FinTech Association
Capital Markets Subcommittee
(October 20th, 2020)

Governance in a decentralized financial system

- Implemention of a multi-stakeholder approach through the BGIN -

Ryosuke Ushida

Deputy Director, Fintech Office, JFSA / Senior Fellow, Georgetown University

Agenda

1. Expectations for decentralized financial technology and where DeFi stands today

2. Regulatory considerations and the implementation of a multi-stakeholder approach through BGIN

[Disclaimer]

The views and opinions expressed in this publication are those of authors and do not necessarily reflect the official policy or position of JFSA

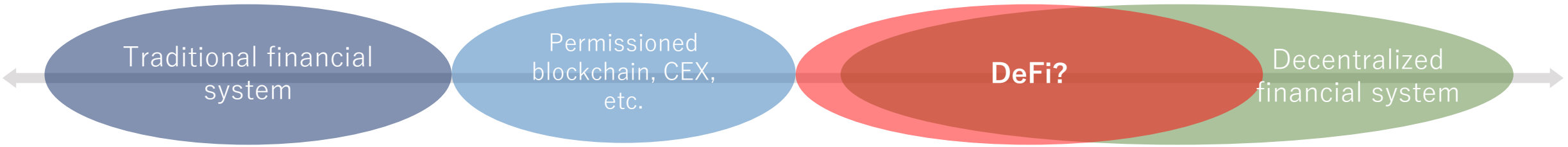
1. Expectations for decentralized financial technology and where DeFi stands today

Terminology

- **Decentralized financial technology**
  - Technologies that have the potential to **reduce or eliminate the need for** one or more **intermediaries or centralised processes** in the provision of financial services (FSB "Decentralised financial technologies")
  - From regulatory perspective, KYC-free does not characterize decentralized financial technology

- **Decentralized financial system**
  - The new financial system (as opposed to the conventional centralized financial system) that decentralized financial technology could bring

- **(So-called) DeFi**
  - Specific applications that are (can be) part of the decentralized financial system
    - Uniswap, Compound, Maker etc.
    - The type and degree of decentralization varies depending on the application
    - **Law degree of decentralization** compared to near fully decentralized use cases (e.g., Bitcoin)



Regulators' expectations and risk perceptions of decentralized financial technology

Expectation

- **Contribution to financial stability**
  - Reduced uncertainty in financial transactions
  - Reduced dependence on intermediaries (solvency and liquidity risks mitigation)
  - Availability
  - Resilience to cyber risk
- **Improving the efficiency and diversity of financial services**
  - A collateral-based ecosystem that is different from existing credit-based financial system
  - Transparent service
  - New financial services meeting customer needs (e.g., micropayments)
  - Financial inclusion

Risk

- **Risks to financial stability**
  - New types of concentration risk, etc.
- **Blurring of legal responsibilities**
- **KYC/AML**
- **Consumer protection**
- **Limitations of existing regulatory approaches**

To maximize the potential of decentralized technology, risk reduction measures must be taken with the right risk awareness

Three Types of Decentralization

- **Decentralization of decision-making**
  - bottom-up approach
  - On-chain Governance (Governance Tokens)
- **Decentralization of risk-taking**
  - Peer-to-Pool (Protocol)
  - Peer: People or Bot
- **Decentralization of record keeping**
  - DLT
  - IPFS

The degree of decentralization and risk characteristics of each project must be closely examined.

Where should (or shouldn't) it be decentralized?

Current standpoint of DeFi

User Interface / Investment Solicitation

- Websites
- Mobile app
- Aggregators
- CEX ?
- SNS (Twitter, Telegram, etc.)

Smart Contract / Decentralized applications

Oracle

Derivatives, Insurance etc...

DEX

Lending / Borrowing

(So called) Stablecoins

Un-hosted wallets

Governance tokens

Other Ecosystems (including CeFi)

Blockchain protocols (e.g., Ethereum)

- Distributed ledgers
- Consensus mechanism
- Mining / Validation
- Node
- Native tokens

etc.

2nd layer solutions

- Side-chains
- Payment channels ...

- ❑ **UX/UI Improvements**
- ❑ **Regulatory Compliance**
- ❑ **Various Issues**
  - ✓ Governance
  - ✓ Security
  - ✓ Upgradability
  - ✓ Interconnectedness
  - ✓ Oracles
  - ✓ Regulatory compliance
- ❑ **Are appropriate incentive mechanisms built in?**
  - ✓ Voting process/mechanism
  - ✓ Relationship with off-chain governance
  - ✓ Unfair trade
- ❑ **Does it have solid foundation to build a complex ecosystem?**
  - ✓ Security
  - ✓ Scalability
  - ✓ Interoperability

lessons from The DAO case (from the SEC DAO report)

- **Concentration of authority to a specific people/group**
  - Curators (a group of individuals selected by Slock.it) have broad discretion in making investment proposals
  - The DAO token holder's voting right is limited and one-off (depending on the curator)
- **Governance structure with low incentives for security investments**
  - Slock.it proposed broader security proposals, including the formation of a "DAO Security" group, the creation of a "Bug Bounty Program", and regular external audits of the code, but revised the proposals after criticized as too costly
- **Vulnerability exists despite code audit**
- **Incident response procedures had not been determined in advance**
- **Regulatory considerations: The DAO token as security**
  - Token holder depends on the significant managerial efforts of Slock.it and the curators from both contractual and practical viewpoints
  - During the solicitation period, the DAO offered and sold tokens in exchange for ETH through its website, which is publicly accessible to the public, including individuals in the United States.
  - The DAO would have been required to register for the offering and sale of DAO tokens unless it received a valid exemption

Is the current DeFi project applying the lessons of the past?

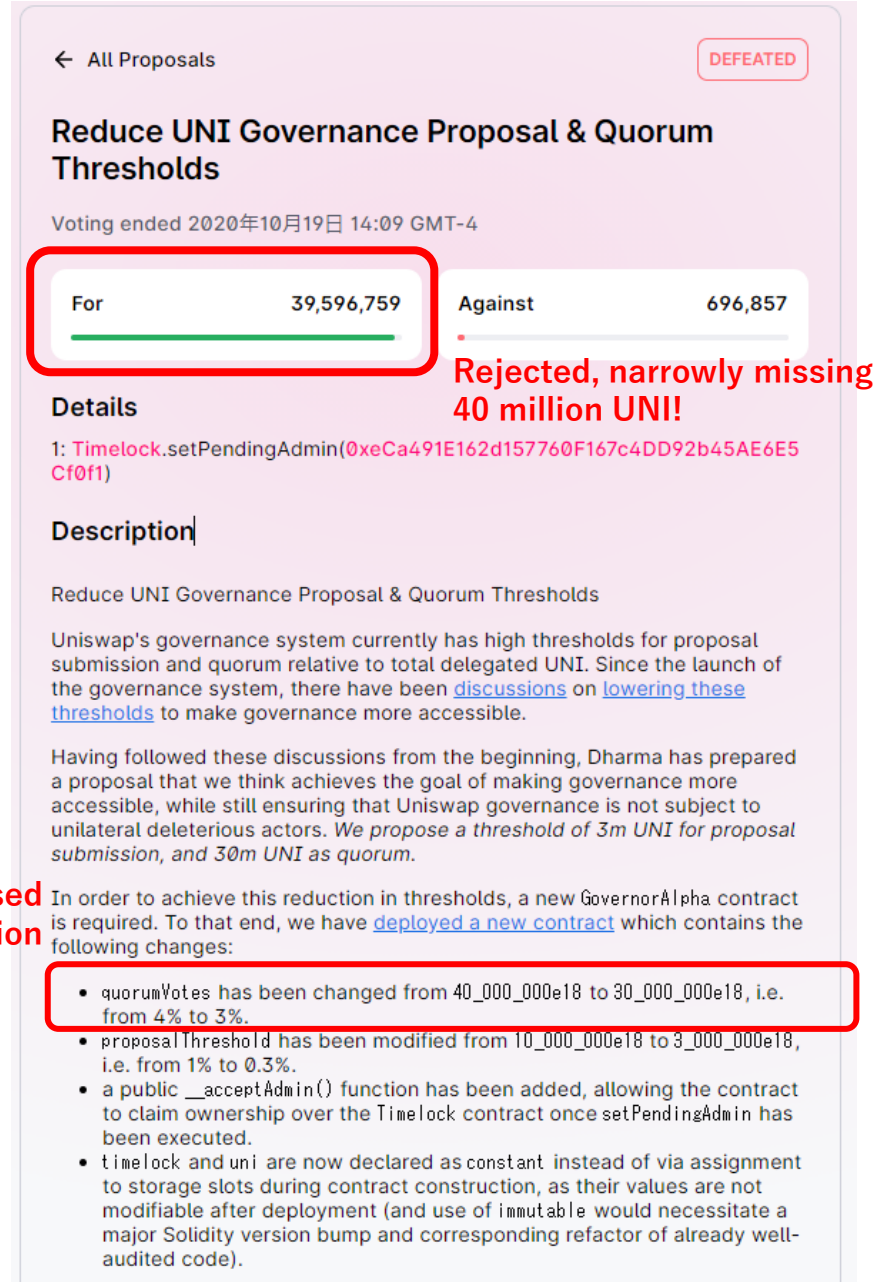
Current standpoint of DeFi

- **Governance Mechanisms**
  - **Efficacy of governance tokens**
    - A mean of community building
    - The Limits of On-ohain governance?
      - Founders, VCs and initial community members hold a lot of voting rights in many projects
      - low voter turnout
  - Hybrid Solutions
    - Obtained a legal entity for source code protection (Dai Foundation)
    - A hybrid of DAO and an existing organization: The LAO (A For-Profit, Limited Liability Autonomous Organization)
- **Institutional Implications**
  - Regardless of the type and degree of centralization/decentralization, achieving regulatory objectives is essential
    - **Concerns about the reduced enforceability of existing regulatory approaches to a fully decentralized ecosystem (topic of the second half)**
  - Dispute resolution mechanisms: e.g. ICANN's leading role in DNS dispute resolution
  - Dealing with regulatory arbitrage including cross-border transactions
  - The challenge against technology neutral approach

Governance Case Study (Uniswap)

- **A large token holder Dharma proposes Uniswap's first governance change**
  - The minimum quorum for approval to be changed from 40 million to 30 million UNI
  - Make the time lock contract changeable
- **Some members of the community fiercely criticize Dharma as a hijacking of the Uniswap governance**
  - Dharma has a strong business relationship (i.e. COI) with Uniswap
  - Considering the low voter turnout, lowering the threshold could lead to a result that gives Dharma strong decision-making power
- **Proposal rejected due to lack of affirmative votes.**
  - Decentralized decision-making is now protected (for a while)
  - The essential issue is unresolved

The proposal would have been passed had it been lowered to 30 million



[Takes away]

- What do you want to achieve with DeFi in the first place?
- How should appropriate governance (on/off chain) be built?
- Large token holders as regulatory access points?
- There's a lot we could (and should) learn from the legacy financial system

Current standpoint of DeFi

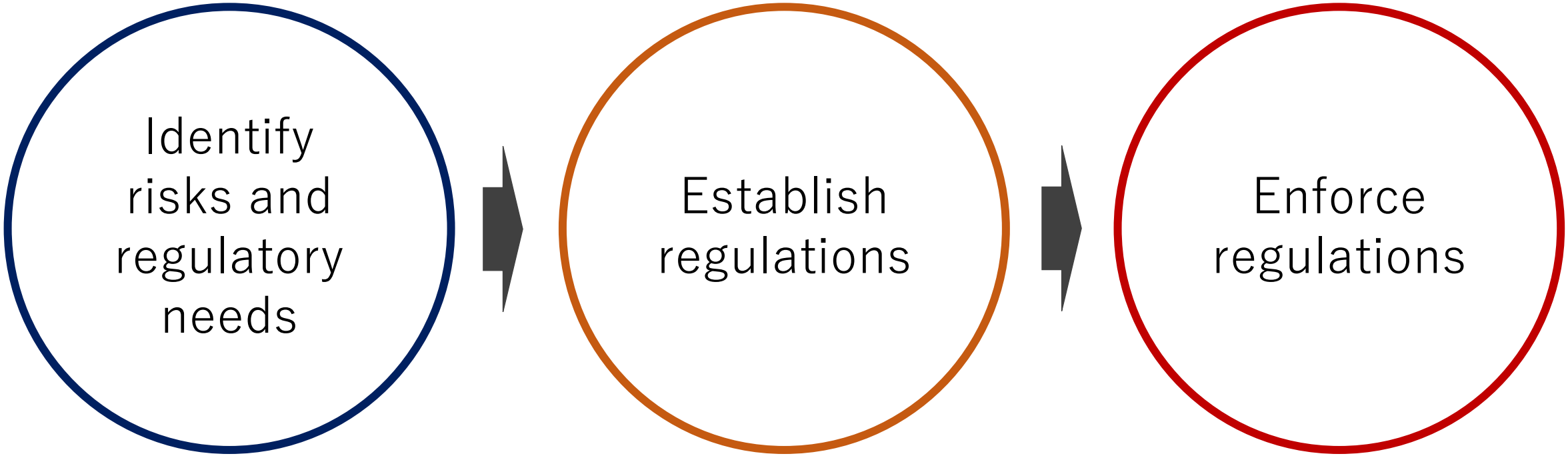
- **Implications for Financial Stability**
  - While some **projects have achieved a considerable degree of decentralization**, the majority have a centralized aspect
    - **New types of concentration risks**: code developers, admin-key holders, governance token holders, node operators, oracle providers, etc. Tends to be concentrated in a relatively small number of individuals or entities. ~~Trustless~~.
  - **Credit risk can be low because it is collateral-based**, but the **price volatility risk of collateral assets** such as ETH cannot be ignored
  - Ability to deal with sudden market changes:
    - **Collateral auctions are dysfunctional** @ Maker (March 2020)
    - Relatively simple algorithms such as AMM can handle edge event?
  - Robustness to cyber risk: many incidents due to **bugs/vulnerabilities in protocols** (e.g., launch without going through a testnet). Vulnerability, even for those audited by third parties (ex. Lien). **Reliance on security of other contracts**.
    - Incidents caused by security management are also a concern (ex. Is the admin-key properly managed?)
  - **Essential to develop the base layer** as a foundation for building complex ecosystems

- **Improving the efficiency and diversity of financial services**
  - **Developments of innovative technologies**: liquidity pools, AMM, etc.
  - The majority of the use cases is speculative
    - **Concerns about market integrity** (e.g., front running, market manipulation)
    - Use cases that address real social needs are expected

2. Regulatory considerations and the implementation of a multi-stakeholder approach through BGIN

What does it mean to regulate?

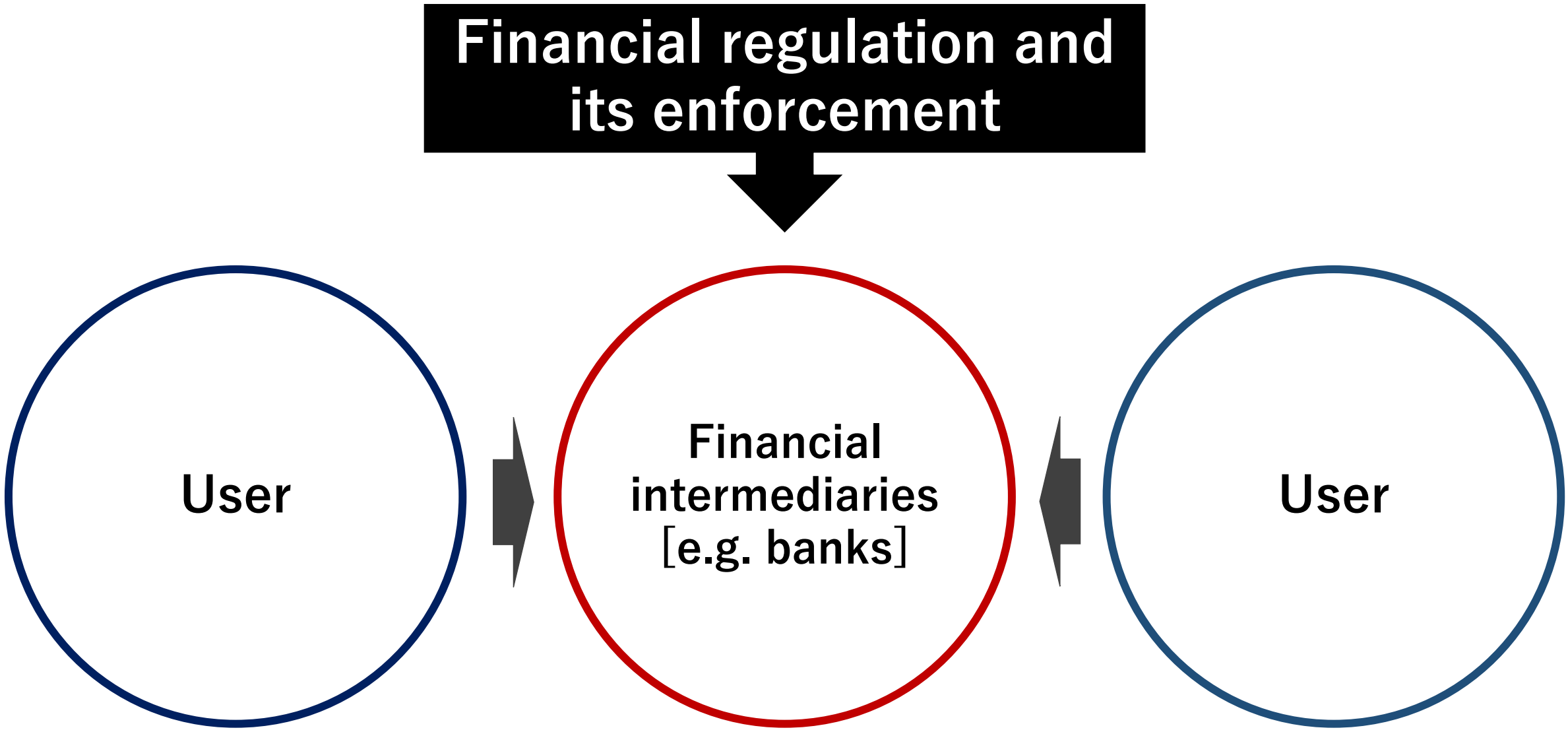
- Just creating regulations does not automatically achieve regulatory goals
- **The goals can be achieved only when the regulations are enforced**



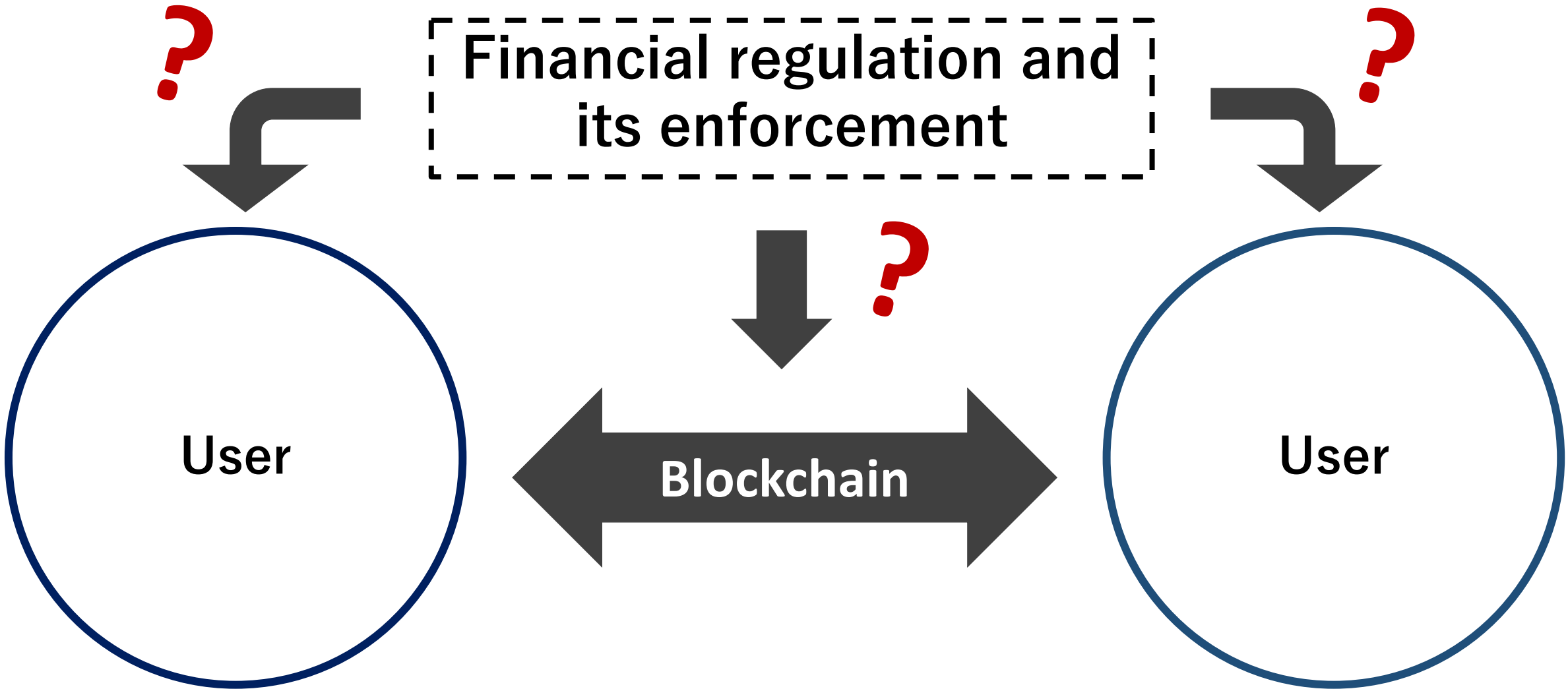
Financial regulatory goals

- These goals need to be achieved for society regardless of the technology used in the financial system

Conventional regulatory approach



In the case of decentralized financial system



Reduced enforceability

- Limitation to achieve regulatory goals by laws and regulations alone
- **Need to re-think and re-define the role of regulation**

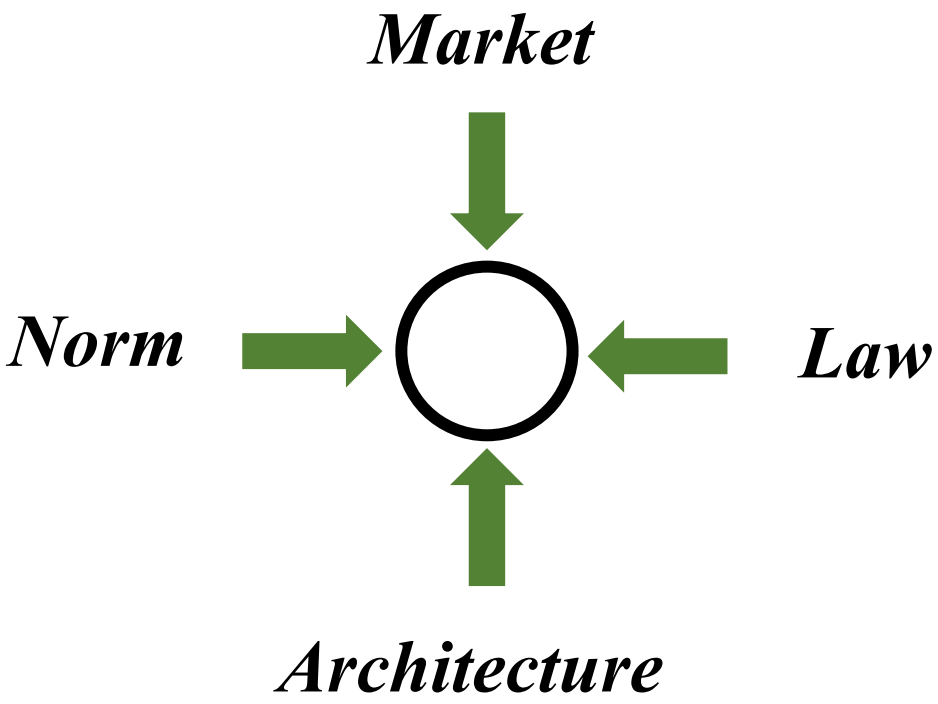
Decentralization	• Blockchain could eliminate intermediaries from certain area of the financial ecosystem	No intermediaries to regulate
Autonomous	• Once the system starts its operation, it continues without third party intervention	Cannot stop the service
Anonymity	• Blockchain can accommodate pseudonymity and more sophisticated anonymity	Reduced traceability
Tamper-resistance	• Once the data is recorded, no single party can modify or delete it	No ex-post remedy (irrevocable)
Global	• By nature, networks created by blockchain are hyper-globalized and digitalized	Limitation of Jurisdictional regulatory approach
Openness	• Anyone can create a new blockchain network and anyone can join it	Obscured responsibility

What should we do?

- **Necessity to develop an alternative approach to the conventional framework of “authorities regulating financial institutions” to exploit the potential of a decentralized financial system**

- Can we learn the lesson from the Internet, which has developed as a distributed network with bottom-up multi-stakeholder approach?

How to control activities in cyberspace?



Laurence Lessig - *Code*, 1997

Application of this concept to decentralized financial system

- **Law/regulation** can be imposed on specifi ecosystem participants *(e.g. admin-key holders, large token holders, node operators, minors, website operators)*
- Government can intervene in the **Market** and provide economic (dis)incentives *(e.g. taxes, subsidies)*
- Government can join social activities to form desirable **Norms**
- Translate laws and regulations into **Architecture** (**Code as Law**)
  - cf. Embedded Supervision (BIS, 2019)

De Filippi and Wright - *Blockchain and the Law* , 2018

CALL FOR MULTI-STAKEHOLDER COMMUNICATION TO ESTABLISH A GOVERNANCE MECHANISM FOR THE EMERGING BLOCKCHAIN-BASED FINANCIAL ECOSYSTEM

Yuta Takanashi, Shin'ichiro Matsuo, Eric Burger, Clare Sullivan, James Miller, Hirotoshi Sato*

ABSTRACT

Financial regulators around the world regulate financial intermediaries and activities to achieve their regulatory goals including investor/consumer protection, financial stability and prevention of financial crimes, and in so doing address various market failures. These objectives are needed in the social interest regardless of the technologies used by the financial system.

Blockchain technology and any financial ecosystem based on it have technical characteristics including decentralization, autonomization, anonymization and globalization, which could undermine the ability of regulators to achieve regulatory goals. Especially when it comes to preventing financial crimes, these characteristics could have significant negative impact on the ability of regulators. The intergovernmental Financial Action Task Force ("FATF")[1] recognizes these issues and is tackling them by issuing multiple guidelines; however, it seems that such

* Yuta Takanashi is Deputy Director for Fintech and Innovation at the Financial Services Agency (JFSA, Japan's financial regulator) and a Senior Fellow in the Department of

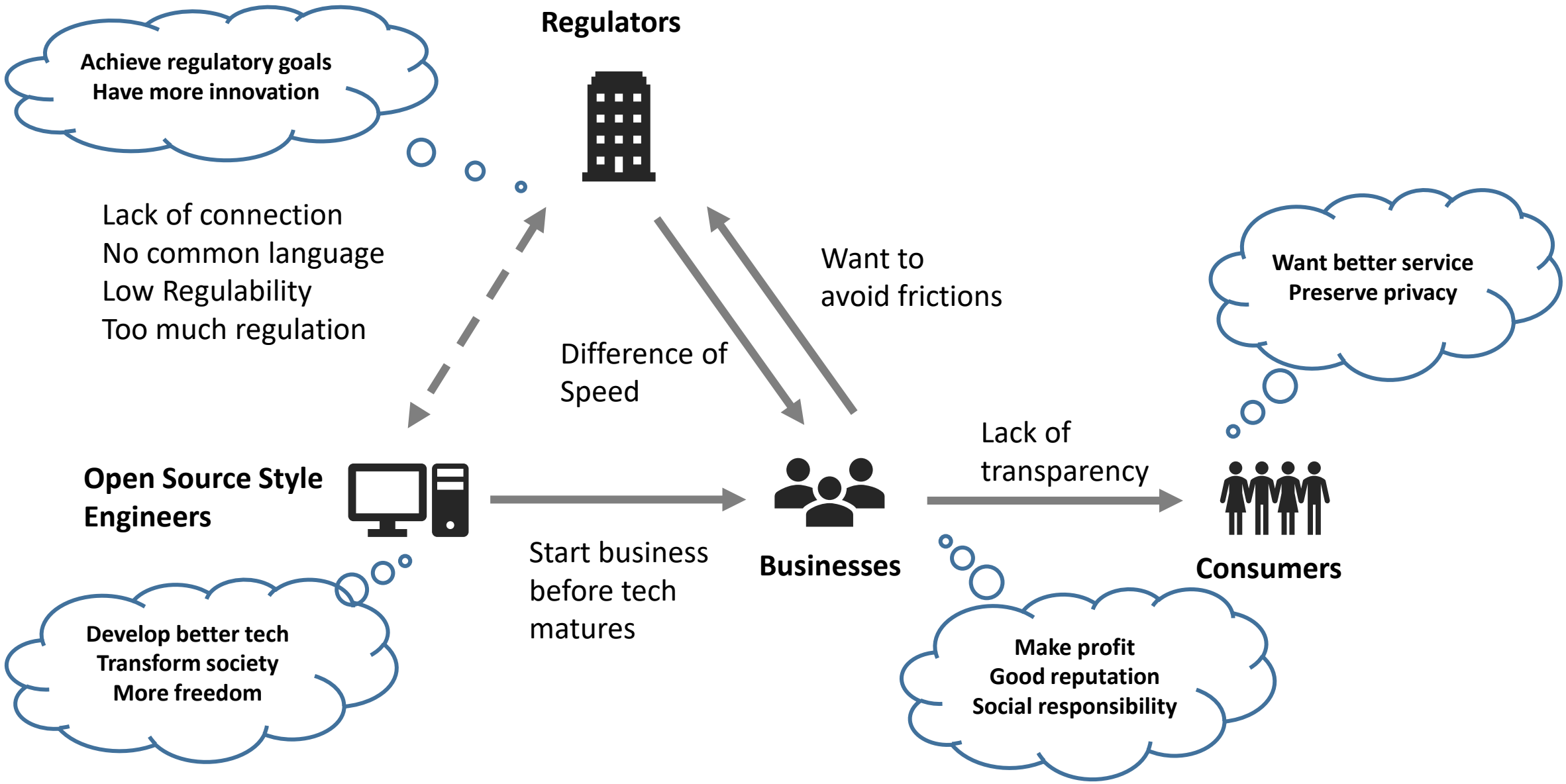
Our Idea

- Develop **Architectures/Codes** that
  - ✓ comply with **Law/Regulation**
  - ✓ align with **Norm**
  - ✓ is competitive in the **Market**
- Developing such architecture requires multi-stakeholders cooperation
- Regulators should give impetus to develop **multi-stakeholder governance**

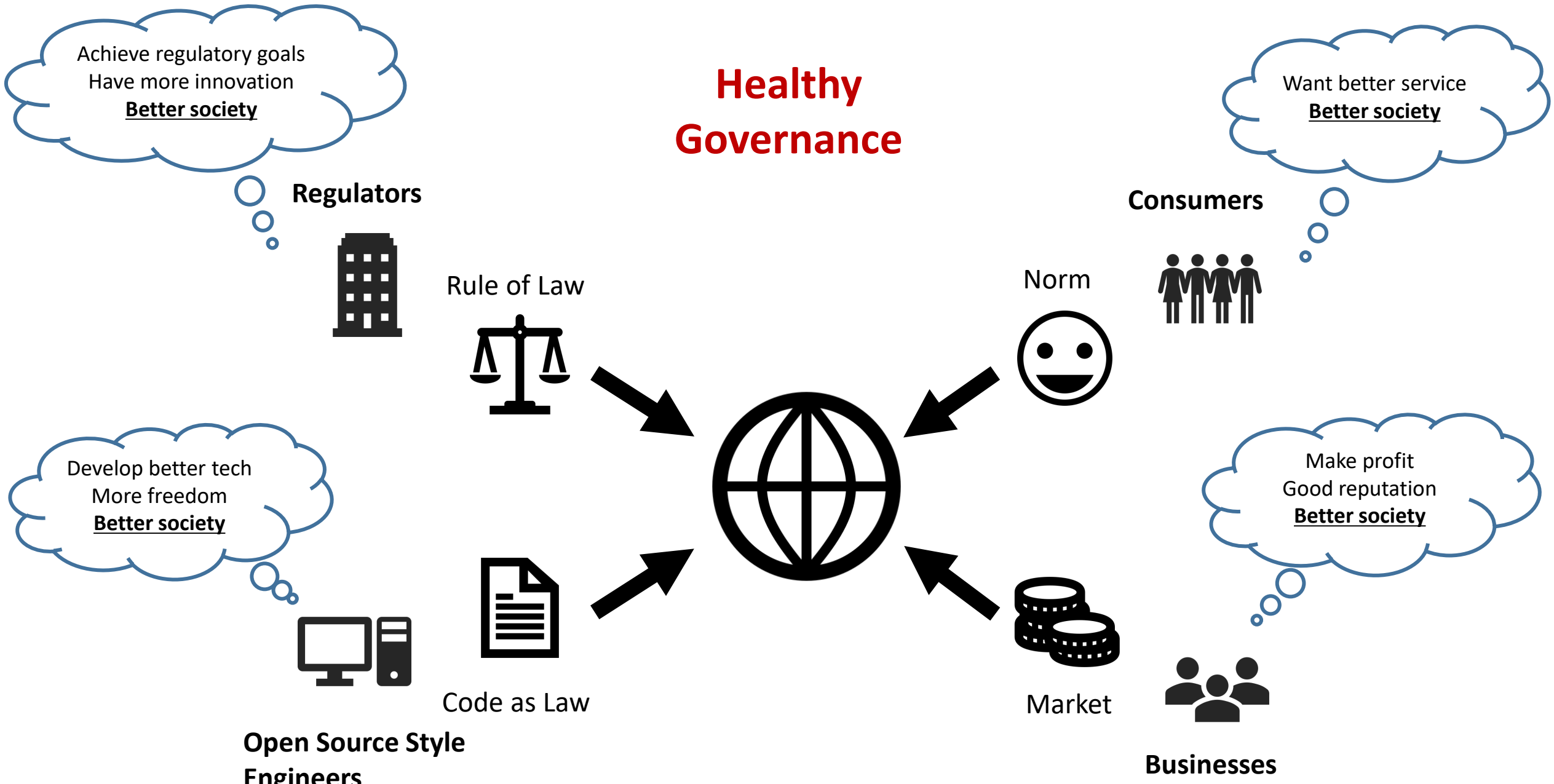
Further readings

- ✓ 2020.5 "A Study on Governance for Decentralized Finance Systems Using Blockchain Technologies", Joint Research Project by Keio University and JFSA

A difficult relationship…



The Future Blockchain Ecosystem (Idealized Image)



The Future of DeFi

- **The community and authorities should engage in dialogue from the early stages of protocol development to ensure a transparent and healthy ecosystem development**
  - *"... engagement than enforcement, "but in the absence of engagement, enforcement is the only option."" - Remarks of CFTC Commissioner Brian Quintenz at the 38th Annual GITEX Technology Week Conference, 2018 October*
  - The existing financial infrastructure is a permissioned system with verifiable controls to manage operational and other risks. Simply making this permissionless could result in a system with code that does not include the elements necessary to achieve the regulatory goals (e.g. AML/KYC).
  - Regulators, developers and users need to have enhanced discussions on important issues such as the governance process of protocol changes to address bugs and how they are prioritized, developed, implemented and controlled (It must be done before the deployment!) . The balance between privacy and traceability should also be carefully discussed, including the means of auditing.
  - Regulators need to improve technological skillsets (to the point where they can do “pull request” on GitHub...).

The technology and its operation are inseparable and need to be discussed together
To this end, we need a global and neutral platform for multi-stakeholder discussions!

Our Journey So Far

Based on the discussions at the G20, BGIN was established in March 2020 to bring together a wide range of stakeholders, including regulators, engineers, and academia from around the world to discuss how to develop sound governance in a decentralized financial system.

2019/3
Blockchain Round-table [JFSA]

2019/6
G20 High-level Seminar on Financial Innovation [Fukuoka]
G20 Summit ［Osaka］

Multi-stakeholder discussion among regulator, developer, academia etc.

Photo by Goodway

G20 High-level Seminar on Financial Innovation [Fukuoka]

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

2019/9.5
FIN/SUM 2019 [Tokyo]

Further dialogues among wider stakeholders

Photo by Nikkei

Designing Multi-Stakeholders Cooperation in blockchain-based economy

Shin'ichiro Matsuo* (Research Professor, Georgetown Univ.), **Mai Santamaria** (Head of Financial Advisory, Ireland Ministry of Finance), **Allen Piscitelle** (Blockstream), Shigeya Suzuki(Project Professor, Keio Univ.), Akihiko Yoshida (Deputy Commissioner, JFSA)

Photo by Nikkei

Implication of Governance for "DeFi" learned from the Wisdom of Internet Governance

Shin'ichiro Matsuo* (Research Professor, Georgetown Univ.), **Jun Murai** (Professor, Keio Univ.), **David Farber** (Co-Director, Cyber Civilization Research Center, Keio Univ.)

2020/3.10
Blockchain Global Governance Conference[BG2C]
Special Online Panel Discussion

（出典:日本経済新聞社）

➡Establishment of BGIN

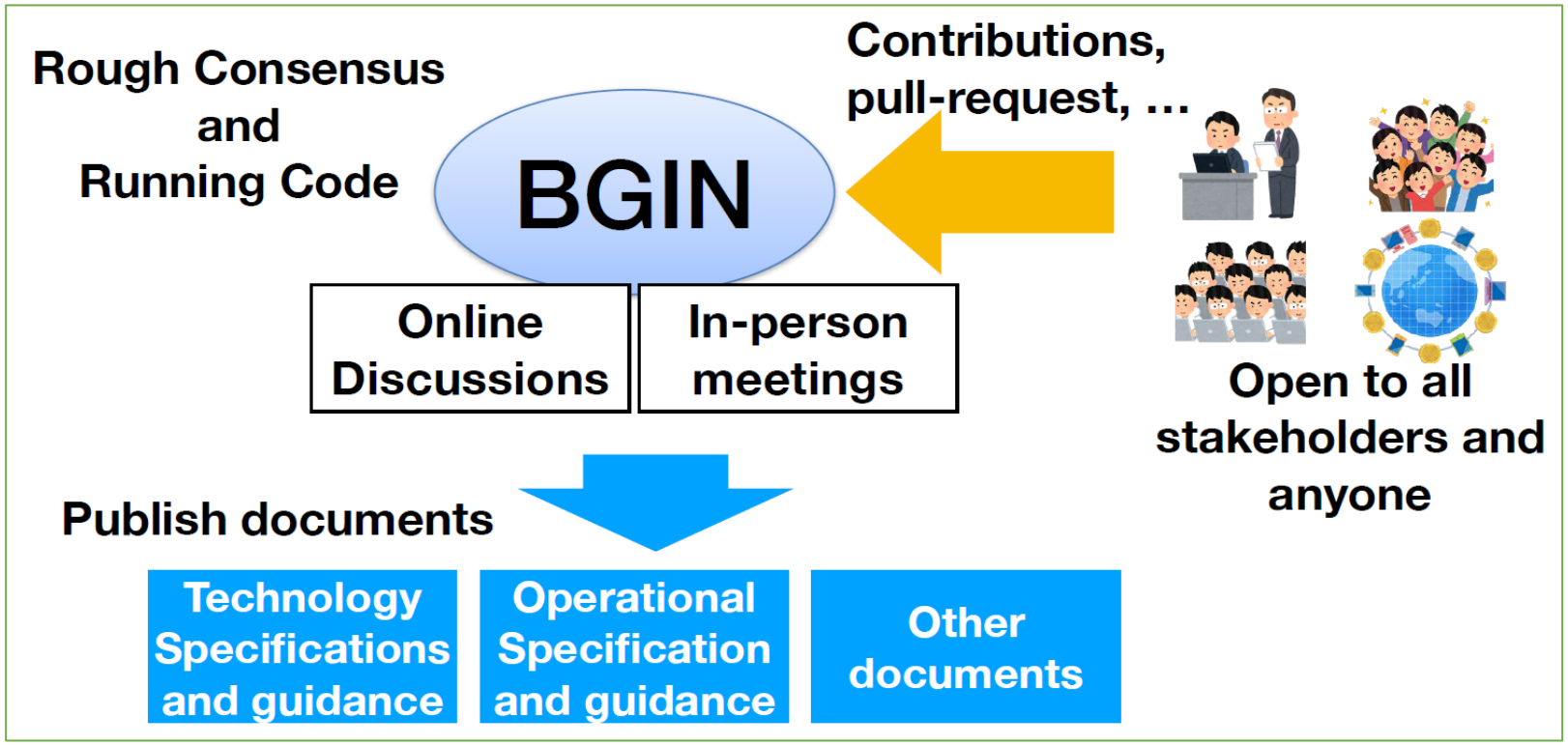
2020/8
BG2C、FIN/SUM BB [Tokyo]

G20 OSAKA LEADERS' DECLARATION –excerpt [June 2019]

17. Technological innovations 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 are closely monitoring developments and remain vigilant to existing and emerging risks. We welcome on-going work by the Financial Stability Board (FSB) and other standard setting bodies and ask them to advise on additional multilateral responses as needed. We reaffirm our commitment to applying the recently amended FATF Standards to virtual assets and related providers for anti-money laundering and countering the financing of terrorism. **We welcome the adoption of the Financial Action Task Force (FATF) Interpretive Note and Guidance. We also welcome the FSB's work on the possible implications of decentralized financial technologies and how regulators can engage other stakeholders**. We also continue to step up efforts to enhance cyber resilience.

BGIN[Blockchain Governance Initiative Network]

- 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.
- Two members from the JFSA participate as initial contributors



https://bgin-global.org

Tentative goals:

1. **Creating an open, global and neutral platform for multi-stakeholder dialogue**
2. **Developing a common language and understandings among stakeholders with diverse perspectives**
3. **Building academic anchors through continuous provision of trustable documents and codes based on open source-style approach**

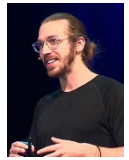
BGIN Initial Contributors

- 23 experts with diverse backgrounds (Engineers, Regulators, Internet Pioneer, Academia, Business, Finance etc.)

Julien Bringer
CEO, Kallistech
Paris, France

Philip Martin
Chief Information Security Officer, Coinbase Global Inc.
San Francisco, US

Danny Ryan
Ethereum Foundation



Shigeya Suzuki
Project Professor, Graduate School of Media and Governance, Keio University
Fujisawa, Japan

Brad Carr
Managing Director, Digital Finance, Institute of International Finance
Washington D.C., US

Shin'ichiro Matsuo
Research Professor, Georgetown University
Washington D.C., US

David Ripley
COO, Kraken
San Francisco, US

Yuta Takanashi
Deputy director, Office of International Affairs, **Financial Services Agency, JAPAN**
Tokyo, Japan

Michèle Finck
Senior Research Fellow, Max Planck Institute for Innovation and Competition
Munich, Bavaria, Germany

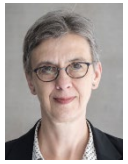
Jumpei Miwa
Director, Fintech and Innovation Office, **Financial Services Agency, JAPAN**
Tokyo, Japan

Nat Sakimura
Chairman, OpenID Foundation
Tokyo, Japan

Robert Wardrop
Director, Cambridge Centre for Alternative Finance
Cambridge, UK

Joaquin Garcia-Alfaro
Full Professor, Institut Mines-Télécom / Institut Polytechnique de Paris
Paris, France

Katharina Pistor
Professor, Columbia Law School
New York, US



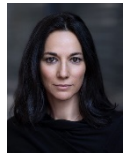
Kazue Sako
Trustee, Sovrin Foundation
Tokyo, Japan

Pindar Wong
Chairman, VeriFi (Hong Kong) Limited
Hong Kong, China

Byron Gibson
Program Manager, Stanford Center for Blockchain Research
San Francisco, US

Nii Quaynor
Chairman, Ghana Dot Com Ltd
Accra, Ghana

Mai Santamaria
Head of Financial Advisory team (SFAD), Department of Finance Ireland
Dublin, Ireland



Aaron Wright
Clinical Professor of Law, Cardozo Law School
New York, US

Flora Li
Director, Huobi Blockchain Academy
Beijing, China

Jeremy Rubin
San Fransisco, US

Yuji Suga
Internet Initiative Japan Inc. / CGTF
Tokyo, Japan

BGIN Roadmap

Establishment of BGIN (March 2020)

Co-Chair

Shin'ichiro Matsuo
Research Professor,
Georgetown University
Washington D.C., US

Mai Santamaria
Head of Financial Advisory team (SFAD),
Department of Finance Ireland
Dublin, Ireland

Acting Assistant to Co-Chairs
Ryosuke Ushida, JFSA

Governance WG

Co-Chair

Shigeya Suzuki Project Professor, Keio University

Aaron Wright
Clinical Professor of Law, Cardozo Law School

Privacy/Identity/Key management SG

Co-Chair

Nat Sakimura Chairman, OpenID Foundation

Katharina Pistor
Professor, Columbia Law School

Community Development

Mar 2020 GitHub Repository
Mailing list
May 2020 Official Website

Drafting ToR and CoC

Drafting ToR

2nd online meeting (June 2020)

Finalizing ToR and CoC

Fundraising, IPR policy, Organization structure etc.

Finalizing ToR

Creation of the first output

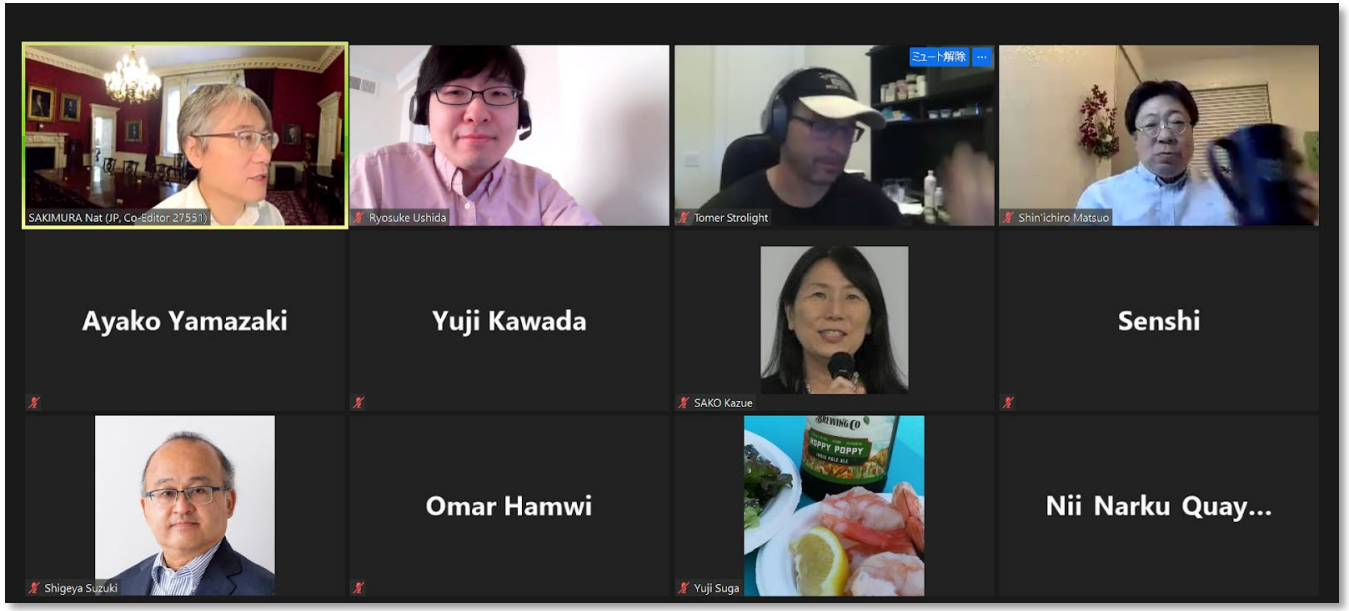
Online workshop with various stakeholders

BGIN #1 meeting (November 23-25, 2020)

BGIN : DeFi related projects

- **Decentralized Financial Technologies and Privacy, Identity and Traceability Work Stream** [Draft proposal]
  - Create documents that strike a balance between innovation and meeting regulatory requirements (e.g., FATF Travel Rule) with inputs from key stakeholders including engineers, regulators, and businesses
- **Key Management Work Stream** [Draft proposal]
  - Key lifecycle management for centralized/decentralized custodians of crypto assets (technology, operations, division of responsibilities, regulatory compliance, etc.)

- ✓ Discussions at bi-weekly online meetings (Zoom), GitHub, Zulip Chat, and mailing lists
- ✓ **Anyone can join the discussion!**



Join us!

https://bgin-global.org

bgin-contact@bgin.team