

**INTERSESSIONAL PANEL OF THE UNITED NATIONS COMMISSION  
ON SCIENCE AND TECHNOLOGY FOR DEVELOPMENT (CSTD)**

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Contribution by Saudi Arabia

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

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

**United Nations Commission on Science and Technology for Development (CSTD)**

Dear CSTD member,

As you are aware, the CSTD 23<sup>rd</sup> annual session selected “Harnessing blockchain for sustainable development: prospects and challenges” as one of the priority themes for its 24<sup>th</sup> session (2020-21 period).

In an increasingly digitalized economy and society, the security and accountability of data transactions are critical elements for creating trust and enabling breakthrough innovations in the digital world. In this regard, blockchain technology has been perceived as a game-changer, with the potential to revolutionize processes from finance to pharmaceutical industries, from humanitarian work to development aid. The blockchain serves as the base technology for cryptocurrency, enabling open (peer-to-peer), secure and fast transactions. The application of blockchain has expanded to include various financial transactions (online payments and credit and debit card payments) as well as IoT, health and supply chain. However, issues associated with scalability, privacy concerns, uncertain regulatory standards and difficulties posed by the technology in integration with existing applications are some of the potential market constraints. The priority theme will focus on the importance of developing a local financial infrastructure that avoids financial exclusion of the most vulnerable communities. There is also the risk that the potential of blockchain for solving developmental problems had been somewhat inflated by its early adopters and the tech media and may not be as applicable for developing and least developed countries. What are the emerging uses of blockchain that can be breakthroughs in accelerating progress towards the SDGs? What are the potential negative unintended social and economic effects of this technology? How could governments maximize the opportunities and minimize the risks? The CSTD could consider this priority theme to examine the potential of harnessing blockchain for sustainable development.

The CSTD secretariat is in the process of drafting an issues paper on the theme to be presented at the CSTD inter-sessional panel meeting. In this context, we would like to solicit inputs from the CSTD members on this theme. We would be grateful if you could kindly answer the following questions based on your experience from your country or region.

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.)

Opinion 1:

a) **Blockchain Technology in Pharmaceutical Supply Chain:** Blockchain, as a distributed digital ledger technology which ensures transparency, traceability and security, is considered as a promise for easing some supply chain management problems. It can also help addressing further problems such as medication shortage, lack of coordination among healthcare stakeholders, product wastage and lack of medication demand information. Challenge: Blockchain and sustainable integration have been somewhat neglected in academic research; therefore, more studies should be conducted to investigate the potential use of blockchain in the area of the sustainable supply chain.

Source: <https://ibimapublishing.com/articles/JSCCRM/2020/562376/>

b) **Application of Blockchain in Healthcare in Saudi Arabia:** a case study suggests that blockchain can store the sensitive data of a patient so that their data can be shared under their control (like: which data, how much of it and to whom). This service allows the patient to record their data only once and use it in different places. It will expand more and more in many domains in future. It's applicable in the MedRec system in Saudi healthcare organization to enhance the medical field. Challenge: The 51% attack is a one of the drawbacks of the blockchain, which means if the one of the nodes has a control of hashing for more than 50% of all nodes, then it can deliberate crush the blockchain by removing or resequencing the transactions.

Source:

[https://www.researchgate.net/publication/341113431\\_Application\\_of\\_Blockchain\\_in\\_Healthcare\\_in\\_Saudi\\_Arabia](https://www.researchgate.net/publication/341113431_Application_of_Blockchain_in_Healthcare_in_Saudi_Arabia)

c) Develop a Blockchain Laboratory: The initiative aims to establish a laboratory to test and experiment with ideas and solutions to develop and enhance the government's procedural services, and to come up with a plan that will improve the quality of government services provided to citizens using Blockchain technology.

Source:

[https://vision2030.gov.sa/sites/default/files/attachments/NTP%20English%20Public%20Document\\_2810.pdf](https://vision2030.gov.sa/sites/default/files/attachments/NTP%20English%20Public%20Document_2810.pdf)

d) One planned project is the tokenization of equity under the Capital Market Authority. The main challenge confronted was the lack of understanding and technical knowledge from the governing party. As a governing body many challenges exist in adopting a new technology such as a Blockchain Network, and most importantly the lack of regulatory and compliance policies that can be implemented within the Network.

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?

Pioneer industries/sectors in Blockchain Innovation in KSA

- The Saudi Central Bank [Financial sector/Bank]
- STC (Telecom Industry) [Communication sector]

Sources:

<https://www.trade.gov/market-intelligence/saudi-arabia-blockchain-technology>

<https://www.strategyand.pwc.com/m1/en/reports/blockchain-for-mena-telecom-operators.pdf>

The national strategy aims to adopt advanced technologies for the greater good of the country. Spanning from healthcare to capital markets and financial sectors. All with the intention of leveraging technologies that will make transaction processes and procedures efficient and secure for the users. The Fintech sector has had a lead in the exploration/adaptation of Blockchain Networks in financial transactions between some banks. As a shared digital ledger that does not contain much regulatory or legal contracts it makes it easier for banks to share a mutual ledger of the transaction. Taking the Network further as to adopt self executing code (smart contracts) may require additional exploration and compliance under a consortium. Luckily under the National Digital Transformation strategy, many sandbox programs have been initiated to help bring innovation to the table.

The government considering to join ET groups in the international organizations such as AI in ISO. There is an international group for Blockchain on ISO, we are considering to be part of International Standard ISO Standard for Blockchain: <https://www.iso.org/committee/6266604.html>

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?

Generally, challenges are: still an emerging technology, number of expertise, regulations and scalability. However, the primary challenge that may be faced is bringing together key stake-holders

and industry leaders to understand certain transaction processes and establish a consensus between the parties on the Network while still being able to keep or modify policies set by the governing body.

The e-government services in Saudi Arabia are still in the early stages of applying Blockchain. Applying Blockchain technology in e-government around the world will help to build trust between citizens and systems because Blockchain provides a high level of security and assures that citizens' sensitive data are protected.

Source:

[https://www.researchgate.net/publication/341735826\\_The\\_Challenges\\_and\\_Benefits\\_of\\_Blockchain\\_in\\_E-government](https://www.researchgate.net/publication/341735826_The_Challenges_and_Benefits_of_Blockchain_in_E-government)

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

More research on the regulatory side will encourage others to follow best practices that were used by innovative countries/government. Perhaps publishing a common framework on "how-to" enhance/modify existing processes and regulation by stake-holders for the adoption of Blockchain Networks.

SDG's were created in 2015 when Blockchain technology was in its early days of development, but today we can see opportunities for blockchain technology to have effective approaches to sustainable development.

- Creation of transparent supply chains with effective traceability
- Creation of stronger and more accountable public institutions (blockchain-based procurement system)
- Ensure sustainable consumption and production patterns. E.g. Mining and Metals Blockchain initiative
- G20 Saudi Arabia, have proposed a solution related to Blockchain (GVC Passport) increase transparency of cryptocurrency in relate to Blockchain. It can increase access to service and goods, improve transparency, reduce tax evasion, expand data gathering and enable faster adoption of digital tools and technology.

Sources:

<https://www.weforum.org/agenda/2020/09/3-ways-blockchain-can-contribute-to-sustainable-development/>

<https://www.unlock-bc.com/news/2020-10-26/us-holberton-academy-blockchain-courses-now-offered-in-lebanon>

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.

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

One of the main themes in Saudi Arabia is Vision 2030. This project is built upon our country's unique strengths and capabilities. Thriving the economy is the primary goal in order to provide all its citizens a good life quality.

More information on this link:

<https://vision2030.gov.sa/en>

The National Transformation Program 2020 is the starting point to implement Vision 2030. It involves public, private and non-profit sectors rolling-out an integrated governance model established by the Council of Ministers. An institutional guaranteeing inter-agency cooperation is considered fundamental to implementation and monitoring.

Saudi Arabia aims to diversify its economy away from its traditional income sources. Fiscal measures are being implemented to create fiscal space to finance the specific initiatives outlined in Vision 2030 and SDGs.

List of SDG initiatives:

[https://www.my.gov.sa/wps/portal/snp/pages/SDGPortal!/ut/p/z1/IY\\_LDolwFEQ\\_qXOhRVzWF9iotZICdmO6Ik0UXRi\\_X9KIRiTZTXJOMsMca5nr\\_SN0\\_h6uvT8P\\_eiy046WKImTLqp8BZNt0sOCDGFKrimA2uecJEjrQnGYOdIEqBpIOHP\\_-amYDf52omVVEyB-8\\_EhEt99F5GxBy\\_A-8QljGy4XaxtEdZPSUq0FQ!!/dz/d5/L0IDUmlTUSEhL3dHa0FKRnNBLzROV3FpQSEhL2Vu/#:~:text=The%202030%20Agenda%20and%20SDG's,2030%20Agenda%20for%20Sustainable%20Development](https://www.my.gov.sa/wps/portal/snp/pages/SDGPortal!/ut/p/z1/IY_LDolwFEQ_qXOhRVzWF9iotZICdmO6Ik0UXRi_X9KIRiTZTXJOMsMca5nr_SN0_h6uvT8P_eiy046WKImTLqp8BZNt0sOCDGFKrimA2uecJEjrQnGYOdIEqBpIOHP_-amYDf52omVVEyB-8_EhEt99F5GxBy_A-8QljGy4XaxtEdZPSUq0FQ!!/dz/d5/L0IDUmlTUSEhL3dHa0FKRnNBLzROV3FpQSEhL2Vu/#:~:text=The%202030%20Agenda%20and%20SDG's,2030%20Agenda%20for%20Sustainable%20Development)

Please send your responses and any further inputs on the theme to the CSTD secretariat ([stdev@unctad.org](mailto:stdev@unctad.org)) by 7 October 2020. We look forward to receiving your valuable inputs.

Sincere Regards,

CSTD secretariat