Blockchain potential for achieving UN SDGs

The work of the United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT)

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The United Nations Centre for Trade Facilitation and Electronic Business

- Intergovernmental body of the UNECE

- Focal point for trade facilitation recommendations and electronic business standards

- Unique collaboration model

- Public and private subject-matter experts (about 500)
Process-based recommendations

Standards development on new and emerging technologies

GOALS

- Improve the ability of business, trade and administrative organizations to exchange products and relevant services effectively.
- Facilitate national and international transactions.
- Simplify and harmonize processes, procedures and information flows.
Blockchain: An overview

- Rapidly evolving area of information technology
- High potential in terms of security, reliability and cost efficiency
- Developed to store cryptocurrency transactions
- New applications are emerging in recent years

**UN/CEFACT**

a. Two white Papers:
   - How existing or new UN/CEFACT standards can be used by blockchain application developers
   - Strategic use of blockchain to support trade facilitation
   - Annex with Sectoral challenges and examples
b. Briefing Note on Blockchain and the SDGs
UN/CEFACT and Blockchain

White Paper Overview of Blockchain for Trade

Sectoral challenges and examples

White Paper on technical applications of Blockchain to UN/CEFACT Deliverables

Blockchain implementation is useful to make possible contributions to the achievement of SDGs

- Establishment of identities
- Tracking of information linked to identities
- Distribution of resources
- Tracing of goods

Agenda 2030: SDGs and Blockchain
Agenda 2030: SDGs and Blockchain

• Some Blockchain implementations can be used to support SDGs
• Potential examples:
  • The establishment of identities (for example for refugees)
  • The tracking of information linked to identities (related to health, social benefits, etc)
  • The distribution of resources
  • The tracing of goods and their content/original source
  • etc.

• Briefing note on Blockchain for the United Nations Sustainable Development Goals
‘Building blocks’ World Food Programme - WFP

TARGET 2.1: ensure access by all people, in particular the poor and people in vulnerable situations, to safe, nutritious and sufficient food all year round.

- Jordan’s Azraq Camp: 10 000 refugees
- Means to pay for food through a block-chain based system
- Authentication through biometric data registration (data provided by UNHCR)
- Transaction fees have been reduced by 98%, and time required for transferring benefits by 3 - 5 business days
Blockchain and the SDGs

Platform for containerized shipping
IBM Industry and Maersk

TARGET 9.1: develop quality, reliable, sustainable and resilient transborder infrastructure, to support economic development

- Efficient and secure method for global trade
- Reduce global trade barriers by guaranteeing more efficient information sharing and transparency of value chains
- Visibility of shipment events in real time
- Tested by Port Houston, Rotterdam Port Community System, Customs Admin of NL and USA
Transparency and visibility in supply chains

Hugo Boss

TARGET 12.8: ensure that people everywhere have the relevant information and awareness for sustainable development and lifestyles in harmony with nature

- Sales in 127 countries / EUR 2.7 billion (2017)
- Blockchain application in support of due Dilligence and Compliance processes
- Leather and cotton value chains
- Secure information sharing
- Trusted consumer awareness
Self-sovereign identity to tackle child trafficking
ConsenSys

- Self-sovereign identity system for at risk-youth and human trafficking survivors
- Unauthorized users cannot manipulate data
- Global Challenge First Prize ("Blockchain for Humanity", WIN, UNOPS and UN-OICT)

TARGET 16.2: End abuse, exploitation, trafficking and all forms of violence against and torture of children
TARGET 16.9: Provide legal identity for all, including birth registration
UN/CEFACT and Blockchain

Benefits of UN/CEFACT Semantic Models

• Standardized data exchange syntax-neutral structures, based on common Master data exchange structure

• The support of information sharing, such as blockchain

• Reduction of administrative burden by efficient reuse of data sharing
Blockchain challenges

- High level of reliability
  - Inappropriate for the purpose of the transaction
  - Introduce barriers instead of facilitating it

- Implied computational costs
  - Barrier for developing economies and MSMEs

- Not all blockchains and DLTS are the same
  - Different levels of reliability, vulnerability, robustness, speed and privacy

- Regulations
  - GDPR: right to be forgotten and request to remove information
  - Challenging to harmonize with the immutability of blockchain

- Interoperability
  - Semantics, syntax and trust

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“As reliable as was appropriate for the purpose for which the data message was generated or communicated, in the light of all the circumstances, including any relevant agreement.”

UNCITRAL “Model Law on Electronic Commerce”, UNECE Rec. 14
Blockchain challenges

• Not all blockchains are equal. They can vary in:
  • Vulnerability, robustness, cost, speed and ability to scale up, degree of privacy
• Cannot reasonably expect all exchanges use a same blockchain solution. Interoperability issues:
  • Semantics, syntax, trust
• Implied cost of the standard may in fact create new barriers to trade
Blockchain challenges

• The chosen method of authentication should be “as reliable as was appropriate for the purpose for which the data message was generated or communicated, in the light of all the circumstances, including any relevant agreement.”

• Blockchain is a very high level of reliability and not all data transactions require the highest level of reliability

UN/CEFACT and Blockchain

• Blockchain Interoperability project
More information

http://www.unece.org/cefact

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Introduction

The United Nations Centre for Trade Facilitation and Electronic Business (UN/CEFACT) is a subsidiary, intergovernmental body of the United Nations Economic Commission for Europe (UNECE) which serves as a focal point within the United Nations Economic and Social Council for trade facilitation recommendations and electronic business standards. It has global membership and its members are experts from intergovernmental organizations, individual countries' authorities and also from the business community.

Key areas of work

- Recommendations
- Standards
- Projects
- Public Reviews
- UN/LOCODE Advisory Group
- Sustainable Fisheries
Thank you

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