

Trust Machines: Blockchains and Information Networks

Aman Singh
Palindrome Technologies

IEEE CQR 2018, Austin, TX

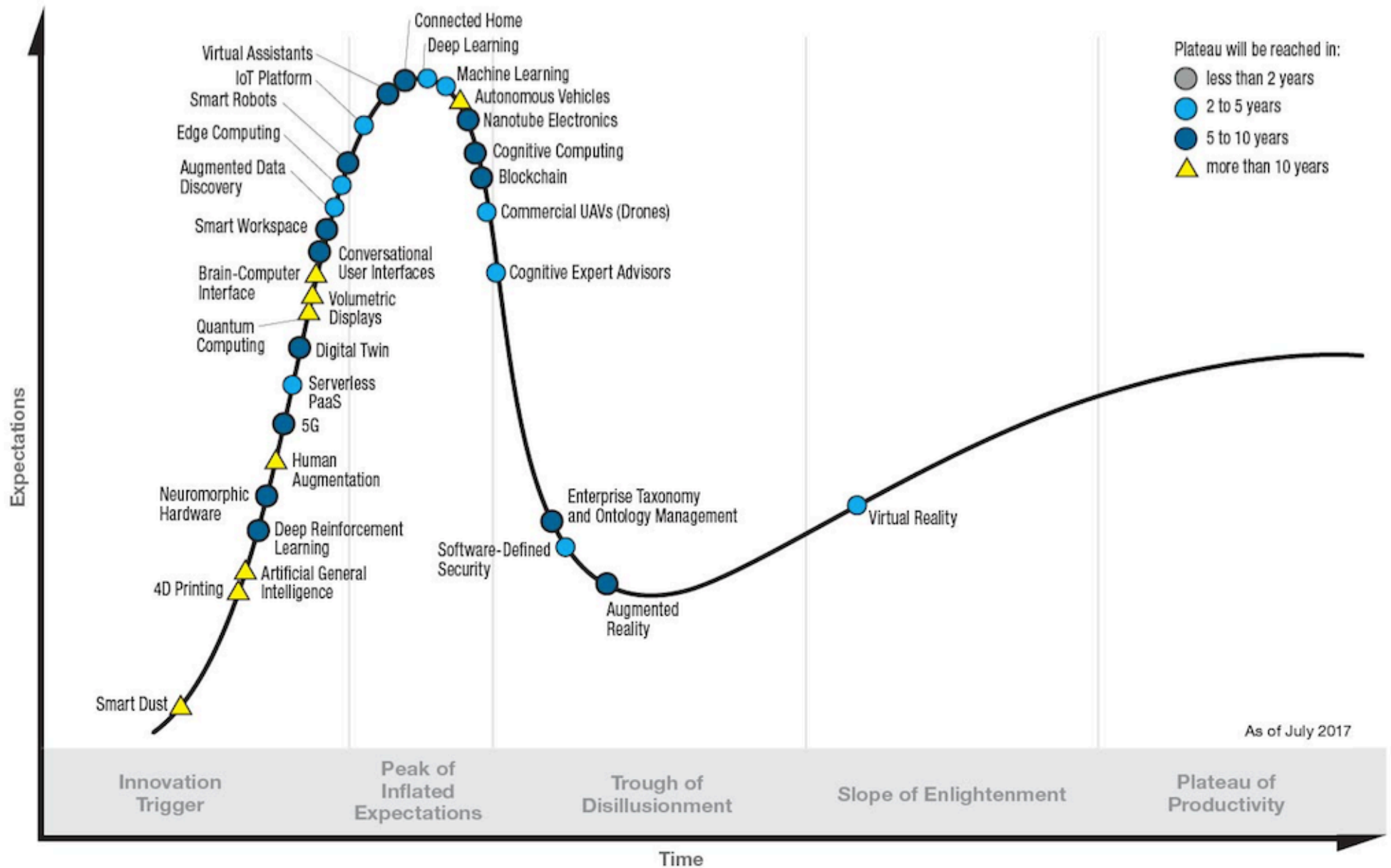


Agenda

- What / Why / Where
- System Model*
- Information Networks
- Research Challenges



Gartner Hype Cycle for Emerging Technologies, 2017



Source: <https://www.gartner.com/smarterwithgartner>



Blockchains

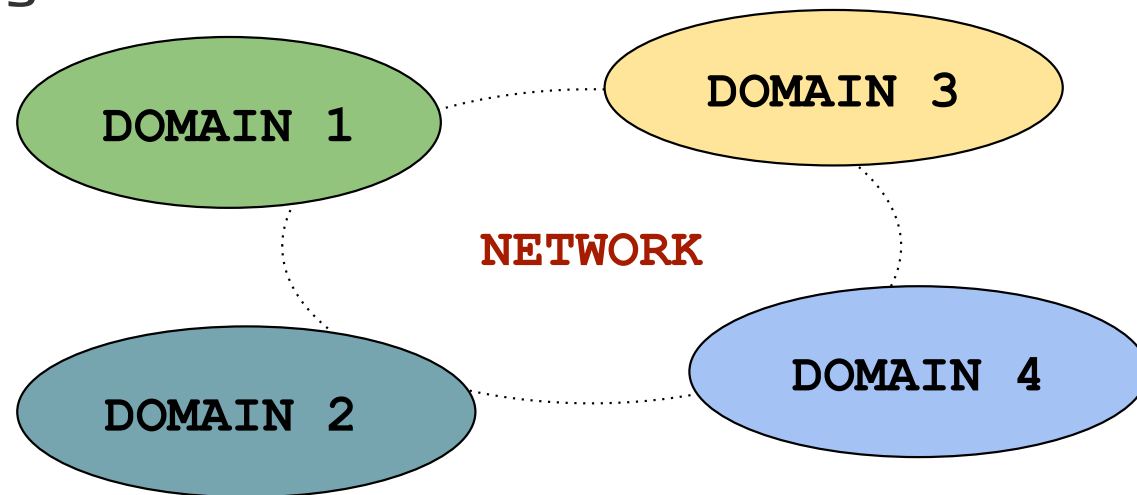
- Internet 2.0
- Internet of Value
- Fourth Industrial Revolution*

*<https://www.weforum.org/center-for-the-fourth-industrial-revolution/>



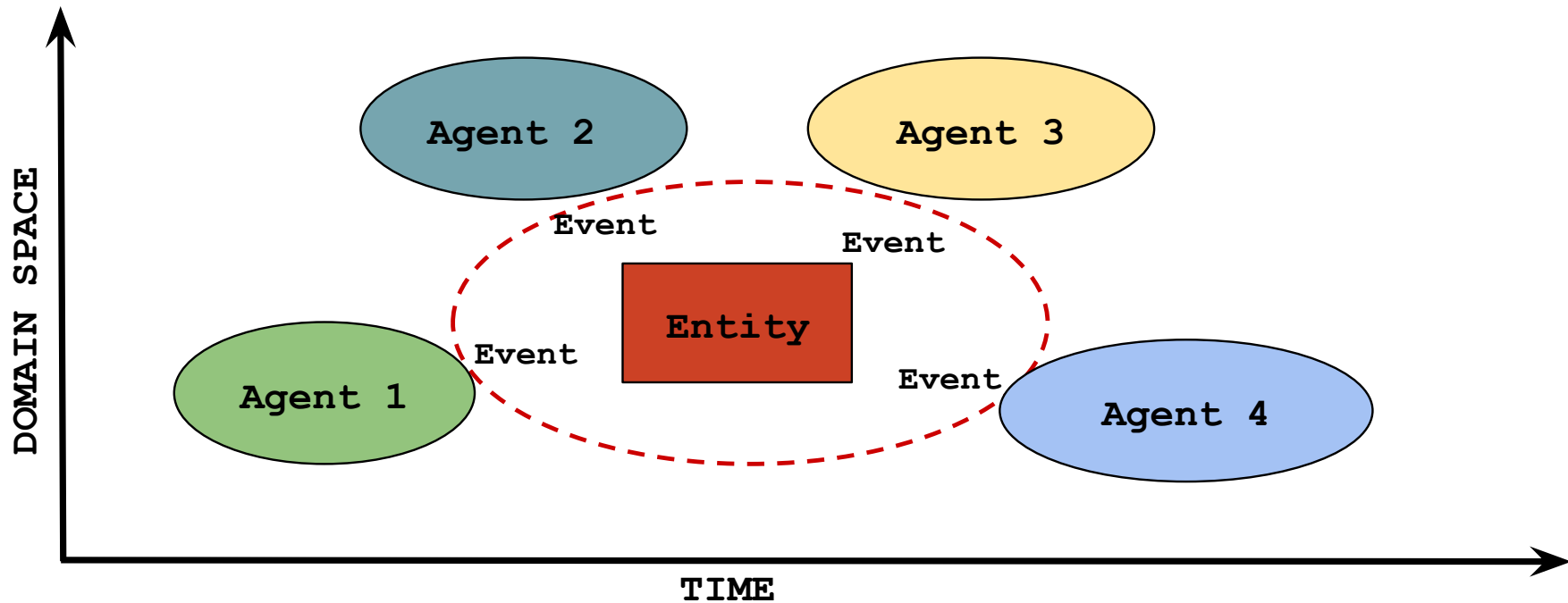
What

- Trust – Identity, Ownership & Verification
- Distributed Ledger
- Immutable Distributed State Machine
 - Transactions
 - Consensus*



System Model

- Entity, Agents and Events



Why

- Transparency
- Immutability
- Identity Management
- User-centric data management
- Codification of Rules
- Trust automation

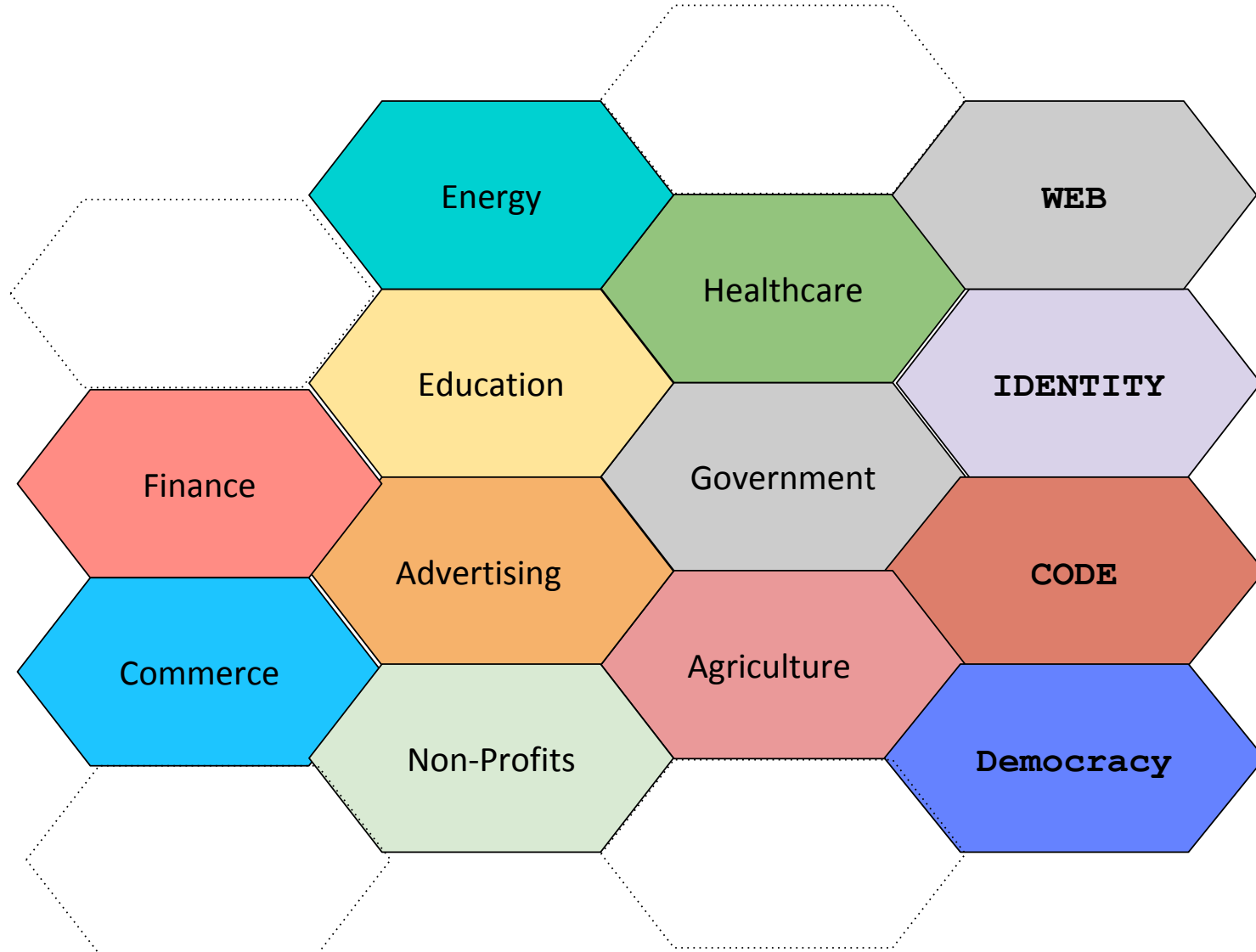


Where

- Life Cycle Tracking
 - Biological
 - Digital
 - Physical
- Process Observability
 - Optimization
 - Incentives
 - Accountability
- Producers and Consumers



Information Networks



Software Supply Chain

- Current system state secure ?
- Open source distribution process
 - Developers
 - Packages
 - Repositories
 - Update Process
- Many channels for security disclosures
- CPE/CVE data managed by central entity



Project *Chain

- Public blockchain
- Single source of truth
- Life cycle tracking of software packages
- Open bug bounty*



Research Challenges

- Scalability
- Interledger Routing
- Web Integration
- Usability



Thanks!

