# Blockchain for Capital Markets

## **Immutable** Ledger

- Ledger underlying access controls, ontology storage, pragmatics
- Information cant be deleted
- Non-repudiation
- Open and inclusive public ledger but privacy friendly data
- Regulatory participation without snooping
- Possible anonymous data for economic health/indicators
- Auditable timeseries of events

#### Ontology

- **Identity Credentials**
- **Data Structures**
- Identifications
- Classifications
- Linked Data
- Sets of Data Objects
- Representational vocabulary
- Well-formed terms

### **Access Controls** Permissions

- Access controls embedded in data objects
- Access controls enforced via cryptography
- Permissioned via business roles not R&D programmers. Business solution to developer challenges.
- Content licensing
- Objects secure regardless of location, in motion, or at rest
- Business solutions, not developer challenges

#### Identity

- **Privacy Friendly**
- Open or Closed Network
- Designed for Hostile or Friendly Environment
- Business configurable yet cryptographically enforced Biometric hardware binding

- Pragmatics
  Business rules overlay information security engine
- Language for conversations not data semantics
- description language not engineering execution language
- static semantic structures underlying dynamic pragmatic behaviour
- multiparty communications
- business protocols
- Models conversations & scenarios
- How environment interacts with ontology
- prescribed scenario of interactions
- Processes of information exchange
- International, domestic, and regional specification to local runtime verification
- Mathematical enforcement of design-by-contract framework for business behaviors

Erik Anderson Bloomberg, X9 & W3C Web Payments