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

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Intervention by ITU

Theme 2: Harnessing blockchain for sustainable development: prospects and challenges.

Harnessing blockchain for sustainable development: prospects and challenges

- Blockchain applications have a big potential for sustainable development.
    - For example, they can boost economies on the local level.
    - Blockchain also has a huge potential impact on the traceability and trust in our food systems and value chains.
- In 2019, the ITU Focus Group on the 'Application of Distributed Ledger Technology' issued guidance on the adoption of blockchain. It provides potential blockchain adopters with a clear view of this new technology and how it could best be applied.

ITU standards provide potential blockchain adopters with a clear view of this new technology and how it could best be applied. These standards can help industry and government to navigate their blockchain journeys with greater certainty.

ITU standards provide a toolkit built to serve all blockchain innovators and practitioners, recognizing that blockchain applications will take a wide variety of forms.

- The standards provide a **reference architecture** detailing the key elements of a blockchain platform to build clarity around how blockchain platforms should be described and assessed.
- The standards provide **assessment criteria** to guide efforts to understand the strengths and weaknesses of different blockchain platforms in different scenarios.
- The standards also introduce **common terminology** for new partners to ensure they are speaking along the same lines.
- These standards were built from an analysis of some 60 emerging and envisioned **blockchain use cases** in telecom, finance, energy, supply chain and government, to name just a few of the many sectors interested in DLT application.

These ITU studies also delivered a report offering a framework for the consideration of **blockchain's regulatory implications** (PDF), in addition forecasting future technological developments in view of their expected impact on blockchain (PDF).

ITU's analysis of blockchain use cases also includes insight into the **relevance of blockchain to the pursuit of the SDGs** (PDF).

In reference to the SDGs, ITU studies concluded that: "Meeting the SDGs will require experimentation and innovation, leveraging 'whole of government' approaches that cut across silos, bringing about shared understandings of interlinkages and tradeoffs between various goals and highlighting major pain points for interventions. DLT can accelerate and amplify attainment efforts because it is relatively quick to develop and relatively easy to adapt to such a wide range of tasks since it is conducive to enabling

processes amongst multiple stakeholders. Energy requirements and externalities of DLT platforms require close examination in the context of picking optimal tools for addressing SDGs."

See ITU standards:

DLT foundations:

F.751.0: Requirements for distributed ledger systems

F.751.1: Assessment criteria for distributed ledger technologies

F.751.2: Reference framework for distributed ledger technologies

Terms and definitions and security aspects of DLT:

X.1400-X.1429: Distributed ledger technology security

X.1400: Terms and definitions for distributed ledger technology

X.1401: Security threats of distributed ledger technology

X.1402: Security framework for distributed ledger technology

X.1403: Security guidelines for using distributed ledger technology for decentralized identity management

X.1404: Security assurance for distributed ledger technology

Blockchain as a service (cloud computing):

Y.3530: *Cloud computing - Functional requirements for blockchain as a service*

Blockchain for smart cities and communities:

Y.4464: *Framework of blockchain of things as decentralized service platform*

Y.4560: Blockchain-based data exchange and sharing for supporting Internet of things and smart cities and communities

Y.4561: Blockchain-based data management for supporting Internet of things and smart cities and communities

Y.4907: *Reference architecture of blockchain-based unified KPI data management for smart sustainable cities*

Y Suppl. 62: *Overview of blockchain for supporting Internet of things and smart cities and communities in data processing and management aspects*

WSIS Process input on ICTs and blockchain related projects

- The **WSIS Forum** provides an inclusive platform for stakeholders to discuss and exchange information on ICT for development. The WSIS Forum promotes and showcases projects and initiatives from the ground that are making social, economic and environmental impact, highlighting the linkages between the WSIS Action Lines and SDGs.
- Blockchain is directly linked to **WSIS Action Line C5: Building confidence and security in the use of ICTs**. Each year, stakeholders organised sessions at the WSIS Forum that highlight the emerging technologies, such as artificial intelligence, cloud computing, 5G, Internet of Things, including blockchain.
- There were 12 projects submitted for the **WSIS Prizes 2020** which used blockchain technology to make economic, social and environmental impact, with 6 of them being nominated for the annual awards, and 2 WSIS Prize Winners were awarded as the best practice examples in using blockchain technology:
  - Recruitment process management as a shared service for government agencies of Bangladesh by the Bangladesh Computer Council, having blockchain enabled Admit card preventing forgery and collusive practices, hence ensuring social norms
  - The first international Cyberschool of the future for the new IT generation, by KIBERone Cyberschool from the Russian Federation, with a long-term integrated development program designed to teach blockchain to their students around the world.
- As a part of the **WSIS Stocktaking** ongoing efforts to promote the good use of ICTs in making social impact, and in order to provide useful, replicable and actionable information to all WSIS community and beyond, the platform started collecting projects and activities on how ICTs are assisting stakeholders in their everyday life, work, and combating challenges caused by COVID-19 pandemic. More than 300 submissions were received so far, all describing how ICT are enabling better health and well-being. Three of the submitted projects were using blockchain technology as main tools to optimize their services.