Automating sustainability reporting using structured data and blockchain technology
Case study: public transport sector

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UITP SDG Sustainability Reporting Portal

Automating Public Transport Sector Sustainability Reporting

- Organisations
- Supply Chains
- Customers
- Investors

- City/Community
- Region
- Country
- Continent
- Global

- Environmental
- Societal
- Economic

Governance
High-Level View of UITP Reporting Platform Architecture

Stakeholder Engagement and Collaboration

- Reporting Organisations
- Financial Services & other Support
- Investors
- Government & NGOs
- Public/Customers

Security and Role-Based Information Access

UITP Reporting Platform

- SDG Reporting Extension
- UMii Reporting Extension
- GRI Reporting Extension
- CDP Reporting Extension
- Financial Reporting Extension
UITP Reporting Platform

SDG Reporting Extension
UMii Reporting Extension
GRI Reporting Extension
CDP Reporting Extension
Financial Reporting Extension

Multicapital regenerative and inclusive economy

System Value Creation

UITP Reporting Platform

Influence on reporting data to create regenerative and inclusive economy

Integration
Activation
Contextualization

UITP architecture IN CONTEXT OF reporting 3.0
Creating System Value using a Holistic Approach*

A Framework for Strategic Sustainable Development in Public Transport Sector

*Reference: futurefitbusiness.org, Creating System Value, Concept Note Version 1.0, April 2017
Regulatory reporting:
- FSA
- HMRC
- EuroFiling (Corep/Finrep)
- etc.

Presentation

Structured Data Taxonomies:
- Standard/Custom/Hybrid

Information management methodologies

Decentralised Ledgers

Financial, Pre-Financial & Integrated Reporting Tools

Structured Data Taxonomies:
- Standard/Custom/Hybrid

Principles, Standards & Guidelines

IFRS, GAAP GRI, CDP, SASB

Blockchain

Our approach: Structured data

Regulatory reporting:
- FSA
- HMRC
- EuroFiling (Corep/Finrep)
- etc.

SDG Reporting
Sustainability Reports

Data Feeds:
- Bloomberg/Thompson Reuters
- Financial Institutions

Internal systems:
- Central GL
- ERP Systems
Blockchain and XBLR: A Natural fit

- Store encryption keys directly in XBRL fields
- Fulfilment of Smart Contracts monitored by XBRL
- Able to leverage off of existing Blockchain infrastructure e.g. Cryptocurrencies and Dapps
- Potential for crowd sourcing
- Transcends Financial <-> Pre-Financial <-> Non-Financial barriers (level playing field)
Blockchain based Cryptocurrency Energy and Carbon Trading Ledger using the Ethereum development platform as an example

**Case Study 1: accounting GHG Emissions: High-level architecture**

- **Energy Production**
- **Transmission – Storage - Distribution**
- **Energy Consumption**

Blockchain based Cryptocurrency Energy and Carbon Trading Ledger

**Ethereum Development Platform (Dapp)**

- **Energy Producers & Consumers**
  - ERP/Accounting systems
  - Carbon Tax and Cap-and-Trade Utilities
  - Internal Carbon Pricing and IRR Calculators

**Companies House**

HMRC

- **Carbon Tax Revenues**
- **Sustainable Development Reporting**

**HMRC**

- GRI
- CDP
- SDG
Case Study 2

Scope 1

Reconcile Energy Production & Consumption

Scope 3

Business Activities
Geographic Locations
Regulatory Requirements

Scope 2

Carbon Pricing Models

Accounting GHG Emissions

- IRR
- EP&L
- Internal Carbon Pricings
Challenges

- Currently no off-the-shelf packages available for accounting and financial reporting in decentralised cryptocurrency financial system.
- Many transaction mechanisms not defined in IFRS or GAAP e.g. cryptocurrencies.
- Negative reaction to using structured data for non-financial reporting. Perceived as regulatory reporting.
- Shifting evolution of technology.