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How could blockchain technology transform CIS economies?

By Rauf Salahodjaev

There has been extensive discussion about how blockchain technology has lots of potential to open up new landscapes for businesses and society in general. Here we will examine the ways in which this ground-breaking innovation could benefit emerging markets, with a particular focus on the Commonwealth of Independent States (CIS), representing the post-Soviet sphere. We believe that, like in previous technological revolutions, the implementation of blockchain could have even more of an impact on emerging markets than on developed markets.

Blockchain has the potential to significantly transform ineffective financial sectors. The CIS countries' financial systems, which should be responsible for providing services to millions of individuals and facilitating transactions worth billions of dollars on a daily basis, are still in their infancy. According to the World Bank, the financial development of the CIS region is lagging behind that of more developed countries. For example, the most recent data shows that the stock market size of Ukraine is less than 16 percent of GDP, which compares to 113 percent in South Korea. The CIS countries' imperfect systems have shortcomings, such as delays and extra charges, creating inefficiency that provides windows for criminal activities. The rise in administrative expenses has also been a source of concern for bankers, as these costs become unbearable to clients, onto whom these added expenses are passed.

According to research, in some CIS countries the size of the "informal" sector may exceed 40 percent of GDP (40.6 percent in Russia, 46.8 percent in Ukraine and 44.3 percent in Moldova). Moreover, it appears that the populations of CIS countries have very low levels of trust and

confidence in financial institutions: 39 percent in Armenia and 59 percent in Russia do not have confidence in banks.

Blockchain technology was initially created to support cryptocurrencies such as Bitcoin. However, the potential of this technology provides a much broader set of services; it is essentially a massive public ledger for millions of devices that keeps a record of valuables. For instance, varied items such as equities, bonds, deeds, contracts and money can be secured using blockchain technology.

If we consider that social and institutional trust is an essential building block of transactions within the traditional financial sector, blockchain technology does not need this type of trust, but rather replaces it with peer-to-peer collaboration, cryptography, smart code and network consensus. The way blockchain technology is designed means that the parties involved in a transaction do not need to see each other before conducting the transaction. It provides an opportunity to create value and sign agreements without involving government agencies and banks for the purpose of identity verification, as is currently required in the conventional system.

Because of the opportunities and advantages it affords, most companies in the financial sector, including audit firms, insurance companies and banks, are also making substantial investments in the technology.

Why this flood of interest and money? Most of these companies see blockchain technology as an enormous opportunity to decrease friction and expenses, as most financial firms depend on a complicated and expensive arrangement of intermediaries to ensure their operations run smoothly and securely. According to Santander Bank, the potential annual global savings could total US$20 billion. Meanwhile, consultancy firm Capgemini has stated that blockchain technology could help save US$16 billion in banking and insurance charges annually. This implies that the decline of transaction costs could have a significant positive impact on the private sectors of the CIS region, specifically by increasing the speed and volume of transactions and facilitating the movement of funds from one economic agent to another within the economy.

Without a doubt, blockchain technology is changing the way transactions are made and has the power to positively impact on various industries. In a recent survey in which 200 healthcare executives were interviewed, about 16% stated that they were looking forward to a commercial blockchain solution in the next year. Industry groups, regulators and market makers will play a crucial role in the adoption of this technology. The issue of data management and security within supply chain management and healthcare are two examples of critical areas that will be affected by the imminent adoption of blockchain technology. If data sharing can be enhanced between various healthcare providers, it will result in improved and more precise diagnoses and more effective treatment plans, whilst also enabling healthcare organisations to offer services at a more competitive rate. The introduction of blockchain technology will enable several stakeholders in the healthcare industry to maintain a connection with their networks without compromising data security and integrity, as it offers them the chance to monitor the origin of data and modifications. The advantages of blockchain technology are its ability to provide transparent, secured transactions and ensure

the recording of all transactions in a stable decentralised register, all of which combines to eliminate extra charges, human errors and wasted time. This is a crucial development in emerging economies, where the quality of manual data collection is very poor and fragmental in most economic and social sectors; indeed, in most cases these inefficiencies make it difficult to compare data collected within one country.

On the government's side, one of its crucial roles is to ensure the maintenance of reliable information about assets, activities, individuals and organisations. Local, regional and national agencies must keep a record of dates of birth and death, property transfers, business licensing and criminal activity. Managing this data can be a herculean task for any agency. In CIS countries, a lack of technological solutions means that some of this data is kept in paper form, and should details need to be amended in official registries citizens must be there in person to make the changes. Most independent agencies seem to develop their own procedures for managing data and information, which sometimes prevents other government agencies from accessing this data. This data must be protected against illegal access and forgery, with no room for mistakes.

The introduction of blockchain technology also simplifies handling confidential information, which makes the process of accessing and using crucial public-sector data easier and ensures the security of the data. Blockchain can be defined as an encrypted digital ledger saved on several computers in a private or public network. It is composed of data records, popularly referred to as "blocks". As soon as these blocks are collated in a chain, it is impossible for anyone to modify or delete the information; instead, these blocks are managed using shared governance protocols and automation procedures.

Finally, blockchain technology may also be an extremely effective tool for fighting corruption in developing countries such as those in the CIS region. At present, the anticorruption policies implemented within the CIS states fall way short of the standards of more developed counties. This new technology can be applied by using smart contracts and blockchain's open ledger technology, which provides an opportunity to track each monetary transaction. Blockchain remains one of the best tools for ensuring the transparent tracking of government expenditure. Moreover, open ledger technology can be very effective in solving the problem of the embezzlement of foreign direct investment (FDI) finances provided by development agencies and other donor agencies. This is important within this region in particular, as CIS states are very dependent on FDI. For example, the net inflow of FDI into Kazakhstan and Azerbaijan is 12.4 percent and 11.9 percent of GDP respectively.

With the application of blockchain's smart contracts, citizens can enjoy privileges such as access to land titles (such as land registry) and voting rights, which is not currently possible for individuals living in low-income rural areas. This is very important considering that rural populations still account for a large proportion of the total population within the CIS region. For example, 45 percent of Azerbaijan's population live in rural areas. Blockchain technology can also be used to prevent electoral rigging by providing a reliable record of votes, whilst also ensuring free and fair electoral processes as each vote would be registered on a publicly accessible ledger. As such, blockchain technology is a welcome development for the promotion of democracy in CIS countries, which are still undergoing the democratisation process.

In conclusion, blockchain technology could form another building block in the sustainable development of emerging markets. By alleviating market imperfections and acting as an invisible hand, it could improve the long-standing problem of data handling and collection, thereby greatly improving policy-making and quality of life for citizens. Ultimately, blockchain could play a pivotal role in accelerating the development of the financial systems of the emerging world, bringing with it significant and varied advantages.

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