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Contribution by Russia

to the CSTD 2020-2021 priority theme on "Harnessing blockchain for sustainable development: prospects and challenges"

PRIORITY THEME 1: Harnessing blockchain for sustainable development: prospects and challenges

The Russian Federation takes a responsible approach to implementation of the UN sustainable development goals (hereinafter, "SDG"), which have been incorporated in official Russian strategic guidelines and program documents. Considerable attention is being paid to expanding the use of blockchain technology, which is viewed in Russia as a rather promising tool to address a wide range of socio-economic and environmental challenges in the area of sustainable development.

An analysis of Russia's national practices in the use of innovative digital technologies, including blockchain, to achieve the sustainable development goals shows that they have expanded over the past decade. Blockchain technologies are beginning to be used to accomplish more than half of the 17 SDGs. This applies primarily to such goals as health and well-being, education, clean energy, industry/innovation/infrastructure, sustainable cities and towns, responsible production and consumption, justice and effective institutions, and partnerships for sustainable development.

Blockchain technology development is a part of the activities provided for by the federal project Digital Technologies under the National project Digital Economy of the Russian Federation. Blockchain technology is also mentioned in the Strategy of Information Society Development in the Russian Federation for the period of 2017-2030. A Roadmap for developing the "end-to-end" digital technology of "distributed register system" was drawn. The Roadmap envisages the use of blockchain in industry, finance, logistics and government. According to the Roadmap, all state information systems are planned to be transferred to blockchain.

Another federal project Normative Regulation of the Digital Environment under the National project Digital Economy of the Russian Federation set down the task

of providing legal conditions for the introduction and use of innovative technologies in the financial market. In 2019-2020, a number of laws were adopted to ensure the achievement of this goal.

As a result, the Civil Code of the Russian Federation incorporates "digital rights" in the list of civil rights objects as a type of property rights and provides their legal definition.

1. Could you share specific examples, projects or initiatives that have used or plan to use blockchain technology for the SDGs in your country? What are the main challenges confronted while trying to implement these projects/initiatives? (Examples may include blockchain solutions for financial inclusion, trade facilitation, supply chains, health, energy, e-Government, etc.)

Russian blockchain projects in the field of ecology and climate are directly linked to **SDG 13** "Combatting Climate Change". Back in 2017 the Russian Carbon Foundation initiated the development of the DAO IPCI platform for green financial instruments (presented at the COP23, COP24 and COP25 climate conferences) and the Blockchain Climate Standard, a standard for issuance of carbon units. The platform was piloted to issue "green certificates" in Skolkovo in conjunction with Vnesheconombank (VEB.RF), NP Market Council and the Skolkovo Foundation, as well as in Chile in partnership with EnorChile SA. In 2020, based on the platform's experience, a new protocol will be developed in partnership with the UNFCCC to issue and monitor green bonds using blockchain.

The recent years have seen Russia expand its use of blockchain technologies in healthcare and their role in this sector is expected to be quite considerable in the future, which will help achieve **SDG 3** "Good Health and Welfare". Several Russian regions are launching pilot projects based on blockchain platforms to improve the maintenance of personalized medical records. For example,

the Moscow Regional Government announced plans in 2018 to create a regional health care system based on these innovative technologies to optimize medical records management. In 2018, in conjunction with Vnesheconombank and the Ministry of Health of the Russian Federation the Government of the Novgorod region launched a blockchain project to monitor the circulation of pharmaceutical products and their provision to the local population. The project creates a brand-new product that integrates three technologies: the electronic prescription, the drug labeling subsystem and Etherium platform resources. The pilot phase of the project is being carried out on the basis of the Novgorod Regional Clinical Hospital with subsequent spread of the practice to other Russian medical institutions and regions. As part of the project, VEB.RF and the authorities of the Novgorod region are planning to roll out educational programs to train specialists in the field of blockchain technology.

Some aspects of **SDG 9** "Industrialization, Innovation and Infrastructure" and several other SDGs are being met by solutions related to the optimization of technological and business processes. Over 40 Russian banks and companies employ blockchain technology in their business processes. One can mention Gazprom's projects (logistics of material and technical resources) as well as those of PJSC Russian Railways (railway cargo operations processing, etc.), QIWI Blockchain Technologies (an ecosystem of interaction between petrochemical suppliers and consumers), NorNickel (including the tokenization of individual processes) and so on. Blockchain projects are actively being carried out in the power industry including process optimization, demand-side management, distributed generation and capabilities for connecting to renewable energy sources. Here we can mention, for example, the startup ØNDER (being implemented as part of the National Technology Initiative (NTI)), Waves Enterprise (in partnership with LANIT, a major system integrator, Skolkovo and PJSC Rosset) and, more broadly, the activities of Energynet (NTI's energy sector).

One can cite the blockchain solutions by Russian Railways OJSC (RZD) during the implementation of the "Digital Railway" project. The developed blockchain platform "Service for life cycle control of freight wagon" allows to monitor the status of freight rolling stock components by collecting, storing, processing and analyzing all recorded events that occur and contain freight wagon details. Similarly, "Service Life Cycle Control of Rail Products". Within the framework of the blockchain platform "Trusted Environment of the Locomotive Complex" trial operation of the smart service contract began, which will enhance the transparency and reliability of data, on the basis of which financial documents are formed.

The infrastructure that promotes innovation include the IPChain blockchain platform (IPChain Association, Skolkovo Foundation), which offers authors and rights holders a wide range of services related to the storage and distribution of IP items in the digital environment.

To achieve **Goal 7** "Providing Access to Inexpensive, Reliable, Sustainable and Modern Energy Sources for All" Russia solves the task of increasing energy efficiency (7.3) through blockchain use for electric power metering. "Rosseti" together with Waves Enterprise and Alfa-Bank have implemented a pilot project called "Energy Accounting Using Blockchain Technology" in order to ensure transparency of the system of interactions and data exchange between electricity companies, as well as end-use consumers of electricity.

Russia is also developing blockchain technology to support small and medium-sized businesses (SME), which contributes to the implementation of **SDG 8** "Decent Work and Economic Growth". In April 2020, the Federal Tax Service (FTS) launched a blockchain platform to issue interest-free loans to SMEs. The platform has been designed to rapidly process business owners' applications for interest-free loans in order to pay wages to their employees.

To address the objective of national financial institutions to promote and expand access to banking, insurance and financial services for all (8.10) in line with Goal 8 the Fintech Association created a blockchain platform entitled "MasterChain". This platform is designed to transfer digital values and information about them between participants and includes several services.

Government agencies at various levels are testing the distributed registry technologies, which corresponds to **SDG 16** "Peace, Justice, Effective Institutions". From 2017, Moscow has been implementing a project called "Active Citizen", which is a digital platform for referendums on city planning and development. One should also note Rosreestr's pilot project to register shared construction participation agreements. The Pension Fund is also maturing further opportunities and mulling over specific solutions in its interests.

2. National systems of innovation affect how different countries can harness blockchain for increasing competitiveness, growth and sustainable development. Please share information about the ecosystem of innovation in blockchain in your country by informing: What are the key industries/specific sector that are pioneer in blockchain innovation in the country? What are the key actors in the national ecosystem of innovation (entrepreneurs, development teams (firms), venture capital, Banks and financial services, academia, regulators)? What are the key networks of the ecosystem in your country (including online networks, innovation hubs, forums, etc)? What are the national strategies, policies, laws and regulations (in place or preparation) related to blockchain?

Russia's ecosystem of blockchain projects is formed by three main groups of players: firstly, large state institutions of innovative development, such as the Russian Venture Company and its subsidiaries, especially those involved in the National Technological Initiative; secondly, the Skolkovo Foundation and, thirdly, major banks and corporations.

The undisputed leaders of mature blockchain projects in operation are financial sector and super-big banking institutions, including those run by the state. They are primarily Sberbank, VEB.RF, Alfa-Bank and VTB.

They are followed by super-big state corporations, primarily Rostekh and also Gazprom, Rosseti and Russian Railways. In the private sector, the most active players are digital companies, for example, MTS and Megafon. The metallurgical companies Severstal and NorNickel are showing a growing interest in blockchain mathematics. There is a growing interest in blockchain from major players with complex logistics and/or customer communications systems, such as Magnit, Dixy, and S7 Airlines.

Increasingly great interest in blockchain innovations has been shown by specialized government organizations and agencies handling large volumes of data and documents, especially the Pension Fund and Rosreestr.

In addition to the legislative authorities, Russia's key regulators of the emerging blockchain ecosystem are the Central Bank, the Ministry of Finance of the Russian Federation, the Ministry of Digital Development, Communications and Mass Communications of the Russian Federation, and the Ministry of Economic Development of the Russian Federation.

Russian educational and scientific organizations also carry out scientific research in the field of blockchain technology (Distributed Ledger Technologies Center of St.Petersburg State University (DLTC of SPbU), Moscow Institute of Physics and Technology - MIPT, A.A. Kharkevich Institute for Information Transmission Problems, the Russian Academy of Sciences (RAS), RAS Institute of System Analysis, Faculty of Computational Mathematics and Cybernetics, Lomonosov Moscow State University, the Institute of State and Law of the Russian Academy of Sciences, Skolkovo Innovation Center, Innopolis University), as well as in the field of legal support for the use of blockchain technology (RAS Institute of State and Law, Law Faculty of Lomonosov Moscow State University).

In addition to the general prioritization of blockchain technologies in various Russian by-laws relating to scientific, technological and innovation development, the Federal Law № 259-FZ dated July 31, 2020 was the first legal act to set down key definitions "On Digital Financial Assets, Digital Currency and on Amendments to Certain Legislative Acts of the Russian Federation" (effective as of January 1, 2021).

3. What are the challenges that your government have faced or may face for promoting innovation and competence building in blockchain in your country, to contribute to national development priorities and accelerate the progress towards the SDGs?

The key problems of developing SDG-related blockchain technologies can be reduced to three main groups of phenomena.

The first group is universal for all countries and includes both design and engineering issues – confidentiality and security, scalability, increased speed of processes, etc. – and organizational and economic aspects: development of optimal approaches and practices in using blockchain solutions, adaptation of processes.

The second group is also quite universal. This problem involves providing the blockchain industry with technological and, equally importantly, managerial personnel, lawyers and other highly specialized staff who have the right perception of the new practices in the blockchain industry and the SDG challenges. This group also includes the issue of greater competence and awareness of public and private sector employees regarding opportunities, prospects, requirements and other aspects of blockchain technology use, particularly for SDG implementation.

The third group of problems is related to the development of the regulatory and legal environment of blockchain technologies both for SDG implementation and development of the blockchain industry in general.

4. What are the actions that the international community, including the CSTD, can take to contribute to harnessing blockchain for sustainable development?

International multilateral organizations, including UN institutions, can make a significant contribution to harnessing blockchain through the following measures:

- Educational, expert and analytical activities: initiating a dialogue with regulators on the importance of the blockchain for sustainable development and existing international best practices;
- Development and communication of "model" regulatory and methodological documents related to blockchain project implementation in the SDG interests;
- Supporting/initiating the development of standards and a certification system for international public blockchain systems through a broad dialogue with the blockchain community and regulators;
- Systematic efforts to develop human capital and the industry's HR potential, including dissemination of information, organization of international events, discussion of educational standards, etc.

5. Could you suggest some contact persons of the nodal agency responsible for projects/policies and international collaboration in this context as well as any experts (from academia, private sector, civil society or government) dealing with projects in this area? We might contact them directly for further inputs or invite some of them as speakers for the CSTD inter-sessional panel and annual session.

At present, there is no central body in Russia responsible for blockchain policy and projects. It could be advised to contact the following organizations and representatives:

- Venture Fund of the National Technological Initiative (NTI) and the structures representing NTI areas: "Technet Association" (Technet), "Science and Technology Park of Novosibirsk Academgorodok" ("Healthnet") Foundation, "North-West" Strategic Development Center" Foundation ("EnergyNet");
- Novosibirsk Institute of Software Systems (NIPS) of the Rostekh State Corporation;
- The Bank of Russia working group on analysis and evaluation of new financial technologies applications headed by Olga Skorobogatova, First Deputy Chairman of the Bank;
- Rosstandart's TC 159 Technical Committee on standardization "Hardware and software tools for distributed registry and blockchain technologies";
- FinTech Association, the largest members of which are the Bank of Russia, Sberbank, VTB, Alfa Bank, Gazprombank, Bank Otkrytie, National Payment Card System, KIVI Bank, Bank AK BARS, Moscow Exchange, Tinkoff Bank, Raiffeisenbank, Promsvyazbank, Vnesheconombank (VEB), MTS, Rostelecom, Yandex, Russian Post;
- Rosreestr (Federal Service for State Registration, Cadaster and Cartography);
- Sberbank's Blockchain Laboratory;
- IPChain Association (National Coordination Center for processing transactions with IP rights and IP items);
- Russian Association of Cryptoeconomics, Artificial Intelligence and Blockchain (RACIB);
- Dmitry Marinichev, Internet ombudsman;
- Alexander Ivanov (Waves Platform);
- Pavel Novikov, Director of the Finance&Blockchain Innovation Center, Skolkovo Foundation;
- Ruslan Yusufov, managing partner of the Mindsmith analytical center;

- Vadim Krutov, CEO of Bitfury Russia;

- Maxim Rukinov, Director, Center for Distributed Registry Technologies, St. Petersburg State University;

- The Institute of State and Law of the Russian Academy of Sciences (igpran@igpran.ru);

- Dmitriy Nazarov, Head of Chair of Business–Informatics, Ural State University of Economics;

- Vitaliy Bulatov, Professor, Shlinsky Institute for Problems in Mechanics of the Russian Academy of Sciences (IPMech RAS).

6. Do you have any documentation, references, technological assessments, future studies or reports on the priority theme in your country or region?

- Map of the Russian corporate blockchain ecosystem. Mindsmith.
  URL: https://mindsmith.io/map/
- Blockchain at the Peak of Hype: Legal Risks and Opportunities / A.Yu. Ivanov (head of the authors' group), M. L. Bashkatov, E.V. Galkova et al.; National Research University "Higher School of Economics", HSE Law and Development - Skolkovo. - 2nd ed. - M.: Vysheya Shkola Ekonomiki Publishing House 2018. - — 237 p.
  URL: https://publications.hse.ru/mirror/pubs/share/direct/220736788.pdf
- Roadmap for distributed registries of Rostekh Group of Companies.
  URL:https://www.cnews.ru/news/top/2020-02-21_rosteh_prizyvaet_vlasti
- Roadmap for "end-to-end" digital technology development "Systems of the "Distributed Register" of the Ministry of Digital Development, Communications and Mass Communications of the Russian Federation (2019). URL: https://digital.gov.ru/ru/documents/6670/
- Blockchain and Law: Review of Legislative Initiatives. Technology Center for distributed registers, St. Petersburg State University. 2019. URL: https://dltc.spbu.ru/ru/materials/analytics/law-analytics.
- New Law on Digital Financial Assets. Analytical Review by experts from the Moscow Digital School Community. 2020.
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- Cryptocurrencies and Blockchains as Attributes of the New Economy. EEC Report, 2019.
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