effort in development of breakthrough innovations or should it support imitations (through purchase of foreign equipment and technologies, licenses, know-how, etc.)? Breakthrough innovations are usually seen in the form of "big projects" – in a way, this is a Soviet legacy when big projects were considered as a measure to keep independence, defense capability and such. Still, counting on "technological breakthrough" is the prevailing approach in government policy at the present time.

Moreover, big projects are playing a growing role in recent innovation policy. These are creation of nanotechnology network, establishment of national research and federal universities, large initiatives to attract best foreign scholars to Russia, and, finally, the project to build an "innovation city" in the Moscow region, at Skolkovo.

In February 2010 President D. Medvedev announced the intention to create a modern science-technological complex aimed at development and commercialization of new technologies, in five areas that he earlier announced as all-country priorities: energy efficiency, information technologies, telecommunications, biotechnologies, and nuclear technologies. According to the President, this should become an absolutely competitive project, and this is how it differs from everything that was done so far. In another words, the government has admitted that all previous measures in the innovation area were not globally competitive.

Since the very beginning this was and continues to be a purely "governmental" project – because its concept, location and other basic questions were discussed in a narrow circle of government officials with very limited representation of some largest companies. Regional leaders were not included in the discussion.

Initially it was announced that the place where the new city should be located, will be selected based on such criteria as the level of infrastructure development as well as its accessibility. Therefore regions meeting such criteria (for example, Tomsk, Novosibirsk, St.-Petersburg, Obninsk, Dubna, Zelenograd and some others) were ready to compete to become a new innovation city ("innograd"). However later it was announced that the winner is Skolkovo – a location that evidently does not satisfy all of the announced requirements.

It may be assumed, that in the government there were two competing concepts. According to the first one, it is crucial to build a new city in an empty space because it is easier to start from scratch in order to bring new culture, technologies, and "people without past". The competing approach is that the city should be based in an already well-developed place where government previously made large investments in infrastructure – for example, in one of the four currently existing technical-innovation zones. Indeed, it is better to try to build something new and avoid any bad legacy; but is it possible to find people "without past"? Also, the "ideal model" of Skolkovo was seen as replication of the U.S. Silicon valley. However American specialists admit that it is impossible "to build" Silicon Valley but rather there should be made an attempt to create conditions favorable for its natural appearance. As it is widely known, the phenomenon of Silicon Valley was not widely repeated even within the United States.

The final choice was for building all new infrastructures which, once again, may be interpreted as a failure of previous government projects to create innovation environment in the country. But if so, why there was no hindsight, why were not the mistakes and omissions made in the past evaluated?

The selection of the place was followed by unprecedented government decisions concerning establishment of privileged economic conditions within the borders of a new city. The package

of new legal initiatives should be presented to the members of the State Duma by the end of the second quarter of 2010. The new measures include but are not limited, to:

1. Introduction of diverse system of tax exemptions and privileges.
2. Development of simplified rules of technical regulations.
3. Introduction of special sanitary regulations and norms of fire safety.
4. Facilitation of coordination with different authorities, and creation of brand new "user-friendly" subdivisions of such government agencies as the Ministry of Interior, Federal Migration Service, Federal Tax Service, Federal Customs Service, Federal Patent Office and some others.
5. Creation of brand new R&D centers – at least two in each Presidential priority areas, modeled from the U.S. experience.
6. Special conditions to attract foreign specialists to work in Skolkovo, based on the changes in visa system and migratory legislation.

Meanwhile the volume of investments in the creation of Skolkovo is not defined yet, partly because not all deals are negotiated. For example, under discussion is the participation of the Massachusetts Institute of Technology in the establishment of an R&D center and in the formation of a new technical university that will be located in the territory of Skolkovo.

It is expected that the first outcomes will be visible not earlier than in 2015. Even though the overall hopes are very high, the very process of this project's birth and the first steps of its realization have revealed problematic areas and pitfalls of the government innovation policy. First, the decision-making process may be called situational when at the beginning and the end choices are made on the basis of political considerations rather than economically justified criteria.

Second, there is a certain degree of idealization of foreign experience. Foreign approaches are often seen as perfect models, and the wider context in which they are working is not counted. The measures themselves are not viewed critically, in their evolution. In the final analysis this leads to disappointment because the adopted measures do not work correctly in the Russian environment. Third, there is a dramatic lack of monitoring and evaluation of previous initiatives; hindsight is unfashionable; only foresight is developing.

When there are resources, political will and a thought-out strategy for realization of a big project, then the chances for success are rather high. However all previous Russian history of big projects shows that some of the important components are always lacking. The Skolkovo project may become a success if it will manage to create a persuasive set of measures, which, in turn, will provide an insight in how all government structures should work in order to create an innovative environment – not in the selected city but in the country as a whole.

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Russia



How do Russian companies innovate?

By Juha Väättänen

Russian innovation paradox

Russia has set a goal to modernise industries and to transform into knowledge based economy. After the collapse of the Soviet Union Russia has suffered from the paradox when relatively high R&D spending produces very weak results for the economy. Russia's innovation performance has been disappointing, despite the available stock of human capital and overall investment in R&D. Russia spent around 23 billion USD on R&D (public & private spending) equalling to 1.1% of GDP in 2007. Russia's R&D spending is high both absolutely and relatively in the reference group of Central and Eastern European transitional economies. For another comparison, European Union's export powerhouse Germany spent 71 billion USD for R&D in 2007.

Russia's weak innovation performance is emphasised by the World Bank data, which shows that German manufacturing worker creates ten times more value added in dollar terms than his Russian counterpart. This means that Russian R&D has either very low productivity or that there are very weak linkages between R&D and the business. A well known fact is that weak innovation performance has roots in the centrally planned economy background. The Soviet Union legacy still influences the main actors of the innovation system. The federal state is still the most important funding source of R&D. Universities are outsiders in the innovation system, only a few universities carry out research activities. Thus, overhaul of innovation system is needed and enterprise sector has a significant role in this process. Let's have a closer look at how Russian companies innovate.

Surveying Russian companies

At Lappeenranta University of Technology (LUT) we have researched the innovation capabilities of Russian companies for many years. We have conducted numerous surveys on innovation activities of Russian companies. Surveys have intended to find out which strategies Russian companies use in their R&D and innovations? How much is spent for R&D? How innovation activities are organised? What are the innovation performance measures and innovation results? How organisational capabilities such as skill levels and openness matter? What is the role of incentives and pressures in innovation process development? Over the years more than 600 enterprises have been surveyed to find answers to the above mentioned questions.

Enterprise surveys are a convenient way to access first hand information from the executives and decision makers in the companies. Traditionally the main stream of Russian innovation research is focused on the policy level and the national and regional innovation systems. However, it is extremely important to know trends in the private sector as well. The productivity gains at the company level are essential for the whole economy development. Experience from the other transitional economies has shown that especially competitive pressures force companies to develop their competences. Typically competitive pressures come from imports, foreign direct investments and domestic competitors. Finally it depends on companies' capabilities whether they are able to respond to increased competition.

Encouraging innovation performance trends

Our study results show very encouraging innovation performance trends. Russian companies spend relatively

large share of their revenues for R&D even in the international comparison. More interestingly, study results show that the best performing companies have distinct characteristics. They have own R&D capabilities and they are actively looking for external knowledge. Definite success factor is the company's ability to develop high level R&D capabilities, which allow acquiring external knowledge. The external knowledge is either acquired from linkages in supply chain or from various stakeholders (customers, suppliers, shareholders, competitors, partners and intermediaries). Innovation capabilities are developed best through the international linkages. Study results show that international competitive pressures effectively increase innovation performance of a company.

It seems that Russian companies prefer domestic co-operation partners even if this co-operation produces more modest innovation results than international co-operation. This indicates that organisational capabilities and skills are to be developed further. On the other hand, companies which have good experiences of international knowledge acquisition aim to deepen their relationships with the key partners. This international co-operation often leads to better innovation performance – higher profitability, better new product development, more product and process innovations and higher number of patents. Furthermore, internationally oriented companies manage to develop their competitive advantages to a new level, which often involves radical changes in their business models, such as increased openness, value creation and value capture.

How does future look like?

Results clearly indicate that Russian companies are increasingly more and more tapping into the world technology pool and are able to absorb this knowledge. This leads to a significant innovation performance increase and indicates that Russian companies are becoming globally more competitive. International competitiveness will eventually lead to diversification of exports and economy in general. However, to facilitate this development further, government should focus on improving investment climate, transparency and openness in the economy. Traditional, centralised and tightly closed approach to innovation and R&D processes do not fit in fast changing global business environment anymore.

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Innovation strategies of emerging Russian multinational companies

By Sergey Filippov

Introduction

After the turbulent 1990s, following the break-up of the Soviet Union, Russia is rebuilding its economy. Its economic growth propelled by the rising natural-resource commodity prices has placed it in the category of emerging economies, together with China, India and Brazil. An important characteristic of the current stage of Russia's economic development is an increasing number of domestic companies venturing abroad. This internationalisation, once started in the neighbouring markets of former Soviet republics, proceeds to the advanced markets such as Western Europe and Northern America. The emerging Russian multinationals employ business models that enable them to leverage their country-specific advantages, such as access to natural resources. At the same time, emerging Russian multinationals start realising the value of innovation as a competitive advantage.

Background

Science and technology (S&T) sector was regarded as of strategic national importance in the Soviet Union, however it was organised according to a different logic than S&T sectors in many western countries. Its specific feature was its institutional fragmentation represented by branches of the national Academy of Sciences, ministerial research institutes, design bureaux, universities. The command economy tightly administered these linkages and the results of scientific research were 'imposed' on state-owned enterprises. After the collapse of the command economy, this inherent fragmentation manifested itself in its strong form. Many enterprises lost connections with their traditional S&T partners. In combination with national economic downturn, when many enterprises were occupied with short-term operational issues to sustain their existence, innovation receded to the background and became regarded as an unimportant element or luxury at best.

Many emerging Russian multinational companies have successfully completed their initial reorganisation and began designing long-term strategic vision. In most cases, innovation is acknowledged as a critical element of these strategies. In terms of their innovation strategies, emerging Russian multinationals may benefit both from innovation capabilities at their home base in Russia and from access to strategic assets overseas.

Innovation Strategies in Russia

Three different approaches can be distinguished in terms of innovation strategies at home in Russia. Firstly, after the collapse of the command economy, large domestic companies started acquiring former state-owned research institutes. In many instances it implied recreation of lost linkages with the S&T sector. This approach dominates among (semi-)privatised former state-owned enterprises, particularly in oil and gas sector. Companies like Gazprom and Rosneft acquired former state-owned oil and gas research institutes and integrated them in their corporate structures.

Secondly, emerging Russian multinationals may form either joint ventures or strategic alliances with foreign (western) multinationals. This approach is in line with the idea of 'open innovation', whereby it is understood that modern organisations need to rely on each other's competences in order to boost their resource base. By forming partnerships with western companies, emerging Russian multinationals secure access to the latest technologies and know-how in new sectors, and, in turn, by partnering with Russian companies, western multinationals enter emerging Russian market. An oil joint venture between Russia's TNK and Britain's BP is a good example. Such partnerships increasingly manifest themselves in such high-tech sector as telecommunications, e.g. a five-year partnership deal between the mobile phone operator MTS and Nokia Siemens Networks.

Thirdly, some companies rely on their own, organic innovative development. They set up their internal R&D departments and employ talents to nurture innovation. An interesting case in point is start-up companies, specifically in IT sector. A well-known example is the computer security company Kaspersky Lab, originally established as a start-up, that has relied on the domestic expertise of Russian programmers. Currently, it is a global antivirus vendor operating in Europe, America and Asia.

It should be noted that this distinction is mostly analytical rather than a clear-cut separation. More so, for development of effective innovative capabilities, companies should combine these approaches in a synergetic manner. Success of modern companies in their innovation strategies depends on the ability to adapt technology and knowledge from various sources.

Strategies Abroad

Access to foreign technology and know-how by acquisition of foreign (technology-intensive) companies can be seen as one of the motives of Russian companies' internationalisation. The market motive can be considered as the prime driver; and technology and knowledge is regarded through the in-house competencies of the target asset. Through these acquisitions, Russian companies aim to foster their innovation and technology base and execute international expansion strategy. Several high-profile deals can be named. For instance, the Russian conglomerate Renova's acquisition of Swiss manufacturing companies Sulzer and Oerlikon; Evraz Group's acquisition of Oregon Steel Mills Inc. in the US. A crucial question here is whether emerging Russian multinationals possess sufficient absorptive capacities; this is an issue of effective integration, use and recombination of obtained knowledge and technology.

State policy

Russian government has recognised the acute need to modernise its national economy, overcome its chronic backwardness and diversify it away from excessive reliance on natural resources. The much publicised project 'Skolkovo', a Russian analogue of the Silicon Valley, serves as a showcase of these intentions. The Russian leadership has voiced its support to the international expansion of Russian companies and their access to foreign technology. Several state bodies are involved in formulation and execution of innovation governance, yet the innovation policy as a coherent and comprehensive policy is still lacking.

Conclusions

The key question remains whether Russian multinationals will compete on the global stage on the basis of access to natural resources or utilising innovation as a competitive advantage, and whether they will be able to enhance their innovation and knowledge base at home and globally. As the value of innovation is increasingly recognised by other emerging multinationals, Russian companies are facing stronger competitive pressure and preparing for the strategic challenge and imperative of innovation.

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The Russian CEOs analyse the innovation activity of their company

By Alexey Prazdnichnykh and Kari Liuhto

In terms of gross expenditure on R&D (GERD) relative to GDP, Russia is positioned in the club of such countries as Estonia, Belarus, South Africa, and Ukraine. Russia slightly exceeds India, Turkey, and Chile, but she is behind China and the Czech Republic.

The share of businesses' expenditure on research and development (BERD) in the Russian GDP is not very high (0.72%). This is more than in her CIS neighbours, and more than in Turkey, Chile or Brazil, but it is clearly less than in China. Regarding the ability to adapt technology and the present technological level, the Russian executives provide exceptionally low rankings compared to other countries. According to the World Economic Forum's Executive Opinion Survey, firms from Ukraine and Kazakhstan were more able to adapt technology, as well as had a more sophisticated technology at their disposal than enterprises from Russia.

Why is the situation so distressing for a country that was first to launch a satellite into the space? In order to find an answer to this question, we conducted a survey among 250 Russian firms. The research results can be summarised as follows.

Approximately a half (51%) of the studied Russian companies had a dedicated R&D department. Only a quarter of all the firms documented their innovation strategy either as a separate publication or a part of corporate strategy. 51% reported to have innovation strategy which was not documented, and 24% acknowledged that they do not have innovation strategy at all.

The major source of innovation for 47% companies in the sample was an own R&D department. Foreign and Russian suppliers of equipment and parts, as well as other functional departments were other three most frequently used sources of innovation.

Approximately a half of Russian middle-sized and large corporations cooperate with foreign partners in technology and innovation. The findings indicate that the most frequent reason for cooperation is upgrading of existing products. Among those companies that cooperate with some foreign partners, over half (53%) mention product innovation among the purposes of cooperation.

The Russian firms often establish partnerships with companies in Western and Central Europe. The overwhelming majority of the surveyed executives pointed out to a European country as the location of their major technology partner, whereas the USA is only 23%, while Japan is about 8%. A more detailed analysis reveals a dominating role of Germany as a technology partner for Russia (36%), which seems to confirm traditional views on the intensive Russia-Germany cooperation. The collaboration with Germany seems to be of more importance compared to technological partnership with all other European countries taken together, including France, the UK, Italy, Spain, the Nordic countries and the Central East European countries, except the CIS.

Finland holds the second place among the European countries as a technological partner for Russia. Finland is twice more often mentioned as the major technology partner for a Russian company than Sweden.

It is interesting to note that the technology cooperation between Russia and the rest of the CIS countries is less frequent than with China. And although our empirical results do not contain information about the direction of the technology transfer, most partnerships with China are certainly bi-directional i.e. the technology transfer occurs to both directions.

More efforts can be applied to streamline the international partnerships. One way is establishing associations and specialised technology trade agents in the most important countries. For example, special technological exchange offices may be set up in Düsseldorf and Munich, Boston and San Francisco, Shanghai and Beijing, Helsinki and Tampere / Turku.

In addition to foreign cooperation, the Russian state plays ever increasing role in the innovation activity of firms. 16% of companies studied indicated to have participated in some government-led innovation support programs at least once.

The most widespread type of support is providing funds for R&D-based innovation projects. 62% of those companies, which obtained support for innovation, report to have used these funds. Financing and subsidising various projects and activities, including innovation projects, purchasing of production equipment and software, construction and development of innovation infrastructure and participation in international exhibitions, are the most common forms of support, and this is in a direct correspondence to the major innovation obstacles outlined by the executives.

Other forms of support such as tax rebates or supporting connections either with universities and research institutions or with businesses are less common. Only 10-15% of executives, who obtained any government support for innovation, reported to have used such forms.

In general, the enterprises consider government science, innovation and technology policies to be ineffective. 65% of surveyed executives do not see positive results of the government intervention at all. Just 11% consider that there are positive results. Given that the government can take multiple roles and implement a multitude of approaches, and therefore, we asked what should be the direction of the governmental intervention.

According to the firms studied, tax rebates for R&D as well as co-financing and other measures of direct and indirect funding of R&D in companies are the priority instrument. This potential policy direction is supported by 57% of the executives. This is of course not surprising if we take into account that these types of funding are direct benefits for the businesses.

Among measures which do not directly presume giving money to companies, 41% consider enhancing the level and scale of education in natural sciences and engineering (at all stages of education) as something that can effectively improve innovation activity. Giving away more R&D funds for research institutes and universities is the third most popular measure with 35% of the company executives considering it as a priority. In addition, companies propose to the government to support the commercialisation via grant systems, to reform the existing system of the government research institutes to increase the R&D effectiveness, and also to pay more attention to developing intellectual property rights, industry regulation, technological standards, and the commercialisation system.

Therefore, the Russian enterprises consider R&D funding, both in private and public sectors, as well as policy steps to increase R&D effectiveness, as those measures of innovation policy which should be of the highest priority for the Russian government.

The research, which this article is based, was conducted in the framework of the project funded by the Academy of Finland (grant 118 338). To read the whole report visit the website of the Pan-European Institute (www.tse.fi/pei) -> Publications: Can Russian companies innovate? - Views of some 250 Russian CEOs).

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Innovative entrepreneurs in Russia

By Ivan Bortnik

How innovative is Russia? What problems should it overcome to become more innovative?

There are several myths about Russia, how true they are?

Myth 1 – Russia has enormous scientific knowledge and therefore a great potential for innovation. It is true up to some degree. Soviet scientific knowledge was really great. However even then it was not equivalent to great achievements in innovation. It was a base for some fantastic results in space exploration, good results in defense industry. However when it was up to civil products the volume of their export - the criteria for innovative products - was really modest. However such a modest export in most of the cases was not because of low technical parameters but because of inherent inability of soviet system and mentality of soviet people to design, to produce, to promote, to sell and to organize service for product on purely competitive base. And russian scientific potential was not supported during almost 15 years. It does not disappear but became much older and therefore is now much less interesting for innovative products and services.

Myth 2 - russians are genetically are not innovative people. It is true but also only up to certain degree. Russians do not pay too much attention to details of everyday's life. If our surrounding is not quite comfortable we may live with it. We like to work enthusiastically for great ideas. But it is not exiting us to work systematically (step by step and may be for years) on improving quality and making competitive ordinary product. However it has nothing to do with our genes and is conditioned mostly by Russian history and climat when we have too many examples that a really hard and systematic work is not always a prerequisite for success story. And when competitiveness in our society is growing we see noout hat more and more examples (like Yandex and Kaspersky Laborwtory) appears of competitave products on international markets. May be it is a little bit strange to hear for western specialists but here in Russia is one of the urgent needs is to promote success stories for customer oriented products, companies and even more important - persons.

Myth 3 - Russia will not become innovative country until it has plenty of gas and oil resources. Yes it is true when it comes to Government's motivation to change rather rapidly from paternalistic soviet economy to much more market oriented one. However we may see from some recent examples that pure market economy is not a perfect one. But also Russia's participation in WTO will foster transition to market oriented economy. It is necessary not because of exhaustion of resources but because of that potential fact that energy efficiency and new sources of energy policies in many countries could give some good results and demand for oil and gas could go down.

What is a real situation with innovative companies in Russia and how it relates to these myths?

It is better to consider separately two groups of companies - large companies and small and medium enterprises. The reason for separate analyze is clear if we recall how these two groups of companies appear in Russia. Most of large companies and their management are from soviet period and are used to planned system of economy. And many of them are controlled by Government until now. Small enterprises on the contrary are organized by enthusiastic and risky persons and they never worked within soviet system as they were not allowed to exist under it. Middle sized enterprises have two origins - either they grew up from small or they are active pieces of previously large soviet companies after their collapse and breakdown. In both cases they are enterprises of new type like the small ones which rely upon only themselves and market forces.

If we analyze situation with large companies we see that most of them (nice exceptions are companies from space and ITC sectors) are not completely uninnovative, but their innovations are mostly organizational and marketing ones and average level of innovativeness measured according Oslo Manual is somewhere about 6% if we take a part of sales of their innovative products as

percentage of their full turnover. As it was said before most of them are controlled by Government and now Government obliged them to develop plans for their future development based on innovative products and technologies. Another purpose of Government activity along this directions is to stimulate R&D financing by enterprises as until now it is less than 0.3 GDP. It is also important because during last few years Government poured a good investments into universities to improve conditions within them for R&D and poor demand for R&D from enterprises makes these investments not quite effective.

With small and middle enterprises situation is different. If we measure their innovative sales (products and services) as a part of their turnover it is somewhere about 25-30% and most of their innovations are technological. It does not mean that most of their products are exported but the first task for most of them is to replace their western analogues on Russian market. And also one should keep in mind that to come on international market and to be competitive over there it is not an easy task for small company. However some of them (like "Tranzas", NT-MDT, "Diakont", "Vladmiva") are already well presented on international markets. Main fields of activity of small and medium enterprises where they are competitive are ICT, especially software, devices and instruments for medicine, science, ecology, energy saving, new materials for electronics, construction industry.

Main obstacles for innovative SME to grow are limited size of internal market with very high level of competition by foreign companies and many problems to overcome to be well presented on international markets - competitors, language, custom, small financial resources and expensive credit, etc.

Keeping in mind what was said about nature of innovative SME the Government is trying now to assist their creation and development. A special federal law was issued to facilitate the creation of innovative small enterprises by research organizations and universities. Preseed and seed funds and programs on federal and regional level are established both of public and public-private nature. R&D of SME is supported through program similar to SBIR program. Public venture funds exist with capital about two billions of US\$. Infrastructure like business incubators, technoparcs, innovative technological and engineering centers are supported by State through regions of Russia.

And finally, what about myths?

Myth 1 – it will take not less than 10-15 years of consistent policy by Government to restore Russian scientific knowledge and innovation potential up to position of soviet science. Scientific and educational schools are still here.

Myths 2 – genes of Russians are also entrepreneurial ones. When their oppression ceases they awake. Process is going on. A wise policy may speed it up.

Myths 3 – it is only up to Russians to prove that this myth is a wrong one.

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Small business in Russia – trends and outlook

By Anatoly Zhuplev

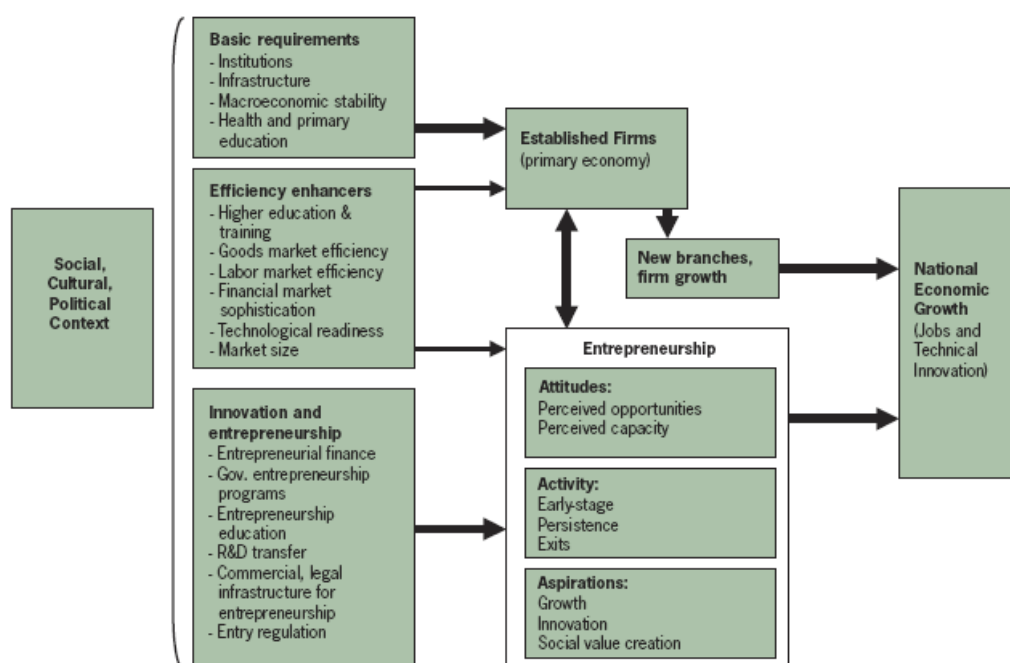
Background

Socio-economic prosperity, growth, employment and technical innovations depend on many factors and conditions where small business enterprises and entrepreneurship (SMEs) playing crucial role (Figure 1). SMEs in Russia, with its important political-economic role in Eurasia, affect both Russia itself and neighboring countries in the “near” abroad and beyond.

Figure 1 Global Entrepreneurship Monitor (GEM)

Framework

(http://www.gemconsortium.org/download/1250272833061/GEM_Global_08.pdf, p.10)



Over centuries, SMEs have not played significant economic roles in Russia, compared to the world's most developed economies. Seven decades of communism following the 1917 Bolshevik Revolution have continued this trend, in effect halting SME developments and creating restrained cultural attitudes towards entrepreneurship among the masses. Throughout moderate liberalization in the late 1980s and eventual demise of the USSR in the early 1990s, followed by roller-coaster years under Yeltsin and a relative stabilization under Putin SME climate in Russia has improved.

Current Developments and Trends

According to the latest Global Entrepreneurship Monitor 2008 report, Russia ranks among the least entrepreneurial countries in its reference group. Some other studies (Russian SME Observatory Report, 2002; U.S. Agency for International Development, 2004) find that private entrepreneurs – natural persons (a major component of the SME sector) dynamics are comparable to European countries. In the mid-2000s SME sector in Russia was responsible for 10-11% of the GDP and 13% of employment nationwide (Zhuplev et al., 2004). Despite more than a decade of the post-communist revival of SMEs since the late

1980s, reliable and comprehensive information often available only from western-sponsored research projects, while Russia's home-based scholars and academics are generally poorly paid, concentrated mostly in few major cities (mostly Moscow and St. Petersburg) and often focus on their personal economic survival and other priorities rather than scholarly research. Adding to the problem and, indeed, part of the problem is the Russian government that provides inadequate attention, financial and organizational support for SME research and development- SMEs typically rank low in government priorities. Although widely recognized as having progressed in SME development in absolute terms, compared with the Soviet past, Russia continues to hold cultural reservations towards entrepreneurship (Global Entrepreneurship Monitor, 2009).

The latest World Bank's survey (Doing Business, 2009) ranks Russia #120 out of 181 economies on the ease of doing business with the following rankings in the ten key subcategories: starting a Business – #65/181, dealing with construction permits – 180, employing workers – 101, registering property – 49, getting credit – 109, protecting investors – 88, paying taxes – 134, trading across borders – 161, enforcing contracts – 18, and closing a business – 89. Russia's overall ease of doing business world ranking in 2009 worsened by 8 percentage points (largely due to problems with obtaining construction permits and getting credit).

According to Russian government statistics, there are 6 SMEs per a thousand people in Russia, compared to 45 in the EU, 49.6 in Japan, and 74.2 in US. More than 50% of the SMEs are located in Russia's Central and North-Western federal districts, among them disproportionate 25% are located in the capital city of Moscow that is comprised of just 7.43% of the total Russian population. Small business is still underdeveloped in the Far Eastern (4.8% of the total number of SMEs), Ural (6.7%) and Southern (9.7%) federal districts. About 46% of all Russian SMEs operate in retail trade and food service, about 14% —in construction service and about 14% — in production industries (Zhuplev, Shtykho, 2009). During Putin's first presidential term his administration initiated economic reforms, including the flat tax system, strengthening of the banking sector, improvements in the SME registration and reporting procedures, etc. These and other measures have had significant impact on motivations, obstacles and other parameters of starting and operating small business ventures. One of the most important improvements has been a wider, simplified access to loans and other sources of financing, although availability of venture capital in Russia, especially for high-tech/high risk start-ups, is still scarce. With financial windfalls from the skyrocketing world prices for energy and mineral resources

the Russian economy has been steadily improving in the 2000s. The period of economic stability during Putin's second presidential term (2004-2008) and growth in population's purchasing power have contributed to an increase in the number of SMEs with the medium level of sales and a decrease in the number of those with low sales in 2008. That has also signified a shift toward higher number of employees working in a business and a decline in the number of additional businesses owned. Economic stability has also instilled a sense of safety for private investors, thus facilitating increase in domestic private investment as a source of financing business. The worldwide economic crisis struck Russia in late 2008 hampering entrepreneurial developments in many ways, with particular severe impacts on SME financing

Longitudinal Study of Russian SMEs

A recently conducted small scale longitudinal survey (Zhuplev, Shtykno, 2009) contrasted and compared the state of Russian SMEs over a period of fifteen years, in 2008 against 1994, in the beginning of the post-Soviet transition. Summarized below are major findings of this survey reflecting the state of affairs as of summer 2008, before the advent of the economic downturn.

- The development of business infrastructure in Russia, especially in the national capital and other major cities, has improved finding information on markets, products, and prices, realizing transportation, advertising and other business functions, as well as setting up communications (phone, fax, etc.). At the same time a shortage of business real estate in capital cities caused by an increased number of businesses entering market has made it more difficult to find office and operating space. Meanwhile, the development of business infrastructure has not facilitated opportunities for acquiring knowledge and skills needed to start up and operate business, as well as in production and operational management; those issues still present a significant problem for the growing number of young entrepreneurs.
- Improvements in the Russian banking sector assured by stricter governmental requirements on the banking transparency (which lead to a license withdrawal for some weak banks or banks of dubious origin in 2002-2007) and introduction of the Deposit Insurance System in 2004 by the Central Bank of Russia have facilitated streamlining of currency transactions, improved safety of monetary system and overall simplification in conducting banking and financial operations, as well as a slight decline in importance of high interest rate as an obstacle. Also, simplification in the accounting system for small business has led to the downshift in rating the accounting and bookkeeping as a problem.
- Rampant crime against private businesses so common in Russia in the 1990s, are no longer perceived as an issue of top magnitude, while bribery and influence peddling, together with unfair competition, are perceived

as more important obstacles. That may be a result of both the dynamics of these processes in reality and entrepreneurs' increased knowledge/awareness.

- The number of young small business entrepreneurs in Russia has increased significantly, thus raising the need and demand for business consultancy and services.
- Reduction in unemployment, a shortage of labor force in the capital cities as well as lack of human resource management experience due to the low level of SME development in the 1990s have led to an elevated importance of finding good and reliable employees and high level of perceived difficulties in managing employees.

SMEs in Russia tend to demonstrate growth in the number of companies, the number of persons employed, the volume of sales and the number and share of female entrepreneurs (the latter is particularly evident in the service sector). This growth has been facilitated by positive changes in the taxation regime and streamlining of the licensing procedures but at the same time hampered by worsening situation with the red tape and bribery.

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Does the Russian economic system support technological entrepreneurship?

By Nikolai Puntikov and Stanislav Tkachenko

In September 2011 one of us moderated a round table discussion at the IV Innovation Forum in St. Petersburg. The panel has been titled "Entrepreneur as Key Player in Innovation Economics" and brought together prominent Russian investors, entrepreneurs, leaders of governmental institutions and foreign experts. The panelists have discussed dynamics of the Russian economic system from the perspective of its compliance with main features and indicators of the innovation economics, as well as issues related to education of entrepreneurs and creation of social environment that supports entrepreneurial initiative. This article has been written as an aftermath of analysis, which we performed over diversity of opinions uttered by speakers at the round table.

Today's problems of Russian national economy are well-known: corruption, low level of economic freedom, oil and gas dependency, lack of strategic vision for development of Russia's political and economic system. In an attempt to address many of them, the government declared innovation as its key priority. In the next 30 years the Russian government plans to invest over a trillion dollars in support of innovations. It is expected that the modernization will be powered by large-scale investment projects which government will support not only financially, but also by offering special tax and custom rules, liberal visa and regulation regimes, and other favorable treatment.

Government support of external economic factors (such as foreign investments) is an important measure aimed at diversification of national economy. However, domestic dimension of the economy badly needs attention of all stakeholders. Reforms of national legal and law-enforcement systems are long due. Russia has to tackle and overcome serious institutional and political barriers that prevent cooperation with foreign partners in Europe and elsewhere. Political institutions for an effective market economy are largely missing in Russia, and corruption is on rise.

Most of the speakers at the Innovation Forum in St. Petersburg provided positive assessment of the progress in establishment of innovative ecosystem in Russia in the past five years. Investment funds and business angels became visible and active; there are governmental institutes that really work, including Russian Venture Company (RVC) and Skolkovo; a lot of business incubators help startups to launch operations and raise capital. Besides, booming Russian consumption and production markets offer entrepreneurs opportunities that would be difficult to find in other countries. RVC's CEO Dr. Igor Agamirzian referred to "strong spirit of entrepreneurship" that should help Russians to overcome "technical" problems.

However, in spite of optimism, the speakers casted a good share of criticism in each case when a specific indicator of innovations economics has been considered closely. We scrutinized just a few of them with an objective to find Yes/No answer to a simple question "Does it support technological entrepreneurship?"

- **Current legislation: NO**

Lack of basic corporate, venture capital and IP legislation; unreliable judicial system; weak and non-transparent law enforcement; heavy bureaucracy at the Custom Service; corruption.

- **Taxation policy: NO**

Except for a few enclaves (like Skolkovo), there are no mechanisms of tax endorsement for innovation.

- **Human capital: YES, BUT...**

...But business is not anymore local; Russian human capital should be globally competitive. When there are no attractive opportunities due to institutional loopholes, entrepreneurs would leave Russia to work elsewhere: from Finland and Estonia to Silicon Valley and Road 128.

- **Share of innovation production in GDP: NO**

Still energy resources and primary products dominate Russian GDP.

- **Innovation economics' infrastructure: YES**

This segment enjoys fast growth explained by enthusiasm of individuals and government money. However, if long awaited reforms in other areas do not happen soon, those infrastructure institutions may well become source for innovation in other national economies, but not in Russia.

- **Capital replacement and government support: YES, BUT...**

...By providing direct financial support to individual companies the government undermines free competition and paves road for another source of corruption. It might be more efficient to invest in innovations infrastructure (incubators) and/or pay decent salary to academic scholars and university professors.

Contemporary Russian economy lacks basic institutions, needed for making innovations possible. We believe that the "holistic solution" of the puzzle could only be found if the "project" of reforming Russia's energy-dependent industrial economy into a full-pledged member of the global innovation economics was explicitly defined and consistently implemented based on the following priorities:

1. **Development of national system of effective liberal institutions of market economy.** Until now there are only imitative copies of such institutions as independent courts, self-regulating business organizations, private-public partnerships, etc.
2. **Establishment of a think-tank's type Center for reforms of national economy.** It should involve representatives of business, legislature and government and should be empowered with authority to implement practical measures in economic, judicial and social spheres.
3. **Reform of institutions of political power,** which includes increasing role of civil society in the system of governance.
4. **New regional policy for Russia** based on post-modern federation, in which regions will compete between themselves for better business climate and invest into innovation ecosystem at regional and local levels of governance.

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Industrial-innovative networks as an opportunity to raise productivity of the Russian North-west

By Igor Maksimtsev and Sofia Rekord

In the context of current economic crisis companies and countries are facing the challenge of searching opportunities for economic survival and growth. One of the basic problems in this field is to define criteria of successful economic development. It is hard to argue with the point that one of the most sound measurement both for businesses and states is productivity, taken as the basis for the study "Lean Russia: sustaining economic growth through improved productivity", conducted by the McKinsey Global Institute. There were pointed out the main problems of Russian economy and initiatives which could improve the situation. It is worth noting that those initiatives perfectly match with main goals of creating industrial-innovative clusters:

- *Increase of competitive intensity*: one of the basic features of any industrial-innovative cluster is a balanced combination of co-operation and competition, that means a competition not only by products, but also (and mostly) of business models. Nowadays in Russian economy such competition is possible between small and medium fast growing "gazelle" companies.
- *Improvements in business processes*: they are inevitable when formal or informal network of companies and supporting institutions is created. Its horizontal orientation (heterarchy) means more flexible structure, but at the same time – more sophisticated management systems. Thus, managerial innovation may work faster, than the technological one, and clusters could facilitate better information circulation and adaptation of the whole production system to external changes.
- *Improvement of professional education and training*: lack of professional training is a problem for the majority of Russian processing industries, so, clusters make it possible to organize special, "tailor-made" educational centres, and, as a result – local labor market which is extremely important during the time of economic crisis.
- *Launching labor mobility and social protection programs, minimization of the expected decline in workforce*: during the "lean" years of economic crisis this is one of the toughest problems, which also may be partly solved by the creation of local cluster labor market with collective responsibilities of businessmen and mobility of employees within the network.
- *Implementation of the integrated approach to urban and regional planning*: industrial clustering implies better organization of the space – territory itself, and infrastructure, both "hard" and "soft". As a result it is possible to create effective system of planning, involving urban and rural areas.
- *Development of a viable financial system*: though it should involve efforts of state monetary authorities, creation of the local system of financing is feasible for the mature cluster network.

Thus, three basic problems of Russian economy, pointed out in the above mentioned survey (inefficient business processes, obsolete capacity and production methods, structural differences) may be partly resolved by developing geographically concentrated industrial-innovative networks, i.e., clusters.

At the same time the point that many Russian industries are rather consolidated, with the small amount of large players, which may hurt their flexibility, is widely discussed. Still, it should be noted that there are opportunities to create clusters even in rather monopolized sectors, involving such models, as:

- *core-ring with lead-firm* (a cluster in which the lead firm is substantially independent);
- *all cores* (the vertically integrated firm).

So, it may be assumed that in oil and gas industry it is possible to build up effective industrial-innovative networks, moreover – it could have a great positive impact on the whole traditional energy sector. The main problems of this sector are: high costs, narrow competition and over-maturity. The last point is the most crucial: through joining together supporting and related industries,

medium-size service companies, and scientific institutions it becomes possible to move companies of the sector to the more "young", growth phase.

Cluster concept also includes an opportunity to create trans-border networks. It is a crucial point for the North-western Russia with common EU border. As mentioned in the Government of Finland resolution "Russia Action Plan" from 16.04.2009, "considering the size of the Russian economy, the number of internationally active companies in the country is rather low".

Conducting a survey of opportunities to develop cross-border clusters between Leningrad region, Saint-Petersburg and Baltic countries, the author of the current article took for the consideration not only the concentration of industries in the region (turnover, employment, number of companies), but also – attitudes of key persons and business circles to determine the level of their awareness of the cluster paradigm. The survey showed that such sectors as wood-working, metal-working, chemical industry and hospitality have the most appropriate balance between quantity (concentration in the region) and quality (acceptance by potential cluster members).

Concerning the principle opportunity to create trans-border production chains: Saint-Petersburg and Leningrad region could provide Baltic countries with: still large market capacity, infant industries with high potential (for example, ICT), educated producers and educated consumers (playing the role of a "testing market" for the whole Europe), higher risk acceptance, developing innovators (creative elites of Saint-Petersburg), and serve as a transportation hub. On the other hand, Russian North-west needs such precious assets, as business knowledge of different type (industrial, ecological, managerial), investments and an ability of networking as one of the most important skills to be implemented on the Russian economic "soil".

It may be concluded that Saint-Petersburg, Leningrad region and the Baltic Sea states possess complementary structure of needs for regional cooperation and clusters formation. At the same time cooperation may be less formal and based on common platforms to improve business processes, such as: IT, science and education, design culture, etc.

Thus, in the Russian case clusters seem to be neither a dogma, nor a panacea, but one of the ways to increase productivity by synergies and fertile environment inside such industrial-innovative communities.

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Progress of the Special Economic Zones in North-West Russia

By Stanislav Tkachenko and Dmitry Tkachenko

Plans for establishing Special Economic Zones (SEZ) in the USSR were first announced in the mid-1980s. Already at that time the consensus had emerged that the most efficient location for these zones was in the border regions – in Belorussia and the Baltic Republics. But the discussion on the level of experts and government officials didn't produce than any clear results. During the last years of the USSR, the initiative for development of SEZ projects moved to the regional level, with "Vyborg" SEZ in Leningrad Oblast as one of forerunners. After the disintegration of the USSR, the development of the full-scale legal basis for SEZ has finally begun.

Federal legislation of SEZs

Legislation on SEZs in Russia today consists of:

- The Federal Law of 22.07.2005 № 116-FL (as of 31.01.2008) "On Special Economic Zones". This Law gives a definition of "Special Economic Zones", lists the four types of these zones, describes the types of economic activities residents are allowed to engage in, and defines the legal procedure to establish and manage these zones.
- Regulations of the federal Government and the Ministry of Economic development. These documents (about 60 overall) define incidental issues of Russian SEZ's performance.
- The Edict of the President of the Russian Federation in July 2005, № 885 «On the Federal Agency's Management of Special Economic Zones" (FAMSEZ). The Agency has received the power to establish and manage Special Economic Zones.

In 2006 the Government of Russia has set up the Joint Stock Company "Special Economic Zones" and on January 26, 2010 banker Igor Kosov was appointed as its CEO. On November 5, 2009, Presidential Edict № 110 revoked the FAMSEZ and divided its functions and project funding between the Department on Special Economic Zones, the Ministry of Economic Development and the Joint Stock Company "Special Economic Zones"

There are altogether 17 SEZs today in Russia. Investing rather significant federal resources into them, Russian authorities have the following priorities:

1. assistance in diversification of the national economy;
2. development of the manufacturing industry;
3. engineering design and production of high-tech goods;
4. modernization of transport and logistic infrastructure;
5. contribution to modernization via creation of growing points of technological growth.

SEZs in North-Western Russia

North-Western federal district (11 regions including St. Petersburg and Kaliningrad) is characterized by a high level of economic development, skilled labour, and strategic location vis-à-vis the European Union – Russia's most important economic partner. As we have mentioned, the very first SEZ has been opened in the Kaliningrad oblast since 1990, even if its economic development was unstable. The zone has experienced a rebirth in 2005, simultaneously

with the replacement of the previous generation of Kaliningrad regional elites, who were closely connected to the military establishment. New governor Georgy Boos is a "heavy-weight" politician, serving prior to his governorship as Deputy Chairman of the State Duma and Minister of Taxation. On January 10, 2006 the Federal Law № 16-FL "On economic zone in Kaliningrad region" was adopted. It provides the regional administration and residents of the SEZ with badly needed standardization and accountability of legal and administrative regimes.

The creation of the SEZ in St. Petersburg was approved on December 21, 2005 by the Regulation of the Federal Governmental № 780 "On creation of special economic zone of the innovational type in St. Petersburg". The Special Agreement "On creation of special economic zone of the innovational type on the territory of St. Petersburg" was signed on January 18, 2006 between the Government of Russia and the Administration of St. Petersburg. This SEZ is divided in two sections: 1) "Noydorf" (Strelna suburb of St. Petersburg) – 19 ha, and 2) "Novoorlovsky forest park" in northern St. Petersburg – 110 ha. The SEZ will start its full-scale functioning in late 2010-early 2011, with RUR 9 billion of public (federal and regional) investments put into infrastructure and more than 30 already registered residents. Specializations of the St. Petersburg SEZ include the following: instrument-making; health-related technologies; electronics; means of communication and IT-technologies.

In addition, on February 3, 2007 a Special Economic Zone for tourism and recreation at the Zelenograd district of Kaliningrad oblast has been approved. Its territory is 67 square kilometers, and its funding from the federal and regional budgets amounts to about RUR 2 billion, as well as private investments totaling up to RUR 6 billion.

Nowadays only one of three SEZs in NW Russia (Kaliningrad) may be considered as functioning well with significant inbound investments and positive impact on the regional economy. There are 63 residents in the Kaliningrad SEZ with gross accumulated investments of RUR 41,5 billion. Until now RUR 21,4 billion was used for new construction, RUR 1,5 billion was put into reconstruction of already existing industrial/logistic infrastructure and, finally, RUR 17,6 billion was utilized in fixed capital and new technologies. The largest number of residents is in the manufacturing sector (34), with the construction sector in second place (16) and transport and communication companies in third place (13). In January 2010, 45 of 63 residents had already started their business, with total shipment and production of rendered services at RUR 27,7 billion in 2009. There are 5,500 employees at the SEZ businesses, and 80 % of the production of the SEZ in Kaliningrad goes to the Russian market.

The problems which the Kaliningrad zone is facing, are: 1) the long distance from the SEZ to receptive markets of Moscow and St. Petersburg; 2) the complete dependence of residential companies on imported raw materials and assembling parts; 3) the lack of the federal government's strategic vision on long-term socio-economic development of the Kaliningrad oblast.

There are even fewer results to be considered in St. Petersburg: there are plans to start first production at the "Noydorf" section of the SEZ in late summer of 2010. And there is not a single resident in the Zelenograd tourist and recreational SEZ in Kaliningrad at this point.

Challenges

The following challenges face SEZs in Russia today:

- 1) *High threshold for inbound investments into SEZ* required for residents to receive official status (just recently it was decreased from €10 million to €3 million).
- 2) *Shortage of experts in the management of the SEZ and professional personnel for registered enterprises.*
- 3) *Long periods of infrastructure's construction by regional authorities.*
- 4) *Bureaucratic hurdles*, which prevent many businesses from entering SEZs and starting their operations.

In September 2009 President Dmitry Medvedev of Russia has announced his "modernization" strategy. At the center of it is the construction of Skolkovo – an ultra-modern research and technological complex next to Moscow - a Russian analogue of the Silicon Valley. The status of Skolkovo in some respects is close to a traditional SEZ. But since Skolkovo is a testing ground for Russia's attempts to convince other regions of the country to attract both modern technologies and leading international specialists – further optimization of SEZ legislation and practice of its implementation is considered today as the strategic priority.

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The bumps in Russia's innovation chase

By Valteri Kaartemo and Kari Liulto

In 2005, four new technology-innovative special economic zones (SEZs) were set up in order to facilitate Russia's transformation from a resource-based economy to a more innovative system. It is acknowledged that SEZs are necessary but not sufficient instruments for the modernisation process in Russia. This acknowledgment refers to the foreseeable bumps ahead in the Russian innovation chase.

The purpose of the SEZs must be linked with the aims of the modernisation process. Modernisation should not be considered as a government programme but as a constant activity in everyday life. Major changes occur only when there is a real need to change i.e. free and fair competition is the only way to force the companies to constantly improve their practices. Common wisdom says that without competition there cannot be competitiveness. Therefore, Russia should abolish the obstacles to free competition, including the privileges of oligarchs.

Without the participation of the world's leading innovation companies, Russia's innovation reform will remain a political exercise. The Skoda case shows that international brand co-operation creates consumer confidence and success stories. Without international brand co-operation, it will take decades before "Made in Russia" stands for high quality. Without foreign participation, Russian natural resources will run out before innovation reform brings tangible changes to the Russian GDP.

Should the Russian innovation reform lean on the military-industrial complex, the participation of leading foreign companies in Russia's innovation reform will remain modest and Western countries will implicitly restrict the inflow of Western high-tech to Russia i.e. the era of the neo-CoCom policy will commence.

Russia's bureaucracy causes enormous inertia, and Russia's novel ideas at the top of society do not materialise at regional level without breaking the passive change resistance forces of the regional administration. The training of regional elites and the nomination of the new change forces is the only way to transform reform at the federal level to reach regional levels. Without corruption-free regional elites, any current reform is doomed to be a superficial administrative exercise.

The impact of the zones must be dispersed throughout the rest of the economy to have a wider influence on the modernisation process. Alone, the SEZs do not provide anything. It is the effective use of these instruments, which may have impact. The innovation activity of the state-run corporations (Rosnano and Russian Technologies) and major private corporations is a necessary but not a sufficient condition to cause major reform in Russia. Therefore, the mobilisation of the private sectors' R&D expenditure, particularly among SMEs, is key in modernising Russia's natural resource-based economy. In this context, one should bear in mind that companies are not interested in economic modernisation but achieving their own goals. Currently, the private sector (including major private corporations) accounts for only 20–25% of the R&D expenditure in Russia.

The concentration on high-tech innovations is a risky innovation policy, since the development costs and possibility of failure is higher than that of low- and medium-tech innovations. Moreover, low- and medium-tech innovations' spill-over effects often occur faster than that of high-tech. The high political value of high-tech innovations may thus realise itself too late. Therefore, Russia's innovation policy should not only build on high-technology but on the products and services in which wide population of Russian companies have existing advantages. Moreover, in order to enhance the process, the SEZs need to contain the "specialty factor", which means that the zones must differ in characteristics from the rest of the economy. We claim that SEZs in Russia are not special enough to result in a major

FDI inflow to Russia, which is a prerequisite for economic modernisation. The SEZs should either offer more benefits to foreign investors or the SEZs should be abolished. No matter which alternative is chosen, the major policy measures should be directed to improving the immaterial property rights and functioning of the legal system i.e. the improvement of the general investment climate.

Russia's innovation reform, with the aforementioned bumps, can be compared to car racing. Rosnano, Russian Technologies and innovation-financing institutions are fuel for the car engine, which is formed mainly by the Russian SMEs and large corporations. The research institutions and academia provide the headlights to see a bit further ahead. The political leadership forming the driving team (the driver and the navigator) should have a consensus on the direction they want to steer their vehicle. The driving team can avoid the bumps and the road blocks ahead created by bureaucracy only by studying the route in advance. However, the driving tandem cannot influence the speed of the competing teams. Unlawful measures result in disqualification and loss of permission to participate in the global race. The Russian population monitors the developments from the back seat, and possibly changes the driving tandem, if they do not show acceptable results rapidly enough. Even if the future of Russia's modernisation is everything but certain, one cannot win without participating in the race. Fortunately, President Medvedev's team has realised this, which gives Russia a chance to succeed.

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Special Economic Zones in Russia – new trends

By Stanislav Tkachenko and Dmitry Tkachenko

Special economic zones (SEZ) play special role in implementation of Russian Government's vision on how national economy should be reformed and modernized. Internal dynamics of their development is rather positive in recent four years. Since the end of 2009, there are seven new SEZ in several Russian regions and of different types of them. In general, there are 24 SEZ in Russian Federation today: 4 SEZ of industrial and production type, 4 SEZ of technological and innovation type, 13 SEZ with a specialization in tourism as well as 3 SEZ in sea-ports and logistics.

Among newly established SEZ there is highly advertised by Russian Prime-Minister "The Titanium Valley" in Sverdlovsk region, "Togliatti" SEZ in Samara region, which should save so called "monocity" from consequences of growing unemployment and even social unrest, and Murmansk Sea-Port SEZ with specialization in logistics.

Following indicators demonstrates SEZ development in Russian Federation in recent years:

	2007	2008	2009	2010	2011 (January-June)
Number of residents registered	50	141	207	267	288
Investment announced, billion RUR	34,237	90,839	144,864	219,900	n.a.
Number of jobs created by SEZ	699	3709	3919	5234	n.a.
Volume of sales of products and services, billion RUR	1,310	10,963	20,800	31,400	n.a.

Source: The Chamber of Audits of Russian Federation, 2011

Despite of very optimistic statistics on SEZs, it should be taken with cautious since all indicators, presented in the table above, are nominal ones and describe intentions rather than real achievements of SEZs administrations and Russian government. For example, statistics on residents of SEZs who actually started their projects is not available as well as volume of real investments and jobs, provided due to fulfillment of these projects. That's why representation of available statistics on SEZs is quite poor.

The growing skepticism on effectiveness of the whole SEZ's project and utilization of money from Russian federal budget let the Chamber of Audit of Russian Federation to start investigation of activities of SEZs in 2010-2011 and in previous periods. We may sum up results of the investigation by following:

- In 2005-2011 Russian budget devoted RUR 87,7 billion for implementing SEZs-related projects. Only RUR 46,3 billion, or 53 %, has been spent in reality,

other budget money has been secured at the accounts of the governmental Vnesheconombank (VEB). In April 2011 there were about RUR 40 billion (i.e. € 1 billion) of deposits of the Joint-Share Company "Special Economic Zones" at the VEB accounts. SEZ in Saint-Petersburg at the end of 2010 has received from the JSC "SEZ" only \$55 million of \$440 million, which has been approved by Russian Budget for its development.

- Only 58 of 396 infrastructural projects has been completed up to the Chamber of Audit investigation (15% of planned).
- Only 206 of 288 residents of SEZs have started their projects in SEZs, and their real investments has reached the level of RUR 36,2 billion.
- Economic efficiency of budget resources in industrial zones, is about 1,9 rouble per 1 rouble of budgetary investments; in the case of technological and innovation SEZs the figure is even less impressive – RUR 0,3 per RUR 1 of budget money.

Analysis of the 2011 Chamber of Audit investigation lead us to conclusion that at this moment the whole project of SEZs faces serious structural and institutional problems, which Russian Government don't know how to deal with. We have to mention here slow construction of infrastructure for SEZs by regional authorities, bureaucratic inefficiency, red-tape, lack of Russian managers with practical skills.

The most problematic sector is nowadays the tourist and recreational SEZs. These zones are located mostly in areas with very poor transport infrastructure and are hardly accessible both for businesses to invest and tourists to travel. The only exception is the tourist special economic zone in Kaliningrad, but it faces another difficulty due to the fact that it is located in national nature reserve (The Kuronian Spit). Construction and development in such areas are restricted by many environmental as well as bureaucratic regulations. That's why prospects for business success of tourist SEZ in Kaliningrad are rather bleak today. Poor infrastructure and lack of free land prevent development activities in another ambitious Kaliningrad project – Special gambling zone near the Yantarny settlement.

Despite of obvious difficulties, related to SEZs' establishment, their legal regime, effectiveness of investments, etc, Russian Government continue to put emphasis on them as very important driving mechanisms of Russian economy's modernization. In March 2011 the Prime-Minister Vladimir Putin has announced that in existing SEZs period of activities, which includes special legal status and tax exemptions, should be prolonged from 20 years nowadays to 35-40 year in the near future. Today there are several drafts of Federal Laws discussed by Russian governmental officials and law-makers in the State Duma and the Council of Federation. They include removal of restrictions for residents of SEZs for non-profile forms of activities, i.e. ability to lease their premises to other residents, to provide food for company's employees, etc. Russian Government is intending to simplify the registration

process for residents of technological and innovation type of SEZs as well as utilize mechanism of liberalization of tax regime to attract more residents into existing zones.

Summing up our overview of the current state of SEZs genesis, we should conclude that despite of serious problems, Special Economic Zones are very significant engines of modernization of national economy both at the federal and regional levels of economic governance. That's why Russian authorities will continue putting political and financial resources in their development to avoid resource curse . But it is almost impossible for them to get any long-lasting positive results from such efforts without further reforms of state corporations, liberalization of economic practices, establishment competitive institutions in domestic economy and demonopolization of its sensitive sectors. Russian membership in WTO is crucial step on the way and successful special economic zones will move this liberal trend even further.

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The Kaliningrad Region as a modernization model of modern Russia

By Alexey Ignatiev

The world financial and subsequent economic crisis stipulated Russia's acknowledgement of the necessity and inevitability of changes in its current economic policy based on raw material export, which is mainly the export of hydrocarbon, through large-scale import substitution policy to high technology export-oriented industries. This is, generally, the economic modernization policy of the country supported by the authorities.

What could be the role of the Kaliningrad Region in this new strategic doctrine of Russia? A complete and thorough answer requires appeals to Russian modern history.

At the beginning of the 90-s when the region turned out to be separated from Russian mainland and its economy being fully integrated into the economic system of the USSR was on the edge of collapse, the region's authorities managed to persuade country's authorities to establish free (special) economic zone on the territory of the region. New economy based on a well-known import substitution policy was formed due to this regime. Components, raw materials and significant number of released products were and are still imported to the region from abroad on the terms of free customs zone which means import duty-free, while the products assembled in the region are sold on the territory of the whole country without any restrictions. As a result, enterprises established in the Kaliningrad Region gained advantage over similar enterprises from Russian mainland and gradually gained the foothold on Russian market.

At the beginning of the XXI century it became obvious that this scheme cannot always exist as stimulating import-substitution in one region impedes similar industries development on other territory of Russia due to artificially created favourable conditions for Kaliningrad entrepreneurs. It was nonsense from macroeconomic point of view. It was one of the reasons to adopt a new law on the special economic zone in 2006. The law was to change the image of Kaliningrad economy transforming it into a complex of large export-oriented industries and many small and medium enterprises oriented at requirements of "the largest". I believe that this ideology justifies the decision on Baltic Nuclear Power Plant building, the support of large energy-consuming enterprises (electrical power produced in excess must have a credit-worthy consumer!). Perhaps, this scheme of the Kaliningrad Region "modernization" has future but I am not sure that Kaliningrad citizens will appreciate large metallurgic enterprises and oil processing plants allocation in the tiniest region of the Russian Federation. In this case we shall forget about the unique nature of the region.

The world crisis of 2008 had a significant negative impact on Kaliningrad economy. Oil price drop determined Russian government's decision on stimulating import-substitution in the whole country by cutting import duties on number of imported assemblies. As a result, many Kaliningrad enterprises functioning on this scheme moved to Russian mainland where logistics is better and resources are cheaper. Thus, the Kaliningrad Region having been an example of establishment and development of import-substitution sector in economy, is now back at the bottom of the ladder. Taking into consideration Russia's persistent eagerness to become a WTO member, the perspectives of import-substitution type of economy in the Kaliningrad Region are vanishing.

New authorities of the region seem to have two ways out in such a complicated situation. The first one is simple and proved – asking the federal center for resources for large

region-forming objects such as the Baltic nuclear power plant with obvious export potential. The other one is more complicated but more pragmatic – not to ask but to offer! To offer the things which the federal center intends to do but due to different reasons (high rate of persistence, resource limitation, pressure of external and internal factors) cannot do it quickly. The question is what Kaliningrad can offer to the Center? As I see it, it should be, first of all, deep real modernization of regional economy and development of all regional society.

In order to make a decision on ways of region modernization, it is worth examining the potential and real advantages of the region. First of all, the region is located almost in the center of Europe, within the European Union, on the cross point of traditional transport routes East-West, North-South. On the other hand, the Kaliningrad Region is a part of a big country which means that if Russia wants to activate the potential of traffic arteries on Vladivostok-Western Europe route, the region could play a key role of a large Russian multi-mode logistics center working both from East to West (Asian raw materials and assemblies for European enterprises) and from West to East (European goods for Asia-Pacific Region market). Even rather preliminary calculations show that this course of country's economy development can become very important under competitive railroad rates (which is exclusively prerogative of Russian government) and completion of customs union formation. The Kaliningrad Region where the regime of free customs zone can be implemented fits well into this transcontinental project as a gigantic common European customs warehouse with a developed transport infrastructure and efficient pilot system of customs clearance of cargoes in all directions. It is obvious that this project is of Russian or even international significance as its implementation is not possible without coordinated and thoroughly considered activities of Russian government and a number of other countries concerned as well as large national and transnational companies.

Another evident advantage of the region is that being situated within an hour and a half – two-hour flight to the leading centers of European economic development (Moscow, Saint-Petersburg, Berlin, Warsaw, Stockholm, etc.) it is a natural oasis for comfort living. At the same time, as it has been noticed in one of Moscow newspapers, the Kaliningrad Region "is not devoid of European gloss" for Russian citizens while for Europeans it is a convenient and relatively safe launching pad for a start in big Russia. Thus, having this advantage, the region can attract not only "Gastarbeiters" from former USSR republics but those whose intellectual, creative and entrepreneurial potential can be and should be involved into innovation economy or, as it is said, economy of knowledge. But re-naming IKSUR into Baltic Federal State University is not sufficient for becoming Russian innovation leader within the EU. "Skolkovo" alone is not enough to modernize the country. We need a powerful center of mass transfer of the existing technologies into Russian market. We need a state programme for a system which traces all current innovation technologies and adopts them to the practical requirements of the country as the whole. Moreover, the adaptation should concern not only permitting certificates for these technologies but new businesses based on European innovation technologies formation and their promotion in Russia. The creation of such

common Russian system in the Kaliningrad Region will not require federal investments as it has a unique Russian-European instrument of development: Cross-Border Cooperation Programme Lithuania-Poland-Russia 2007-2013. The main priority of the programme is joint active development of innovation processes. At the same time, joint creation of innovation products, researches, elaboration of test samples of new products can be done within the Seventh Framework programme which incorporated Russia a couple of years ago. And this implies billions of Euros not only for academic institutions but for small and medium business as well in the sphere of new developments and innovations.

Of course, we need scientific schools and well-considered migration policy. The region requires not only working hands but clever minds. Federal University infrastructure and priorities and fields of scientific researches should be defined in coordination with the major Russian and European research and education centers to draft joint projects, programmes and establish new scientific schools. Both Russia and Europe are acquiring a deeper understanding of the fact that the consequences of global crises can be overcome only by joint efforts as well as a new leading center of modernization can be established.

Taking into consideration the latest activities and declarations of Russian leaders (Putin's speech in Berlin, November 2010), common European integration is becoming a cornerstone for not only country's modernization but its foreign policy. Agreements with the EU on four common European spaces and detailed roadmaps for their gradual

formation confirm political will of the parties for unprecedented rapprochement. The problem is that this process is very slow due to the abovementioned reasons. The process can be accelerated by convincing Moscow and Brussels that the Kaliningrad Region jointly with cross-border regions of Poland and Lithuania can create a realistic model of these spaces in economy, safety, science, education and other spheres. It is obvious that it is not that easy to implement this project without support of federal authorities, the European Commission and governments of Poland and Lithuania. But such a project of European significance is in line with integration political and economic tendencies and there are good chances to implement it by joint efforts. But it should be taken into account that initiative, definite suggestions and political will should come, first of all, from the authorities of the region. The first annual address of a new governor Nikolay Tsukanov made at the end of the previous year buoys definite optimism.

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Russia

Rise, fall and resurgence of the Special Economic Zone of Kaliningrad/Russia

By Stephan Stein

The Special Economic Zone (SEZ) should lead the Kaliningrad region into a "Hong Kong at the Baltic Sea". That was the dream of a leading German banker. By law the Russian region is a Special Economic Zone but never became similar to Hong Kong. Nevertheless the region is interesting for foreign investors. The number of German investments is in no other Russian region higher - except of Moscow and St.Petersburg. The last figures show that 403 businesses with German money registered in Kaliningrad region. Every year during the last ten years the figure rose by 30 new registrations. In 2009, the year of crisis, even 89 new companies were added. The flagships of German business are BMW which started its car production in 1998 and HIPP, which produces baby food for Eastern Europe. But much more business came from Lithuania and from Poland – the two leaders in investing into the Kaliningrad region.

It makes sense to give a special economic status to the Kaliningrad region as compensation for disadvantages. After the decay of the Soviet Union the region became an exclave – about 400 kilometers far from the Russian motherland. By land route you have to pass Lithuania and Belarus reaching Russian soil. Every Russian needs a transit visa because Lithuania belongs to the Schengen agreement. Mostly every non-Russian needs a multivisa for Russia and a transit visa for Belarus. Although all sides do their best to ease the visa procedures - it is a locational disadvantage for Kaliningrad. Managers think that in case of a conflict between Russia and the EU the transit of goods through Lithuania could become a problem. Although this never happened – it is a knock out criteria for many potential investors.

Since 1991 the Russian parliament, the state Duma, changed the law of the SEZ twice. Actually we have the law from 2006. The first two versions of the law offered customs advantages – the actual law, which is valid until 2031, contents tax advantages. If an investor pays about 3,75 mio. Euro (150 mio. Rubles) within 3 years for his project he can become a so called resident of the SEZ. This grants tax holidays for 6 years on behalf of income and property tax. The next 6 years he has to pay 50% of the mentioned taxes. A resident has finally 12 years of tax advantages. Actually we have a little more than 100 residents – but there are rumors that some residents did not pay out their promised sums.

Let us have a look on the German enterprises in Kaliningrad. It shows that the actual law of the Special Zone is not effective enough. More than 400 registered companies invested about 2,6 mio. USD. Even if they would put their investment together they could not become resident of the SEZ because of the barrier of 150 mio. Ruble. The neighbor Lithuania – who registered more than the double of German companies – invested accumulated about 7 mio USD and the other neighbor Poland - who registered as many companies as Germany – invested accumulated about 6 mio. USD. These are the figures of 2010. It becomes clear that Kaliningrad is the field of small and middle sized enterprises (SME). The big investors prefer the logistical advantages of the line St.Petersburg – Moscow or go directly to locations near their customers in the inner of Russia. SME are not able or do not desire to invest 3,75 mio Euro. This is one of the reasons of the permanent lack of the SEZ Kaliningrad.

The Kaliningrad region suffered during the crisis years. Production fell by more than 10%. Import decreased in 2009 by 48% - export by 20%. Trade with Germany – traditional trading partner no. 1 – fell 50%. Unemployment increased to 10%. People blamed high prices for products and lower family income. Kaliningrad saw biggest protest manifestations ever. During the last elections the ruling political party "United Russia" and Mr. Putin himself received less than 50% of the votes which is the worst result in Russia after Moscow and St.Petersburg.

But the economic picture changed since 2010. The retailers report a new boom. Transport companies which sold their

machinery through the years of crisis blame that they have not enough trucks. Port handling increases and the railway company lacks on wagons. Only construction companies suffer and foreign investors seem to wait.

Even through the time of crisis investment into infrastructure of the region never stopped. An "autobahn" from Kaliningrad was built until the coast of the Baltic Sea . If finished it becomes a ring highway connecting the city with the airport, the Baltic coast, the ports of Baltijsk and Svetly, until the so called Berlin highway. In Mamonowo arose a modern border crossing towards Poland and Europe. Money from Moscow flew permanently. Further big investment is the so called Baltic Atomic Power Station which is under construction near the Lithuanian border for 5 bln Euro. In 2016 - 2018 it will deliver 2300 Megawatt. Kaliningrad reconstructs its sewage system partly with the help of the EU and its waste dumps. Two foreign airlines started operation actually in addition to the Polish LOT – Scandinavian SAS and German Air Berlin. In 2018 Kaliningrad wants to host games of the soccer world championship which will be held in Russia. This should give an input for the construction of sport premises and touristic infrastructure including the airport which is an unfinished building now.

In September 2010 came a big political surprise. Then governor Georgy Boos – who wanted to make a second term - was forced to resign. President Medvedev brought the mayor of Gusev (a provincial town in the Kaliningrad region), Mr. Nikolaj Tsukanov. Different to Boos, who took his ministers mostly from Moscow, governor Tsukanov recruited his team from the local elite, many partners from Gusev. Meanwhile the Kaliningrad business openly discusses the incompetence of ministers, the low performance of the governor and the provinciality of the bureaucratic apparatus. Many people see Tsukanov's resignation after the inauguration of president elect Putin. This is the reason why we consider a period of stagnation since autumn 2011.

The local parliament started a discussion together with local experts to improve the image of the region and to attract foreign investors. The ideas are directed into tourism, medical tourism and so on. Proposals from the administration seem to be non-realistic dreams. The proposals of foreign investors are simple: First to reduce the entry sum for the SEZ from 150 mio. Rubles to 20 mio Rubles. Remember that the region is an investment place for SME. Second - to provide infrastructural developed plots of land to attract the construction of new middle-sized factories. The development should be financed by the government. Third – because the management of the SEZ was poor in the past to invite professional managers with experience of Free Zones to manage the zone with an independent administration which has influence to legislators in Moscow and in the region.

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Development of innovations in Kaliningrad Region – general characterization and overview of the perspectives

By Timur Gareev and Igor Denisov

In the previous issue of the Newsletter both national and international dimensions of current innovation policies of Russian Federation were analyzed (to compare, see, for example, expert evaluations in articles 485 and 495 [Bimonthly Review, 2: 2010]). The aim of this review is to discuss the specific reactions of Kaliningrad region economy to innovation stimuli.

In 2009 Russian Federation introduced a chapter on innovative activity of its regions into the National Innovation Report. However, the innovation policy as a whole still lacks adequate geographical dimension.

Russian Federation has always been – and still remains – a country with a diverse regional landscape, and each of its regions has its own understanding of how to build up and develop regional innovation systems. Recent federal initiatives suggest that the country is implementing the model of concentrated (polarized) development of national innovation system ('top-down' approach). To give an example, one might recall both priority funding of the traditional centers of science and research and large-scale investment projects supporting the development of new 'science cities', such as Skolkovo.

The regions are actively competing against each other to attract targeted 'innovation development' funds. In this competition, the advantage of Kaliningrad region is geopolitical and institutional (thanks to its special economic status), rather than a research and development one. In many ways Kaliningrad region is a unique location for innovation development. One of the main features of innovation development is the fully-functioning 'science-industry-government' network.

As to its *science*, the region has three public institutions of higher education – Immanuel Kant State University of Russia (IKSUR), Kaliningrad State Technical University and Baltic State Academy. In addition, there are 8 research institutes, 9 research and development enterprises, 27 small innovation firms, 36 innovation-active companies and a number of individual inventors and innovators. Geographically, the major innovation projects and organizations of the region are concentrated in the city of Kaliningrad, which is characteristic for the regional development as a whole – its economy is mostly centripetal. At the same time, two other towns in the region have been recently demonstrating significant innovation system development: Gurievsk, which is located just outside the city of Kaliningrad and thus further strengthens the innovations center, and Gusev, which has welcomed a number of innovation-active enterprises and created an industrial part, and through that was able to decentralize innovation activity of the region.

As for the infrastructure, apart from the specific ministries of the Government of Kaliningrad Region, the region also has 2 non-commercial partnership projects: *Kaliningrad Center for Innovation and Technology* and *Kaliningrad Technology Transfer Center*. Other organizations that have to be mentioned include the Chamber of Commerce of Kaliningrad Region, 'Baltica' Innovation and Technology Center, SME Support Foundation, "Innovation park" of IKSUR and others.

In the middle of 2009 Russian Federation adopted a Federal Law on the creation of firms with participation of universities and research institutes. As a result, several of

the Kaliningrad higher educational establishments have already launched a number of pilot start-ups. FASIE, the Federal Foundation for Development of Innovative SMEs, is the main source of financial support for the innovative enterprises in the region. Several projects operating under the umbrella of the Foundation – *Start*, *Razvitiye*, *Pusk*, *Temp*, and *U.M.N.I.K.* – stimulate the creation of those innovation businesses, whose primary goal is to create and develop intellectual property (such as patents, working models or production prototypes). In the 5 years of its work the Foundation has helped to launch almost 40 start-ups in Kaliningrad area, 27 of which are still successfully running their operations. The turnover of the most successful of those enterprises is sufficient enough to allow those companies to self-finance participation in large-scale regional, national and international projects. In 2009 alone those companies were able to set up 5 interregional and 3 international innovation projects.

Since 2006 the region has seen a significant increase in the number of qualified healthcare, medical education and medical biotechnologies resident personnel. This is directly connected to the creation of a new medical school at Immanuel Kant State University of Russia.

The industry of the region tends to follow a number of stages in adopting new technologies – from copying to innovations. Innovations are, as a rule, first introduced in the spheres of economy with low market entry and export barriers. This is typical of IT, for example; and the Kaliningrad Region now has more than 20 successful IT companies that specialize in development of software for export and providing IT-solutions for businesses. In the region, however, there has also been created a number of start-ups operating on the basis of self-developed innovations. This situation accounts for a recent advance of locally-produced technologies to national and international markets. This is characteristic for agricultural technologies, processing of raw materials, food industry, professional equipment development, healthcare and biotechnology, IT-solutions for agriculture and housing and utility services.

To stimulate the development of large enterprises of Kaliningrad region there functions a Special Economic Zone regime. The role of the latter in the innovative development is debatable. On the one hand, the SEZ regime attracts direct foreign investments (and related technological solutions). On the other hand, the tax relief conditions are not geared towards supporting innovative businesses. Since 2006 more than 60 companies (with aggregated investment potential of about 1 billion EURO) have been added to the regional resident registry, but only 10% of the 47 economically-active residents utilize innovative approaches. At the same time, the SEZ residents account for at least 20% of permanent investments (with the use of the newest technologies). Moreover, SEZ has 18 active residents with 100% foreign capital, and they are responsible for at least one third of the total amount of investment funds. The industry of the region still bears relatively high transaction costs related to the financing of the development of new technologies.

Deterrents of the innovation development in Kaliningrad region include structural limitations of venture financing, various substitution practices (e.g. demand for innovations is substituted with import), as well as lack of developed

interregional and international cooperation and technology exchange networks.

The success of international business innovation cooperation is further deterred by the weakness of innovative infrastructure and relatively low capacity of telecommunication networks. To a degree, the development of international cooperation between regional R&D centers that have experience in critical technologies is also hindered by certain institutional requirements (for instance, but the requirements of export control).

The perspectives of international cooperation in innovation and research lie in the implementation of two interrelated schemes. The first concerns the development of various tools of technology transfer within the cooperation network. *Gate2RuBIN* (Gate to Russian Business Innovation Networks) project, launched in 2008 on the basis of the *Enterprise European Network* (EEN), can be given as an example. The second – and the most attractive for Kaliningrad region of the two – is the creation of open, transparent mutually beneficial international cooperation in the Baltic Sea area. Both schemes should be prioritized in such projects as *Neighborhood*, and within the framework of other systemic international mechanisms.

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St. Petersburg – the leader of Russian modernisation

By Valentina Matvienko

St. Petersburg is the largest metropolis in northern Europe, with more than 4.5 million inhabitants, making it the fourth most populated city after London, Paris and Moscow. The city on the Neva is a world cultural treasure trove, a museum under the open sky. At the same time, St. Petersburg is a large transport and industrial centre, one of the leaders of the growing Russian economy as on rates of economic development and volume of investments involved and on increase of people's standard of living.

In recent times, St. Petersburg has attained exceptional success in social and economic development. For the last three years we have tripled the city's budget. Such an increase in revenues has not been seen in any other part of the Russian Federation. This has been possible thanks to the stable work of industry, the development of small and medium-size businesses and the influx in the city of the largest national and international companies with internationally recognised names.

Our budget is socially orientated and furthermore, this is a budget for the development of the city. Funds are invested primarily in the implementation of the largest infrastructural projects, the reparation of housing and the equipment of housing courtyards. They are also invested in supporting social programmes, modernising and replacing engineering and electrical systems and communications and the restoration of historical buildings. As the budget increases, the level of our citizens' prosperity grows and raises people's standard of living.

One of the main components of the success of the St. Petersburg economy is the rising level of investments. We have made all possible to create favourable conditions for investors. In 2004–2005, investment rates in the city's economy rose by 40% a year, and in the first half of 2006, foreign investments in the real economy increased by 3.5 times. At the same time, foreign direct investments have doubled in volume. In 2005, global credit rating agencies raised St. Petersburg's investment rating in four times. Today St. Petersburg investment climate is quite rightly considered the best in the country, having won in the All-Russia competition for Lowest Investment Risk and Best Social Climate. In 2006, the city was rated first for effective governance of the region, and was victorious in the National Ratings for Transparent Acquisitions supported by the State Duma's Anti-Corruption Commission, the Federal Antimonopoly Service and the Audit Office. At present we like to say that if Russia is perspective market for investors, then St. Petersburg is the best place for entering that market.

We understand that the city's investment attractiveness is not limited to a system of concessions for investors. It also includes transparency of city finances, competitive tenders for real-estate and land, the stability of city socio-political life, a readiness to adhere to investors' exact strategic guidelines for the city's development and the development of new areas. In 2005, the new St. Petersburg General Plan was accepted for the period until 2025 becoming the fundamental strategic document for the city-planning development.

St. Petersburg is a multifunctional centre with a differentiated economic structure. Ship-building and metal-working industries, manufacturing of electronic components, food industry, pharmaceuticals and many other sectors are flourishing in the city. We are carrying out a serious reconstruction of the economy with an accent on modernisation, development of the science-driven and high-

tech sector and unveiling modern enterprises. Only recently, seven new high-tech enterprises were built and operated by large domestic and foreign companies including Gillette, Elcoteq, Knauf, Izhorsky Trubny Zavod, Russky Standart. Also in the pipeline are projects from Bosch and Siemens, Technopolis and Alkan Packaging.

We would be right to call St. Petersburg the leader of Russian modernisation, a centre for progressive ideas, an example which today serves as the model for mutual relations between Russia and the West. Under the decision of the Federal Government the country's first special economic zone for the development and implementation of innovative technology, Russia's first Technology Park has been created in the Neva's city. Global brands are ready to be participants, including companies from the Baltic States. The town of Peterhof, famous to all as one of the architectural jewels in St. Petersburg's crown, has been given the status of Science Town.

Our city is the 'European Gateway' of Russia, one of the largest ports in the Baltic and a crossroad of the most important transport routes. St. Petersburg is an essential part of Greater Europe, a fully legitimate participant in international cooperation, above all, with the Baltic States. This is precisely why we are promoting the most significant infrastructural projects with the cooperation and support of our partners, with particular importance given to projects in the fields of transport and logistics, tourism and innovation and energy and municipal services. The South West Wastewater Treatment Plant ecological project put into operation in St. Petersburg is now ranked as the best ecological project in Europe. It has been recognised a bright and unique example of partnership in the framework of the Northern Dimension Environmental Partnership (NDEP). The opening of the South West Wastewater Treatment Plant has allowed a twofold reduction in the pollution load to the Neva and the Gulf of Finland and brought its water purity up to 85%. After the commissioning the modernisation of the Northern Collecting Sewer, the disposal of waste water will stop almost completely.

St. Petersburg collaborates very closely with many associate-towns from the Baltic States. Our city holds the chairmanship of the Union of Baltic Cities' Commission on Information Society, created on our initiative. We are also collaborating with the Council of Baltic States. St. Petersburg is a member of the international Baltic Metropolises Network (BaltMet). At the recent Mayor's Meeting in Helsinki the major St. Petersburg projects in the fields of innovation, transportation infrastructure and ecological security received approval and support from the eleven BaltMet cities. Three of St. Petersburg's largest projects were on the BaltMet's list of 26 focal infrastructural projects: The construction of the Western High-speed Diameter, the Orlovsky tunnel under the river Neva and also the completion of the Northern Collecting Sewer drainage system. Their realisation, without a doubt, will benefit not only St. Petersburg but also our Baltic neighbours, opening greater development prospects for the Baltic States in Pan-European and global development.

Furthermore, the implementation of a high-speed railway service on the Moscow - St. Petersburg - Vyborg - State Boarder line could become one of BaltMet's priority projects and our Finnish colleagues are particularly interested to support it. It is suggested that it will be possible to travel from

St. Petersburg to the border in an hour and a half, significantly shortening travel time to Helsinki.

Since 1997 St. Petersburg's Government has been collaborating with the Finnish Advisory Group, an informal alliance of large Finnish companies. St. Petersburg together with Leningrad Oblast is actively working with Finland's South-East regions under the EU's INTERREG South-East Finland – Russia programme.

A whole range of large infrastructural projects have been launched in St. Petersburg and are being carried out through the direct participation and active support of the Federal Centre. They add a completely different dynamic to the development of the city. This year, the eastern half of the ring road around St. Petersburg was opened. At the same time the construction of the Western half has been started with the aim to complete the entire ring road by 2008. The ring road is not only extremely important for the city, as its final completion will help to significantly improve the transport situation in the city. The ring road is an important part of the Moscow - St. Petersburg – Helsinki federal highway and an essential part of the Ninth Intermodal Corridor between Europe and Asia.

In addition to this, there is the construction of 'Baltic Pearl' a multifunctional complex of residential, commercial and administrative buildings on coast of the Gulf of Finland, the construction of a new, modern football stadium, the reconstruction of the unique architectural heritage of New Holland Island, the construction of a second stage at the great Mariinsky Theatre and many other projects that characterise the scope of our work in modernising the city's amenities. Furthermore, we held a best concept-design tender for the Gazprom-City administrative-business development where the world's leading architectural firms took part.

We are also starting the construction of the Western High-speed Diameter, a motorway that will link the north and south of St. Petersburg and allow the constant flow of traffic through the city. After an eighty year break it will become the first in Russia to be built on the basis of a concession agreement. This is a major project not only for St. Petersburg and Russia but also for our close neighbours on the Baltic coast. A number of foreign and domestic consortiums have shown their great interest in the concession agreement and are ready to take part in the investment tender. The World Bank has given this project an outstanding score and is prepared to provide its financing. Our project enjoyed a great popularity in the held not long ago exhibition of the largest international infrastructural road show in London. The winning bidder for the construction of the Western High-speed Diameter will be chosen at the beginning of 2007.

For the first time in the history of St. Petersburg, a new aspect was brought to the city's economy in 2006 – automotive construction. Three global automotive giants, Toyota, Nissan and General Motors, have announced their decision on locating their factories in the area. This is more than a statistical sum of investments, taxes and quality of new work places. It is a vivid example of the build up of competitive advantages in the city.

Today, with the assistance of the federal centre we are working on 15 high-priority infrastructural projects. One of our main tasks is the modernisation of the energy infrastructure. On the list of the largest objectives is the construction of the South-Western Thermal Power Plant, the first private Thermal Power Plant in Russia, and new electrical substations. The Government of St. Petersburg has signed a very important agreement with RAO UES of Russia for the modernisation of St. Petersburg's power supply and power complex development. The extent of this investment in the city's power supply until 2010 constitutes more than ten billion Euros.

We have embraced St. Petersburg's development Programme as a tourist centre from 2005 to 2010. This was created on the basis of research of the Boston Consulting Group, commissioned by the federal government. In that research, a system of measures is outlined, aimed at realising an important goal – to become one of the top five tourist centres in Europe by 2010, attracting up to five million tourists a year to the city. On the list of basic undertakings, amongst others, is the development of Pulkovo Airport; the construction of new hotels, modernisation of museums, the creation of a network of tourist information sites and the development of congressional tourism. We have already built a range of new hotels. The realisation of the large-scale project for developing Vasilevsky Island is proceeding at full speed with the construction of a passenger terminal and with the prospective rapid development of cruise tourism. This year saw the introduction of a Tourist Angels – volunteers assistants helping city visitors. This will be followed shortly by the launch of an information 'hotline' for tourists.

This year, with the help of the federal centre, St. Petersburg has been accorded institutional status. Deputies of the State Duma took the decision to move the Constitutional Court of the Russian Federation to the banks of the Neva. Henceforth, St. Petersburg is Russia's second capital, not only de facto but also de jure. This event of great historical significance will undoubtedly give a new dynamic to the development of the city, bringing about substantial growth of all our foreign-policy and foreign-economic links. Furthermore, the national television station Channel 5 is based in and broadcast from our city, enhancing St. Petersburg's capital status.

Realising our historical mission, we have opened our city to the whole world. We happily await and welcome our friends and partners. Those who have still not come to Russia to do business can begin their journey in the city-on-Neva. You can rely on the full support of the Government of St. Petersburg. Welcome to St. Petersburg!

Valentina Matvienko

The Governor of the City of St. Petersburg

Russia

St. Petersburg – the centre of innovative development of Russian Federation

By Mikhail Oseevskiy

Saint Petersburg, the second largest city of Russia, often called its "Northern capital city". Located at the crossroads of sea and river routes as well as land thoroughfares Saint Petersburg is the European gate of Russia, its strategic center, the closest to the countries of the European Union.

Saint Petersburg is a young city. It was founded by Emperor Peter the Great in 1703. Today, however, Saint Petersburg is the fourth largest city of Europe after London, Moscow and Paris. Its resident population is over 4.5 mln. people.

For over 200 years our city was the capital of the Russian Empire and we still admire the beauty of its palaces, embankments and parks - Hermitage, Russian Museum, Summer Garden, Petrodvorets - are world known.

Saint Petersburg today is the largest industrial, scientific, educational center of Russia. Starting from 2003 the gross regional product was annually growing by more than 8% and was 91 bln. dollars in 2008. Our strategy is a favourable business climate, economy open to competition, support of innovative projects.

St. Petersburg is the centre of the academic, branch and high school science (more than 11 % of scientifically-educational potential of Russia) which is capable to generate scientific and technical achievements in the diversified areas: hydrogen power, microsystems, nano - and the biotechnologies, new materials and other directions.

The sphere of a science and innovative activity of St. Petersburg is presented by 429 scientific organizations, 327 branch scientific organizations, 78 high school organizations.

In a city work as 85,7 thousand scientific employees, from them about 3 thousand doctors of sciences and over 9 thousand candidates of sciences. At universities and institutes of St. Petersburg 8 % of all Russian students are trained. 70 % of workings out of research-and-production sphere of St. Petersburg were realized in other regions of Russia and foreign countries.

The number of the large and average enterprises of the industry of St. Petersburg which create the advanced industrial technologies, in 2007 has constituted 36 companies. The quantity of the created advanced industrial technologies at these enterprises in St. Petersburg in 2007 has constituted 73 % from total number of the created technologies in Northwest region. The enterprises, using in the activity the advanced industrial technologies more than 230, and applying technologies – it is even more. So, the quantity of the used advanced industrial technologies in 2007 constituted 2985 units – a quarter of all used advanced industrial technologies in Northwest region of Russia.

Comparison of this data shows that the enterprises consuming innovations, much more, than making them. On the one hand, it testifies that in a city the considerable quantity of the enterprises uses innovative technologies; on the other hand – that while is much less than again developed innovative products. It means that already in a near-term outlook the increase in demand at innovations will lead to acceleration of work of the enterprises creating them.

We clearly understand what we want our city to be like in the midterm. The primary goals have been stated in "Programme of Social and Economic Development of Saint Petersburg until 2025". The major objectives are:

1. *Saint Petersburg is a center of science, education and innovation.*

There are 45 universities in Saint Petersburg with over 400 thousand students. We are planning to launch a large-scale programme of innovation promotion on this basis. The primary areas are precision mechanics, optics, electronics, IT-technologies, pharmaceuticals and biotechnologies.

2. *Saint Petersburg is a trade and transport hub.*

Development of Saint Petersburg as the largest Russian trade and transport center of international significance located at the Baltic Sea provides for measures to stimulate export-import goods traffic via Saint Petersburg or adjacent territories, to simplify the procedure for crossing of the border and customs procedures, to build new customs terminals.

An essential element of development in this direction will be reconstruction and extension of the capacities of the Greater Port Saint Petersburg and construction of new terminals. Construction of the ring motorway round Saint Petersburg is nearing completion. New high speed railway and superhighways for communication with Moscow and a new airport will be built.

3. *Saint Petersburg is a city open to the world, a largest international center of business, political and cultural cooperation.*

Saint Petersburg has become a place of high-level negotiations, including summit talks, conferences, forums, a place where major political and economic decisions are taken. Besides, Saint Petersburg has started assuming a number of nationwide federal functions. In particular, the Constitutional Court of the Russian Federation is already located in Saint Petersburg.

Saint Petersburg is strengthening its role as the cultural capital of Russia, as a venue of festivals, exhibitions and concerts, many of them being internationally significant. We set the task to increase the tourist attractiveness of Saint Petersburg, which will enable us to become a leading European center of international tourism.

Nevertheless, like most cities and regions in the world, in autumn 2008 Saint Petersburg faced with the world financial crisis. We had to prove that city was ready for any difficulties, that the pre-crisis measures turned out to be necessary and timely while the strategic goals for the foreseeable future did not change.

In April 2009 the Government of Saint Petersburg developed and approved the anti-recessionary plan consisting of the following main sections:

- The first section. *Strengthening social protection.*

Over the year since the beginning of the crisis the registered unemployment rate has been still very low: 28 thousand people, although the number has doubled. This is a little more than 1% of the workforce. Such a low unemployment level is ensured both by the dynamic development of the city economy in the recent years and reduction of the population, typical of many European cities.

All the unemployed get unemployment allowances and have a possibility of getting a new profession at the expense of the state. We pay special attention to employment of women, young people and the disabled.

Despite the city budget cut, it fell by 20% compared to 2008, we have decided to raise the salary in the public sector in 2009 – over 280 thousand people. We have raised the allowances and payments at birth of a child to families with children, to disabled people. The total amount of social payments in 2009 will exceed 450 million dollars.

The second direction of the anti-recessionary program is *support of business activity and creation of new jobs*.

It should be noted that this complex of anti-recessionary measures is the most financially intensive one and is implemented, first and foremost, by the federal government. This includes increase of banks' capital, granting credits to largest industrial consumers and enterprises, stimulation of demand, including demand for motor cars. Saint Petersburg has supplemented the federal program by providing subsidies to compensate some part of the expenditures related to acquisition of modern technological equipment by leasing, improving the employees' qualification, certifying the products.

We pay special attention to support of small and medium enterprises as this is an essential part of the city economy. Saint Petersburg has a leading position in Russia by the number of small enterprises per 1 thousand of residents. We have increased threefold the city budget expenditures for providing grants to first-time entrepreneurs for establishment of their own business, training programs and consultations, participation in exhibitions.

From January 1, 2010 the taxes for small business will be reduced by 30%.

Introduction of the system of contracting via Internet has considerably simplified the possibility for small enterprises to receive a city order.

All these measures have enabled us to create over 15 thousand new enterprises since the beginning of the year.

The third section of the anti-recessionary program is *development of the engineering and transport infrastructure of the city using mechanisms of private-public partnership*.

We have always liked this way of implementing large projects; however, the limited direct budget investments available this year made us boost our efforts and attract

private investments in new industries. It should be noted that our strategic consultants in the private-public partnership area are the World Bank and the European Bank of Reconstruction and Development.

This year we have completed the tender for choosing a concessioner for construction of a new city airport: it is an international group headed by Frankfurt airport. Tenders are under way to choose partners for construction of the Western diameter – the first toll superhighway in the city and a tunnel under the Neva River.

In the near future we will announce a tender for construction of a large garbage recycling plant and a highspeed tram line.

The anti-recessionary program - live and dynamical, it is constantly optimized and improved. Analyzing the current situation we can say that the peak point of the crisis passed and we are going up. Unemployment is going down, the bank credit volume is increasing and, apparently, in the 4th quarter we fix the growth of the gross regional product.

I want all interested in development of the business in Russia foreign investors to pay attention to St. Petersburg – its possibilities, prospects and potential are opened for you. I do not doubt that cooperation with our city will be mutually advantageous and interesting to all participating parties!

Mikhail Oseevskiy

Vice Governor

St. Petersburg

Russia



Can Saint-Petersburg meet the challenge of innovation age?

By Oleg N. Misko and Sergei F. Sutyryn

One could sensibly argue that transition of Russian society from its current natural resource based pattern of economic development towards "innovation-based" one constitutes top priority of Federal authorities. There are several Presidential Decrees as well as other basic documents (Federal Laws and Federal Programme) legally supporting abovementioned priority. Existing regional legislation specifies general goal to different aspects of innovation policy.

Traditionally being one of leading national scientific centers St.Petersburg logically enough strives for a status of "Russian innovation capital". Special comprehensive programme of innovation policy measures for the city has been elaborated in 2007 in order to promote respective changes. It includes infrastructural development; measures aimed at facilitation of contacts between Rosnano (State Corporation in charge of allocation of financial resources for innovations) and both individuals and legal entities applying for respective funding; provision of information support. Within the framework of the latter Second St.Petersburg International Innovation Forum took place on 30.09-03.10.2009 with a total sum of signed contracts equaled to more than 1 billion RUR (about 26 million euro¹).

At the first glance all that might look impressive. At the same time real significance of so far achieved results appears to be pretty modest. In particular, this sum would be sufficient to construct just about 5 km of roads in St.Petersburg. As for existing infrastructure, at the moment it includes 12 information-consulting centers; one (!) business incubator; approved project of "special economic innovation zone" with assigned land plot; small number of other projects at the stage of design.

What about future prospects? In order to assess them properly at least two points should be taken under consideration. First of all, economy of innovations (as well as any other type of economy) should be based upon sufficient *resources*. In our case the key role belongs to human capital. Generally speaking St.Petersburg has certain competitive advantages in this field. Namely they are higher than national average educational level of labour force and well-developed network of universities (currently 101 both government and non-government entities of higher education) and research institutes (95 entities) with substantial stock of innovation projects potentially able to be introduced into industrial production.

At the same time, existing potential is clearly underutilized. According to the official statistics in 2009 for each 100 people employed by industry there were 20 people involved in various forms of R&D. In spite of this impressive ratio total value of all R&D contracts implemented in the city equaled to less than 7% of industrial production. One could sensibly argue that real innovation component of these 7% hardly exceeds one third, that is about 2% of total industrial production.

Secondly, without an appropriate *system of governance* chances to succeed in transition under discussion are really pretty low. Traditionally Russian industrial sector and R&D one operated almost totally independent from each other. The former tried to buy technologies and new high-tech equipment mainly from abroad. The latter also preferred to focus rather on foreign customers than on domestic enterprises. The main idea behind establishment of State Corporation Rosnano was precisely to bridge this gap.

At the level of St.Petersburg above-mentioned comprehensive programme is the only official document, which defines trends and guidelines in development of regional "innovation-based economy". Meanwhile in its current form the programme has several obvious drawbacks. First of all, key economic indicators it is based upon are too general, partly irrelevant and open to serious distortions. In particular, number one in the list – GRP per capita – doesn't reflect any direct results or factors of "innovation-based economy". Both "value of dispatched innovative output" and its "share in total dispatched output" (second and third in the list) might include large or even very large components which have nothing to do with innovations per se. Unfortunately, regional statistical abstracts do

not provide any information on definitions and methods used for respective calculations.

Secondly, neither general principles of the programme's no its criteria and indicators correspond properly with that of Rosnano. The latter focuses primarily on two indicators – total number of the companies established with its assistance and overall value of investments (loans and state guaranties as well as contribution in statutory funds of established companies). Under the circumstances probability of a certain conflict between two sets of goals is pretty high.

As for Rosnano taken as such, current performance of the corporation provides substantial ground for criticism. It might be challenged for its failure to create sufficient innovation incentives. Instead, in many cases it provokes elaboration of corruption schemes to receive budget financing for the projects often regardless of their innovative content. In addition, SMEs are doomed to be discriminated in their attempts to get support. It is both easier and better for Rosnano to finance one large project than several small ones. More than that, according to official site of the Corporation it invests only in the projects with expected annual sales after 5 years of their implementation exceeding 6.4 million euro.

Taking all this under consideration one could hardly feel optimistic regarding the prospects of St.Petersburg programme to be properly fulfilled by 2011. Data provided in Comprehensive programme of innovation policy shows next quantitative objectives to be reached by 2011: GRP per capita – 11.6 thousand euro (6.3), value of dispatched innovative output – 2238.2 million euro (604.9), share of dispatched innovative output in total dispatched output – 10.3% (2.0), technological innovations – 581.5 million euro (33.3), number of elaborated advanced production technologies – 97 units (169), number of issued patents – 2585 (n.a.), number of employees in R&D – 111,0 thousand persons (44.7)².

To sum up, in order Russia in general, St.Petersburg in particular could adequately meet challenges of innovation era serious adjustments in the governance of the process are needed both at the federal and regional levels. Without these adjustments Russian quest for "innovation-based" economy is most probably doomed to share destiny of many previous officially declared campaigns.

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² Data in brackets shows the 2008 statistics.

Source: Calculated on the basis of Petrostat, Goskomstat, www.spbinfo.ru

¹ 1 euro=39,04RUR (22.04.2010); the same exchange rate is used through the whole article.

New trends in business in Moscow–St. Petersburg

By Pirjo Karhu and Manfred Janoschka

New leadership and corporate culture in Russia

Russia has suffered a huge cultural change during last 20 years while moving from Soviet society to a market economy. The new trends in leadership and corporate culture are today hot topics in business.

From Soviet style...

As a Soviet heritage there was no proper corporate culture existing at the early 90's in Russia; the culture was more or less authoritarian and masculine: I tell you what to do. The management was based on a strong hierarchy, a huge bureaucracy, commanding and punishing people. As a result of that, the decision making was centralized and slow. The initiative and independency of employees were not accepted. The long term target setting or business orientation were missing. In that kind of environment the employees became passive, avoiding mistakes and shirking responsibility. The general manager was expected to be strong, dictatorial, self-confident and autocratic.

...to modern corporate culture

The new roles of managers are the opposite to the old ones. Cross cultural communication and understanding of the Russian way of thinking and acting is a continuous learning process. It's worth doing, because it encourages confidence inside the company. Today young Russian professionals are eager to work in companies, which allow them the independent thinking, the use of own talents and the advancement in career. It's also important that employees can internalize the company values as their own ones. Setting the common goals together increases the commitment and responsibility of people working for company. It also creates a wonderful atmosphere and a team spirit. This all reflects to the client service: the clients can sense that people who love their work, love also clients and want to make them happy with a surprisingly good service. This distinguishes 'the best from the rest'. A client can really feel him/herself as a king or a queen. The top manager's new role is extremely important. A good leadership consists of the efficiently organized work methods and resources, the comfortable work environment, the high-quality IT-solutions and tools and the quality system with the correct, functioning processes. As an umbrella there is a fair, incentive and inspiring leadership.

According to the survey made among American companies it's stated that the success companies do not go after the maximum profit; yet, they do make twice better profit than their competitors. The top companies focus on developing own business operations excellent, to be a forerunner on the market. They are not following how their competitors are running their business. And the top companies do the things differently than the others. When creating a new corporate culture in Russia there are some tips to be followed: Set clear targets and track results. Be present and reachable. Communicate actively, openly and honestly. Be yourself, don't hide your feelings. Create a friendly atmosphere. Keep your promises. Have a party now and then - and relax.

The new corporate culture consists of a well prepared road map: clear mission, vision, values, strategic targets and an incentive leadership. Everybody wants to be a part of a success story. The success depends mostly on a good client care: to keep clients always happy. When employees are highly motivated, there is no concern for the business results. A good leadership can be summarized by saying: We are in business for profit and fun. The more fun - the more profit. In Russia with love.

Need for modernization

Russia mainly got over the crisis. In 2010 the economy grew already by about 3,8 % after the hard decline of GDP by 8% in 2009. IMF forecasts for 2011 an increase by 4,5%. The Russian Government assumes further increasing GDP rates and rise of production up to 10 % in the next years. The Russian government wants to promote a profound diversification of the economy, an expansion of the values production chain and the development of innovations. Russia should become the world market leader in the production of different goods.

Foreign investors should be won over through such great projects the Russian Silicon Valley "Skolkovo", the Olympic Games in 2014 and the Football World Cup in 2018. Eight foreign big companies – such as for example Cisco, Microsoft, Boeing, Siemens, Nokia, Intel etc – already became partner in "Skolkovo".

Modernization offensive

Following branches should first bring forward the modernization of the country: measures for the improvement of the infrastructure, production of the technologies in the fields of medicine, energy and information, development of the telecommunication and space systems as well as the increase of the energy efficiency. The total investments are over a trillion US dollars for the next 30 years.

Measures for the improvement of the infrastructure concentrate on road construction, railways, local traffic (underground) and airports. Till 2015 over 6000 kilometers of roads should be built, tens of thousands kilometers should be improved. Besides 3000 kilometers of new railways are planned including improvement (St. Petersburg – Moscow –Nishnij Novgorod) and extension of the railways for the high-speed trains as well as a considerable extension of airports (among others also in St. Petersburg).

Medical branch is an extremely important Russia's building site. Hospitals as well as work of the medical institutions and structures and their management require profound renewal. There is no production of the modern medical equipment in Russia, important medicines must be imported. The government promotes the development of this branch. Russia possesses the biggest energy reserves (oil, natural gas, coal). At the same time it has the best possibilities to reduce the energy losses. Till 2020 Russia wants to reduce the primary energy consumption by 40% (in comparison with the level of 2007).

IT and telecommunication is a branch of economy, in which Russia wants to reach a world level. This branch is financed with the funds from the federal budget and the local budgets. These funds total over 70 billion\$. Other programs in the field of nanotechnology, aviation and space travel are also the points for the future industry.

Business activity in Russia

In case of an investment in Russia there is a following question: How should I make a business start-up, a business roll-out in the regions; in what kind of legal form and with what partner? Also, all the foreign employees need in Russia a work permit and visa. For "foreign specialists" this procedure has become easier since June 2010.

Conclusions

New leadership and corporate culture enable to develop continuously organization and services and work as a one dream team for the best of the clients. That is a base for a good business. Furthermore, the need for modernization in Russia and the modernization offensive which is introduced by the president and the government should attract in the first line the European companies and give them possibilities for their business in Russia. These are great chances for an investment in Russia.

Pirjo Karhu

Chairman of the Board

Konsu ACCOUNTOR GROUP

Finland-Russia-Ukraine

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Industrial business parks – SMSE employment platform in Russia

By Timo Koivumäki

In their hopes of Russia joining European society and economic system, too few western opinion leaders seem to pay attention to the elementary cultural difference between nations around the Baltic's. The lack of understanding the differences in mentality has led to continuous disappointments both in political and economical questions. The same goes on a practical level of everyday business.

Western democracies' attempts to monopolize determining global ethics and human rights should be critically discussed. I am not saying democracy is a bad system; it just has one general flaw in it, human nature. It is the same nature that drives the leaders to hope for unrealistic integration of Russia in to Western economy. When we should seriously be thinking of the future of western economy, maybe our future is in the east.

Russia is consciously floating between democracy and dictatorship. Western leaders may criticize elections there to be unjust, but most of the people in Russia don't. Majority of the citizens agree that this regime is what Russia needs. Partly it is a matter of choice, but also subconsciously steered by cultural history. One has to remember that mentally Russia is more Asian than European, religious history is in Byzantine Empire, trading history on Silkroad and administrative tradition to a great deal in clan culture. Recognizing this foundation the people may be right.

Now with western economies lagging again many companies are turning their heads to Russia. What makes it more promising is that Russia's business climate has been relatively stable over three last electoral terms and it apparently is continuing. Although at this point it is needed to stress that most of ordinary business men in the country say that bureaucracy and authority arbitrariness has gradually increased over entire Putin's regime.

The cultural shock across Finnish - Russian border is tremendous. In Transparency International's Corruption Perception Index of 2010 Finland and Sweden scored 9,2 and Russia 2,1 on ten point scale, placing Finland and Sweden on shared 4th place with second highest grades, whilst Russia is number 154 among 178 reviewed nations. This is of course only one attribute and might not be the main issue when considering establishing in Russia.

Especially SMSE's find Russia a difficult business environment. But all this does not mean that one cannot run a successful business in Russia. And there is business for taking. It only takes enough will and humbleness to seek help in doing it. There is a lot to learn from Russian entrepreneurs. One thing is the personal networking. Secondly it is required to come in to terms with your own ethics and values. Some sectors in Russia just don't work without sharing the benefit, or call it bribery if you will. But there are also many other sectors, where running an all legal business is possible and profitable, and some where it is even a must. This is something that, no matter what, we most probably will not be able to change from outside.

Regardless of all above Russia remains an interesting market with an evident growth potential.

Also Nordic governments have promoted business cooperation across the border. Now that other export and domestic markets are slow it is even more important direction to grow. Already in 2006 Finnish – Russian cross government SMSE's supporting program EuroRussia set a target to establish industrial business parks adjacent to the border. None of them seem to have really succeeded yet. Nevertheless these business parks could be an important foundation for SMSE's, specially the ones located at the border zone. These can provide much easier control and border crossing for operators with limited resources.

Their strength is in offering a safe environment where business security can be maintained by providing relevant services and public support. The business logic of current parks has to be rethought. It has to be based on solving operational questions and the services thereof rather than being property driven as most of them today are. For the western entrepreneurs as users here's the place where they can and have to learn from their Russian colleagues about networking. Sharing resources and knowledge enables labor intensive industries to expand across the border and take significant share of the growth potential in Russia. There are only limited Russian government determined strategic sectors where it nearly impossible for an SMES to operate. Serving these sectors then might be lucrative if the business. Also automotive industry is in focus of many interest groups. Automotive has been a forerunner in practically all markets when it comes to SMSE production and subcontracting networks. It is a rising sector in Russia too and it will set new standards and business models for many payers around. It can in near future provide subsistence to over 100.000 people.

Public sector must take a more active role in financing the parks and SMSE's operating there in, because these are off corporate world and thus not interesting for private banking sector today. In Russia it also must be understood that innovation activity is not necessary multibillion nano-space technology. In most cases it is a small improvement in an ordinary volume business enabling significant cost saving. SMSE industrial business parks would create welfare and security on the border zones and entire Baltic Rim.

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Writer is a Finnish business consultant and entrepreneur with close to 25 years of experience in running business in Russia. He is also active in an industrial business park development in North-West Russia.

Russia's modernization program as opportunity for Baltic Rim economic cooperation

By Päivi Karhunen and Riitta Kosonen

The national innovation system in Russia has been in major transformation since Vladimir Putin's first presidential term. The speed of introducing reforms in the field of research, education and innovation infrastructure has been particularly rapid during the past five years. The program for modernization of the Russian economy, launched by President Dmitry Medvedev in 2009, has brought along new initiatives in this field, and significant budgetary resources have been allocated to some of them.

The challenges of the Russian innovation system are numerous. The strategy draft *Innovative Russia 2025*, prepared by the Russian Ministry for Economic Development, makes an excellent overview of the state of the art. First, in the international innovation comparison Russia's performance is modest. The share of research and development (R&D) expenditure in the Russian gross domestic product (GDP) is slightly over 1 per cent, and the country's technology trade balance has turned negative in the 2000s. Furthermore, the financing of R & D is strongly dominated by the state, the share of which in 2009 was 66.5%. The efficiency of use of R&D funding calls for improvement as well. The three-fold increase in R&D expenditure since 1995 has resulted only in a 30% increase in the production of innovative products.

Moreover, the demand for innovations by Russian large companies is low, and skewed towards updating of manufacturing equipment instead of research and product development activities. This is one of the key reasons for the low degree of commercialization of innovations made in research institutes, which is traditional for the Russian science community. This problem was inherited from the Soviet economy, where R&D activities were performed at state research institutions with no linkage to the enterprises.

The interest of foreign companies to invest in R&D activities and technology-intensive production in Russia has been low. This is in part due to the challenging business environment in the country with excessive red tape and rampant corruption. Moreover, the cumbersome customs regulation and procedures have eroded the competitiveness of Russia as offshore production location of high-tech goods targeted to the world market.

What makes the modernization program different from previous initiatives for reforming the innovation system? One key issue is that for the first time, foreign actors are openly invited to participate in the process, and the need for imported knowledge and technologies has been recognized as central part of modernization. The introduction of modernization partnerships with foreign countries, including the European Union, provides a framework for such participation. Concrete initiatives introduced in the framework of the EU-Russia partnership for modernization include the proposed joint funding program by EBRD and Vneshekonombank, which would provide financing for investment projects implemented in Russia.

Furthermore, the recent reforms in the innovation system have included programs for bridging the gap between science and enterprises. One of the aims of the science sector reforms is to strengthen the research done in universities, and to strengthen their role as hotbeds for new innovative enterprises. The entrepreneurial university concept is a key component of the National Research University program, launched in 2009. It aims at creating preconditions and support structures for innovation and commercialization of research results into businesses at universities. An important step supporting this

aim was the law approved in 2009, which gives universities the opportunity to establish small innovative enterprises.

Moreover, the modernization initiatives have been linked to the broader context of improving the business environment and investment climate in Russia. The problem in previous attempts to improve the innovation infrastructure, such as the establishment of Special Economic Zones in 2005, has been that the legislation regulating them has not been in line with the broader legislative framework. This problem has been addressed in, for example, in the planning of the Skolkovo Innovation City, for which own legislation was adopted. This includes streamlining of visa and immigration procedures, and facilitating dealing with different authorities for Skolkovo residents. All these issues have caused major difficulties for foreign firms in Russia.

To sum up, the modernization program has in principle opened a new era in the history of Russian reforms, being based on the principles of open economy and international cooperation. This may open a window for the increasing integration of Russia to the Baltic Rim economic region. The principles of the modernization program may boost the role of St. Petersburg in the Russian economy, as being the Northern Capital of Russia, St. Petersburg hosts four National Research Universities, and modernization projects in the field of pharmacy and medical technologies, to mention a few initiatives. Overall, there are grounds to argue that the current modernization program in Russia is somewhat different from the previous national attempts in the innovation sector. Also, it is more sensitive to the national context and attempts to improve factors that have proven to be problems for innovation in Russia. What, however, remains unchanged from the previous efforts to modernize the Russian innovation system is the top-down approach, where the role of state is emphasized. Time will show how the new plans will be applied.

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Modernisation of Russian economy in collaboration with Finnish partners

By Valery Shlyamin

The global financial-economic crisis has yet again revealed weak spots in domestic economy – oil and gas sector dependence, traditional raw-material export orientation, low rate of economy and external trade diversification, high labour intensity and power consumption of industry, insufficient receptivity to innovative proposals, lack of market development in broad sense of the term, low labour output and wage, domestic financial market underdevelopment.

The crisis has shown that Russia requires undelayable economy modernisation. At that taking into account relative limitation of state and corporate financial resources that could be invested in modernisation process it stands to reason that the state should target its efforts and resources at a rather narrow list of modernisation priorities with a view of achieving structural improvements by 2020 and directed at attainment of the Russian economy competitiveness in chosen fields.

President Dmitry A. Medvedev approved a list of priority fields for modernisation and technical development of Russia: medical technologies and pharmaceuticals, energy efficiency, nuclear technologies, computer technologies and software, space technologies and telecommunications. Implementation of the above priority tasks is carried out by federal and regional bodies in cooperation with companies, scientific community and higher education institutes. Within this process major importance is attached to the external economic factors such as foreign investments, technologies import, hiring of qualified foreign specialists, added-value goods export development, scientific, technological and production cooperation.

Finland is in full sense one of the Russia's strategic trade and technological partners in Europe. It's non-random that in the course of Finland's President Tarja Halonen visit to Moscow in November 2010 Russian leadership proposed to sign a Declaration on partnership for modernisation. The Declaration is expected to contain approved plans of both parties and an appendix of perspective projects implementation of which will enjoy state assistance.

I presume that proposed partnership will evenly contribute to economy modernisation goals achievement in Russia as well as in Finland. Our Finnish partners are experienced in technological projects commercialising with full chain path: "idea – invention – technological trials / market testing – certification - product marketing". We expect that Russian-Finnish modernisation partnership will contribute to creation of tools providing for the various projects implementation within the modernisation priorities designed on the basis of Russian specialists' technology.

Among the project ideas proposed for discussion I would like pick out a number of projects within the fields of telecommunications, computer technologies and software, energy efficiency, medical technologies and pharmaceuticals developed with participation of such well-known companies as "Nokia", "Nokia Siemens Networks", "Fortum", "Farnos" and others.

The Trade Representation of the Russian Federation in Finland is working on continuation and intensification of business cooperation between Russia and Finland also in other economy fields, expanding of production cooperation between our countries in various forms including subcontracting. The most promising sector of cooperation between Russia and Finland from the point of view of production cooperation expected outcome is shipbuilding.

Freight management on the Northern Sea Route, development of new oil and gas deposit fields will demand vigorous efforts on creation of fleet that would be capable of fulfilling the national Arctic strategy. Russian shipyards can provide no more than 30% of the new first class ships demand as calculated up to 2030. Finland is one of the world's shipbuilding leaders and old-time USSR and Russia partner. In this sector Russia has also gained a unique practical experience and created considerable scientific potential. As is well known in 2009 Russia and in 2010 Finland have adopted national Arctic strategies. At this point we consider it expedient to reveal the points of intersections between the two countries' strategies. In all probability this task should be solved by means of intergovernmental

dialogue because the matter in question concerns spatial planning in the mega region. Russian and Finnish companies displayed eagerness for joint projecting and building of maritime ships (Arctic class tankers and gas carriers, ice-breakers), modern depot drilling stations necessary for development of new hydrocarbon deposit fields in northern seas with use of Russian technologies as well as Finnish "know-how".

Shipbuilding cooperation is not limited to direct vessel construction. This sector implies interaction of the wide spectre of machine-building and instrument-making enterprises involved in design, production and maintenance of diverse equipment as well as metallurgical companies and chemical industry enterprises.

At present time a number of perspective Russian-Finnish projects are being successfully implemented within the framework of production cooperation. These are: construction of Arctic tankers in Russian shipyards under Finnish license; production of low-speed vessel engines with use of Finnish technologies on the Russian enterprise; joint design of multifunctional diesel-electric ice-breaker with capacity of 25 megawatt for operation in the Arctic region; joint construction of ice-breaker for oil-overflow counteraction in the Gulf of Finland; joint design and projecting of drilling stations; propulsion systems production; supply of Finnish azimuth propulsion systems for ice-breakers built in Russia; supply of Russian screw propellers and spare vanes to Finnish shipbuilders. These projects are being implemented by Russian companies "Objedinennaya sudostroitel'naya korporatsiya" (Joint shipbuilding corporation), "Sovcomflot", "Admiralteiskie verfi" (Admiralty shipyards), "Petrobalt", "Baltiyskiy zavod" (Baltic plant), "Rosmorport", Bryansk machine-building enterprise, "Zvyozdochka" (Star) with Finnish companies "STX Finland", "Aker Arctic Technology", "Wärtsilä", "ILS", "ABB Marine", "Steerprop", "Raahen Tevo", "SET Group". Companies "STX Finland" and "Objedinennaya sudostroitel'naya korporatsiya" (Joint shipbuilding corporation) have started a joint venture "Arctech Helsinki Shipyard" for joint production of high-level technology Arctic class vessels. The Agreement on production of two multifunctional supply ice-breakers for "Exxon Neftegaz" company in Sakhalin has already been signed.

Collaboration in the field of production cooperation is also carried out in other branches of machine-building. The perfect example of it is the long-term cooperation between companies "Metso Paper" and ZAO "Petrozavodskmash": The Russian enterprise produces accessories and assemblies for paper-making machines. In May of 2010 Finnish company "Wärtsilä" and ZAO "Transmashholding" signed a contract on starting a joint venture in Russia for production of modern multifunctional economy-type and environmentally safe diesel engines "Wärtsilä-20". Partners started a holding company which will set up diesel-making enterprise in the city Penza for assemblage and testing of engines and production of major engine parts.

One cannot but mention possibilities provided by Finnish companies in Russian pulp and paper and wood industries. Modernisation of Bratsk and Kotlas pulp and paper plants is carried out with significant assistance of Finnish machine-building companies "Metso" and "Andritz". New saw-mills in the Russian Far-East and East Siberia are supplied by companies "Järtek" and "Heinola Saha Koneet". Projects on construction of new pulp and paper mills are under preparation. We expect active participation of Finnish business in these break-through projects and are ready to render needed assistance to them.

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Russia

Finnish-Russian Innovation Centre – main results of activities

By Igor Kuprienko

The Finnish-Russian Innovation Centre (FinRusInno) was established in beginning of 2008 as the joint initiative of Finnish Innovation Centre «Finnnode Russia» and municipalities of Lappeenranta and Imatra. The main goal was defined as: to promote international cooperation in the field of innovations by attracting partners and public funds in Russia and Finland. The Centre activities are focusing on innovations in ICT field, nanotechnologies, forestry, energy efficiency in construction and real estate management, transport, logistics, enterprises, researches, education etc.

In fact, FinRusInno has become the cooperation platform between Finnish and Russian local authorities, companies and organisations, universities and R&D institutions. Around 6000 persons were visited the Centre during this time. About 1000 Russian and Finnish companies have learnt how to work together. Nearly 100 of St.Petersburg based companies have made the decision to explore the European market by establishing the business in Finland.

FinRusInno is intensively supporting the commercialization of innovations activities. Number of competitions, training sessions, consulting activities was done. Lappeenranta Innovation together with Finnnode Russia and group of partners has initiated the remarkable project, which is focusing on Commercialization of Russian innovative companies. Already in the middle of project lifetime, 3 companies have started its operation on European market. More that 300 companies has applied to take part in the project, and accessed to the commercialization process.

Above mentioned digits are demonstrating the quantity results. Beside the digits, the Centre has made a huge influence on integration of Finnish and Russian Innovative systems. This experience has moved to EU-Russian level. One of Important event is European-Russian Innovation Forum, which is yearly organized in Lappeenranta. First Forum is famous by remarkable visit of the Prime Ministers of Finland and Russia. During visit of Mr. Putin, number of bi-literal agreements was signed. Second Forum was mainly focused on business cooperation. The Third Forum will be organized in June 2012 in cooperation with European Business and Innovation Centres Network (EBN). Organizers are expecting nearly 1000 participants from all around Europe and Russia.

Moreover the European-Russian Innovation Forum is organized in close cooperation with City of St.Petersburg and logically connected to St.Petersburg International Innovation Forum, which is traditionally organized in a last week of September in St.Petersburg. FinRusInno team in cooperation with European-Russian InnoPartnership are actively supporting the St.Petersburg Forum by bringing the European speakers and organizing the Forum events focusing on EU-Russian cooperation in innovation field.

FinRusInno is an initiator of development the cooperation between Finnish and Russian Universities. The alliance of Finnish and Russian Universities were formed in

2009 with a name of Finnish-Russian Innovation University (FRIU). For a moment 3 Finnish and 6 Russian universities are developing the joint programmes in education and R&D. Universities – members of FRIU – have several Double Degree education courses, which provide the possibilities for students on having two diplomas from Russian and Finnish University.

Although, FinRusInno is providing the services to all Finnish and Russian companies and organisations, the special focus is on cooperation between St.Petersburg and Lappeenranta can be illuminated. Two Lappeenranta municipal companies and two founders from Russia have launched the common company – European-Russian InnoPartnership (ERIP), which is essential part of the development the cooperation on cross-border environment. ERIP, FRIU and FinRusInno are forming the Regional Open Innovation Platform. The Platform is providing similar services for innovative companies from both sides of the border, assisting on internationalization of the business and easy access to cross-border markets.

Activities of FinRusInno has clearly demonstrated that innovation system of Finland and Russia has strong differences but provide added value to each other. Russian innovations are lacking the demand on local market and exploring the worldwide opportunities. As the newcomers, they meet the challenges, which are not in common practice in Russia. The Finnish innovators have those experiences, which are lacking from Russian side. Another important advantage is a strong support of innovations by Finnish government. Both of these opportunities are motivating the Russian innovators (primary St.Petersburg based) on choosing Finland as the first step to internationalization processes. The activities of Finnish-Russian Innovation Centre is the important daily process supporting economies of both countries by initiating and assisting to new innovative companies and organisations on start-up and growing stage.

Igor Kuprienko

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St.Petersburg

Russia



Some policy proposals based on the Finnish-Russian innovation collaboration

By Kari Liuhto

12 recommendations based on Finnish-Russian innovation cooperation can be summarized as follows.

1) *Establish a Joint EU-Russia Innovation Center both in Russia and in the EU.* These two units would bring together the innovation-intensive firms of Russia and the EU. It would be wise to found such a unit in St. Petersburg due to its proximity to the EU, and in a similar manner, another unit in Helsinki, which is connected to St. Petersburg by high speed trains. The EU and Russia should share the costs of establishing these units on an equal footing.

2) *Support the internationalization of innovations.* The adaptation of western innovations into the Russian market and the internationalization of the Russian goods towards the EU market is more rational than investing into insecure and expensive innovation activity, and therefore, cooperation with foreign firms most probably will lead to the fastest results.

3) *Turn the innovations conducted in the military sector into civilian use.* Closed innovation systems are expensive and inefficient, and usually, they fuel corruption. Therefore, it would be important to modernize the innovation system linked with the Russian military, as the army uses 35-40 per cent of the Russian R&D expenditure, and probably this share is to increase, if Russia is to allocate USD 650 billion into the modernization of its army in this decade. Russia might benefit from the experiences of the USA and Israel, which have turned several valuable military-related innovations into civilian use, and vice versa.

4) *Improve intellectual property rights (IPR) and the investment climate.* Inviting the world's leading IPR specialists to Russia to review the Russian IPR legislation and institutions would be the fastest way to improve property rights in the country. One of the main weaknesses of the Russian investment climate is over-bureaucracy and corruption linked to it. The only way to win the battle is to minimize the number of bureaucrats and regulations, since fighting bureaucracy with bureaucrats is doomed to fail.

5) *Institutional innovations are needed.* For instance, it is highly recommended to transform the Academy of Russian Sciences (RAS) from a research unit into a research funding organization. Such a transformation would lift the RAS above the operative research units and turn it into a strategic research policy actor. Moreover, this change would make the use of national R&D funding more effective and enhance competition between the universities, which should be the core of the research activities in Russia. In addition, closer cooperation between the Russian Ministry of Education and the Ministry of Economic Development would facilitate bringing scientific ideas into commercialized products and services.

6) *Design a service innovation policy.* The USSR neglected services, while emphasizing industrial production. The ghost of the Soviet mentality still moves in the current innovation policy of Russia, as many of the policy measures are targeted towards technological innovations. In this context, one should not forget that more than half of the Russian GDP is formed by services, and an improvement in services would definitely bring the advancements of Russian innovation policy into the hands of every Russians. Upgrading the competitiveness of services would add to the growth of the Russian GDP.

7) *Enhance management innovations.* Around a quarter of the Russian GDP is created by state-owned enterprises (SOEs) and the 100 largest SOEs cover a majority of this stake. Taking this into account, it would be rational to create a team, consisting of a dozen top international management consultants, to review the manage practices of these SOEs. Such a team would bring much needed transparency to the

operations of these SOEs and would increase the efficiency of these firms, adding positively to the overall economic growth of Russia.

8) *Create innovation competition.* One should publish a list of the most innovative regions in Russia. As the innovations are on the top of the politicians' agenda, publishing a list of the most innovative regions would encourage the regional administration to develop own innovation policies. Besides, one could establish both national and regional innovation competitions among firms and citizens, which would aid in mobilizing the SMEs and ordinary people.

9) *Establish innovation journalism to share best practices.* It is essential to communicate success stories to encourage SMEs and ordinary Russians to innovate, but simultaneously, it is wise to communicate openly about failures, since mistakes are the best teachers.

10) *Do not concentrate on radical innovations.* We very seldom experience radical innovations, and therefore, it would be rational to focus the innovation policy on improving existing products and services. Though top scientists and politicians favor radical innovations due to their publicity, continuous product and service improvement is usually the most rewarding for society as a whole. Russia does not need periodical innovation programs but it needs a sustainable innovation culture.

11) *Teach creativity and entrepreneurship in universities.* Creativity and entrepreneurship are the two main friends of successful modernization, whereas bureaucracy and conservatism are its worst foes. The federal e-learning courses dedicated to innovation and entrepreneurship would make it possible for all the Russian universities to take advantage of the latest achievements of modernization, provided that the regional universities possess a sufficient ICT environment, and dissemination is organized adequately.

12) *Avoid political stagnation.* Should Russia be unable to develop free and fair political competition, there is a real risk that a one party-dominant system will lead to the similar administrative and socio-economic stagnation that was experienced during the Brezhnev era.

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Opportunities of Finland in Russian innovation environment

By Timo Koponen

Finnish innovation system is regarded as one of the most effective in Europe. To improve its innovative development Finland has integrated with European and US innovation systems and now is starting cooperation with fast developing innovation environments of Russia, China, and India. In Finland we understand that in order to improve our competitive positions in global economy we have to work more and more globally, recognizing that the best innovations may be born "borderless".

Russian innovation environment is developing very fast. The Government is promoting the innovation policy on all levels of education and economy. The Russian Government is building a system for monitoring potential innovations in leading Russian regions using the capabilities of Rosnano. Rosnano is probably the biggest profiled venture investment fund in the world and it is aimed to invest only into productions based on nanotechnologies in Russia.

Nanotechnologies are the most advanced and prospective area of sciences in Russia. On the other hand, in Finland there has been created a cluster of nanotechnology business which includes 200 companies and R&D laboratories. More than 60 of them already have cash flow from business. That is why the nanotechnologies are one of the most lucrative areas of the future Finnish – Russian cooperation in research and business. To support this development Ministry of Employment and Economy of Finland and Rosnano has signed a Memorandum, targeted to give a strong support to operators in the both countries in this business. Finnish technology agency Tekes has already been cooperating with Kurchatov Institute, being the main coordinator of nano research in Russia, for three years.

In Finland there has been created 13 industrial or service clusters "OSKE" (The Center of Expertise). More than 8000 firms are connected with programs of the clusters. To achieve the most advanced technological solutions for the global competition, leading Finnish companies and research organizations have established 6 development companies in which the best national skills and capabilities are to be combined – "SHOK" (The Strategic Top Competence centers).

If we in this framework look at potential areas of science, research and technology in Russia, we can identify a few prospective areas not only in nano, but also in such businesses as ICT- software, biotechnologies, bioenergy, sun energy, and new technological solutions in energy efficiency and environmental issues. R & D in energy efficient technology is one of the main topics in the Strategy of Innovative Industry Development Program of the Russian Government and it paves way for cooperation between Finnish Clean Tech companies and Russian enterprises in machinery.

In order to better understand processes happening in global innovation environment, especially in BRIC countries, the Ministry of Employment and Economy of Finland has established a new Finnish innovation center

network concept – Finnnode, which combine major Finnish innovation organizations. Finnnode innovation centers are working in 4 countries by now, in Russia (St Petersburg), China (Sanghai), Japan (Tokio), and USA Santa Clara, CA). The next center is scheduled to be opened in India (Mombai).

Finnnode Russia, inspite it is located in St.Petersburg, is working to set up a network with leading Russian innovation organizations, not depending of their location in Russia. To be able to understand and react to the developments in innovation business in the country, Finnnode Russia now works with respective partners in Moscow, St.Petersburg, Ekaterinburg, Kazan etc. About 30 % of scientific potential and 70% of financial resources of Russia are located in Moscow, that's why Finnnode Russia is planning to expand its permanent presence there in 2010.

Finnnode Russia started its activities in February of 2008. During the year of 2008 Finnnode Russia identified and selected main areas of operations in Russia for 2009. These areas cover networking with leading operators in nanotechnology in Moscow, St.Petersburg, and Ekaterinburg. Because Finland is one of the leading countries in Europe in energy efficiency and ecological construction, of course these capabilities open a wide variety of options for cooperation with Russians in this field, especially in North-West Russia. The fact, that one of the biggest clusters of automobile assembling in the world is located in St.Petersburg area, allows to expect future business opportunities for Finnish technology and service companies.

A number of factors, such as developing legislation system, governmental support to regional innovation development agencies, increasing availability of financial resources (such as public funds, private venture companies, business angels, and growing interest of global venture capital towards Russia) is turning Russian economy to more innovative direction. Despite of the problems in commercialization of Russian innovations because of weakness of IPR - transparency, lack of financing of innovation developments and start-ups, low level of English proficiency and international communication, bureaucracy and corruption, the new generation of modern and internationally oriented young Russians guarantees stable movement of Russia towards innovative society. Finland will be a reliable partner of Russia in this movement.

Timo Koponen

Director

Finnnode Russia

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Developing the Russian innovation system – potential for increased cooperation with Finland

By Kaisa-Kerttu Peltola

Russia has a lot of largely unused innovation potential and the country has a relatively large science base and a well developed education system in science and technology. One of the positive characteristics which should also be better utilised is the large potential market and resources for innovative activities in Russia. Indicators of innovation activity, however, reveal an imbalance between the public resources allocated to knowledge creation and the innovation outputs. This imbalance as well as the limited role of the private-sector in R&D, are some of the major challenges of the Russian innovation system.

Russia's innovation system is still in the phase of transition resulting in problems such as the lack of cooperation and coordination of different organisations in the innovation system and undeveloped intermediary system which have had a negative effect for instance on commercialisation of innovations. Supporting cooperation on national and international levels should therefore also be emphasised in the Russian innovation policies.

Although Russia has made progress in the development of innovation policy, policies have been largely based on a research-centered ideology and have not been able to repair the weaknesses in the innovation system. Russian science and technology policy has a strong focus on the R&D which has not been responding to the demands of the market. More support for market oriented innovation development and commercialisation of innovations, by means of development for instance public-private partnerships, would be needed, in order to make the innovation process in Russia more effective.

An important challenge of the Russian innovation policy is to encourage a stronger participation of the Russian business sector in the innovation process, as the lack of commitment by the business sector is a major weakness in the Russian innovation system. Integration in international markets and attracting more foreign direct investment in technology intensive sectors should also be emphasised in the Russian innovation policy in order to promote technology transfer and accelerate technical progress. Russia has a lot of potential in certain leading research and innovation industries. However, the efficient use of vast natural resources on the international market is a challenge for Russia's technology intensive industries as well as its ability to commercialise research findings into marketable products.

Attraction of foreign investment and foreign presence is important for Russian innovation system and learning from foreign experience is growing but it is not yet a standard activity of responsible government ministries. Although Russian companies have already entered into partnerships with foreign companies in various ways in order to get access to the latest technology as well as managerial and marketing experience and Russian research organisations have been active in mobilising foreign support and research

contracts, this development should be further supported and developed in the government policy level.

Despite the problems of the Russian innovation system it also provides foreign actors with opportunities to expand their operations and benefit from the developing opportunities. Considering potential for increasing cooperation between the Finnish and Russian innovation systems opportunities for benchmarking and mutual benefits can be found. One of the strengths of the Finnish innovation system is a well developed network of intermediary institutions providing innovation support and expertise, set up to help Finnish businesses, universities and other providers of knowledge to use different services at different stages of the innovation process. Collaboration between the private and public sector in Finland is also strong. On the other hand, the relatively small size of the country can be considered a weakness as the domestic market for innovations and R&D is quite small.

Russia, on the other hand, provides with a large potential market and resources for innovative activities. As pointed out earlier Russia still has transitioning innovation system where market oriented actors coexist with Soviet-style organisations and mechanisms. The different strengths and weaknesses, however, create many opportunities for mutual learning and cooperation between Finland and Russia. Finnish actors can benefit from the opportunities of the market potential nearby and the knowledge and experience of the Finnish as well as other foreign actors can have a positive effect on the development of the Russian innovation system.

Increasing the efficiency of the Russian innovation environment is, in other words, also in the interests of Finnish organisations as it offers new opportunities for innovative activities. The cooperation and creation of networks with different levels of the national innovation systems involved in the innovation development including the public sector organisations is a precondition for the cooperation. Policies enhancing the cooperation between Finnish and Russian innovation organisations are needed, especially cooperation within concrete projects with mutual benefits should be further supported by governments on both sides.

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Natural cooperation takes a substantial effort to start

By Dmitriy Lisenkov

Russia and Finland are neighboring states with the common boarder of approximately 1,300 kilometers, common access to the sea and centuries of close interactions. Despite that natural closeness there is not much of joint success, which has been achieved by the two countries on the innovation front.

Supporting R&D activities and commercialization of their results are now important priorities in both our countries. Both Russia and Finland have state-backed nanotechnology initiatives and decided to conclude a memorandum of understanding on cooperation in the field of nanotechnology with an action plan for the upcoming year between the Ministry of Employment and the Economy of Finland and the Russian Corporation of Nanotechnologies ("RUSNANO"). This memorandum would allow both sides to test each other's real intentions regarding the cooperation ideas.

It has to be noted that RUSNANO was established in September 2007 by the Federal law to enable Russian Government policy in the field of nanotechnology. Currently the corporation manages over €8 billion made available to it in the form of direct investment and loan guarantees by the state. To accomplish its tasks, RUSNANO co-invests in nanotechnology industry projects that have high commercial potential and/or social benefit. Early-stage investment by RUSNANO lowers the risk of its investment partners from the private sector. As of end of May 2010, 76 such projects were approved for funding for the total volume over €6,5 billion (including RUSNANO's share of €2,8 billion). These investments are intended to ensure that the annual output of the Russian nano-industry reaches around €24 billion in 2015. In order to assist the Russian nanotechnology industry in entering the global market and strengthening its international links RUSNANO develops partnerships with the leading nanotechnology centers and investors worldwide.

The above-mentioned cooperation memorandum was signed during the First Nanotechnology International Forum in Moscow in December 2008. It was quite a natural step but at the same time it became the first of its kind. The purpose of the memorandum was not to announce any major initiative or joint project in the nanotechnology field. It has laid the legal ground for further steps and joint efforts in such areas of mutual concern as standardization and safety, intellectual property rights protection and foresights development, and, of course, co-funding innovation businesses in the field of nanotechnology and supporting their cross-boarder activities. In 2009, a number of mutual activities were performed both in Finland and Russia, including Nanotech Partnering Forum in Espoo, one of the leading innovation hubs in Finland. During that event some groups from the two countries met and started initial collaboration discussion. While RUSNANO and its partners succeeded in facilitating such discussions they kept learning about the possible issues along the way.

The official visit of the RUSNANO delegation took place in February 2009, when the top management of the corporation met with the Finnish political and business leaders in an attempt to understand the roots and the perspectives of the country's innovation system and to find the right partners. The best practices were learned to be applied in RUSNANO's activities.

Building wide technology cooperation is a long and difficult endeavor. Still, it starts with some practical steps. That is why in December 2009 the Industry Investment Ltd ("FII") and RUSNANO agreed to create a co-investment program. FII is a government-owned investment company which mission is to promote business, employment and economic growth through capital investment. The investments of FII amount to €650 million to-date. FII and RUSNANO are very similar in its activities and both intend to actively help technology companies become major international players.

The actual co-investment agreement was signed in Lappeenranta, Finland on May 27, 2010 during the First EU-Russia Innovation Forum. The signing was done in the presence of Russia's Prime Minister Vladimir Putin and Finland's Prime Minister Matti Vanhanen.

The aim of the cooperation is to co-invest a total of €50 million in rapidly growing nanotechnology companies operating in Finland and Russia, so that companies could also benefit from technologies developed in both countries. This cooperation is expected to become a first case of efficient technology transfer between the countries while creating wealth for stakeholders. Industry Investment and RUSNANO are evaluating possible target companies and will invest in them jointly and on equal terms. Both corporations have already reviewed together the deal flow and identified a number of interesting companies. The first joint investment can happen within the next six months. The investment program will last for up to three years. However, it is just a first step to test the deal flow of prospective nanotechnology companies for such cooperation. If it proves to be efficient and successful the parties pre-agreed to consider extending the program to set up a joint venture capital fund with the aim of investing in companies operating in both Russia and Finland.

The sides strongly believe that combining top-level Finnish know-how with extensive Russian expertise will produce globally competitive technologies. This co-investment program will also allow consolidating resources and experience in developing innovative companies thus opening new opportunities to enter global markets for Russian and Finnish technologies.

The Finnish-Russian cooperation can be a good example of the right approach to technology cooperation between EU countries and Russia. It is clear that more unified policies and joint support programs can bring a great benefit to the high-tech companies.

Dmitriy Lisenkov

Managing Director

RUSNANO

Russia

Innovations and Finnish–Russian research co-operation

By Asta Salmi

There is a strong political will in Russia to boost innovations as reflected, for instance, in Russia's long-term policy programme (*the 2020 concept*). The programme is based on three scenarios, one of which is to turn Russia into an innovation-based society by 2020. This path is seen to be the one that can lead Russia away from its current economic problems. Innovations are thus the focus in today's Russia.

Innovations in the Russian context have also been the object of several research projects. The Academy of Finland has recently funded three academic projects in this area: International Dimension of Innovation System in Russia (led by Professor Kari Liuhto at Turku School of Economics), Innovative Integration Strategies of Finnish and Russian Companies (led by Professor Riitta Kosonen, Aalto University School of Economics) and Innovativeness in Russian High-tech industries (led by Professor Markku Tuominen, Lappeenranta University of Technology). These projects were co-funded with the Russian Foundation for the Humanities, and they were part of the Research Programme on Business Know-how (2006–2009) of the Academy of Finland.

Looking at the innovative environment in Russia and how local and foreign companies may operate in this environment, the research projects also investigate the role of international networking. The results show that great differences in innovative capabilities across different parts of Russia still prevail. There is a need to further develop an open innovation environment and, in particular, to support cross-border idea exchange and networking. Furthermore, companies need innovative ways to become integrated into the local context. Social innovations in business know-how enable them to adapt to the Russian society. These innovations are needed due to the strong political (e.g. law enforcement and corruption), economic (the grey economy and personalised business networks) and social links (availability and skills of labour and paternalism) of business. The integration practices seem to be peculiar to the Russian business context and differ from those adopted elsewhere, which poses challenges to the foreign companies. All of the studies stress the importance of international networking and linkage building within the innovation system.

Russian official plans to boost innovations have been criticised for their emphasis on top-down policies. The results of the aforementioned studies would confirm the often expressed need to enhance bottom-up networking to support the strong administrative pressure. Indeed, interactive relationships as well as diverse international co-operation are the essential characteristics of any national innovation system. The research co-operation within the Programme on Business Know-How illustrates two important areas of networking within the innovation system: international co-operation, firstly, between the funding agencies and, secondly, between the researchers.

Finland and Russia share a long tradition of scientific co-operation, of which funding research on business know-how is only one example. The Academy's international strategy

identifies Russia as one of its main areas of collaboration. Research funding co-operation already exists in many fields and further co-operation is being planned. The Academy of Finland engages in close co-operation with three Russian science and research funding organisations: the Russian Academy of Sciences, the Russian Foundation for Basic Research and the Russian Foundation for the Humanities. The aim of joint research funding is to fund top-class Finnish–Russian projects that generate added value in research that focuses on the environment, well-being, society and technology.

Another important area of networking is cross-border co-operation between researchers. The three aforementioned cases are prime examples of this: close and active co-operative links between individual Finnish and Russian researchers were built and future research co-operation is being planned. The co-operation has, furthermore, been extended to involve researchers from other countries; to give just one example, a seminar on Russian innovations organised around these projects in spring 2010 attracted participants not only from Finland and Russia, but also from the United Kingdom, New Zealand and Mongolia. Thus the results of these projects pave the way for even more extensive international research.

Intensive and long-term research collaboration between individual researchers is essential in the area of innovation studies. It helps create a deep understanding of the innovation systems and practices of the respective countries and gives a basis for comparative studies. Moreover, local contacts are often the only option to gain access to the companies and other research sites to do research. The co-operation with companies is particularly important in innovation research, since companies, as both producers and users of new knowledge, are a central element in the innovation system. Given that innovation is about developing and inventing new technologies, services, business models and operational methods, it is clear that both companies and researchers benefit from close co-operation.

It seems that the ambitious plan of building a Russian innovation society can only be accomplished, if also networking and relationship building take place at various levels and between different types of actors. Joint research projects are one fruitful way to build the basis for future innovations.

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Finland

Learning economy in the Baltic Sea region – an experience of the Finnish-Russian cooperation

By Irina Sarno

The Baltic Institute of Finland (BIF) promotes cooperation between countries in the Baltic Sea Region. It is an independent organization established in 1994. BIF has an extensive expertise in international project management at all stages: from the idea creation, to implementation and finalizing of the project. BIF's mission is to enhance the cooperation within the framework of the mega-Baltic Sea region, to create and develop networks of international partnership. The following themes are in BIF portfolio:

- innovation cooperation
- information society development and ICT
- environmental management and technology
- business development and export promotion
- International partnership in training managers of companies operating in foreign companies; cultural cooperation.

During last years BIF had organized a significant number of forums, conferences, seminars and workshops. For example, Finnish-Russian Innovation Forum was held in 2006 in Tampere. Given the principle of Triple Helix, stakeholders from Finland and St. Petersburg, representatives of leading companies and technology parks, universities have taken part in the Forum. As a result of the forum discussions, a three-years project on the development of the regional innovation system of St Petersburg through transnational cooperation was launched. The project partners have stressed out that an exchange of experiences, mutual learning between subjects of innovation networks is a significant component of innovation networks. In this respect, innovation systems initiate and implement the principle of learning in modern economy based on ever-rising competence of its constituent entities. Accordingly, the formation of innovative networks of cooperation in Finland and Northwest Russia means creating a system of learning among significant actors of these large regions.

One of the projects required by a system of mutual learning is St Petersburg Business Campus (StPBC). StPBC started in 2009, it comprised an interaction of the following elements:

1. a benchmarking network of Finnish companies operating in St. Petersburg
2. a network of Russian and Finnish higher education institutions that provide educational services for the companies personnel, managers
3. representatives of the authorities of Russian and Finnish regions, which support the development of Finnish and Russian companies.

The main objective of StPBC is to improve the adaptation of member-companies to the conditions of the region, to strengthen the dialogue between these companies and local stakeholders (local and regional authorities, vocational training institutions) in the region, to improve the interaction between Russian and Finnish business. In particular, this project aims at enhancing training programs for businesses in the region. The project is mainly supported by the Ministry of Employment and the Economy of Finland. The Baltic Institute of Finland is a coordinator of StPBC, and the local coordination in St Petersburg is provided by the Committee for Economic Development, Industrial Policy and Trade, City of St. Petersburg.

Irina Sarno

Kandidat Nauk

Russia-team leader project manager

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Creating the world's first global innovation hub chain: Technopolis is now operating in Finland, Russia and Estonia – and just getting warmed up

By Keith Silverang

Globalization has also brought with it the rise of international chains, networks and franchises. The world has its Ikeas, its Starbucks, its Hiltons and its Elixia fitness center chains. Like it or not, the world is getting smaller and more homogeneous. The Web has provided entrepreneurs and corporations with instant access to the global customer community – if you can get their attention amid the noise. Successful growth companies have understood that to master this universe you have to be the best in the world in your own niche, but to have sufficient scale and generate the big numbers – to be a true growth story - you need to operate internationally, preferably globally. That is the way of the New World we live in.

The real estate business is widely considered a local game. It is typically quite conservative and dominated by risk management issues. Given the events of the global financial meltdown and the capital intensiveness of the real estate sector, this is hardly surprising. It also does much to explain why very few authentic real estate chains have arisen outside of the hotel and retail sectors. This is particularly true of science and technology parks. Apart from office hotel chains the business is fragmented and dominated in Europe by municipally and university owned parks operating locally. Elsewhere in the world you will find significant privately owned parks as well, but rarely do they operate as a chain or even as a coordinated network.

Technopolis wants to be the game changer. We now have 15 campuses in 7 cities in Finland and Russia. We're in the process of acquiring our first Estonian campus in Tallinn. Our campuses are now operating as an authentic innovation environment chain with centralized chain and service concept development and management. Our vision is to become a European-wide chain over the next few years. After that the sky's the limit.

And why not?

We've already learned that the right combination of investment in the right kind of infrastructure and services for knowledge-intensive growth businesses and their partners can create the dynamics that make innovation ecosystems take off. It's not nearly enough to construct nice buildings. In fact, more often than not, public sector driven innovation centers and incubators are glass monuments that are expensive to build, even more expensive to operate and do not optimally enable the effective interaction of innovation players, not to mention their rapid expansion within a single campus. Technopolis' public sector partners, have learned that we can not only free up critical capital for them, but that by entrusting their strategic innovation assets to us they can be sure that we will invest continuously in more growth of the innovation hub and deploy services that most effectively support the attraction and expansion of growth companies.

I believe strongly that the formula for success is universal. Shared infrastructure services such as advanced ICT and video conferencing generate savings and productivity improvements that are appreciated anywhere. Our online and physical matchmaking services enable growth companies to find venture capital and reference customers from around the world. Technopolis has productized solutions that not only network agents within a

single innovation hub, but also connect all of our innovation hubs to each other and to world class companies, financiers and partners around the globe.

St. Petersburg is a case in point. Even though the first 24,000 square meter phase of our 80,000 m² park will not launch until next summer, we already have had a half dozen matchmaking events and have brought several high quality Russian start-ups into our international investor matchmaking system where they have received attention from international risk investors who didn't even know they existed before. Technopolis Pulkovo, with monthly matchmaking events, global fund raising solutions for local growth companies, world-class video conferencing solutions and a built-in community of domestic and international technology companies of all shapes and sizes will revolutionize the St. Pete innovation system, giving it access to the capital and corporate connections that it so desperately needs to begin reaching its tremendous potential.

Our joint venture in Tallinn will go further and faster because Technopolis Ulemiste City will have critical mass from the very beginning, with 60,000 m² of high-quality modern office space and an excellent customer portfolio. Estonia is one of the most wired countries in the world and the birthplace of Skype has a proven capacity to generate world-class start-ups. Once Technopolis begins connecting them to its investor and customer networks things will start happening.

You can see where this will lead. The more innovation hubs we acquire, the better the value proposition is for both our clients and for their stakeholders. In the near future we will be able to offer international venture capitalists and corporations a one-stop-shop to meet the best Nordic, Russian and Baltic growth companies. For our tenants this means access to world class capital, customers and partners. As we become a European-wide player and then a global player we are creating a unique virtual and physical matchmaking market that will be very hard to match, never mind duplicate. It's easy to understand then why the European Investment Bank and the European Bank for Reconstruction and Development have been keen to finance our projects. We're not building technoparks to get a quick return. We're creating sustainable innovation ecosystems that give birth to and enhance the knowledge economy where ever we go.

It's this passion for entrepreneurship and innovation that separates Technopolis from conventional real estate companies, especially the listed ones. And it is this passion that we enable us to fulfill our mission to create the world's first and finest chain of innovation hubs.

Keith Silverang

CEO

Technopolis Plc

Finland

Internationalization of R&D – implications for Russia

By Adujna Lemi

Although scholarly work has focused on the issue of cross-border spread of R&D activities only since the late 1980s, the internationalization of R&D is not a recent phenomenon. The expansion of communication networks to perform new R&D has made it relatively less difficult to tap into foreign innovations, and to exploit home grown innovations as well as other potential sources of innovation. As the world becomes even more integrated and as other driving factors become more favorable, the focus may have shifted from one form to the other, but the momentum has kept pace with the spread of the components of globalization.

Russia is not an exception and it has joined the web of the spread especially since 1992. Although geopolitical events, especially the end of the cold war and the collapse of the Soviet Union had significant effects on Russia's R&D intensity, recent years' R&D performance of Russia reveals that Russia has growing interest for innovation in par with other advanced countries. In response to this growing interest for innovation, Russia has started attracting not only emigrated Russian Scientists but also foreign scientists. Between 1998 and 2003, R&D spending doubled and its R&D intensity (R&D/GDP) ratio rose from 1% to 1.3%, although it slowed down to 1.1% in 2005. Even in recent years, despite the slow global recovery from the 2008/9 crisis, which resulted in a large net capital outflow from Russia resulting in the deterioration of the balance of payments, Russia demonstrated determination to attract R&D activities through special programs and incentives to put its economy on the firm footing for sound and speedy recovery. Through an initiative launched at the level of the President's Office, the program establishes innovation zone with special privileges for research and high-tech businesses. However, there are significant variations in terms of sectoral focus and government funding priorities.

Data on the R&D spending per sale of Multinational Corporations (MNCs) in Russia between 1989-2003 shows that R&D spending per sale in Russia was less than the average for all countries by a factor of five. Whereas the ratio of corporate profit tax to net income of a corporation was the highest in Russia by about three times more than the average for all other countries. Given the low level of R&D spending per sale and high corporate profit tax rate on MNCs, Russia had earned only modest amount of receipts from royalty and fees by exporting already created innovations. However, the government of Russia's Information and Communication Technology (ICT) expenditure was only slightly lower than that of the average for other countries. The later, coupled with more than average government sponsored R&D activities, was an encouraging sign for the country to attract more R&D activities by MNCs in the country during the same period.

What is more revealing of Russia's bold measures to attract R&D into the country and to become the major international destination of R&D activities was that mostly high-tech industries were spending more on R&D in Russia more than medium- and low-tech industries. In fact, only high-tech and low-tech industries spent on R&D in Russia and employed more labor during the 1990s and early 2000s. However, medium-tech industries had the largest asset holdings in Russia among the industry sub-groups.

Breaking the data by industry, only three industries dominate the R&D spending in Russia, namely: Chemicals, information, and wholesale trade, in this order in terms of their R&D spending. It is somewhat unexpected that the mining and

petrol industries spent very little in Russia where this industry group has been the major contributor to the economy, at least, in terms of export earnings. In fact, the mining and petrol industry had the highest asset holdings of all industries in the country even more than those industries that spent more on R&D activities. It is tempting to speculate from the foreign profit tax numbers that the low R&D spending of the mining and petrol industry may be a result of the high corporate profit tax that the industry faced in the country compared to other industries. It is, therefore, no wonder that the high corporate profit tax had discouraged the largest contributor to the economy, the mining and petrol industry, to undertake major R&D activities. Russia may need to structure its tax and incentive codes to favor more spending on R&D activities.

Russia also stands out as an exception in several aspects in relation to R&D performance compared to other OECD countries. For instance, although the academic sector R&D (research at universities) was only second to industrial sector in terms of national R&D performance in most OECD countries, the share of academic sector R&D was the lowest in Russia (6%), whereas in Canada academic sector R&D accounts for the highest share (38%) in recent years. Similarly, in most OECD countries, industrial financing was primarily by the business sector; the exception here is again Russia, where government was the largest source of industrial R&D funding, as recent as, in 2005. Russia's focus on basic research at the expense of applied research also made the country an exception among the OECD countries. Applied research is an area where Russia invests only a small proportion of its GDP. Recently, however, Russia started to note that applied research is better able to meet immediate social and economic needs to refocus its priorities in partnership with the European Union.

The recently launched new research program in Russia, which runs until next year (2007-2012), is expected to lead the country in applied research direction in line with the EU partnership, with priorities on energy, the environment, biotechnologies, information and communication technologies, nanotechnologies and transport. As such Russia can build on not only its recent interest in expanding the R&D initiatives but also its potentials as a destination for R&D activities. With more than two million workers in over 4,500 R&D centers throughout Russia, among which one million researchers and scientists, Russia tops most OECD countries in the world as the leading R&D destination country and potential source of innovations.

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R&D and innovation – a window of opportunity for enhanced cooperation with Russia?

By Manfred Spiesberger

Research and Development (R&D), and innovation have experienced remarkable changes over recent years in Russia. They have been identified by Russian policy makers as one of the key drivers of the much propagated modernisation of the country's economy beyond primary goods production. In line with economic expansion and GDP increases of around 7% up to the year 2008, funding of R&D has also significantly improved. This trend encountered a setback in the crisis years 2009-2010, but should be back on a growth track with current economic recovery. Gross Domestic Expenditure on R&D (GERD) as a share of GDP stays in Russia slightly above 1% (in 2009 it reached 1.18%). The allocation of R&D funds has become more competitive, especially through a range of Federal Targeted Programmes and funding tools implemented by the Ministry of Education and Science. New funding bodies for innovation were introduced with the Russian Venture Company and Rusnano, the latter one caring specifically for nanotechnologies. In this context, opening-up tendencies towards international cooperation in R&D and innovation, especially with the EU, have been developing.

Opening up through various Russian programmes,

Russia has started in recent years not only to attract emigrated Russian scientists to work with research groups back in their former home country, but is now reaching out actively to foreign scientists. In June 2010 the Russian Ministry of Education and Science launched the programme "Attracting leading scientists to Russian universities", which aims at stimulating research activities at universities and at internationalising them. This scheme comes with solid funding of approximately € 3.5 million per project. Scholars selected for funding will have to spend at least four months per year at a respective Russian university. As a result of the programme 40 scientists will receive support, whereby a majority is foreign residents and only 5 are permanent Russian residents. Among the foreign residents an important share are emigrated Russian scientists, but several non-Russians (especially Germans) were selected too. Review commissions included besides Russian also foreign experts, which is a new, but still rare feature of evaluations in the frame of Russian funding programmes.

In the field of innovation, President Medvedev's pet project Skolkovo shall be established with international partners. In the Skolkovo innovation zone specific privileges for research and business cooperation shall apply and development of high tech businesses be facilitated. But the success of the project and whether it can have an overall impact on the country's innovation system has still to be seen.

Developments at the EU level

Russia's cooperation with the EU in R&D is ongoing on a broad scale both multilaterally and bilaterally with its member states. This is shown by indicators such as co-publication data or the number of joint bilateral R&D funding programmes.

At the EU level, the EU's Framework Programme for RTD and the EURATOM Framework Programme (FPs) are the main cooperation forums for R&D. Russia has consistently had the strongest participation in the FPs, of all countries not

being EU member states or countries associated to the Framework Programmes. Through joint calls for RTD projects of the EU and Russia within the Framework Programmes ("coordinated calls") in various scientific fields (e.g. aeronautics, nanotechnology, energy, fission, etc.), cooperation has been intensified and Russia has funded its participating teams from own national resources. This has strengthened ownership of this activity and perceptions of cooperation on a par, a fact especially important for Russia.

A next step in rapprochement with the EU would be an association of Russia to the Framework Programmes. Russia expressed its interest in becoming associated to the FPs in 2008, which was inspired by the fact that EU countries are Russia's main cooperation partners as well as by a policy to internationalise and increase competition within the Russian R&D and innovation system. But association to the FPs is discussed controversially within Russia and the EU, and consequently negotiations have advanced until now only slowly.

Meanwhile new cooperation tools are in the process of being established through ERA.Net RUS, a European Research Area (ERA)-Net project funded by the EU. ERA.Net RUS aims at coordinating bilateral funding programmes; it has resulted in a call for R&D and innovation projects announced for February 2011. This call is jointly funded and managed by funding bodies from EU Member States, countries associated to the FPs and Russia.

Another joint EU-Russian initiative concerns a "modernisation partnership", which was agreed in spring 2010 between European Commission President Barroso and Russian President Medvedev. The partnership's priority is on facilitating trade and investment, and on intensifying economic relations. The EU focuses here on alignment of technical regulations and standards, on enforcement of Intellectual Property Rights (IPR), on the functioning of the judiciary and the fight against corruption. But the partnership includes as priority area as well innovation, research and development, and space.

At the bilateral level, cooperation with Germany stands out.

The countries have entered into a strategic partnership on education, research and innovation. Russia participates with significant financial shares in research infrastructure projects in Germany (e.g. it covers around a fourth of the costs of the German XFEL laser project), and a German-Russian scientific year starting in the second half of 2011 shall provide further impetus. The dense cooperation network is confirmed through data on co-publication, which indicate that German colleagues are the second most important co-publication partner of Russian scientists, only narrowly behind scientists from the USA.

Tellingly, Prime Minister Putin launched in November 2010 the latest Russian charm offensive towards the EU in view of a visit to Germany. He proposed an enhanced cooperation in economic matters through a fuzzy "harmonic economic area" between the EU and Russia with a perspective of reaching a free trade area. Energy, R&D, innovation, mobility of students and researchers were also on his agenda.

The opening-up trend can be traced with several more examples, such as Russia's efforts to become a member of the WTO and the OECD, or Russia's repeated proposal to the EU to jointly lift the visa requirement. Lifting visas is indeed a constructive proposal, as they are an annoying hurdle for researcher mobility.

Barriers for cooperation persist

But Russia has to tackle and overcome serious barriers that hamper cooperation. Bureaucratic procedures, uncertainty about protection of property and Intellectual Property Rights (IPR), and unreliability of the judicial system limit the expansion of R&D and innovation cooperation. Exchange of scientific material and equipment with Russia is complicated and may be costly because of taxation and customs duties. Lack of funding for joint projects, housing problems and harsh living conditions in Russia are further factors. Clear regulations, property protection and a proper legal system and functioning of the judiciary are necessary.

Another drawback concerns the fact that changes in R&D and innovation are mainly driven by the state. Private business takes only limited initiatives in this field on its own and more or less independent funding agencies, such as the Russian Foundation for Basic Research see their budgets being reduced or stagnate. Less state control and more room for manoeuvre for non-ministerial actors could set free a cooperation stimulus.

Nevertheless, R&D and innovation, where an obvious common interest for enhanced cooperation between the EU and Russia and a solid basis for it are given, could provide a good practice example on how to advance jointly in a certain policy field. This would need to spill over to more critical fields such as human rights protection and democratisation. Windows of opportunity should be used and measures be taken in time. Russian proposals regarding visa policy and its interest in association to the FPs need to be taken seriously and negotiations not be delayed by diplomatic wrangles – notwithstanding the result of negotiations. Things may change quickly though, as one could learn just recently: in spite of a prickly relationship, a British-Russian oil deal was struck at top policy-makers level, when common interests came into play and were recognised.

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German-Russian collaboration in research and innovation

By Michael Schlicht and Marion Mienert

Strengthening the Russian-German cooperation in the field of applied, industry-oriented research is a major concern of the existing strategic partnership between Russia and Germany in education, research and innovation established in 2005. Common strategic interests are one important cornerstone of this partnership. In fact, the German High-tech Strategy 2020 and the Russian Strategy for the Development of Science and Innovation in the Russian Federation 2015 share a common vision. Both intend to adjust their national innovation systems to the challenges of the global economy, e.g. by creating lead markets, providing favourable framework conditions for innovations and by improving the collaboration between science and industry. The Russian strategic priority areas for innovative development match to a certain extent the focus areas and key technologies defined in the German High-tech Strategy, such as nanotechnologies, information and communication technologies and biotechnologies.

Furthermore, both countries have a long tradition in research collaboration, reflected in the agreement on Scientific and Technological Collaboration (STC) of 1987 as well as in a number of ministerial agreements concluded for individual research areas. The German-Russian Year of Education, Science and Innovation launched in May 2011 by the Federal Ministry of Education and Research (BMBF) and the Russian Ministry of Education and Science (MON) celebrates the good scientific relation between the countries, highlights the rich variety of best practice examples in research and innovation and reaches out for a new quality of their long-standing cooperation.

A fairly new initiative in this relationship is the joint funding programme between the Russian Foundation for Assistance to Small Innovative Enterprises (FASIE) and the Federal Ministry of Education and Research (BMBF). According to the recent OECD-report on the Russian innovation system, the founding of FASIE is considered to be one of the most successful initiatives of Russian innovation policy in the past years. Established in 1994 as a non-commercial state organisation by the Russian government, its mission is to support small innovative Russian companies in their efforts to develop new high-tech products by providing financial and informational support and creating an infrastructure for Russian SMEs.

The common aim of FASIE and BMBF is to stimulate German-Russian cooperation in innovation by supporting collaborative projects in the field of applied and industry-oriented research. Since 2008 annual funding competitions for German-Russian projects in applied research have taken place. Applicants are SMEs and research organisations from Russia and Germany. So far, a total of 42 German-Russian innovative projects have received funding in the amount of up to 100 000 Euros (4 million Roubles) per project from the Russian and the German side each. These projects have led to promising technological developments on the Russian and German markets.

Due to good results, this German-Russian initiative has recently been raised to the European level. In February 2011, funding parties from six European countries and Russia have jointly launched a multilateral funding competition for innovative SMEs and research institutions within the ERA-Net RUS initiative under German lead. Participants besides Germany (BMBF) and Russia (FASIE) have been France, Turkey, Greece, Israel and Switzerland providing a funding budget of 3.6 million Euros. In September 2011, ten projects were selected for funding.

Coming back to the German-Russian Year of Science, one of its major objectives is to stimulate effective German-Russian innovation partnerships and to bring together academia and

industry of both countries. Some of the recent developments in the Russian innovation policy open up promising perspectives and show new collaborative potential to support this objective. The ambitious Skolkovo initiative – the creation of a Russian Silicon Valley outside Moscow – for instance, provides German industry and scientific institutions with multiple opportunities to start innovation partnerships with Russian organisations. And in fact, German companies such as Siemens are already involved, and several German research institutions have expressed their interest to commit themselves to this project.

The new Association of Innovative Regions in Russia established in 2010, is an interesting candidate for German-Russian innovation partnerships on the regional level. It unites eight Russian regions – Irkutsk, Kaluga, Novosibirsk, Tatarstan, Mordovia, Krasnoyarsk, Perm and Tomsk – with the common objective to foster the economic development of these regions by creating an innovative environment in the legal, economic and social creative spheres and promoting joint innovative, scientific and technological projects. The regions intend to involve international experience in the field of regional innovation strategies. A first step in this direction was taken with the Russian-German-French regional innovation conference in Novosibirsk in September 2011. Among the participants were representatives of German federal and regional authorities. A follow-up delegation of Russian regional representatives to German regions and clusters is being arranged for December 2011.

The establishment of innovation partnerships with Russia is also relevant on the European level. Cooperation in R&D and innovation is one of the objectives of the EU-Russia modernisation partnership agreed on in 2010. In view of the European growth strategy “Europe 2020” and the related flagship initiative “Innovation Union”, Germany plans to team up with Russian and other European partners to streamline current political initiatives in Russia towards dedicated innovation activities. This is especially relevant in order to strengthen Russia’s role in the upcoming European Research Framework Programme “Horizon 2020” which will bring closer together research and innovation, prioritise enabling technologies and address global challenges. Germany regards itself as one of Russia’s natural strategic partners in this venture.

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Foresight for EU-Russia S&T and innovation cooperation

By Vicente Carabias, Karel Haegeman, Alexander Sokolov, Manfred Spiesberger, Klaus Schuch, and Irina R. Kuklina

Science and Technology (S&T) and Innovation cooperation between the EU, its Member States (MS), Countries Associated (AC) to the EU's 7th Framework Programme for RTD (FP7), and Russia is developing dynamically at the multilateral as well as bilateral levels. In this context and in the frame of the EU-FP7 funded ERA.Net RUS project, a foresight exercise is being implemented. Structural and thematic scenarios for a sustainable S&T and Innovation (STI) cooperation between the countries involved are currently being developed with the time perspective 2020. Foresight results shall provide a basis for a joint STI funding programme and will be fed into the policy making process on STI cooperation between EU MS/AC and Russia.

EU-Russia S&T and innovation cooperation

Support for innovation has come high on the policy agenda both in the European Union (e.g. Europe 2020 Flagship Initiative Innovation Union), as well as within Russia (e.g. Skolkovo Innovation Center near Moscow). While the EU strives to further strengthen its innovative capacities, Russia needs to catch up on innovation and acquire related know-how. At the same time cooperation in STI has been developing dynamically over the past years between Russia, the EU, its Member States, and Associated Countries to the FP7. Cooperation is ongoing on a broad scale both multilaterally and bilaterally.

At the multilateral EU level, the EU's Framework Programme encompassing research as well as innovation and the EURATOM Framework Programme (FPs) are the main cooperation forums. Russia has consistently been one of the most active non-EU and non-AC participants in the FPs. Through joint calls for research and innovation projects launched by the EU and Russia within the FPs ("coordinated calls") in various scientific fields (e.g. aeronautics, biotechnology, energy, health, nanotechnology, nuclear fission), cooperation has been intensified. Russia has funded in these projects its participating teams from own national resources.

The further development of the cooperation process is fraught with uncertainty. While there are positive signals indicating a dynamic development of cooperation, such as new funding schemes within the ERA.Net RUS project, the strengthening of bilateral cooperation and the trend of Russia opening up to international STI cooperation, we also observe some signs of stagnation. This concerns, for example, the decision of the EU to not open negotiations on the possible association of Russia to the FP7; instead a new strategic partnership in S&T shall be built, which is still vague. Moreover, uncertainties of politics within the EU and Russia, as well as international politics always have the potential for disrupting a further rapprochement.

Foresight exploring future EU-Russia relationships

In this context of developing EU-Russia STI relationships, a foresight exercise running from 2010-2012 is being implemented in the frame of the ERA.Net RUS project. The foresight activities will provide an analytical basis for a future sustainable cooperation policy in STI between EU MS/AC and Russia. At the core of the foresight process is the preparation of structural and thematic scenarios for STI

cooperation with a time perspective up to 2020. The development of this cooperation will be directed towards addressing societal and economic challenges that both the EU and Russia are most likely to face in the future.

In the first phase of the ERA.Net RUS project from 2009-2010, substantial analytical work was performed by the project consortium, including reports on the Russian S&T system and its funding, on experience of Russian participation in ERA.Nets and on an analysis of bilateral cooperation. The analytical work was supported through a focus group meeting with scientists, which tested for strengths and weaknesses of the Russian S&T funding system. In addition a comprehensive survey was conducted among the most relevant European and Russian funding organisations to take stock of the substance of bilateral STI funding instruments that are already in place. The mentioned ERA.Net RUS analytical reports can be accessed through www.eranet-rus.eu.

This preparatory work provided a solid basis and valuable input for starting up the ERA.Net RUS foresight exercise: In the framework of the structural scenario development, a "Creativity Workshop" gave room to discussing the critical variables and defining the underlying dimensions allowing to differentiate scenarios. The ERA.Net RUS foresight partners selected four scenarios for EU-Russia STI cooperation in 2020 and elaborated them in more detail: They outlined one optimistic ("*R&D policy paradise*"), one pessimistic ("*Lost in diverging priorities*") and two intermediate ("*Isolated R&D excellence*", "*Empty cooperation programming shell*") scenarios through storytelling, collection of main arguments, assessment of impact variables and drafting of roadmaps necessary to make the scenarios happen. The resulting scenarios were then validated and further developed through expert workshops with policy makers, representatives of funding organisations and researchers. Additional feedback will be gathered from the participants of the initial creativity workshop.

In an online survey European and Russian scientists will be addressed to validate thematic priorities, which have been identified as relevant for future EU-Russia STI cooperation. In addition, this expert assessment will help to single out more specific topics under the broader priorities. By cross-checking the EU and Russian thematic S&T priorities, one can confirm that priorities are evolving in the same direction, especially with regard to S&T programmes in the fields of *energy*, *health*, *nanotechnology*, *transport*. It is worth mentioning that the comparison of priorities revealed a strong focus on *technological implementation* (incl. *biotechnology*). While the EU emphasizes *thematic fields supporting a sustainable development*, i.e. food, water and energy security, climate change, the Russian Federation highlights apart from the similar topics environment, life sciences and nature management also *information and telecommunication systems*.

Furthermore, in a broad Delphi survey the resulting structural and thematic scenarios will be assessed on probability and desirability as well as on their relevance for value creation, for policy development and for advancement in STI.

Foresight results will be fed into the policy making process on STI cooperation between EU MS/AC and Russia. The foresight results will provide a basis for developing a joint STI funding programme and for coordinating STI efforts for better facing joint future societal and economic challenges.

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International science and technology cooperation in Eastern European countries

By Klaus Schuch, George Bonas and Jörn Sonnenburg

National Policies and National Programmes Addressing International S&T Cooperation

In all Eastern European Neighbourhood Policy (EN) countries the national Science, Technology and Innovation (STI) policy acknowledges the **importance of strengthening International Cooperation in Research and Development (R&D)**. Provisions for this (articles, paragraphs etc.) can be found in the respective national legislations (e.g. Armenia: *Law on Scientific and Technological Activity, the Strategy on Development of Science and Action Plan 2011-2015*; Georgia: *Law on Science and Technologies and their Development*; Moldova: *Code "On Science and Innovation"*; „Moldova Knowledge Excellence Initiative” Action Plan 2008; Ukraine: *National Indicative Programme 2011-2013*). International Science and Technology (S&T) cooperation for example has a special allocation in the state budget of Belarus and receives 3-4% of budget spending for R&D annually. However, there is no distinct single policy document referring to the issue of International Cooperation in any country.

EN countries have a number of **national programmes** that are in operation. In some countries these programmes are open for foreign researchers (Belarus). In other countries R&D programmes are basically open for international collaboration but funds are provided only to domestic researchers (e.g. Georgia and Moldova: *The State Grants for Fundamental and Applied Studies*), while there are also cases where programmes are more restricted (like in Armenia).

Also in the Russian Federation enhancing internationalisation of the R&D sector has been identified as one important aspect for improving the quality and results of Russian R&D in the last years. Internationalisation beyond the geographic limits of the former Soviet Union, however, starts – like in most Eastern European Countries - from a low level. In Russia still many R&D organisations are isolated from each other and from the outside world. Data on Russian co-publications show that the USA and the EU countries Germany, France, UK and Italy are **the top collaborating partners**. Co-operation with China and South Korea is quickly increasing.

To counteract **brain drain**, Russia also recently implemented within the frame of its “Scientific and *Scientific-Pedagogical Personnel of Innovative Russia for 2009-2013*” an initiative to attract emigrants back to Russia or to develop various kinds of linkages. Moreover, in June 2010 another targeted programme¹ aimed to attract foreign scientists was launched. A few Russian R&D programmes are also open for participation of EU researchers². The main access obstacles for international researchers, however, are a lack of information about Russian RTD programmes, linguistic barriers and financial and legal issues.

Bilateral Agreements and Programmes

Eastern European Neighbourhood Policy (EN) countries have a number of **bilateral agreements** mainly with other Commonwealth of Independent States (CIS) countries and countries of the EU. Some countries have also signed agreements with other non-EU countries such as USA (Armenia), Argentina (Armenia), China (Armenia, Belarus, Moldova), India (Armenia, Belarus) and Venezuela (Belarus).

¹ The name of the programme in English is “*Attracting leading scientists to Russian universities*”.

² See <http://www.access4.eu/index.php> for more information

Moreover, bilateral agreements have also been signed by research institutions (mainly the National Academies of Sciences) with similar counter parts abroad.

Also Russia has bilateral agreements and programmes with many states all over the globe in place. The EU is an important partner for Russia’s R&D internationalisation attempts. Russia has concluded bilateral S&T agreements with a broad range of EU Member States and countries associated to the European Framework Programme for Research and Technological Development (FP). Agreements have also been established at the level of research funds. At the level of research organisations, especially the Russian Academy of Sciences has a dense network of cooperation agreements in place.

Findings of a survey conducted under the ERA.NET RUS project proved that bilateral cooperation is focussed on basic research. The most frequently used instrument is mobility support. Thus, not surprisingly, the budgets of bilateral agreements are mostly small scale and annual investment is usually below €1 million. Most recent trends show a shift from mobility towards more substantial R&D projects, a higher propensity for supporting applied research and innovation and an evolution of bilateral towards multilateral schemes.

(Sub-)Regional Cooperation

Regional cooperation is based on the numerous **bilateral agreements** that exist between the countries as well as between specific research institutions (academies, universities, research centres) in the Eastern European region. Historically, collaboration with Russia is characterized by the highest indices (e.g. in Belarus 55% of the National Academy’s international projects are carried out with Russia). Russia has concluded bilateral S&T agreements with all Eastern European and Central Asian countries except Turkmenistan³. In 2011 an intergovernmental programme for cooperation in the sphere of innovation within the Commonwealth of Independent States (CIS) was adopted. R&D cooperation within CIS is facilitated by the fact that Russian is considered as *lingua franca* among the scientific communities. In addition to the strong traditions and ties within the CIS, R&D cooperation with other Asian countries rapidly increases. RFBR for instance regularly runs joint calls with the Japanese Society for the Promotion of Science, the State Fund for Natural Sciences of China and with the Indian Department of Science⁴.

Furthermore, some bilateral programmes between the EN countries serve to enhance the cooperation in the sub region (e.g. Call for joint bi-lateral basic research projects 2011 between BRFFR (Belarus) and the State Committee of Science of Armenia). Overall, regional cooperation is mainly driven by past personal or institutional links often inherited from Soviet times and current political initiatives and programmes (BSEC, GUAM, CIS, ENP/ENPI, etc.).

Regional cooperation also benefits from **cross border programmes** under ENPI (especially the Black Sea cross border cooperation programme 2007-2013, the Black Sea Basin Joint Operational Programme 2007-2013). Other international programmes/projects with EU countries mainly under FP7 provide opportunities for regional cooperation in

³ Taken from <http://mon.gov.ru/work/mez/dok/1075/>

⁴ Information taken from Spiesberger, M. (2008): *Country Report Russia An Analysis of EU-Russian Cooperation in S&T*. Prepared on behalf of the CREST OMC Working Group

science, technology and innovation. Also important for fostering regional cooperation in STI is the participation of almost all ENP countries in regional organisations such as BSEC and/or GUAM which provide fora for political dialogue in various sectors including STI (see above).

Agreements and Implementing Programmes between the EU and the Eastern European Region

All EN countries - except Belarus - have **Partnership and Cooperation Agreements (PCAs)** with the EU. These form the legal basis for EU relations with each country. The PCAs establish the institutional framework for bilateral relations, set the principal common objectives and call for activities and dialogue in a number of policy areas including S&T. In specific cases (e.g. in Armenia, Moldova, Ukraine) the PCA has led to the approval of concrete Action Plans listing precise commitments of the targeted country in order to meet EU standards.

All EN countries participate in **7th EU Framework Programme for RTD (7FP)** as International Cooperation Partner Countries (ICPC). It is expected that Moldova will attain the status of an associated country by January 2012. Up until the end of 2010 the majority of countries had a quite limited number of successful proposals and the EC funding for EN participants under FP7 ranges between €1-3m per country. The only exceptions are Ukraine and Russia. Ukraine had 103 successful proposals with a EC contribution reaching approximately €12 million. Until the beginning of FP7, Russia has had consistently the highest project participation among the group of "third countries". Now its leading status is contested by the USA. Under the framework of FP7, Russia, which has concluded an S&T agreement with the European Commission for the first time in 1999, implements several "co-ordinated calls" with the EU, which are jointly defined and funded. Since 2001 S&T agreements between the EU and Russia are also in place for EURATOM covering fission as well as fusion oriented research.

All EN countries are covered by the **European Neighbourhood Policy Instrument (ENPI)**. For each country tailor made ENP Action Plans have been drafted taking on board differing national needs. With regards to STI a common goal for all countries is closer integration to the European Research Area through more active participation of local research organisations in the EU Framework Programmes. In general, however, **funding through the ENPI** focuses on strengthening democratic structures and good governance, supporting regulatory reform and administrative capacity building and on poverty reduction. The European Commission offered more than €900m for financing the activities in the EN countries for the period 2007-2010. Indeed STI is not seen as a priority area for funding as such but can benefit through for example regulatory reform and capacity. Few activities within ENPI are related to different scientific topics directly.

According to European **Competitiveness and Innovation Framework Programme (CIP)** regulations the programme is open to third countries as well. From the EN countries Armenia and Ukraine⁵ participate in the Enterprise Europe Network of CIP (a network of regional consortia providing integrated business and innovation support services for SMEs) without however receiving financial support from the programme. In addition, Moldova and Ukraine participate in the Intelligent Energy Agencies initiative of CIP again without financial support from the programme. All other EN countries have not been involved yet with CIP.

All EN countries are engaged in the **Lifelong Learning programmes (LLL)** and in particular in TEMPUS which is the older one and in which the EN countries have a higher success rate, and in ERASMUS MUNDUS which is becoming more

popular but is still relatively new, with limited participation (e.g. 48 Master Courses Students and 23 projects for institutional cooperation and staff exchange in the six EN countries in 2011).

In general, international mobility especially for young researchers remains low, with the exception of programmes in ICT area where a positive trend is recorded (Belarus). Visa remains an issue for the scientists in some countries (Ukraine), but in some others (Georgia) recently implemented visa procedures will make it easier, shorter and cheaper for scientists to travel to the EU.

Another framework for intensifying cooperation between Russia and the EU in particular had been agreed in 2003 with the "**four common spaces**", which comprise a common space of research and education, including cultural aspects. Hereunder a series of measures to facilitate Russia's integration into the European Research Area are implemented.

Eastern European, especially Russian scientists participate also in projects of the **European initiatives COST and EUREKA**. Among all non-COST member countries, Russia has the highest participation in COST actions. Russian participation in EUREKA, however, is comparatively low, which confirms the limited innovation capacities of the country.

Through the **International Science and Technology Centre (ISTC)**, founded in 1992 as an international organisation by USA, Japan, Russia and the EU, substantial support to the Russian R&D sector is provided with the aim of conversion of military to civilian research.

The latest joint **EU-Russia initiative** is a "*modernisation partnership*", agreed in spring 2010. It includes cooperation in R&D and innovation. Regarding the latter, certain emphasis is on aligning technical regulations and standards and on enforcing IPR.

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⁵ EEN Members: <http://www.enterprise-europe-network.ec.europa.eu/about/branches>

Russia's modernization campaign – towards a high-tech Potemkin village?

By Philip Hanson

For the past six months or so, Russian politicians have been making speeches about modernization. Prime Minister Vladimir Putin now heads a 26-member government Commission on High Technologies and Innovation. President Dmitrii Medvedev heads the presidential Commission on the Modernization and Technical Development of the Russian Economy. If technological progress requires competition, the president and prime minister are certainly providing it.

But how serious is all the talk? The short answer is that it is serious but unlikely to produce results.

Under different names, the topic of technological catching-up has been a staple of Russian political discourse since Peter the Great. Under the heading of 'diversification' it was actively discussed among policy-makers in the latter part of Putin's first presidential term. In 2003 the Ministry of Economic Development and Trade (as it then was) proposed various policies for stimulating manufacturing at the expense of the natural-resource industries. The subsequent hiking of taxation on oil companies was intended in part to achieve this.

The current round of campaigning goes back to 2007-08. This was when the famous Putin Plan for the upgrading of Russia into a leading-edge knowledge economy by 2020 took shape. The latest burst of political activity, however, began with several pronouncements by Medvedev last year, including his address to the Federal Assembly in September. He called then for Russia to cease to be 'a primitive raw materials economy' and instead to become 'a smart economy producing unique knowledge, new goods and technology of use to people', particularly in medicine, IT, telecoms and space, as well as in the energy sector.

Both Putin's and Medvedev's speeches on the subject indicate that they see Russian modernization as a top-down, state-led process. It is true that they both advocate investments in education and the reduction of barriers to the development of small firms – which free-market liberals would agree with. But the emphasis is on state programmes and large companies – the latter either state-controlled or working closely with the state.

The presidential modernization commission has fewer administrative powers and less funding than the government commission, but it has in recent months made the running so far as proclamations are concerned. Here it has the advantage of the presentational skills of presidential aide Vladislav Surkov. It also has the substantial merit of having Russia's most effective economic administrator, Anatolii Chubais, on board. It is the presidential commission that is establishing a 'Russian Silicon Valley', to be built at Skolkovo, near Moscow.

Russian liberals have been highly critical of the whole approach, whether from Putin or from Medvedev. Yulia Latynina sums it up: 'Modernization is impossible in Russia because there can be no nanotechnologies in the Byzantine Empire'. The liberal view is that state industrial policy, even if it is sometimes successful in some countries, cannot succeed in present-day Russia, where the state machine is corrupt and grossly inefficient. What liberals want to see is reform that will allow a properly independent judiciary, the rule of law, protection of property rights and the removal in

general of impediments to competition. This in turn, in the view of most liberals, requires political liberalization: the introduction of open competition into politics. Without those changes, the grand state schemes envisaged by the president and the prime minister will create only large black holes in the state budget.

There are other difficulties. Russian science and technology are weak. There are plenty of researchers, but they are aging, under-paid, under-motivated and still working in semi-seclusion from the outside world. In September last year a group of expatriate Russian scientists sent an open letter to the Russian President and Prime Minister; they deplored what they described as the 'catastrophic state' of Russian fundamental science. The letter's signatories were working in leading universities and research institutes in the US, UK, Germany, France, Australia and other countries. Their judgement carries a lot of weight.

Neither higher education nor applied science is in good shape either. In the widely-used THE-QS rankings of world universities, Russia has four in the top 500, against 10 Indian and 11 Chinese universities. World Intellectual Property Organization data for 2007 show the following percentage shares in all patent applications outside the country of residence of the first-named patentee: India 0.48; China 0.90; Russia 0.14. Anatolii Chubais himself has pointed out that there is very little private-sector demand for R&D in an economy dominated by industries that are not R&D-intensive.

There has been some clarification and improvement in modernization policies. At first all the emphasis was on Russia somehow, in a decade, becoming a major source of products and processes new to the whole world. Now both the presidential and the government commissions have recognised that catching-up by absorbing technologies new to Russia but already established elsewhere has to be part of the agenda. But it is still an agenda in which large state-controlled entities linked to the old military industrial complex – the United Shipbuilding Corporation, the United Aircraft-building Corporation, Rostekhnologii, Rosnanotekh, etc – are assigned key tasks. Rosnano is due to become a joint-stock company instead of a legally-anomalous 'state corporation' by the end of 2010, which is a modest improvement. Anatolii Chubais has used some of Rosnano's resources to establish a venture capital fund, to encourage small, high-tech start-ups. But the basic approach remains top-down.

Overall, the prospects for the modernization campaign are not good.

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Internationalization of high-tech industries – lessons for the Russian government

By Kalman Kalotay

The Russian Federation is a laggard country in terms of the internationalization of its high-technology (high-tech) industries. This is quite paradoxical, as the country has in principle all the ingredients required for a more vigorous insertion into the global network of high-tech activities: a strong science, technology and innovation based inherited from Soviet times (slightly eroded since then), a vast and well trained labour pool (with skills again a bit eroded but still important), and recently large foreign direct investment (FDI) inflows and outflows. Indeed, by 2010, the country had become the 8th largest recipient of the world in terms of FDI inflows (\$41 billion) and also the 8th largest source of the world in terms of FDI outflows (\$52 billion).

The laggardness of the internationalization of high-tech industries may seem to be evident for most observers; however it is not easy to quantify it. The main methodological difficulty arises from the fact that practically all FDI statistics lump high-tech industries (their common list includes pharmaceuticals, aircraft & spacecraft, medical, precision & optical instruments, radio, television & communication equipment, and office, accounting & computing machinery) with medium-high-tech industries (electrical machinery & apparatus, motor vehicles, trailers & semi-trailers, railroad & transport equipment, chemicals & chemical products, and machinery & equipment). If we accept the merging of these two groups as still a good proxy of the propensity to engage in high-tech FDI, latest available statistics reveal a striking difference between the world average (11.3% in inflows and 9.5% in outflows) and Russian data (4.1% and 4.3%, respectively, see table 1). Note that inward and outward industry classifications do not necessarily match, because the former reflect the industries of the investor, while the latter the industry of the host firm, and the two often differ.

Another proof of the laggard status of the Russian Federation is in the universe of the largest transnational corporations (TNCs) of the country: in 2008, none of them were from high-tech industries although some of them undertook important research and development (R&D) activities. These large firms accounted for more than half of the country's outward FDI stock, with Lukoil and Gazprom together representing almost one-quarter, other natural-resource-based firms about one-fifth, and non-resource-based firms of the top 25 for about one-tenth. As a result, high-tech firms, although they exist, and sometimes internationalize, are invisible on the overall radar screen of Russian FDI.

Studies examining the Russian high-tech internationalization paradox usually conclude that the country's laggardness almost fully policy made. The 2009 Knowledge Economy Index of the World Bank for example shows that the country fares well in terms of its education system (despite all the well-founded criticism of its distance from real life), innovation, and information and communication technologies, but sorely lags behind almost all countries of the world in terms of "economic incentive regime". The score of the Russian Federation is even lower than the average of the low-income countries of the world. China's and India's indices are twice as high, and that of Brazil almost three times. The distance from developed economies is even larger: almost five times.

The policy lessons from countries that succeeded with the internationalization of high-tech industries are usually straightforward. The secretariat of the United Nations Conference on Trade and Development has analysed the cases of Canada and Singapore in detail. One of the common lessons of these successful cases is the need for a holistic approach towards general national development policies, science, technology and innovation policies, and inward and outward FDI promotion. In the Russian Federation, this interconnectedness is missing, largely due to the fact that inward and outward FDI policies are at a nascent stage, and whenever they exist, they do not seem to coordinate with other policies. Another problem is in the country's approach to science, technology and innovation, inherited from Soviet times, when business applications were seen as unnecessary, and sometimes even suspicious. Soviet science attained very high levels but cruelly failed on practical application. Finally, international benchmark countries such as Canada and Singapore have overcome the stage where concerns about the strategic nature of high-tech industries (if they are high-tech, by nature they should have some strategic value, at least) prevented their internationalization. Instead, they introduced policies such as strong intellectual property measures, which minimize eventual strategic leakages of very sensitive technology. They also adopted a flexible approach to the internationalization of high-tech industries, combining equity (traditional FDI type) investment in some segments with non-equity forms (e.g. licensing, franchising, non-equity based R&D joint ventures) in more sensitive activities. In contrast, a more rigid approach to strategic issues prevails in the Russian Federation. It goes beyond the formal restrictions of the Strategic Investment Law (Law on the procedure of foreign investment in companies having strategic significance for the preservation of national defence and State security) of 2008, which singled out aircraft and airspace as strategic industry, leaving other high-tech activities in theory outside the realm of the law. Moreover, the law intended to apply relatively simple procedures for approval. However, reality has proved to be more complex, the procedures in practice has been more burdensome than foreseen, and the other high-tech industries remained mostly in a grey zone, where officially they are not strategic but *de facto* are treated similarly.

Beside policy issues, the case of the Russian Federation is very different from the "best practice" countries in terms of institutions supporting inward and outward FDI. In Canada and Singapore, they have existed for a long time, and have received clear mandates in promoting their respective countries' technological upgrading in the international scene. They also have mandates to follow these goals with important financial means. In contrast, the Russian Federation lacks such well-structured agencies. Instead, inward and outward FDI promotion is done more on an informal basis, on an ad-hoc basis and at the high political level. This arrangement fits the current structure on inward and outward FDI, in which large resource-based firms with mega-projects dominate. This way the country can well control the development of natural resources and main manufacturing facilities at home and strategic expansion of flagship national firm

abroad. However, it has the disadvantage that high-level politicians by default can not devote the same (100%) attention to investment promotion matters as investment promotion agencies specialized in the field, as the formers' main aim oversight over the general development of a vast and complex country. Moreover, firms in high-tech industries tend to be smaller than natural-resource-based firms, and change more rapidly. Only specialized agencies can keep track of those developments and prepare a quick strategic response.

Given the fact that most of the problems of the Russian Federation are policy made, or are due to a weakness of institutions, change is more easily possible and desirable than in the case of countries that lack the basic science, technology, innovation and skills base of the internationalization of their high-tech industries. It requires mostly a strong political will to change, consensus building about such changes, and institutional development (including the generation of sufficient resources for the proper functioning of institutions. The case of Canada also proves that the complexity and the federalism of the country do not necessarily hinder coordinated policy action at the national level, only the process of consultations is longer, as it involves federal entities. The Russian Federation in principle has all the ingredients require for a rapid improvement of the situation.

The views expressed in this article are those of the author, and do not necessarily reflect the opinion of the United Nations.

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Table 1. Share of selected industries in the FDI inflows and outflows of the world and of the Russian Federation, latest period available (Per cent)

	World inflows 2007–2009	Russian inflows 2010–March 2011	World outflows 2007–2009	Russian outflows 2010–March 2011
Mining, quarrying and petroleum	0.4	6.8	9.5	6.1
Metal and metal products	2.6	4.3	2.8	2.2
High- and medium-high-technology industries ^a	11.3	4.1	9.5	4.3

Source: Author's calculations, based on data from the UNCTAD FDI/TNC database (world flows) and from the Bank Russia (Russian flows).

^a The list of high- and medium-high technology industries includes chemicals and chemical products, machinery and uipment, electrical and electronic equipment, precision instruments, motor vehicles and other transport equipment.

Commercialization as the bridge from Russian science to prosperity

By Mikko Kaarela and Pekka Koponen

Russia has been and will most likely remain one of the key players in scientific research, with internationally recognized achievements in physics, chemistry, materials science etc. Russian scientists have been among the pioneers in discovering materials break-throughs such as carbon nanotubes, atomic layer deposition and inventing industrial manufacturing of silicon carbide semiconductors, to name but few. In all the mentioned areas, however, Russia has lost the scientific and business leadership and also the intellectual property battle. Let us take a look why this has happened - and keeps going on.

Partly as a result of the Soviet legacy Russia has significant problems in turning investment in science into wealth and prosperity. First of all, the tradition of commercializing results of science is still young, due to the fact that private entrepreneurship was practically criminal only two decades ago. Private enterprise is still seen by the system as a "suspicious activity" that must be kept in a short leash, with lots of red tape and mandatory procedures, controls and inspections. Frequently these requirements cause significant additional costs and delays when a private company is trying mind its own business and serve its customers. For example, the common western practice in professional services - sending a letter of proposal and confirming its acceptance - is not enough to ensure that the bank will eventually allow the payment of the invoice. Mandatory contract documentation obviously slows down the business and reduces Russian technology companies' competitiveness in the international market place. Dealing with the Customs is a topic of its own and a major hurdle to start exporting technology products in form of physical goods. As president Medvedev put it: "When I hear talk about the customs, I sometimes have hard time to control myself."

Most senior executives and civil servants in their fifties and beyond are also products of the Soviet era. No wonder that they may find difficult to understand how industrial (as opposed to trade with natural resources) market economy works. The younger generation in turn has limited experience which makes it difficult to build senior level relationships with international partners and customers. On top of that, a career in science is not seen as a particularly attractive option by the younger generation and hence many research teams consist of people beyond the retirement age.

How should Russia achieve better returns on investment in science?

Our experience in dealing with commercialization of technologies shows that the issues to be tackled fall into three broad categories:

- 1) systemic problems such as red tape in many forms and shapes.
- 2) Skill gaps regarding commercialization process as such, plus cross-cultural and language skills and
- 3) lack of international contact networks

The roots of systemic problems are political and so must also be the solutions. Some high-profile projects such as the Nanocenters financed by Rusnano, Skolkovo Foundation or Special Economic Zones tackle the problems in limited scale. It is clearly better option to actually do something and gather experience on new solutions than doing nothing while more fundamental changes are being prepared. At the same time, many Russian start-ups have decided to establish their commercial presence abroad, while keeping the R&D or manufacturing in Russia. This may be the fastest way of getting the product proven in the market and then investing in the volume manufacturing capacity in Russia. The LED-

manufacturer Optogan is an example of a start-up company with Russian roots, initially established in Finland and then acquired by Russian investors Rusnano and Oneximbank. A similar process could become a conventional option for many technology start-ups, with dedicated commercialization support infrastructure built in Russia and e.g. in Finland.

On top of traditional business incubation and acceleration, specific Commercialization Support Centers could render support in market validation of new products and contribute in certain areas of engineering and product design, such as industrial design, IPR management, documentation and product certification. They could also serve as a training ground for the new generation of business professionals who can learn to deal with all aspects of international commercialization.

Given the size of the Russian domestic market, one can ask if the international commercialization is that necessary. In our opinion, the only way to improve international competitiveness is to compete internationally. With the forthcoming WTO membership, the border between domestic and international business will become fluid and there will be less room for protected domestic manufacturers and stimulated demand for less than competitive products.

Finally, the contact networks can only emerge from practical work and interaction with colleagues from other organizations and companies across national borders. The more Russian universities expand their international student exchange and research partnerships, the sooner it becomes natural for professionals to have spells of their academic and business careers in other countries. It is also important that Russia becomes an attractive career option for foreign professionals to work, not only as expatriates in foreign-owned companies, but also in ordinary Russian enterprises.

These changes will not happen overnight and in the meantime investments in speeding up the development are necessary. When investing in innovation infrastructure it is useful to look how the money is used on tangible assets and how much of the investment is directed on acquiring international professional expertise, support of intellectual property management etc. The attitude that buildings and equipment are investments but money spent on expertise is a cost is a sure way to prevent return on investments in science from materializing.

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Using Foresight as an instrument for constructing future vision for key sectors of Russian economy – results and lessons

By Alexander Chulok

Forecasting of long-term economic development is becoming more and more popular in Russian's innovation and industrial policy agenda. Practical implementation of more than thirty forecasting projects was launched recent years¹. Main objectives for such projects were: identifying key drivers and trend for Russian economy, identifying most critical technologies, elaborating scenarios for key sectors and science directions, policy recommendations, science priorities, regional plans, building expert networks based on federal institutes, technology roadmaps for science directions and key sectors. In the fairway of such initiatives most big Russian companies² activated development of long term innovation strategies, scenarios and plans.

As a basic instrument for meeting such goals Foresight conception can be used. Developed and developing countries have been using Foresight for about fifty years for constructing common vision at corporate, industrial and national level between key stakeholders³.

Within one of the key Foresight projects in Russia "Forecast of S&T development of Russian economy by the period of 2030"⁴ main object was the determination of necessary technologies and technologic solution, in accordance with scenarios of key Russian economy sectors.

The results for sectors were highly diverse due to different sectoral structures and a number of sectors⁵. What we can do in brief is to show some examples of some results for several sectors.

We constructed the expert pull to provide sectoral information on the interested questions which combined for each sector:

"Synthetics experts" – high level experts, industry strategies designers, consultants;

"Industry experts" – top- and production managers of the main private and public companies;

¹ Starting from the year 2006 forecast and foresight projects were launched by the key Russian Ministries (Ministry for Science and Education, Ministry for Communications and Informatization of the Russian Federation, Ministry of Industry and Trade), state-owned corporations (Rosatom, Rosnano) and some Russian regions (Tomsk, Saint-Petersburg).

² At least those who had state capital were obliged to develop the "Innovation development plan" by the Government prescription.

³ Most recent definition of Foresight considers it as "an open and collective process of purposeful, future-oriented exploration, involving deliberation between heterogeneous actors in science and technology arenas, with a view to formulating shared visions and strategies that take better account of future opportunities and threats" (Keenan, M. and Popper, R. (2007), *Research Infrastructures Foresight (RIF)*, ForeIntegra, Brussels: European Commission).

⁴ Supported by the Ministry for Science and Education of Russian Federation.

⁵ We investigated ten key sectors: energy, iron and nonferrous-metals industry, agriculture, chemical industry and pharmaceuticals, aircraft industry, commercial shipbuilding and information sector.

"Science experts" – leading academic institutes representatives.

As a result for each key sector we got four to eight prospective scenarios. We used in-depth interviews, focus groups, and surveys to provide communication with the expert pool. To discuss preliminary version of the visions and present final results we used round tables and conferences.

As an example of sector scenario demonstration we can provide description of two basic models for pharmaceutical and medical industries. We defined common and specific key characteristics of each model. Then we divided main perspective technologies according to these models and defined those which are invariant to the models and those which are specific.

Some interesting lessons and conclusion are:

Russian sectors are multistructural, they are characterized by obviously many different beneficiaries and actors, different technological and economic structure – as a result the Government should switch from the policy of unique instruments, towards the personalized innovation policy, taking into account the specification of each sector (sub sector);

For some sectors (ferrous and non ferrous metallurgy, ICT) it's not possible to get to the desired future directly: one should get a "bridgehead" fist, and then through the "switching models" archive the final vision;

Difficulties with codification" of obtained results: one should construct a "meta language" of the project which could translate expert materials at list from two languages: technical and economic;

Insufficient level of contribution from federal and regional authorities in formation of visions and scenarios: quality of the project depends essentially on experts involvement in application of technologic modernization policy buildup at a level of interested ministries;

Lack of "success stories" and good demonstration examples restricts potential demand from business society for participation in foresight and forecast projects.

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Figure 1. General logic of scenario generation within the project “Forecast of S&T development of Russian economy by the period of 2030”

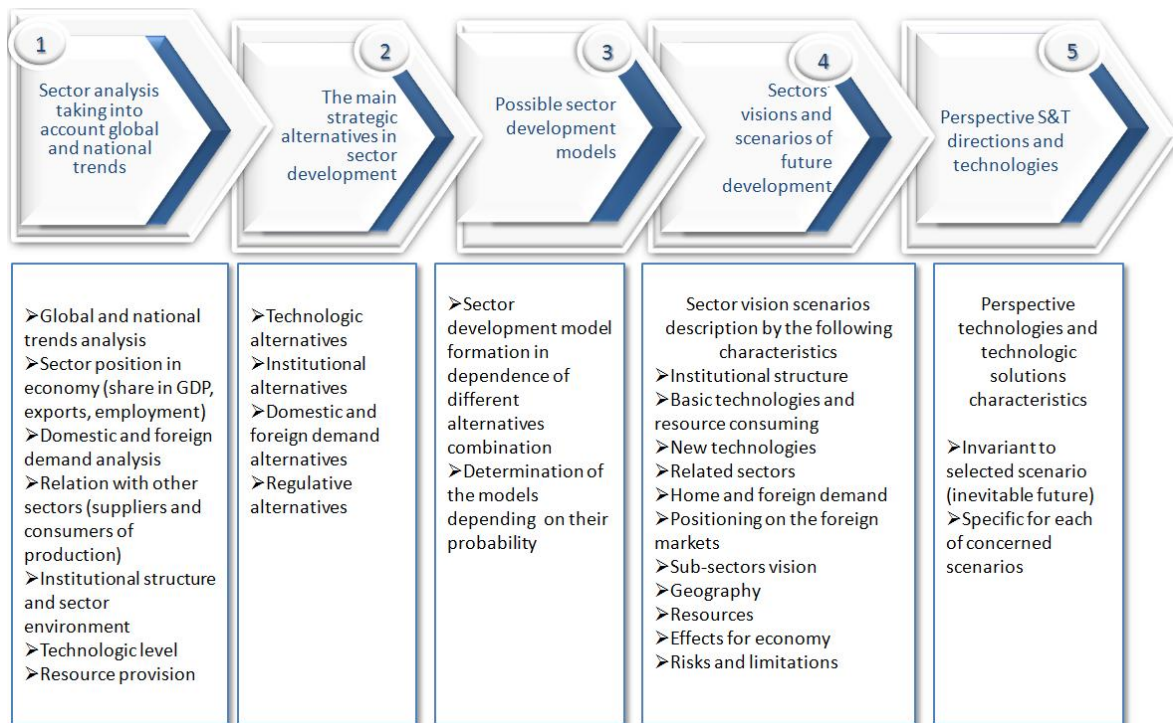
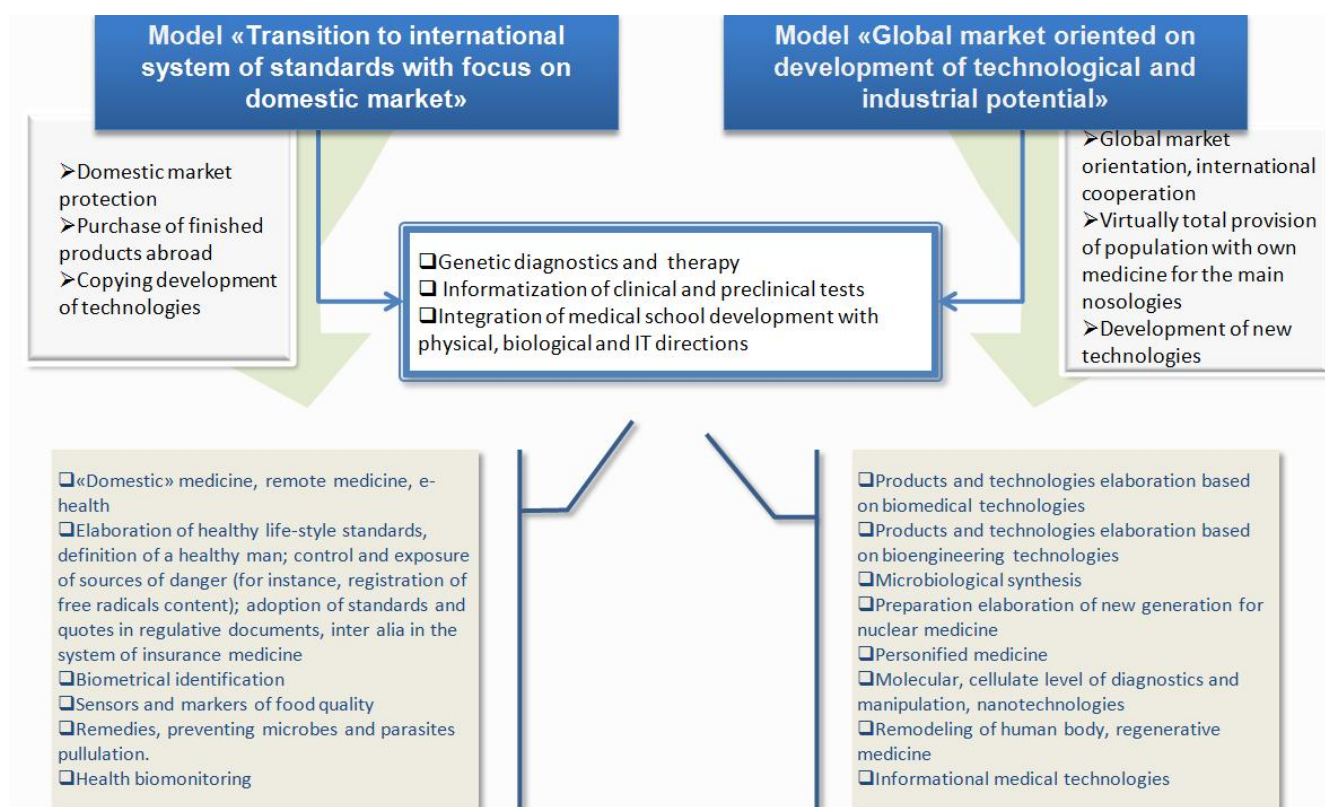


Figure 2. Summary characteristics of long-term perspectives for key investigated sectors*

	Ferrous metallurgy	Nonferrous metallurgy	Agriculture	Chemical industry	Medicine and pharmaceuticals	Aircraft industry	Commercial shipbuilding	Information sector
Interactions with other sectors								
Demand for products and services from other sectors	Metallurgy Energy sector Machine building Transport	Cargo shipping operations Electric energy in all industry Fuels in all industry	Chemicals, fuels and lubricants Electricity and gas	Oil-producing and oil-refining industries Gas extractive industry Ore mining and processing enterprises S&T complex	Agriculture Special metallurgy Electronics Chemical industry ICT S&T complex	Almost all industries S&T complex	Ferrous and nonferrous metallurgy Machine building Chemical industry	Electronics Educational system S&T complex
Main consumers	Metallurgy Machine building Construction Transport Energy sector	Machine building Ferrous metallurgy Construction	Food industry Pharmacy Energy sector Householders	Machine building Construction Residential consumption Householders	Health-care system Householders	Air transport	Sea and river transport	IT- electro energy, IT- finance, ICT, Oil and gas industry Householders
Perspectives for development of domestic market and new market niches								
Perspectives for development of domestic markets	Medium growth for mass production Rapid growth for ultimate consumpt.	Medium growth for mass production Rapid growth for ultimate consumption	Medium growth Rapid growth for crops	Rapid growth for most segments, especially in ultimate consumption	Rapid growth	Medium growth	Slow growth	Rapid growth
Possibilities of new significant niches	Low probability	Low probability	Medium probability (organics, bio fuels)	Medium probability (low tonnage and fine chemical products, packaging)	High probability (cure schemes, drugs with delivering)	Low probability	Medium probability (medium tonnage cargo boats, oil platforms)	High probability (electronic services, 5G, GRID systems)
Specificity and technological characteristics								
Level of technologies (quality/ efficiency)	High / Low	High / Low	Medium / very heterogeneous	Medium / heterogeneous	Heterogeneous/Low	Medium / Heterogeneous	Low / Low	Medium / heterogeneous
Investment projects	Long- term projects (30-50 years)	Long- term projects	Medium-term projects (3-6 years)	Long- term projects (10-15 years)	Long- term projects (15-20 years)	Long- term projects	Long- term projects	Medium and short-term projects
Organizational structure of the sector								
Current structure in Russia	Mass demand – big vertically integrated comp. and horizontal integ. comp.	Mass demand big and huge companies, vertical integration	Big agro holdings and enterprises as well as house farms and small companies	Large-tonnage chemical- big companies	Small and medium enterprises	Big companies, vertical integration	Big companies, vertical integration	IT – SME Telecommunication sector- big companies
Main trends in Russia and other world	Mass demand- mergers; global market cartels, optimization, new global players	Combining of productions, located in different world countries	Development of farmers	New players from Asia. Increasing comp. role of small (low-tonnage chemicals)	Increasing of M&As; creation of integrated comp.; new players from China and India	New world players from Brazil and China	New players	Increasing of new small firms; Big comp. go to services markets

* Estimations made for 2009-2010 years

Figure 3. Basic models for pharmaceutical and medical industries



High-tech response to modern challenges and new opportunities

By Peter Coachman

Despite very challenging business environment and economical conditions of 2008 Technopolis continued its vigorous expansion both in Finland and in Russia and it proves the fact that tough times is the right moment to turn to innovative way of thinking and different business models based on cutting-edge technologies and ideas.

The Russian innovation system has not obviously been formed yet or at least it can't be claimed a working and effective system. Due to a continuous underfunding and general country crisis nothing substantial has been done for years to recreate the innovation infrastructure or mechanisms.

Nevertheless St.Petersburg has huge potential as a science and educational centre. It is one of Europe's leading R&D hot spots and an attraction point for the whole-world R&D community. It's common knowledge that unique research work and cutting-edge technologies in various fields of basic and applied science are developed here.

However high technologies require above-average management. Technopolis sees its role in creating such a favourable and efficient innovation ecosystem which will make the innovative product go successfully through all stages of development from the idea to commercialization and entering international market – that is the key question for Russia and St.Petersburg in particular.

What is done in practise to make this wheel turn? There are three major components of effective innovation system:

1. Ideas
2. Funding
3. Clients.

Technopolis uses its best practises accumulated during more than 25 years of business development activities to connect these three crucial elements and create favourable conditions for their cooperation. Carefully screened and selected innovative ideas grow in our start-up centres, through Technopolis tools they get access to affordable sources of venture capital while wide client network provides an opportunity to promote and sell packaged products in the market.

Serious steps have been taken in 2008 towards creating St.Petersburg innovation ecosystem. In cooperation with St.Petersburg Technopark OJSC, Technopolis launched Technopolis-Ingria incubator which will provide business development services to knowledge-based start-ups, internationalization and growth services to promising young entrepreneurs in St.Petersburg. Simultaneously we launched regular networking events for IT and high-tech companies which bring together the interests of companies, investors and end-users in order to organize mutually advantageous cooperation in this sensitive and highly-specialized environment.

Technopolis is creating a first-class operating environment for high-tech and knowledge-based business which will serve as a platform for their development and internationalization.

In 2008 Technopolis started construction of Pulkovo technopark and already made impressive progress in construction works. Pulkovo technopark is constructed in the immediate vicinity of the International airport creating unique concentration of high-tech business at the crossroads of numerous transport routes. The first stage of technology park totaling over 80 000 m² is scheduled for completion at the end of April 2010. It will offer 23 000 m² of ultra-modern flexible premises tailored to the needs of high-tech companies in design, lay-outs, communication data systems and infrastructure which ensure that no valuable development will be lost of the sight.

Creation of the first Technopolis technology park in St.Petersburg is intended to boost the community's business and innovation dynamics, provide a foothold for new knowledge-based companies to grow and help to transform St. Petersburg into a world class business and innovation hub.

Peter Coachman

Director of Russian Operations

Technopolis

Russia



Russian Technology Transfer Network – gate to Russia's innovations

By Oleg Luksha

One particular challenge to Russia's ability to translate intellectual capital into economic opportunity – a challenge that is not only surmountable but also has the potential to alleviate other innovation barriers – is the lack of networking skills among Russian technology and R&D organizations. A culture of innovation based on open networking and information sharing, attributes that characterize innovation hubs like Silicon Valley, has yet to fully develop in Russia. Such a culture is crucial for successfully seeking and collaborating on international projects and bringing innovation to the market. The current dynamics of Russia's innovation culture are by and large the legacy of the Soviet system, which kept information centralized and closely guarded. Many post-Communist researchers, professionals and policymakers – regardless of their talents and the sincerity of their efforts to build an innovation economy in Russia – grew up under this system and do not have the necessary networking skills to leverage relationships both within Russia and, most importantly, beyond its borders. Support is needed to nurture new ways of networking, sharing information, and creating an innovation infrastructure across Russia.

Understanding these challenges and taking steps to proactively address them were the driving forces behind the creation of the Russian Technology Transfer Network (RTTN). Since its founding in 2002, RTTN has worked with the global business and research community to tap into the scientific and technological advances made in R&D centers and universities across Russia. RTTN, with its coordinating team based in Obninsk, Kaluga Region, is an association of over 90 Russian innovation centers from more than 40 regions of Russia and the CIS that aggregates information on R&D offerings and requests in Russia and neighboring states and serves as an entry point for potential technology partners. Given Russia's vast territory, its potential language barriers and information gaps between Russian regional and foreign entities, RTTN's work is a critical element to developing the country's national innovation infrastructure.

RTTN has two main objectives:

- To facilitate technology transfer between Russia's science and technology sector and various industry players through information dissemination. This is achieved through the organization's online database of technology offers and requests, which includes information coming from the local databases of RTTN members across Russia and the CIS.
- To help its members, which are mostly Russian SMEs and R&D organizations based outside of Moscow, build the capacity needed to identify and pursue international partners and cooperation opportunities. This is done through various networking opportunities and capacity-building initiatives, including conferences, brokerage events and workshops for RTTN members, partners and clients.

Rather than being created by government initiative, RTTN was developed from the ground up, and its growth has been reinforced by the will of its members. The network was initiated by the Obninsk Center for Science and Technology, a leading Russian R&D center located in Obninsk, in partnership with the Koltsovo Innovation Center, which is located in the Novosibirsk Region. To build the network's capacity, the centers sought cross-border collaboration opportunities through various EU entrepreneurship programs, including the Technical Assistance to the Commonwealth of Independent States (TACIS) program, which is currently integrated with EuropeAid. Since 2008, RTTN together with other two networking organisations in consortium – Russian Union of Innovation Technology Centers and Russian Agency for SMEs support, became a member of the Enterprise Europe

Network (EEN), a group of more than 580 regional business support organizations from 47 countries (EU member states, associated countries and third countries), including chambers of commerce, technology centers and research institutes that provide integrated business and innovation support services for SMEs. Through the national project Gate2RuBIN (Gate to Russian Business and Innovation Networks) EEN Russia consortium attracted the best business and innovation support organisations from Russia to EEN activities being one of the most active third countries partners in EEN.

To specifically address the lack of networking savvy, RTTN developed and published a networking guide entitled, "How to Effectively Network/Communicate in International R&D projects." The guide, available in both English and Russian, was created under the framework of FP7 ISTOK -SOYUZ project, which is an EU project designed to promote R&D cooperation and knowledge transfer between the EU and Eastern Europe and Central Asia. Inno Group, a Europe based consulting company that designs and implements innovation strategies, was also instrumental in helping RTTN establish itself and launch such initiatives as the guide.

As a result of RTTN's initiatives, RTTN centers have become the backbone of the innovation infrastructure in many of Russia's regions, especially driving forward international cooperation initiatives. The Novosibirsk-based company Dia-Vesta, which has produced sugar-free, vitamin-fortified muesli bars and other health foods since 1999, serves as an excellent example of the importance of building an international networking capacity.

A few years ago, Dia-Vesta turned to RTTN's Novosibirsk affiliate, Innovation Center Koltsovo (ICK), to find a partner to jointly manufacture muesli bars with prebiotics and probiotics and market them in Europe. Under the guidance ICK and with the active support from other Gate2RuBIN consortium members, Dia-Vesta participated in the 4th Taste-Nutrition-Health International Congress, which was organized by the EEN in Dijon, France in March 2009. ICK provided a package of marketing and business services to equip Dia-Vesta for the event, including developing the company's technology profile, creating presentations, commercial proposals, hand-outs and advertising materials, assisting with obtaining visas, and finding Russian-French interpreters. As a result, Dia-Vesta successfully established contact at the event with the Slovenian company Fructal, which sells fruit juices and fruit-based snacks throughout Europe. Following additional negotiations in Slovenia, Dia-Vesta and Fructal agreed to partner.

Such success stories are proof that innovation and intellectual capital are quickly becoming key factors for regional competitiveness in Russia, replacing more traditional factors like natural resources endowment, location and physical labor capacity. Through the work of RTTN and similar initiatives, Russia is creating an innovation infrastructure and re-defining its R&D culture from the ground up.

Oleg Luksha

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The development of the nanotechnology industry in Russia

By Richard Connolly

Since 2007, the development of a competitive nanotechnology industry has been identified as an issue of considerable importance by the Russian government. As part of wider efforts to promote economic modernization in Russia, the government has committed significant resources to support an active industrial policy to help achieve this goal, making Russia one of the world's largest state spenders on the nanotechnology industry. However, Russia's location, far behind the global technological frontier, has hampered state efforts to ignite a wave of activity in this industry, suggesting that state efforts to create high-technology, knowledge-based industries might be inappropriate for a country at Russia's stage of economic development.

While state efforts to develop the nanoindustry in Russia have been, at least in material terms, impressive, there remains much work to be done. There are strengths on which to build. Russia appears relatively strong in theoretical research: it ranked eighth in nanotechnology publications between 1991-2007, behind China and Korea, but ahead of Italy and Switzerland. Public spending on nanotechnology research is currently among the highest in the world. A small but dynamic private sector exists: for example, NT-MDT, which specialises in scanning probe microscopes, is ranked second in terms of sales volumes on the world market. The firm reinvests c. 15-20 per cent of revenues in R&D and has forged a number of associations with foreign companies. In terms of regional distribution, some regions are especially active, with most nanotechnology activity concentrated in Central and North West okrugs (Moscow, St Petersburg, Tomsk, Kaluga, Perm).

However, the weaknesses remain severe. Russia performs badly in the commercialisation of research, ranking 16th in world in number of patents related to nanotechnology – behind Korea and China, a meagre 0.2 per cent of the global total. The industry is overwhelmingly state dominated, with over 80 per cent of all investment in nanotech-related activities in Russia subsidised to some degree by the state. The acceleration of state investment since 2007 means that this tendency is unlikely to be reversed. Of particular importance is the fact that nanoscience infrastructure is – compared to the EU, USA and Japan, at least – extremely underdeveloped. While this remains the case, it is difficult to see Russia making any significant strides as a major nanotechnology actor. This manifests itself in the relatively small number of R&D personnel in fields of nanotechnology and nanoscience: c. 14,500 in 2009 (3.9 per cent of all researchers) compared to c. 150,000 in the USA in 2008.

There are also a number of weaknesses in the specific mix of policies designed to stimulate activity in the nanotechnology industry.

First, it is not clear that the efforts made so far will result in a significant expansion of private sector activity in the Russian nanotechnology industry. The co-financing element of Rosnano's activity – arguably the primary feature of Russia's industrial policy – means that any company will, to some degree, experience partial state ownership. While the state share does not, in most cases, exceed 49 per cent, it is certainly true that Rosnano – a state agency – makes the key decisions on lending. Moreover, it is not clear what role the state will play in those ventures that have been co-financed by Rosnano. The company claims that after 3-5 years, the state will relinquish its share in the co-financed projects. However, it is not clear that Rosnano will be able to relinquish its stake in unsuccessful ventures. If there are no buyers, will the state be prepared to make significant losses? In short, a clear mechanism for 'letting losers go' is required if the policy is not to turn into an open-ended rent-seeking arrangement.

Second, the wider, non-Rosnano related private sector will also need to grow if current policies are to be considered successful. However, while private sector investment in nanotechnology surpasses government financing in most other countries, the opposite is true in Russia. This resulted in a less

privileged position for Russia when its total funding for nanotechnology development was compared with that of other countries. In 2010, there were few private investors in Russia, and foreign capital had shown little interest in high-tech industries such as nanotechnology, presumably due to the poor climate for long-term investment. Investors from developed countries are able to bring important capital to Russia, as well as ideas about corporate management, governance, and reporting and accounting standards – not to mention the fact that joint ventures are perhaps the most effective way of achieving technology transfer. While foreign activity remains subdued, the prospects for private sector development in nanotechnology appear especially bleak.

Third, there is only a muted demand for nanotechnology products in the Russian economy. This low demand is generally correlated with wider high-technology production levels. In Russia, high-tech products account for a small proportion of production and exports, so it should be no surprise that demand for nanotechnology products is correspondingly low. Without significant levels of sustained demand for these products, it is highly unlikely that supply – in the form of production facilities that allow high volume serial production of quality micro-components – will expand. If this continues to be the case the ambitious targets outlined in the 2007 strategy are unlikely to be achieved.

A wider issue – and perhaps the most important one – is whether the sort of industrial policy typified by efforts in the field of nanotechnology is really appropriate for a country like Russia. Russia's level of per capita income relative to the USA and the EU shows that Russia is located some way behind the global 'technological frontier'. Broadly speaking, if a country is, like Russia, located some way behind the frontier, its mix of policies to promote economic modernization should include efforts to upgrade technologically through cooperation with foreign companies (through inward foreign direct investment [FDI], for example) and the import of embodied technology. The effective acquisition, absorption and diffusion of foreign technology requires policies designed to enhance the absorptive capacity of an economy. Public policy should, for example, focus on attracting FDI and then embedding these actors within Russia's domestic economy by integrating FDI and stimulating multiple linkages between foreign and domestic firms. This type of process would be a slower and less grandiose path to modernization; it would also be much more likely to achieve significant results.

Ultimately, then, despite the promise of significant resources being allocated to the likes of energy efficient technology, nuclear technology, space technology and communication, pharmaceuticals, and strategic information technology, the fact that Russian industrial policies are not appropriate for the domestic context means that modernization Putin-style is quite unlikely to result in anything other than, at best, the development of small 'enclaves' of innovation, weakly linked to the wider Russian economy, and too small to generate wide-scale economic modernization.

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Russian intelligence services can help domestic nanotechnology – by keeping at arm's length

By Fredrik Westerlund

Since 2007, Russia has been committed to a major effort to develop its domestic nanotechnology and industry as a means to modernize the Russian economy and society. There are many ways to boost national science and technology (S&T) and industry, and each state tends to combine a number of options. Increased spending on domestic research and development (R&D) is one way. Intensifying and deepening international cooperation is another. A third way is to create a domestic environment conducive to innovation and research.

Furthermore, national intelligence and security services can supply foreign know-how and technology through espionage as well as providing protection from foreign industrial espionage. This is particularly tempting for countries wanting to leap ahead without making the necessary fundamental institutional changes in order to become more innovation-friendly.

Russian nanotechnology initiatives: little and late

The Russian Government entered the nanotechnology race late, but has devoted substantial sums to developing domestic science and industry. Over 100 bn RUR has been allocated up to 2015 and it was the leading government investor in 2009. However, since private and foreign investments are only modest and the infrastructure is underdeveloped, Russia has been losing ground in both nanotechnology research and patenting. Russia also lags behind in international evaluations of the innovation and business climate. Its main advantage in nanotechnology is its relatively strong position in international research and patenting collaboration.

Intelligence service support: a promising short cut ...

Official Russian documents and reports from foreign intelligence services as well as assessments by scholars and former Russian intelligence officers suggest that the Russian intelligence services are collecting S&T intelligence abroad. In the Soviet era, a clandestine organization was created to collect intelligence for the biological weapons programme. It is reported to have survived and could be used to support R&D in the area of nano-biotechnology. The Soviet nuclear weapons programme was accelerated by intelligence-gathering abroad. The nuclear weapon research organization's successor, the Kurchatov Institute, enjoys a central position in the Russian nanotechnology effort.

The Russian security services can also support Russian nanotechnology by providing protection from foreign intelligence services and corporations. Safeguarding Russian science and industry has been one of the tasks of the Federal Security Service (FSB) since its creation in 1995. As late as December 2008, the head of the FSB directorate for the Saratov region singled out Russian nanotechnology projects as being of particular interest to foreign special services.

... or a dead end for Russian nanotechnology?

Intelligence service support could be a tempting short cut when other avenues to developing Russian nanotechnology science and industry are uncertain. It could, however, prove to be a dead end. First, the Russian intelligence services are not as efficient as their predecessors. They cannot rely on assistance from allied intelligence services or on ideologically motivated spies as they could in Soviet times. Furthermore, corruption within the services takes its toll on their efficiency.

Second, extensive collection of S&T intelligence abroad does not automatically imply dividends for domestic science and industry. A successful transfer of foreign technology is dependent on the capacity of the recipients to make use of the information they receive. Russian nanoscience lags behind in several areas and the domestic nano-industry faces severe challenges in converting scientific advances into competitive mass-produced products.

There are also several risks connected with intelligence service support. Reliance on intelligence may dull the edge of science by making it reactive and dependent on foreign findings. Furthermore, the security mindset of intelligence services, with its emphasis on risk reduction, is in many ways the opposite of a climate conducive to research and innovation.

The most important aspect of intelligence support to Russian nanotechnology is its potentially negative impact on cross-border cooperation. If the security services in other countries suspect that Russia is spying, the flow of knowledge into Russia could suffer. Foreign companies and research institutions will be alerted to the risk of espionage, and access to state-of-the-art science abroad could become restricted for Russian researchers and engineers. Moreover, over-zealous security service officers could harm Russian nanotechnology. In 2007, several charges of espionage were brought against Russian academics. In January 2010, a Russian Academy of Sciences institute director complained over the close attention the security services were paying to Russian scientists and over trumped-up charges of espionage. Such activities could result in scientists refusing to take part in international research projects or declining funding from abroad.

In an era of technological globalization, international cooperation is of the utmost importance for scientific and technological progress. As mentioned above, Russia's primary strength in nanotechnology research and patenting is its comparatively good position concerning international collaboration. Intelligence support efforts could undermine Russia's main advantage in the field of nanotechnology. Indeed, the Russian intelligence services would perhaps serve domestic nanotechnology best by keeping a distance.

Note: The views expressed in this article are the personal opinions of Fredrik Westerlund. They may not reflect the views of the Swedish Defence Research Agency nor Swedish Government policy.

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Ioffe Institute and its contribution in the development of nanotechnology in Russia

By Andrei G. Zabrodskii

The history of the Physical-Technical Institute originates from September 23, 1918. The first director of the Institute, Abram .F. Ioffe — an outstanding scientist and science organizer — laid principles of its effective operation, which rapidly promoted the Institute to among world's leading research centers. These principles are the following: combination of basic research and the ensuing applied studies; determination to tackle with most important problems in the development of science, economy, and defense potential of the country; and training of skilled personnel at the base Faculty for physics and mechanics, created by A.F. Ioffe at Leningrad Polytechnic Institute.

The Ioffe Institute is the cradle of domestic physics, in which the future Nobel Prize laureates, N.N. Semenov, L.D. Landau, P.L. Kapitsa, I.E. Tamm, and Zh.I. Alferov, commenced their scientific careers and worked. About 20 country's educational and research institutions have originated with active participation of the Institute staff members. The world's fame was brought to the Institute by works in solid-state physics, semiconductor physics, quantum electronics, power semiconductor electronics, astrophysics, physical gas dynamics, nuclear physics and controlled fusion, plasma physics, and semiconductor heterostructures. At present, studies of Institute's scientists cover nearly all areas of modern physics.

Now the Institute comprises 64 scientific laboratories grouped into 5 research divisions. Its staff counts 1058 researchers, including 260 Doctors and 560 Candidates of science.

The Institute initiated and coordinated the State program in the field of carbon nanostructures: fullerenes, nanotubes, nanodiamonds, etc., in 1994--2004. At present, the Institute develops techniques for production of nanoporous carbon, detonation nanodiamonds, and graphene for electronics and medicine.

In 1995, the concept of three-dimensional (3D) photonic crystals based on a periodic matrix of synthetic opals was put forward and then implemented at the Ioffe Institute. Ultrafast (~100 fs) photoinduced switching of the photonic energy gap has been achieved in 3D photonic crystals based on opal-semiconductor nanocomposites. A new class of optical materials, photonic-phononic crystals for ultrafast control over light fluxes, has been created.

Studies in the field of molecular-beam epitaxy of modulation-doped nanoheterostructures in the systems AlGaAs/InGaAs/GaAs and AlInAs/InGaAs/InP, commenced at the Ioffe Institute more than 20 years ago, laid foundations of the domestic industry of microwave heterostructure field-effect transistors and made it possible to create Russia's electronic components for radar, telecommunication, and satellite navigation systems. The development of techniques for fabrication of short-period semiconductor superlattices with high structural perfection has resulted in that electronic components for terahertz devices were created.

The Ioffe Institute conducts research in the field of epitaxial growth of heterostructures based on wide-bandgap materials (GaN). Methods for fabrication of effectively emitting quantum dots in the InGaN system have been developed, and LEDs for the spectral range from ultraviolet to red have been created. A technique for fabrication of monolithic white LEDs has been developed. End-face and surface-emitting laser structures have been fabricated. Vertical lasing in Bragg-cavity structures under optical excitation at room temperature has been obtained for the first time in the world.

During about half a century, the Institute has been occupying world's leading positions in research and development activities related to semiconductor heterostructure lasers: the first patent was obtained in 1962, continuous-wave lasing was achieved in 1969, record-breaking current density (40 A/cm²) was reached in 1988, an injection laser on quantum-dot structures was created in 1994, and world's record in the efficiency of a semiconductor laser (74%) was set in 2004. At present, Institute's developments serve as a basis for setting production of semiconductor heterolasers for various purposes in the country.

Ioffe Institute's scientists have made a major contribution to the development of high-efficiency solar cells based on nanoheterostructures. Here, heterostructure solar cells were created for the first time in 1969. Industrial manufacture of space solar cells with increased efficiency and improved radiation hardness was organized in Russia on the basis of these studies. Terrestrial solar photoelectric power installations based on cascaded photovoltaic converters and solar light concentrators, which make it possible to diminish by up to a factor of 1000 the area of the converters, have been developed at the Ioffe Institute. Because of their high efficiency (more than 37%) and precise tracking of the Sun, installations of this kind provide a 2--3-fold increase in the per-unit-area electric power, compared with silicon and thin-film cells.

The Ioffe Institute was one of world's research centers at which studies in the physics and technology of amorphous and glassy semiconductors were commenced. Here, an industrial technology for plasmochemical deposition of films of these materials for thin-film field-effect transistors, liquid-crystal displays, and solar cells was developed or the first time in Russia. Studies in the theory, technology, and experiments on photo- and electroluminescence in Si:Er at a wavelength of 1.55 μm, aimed to develop electronic elements for silicon optoelectronics and LEDs working at room temperature, have been carried out at the Ioffe Institute. A technique has been developed for obtaining silicon nanoclusters in a dielectric matrix for light-emitting structures. In 2011, the Research center "Thin-Film Technologies in Power Engineering" was organized at the Ioffe Institute in order to develop technologies for manufacture of thin-film micromorph units.

A technique for fabrication of an effective nanocomposite catalyst based on functionalized carbon nanotubes has been developed at the Ioffe Institute. The utilization efficiency of platinum in air-hydrogen fuel cells has been raised by up to a factor of 5, and their specific power has been doubled. A specific power of up to 600 mW/cm² has been reached for fuel cells with a platinum content of about 300 μg/cm². Promising designs of compact power sources in the configuration with a free-breathing cathode and electrochemically stable materials have been developed.

In recent years, the Ioffe Institute has become one of the most prominent partners of Open Joint-Stock Company "RUSNANO" created in order to develop high-tech nanotechnology-based industries in Russia.

Andrei G. Zabrodskii

Corresponding member of the Russian Academy of Sciences

Director of the Ioffe Institute

Russia

The "Triple Helix" of the Polymer Cluster

By Sergey Tsybukov

A working model of "Triple Helix" is started in St. Petersburg. It is a modern mechanism of partnership between government, business, scientific and educational community to organize innovative development of the cluster. For the first time several innovative financing mechanisms, training, shared responsibility and risk minimization are incorporated in a single project. This model is unique and have no analogues. It was brilliantly realized on the basis of one of the St. Petersburg Polymer Cluster projects - the newly opened the Prototyping Center of items from composite materials and coatings application. Our interlocutor is Sergey Tsybukov, General Manager of the LLC "SPA on plastic processing named after "Komsomolskaya Pravda":

- Sergey, what a prototyping center is and how the "Triple Helix" model works here?

- The Prototyping Center is a transition from a prototype model to the mass production. Our Prototyping Center of items from composite materials and coatings application, opened on March 15, 2011, was established to support small and medium enterprises engaged in innovation activities. This is a joint project of The Ministry of Economic Development, Government of St. Petersburg, Polymer Cluster and the St. Petersburg State University of Information Technologies, Mechanics and Optics (ITMO). The Prototyping Center establishment was invested by the polymer cluster, the St. Petersburg budget and The Ministry of Economic Development. SPbSU ITMO provided the part of the equipment to the Center through ITMO basic chair, which is opened at the LLC Plant "KP".

The equipment is a significant component of the successful Prototyping Center work. However, people who work there are the most important component. In this matter we were lucky enough to engage cooperation with ITMO and the Higher School of Economics at SPbSUEF. These departments prepare for us a team of specialists, including post-graduates (science), engineers (production) and managers (economy) with a basic technical education. These guys have studied at ITMO and have participated in research-and-development activities for the Prototyping Center. Now they earn money using their R&D at the Prototyping Center, write research theses and teach students the practical work in our Base Department.

In the future, some of them will teach at the university, somebody will be invited to work at the public office. Thus, we can see a coherent string of logic: education at the university - practical study (in part due to the city budget) - work in the Center - knowledge and skills transfer to young people - economy management. This is how the "Triple Helix" works: when a company is able to order R&D to the university, a university is ready to do this research, to train personnel and to educate leaders who will implement this research. The state co-finance the process, as its support is indispensable at some steps. But all the invested money is given back by raising taxes.

- Is it possible to find out more about results of your work?

- We will report about it at the roundtable discussion "Triple Helix" model benefits for Russia innovative development" in the business program of the Forum "Russian Industrialist - 2011". At this forum we will tell

about the basic department of ITMO established under the Polymer Cluster, about our work experience, we will also show samples, etc.

- What do you think about weak spots of the classical technical education?

- We must eliminate the huge gap between the classical technical university and the real research institute or the real production. The weak spot of the classical technical education is the situation when people come to work and don't understand how to make money on their knowledge. Unfortunately, our project is one of the few in the city. And they must be dozens.

- What is the current Prototyping Center load ratio and what are its prospects?

- We already have more orders now than we can execute. At the moment there aren't companies in the city with enough competencies to bring a project from concept to realization in a limited edition. That's why we think about staff increase and new equipment purchase.

Now we have a large R & D with "Vodokanal of St. Petersburg", where we implement new coatings, and a project with CSRI named after A.N. Krylova on the use of modern shipbuilding de-icing materials. We will continue to work with Russian Railways, RUSNANO and other public and private institutions. What about our city, we can offer the latest technologies in anti-corrosion and other protective treatment of the buildings elements (roofs, attics, basements), resolve the problem of energy conservation. Unfortunately, the Housing Committee continues to consider our proposals. I hope that the gubernatorial election will cardinaly change the situation and the attitude to Russian know-how.

I'd like to emphasize another near term prospect for the Prototyping Centre development. An international company TomasGroup, business consultant of leading companies in the world, will conduct training on business processes for our specialists. The experts of this company believe that our Center (in case of specialization in nanotechnology for structural materials and coatings creation) should become the leader among 145 world's leading prototyping centers. As a result, our project should become self-developing: we begin to engage more and more resources and complete the increasing number of tasks.

Sergey Tsybukov

General Manager

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The interview was written by Aleksander Kibalnik and it was earlier published at "St.Petersburg in the Mirror".

University in innovative space region

By Ilya Romanovich Shegelman

Founded in 1940, Petrozavodsk State University (PetrSU) is one of the largest multidiscipline classical universities in the European North of Russia. Till 1956 the facility had been referred to as Karelian and Finnish State University. Today PetrSU plays the leading role in research, staffing and technological support to social and economic development of the Republic of Karelia (RK). It develops the most advanced technical and process solutions, innovations and cross-border international cooperation. In the course of 70 years the University has trained over 60000 specialists for different branches of the economy and social sphere.

PetrSU does research in 22 scientific fields and in 43 priority subject areas. Researchers of the university complete about 300 research, educational and commercial projects annually. The most significant fields are the ones related to the development of information technologies, mathematical modeling and electronics; some are connected with solving the issues of comprehensive and rational use of forest, mining, water, fish and other resources, environmental protection, including human ecology, modernization and development of education, studying languages, literature and culture of the people of the Russian North.

PetrSU is an important segment of the regional innovation system of Karelia and it implements the whole range of fundamental and applied innovations, R&D, commercialization and transfer of developments and technologies. The University has got over 60 research and training teams (schools) in different areas of natural and technical sciences and arts.

Thanks to the efforts of its employees, the University is transforming into a special training, re-search and innovation facility aiming – besides all – at implementing a complete innovation cycle dealing with creating innovations. It means that the University targets not only fundamental, exploratory and applied research, but also strives for creating innovations, their commercialization and transfer. It is very important that innovative activities are combined with training, i.e. creativity of students is enhanced by joint scientific research done by teachers and students. The findings are published in monographs, collected works, textbooks, guidebooks, articles and abstracts of reports at scientific conferences. All in all, teachers and researchers of the University produced 3574 publications including 130 monographs, 247 textbooks and workbooks, as well as 3197 articles in scientific journals in 2007-2009 only.

One of the major innovative subdivisions of PetrSU is IT-park, which employs over 330 persons. The key segments of the IT-park is the International Center of PetrSU-Metso Automation Systems, International Center Nokia-PetrSU Mobile Devices, International Center for wireless telecommunication systems, International laboratory of mathematical modeling and software development for natural resource facilities, Center for software development for production control, Center for developing and introducing automated process management systems. The IT-park will to a large extent contribute to the establishment of creative capabilities in young generations. This up-to-date innovative division of the University is one more step towards strengthening the influence of Petrozavodsk State University not only on the development of training and research in our region but also on the development of its economic and social sector. Every year the University makes a stronger

impact on the activities of the Government of the Republic of Karelia, and it is turning into an extra expert and analytical center for the whole range of issues and challenges.

We are hoping that the University innovation facility – the IT-park being a part of it – will gradually solve the key issue of innovative development, i.e. matching the interests of R&D and business. Expectations of the business sector from researchers are known on the whole, and those are considerable reduction of production costs with no damage to quality, increase of production capacities of equipment and technologies, their automation, resolving complex R&D tasks that cannot be solved by local engineering communities etc.

As of today, the innovation facility of PetrSU comprises 49 innovative and infrastructural sub-divisions including IT-park, Regional Center for transferring technologies, Regional Center for new information technologies, Center "PetrSU-Metso Automation Systems", Budget monitoring center, International R&D Center "Plasma", R&D Center for designing and extracting open pit mines, 3 research institutes (Karelian Research Institute of Forest Industry, Northern Fisheries Research Institute and RI of Historical and Theoretical Problems of People's Architecture), specific research centers and laboratories (mathematical modeling, planning optimization, electronic database development and management for forest industry, comprehensive use of forest resources, environmental problems of the North, challenges of Scandinavian countries and Finland etc.), Center for collective use of research equipment, Karelian Medical Research Center under Northwestern Branch of the Russian Academy of Medical Science, Regional center for international cooperation in the European North, Northern European Open University, Karelian Information Center of the European Union, Karelian Center for Canadian Studies, branches of university departments at enterprises and organizations, and the students' Business Incubator established in 2010. Special attention is paid to the issue of protecting intellectual property. Department for Protection of Intellectual Property and Inventions was opened, students are trained in this sphere, and innovation contests are conducted for young people.

The enterprises established by the University in 2010 take part in innovative activities: Invest-businessconsulting, Optisoft etc. In 2010, PetrSU also founded several new innovative research and training centers, and the most promising one is Economy Security Center, which studies the questions of economic security and sustainability of the whole region and some specific enterprises, covering the issues of employment, migration, people's income, budget effectiveness etc.

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Russia

Foreign investment in the strategic sector of the Russian economy – fundamentals and expectations

By Igor Yurgens

A radical socio-economic transformation has lasted almost twenty years in Russia. This process one can in general describe as successful, but to talk of its completion is currently not possible. However, the current year for us in this respect has been a year of great expectations.

The Russian government has at last grasped why the country needs full-scale strategic modernization, and what such modernization requires from the government itself and from its various offices.

The state – slowly but surely – is changing, reorienting itself toward completely new tasks, and acquiring totally new functions. These are supporting functions, the economic policy of which consists first of all in the creation, support and development of an environment favorable to business.

Russian President Dmitry Medvedev has already more than once declared that the formation of the best conditions for investment – both internal and external – has become one of the primary areas of work of the Russian government. The adoption of the Law on Foreign Investment in the Strategic Sector has confirmed how the preparedness for such work is genuine, but at the same time has shown that the effectiveness of these efforts can be noticeably lowered by certain negative influences.

The myth circulating beyond the borders of Russia that the law contemplates a ban on investment is clearly unfounded. Those with experience in investing in the strategic sector of the Russian economy, together with those who had the intention of doing so, fully understood the necessity of the creation of a statutory document of this sort. The clear and sufficiently transparent procedure for obtaining official permission is much better than numerous informal contacts with uncertain prospects. And strict determination of sizes of portions of shares in an enterprise - requiring sanctioning upon purchase, plus a clear establishing of borders between strategic and non-strategic sectors, represent a much more convenient state of affairs than the duplicated control of particular procedures scattered among separate industry laws. All the new introductions, without a doubt, have improved the investment climate.

There is also the other matter of the idea that the strategic section of the Russian economy, mirrored by the large volume of work on its legislation, has considerably (and, I assume, unjustifiably) expanded. I think that practical experience in introducing laws on foreign investment will help the legislators somehow narrow the sphere of its application.

At the moment, however, to talk of such experience is not possible. No matter how much one improves the investment climate in a particular country, the global economic crisis will nevertheless still have its say, and, at the moment - the final say.

To date, the Commission on Foreign Investments, chaired by the Russian Prime Minister, has not turned down a single transaction falling under its competence. However, those approved number only two: the purchase of 25% of the shares in the Sukhoi civil aircraft manufacturer by a subsidiary of the Italian company Alenia Aeronautica to develop together the Sukhoi SuperJet-100 range; and the acquisition by De Beers of 49.99% of

Arkhangelskgeologodobycha shares owned by Lukoil with a view to development of the Verkhotinskaya diamond field. It was also announced that by early 2009 another five large transactions will be reviewed by the Commission. But it is clear that the Russian government is incapable of bucking the general trend: investment activity is falling, especially in big business. And we cannot expect any positive shifts here.

However, the global financial crisis (no matter how deep it gets) does not remove the need to modernize the Russian economy and the whole political and socio-economic system. Nor does the crisis cancel the objective set by Dmitry Medvedev at the Krasnoyarsk Economic Forum in February 2008. The President pointed to the need to concentrate on four main issues in the coming four years: institutions, infrastructure, innovation and investment.

Efforts aimed at enhancement of the investment climate should not depend on how impressive annual economic growth indices are. Contemporary development of the economy, presupposing the creation of optimal conditions for foreign investment, is a long-term project, which does not anticipate any temporary freezing. Indeed, delaying such a project could bring about collapse.

Regardless of certain weak areas, the legislation regulating the pattern of foreign investment into the strategic sectors of the Russian economy became an important step in the context of implementation of the modernization project. The barriers that have been established by the legislators are much more rational than those which they replaced. However, this legislation is by far not the key factor in reflecting the attractiveness of Russian business to foreign investors.

There are a number of restrictions that prevent Russia from securing the kind of investments that would be optimal in terms of both volume and, what is more important, quality. Such restrictions include the following: the inefficiency of the legal system; insufficient protection of private property; widespread assumptions about the absolute power of Russian corruption; the lack of trust in relations of the business community, the state and civil society; the preservation of the raw-material orientation of Russia's export policy; and the growing confrontation between Russia and the US and some European countries resulting from a more active Russian foreign policy.

If the Russian government puts enough effort into solving these problems – and mention has been made of this effort more than once, and initial steps have already been taken – I think that the consequences for the investment climate will be impressive, regardless of the state of the global economy.

Igor Yurgens

Chairman of the Management Board

Institute of Contemporary Development

Russia

Main peculiarities of the Russian intellectual property legislation

By Igor Nevzorov

A combination of certain principles inherited from the Soviet times and set of legal concepts adopted from the Western law, the Russian intellectual property legislation currently is one of the most unusual and complicated laws in the modern world.

Now, as opposed to the legislative structure in most European countries, most of IP rules in Russia are codified. IP codification enacted since January 2008 is a continuation of a Soviet tradition where all IP regulations were combined into one code (the 1964 Civil Code).

The main distinction of the Russian IP regulation is the priority of the so called "imperative rules" of the Russian legislation over any other regulations contained in foreign law. It is directly established¹ that, despite of any foreign rules regarding intellectual property, the effect, volume, restrictions on and allowed use of IP in Russia are governed by the Russian Civil Code. Thus, any use or transfer of IP in contravention of Russian law will be deemed in Russia as illegal, null and void.

Russian "imperative rules" contain a number of specific provisions and requirements differing from those provided by Western intellectual property regulations. Among them the following are to be underlined:

- *Obligatory state registration of trademarks, service marks and patented items in regard to the Russian territory.* Where obligatory registration has not been completed, the IP is deemed as not legally existing in Russia. Therefore, companies generally have no legal protection and have no possibility to pay royalties for the use of such IP if it has not been properly registered.

- *Obligatory confidentiality protection procedures in regard to know-how.* Under Russian law, know-how is a separate item of intellectual property which comes into existence only after the company completes certain formalities to ensure the protection of the know-how (e.g., marking all know-how carriers with confidentiality labels, adopting internal policies to protect confidentiality, restricting access to the confidential information, etc.). If such measures have not been taken, the company will have no recourse if the confidential information is disclosed, and it will not be able to transfer (license) the information as know-how (rights to use know-how).

- *Obligatory state registration of IP transfer (license) agreements in regard to trademarks, service marks, patented items.* An agreement concerning registered IP (trademark, service mark, patented item) will be valid in Russia only after it is properly registered with the relevant intellectual property agency (Rospatent). If an agreement is concluded but not registered, it is deemed as having no legal effect in Russia.

- *Each IP license agreement should contain all "essential provisions" directly stipulated in Russian law (e.g., subject of the agreement specifying the item of IP to be transferred or licensed, ways and area of allowed use of the IP).* Otherwise, the agreement will be deemed as not concluded and having no legal effect.

- *Future IP may not be transferred or licensed.* The Russian law says that only the existing IP may be transferred or licensed. Therefore, if contracting parties intend to transfer (license) IP to be created in the future (but currently can't be precisely specified in an agreement since

it has not yet come into existence), the agreement will be deemed as not concluded and having no legal effect.

The above issues and peculiarities are important not only from the legal perspective (in regard to the possibility of IP rights protection in Russia), but also from the tax perspective. Where IP will is not deemed to be existing in Russia, or license agreement does not meet the requirements provided in the Russian law, there is a risk that the tax authorities may claim the expenses (e.g., royalties) incurred by one of the parties to the license agreement as economically unjustified or not documented. This may affect the company's income tax calculation in Russia so that the amount of income tax will be increased.

In regard to IP benefits provided under the Russian law but probably not available under the legislation of foreign countries, it is necessary to mention the following:

- Russian law provides a shorter (3 year) term for cancellation of trademarks due to non-use. Where a company does not use its trademark (e.g. in regard to certain registered classes of goods) over 3 consecutive years, the trademark registration may be fully or partially terminated at the request of any interested party,
- Russian law provides for a possibility to cancel a third party trademark if it was registered in an act of "unfair competition", i.e. if a company registers a trademark similar or identical to the logo of a competitor (even if such logo is not a registered trademark), then such registration may be deemed "unfair", and the trademark will be cancelled,
- Under the Russian law a company "automatically" has an exclusive right to use IP created by its employees as part of their employment duties. It will be sufficient for the company to prove that the author is its employee and was instructed by the company to create the IP.
- Russian law stipulates the possibility to patent in Russia feed and beverage recipes (e.g., bread, beer, etc.). Other companies will be allowed to use the same recipe only if proper consent is given by the patent owner or under a license agreement.
- Under the Russian law, IP may be used by third parties not only under license agreements concluded with the IP owner, but also based on unilateral authorization given by the owner (clause 1229 of the Civil Code of the Russian Federation).

The above peculiarities are specific to the Russian IP legislation. We assume that the Russian IP law will continue developing to become more Western-oriented and more consistent with current European IP regulation. However, the current requirements of the Russian IP law should be strictly adhered to by all foreign companies seeking to establish or expand their business in Russia.

Igor Nevzorov

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¹ Clause 1231 of the Civil Code of the Russian Federation

Russia – affordable Internet access across the country

By Aimo Eloholma

In the 20th century Soviet Union was lagging badly behind the Western countries in the development of telecommunications services. It didn't help although Lenin stated in 1920's: "Socialism without post, telegraph and telephone is nothing but a phrase." It is obvious that efforts were made during the Soviet times for high quality telecommunications between authorities; however in public telecommunications services for common people Soviet Union walked a few steps behind Western countries.

From emergence to saturation

The breakthrough of mobile communications has raised the Russian telecommunications back to a level which is proper for a nation with such forerun intelligence. For example in 1895 Mr. Alexander Popov invented and also the very first time in the world demonstrated to the public the use of radio waves for communications. Anyhow the breakthrough of GSM technology was reality in Russia only at the turn of the millennium. After that the development has materialised at an incredible rate. In 10 years Russia has developed from the emergence of mobile communications to the level of saturation and to one of the largest mobile markets in the world. Today Russia with its more than 200 million subscribers is TOP4 country after China, India and USA in mobile. When the commercial launch of new 3G technology was made in 2007-2008, Russia was anymore 2-3 years behind the most developed Western countries. The very rapidly expanded 3G network coverage in Russia has resulted in an enormous growth of mobile data communications (mostly use of Internet services); the growth in data volumes in biggest mobile networks has been 6 fold during the last 12 months.

But there is no great success without heavy efforts and investments made. Three biggest mobile operators in Russia, BIG3 (MTS, Vimpelcom and MegaFon) have invested 35 000 million USD to build up mobile network infrastructures to Russia's vast territory. In addition, this success has created a ground to the Government to set up a national goal for "affordable Internet access across the country". The Government has repeatedly said to ensure the chances to make the goal.

Diversification of economy

The implementation of the goal is utmost important to the Government. Russia is today unbalanced gas- and oil-producer and necessarily needs diversification of its economy and industry. Innovations will be in a big role in this diversification. A tool to boost innovation capabilities is to let information flow and to combine it in non-prejudice way. Internet is a perfect tool for this purpose. Also several researchers say that there is a clear correlation between broadband data services provided (used in Internet) and GDP growth rate.

At the moment Russia's PC as well as Internet access penetrations are lagging behind the countries where a well developed telecom infrastructure has been in place already for a long time. For example in USA and in several European countries the penetrations are in the range of 70-80%, but in Russia the penetrations don't even reach the level of 40%. There are assumptions that Russia will pass over the current penetration level of European countries in five years. This will not allow any failure in the goal of nationwide Internet access expansion. Capable mobile networks will support reaching the goal because the alternative solution, wire-line infrastructure is partly badly outdated originating from the Soviet times. There are high quality broadband services available in Moscow and in some other larger cities but it is difficult or even impossible to

build nationwide high quality wire-line networks due to the vast rural areas.

The flexibility of mobile networks creates solution for the vast territory. However, the original GSM voice communications technology is not suitable for good quality Internet access because of data transmission speed limitations. 3G technologies increases the speed considerably, enabling down loading speeds up to few tens of Mbit/s.

New LTE technology

User demands will still develop furthermore. Speed- and response time requirements in using Internet based services are challenging. In addition, also new demands for uplink speeds are obvious, e.g. user demands to send live video from his/her own mobile terminal. New services can be implemented in mobile networks by using 4G technology i.e. LTE (Long Term Evolution), providing Internet access speeds up to 100 Mbit/s. There is a clear desire in Russia to implement this new technology simultaneously with European countries. President Medvedev announced in his annual address to Parliament in November 2009 that 4G should be provided across the whole Russia in five years. LTE presents a good opportunity to make Internet access available at a moderate price to a large base of users.

Non-transparency in processes

There are always many different interests in a big country like Russia. LTE technology needs new radiofrequencies. The difficulty to distribute radio spectrum effectively is rooted to the fact that the military initially controlled nearly all the frequencies. Therefore the Government has not yet been able to give licences to utilise frequency spectrum to such operators who would have financial and competent resources enough to implement the new technology rapidly and in an extensive way. Mixing politics with granting the licences may risk the rapid implementation and cause a delay of several years to the commercial launch of new LTE technology. As a consequence the aforementioned big goal "affordable Internet access across the country" might in the course of time run away from control.

The delay in granting licences has brought again to light one of the weaknesses of procedures in Russian Government; the licence processes are not clear, nor transparent. Non-transparency gives always room for different interest groups to play. Therefore, and connected to this frequency distribution issue, Russia's BIG3 mobile operators have approached the Government, up to President Medvedev with an evident request that the licence and frequency spectrum processes should be clear and transparent. The importance of this request concerning the regulation and competition in Russia's telecommunications market extends far beyond the borders of specific industry and it applies partially to the development of entire economy of Russia.

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