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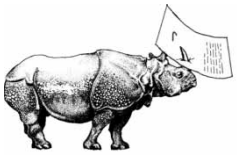

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HIGH TECH ON BRICS AGENDA: WHAT COULD RUSSIA PROPOSE?

Economic growth and the combined demographic, scientific, and industrial potential of the BRICS countries have turned the bloc into a global leader. Other global players are paying close attention to this format of international cooperation. BRICS nations are already working closely in the area of finance, but there is clear room for improvement in terms of cooperation in high-tech industries, which are crucially important for international security and economic growth.

Cooperation in the high-tech sector between the BRICS countries could go a long way towards resolving several global problems. In addition, it could further institutionalize the BRICS structure and give it greater practical meaning. Russia has traditionally been a leader in high tech. Using Russian experience in the BRICS format could therefore enable our country to play a more active role in addressing these problems and bolster its own standing in that informal bloc.

The most promising areas of cooperation in the high-tech sector include:

- countering cyberthreats;
- safe and secure development of nuclear energy;
- peaceful space exploration;
- high-tech technologies in the logistics sector, such as radio-frequency identification (RFID) technology.

One of the key modern trends is the rapid development and spread of new technologies. Over the coming decade that trend will become even stronger. Advanced technologies are often put to military applications. In many areas, the United States and its allies—the European countries, Japan, and South Korea—have come to dominate this technological race. The uneven and uncontrolled nature of growth in the above-mentioned areas is detrimental to the existing balance in the international system; it could even provoke a new arms race.

Russia remains one of the world's most technologically advanced countries. But rapid technological progress in the developed countries and the significant efforts being made by the developing nations to close the gap with the leaders are jeopardizing Russia's standing. Lagging behind the world leaders in peaceful technologies means a loss of international competitiveness.

INTERNET TECHNOLOGIES

It has become obvious in recent years that the BRICS nations must radically step up their cooperation in fighting cyberthreats. There is a clear deficit of effective mechanisms against transnational cybercrime. Meanwhile, criminals are developing ever more sophisticated and destructive types of cyber-weapons. As a result, the critical infrastructure of countries around the world is becoming extremely vulnerable to such threats. While the people who perpetrate cyberattacks and the ones who pay for them remain anonymous, the attacks themselves are

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becoming increasingly destructive, and the damage they inflict is not limited to the cyberworld. Such a situation inevitably undermines the existing international security regime and destabilizes the international system. That is a direct threat to the national security of Russia and its allies.

Other problems include variations in the development of internet infrastructure across the globe, which could slow down further progress and rollout of Internet technologies in the developing countries.

Using the BRICS format, Russia could initiate the development of a strategy document summarizing the shared vision and outlining the consensus approach of the BRICS nations to the provision of security for the information space, as well as stating the goal of promoting such an approach at various international platforms, including the UN and its specialized agencies. The BRICS nations need to draw up a series of agreements to ban cyberattacks against critical infrastructure of the financial system, nuclear energy facilities, and strategic military command systems, as well as information systems of offensive weapons and WMD.

BRICS could become a format for confidence-building measures and information exchange in the area of cybersecurity between the participating states. Such measures could include development of systems to prevent cyber-incidents, provide early warning, and share information about them. In particular, the BRICS nations could establish emergency hotlines and an international center for dealing with cyberthreats, using mechanisms of international public–private partnership.

It would be in the interests of BRICS as a whole and of Russia in particular to pursue joint projects which aim to improve the intercontinental IT infrastructure (fiber-optic cables, etc). Such projects would increase the reliability and resilience of telecommunication channels between the BRICS countries, and give people living in these countries greater access to broadband Internet. One possible project—which is already being discussed—is to lay a transcontinental underwater data cable directly connecting all the BRICS countries, which are situated on three continents.

All five BRICS nations have more or less equal starting positions, shared problems, and similar obstacles to active and rapid development of e-governance and, in a broader sense, of information society as a whole. Setting up a coordinating structure to facilitate the sharing of best international practice and to assist in the adoption of that practice would help to achieve the common goals.

PEACEFUL SPACE EXPLORATION

The dangerous possibility of weapons being placed in outer space still remains on the international security agenda. International space law has many gaps in terms of regulating the use by sovereign states of outer space, and near-earth space in particular. It allows the placement and deployment in space of non-nuclear weapons, as well as the use of force in space and from space. In February 2008 Russia and China jointly unveiled a draft treaty which aims to prevent the placement of weapons in space, as well as the use or threat of the use of force against spacecraft. But the draft, which was proposed for the consideration of the Conference on Disarmament in Geneva, has not received the required international support. Even though by now many countries have reacted positively to the Russian–Chinese initiative, Brazil and India, which have their own military space programs, have been less than enthusiastic. In addition, there is little coordination between the BRICS countries at the Conference on Disarmament—or any other forums, for that matter—on the issue of using space for peaceful purposes.

At the same time, the benefits of actively developing peaceful space technologies are being partially devalued by R&D duplication (for example, the global satellite navigation systems and independent space programs pursued by individual countries). As a result, resources are not being concentrated on the important task of radically improving satellite navigation technologies or exploring interplanetary space. The Russian space industry is also facing several difficulties stemming from the inadequate presence of Roskosmos in the southern hemisphere (there is a need for additional correction and monitoring stations for GLONASS, and for more orbit observation instruments).

Russia must lobby all fellow BRICS members to secure their support for the initiative on banning the placement of weapons in outer space. First and foremost, efforts must be made to persuade India and Brazil to change their stance. These two countries' concerns in this area need to be

clearly understood, and then addressed and eliminated. Once that has been achieved, the BRICS countries will be able to form a united front at the Conference on Disarmament, at the UN Committee on the Peaceful Uses of Outer Space, and during formal and informal consultations with the United States and other nations.

It would be in Russian interests to sign an agreement on using the territory of South Africa, Brazil, and India for joint orbit monitoring, tracking exploration spacecraft in deep space, and extending the coverage and improving the accuracy of the GLONASS system. Russia needs to promote GLONASS in the BRICS countries; the Russian satellite navigation system should be used in conjunction with the existing and future systems operated by India and China.

Joint space initiatives of the BRICS nations should aim to create an attractive global alternative to the U.S. and EU space programs.

NUCLEAR ENERGY

Even though it has been more than a year since the Fukushima nuclear accident, the issue of safety and security of nuclear power plants and of the entire nuclear industry remains as pressing as ever, with major repercussions for that industry's prospects. At the BRICS summit in Delhi on March 30, 2012 the leaders of the five countries called for international cooperation in the development of safe and secure nuclear energy. The BRICS heads of state highlighted the need for joint efforts in order to ''increase public trust in nuclear energy as a clean, affordable, safe and reliable source of energy, which is indispensible for meeting the world's energy demand.''[1]

In the context of developing nuclear technologies in the BRICS countries, the most sensible approach for Russia would be to transition from building power plants in these countries to partnership and joint projects, primarily with India and China. Russia should seek to engage companies from these two countries (and, at some point in the future, from Brazil and South Africa as well) in consortiums to build NPPs in the BRICS countries themselves and in third countries. Such projects would strengthen ties between the five BRICS nations through partnership relations between their companies. They would also enable greater use of the credit resources of the BRICS states in third-country NPP projects. Participation of national companies in these projects would help to build trust among the local population and to avoid protests. In return, Russia will be able to secure preferential access to the markets of its partners.

Russia needs to participate in joint nuclear research projects with the other BRICS countries in order to strengthen its ties with its partners and to reduce the influence of third countries, as well as to improve its own nuclear energy technologies. New technologies developed by the BRICS nations (based, for example, on thorium cycle research by China and India) could bring substantial changes to the global energy sector.

The BRICS countries also need to develop nuclear energy cooperation between their scientists and expert communities. Contacts between experts and specialists, as well as academic exchange programs, can help these countries to build up their own expertise, demonstrate to the decision-makers the benefits of cooperation with Russia, and establish the necessary ties.

HIGH TECHNOLOGIES IN LOGISTICS

The BRICS countries are the world's leading economies—but trade between them is well below its full potential. In 2011 mutual trade in the BRICS bloc stood at $230 billion. The BRICS summit in Delhi held in March 2012 has set the target of $500 billion, to be achieved by 2015. The five countries urgently need to optimize their cross-border logistics and speed up the transit of goods, while at the same time improving the reliability of customs controls. There are high-tech solutions available, such as radio-frequency identification (RFID) technology, which relies on radio waves to transmit information, either manually or automatically. They could help to improve the situation. But the BRICS countries are not putting these technologies to good use, and their efforts in this area lack coordination. In addition, there is no single set of RFID standards, and only a relatively small number of checkpoints are equipped with that technology.

Like all the other BRICS countries, Russia has a clear interest in optimizing the flow of trading goods and introducing automatic identification of cargos. BRICS nations could jointly develop a common standard of radiofrequency identification to speed up the work of the border and

customs checkpoints in the five countries. Such a standard could also be adopted on a global scale. It would also make sense for all BRICS countries to study the Indian initiative on equipping all the national checkpoints with RFID technology.

RUSSIA'S INTERESTS

Russian interests in high tech boil down to neutralizing the military threat in space and peaceful space exploration; developing Internet technologies and countering threats in cyberspace; preventing a new arms race; maximizing the Russian potential in nuclear energy; and introducing advanced technologies in the logistics industry. High-tech branches of the Russian economy also require foreign investment and innovation.

It is also important for Russia to strengthen BRICS and to flesh it out with various forms of political, economic, and technological cooperation.

The combined potential of the BRICS countries is very impressive;[2] this also applies to the high-tech sector. However, making use of that potential is difficult because of the lack of a common agenda and action plan in the area of high technologies. Cooperation is mostly happening on a bilateral rather than multilateral level.

Making use of the opportunities offered by BRICS to compete more successfully with the United States, the European Union, Japan, and other developed economies is in the interests of Russia and all the other BRICS nations. To that end, Brazil, Russia, India, China, and South Africa must turn from a financial club into a group of countries united by the scope of their shared interests, and willing to defend these interests in the international arena. Russia's place in this body should be appropriate to its level of technological development.

Russia's interests require a shift in the focus of cooperation within the BRICS bloc towards areas which constitute our country's traditional strengths. Such a shift will be made easier by the fact that our BRICS partners are genuinely interested in the development of high-tech sectors. By the same token, it is clearly in Russia's interests to strengthen its economic presence in India and China, and to expand it geographically by stepping up cooperation with Brazil and South Africa.

NOTES

[1] Delhi Declaration, President of Russia—official website, March 29, 2012, <http://eng.news.kremlin.ru/ref_notes/82>, last accessed January 15, 2013.

[2] BRICS countries account for about 70 percent of the world's nuclear power plants now under construction. Russia, China, and India accounted for 62 percent of the world's space launches in the first half of 2012. The Russian segment of the Internet is the largest in Europe, and China's the largest in the world. All five of the BRICS national segments are among the fastest-growing in the world. Half of the world's Internet users live in BRICS countries.