

Leverage Blockchain to Rebuild Trust

- Harmonizing Global Stakeholders -

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Africa Internet Summit 2021

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GEORGETOWN UNIVERSITY

About Me



@Shanematsuo

- Background: Cryptography and cryptographic protocols
- Research Professor at Georgetown University
 - Director of CyberSMART research center
- Co-Founder of Bsafe.network and BGIN
- Program committee and editor: Scaling Bitcoin, IEEE, ACM conferences, CodeBlue, Ledger Journal and more...
- Program co-chair of Scaling Bitcoin 2018, IEEE ICBC 2022
- Standardization at ISO TC307 (Blockchain and DLT)
- A member of OECD Blockchain Expert Policy Advisory Board(BEPAB)
- Engaged in BoJ – NTT Internet Cash in 1998-2000



About Me



@Shanematsuo

**I have no Bitcoin and any
cryptocurrencies**

**I have no position on “the exchange
rate to FIAT currency.”**

COVID-19 implies Social Distance Native Society

Physical World

- Need social distance at any time
- International travel ban
- Even immigration is not allowed
- Global collaboration is essential

Cyber Space

- All other business/personal process should be done in cyber space
 - Zoom conference, and Zoom drinking party
 - Contract and its execution
 - Consensus by physically distributed parties
 - Election?

What the Internet does and doesn't Provide

Organizing communication process

Understanding

Negotiation

Verification

Reliability of Data

Identity Management

Agreement

Encryption

Authentication

Security and privacy enhancement of **data transmission**

End-to-end Data Transmission

Permissionless innovation

Global (not International) Network

Eliminates Single Point of Failure (SPOF)

Proof of work: Online and Off-line

Off-line

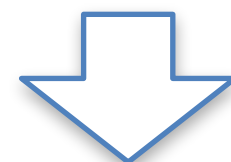
Transaction in
Physical Space



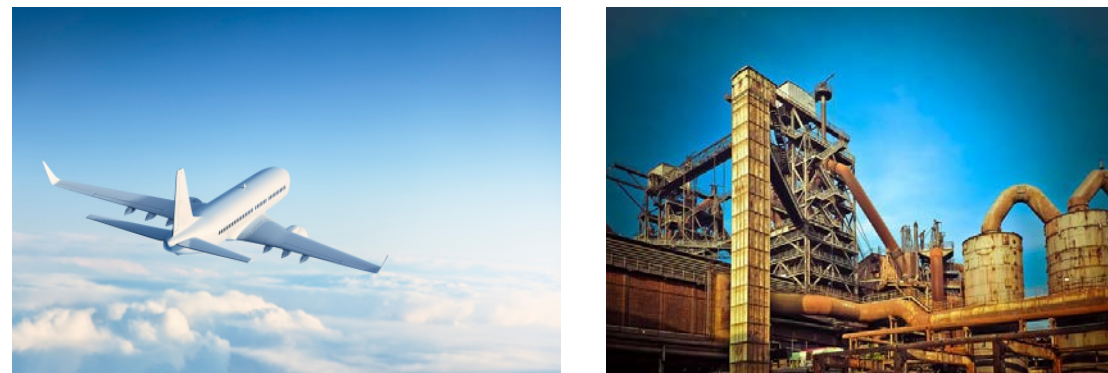
Building trust by
physical
communication



Off-line
Proof of work



Huge waste of
Electricity,
CO2, time, etc.



Online

Transaction in
Cyber Space



Computationally
Verifiable Ledger



“Don’t Trust,
but verify”



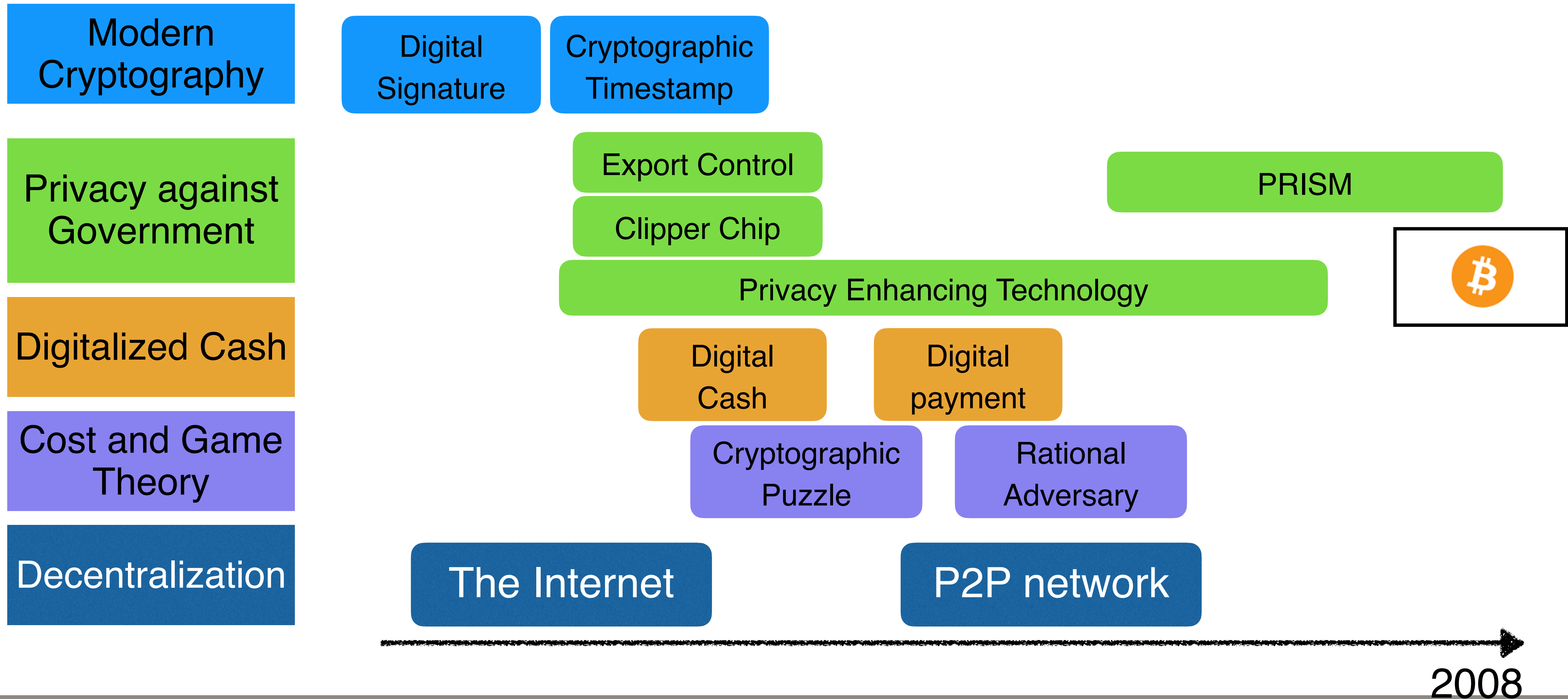
Online
Proof-of-Work



Huge waste of
Electricity and
CO2

Q: Can we expand use cases and make them **sustainable**?

History toward the invention of Blockchain



Revisit what Satoshi proposed

An electronic payment system based on cryptographic proof instead of trust, allowing any two willing parties to transact directly with each other without the need for a trusted third party.

In this paper, we propose a solution to the double-spending problem using a peer-to-peer distributed timestamp server to generate computational proof of the chronological order of transactions.

Who are becoming the Creators of the Financial Systems?



Permissionless Innovation

- Empowers all edge to create new innovations and ecosystem
- Increases the number of potential innovators
- Solution to innovation dilemma

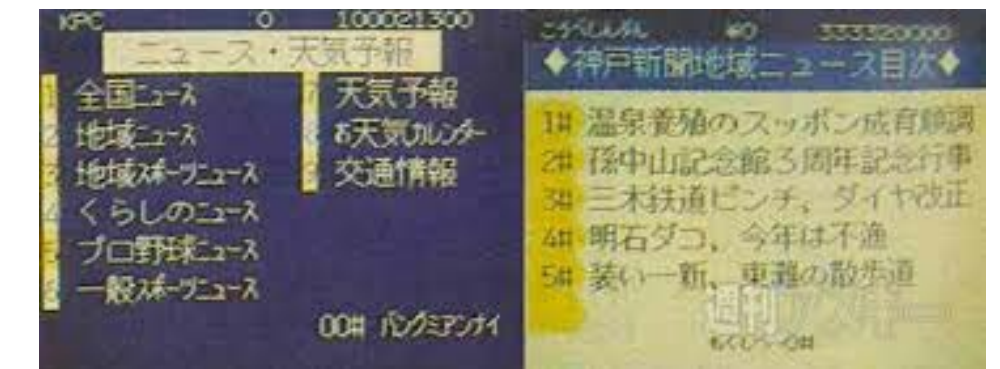


The Internet: An Example of Permissionless Innovation

- Unbundle ownership of communication channel and right of multi-lateral communication
 - decentralized architecture: Routing, BGP
 - layering of technology
TCP/IP, i.e. “stupid network”
- Unbundling facilitates producing new service, business and economy from grassroots.



Minitel (France)



CAPTAIN (Japan)

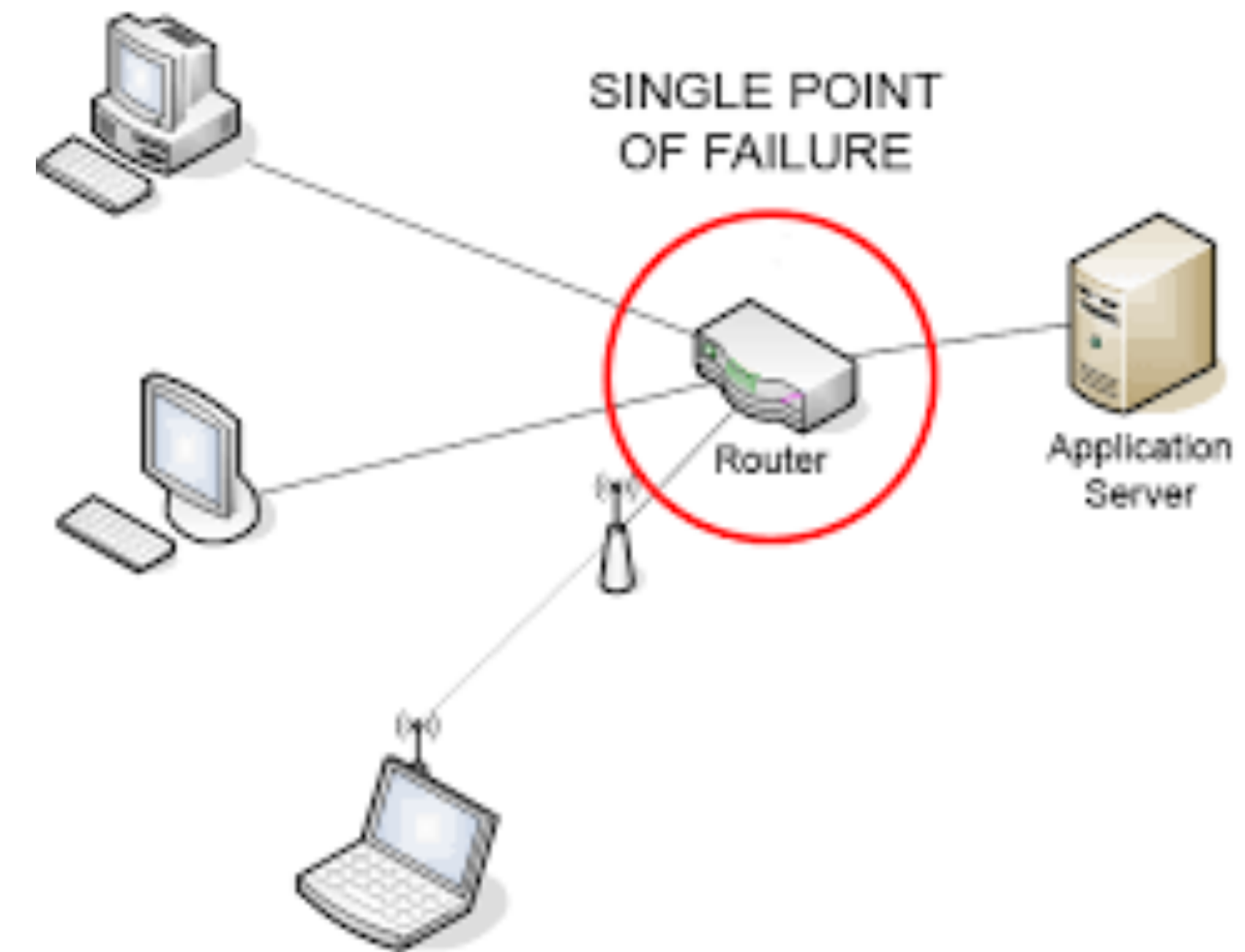


Why “without trusted party” matters

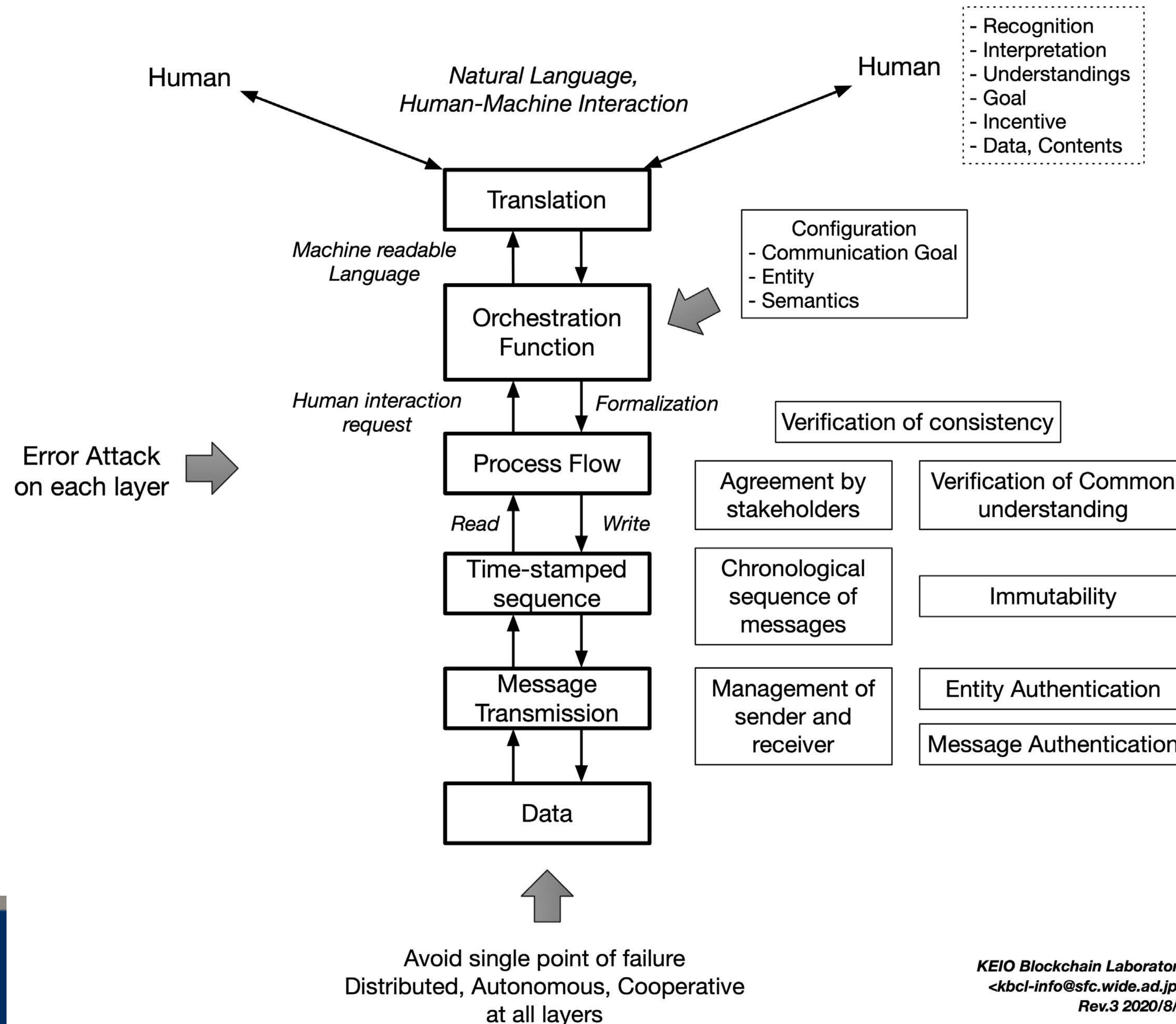
Avoid single point of failure

Target of cyber attacks

Business continuity



Updating Digital over the Internet

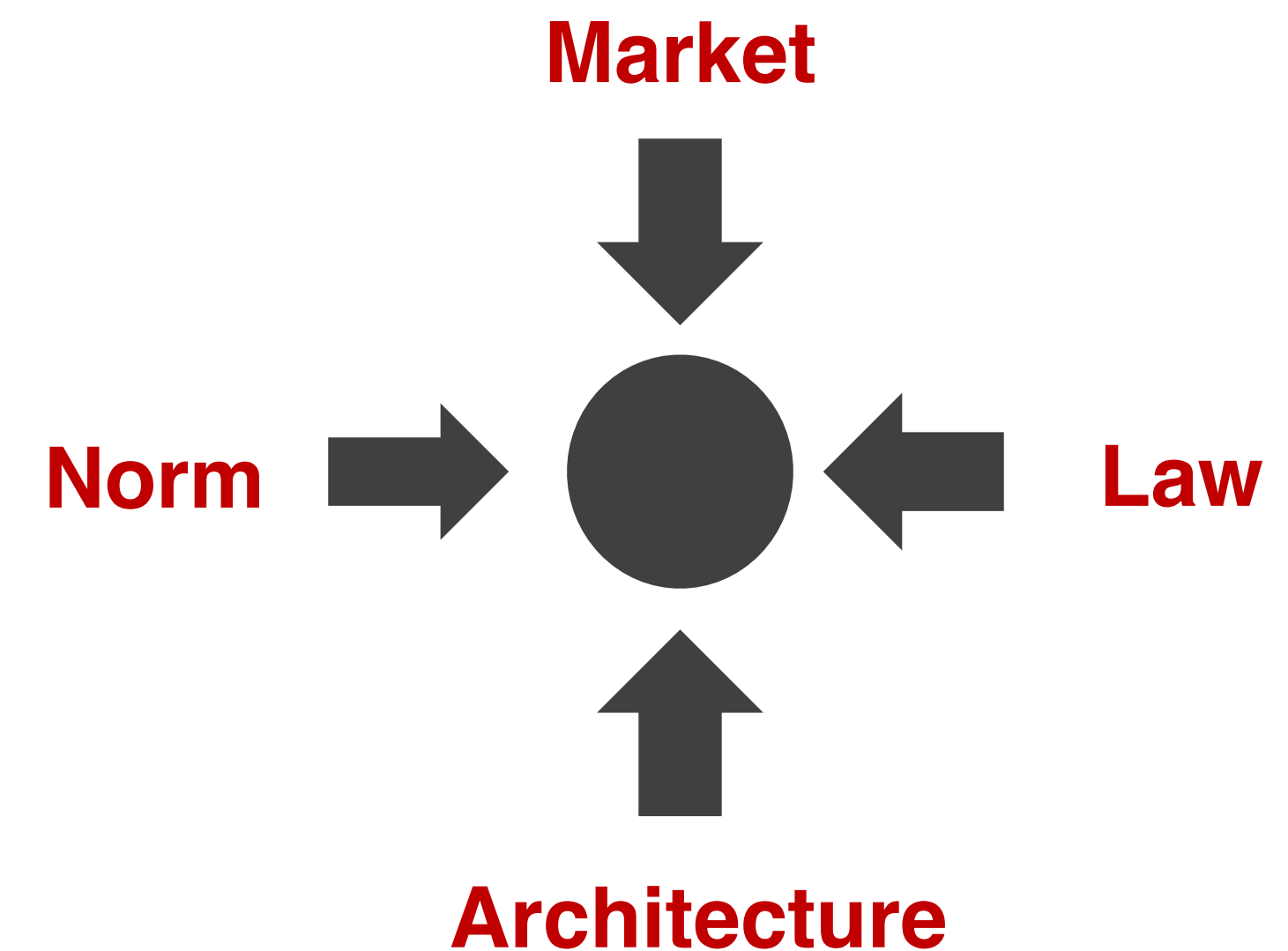


Revisit and design
“Digital Communication”
among persons
(including legal person)

How the Internet Affects Governance in Communications, Commerce and Data

The Internet made “**GLOBAL (not international)**” space.
It requested establishment of new form of governance.

- Change of targets to regulate
- Cybersecurity
- TAX
- IPR
- Privacy
- GDPR



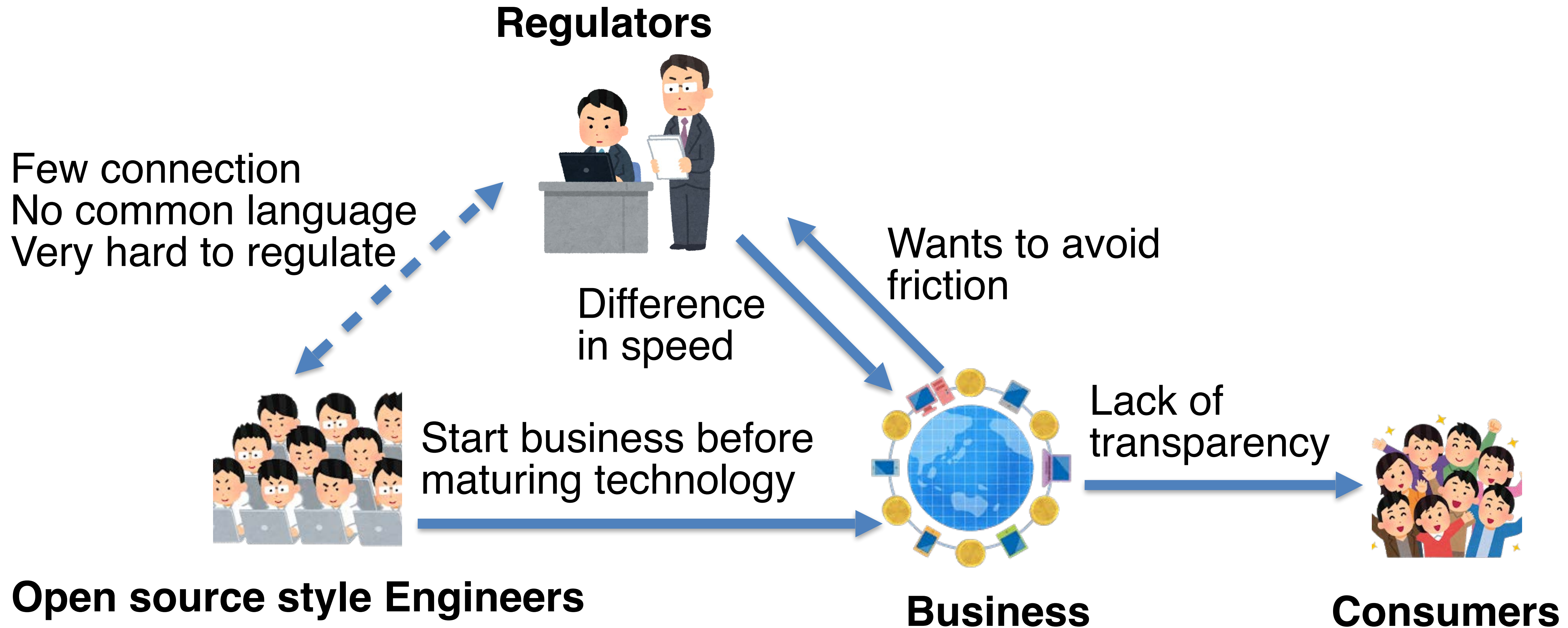
Lawrence Lessig - Pathetic Dot Theory

Why Libra 1.0 was not accepted



- US Democracy vs. Libra association governance
- FIAT currency vs. company issued currency
- AML/CFT

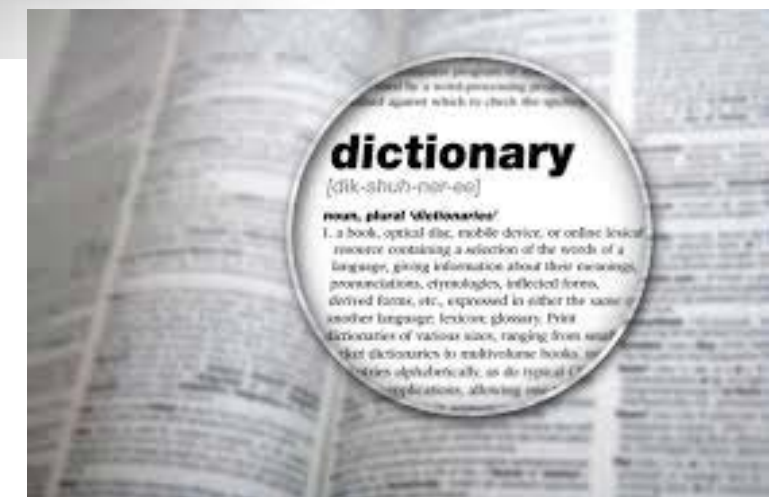
Stakeholders and the Current Situation



Better Conversation with Grass-root and Agile-Innovation Friendly Governance

Need to have better incentive designs among stakeholders

- Common place
- Common language
- Harmonized incentive

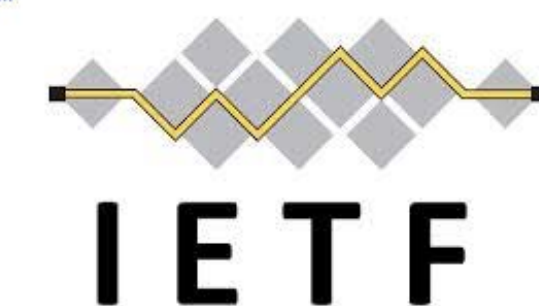


Standard in the next era:

Criteria to have common understandings

Lessons from the Internet: ISOC, IETF, ICANN, etc.

ISO Standardization: Technical reports on Security for Digital Asset Custodians



What happened at G20 last year



G20 Financial
Minister and
Central Bank
Governor Meeting
in Fukuoka (June
8-9, 2019)



What happened at G20 last year

G20 HIGH-LEVEL SEMINAR ON FINANCIAL INNOVATION

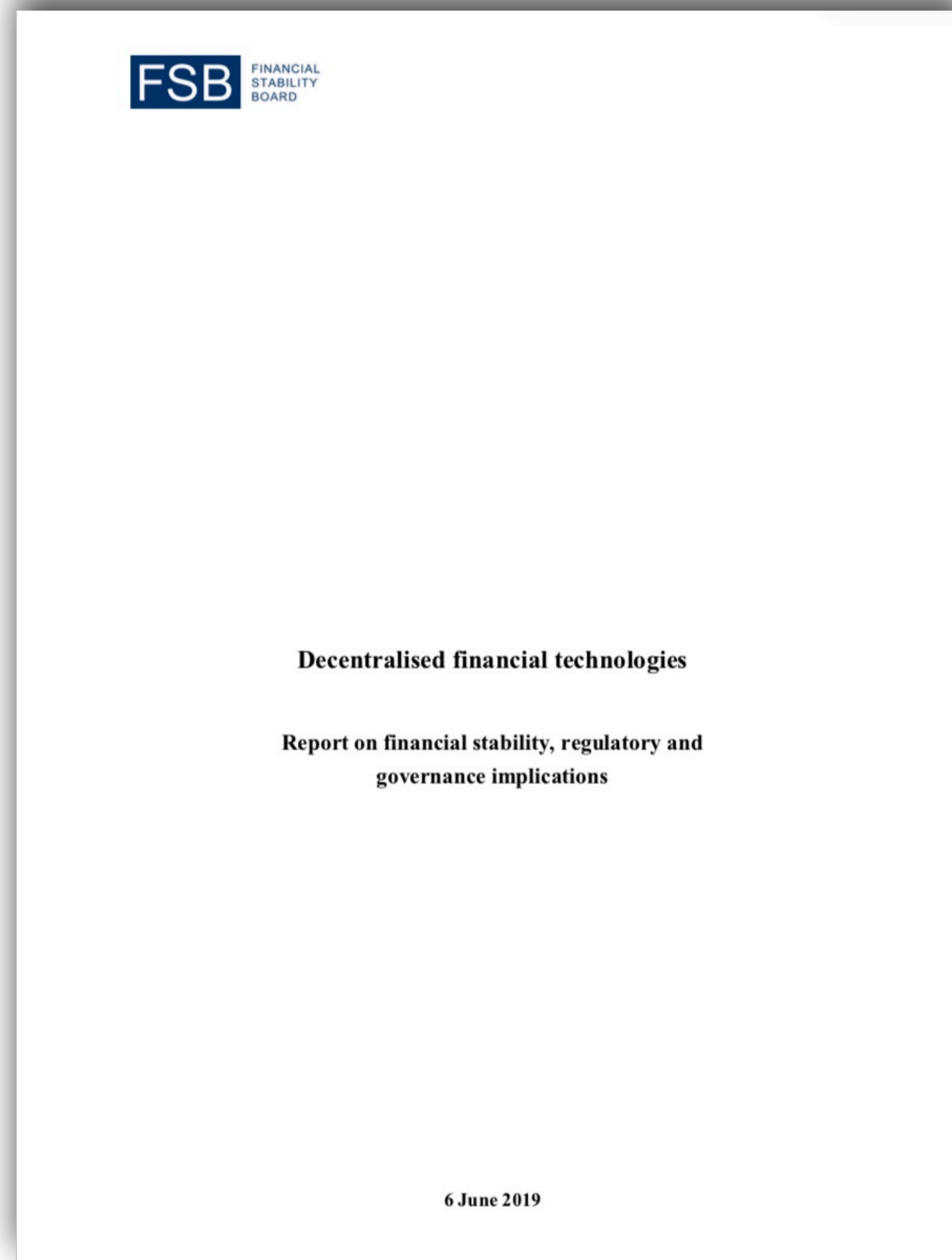
“OUR FUTURE IN THE DIGITAL AGE

Session 2: Multi-stakeholder Governance for a Decentralized Financial System

Jun Murai	Professor, Keio University
Klaas Knot	President, De Nederlandsche Bank, and Vice Chair, Financial Stability Board
Adam Back	Co-founder and CEO, Blockstream
Shin'ichiro Matsuo	Research Professor, Georgetown University
Brad Carr	Senior Director, Digital Finance, Institute of International Finance



A Report by Financial Stability Board (FSB) : published on June 6 2019



FSB report on decentralised financial technologies considers:

- **Financial stability, regulatory and governance implications of DLT and P2P;**
- **Sets out benefits and risks of increased use; and**
- **Underscores the importance of a multi-stakeholder dialogue.**

A resulting sentence in the communique (the 13th paragraph)

Technological innovations, including those underlying crypto-assets, can deliver significant benefits to the financial system and the broader economy. While crypto-assets do not pose a threat to global financial stability at this point, we remain vigilant to risks, including those related to consumer and investor protection, anti-money laundering (AML) and countering the financing of terrorism (CFT). We reaffirm our commitment to applying the recently amended FATF Standards to virtual assets and related providers for AML and CFT. We look forward to the adoption of the FATF Interpretive Note and Guidance by the FATF at its plenary later this month. We welcome IOSCO's work on crypto-asset trading platforms related to consumer and investor protection and market integrity. We welcome the FSB's directory of crypto-asset regulators, and its report on work underway, regulatory approaches and potential gaps relating to crypto-assets. We ask the FSB and standard setting bodies to monitor risks and consider work on additional multilateral responses as needed. **We also welcome the FSB report on decentralized financial technologies, and the possible implications for financial stability, regulation and governance, and how regulators can enhance the dialogue with a wider group of stakeholders.** We also continue to step up efforts to enhance cyber resilience, and welcome progress on the FSB's initiative to identify effective practices for response to and recovery from cyber incidents.

Blockchain Global Initiative Network (BGIN)

An **open and neutral** sphere for all stakeholders to **deepen common understanding** and to **collaborate to address issues** they face in order to attain sustainable development of the blockchain community.

Regulators



Consumers



BGIN



Open source style Engineers

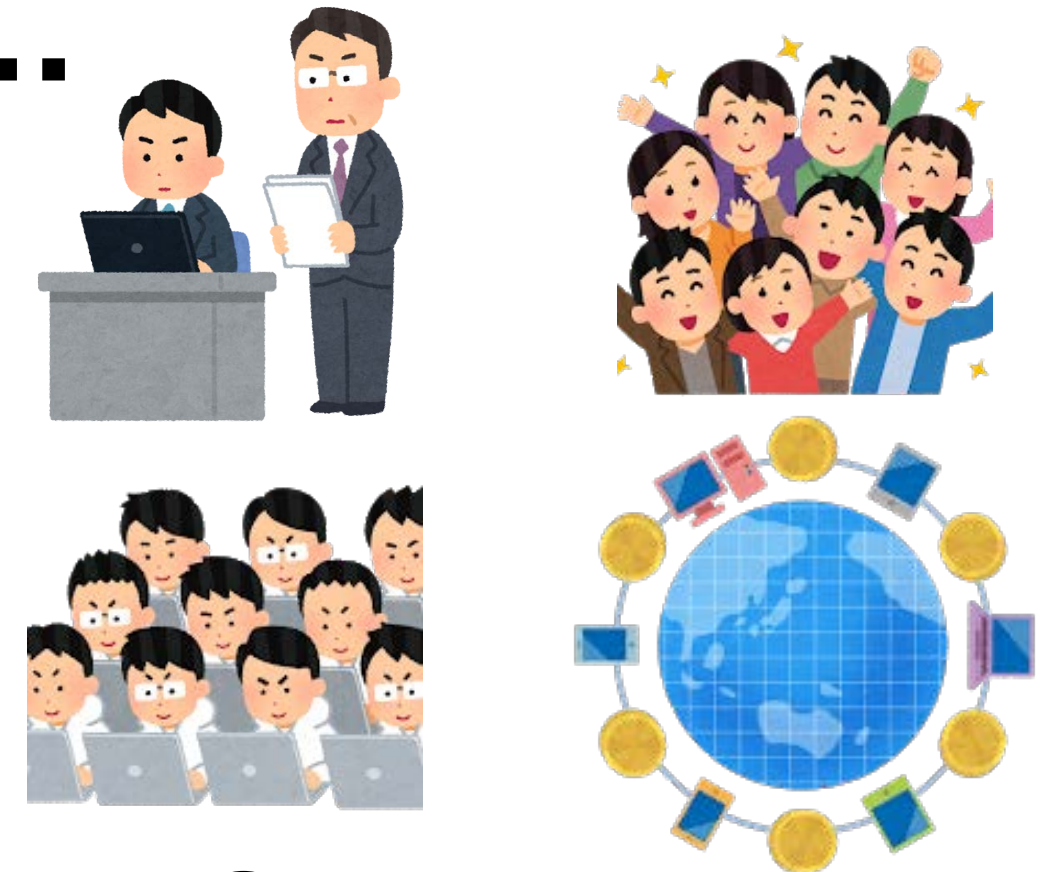
Business

How it works

**Rough Consensus
and
Running Code**

BGIN

**Contributions,
pull-request, ...**



**Open to all
stakeholders and
anyone**

**Online
Discussions**

**In-person
meetings**

Publish documents

**Technology
Specifications
and guidance**

**Operational
Specification
and guidance**

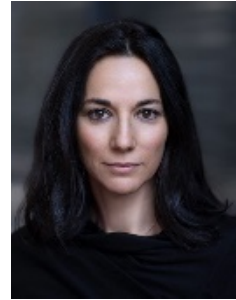
**Other
documents**

BGIN Initial Contributors

- 23 experts with diverse backgrounds (**E**ngineers, **R**egulators, **I**nternet Pioneers, **A**cademia, **B**usiness, **S**tandards.)

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Dublin, Ireland



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Yuta Takanashi

Deputy director, Office of International Affairs,
Financial Services Agency, JAPAN



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San Fransisco, US



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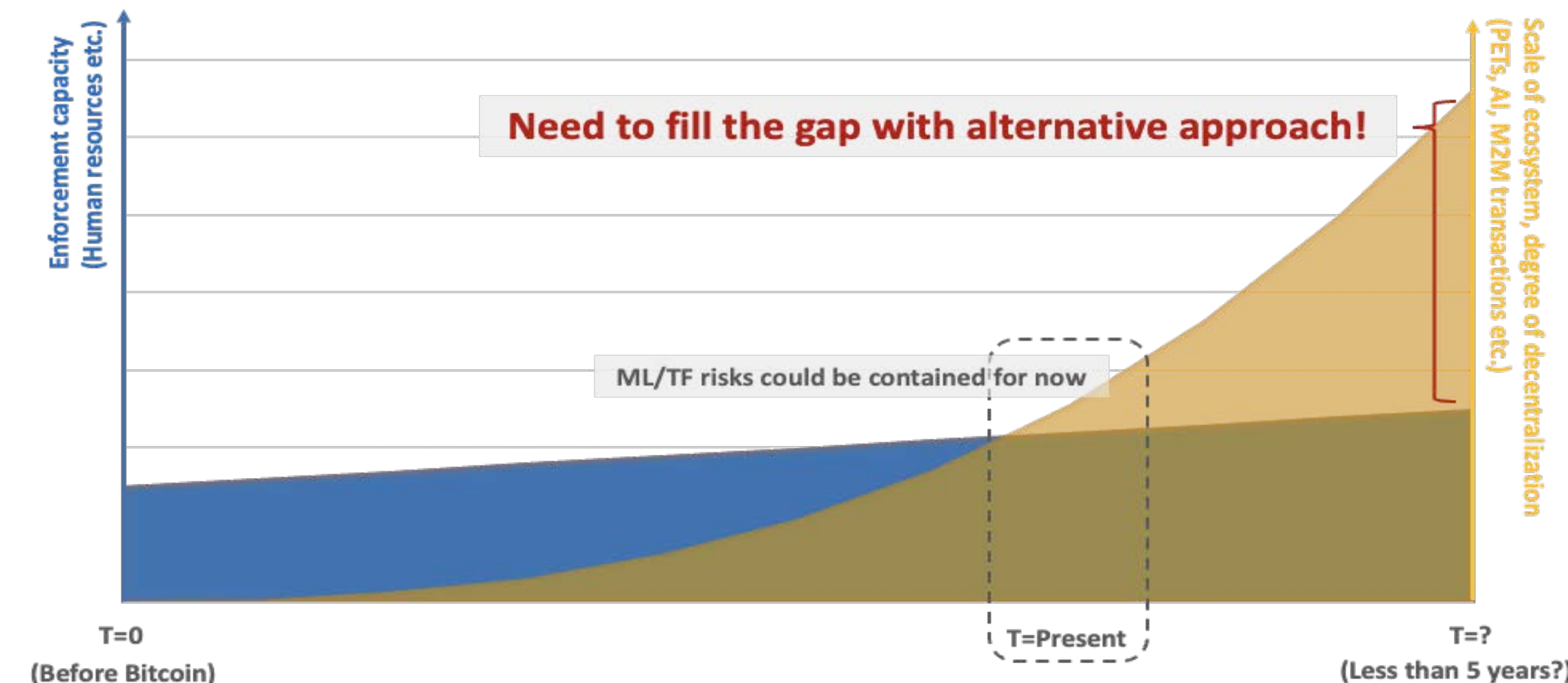
Activities of BGIN

- Working Groups: Create documents, codes for specific topics
 - Internal Governance Working Group
 - Identity, Key Management and Privacy Working Group
- General Meetings (Three meetings / year)
 - Block #1: November 2020, Mumbai, India (Virtual)
 - Block #2: March 2021, Paris, France (Virtual)
 - Block #3: June/July 2021, Washington DC/NY, USA (Virtual)
 - Block #4: Fall 2021, in Africa (Virtual)
 - Three days event: The day 3 focuses on local blockchain community



Collaboration with Financial Action Task Force (FATF)

- Joined as a panelist of FATF Virtual Asset Contact Group (April 2021)
- Presented the result of multi-stakeholder discussion regarding FATF travel rule and new regulations on virtual assets
- Proposed continuous joint works
- BGIN is planning to invite FATF representative to future BGIN meeting



Centralized, Decentralized and Poly-centric Stewardship

Centralized Trust



- Becomes the SPOF
- Blocker against permissionless innovation

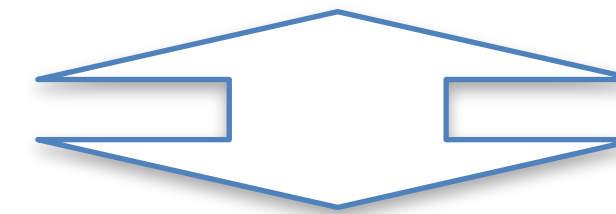
Decentralized Trust



- Who is responsible for what?
- Broken incentive mechanism
- Works just for payment



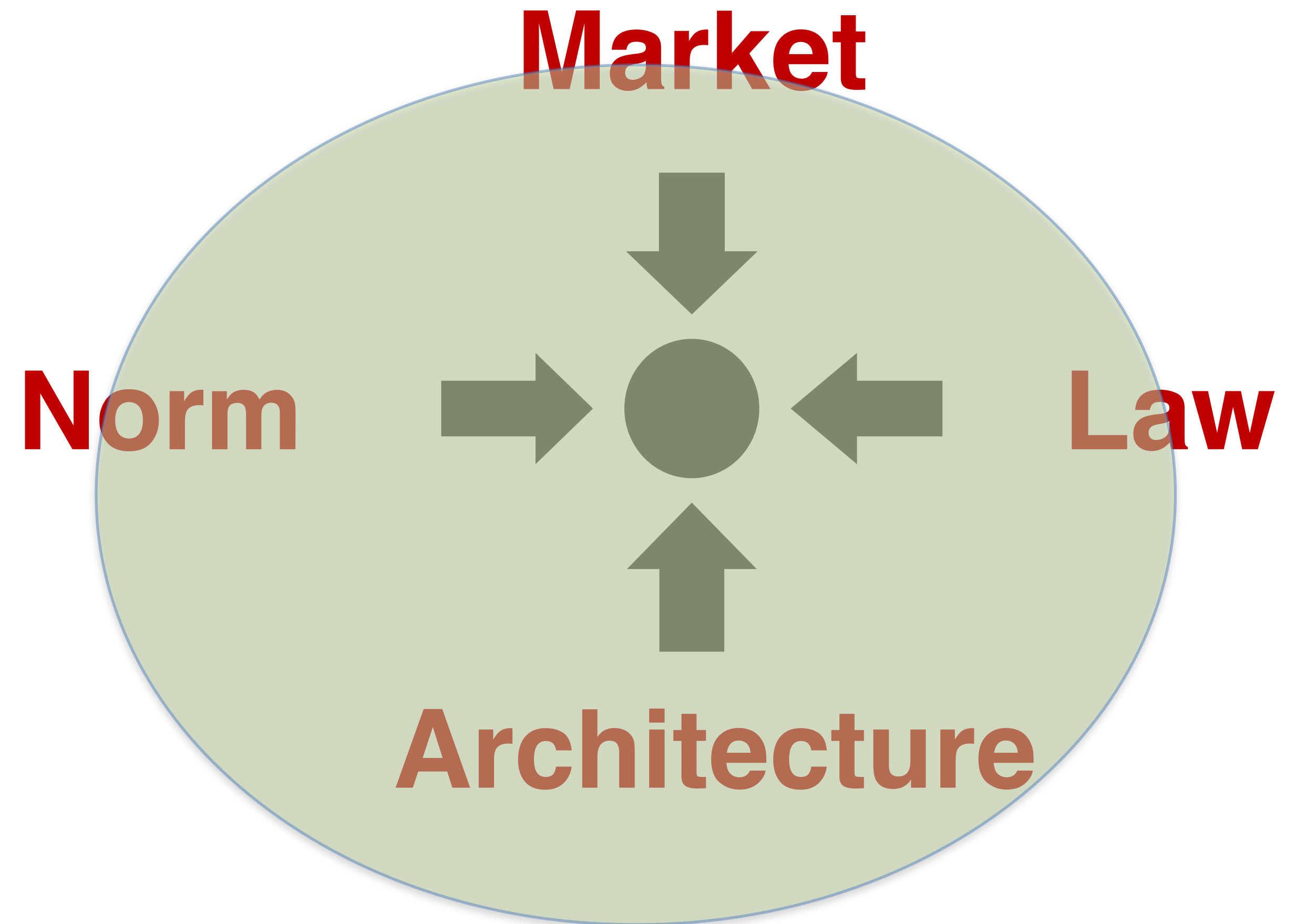
Poly-centric Stewardship



Permissionless Digital Trust Foundation

Toward Healthy Digital Trust

- Digital technology plays bigger roles than before.
- Trust for human communication is key
- Important principles
 - Stay global: don't create SPOF
 - Human-life centric
 - Responsibility in a society: poly-centric stewardship and inclusion of all stakeholders
 - Create common language and understandings
 - Be collaborative
 - Make it sustainable: Incentive design is essential



Thank you!



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