Open Innovation & Blockchain Initiatives

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Part 1. Open Innovation

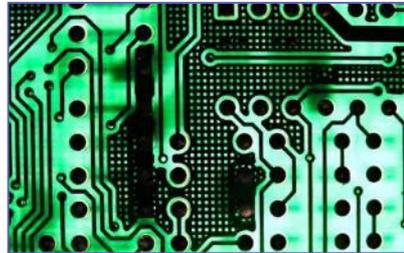# IT giants are trying to play an important role in finance

Various technologies appear one after another

IoT

Mobile

Quantum Computing

AI

BigData

Cloud

Blockchain

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Open Innovation Activities in MUFG

> ## Build an open innovation team and promote initiatives

Feb 2015
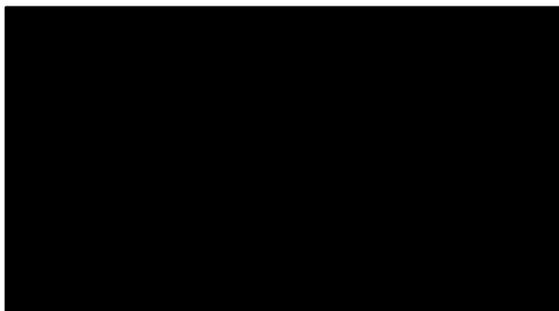Fintech Business Competition

Oct 2015 -
Startup Accelerator Program

Mar 2018
MUFG Coin Hackathon

Mar 2016
Bank API Hackathon

Mar 2017
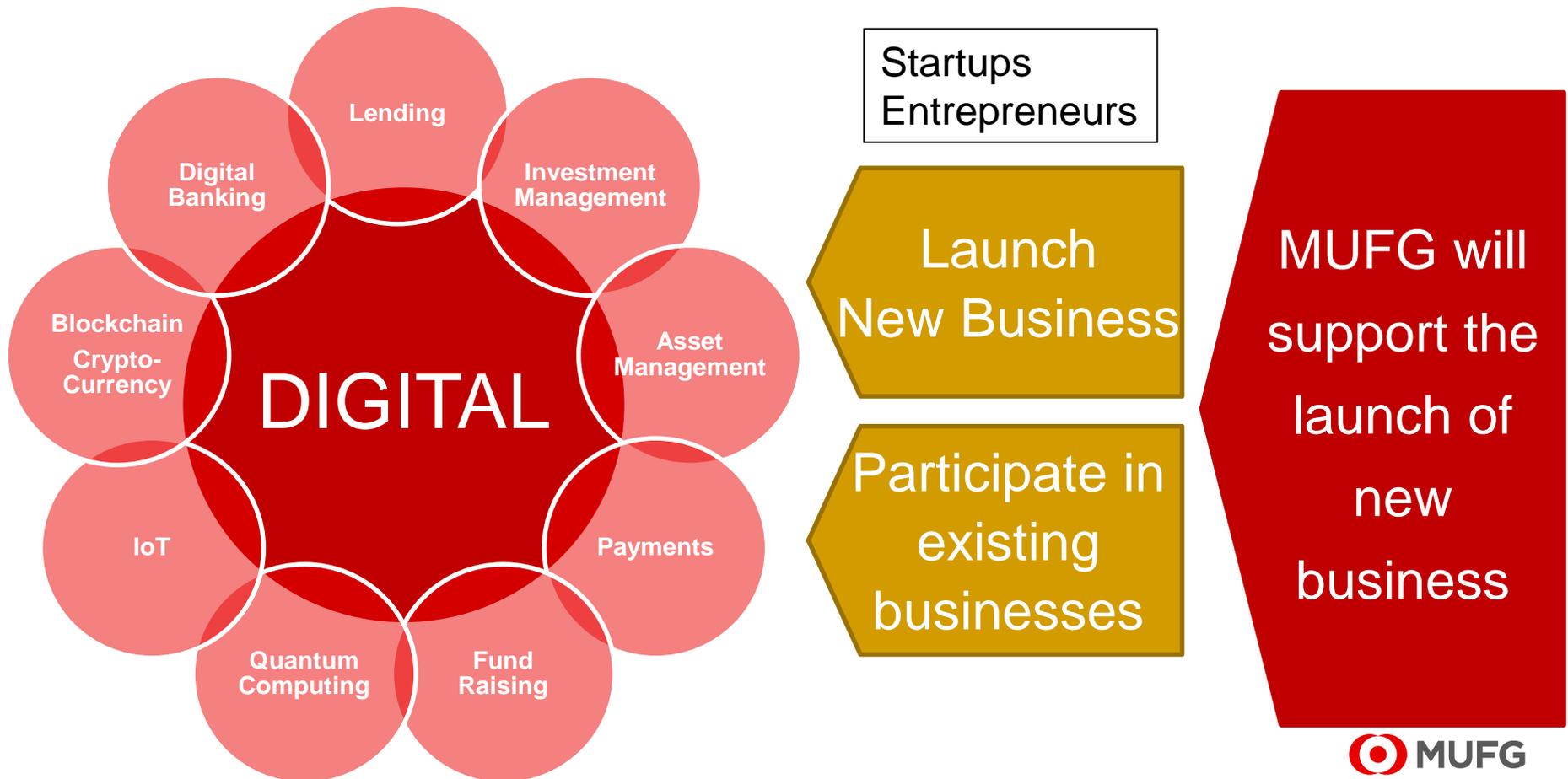Official release of MUFG {APIs}

Retail Banking API

Commercial Banking API

Kabu.com API

eMAXIS Web API

MUFG Digital Accelerator

Program to support startup companies
to launch innovative business

DIGITAL

- Lending
- Investment Management
- Asset Management
- Payments
- Fund Raising
- Quantum Computing
- IoT
- Blockchain Crypto-Currency
- Digital Banking

Startups
Entrepreneurs

Launch
New Business

Participate in existing businesses

MUFG will support the launch of new business

Program Schedule for 3rd Batch

Acceleration Phase
(March 2018 – July 2018)

Collaboration

Mentoring session by pro & MUFG mentors and advisors

Coaching Session, Technical Session

Support for entrepreneur

DEMO DAY, Prize

Business Alliance

Customer Matching

Investment Opportunities

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Co-working Space "The Garage"

Participant startups

Batch 1

AlpacaJapan

Smart idea, Inc.

xenodata lab Co.,Ltd.

ZEROBILLBANK Ltd.

Knowledge Communication Co.,Ltd.

Batch 2

AnyPay Inc.

OLTA

Good Moneyger Inc.

Crowd Realty, Inc.

SImount

Nayuta inc.

Robot Fund Co., Ltd.

Batch 3

AndGo, Inc.

MDR Inc.

Credit Engine, Inc.

no new folk studio Inc.

FACTBASE Inc.

RESTAR Inc.

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Part 2. Blockchain Initiatives

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Blockchain Initiatives - Application Areas

Blockchain 2.0

✓ **Trade Finance**

Lots of documents, stakeholders exist. Improve efficiency, speed, accuracy (risk reduction) with process automation by smart contract

✓ **Supply chain**

Visualize the supply chain process by connecting remittance, receivables, contract management, and trade finance block chains

✓ **Contract Management**

Improve supply chain by establishing inter-company contract based on smart contract, streamline trade finance

✓ **KYC**

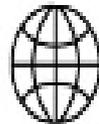Improve KYC by integrating identity verification information between banks, improve customer convenience
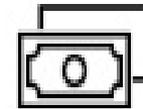
Blockchain 1.0

✓ **Crypto Currencies**

Crypto currency exchange business

✓ **Remittance**

Domestic： Build cross banking consortium
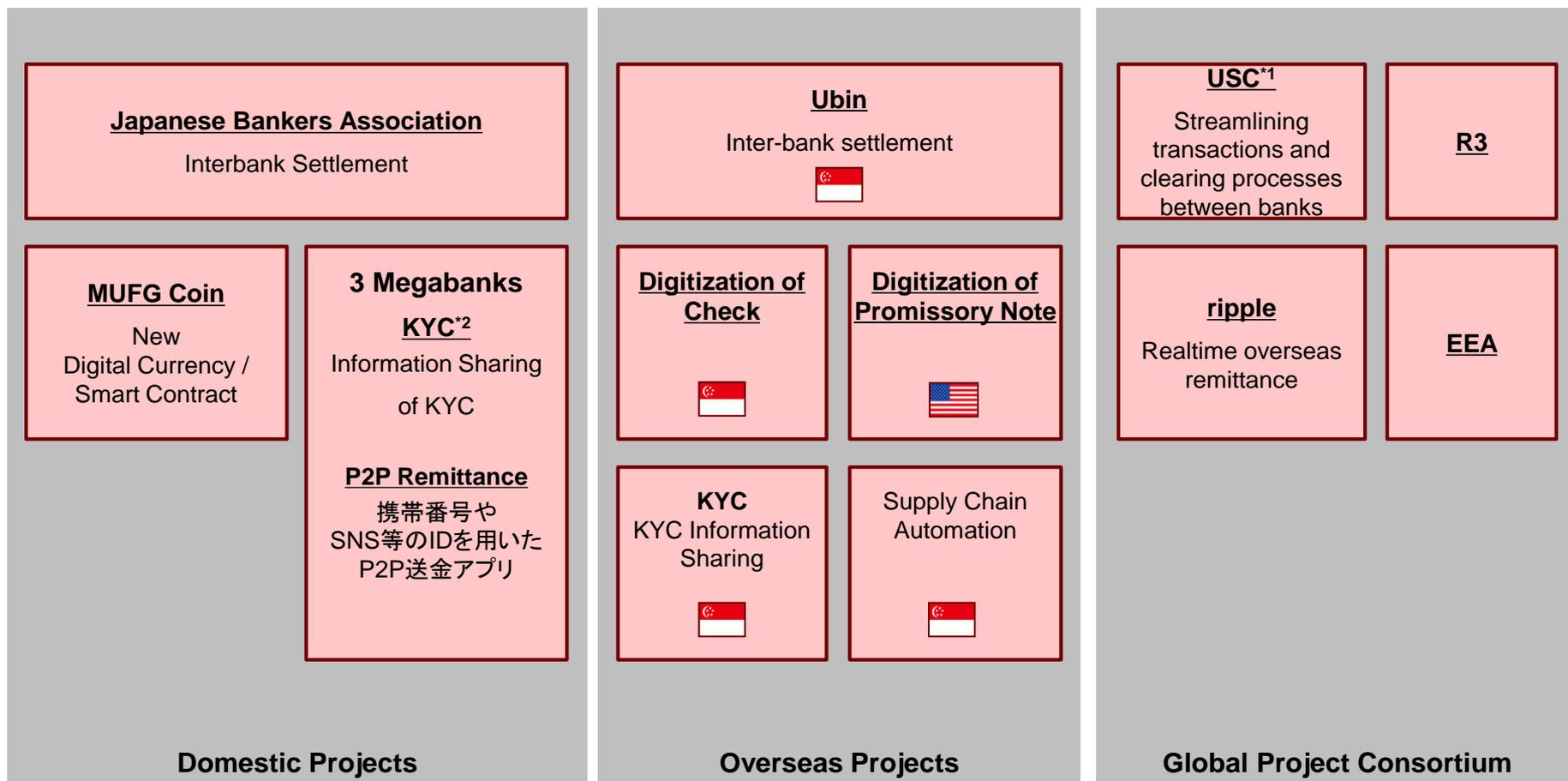Oversea, Inter-bank： Leading roles at each consortium

✓ **Securities**

Lead the cross-bank electronization

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Blockchain related activities

• Participate in various field trials

Domestic Projects

Japanese Bankers Association

Interbank Settlement

MUFG Coin

New
Digital Currency /
Smart Contract

3 Megabanks

KYC[2]

Information Sharing
of KYC

P2P Remittance
携帯番号や
SNS等のIDを用いた
P2P送金アプリ

Overseas Projects

Ubin

Inter-bank settlement

Digitization of Check

Digitization of Promissory Note

KYC
KYC Information Sharing

Supply Chain Automation

Global Project Consortium

USC[1]

Streamlining transactions and clearing processes between banks

R3

ripple

Realtime overseas remittance

EEA

*1 Utility Settlement Coin
*2 Know Your Customer

13

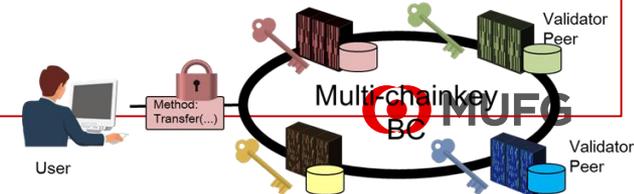MUFG

Our recent apploach to leverage DLT/blockchain

Usecase	Digitization of checks	Supplychain automation	Digital Currency (MUFG Coin)
Country	🇸🇬	🇸🇬	🇯🇵
DLT	Ethereum Hyperleger fabric	Hyperleger fabric	
Project date	2016/4 -	2016/3 -	2016/7 -
Status	PoC ended Exproring next step	PoC ended Partly in production	Internal use

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Digitization of checks

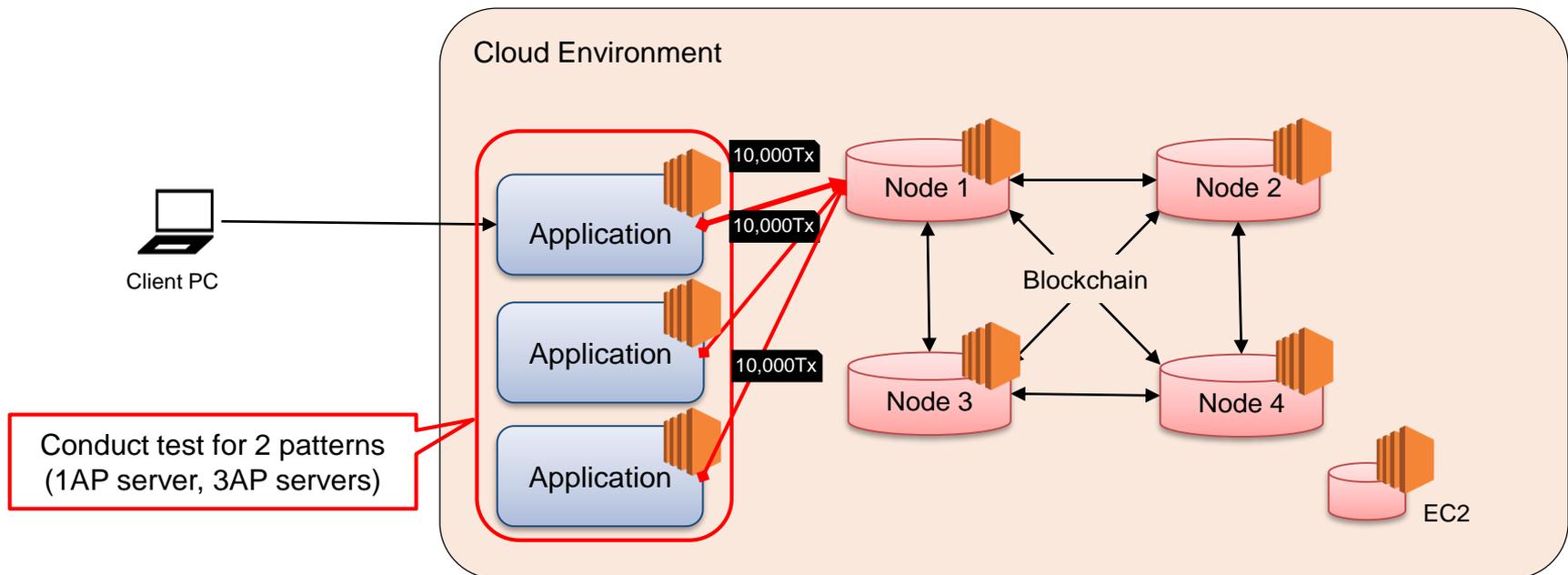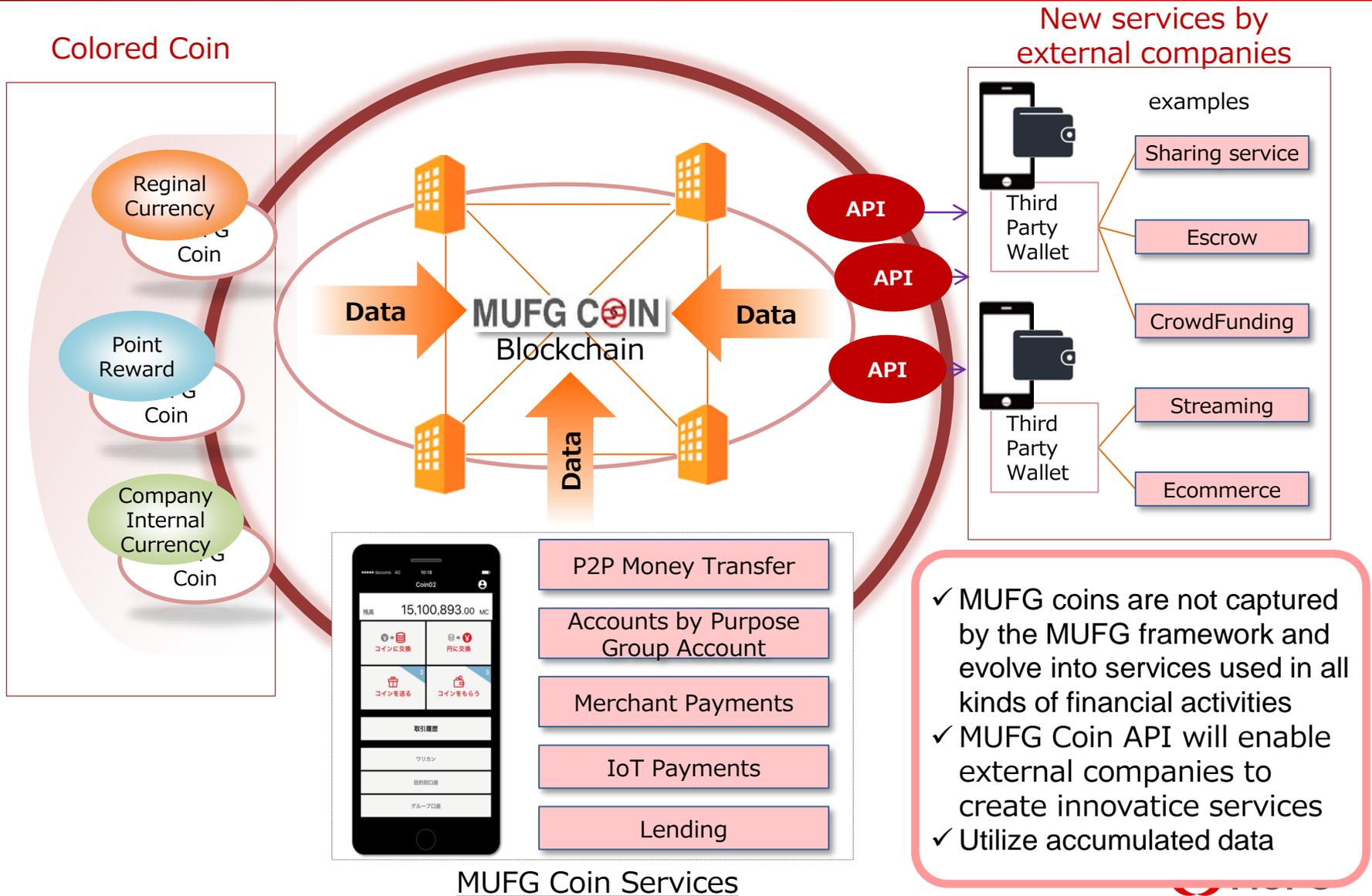|	
Objectives	• Basic study and evaluation of blockchain technology • Study on information concealment on Blockchain
Implemen-tation	• Migrated system from public chain(Ethereum) to consortium chain(Hyperledger fabric)
Implemen-tation result	1. Public chain is not suitable for this type of transaction (At least at that time of implementation) • It takes 3 minutes to confirm the transaction • Transaction can be canceled • Cost is uncertain, possibility of higher cost 2. Consortium chain better fit in terms of: • Performance • Information concealment

Evaluation of blockchain technology

- In addition to introducing individual use cases, we evaluate multiple blockchain software in terms of <u>consensus mechanism</u> and <u>performance</u>.

MUFG Coin — New digital currency & smart contract network

New services by external companies

Colored Coin

Reginal Currency → MUFG Coin

Point Reward → MUFG Coin

Company Internal Currency → MUFG Coin

Data → MUFG COIN Blockchain ← **Data**

Data

API

API

API

Third Party Wallet

examples

- Sharing service
- Escrow
- CrowdFunding

Third Party Wallet

- Streaming
- Ecommerce

MUFG Coin Services

Coin02
残高 15,100,893.00 MC
コインに交換 / 円に交換
コインを送る / コインをもらう
取引履歴
ワリカン
目的別口座
グループ口座

- P2P Money Transfer
- Accounts by Purpose Group Account
- Merchant Payments
- IoT Payments
- Lending

✓ MUFG coins are not captured by the MUFG framework and evolve into services used in all kinds of financial activities
✓ MUFG Coin API will enable external companies to create innovatice services
✓ Utilize accumulated data

MUFG Coin – CEATEC JAPAN 2017

✓Vending machine that can be paid with MUFG coin (Directly connected to blockchain via 4G NW)

✓Train and earn coins, buy water with the vending machine

MUFG Coin – Hackathon "Fintech Challenge 2018"

✓2.5 days hackathon
✓9 teams participated in
✓MUFG Coin 10 APIs and test environment are provided to the teams

## Bounty Platform "Challengers"

✓Service for athletes who achieved great result and recognized by many people
✓When a lot of people acknowledge that the athlete has achieved the preset goal, the Smart Contract enforces the payment of the reward.

The road to adoption for live environment

- More maturity and functional advancements are required
  - ✓ Scalability
  - ✓ Performance
  - ✓ Interoperability
  - ✓ Documentation
- Points to consider other than technology
  - ✓ Governance and operation of the consortium
  - ✓ Legal positioning of Smart Contract
  - ✓ Auditing method of ledger in consortium type blockchain

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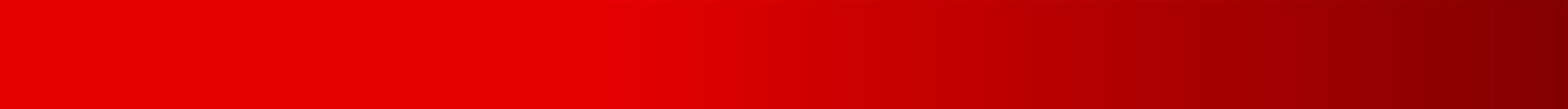
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