

UNLOCKING THE POWER OF BLOCKCHAIN TO ACHIEVE THE SDGS

A blockchain is a way of organising and recording data to maintain a digital distributed ledger, i.e. there is no master computer holding the data but participating computers (“nodes”) hold a copy of the data. Transactions, agreements and contracts are stored in blocks and each block is linked to the previous one, therefore creating a chain. Each block contains a complete and time-stamped record of all transactions that occurred in the network. The database can be extended, but previous records cannot be changed.

WHY ARE UN ORGANISATIONS EXPLORING BLOCKCHAIN

Blockchains allow storing data in a secure, transparent, auditable and efficient manner. The Blockchain can help the international community reduce transaction costs, lower the risk of fraud, control financial risks and protect beneficiary data amongst many other advantages. They can unlock significant efficiency gains and savings by reducing the need for third-party intermediaries.

COMMON MISCONCEPTIONS

“There is only one Blockchain”: False. There are many different technologies designed for different use cases that are commonly referred to as Blockchain. The most frequently used blockchains are Bitcoin, Ethereum, Hyperledger and Ripple Consensus Network. Moreover, there are public and private blockchains: On public blockchains everyone can see all transactions, whereas on private blockchains only specific members are allowed to access the blockchain and make transactions.

“Blockchains are unhackable”: False. No system or database will ever be completely secure. Blockchain’s security works not only because it is encrypted but also because it is decentralised. Victims of the biggest blockchain breaches were targeted because they tried to centralise the decentralised system. The hacks

were possible due to vulnerabilities in systems connected to the blockchain, not within the blockchain itself.

“Blockchain is the same as distributed ledger technology”: False. Other components making distributed ledgers possible include a decentralised and open peer-to-peer network (protocol), a set of consensus rules for transaction validation, and a mechanism for reaching consensus on the valid blockchain (proof-of-work).

“Blockchain is Bitcoin”: False. Bitcoin is a cryptocurrency that is using blockchain to record transactions on a distributed ledger. It makes direct electronic payment between people possible and therefore eliminates the need for a third party.

The UN Innovation Network is an informal, collaborative network of innovation teams from UN agencies. This is the first in a series of knowledge sharing briefs based in discussions of network members.



HOW UN AGENCIES ARE ALREADY USING BLOCKCHAIN

WFP USES BLOCKCHAIN TECHNOLOGY TO DISTRIBUTE FOOD ASSISTANCE TO REFUGEES

As part of WFP's "Building Blocks" project, 10,000 Syrian refugees in Jordan are able to redeem cash-based transfers on a blockchain-based system. The seamless integration of the blockchain into existing technologies allows WFP to use the same process— resulting in no change in the beneficiary experience and disruption to food assistance programmes.

Blockchain allows WFP to virtually eliminate transaction fees paid to third-party financial service providers during the cash transfer process and the project will pay for itself within the first year. Financial risk is also reduced and beneficiary data protection improved. By the end of 2017, WFP aims to scale the project to reach 100,000 Syrian refugees with full roll-out to all Syrian refugees assisted by WFP in Jordan in 2018.

UN WOMEN IS EXPLORING HOW BLOCKCHAIN CAN HELP EMPOWER WOMEN AND GIRLS


In partnership with Innovation Norway, UN Women is exploring the potential and risks of leveraging blockchain technology to promote gender equality and women's empowerment by (re)building a civil registration and economic identity and sending and receiving digital assets directly.

UN Women will be investing in a few pilot initiatives over 2018 in partnership with other UN agencies and the private sector. To identify and test the most competitive solutions, UN Women is hosting a live simulation blockchain lab in January 2018, which builds on UN Women's previous hackathon at the Katapult Future Fest.

UNICEF STORES EDUCATION RECORDS OF CHILDREN ON A DISTRIBUTED LEDGER

UNICEF is investing in the South African start-up 9Needs to develop the open source digital identity and personal information platform "Amply". The system uses blockchain infrastructure and smart contracts to strengthen the registration, contracting, information and management systems of early childhood development programs. It helps children access services such as education, health care, social benefits.

The data stored on Amply includes metadata (e.g. date, time, location) and "seals" of guarantee making it easy for external authorities to check the validity of the data, without accessing the data itself. UNICEF uses the data generated to tailor its services to be more predictive, precise, personalised and preventive.



UNOPS IS EXPLORING HOW BLOCKCHAIN CAN INCREASE THE EFFICIENCY OF TRANSFERS

In 2016, UNOPS launched a project to explore how blockchain can be used to increase the efficiency of aid transfers, specifically of

- 1) entry to the international aid community,
- 2) intra-agency transfers, and
- 3) transfer to the end beneficiaries.

Especially the second area offers tremendous opportunities for partnerships among UN

Agencies. To identify possible technology partners, UNOPS launched an RFI for blockchain-based international assistance, which received over 70 responses that have been made available to all UN Agencies. UNOPS is looking to establish a proof of concept in five priority areas, i.e. payments, identity, data storage, supply chain, funding platform.

UNDP AND AID:TECH USE BLOCKCHAIN TO REDUCE THE COST OF REMITTANCES

Currently the average cost of remitting money to Serbia is around 8% and there is no transparency on how and where the money is spent. In Serbia, UNDP and AID:Tech are using blockchain technologies to issue a Digital Identity to beneficiaries and thereby enable them to receive remittances directly. This is expected to reduce the cost of individual transfers by more than 2%.

Instead of sending cash, the diaspora will be able to purchase vouchers for items such as food, electricity and more. These vouchers will be sent directly to the beneficiaries Digital Identity, which they can use at the point of sale or on a mobile app to pay for their electricity, gas, groceries etc.

THE WORLD BANK HAS LAUNCHED A LAB TO COLLABORATE ON BLOCKCHAIN

The World Bank has launched a Blockchain Lab to serve as a forum for interested stakeholders to collaborate on distributed ledger technologies.

A physical Lab provides a collaborative environment to learn and test new ideas; a virtual Lab offers technical learning and piloting resources (e.g. templates, use cases), links to knowledge products and a roadblock-busting collaboration space.

The Lab will also highlight potential challenges and pitfalls associated with blockchain.

The Lab is exploring use cases ranging from land management to carbon trading and cross border payments to disbursement in the education sector. To date, over 20 partners have offered their support to the Blockchain Lab.