Implementation Experiences of DL: The Tension between Data Sharing & Privacy

Peter McBurney
Department of Informatics
King’s College London
Strand London UK

Email: peter.mcburney@kcl.ac.uk

SDLT2 · 2018

5 July 2018
DLTs — Evolving thinking over last several years

Distributed Ledger Technologies appropriate for:

- Cryptocurrency transactions
- Currency transactions
- Transactions involving exchanges of assets
  - ownership and custody
- Permanent records of information
  - eg, personal identity, corporate identity, provenance
- Promises and commitments
  - eg, futures contracts, trade flows, insurance, regulatory compliance.

Strong interest now from large corporates.
Example: Real-time insurance recalibration

- Consortium of Maersk, EY, MS Amlin, XL Catlin, Guardtime, et al.
- DL for real-time automated insurance adjustment
- Motivation
  - New insurance products
  - Real-time calibration of risks & costs
- Ships able to re-plan journey enroute.
Example: Competing claims in South China Sea
Post-trade workflows for energy commodity futures

- Consortium of 9 energy companies, banks & commodity traders

- Shared platform for management of post-trade activities

- Motivations:
  - To improve back-office efficiency and reliability
  - To enter shared data just once
  - To solve double-spend for resources
  - To automate activities in trade flow.
Motivations — key benefits

- For shared data: Enter data once & validate at entry
  - To eliminate need for reconciliation across organizations

- Eliminate “double-spend” problems
  - Eg, Berths in ports, ship cargoes; etc

- Automate manual processes
  - Use of smart contracts for event-driven processes

- Real-time adjustments (or nearly so)
  - Eg, insurance premiums for ships in transit

- Fast settlement

- Tamper-proof logs & provenance
  - For disagreements & disputes
  - For compliance.
Fundamental Tension: Data Sharing vs. Data Privacy

- **Desire to assign**
  - specific units of information/actions/permissions/obligations
  - to specific actors or agents
  - starting at a specific time
  - for a specific duration (either time-based or event-based)
  - for a specific purpose
  - and assigned to no one else at this time for this purpose.

- **Want to be able to**
  - Assign quickly & easily at run-time
  - Revoke quickly & easily at run-time
  - Verify consistency with other assignments
  - Verify compliance & performance.
Thank you!