SB50 – SIDE EVENT

Distributed Ledger Technologies (DLT) Research and Applications at the UNCC secretariat

Bonn, Germany, 25 June 2019
Netizens vs. Citizens in order of size (user base or population)

<table>
<thead>
<tr>
<th>Rank</th>
<th>Platform</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Facebook</td>
</tr>
<tr>
<td>2.</td>
<td>China</td>
</tr>
<tr>
<td>3.</td>
<td>Tencent</td>
</tr>
<tr>
<td>4.</td>
<td>India</td>
</tr>
<tr>
<td>5.</td>
<td>WhatsApp</td>
</tr>
<tr>
<td>6.</td>
<td>LinkedIn</td>
</tr>
<tr>
<td>7.</td>
<td>Instagram</td>
</tr>
<tr>
<td>8.</td>
<td>United States</td>
</tr>
<tr>
<td>9.</td>
<td>United States</td>
</tr>
<tr>
<td>10.</td>
<td>Snapchat</td>
</tr>
</tbody>
</table>

Source: UNICEF, 2017
“The Age of Digital Interdependence” presented to UN Secretary-General António Guterres on 10 June 2019, 20-person Panel co-chaired by Melinda Gates and Jack Ma makes 5 sets of recommendations to:

• Build an **inclusive digital economy and society**
• Develop human and institutional capacity
• Protect human rights and human agency
• **Promote digital trust, security and stability**
• Foster global digital cooperation
Accelerating, encouraging and enabling innovation is critical for an effective, long-term global response to climate change and promoting economic growth and sustainable development.

Article 10, the Paris Agreement
DLT Applications

Climate change
- Peer-to-peer renewable energy-trading systems
- Crowdsale for renewable energy investment
- Optimized distributed grid management
- Authentication of renewable energy certificates
- Data ledger for optimized transport logistics
- Blockchain-based decentralized delivery networks
- Peer-to-peer vehicle sharing
- Smart parking system for optimized mobility management
- Blockchain-based land, corporate, civil and asset registries
- Citizen loyalty and reward platforms
- Decentralized voting platforms for climate action
- Blockchain-enabled sustainable mining
- Automation of data collection and management for better sustainability accounting
- Financing sustainable land use

Clean power
- Secure paperless transactions

Smart transport system
- Ledger for collection and verification of ESG data
- Soil properties data collation from distributed sensors
- Blockchain-powered platform for carbon offsetting
- Waste-to-energy blockchain solutions

Sustainable production and consumption

Sustainable land use

Source: Building Block(chain) for a Better Planet
WEF September 2018
DLTs ecosystem and Climate Action

- DLTs as an enabler for enhanced climate action
- DLTs as resource consumer
- DLTs for **climate policy making**
Defining DLTs through their characteristics

DLTs use a variety of existing technologies to provide a set of characteristics which enable key functions that are jointly required to address these challenges.

<table>
<thead>
<tr>
<th>Some characteristics</th>
<th>... that enable</th>
<th>... and used to achieve</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed &amp; Decentralized</td>
<td>Resistance to failure</td>
<td>□ Transactions with no or less reliance on intermediaries → reducing turnaround &amp; costs</td>
</tr>
<tr>
<td>Central-administrator free</td>
<td></td>
<td>□ Enhanced traceability and transparency: full &amp; reliable audit trails</td>
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<tr>
<td>Append-only writeable</td>
<td>Immutability and time stamp</td>
<td>□ Avoidance of double counting in exchanges of values</td>
</tr>
<tr>
<td>Cryptographically-sealed</td>
<td></td>
<td>□ Enhanced security</td>
</tr>
<tr>
<td></td>
<td></td>
<td>□ Transactions between individuals/entities that have no or little trust in each other</td>
</tr>
<tr>
<td>Consensus-based</td>
<td>Resistance to mistrust</td>
<td>□ Reliable exchange of values (e.g. tokens/units)</td>
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<td>Audience-controlled</td>
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<td></td>
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<tr>
<td>(Private/Public)</td>
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The UNCC secretariat has initiated a research with the aim of:

- Developing a **decision tree to assess relevance of DLTs** as technical solution to **clearly defined problems**.

- **Application to the measurement of scope 3 climate contribution**
DECLARATION OF DIGITAL INTERDEPENDENCE

How we manage the opportunities and risks of rapid technological change will profoundly impact our future and the future of the planet.

[...]

We declare our commitment to building on our shared values and collaborating in new ways to realise a vision of humanity’s future in which affordable and accessible digital technologies are used to enable economic growth and social opportunity, lessen inequality, enhance peace and security, promote environmental sustainability, preserve human agency, advance human rights and meet human needs.