Automating sustainability reporting using structured data and blockchain technology
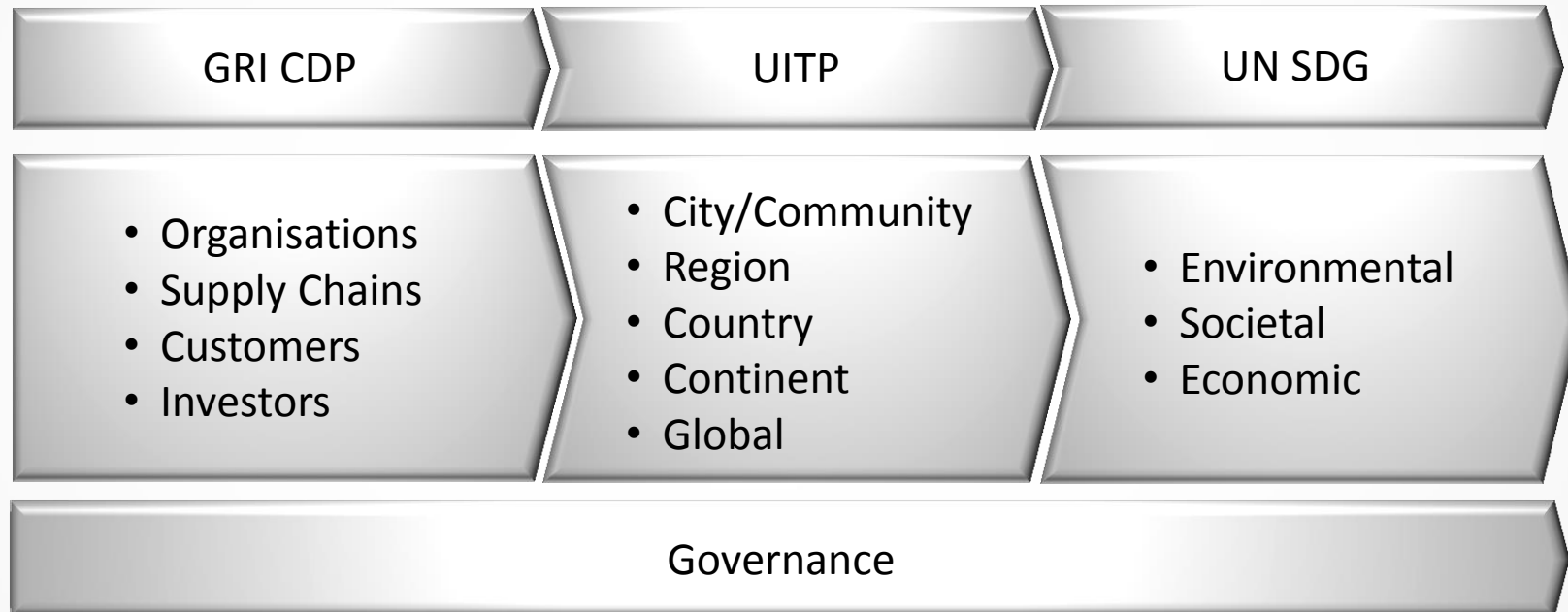**Case study: public transport sector**
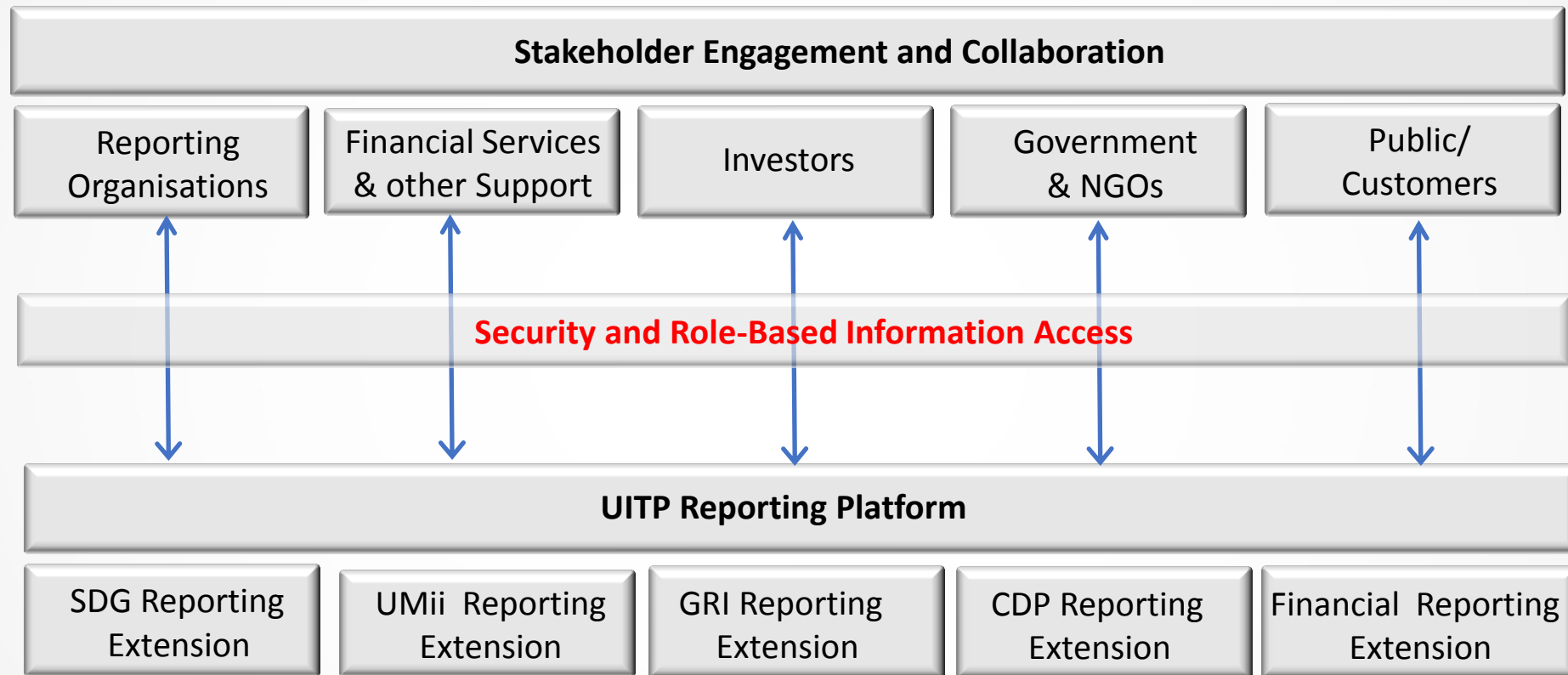
UITP SDG Sustainability Reporting Portal

Automating Public Transport
Sector Sustainability Reporting

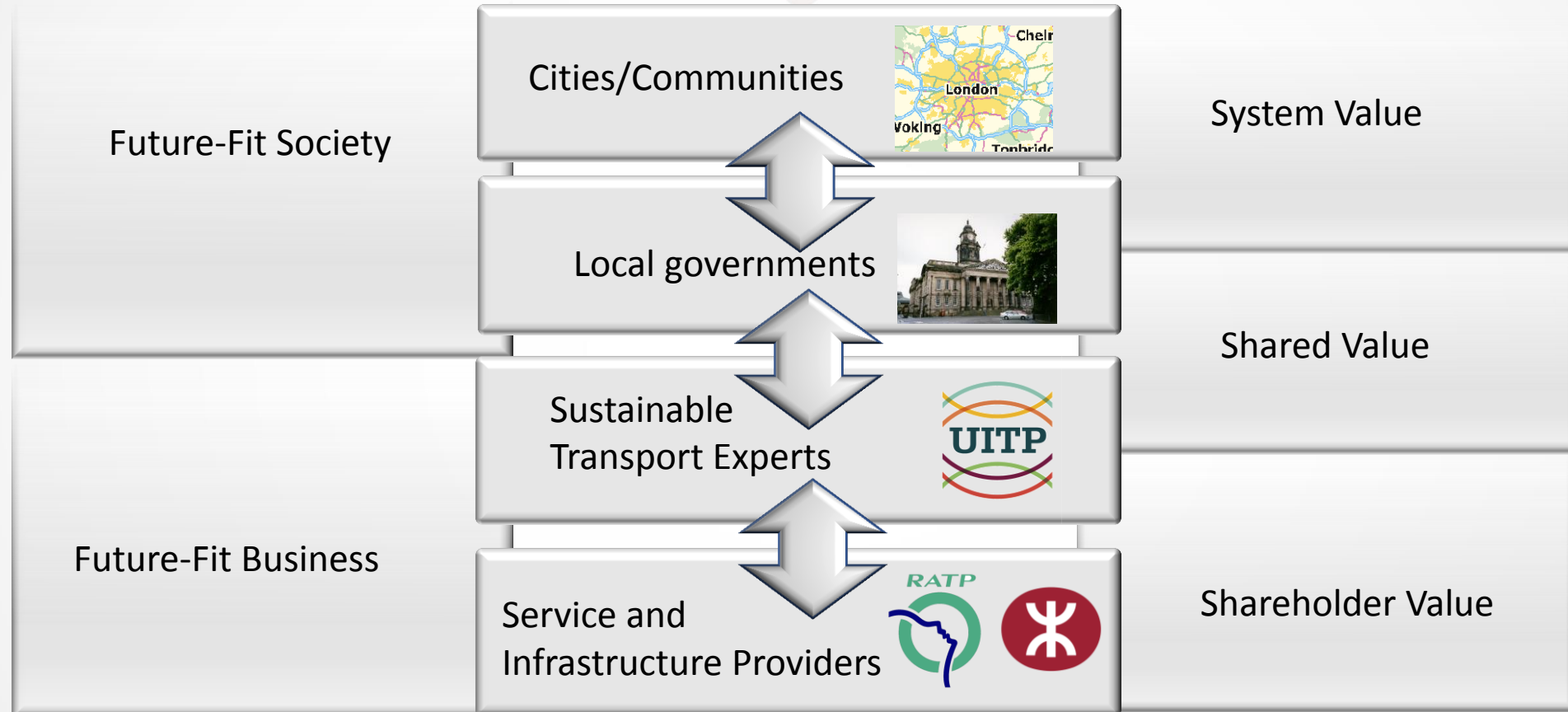| GRI CDP	UITP	UN SDG
• Organisations • Supply Chains • Customers • Investors	• City/Community • Region • Country • Continent • Global	• Environmental • Societal • Economic

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

ESG Matters
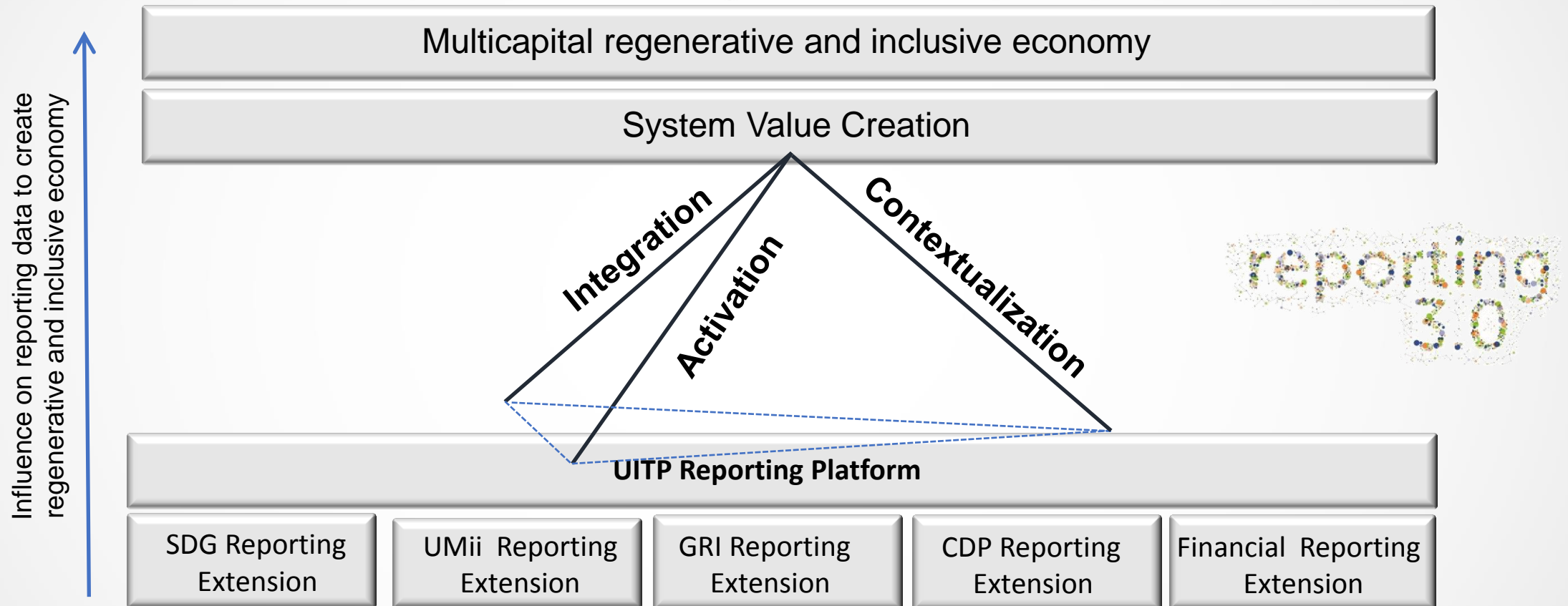
Our approach: Structured data

Presentation

Reporting Tools & Methodologies	Financial, Pre-Financial & Integrated Reporting Tools
Information management methodologies	Structured Data Taxonomies: Standard/Custom/Hybrid
Principles, Standards & Guidelines	IFRS, GAAP GRI, CDP, SASB
Decentralised Ledgers	Blockchain

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

SDG Reporting Sustainability Reports

Data Feeds:
- Bloomberg/Thompson Reuters
- Financial Institutions

Internal systems:
- Central GL
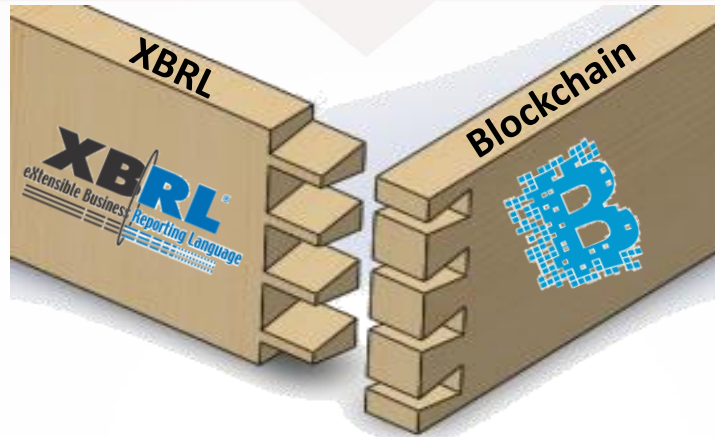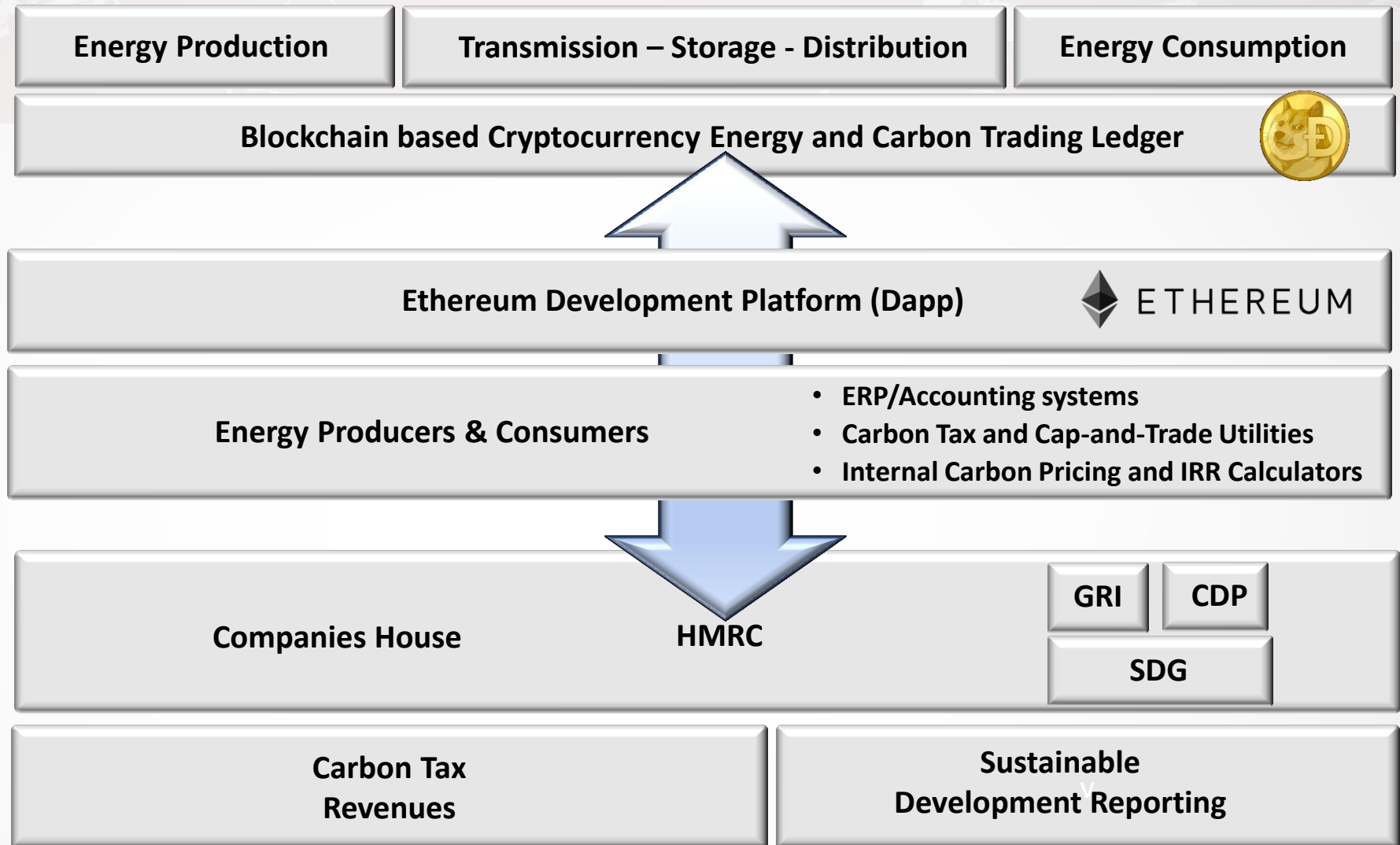- ERP Systems

Our approach: Blockchain & XBrl

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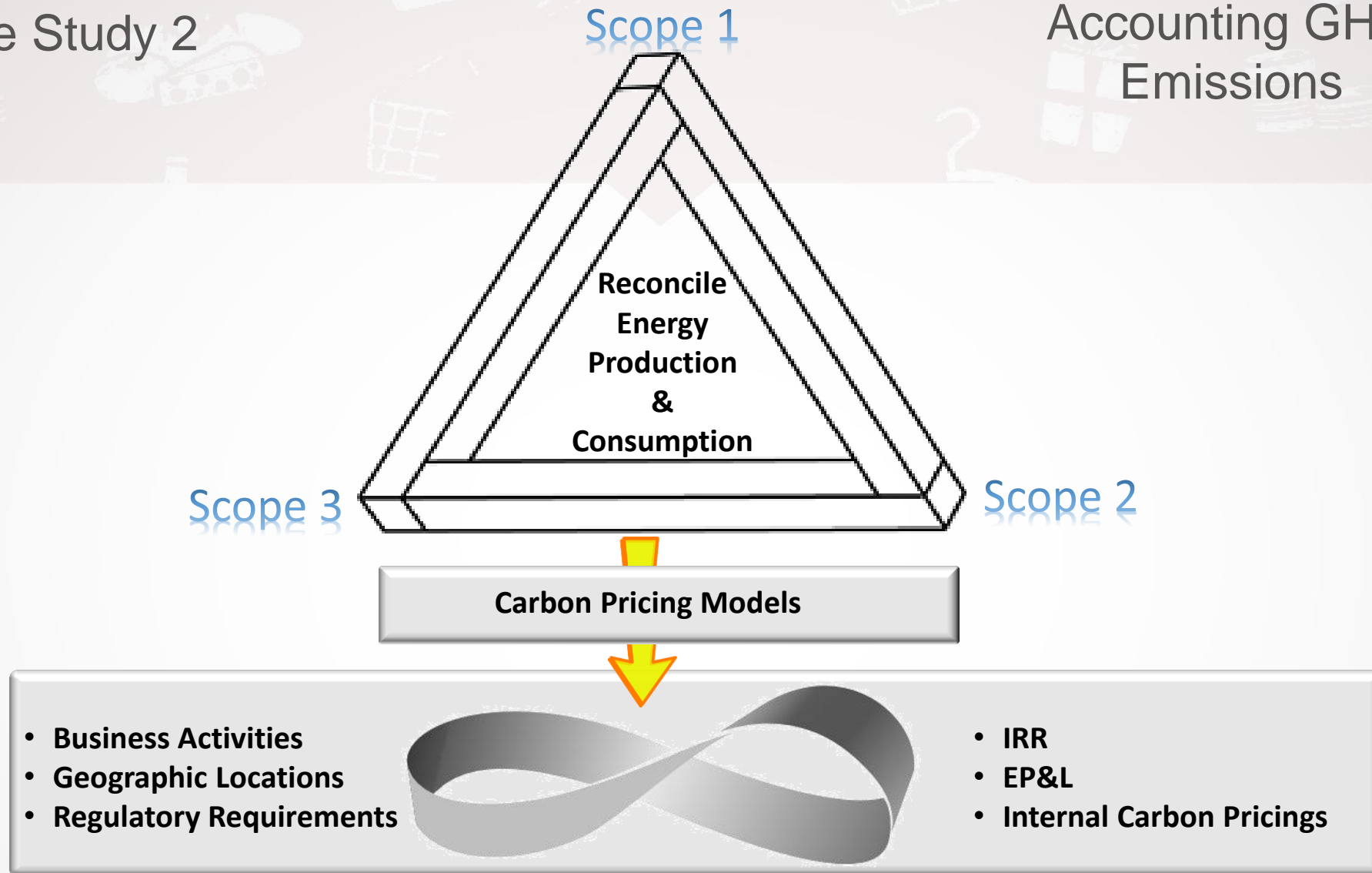
Case Study 1: accounting GHG Emissions: High-level architecture

Blockchain based Cryptocurrency Energy and Carbon Trading Ledger using the Ethereum development platform as an example

Energy Production	Transmission – Storage - Distribution	Energy Consumption

Blockchain based Cryptocurrency Energy and Carbon Trading Ledger

Ethereum Development Platform (Dapp)

ETHEREUM

Energy Producers & Consumers

- ERP/Accounting systems
- Carbon Tax and Cap-and-Trade Utilities
- Internal Carbon Pricing and IRR Calculators

Companies House **HMRC**

GRI	CDP
SDG	

Carbon Tax Revenues	Sustainable Development Reporting

ESGMatters

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