

Japanese Financial Institution and FinTech

18 October, 2017

Mizuho Financial Group
Senior Digital Strategist
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Jump! One MIZUHO
Building the future with you



MIZUHO



東京2020ゴールド銀行パートナー

I Digital Innovation Department

II Overview of FinTech

III FinTech Innovation in Mizuho

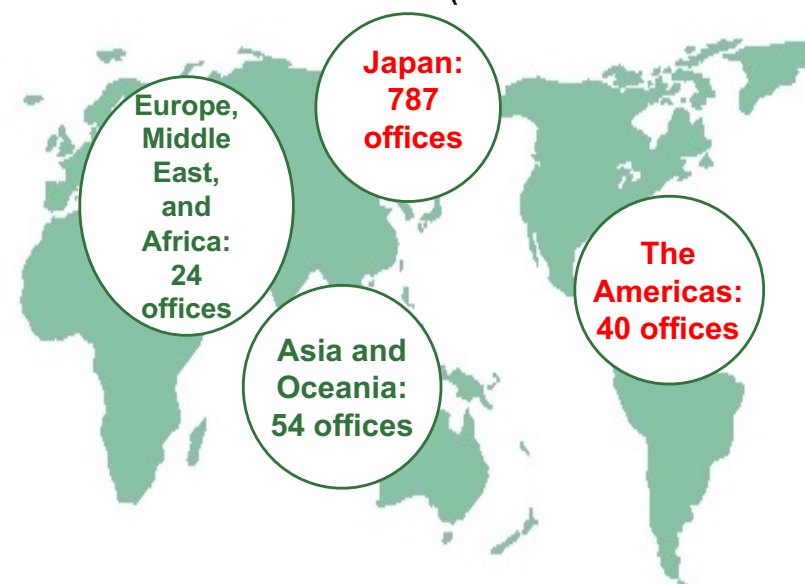
I Digital Innovation Department

About Mizuho Financial Group, Inc.

Company name	Mizuho Financial Group, Inc.
Stock listing (code)	New York Stock Exchange (MFG) Tokyo Stock Exchange (8411)
Location of head office	Tokyo, Japan
Number of employees	59,179
Number of offices	796 offices in Japan 116 overseas offices
Total assets (FY2016)	1.8 trillion USD
Consolidated gross profit (FY2016)	19 billion USD

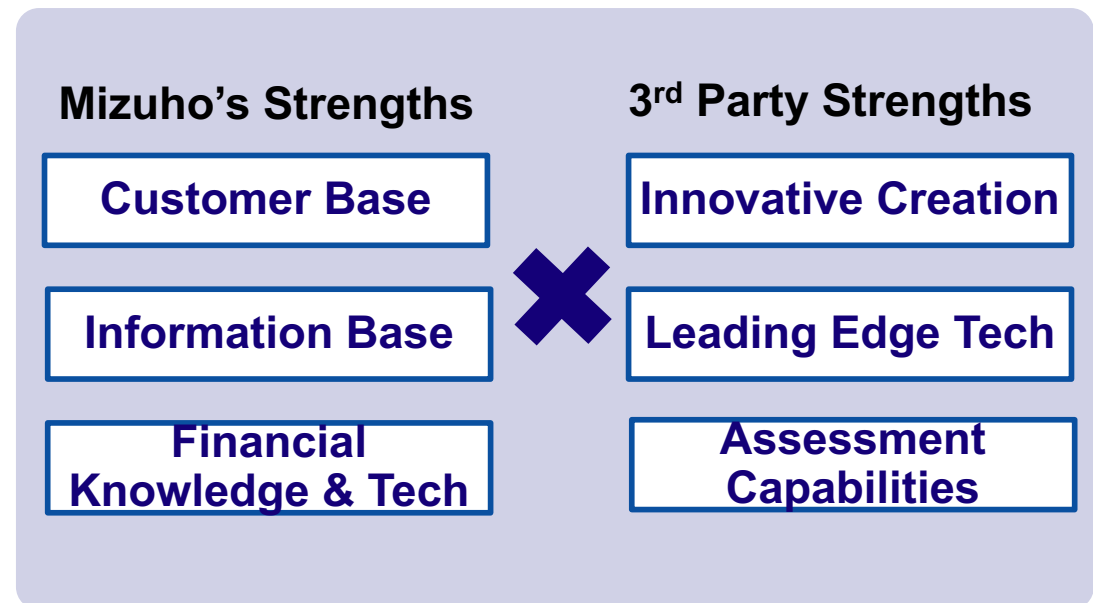
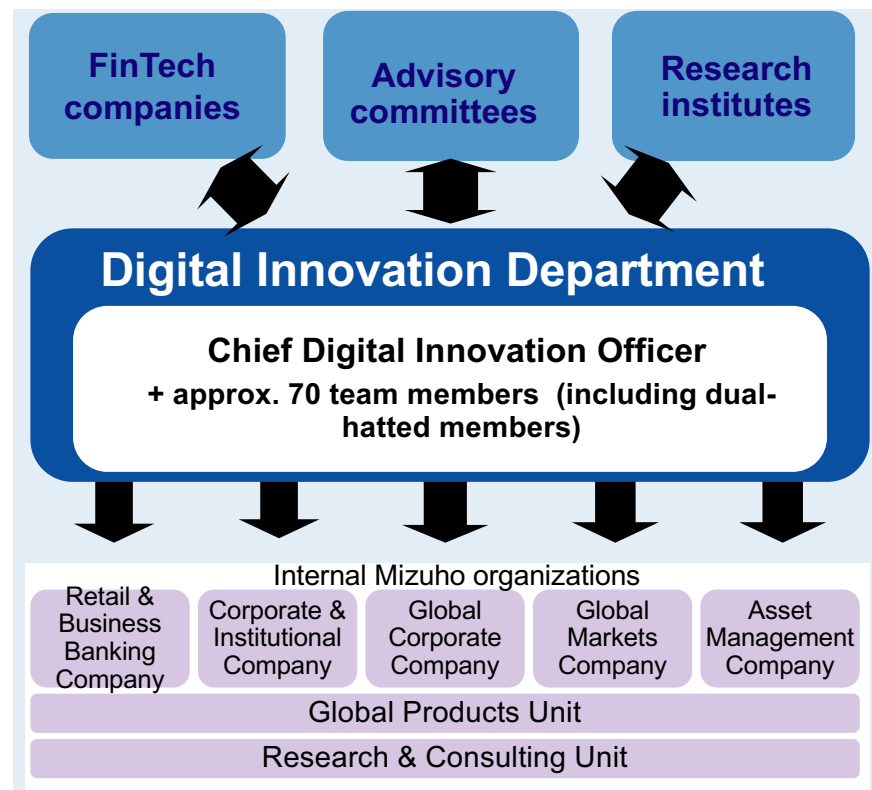
Number of offices
796 offices in Japan and 116 overseas offices

(In more than 40 countries/regions)



I Digital Innovation Department

- ✓ “New business creation” through collaborations with domestic and international external organizations and open innovation with the goal of delivering “customer-oriented improvements in service quality”.



I Digital Innovation Department

External companies
networked with

2,500

Investments in
FinTech funds

9

Amount of useful industry insight

Japan 183

Bay Area 291

Presentations given/
events jointly organized

100

(15 outside of Japan)

Media
appearances

Press releases

35

Articles

200

Percentage of mid-career
hires in the team

48 %

Ex)JCB, Sony Bank,
BTMU, NTT, NTT Data,
nifty, Yahoo,

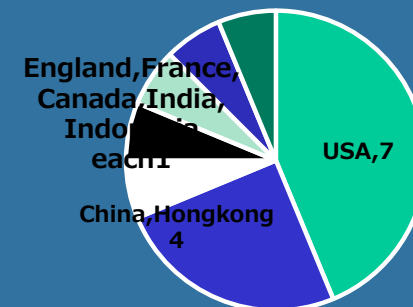
Percentage of the team with
educational backgrounds
other than art subjects

52 %

Ex)Information engineering,
nuclear engineering,
information management,
education, sociology

Percentage of the team
with work/study abroad
experience

65 %



Based on data current as of April 2017
Data for events, jointly held events, press releases, and articles are totals
for the period of April 2016 to March 2017

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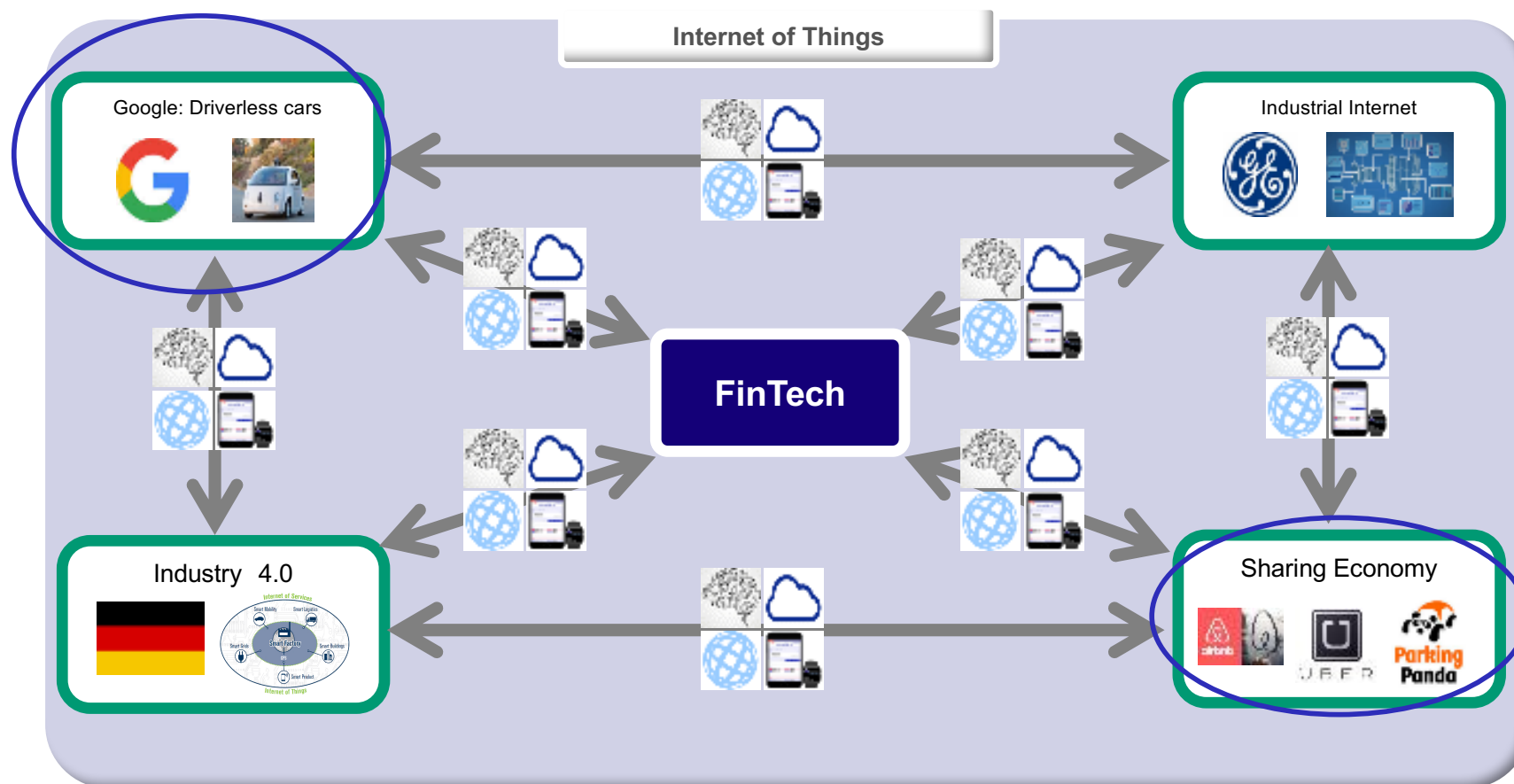
II Overview of FinTech

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II Overview of FinTech

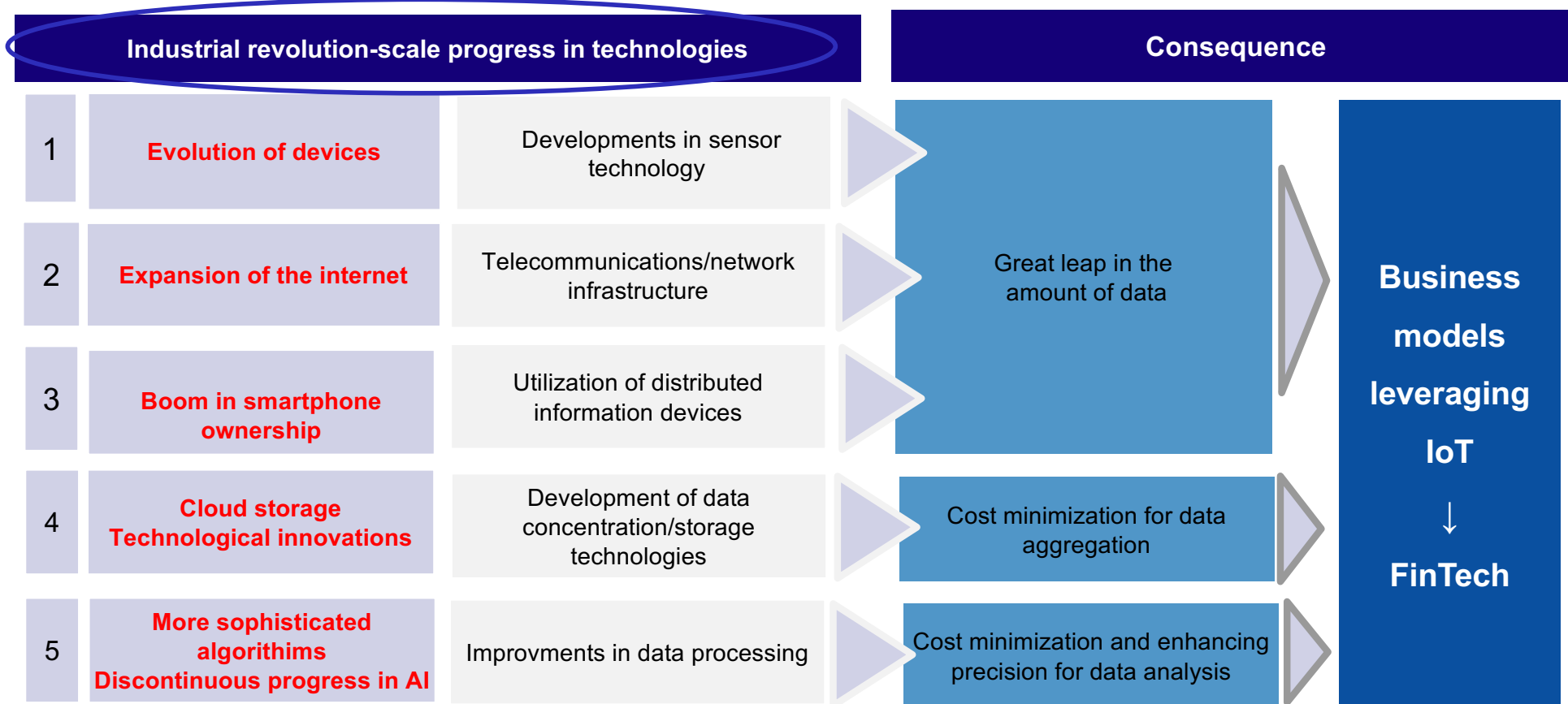
FinTech as a part of the Internet of Things (IoT)

- ✓ FinTech is an integral part of the Internet of Things
- ✓ The two fields share both underlying technologies and similar concepts



Source: Prepared by Mizuho Bank's Industry Research Division

What is behind the spread of the IoT?



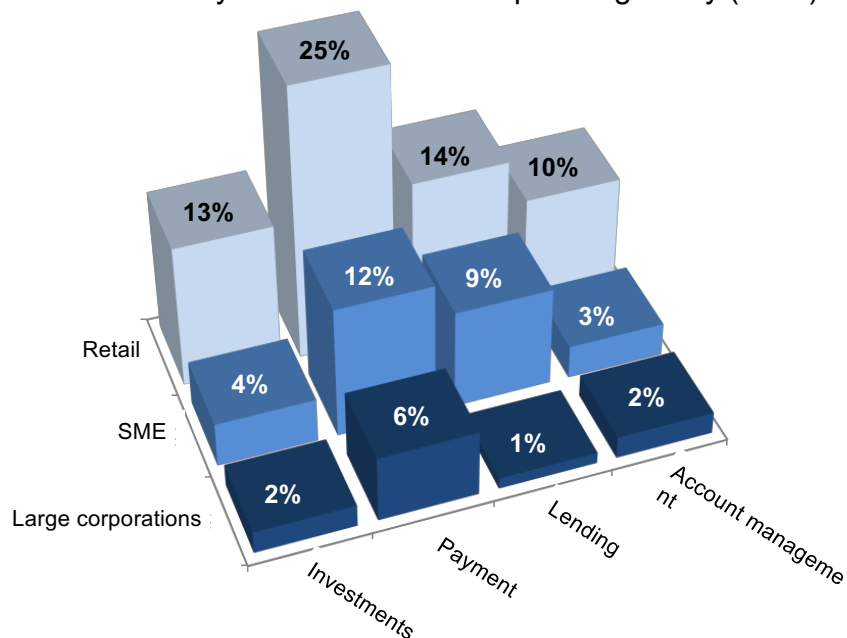
Source: Prepared by Mizuho Bank's Industry Research Division

II Overview of FinTech

FinTech companies' entry into the market

- ✓ The main markets of the FinTech companies is Retail x Payment.
- ✓ Even for large corporations, the entry into the settlement field is relatively large

Market entry of 350 FinTech companies globally (2015)



(Source) Mizuho Research Institute, with reference to the information from McKinsey & Company

Major business areas of Japanese FinTech companies

	Retail	SME
Investments	WEALTHNAVI, 楽天証券 (Rakuten Securities)	
Payment	LINE Pay	楽天 (Rakuten), Coiney
Lending	AQUSH, 楽天 (Rakuten)	maneo
Account management	Money Forward, zaim, Moneytree	free

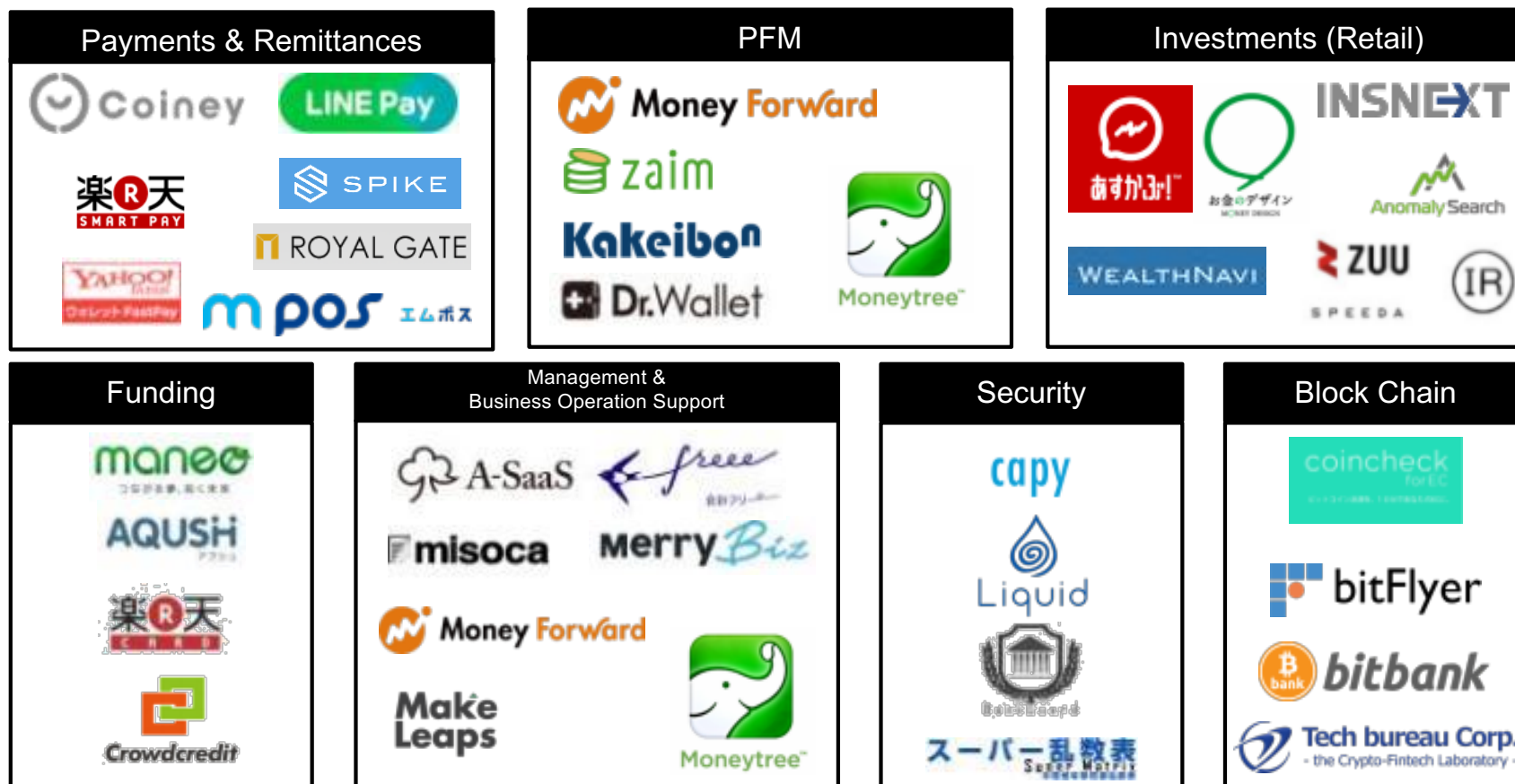
(Source) Mizuho Research Institute

II Overview of FinTech

FinTech companies in Japan

- ✓ Contrast with overseas, although the number is small, FinTech startup is growing in each field in Japan

FinTech startup companies in Japan (by business area)】



(Source) Mizuho Research Institute, with reference to the companies' websites, etc.

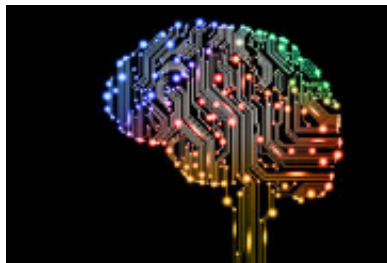
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Key technologies to focus

- ✓ There are three underlying technologies in the spotlight: big data, artificial intelligence and blockchain
- ✓ Digital Innovation Department is utilizing these underlying technologies to create new financial business



Artificial Intelligence



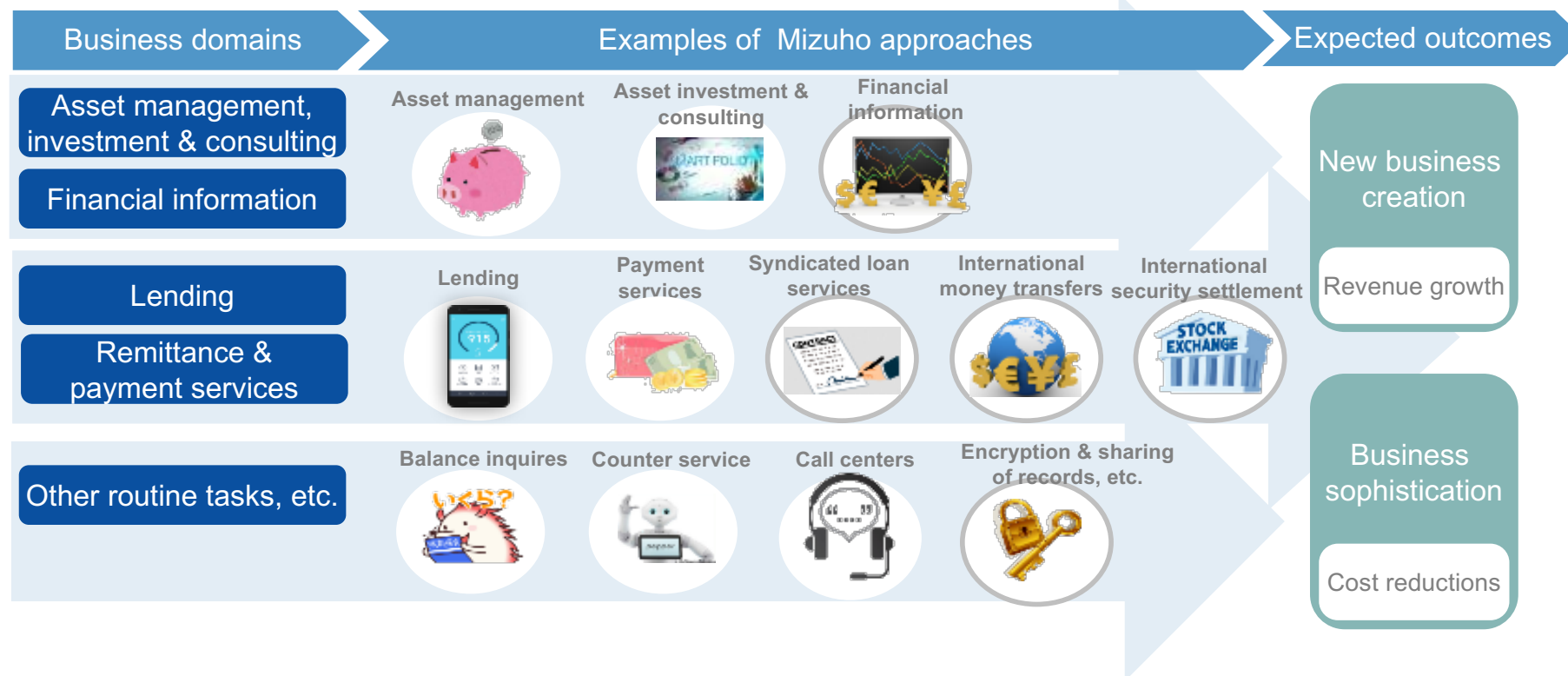
Big Data



Blockchain

An Overview of Mizuho's Approach to FinTech

- ✓ The business domains shown below are expected to be the main users of FinTech
- ✓ Various approaches are being set in motion in expectation of “revenue growth through new business creation” and “cost reductions through business sophistication”



Awards



**BAI Global Banking
Innovation Awards 2016**
(BAI : Bank Administration Institute)



**Channel
Innovation**



**Disruptive
Innovation
in Banking**



EFMA Finalist Physical Distribution Award 2016
(EFMA : The European Financial Management Association)



6th Consecutive MCPC Award
(MCPC : Mobile Computing Promotion Consortium)



攻めのIT経営銘柄2016
Competitive IT Strategy Company

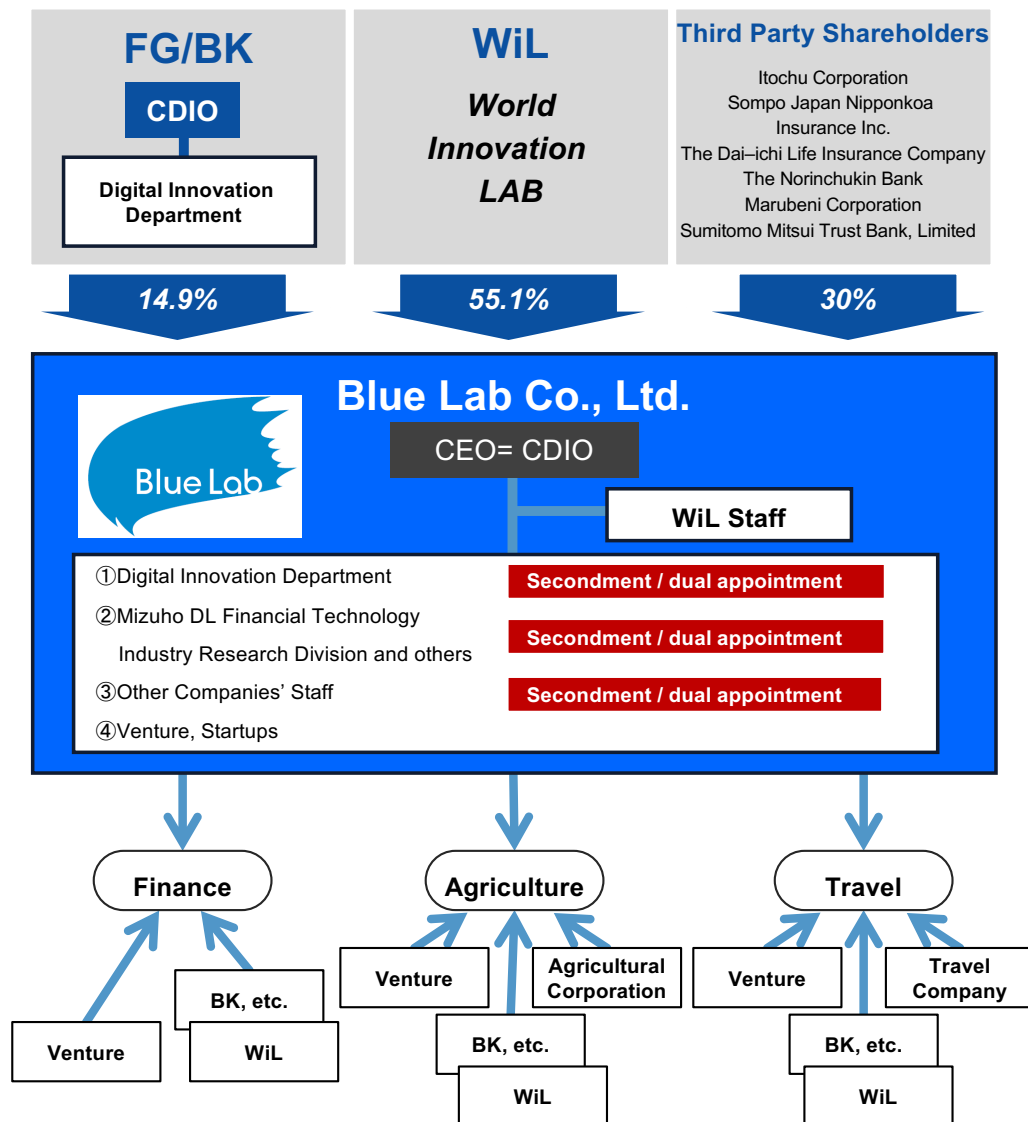
Recognized as a desirable brand for investors who place importance on the enhancement of medium-to-long-term corporate value, based on a comprehensive evaluation which factored in our financial innovation using new technologies such as big data, AI, blockchain, and robotics, as well as our transparency on policies relating to strategic application of IT.

The establishment of the joint venture company



III Fintech Innovation in Mizuho

The Establishment of Blue Lab Co., Ltd.



Role expectations of Blue Lab

Widen our view towards various industries and fields, not limited to finance

Create a next generation business model utilizing new technology

Vision: To become "The best Incubator Company in Japan"

Basic Concepts

1. Open Innovation

Flexibly collaborate with other industries in and outside Japan as well as with other banks

- Collaborate in both phases: business model development and commercialization

2. Platform

Create a system which every participant can profit from

- Not necessarily just Mizuho

3. Commercialization oriented

Realize JPY 100bn value added until FY2020

4. Global Format

Location: Tokyo and Silicon Valley

5. Governance Management

Follow business style of venture companies in Silicon Valley

Source: Mizuho Financial Group Digital Innovation Department

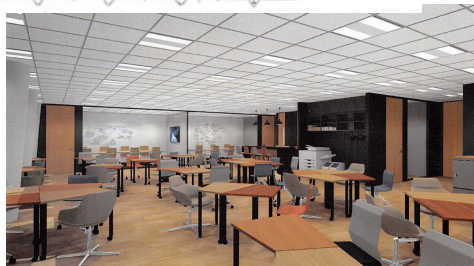
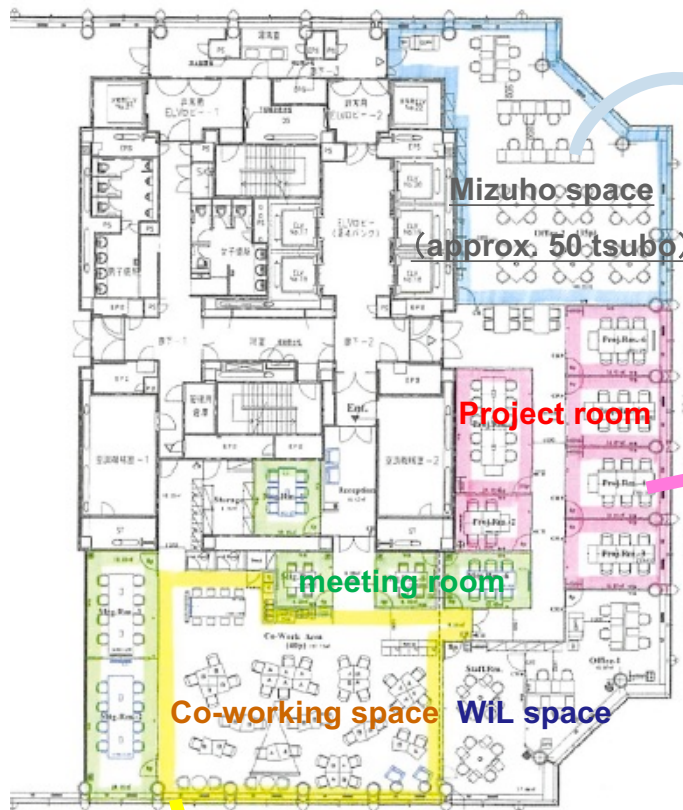
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Overview of Blue Lab

Heading	Overview
Trade Name	Blue Lab Co., Ltd.
Head Office Location	2-5-1 Atago, Minato-ku, Tokyo Atago Green Hills Mori tower ※ Also planning to use WiL Silicon Valley Office
Date Established	June 30, 2017, starting operation in mid-August, 2017
Capital	10 million yen ※ Total amount of 1,000 stocks to be issued
Composition of Executive Officers	President, CEO, & Representative Director: Daisuke Yamada 【FG/BK Executive Officer and CDIO】 Directors (3): Gen Isayama 【WiL President】 Tetsuya Akutsu 【FG/BK Chief of Strategic Planning Department】 Nobuhisa Abe 【FG/BK Chief of Digital Innovation Department】 Auditor: Masaya Kubota 【WiL Partner】
Composition of Shareholders	WiLx 【WiL Japanese Branch】: 55.1% Mizuho Bank: 14.9% Other Shareholders: Total 30%- Other shareholders are as below (each company: 5%) Itochu Corporation, Sompo Japan Nipponkoa Insurance Inc., The Dai-ichi Life Insurance Company, The Norinchukin Bank, Marubeni Corporation, Sumitomo Mitsui Trust Bank, Limited
Business	Within finance related business based on the Banking Law • Consulting business, Finance and Economy Research and Research business, venture capital business, and data managing business etc.
Composition of Staff	• FG CDIO and people in charge of digital innovation department when established 【approx. 30 people, including trainees from other banks】 • from WiL, dual appointment 【some】 • Considering hiring from other shareholders and outside companies

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Reference: Office Space in the New Company (Atago Green Hills Mori Tower)

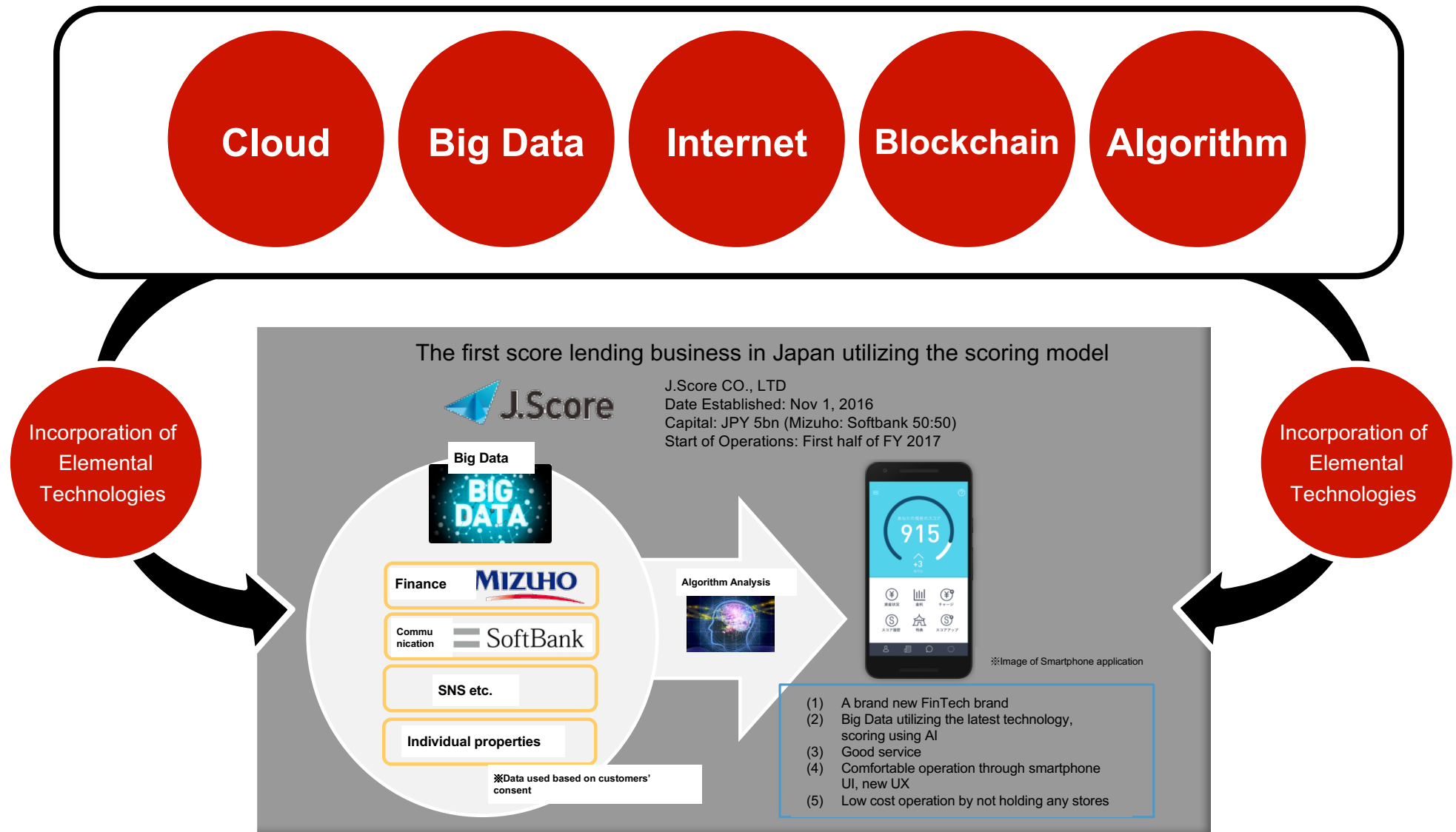


(MAP) ※3 minutes walk from Kamiyacho or Onarimon Station



III Fintech Innovation in Mizuho

The creation of a business model derives from the incorporation of elemental technologies



III Fintech Innovation in Mizuho

Pipeline List 20 Business Ideas

#	Pipeline	#	Pipeline
1	Blockchain / DLT : Trade Finance	11	Paperless Electronic Authentication・Contract
2	Digital money	12	Aggregation of Middle・Back Office Operation
3	Overseas “to C” E-money	13	KYC/AML/ fraud detection
4	Algorithm Trading	14	Usage of analyzing Sales Journal
5	Credit Scoring Model	15	Usage of VR (Virtual Reality)
6	Auto Loans for New Customers	16	Usage of various Open API
7	Installment Finance outside Japan	17	Digital Bank utilizing AI
8	Micro Finance outside Japan	18	“Minpaku” Project
9	Usage of data between other industries	19	Sales of Wallet Insurance
10	Enhancement of Means of Communication	20	Mixture of Agriculture, Logistics and Finance

Pipeline

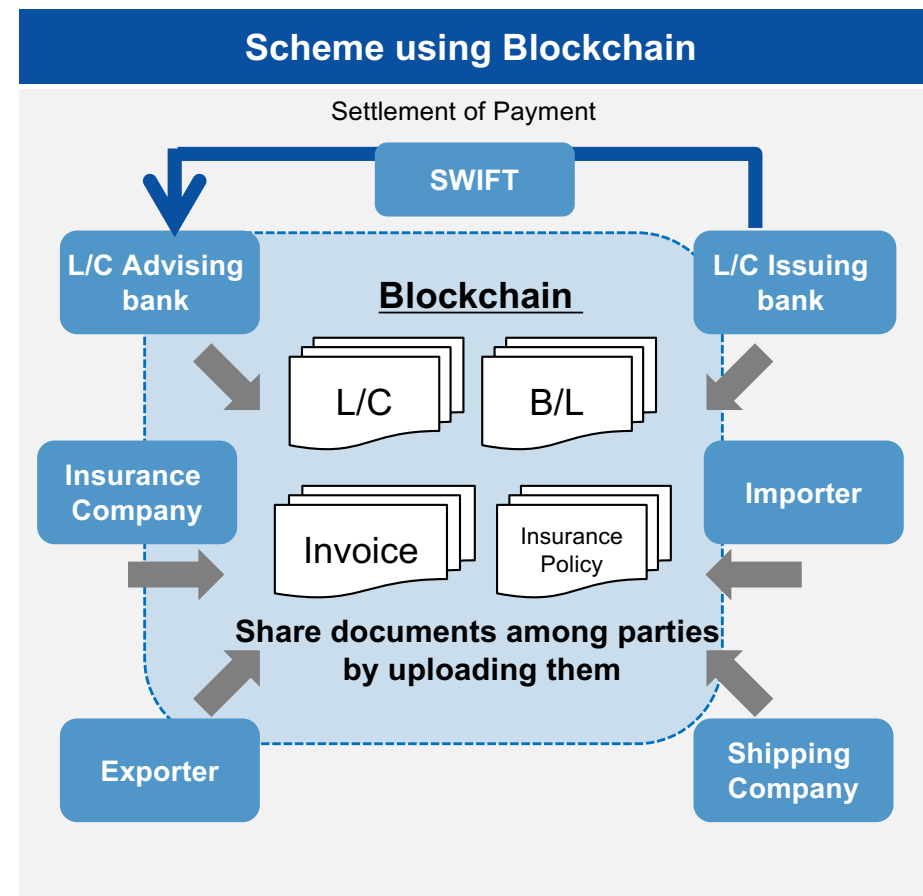
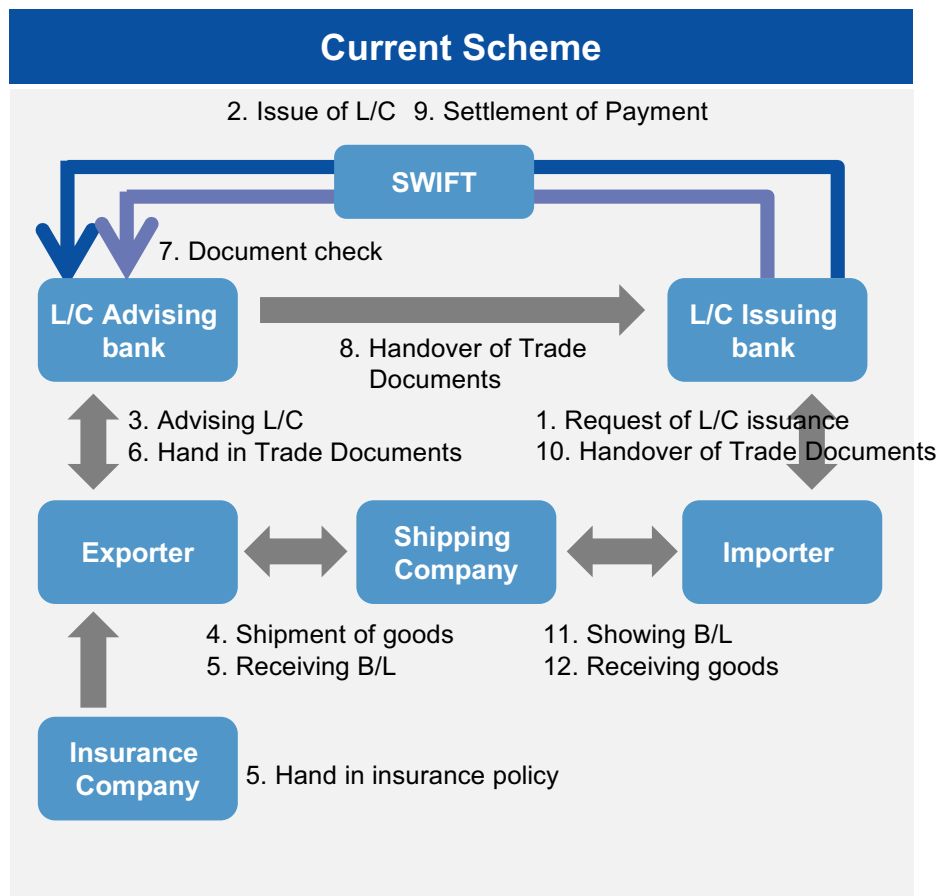
Blockchain/DLT : Trade Finance

MIZUHO + IBM

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Blockchain: Trade Finance

If we share the trade documents among all parties which currently take time to transmit the documents, it is possible not only to shorten the transaction time but also to make administrative work more efficient and reduce fixed costs



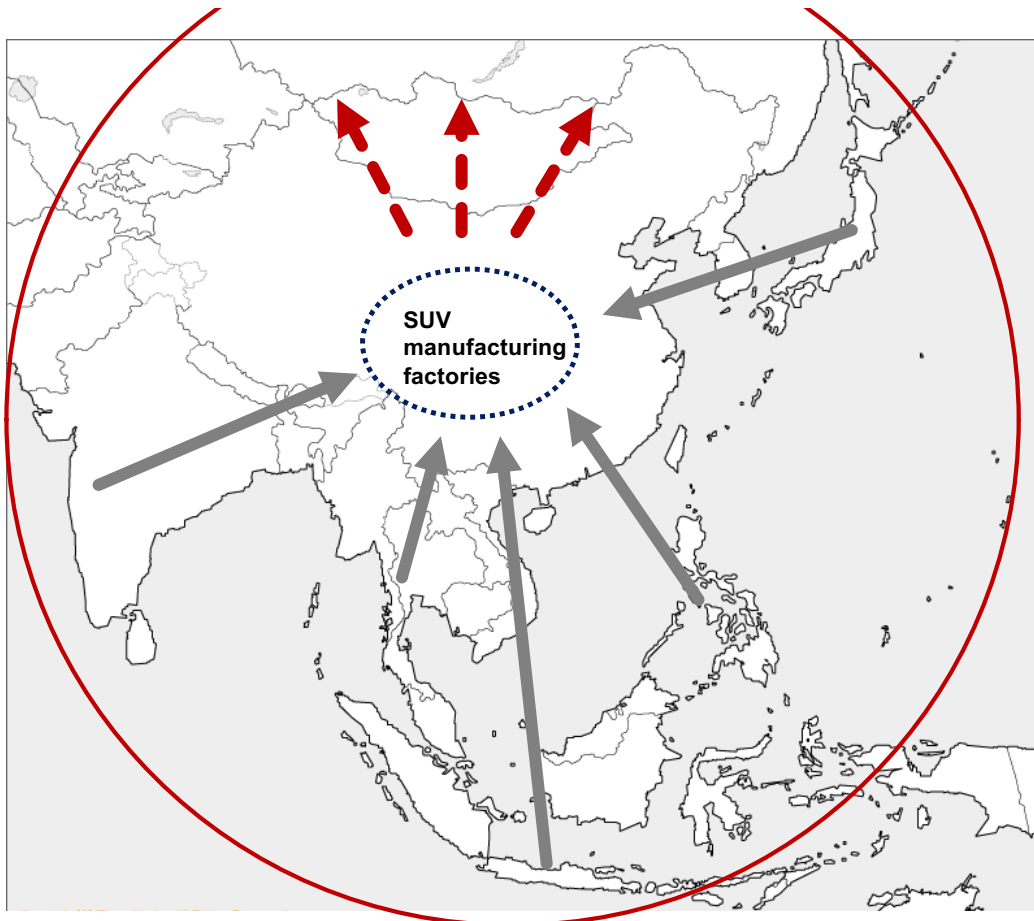
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- | | | |
|----|-------------------|--------------------------------------|
| 1 | Exporter | Marubeni Head Office |
| 2 | Importer | Marubeni Australia |
| 3 | Insurance Company | Sompo Japan Nipponkoa Insurance Inc. |
| 4 | Shipping Company | - |
| 5 | L/C Issuing bank | Mizuho Bank |
| 6 | L/C Advising bank | Mizuho Bank Sydney Branch |
| 7 | Exporting Amount | Max. USD4mm |
| 8 | When | June, 2017 |
| 9 | Platform 1 | Fabric (IBM) |
| 10 | Platform 2 | Corda (R3) |

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Supply Chain Box

**“SUV Manufacturing”
Global Supply Chain Image**



Global Supply Chain

⇒ Accumulation of Trade Finance



Wrapped in Blockchain

⇒ Commoditization: Tentative Name
“Supply Chain Box”

- Shorten the term of shipping and finance
- Visualization of inventories



Supply Chain Box I.P.

⇒ Share among Mizuho • Sler • Startups



Expanding Supply Chain Box

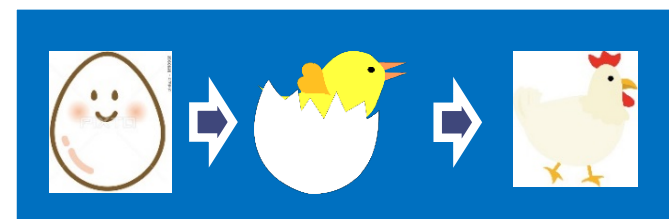
⇒ Global Manufacturing (Airplanes, automobiles, consumer electronics etc.)

⇒ Expanding to other industries

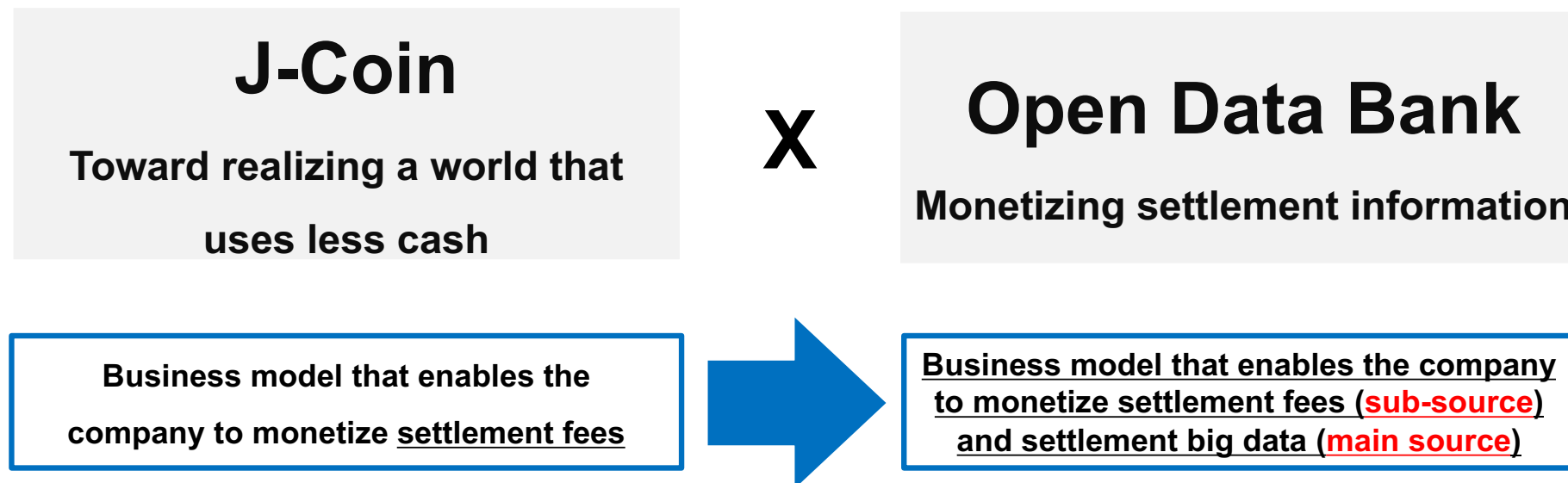
(General Contractor etc.)

Pipeline

Digital money



“J-Coin” Vision x “Open Data Bank” Vision



Develop a new nationwide platform and create an income source based on a new business model.

Nationwide platform

1) Company that issues common electronic money for all Japanese banks (“J-Coin vision”); 2) Information bank that accumulates settlement information (“Open Data Bank vision”)

“J-Coin” Vision x “Open Data Bank” Vision

“J-Coin” vision

- **Mega banks will take the initiative in putting an end to the existing B2C settlement business model.**
- **To move toward a “world that uses less cash”**
 - To increase the convenience of consumers and member stores by significantly reducing settlement fees
 - ⇒ To share benefits from IOT advancement with a wide range of users
 - ⇒ The source of the benefits will be the “fixed expenses of financial institutions,” which will be reduced with the realization of a move toward a world that uses less cash.
 - Reduction of fees for ATM installment and costs for cash operations ⇒ Drastic reform of branch operating policy
- **Japanese banks will enjoy great synergy in competing against the surge of giant settlement companies from overseas.**
 - To justifiably exercise the strength of Japanese banks: Potentiality of deposit accounts for which KYC procedures were completed

“Open Data Bank” vision

- **To create a new income source by using and utilizing settlement information obtained from J-Coin (electronic money) transactions**
- **The issuance of J-Coin is simply a means. The real purpose is the accumulation and utilization of settlement information.**
 - Establishment of a Japanese version of FICO, enhancement of the consulting business through the analysis and utilization of settlement information, etc.

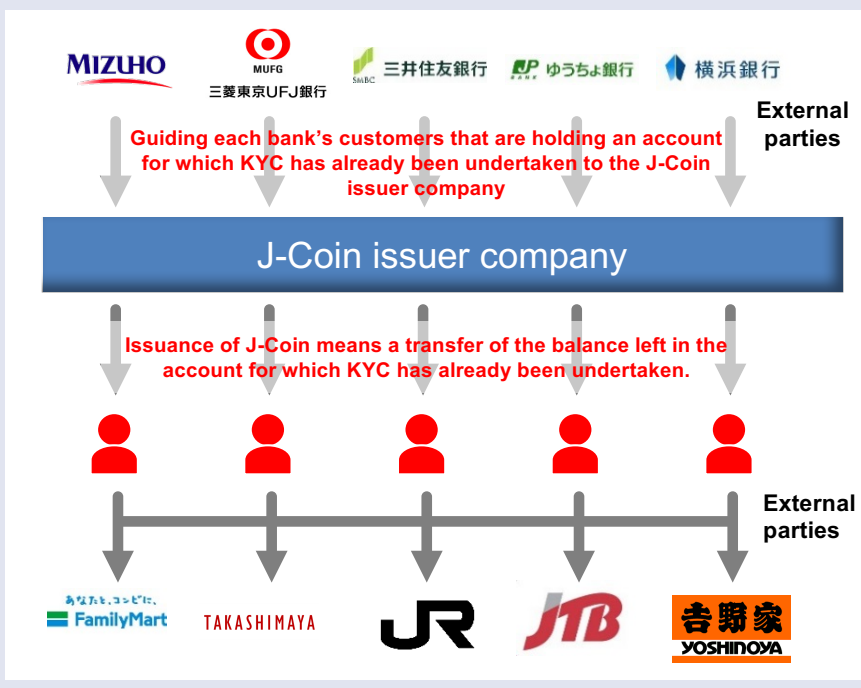
“J-Coin” vision x “Open Data Bank” vision

- **To clearly identify “areas of cooperation” and “areas of competition” and to increase added value for the nation’s economy**
 1. **Areas of cooperation: Development of a nationwide platform (J-Coin issuance bank + Open Data Bank)**
 2. **Areas of competition: Utilization of the settlement information accumulated by Open Data Bank**

“J-Coin” Vision x “Open Data Bank” Vision

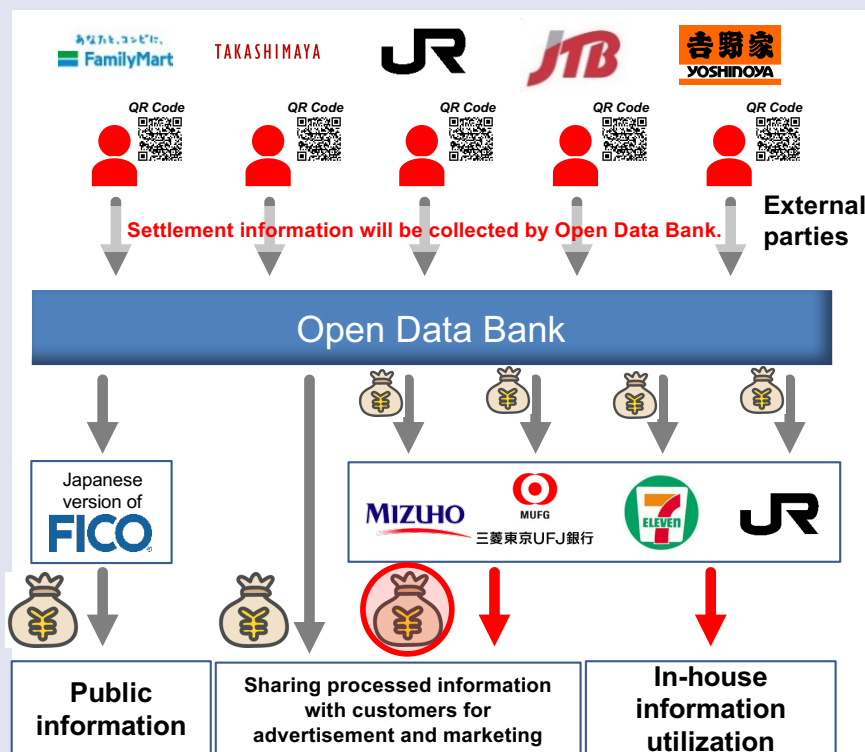
J - Coin

- “All-Japan electronic money” issued by all Japanese banks
 - Electronic money pegged to JPY, unlike Bitcoin
 - Cash converted into electronic money will be automatically transferred to one's smartphone from an account for which KYC has already been undertaken.
 - All Japanese banks will issue electronic money under a single brand name.
 - Electronic money brands such as Mizuho Coin and BTMU Coin will be consolidated into J-Coin.
 - Movement toward realizing a world that uses less cash and cards
- Promotion of an economy using less cash, for B2C settlement
- Cash will be replaced with the combination of credit cards and J-Coin for B2C settlement in Japan.
 - The number of small-amount credit card settlements will be decreased. Japanese banks will resist companies from different industries entering the market, in a concerted manner.



Open Data Bank

- To collect settlement information and monetize utilization of information
 - Settlement using J-Coin is a means of information collection.
 - Settlement is “Red Ocean” and information utilization is “Blue Ocean”.
- Open Data Bank will be established as a shared infrastructure.
 - Stakeholders will be 3 mega banks, local banks, leading member stores, etc.
 - Will be utilized as information infrastructure of the Japanese version of FICO score.
 - It has not been determined how settlement information will be monetized yet.

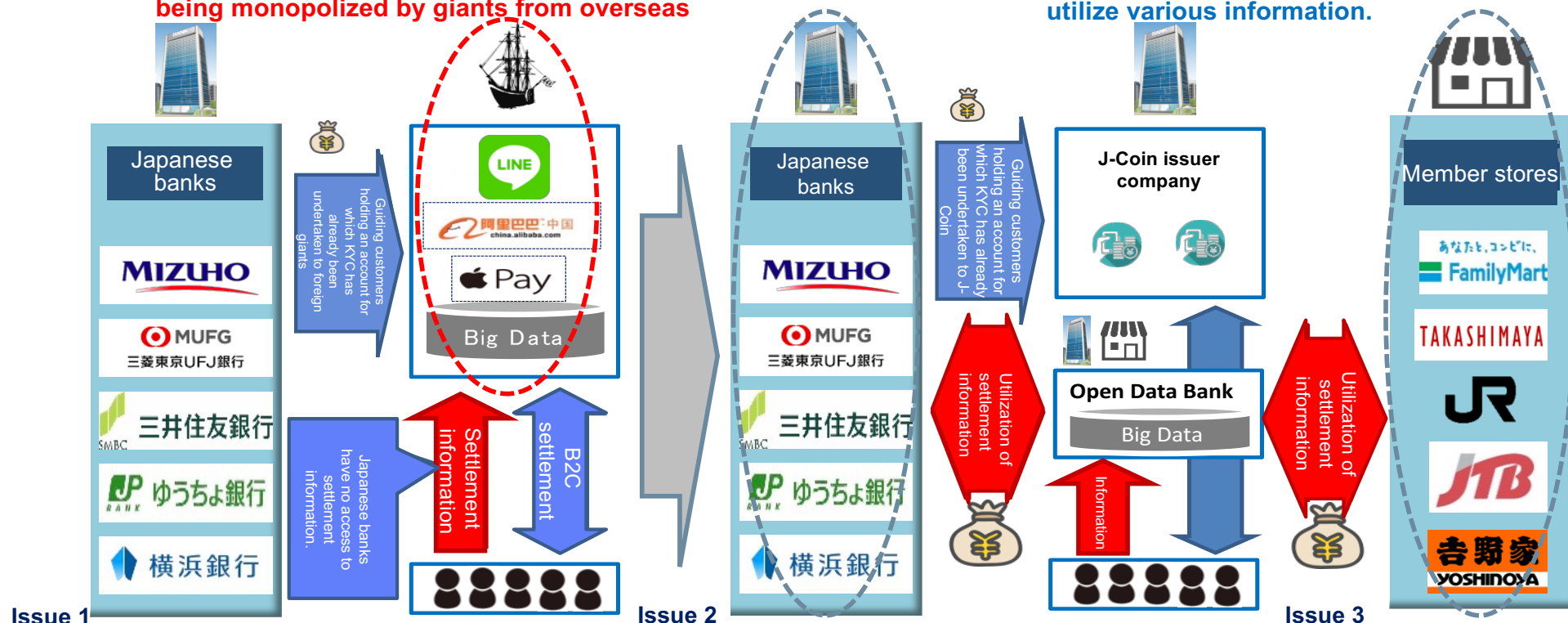


X

“J-Coin” Vision x “Open Data Bank” Vision (Overview)

Concern for settlement transactions and information being monopolized by giants from overseas

Member stores and financial institutions will be able to utilize various information.



- Uncertainty about the early establishment of a J-Coin issuer company
 - All Japanese banks can cooperate together for the common good so as to reduce fixed expenses, through the promotion of a move toward an economy that uses less cash.
 - Consolidation is needed before multiple coin issuer companies can be established.
 - Aim to disseminate the service all over Japan by 2020 through the early establishment of the company.

- Uncertainty about the expansion of the users' and member stores' base
 - Expansion will depend on the pursuit of convenience and economic efficiency.
 - ✓ Reduction of settlement (remittance) fees (for users)
 - ✓ Reduction of member fees (for member stores)
 - ✓ Granting of incentives
 - ✓ Easy-to-understand system of J-Coin having equal value to JPY

- Specific measures for the utilization of settlement information
 - Development of infrastructures to support the utilization of settlement information
 - ✓ Environment of utilization that does not allow giants from overseas to monopolize the market
 - Privacy and permission regarding the use of information
 - ✓ Response in compliance with the revised *Act on the Protection of Personal Information*
 - Monetization of settlement information to be examined in the future

Advanced Examples of Countries Overseas: Swedish Electronic Money, “Swish”

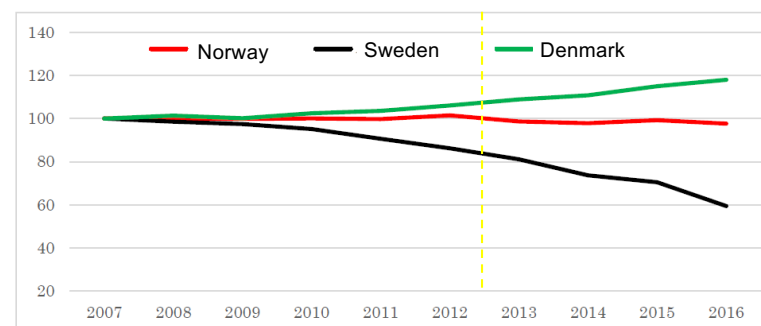
In Sweden, more people are using “Swish,” a mobile settlement service jointly established by the country's main banks. At the same time, as more banks have decided to stop handling cash at their branches and are removing ATMs, an economy where cash is used less is becoming a reality.



Application for quick settlement
on a smartphone

Service commencement	December, 2012
Number of users	5.2 million (total population: 9.75 million)
Purpose	<ul style="list-style-type: none"> ➤ Remittance between individuals ➤ Payment at brick-and-mortar shops and EC sites
Features	<ul style="list-style-type: none"> ➤ Established by the 6 main banks in Sweden ➤ Authentication is supported by a security application for personal authentication, Mobile Bank ID, with a personal number that is similar to “My Number” in Japan, all via collaboration

Cash circulation



Source: Websites of the central banks of each country
Note: Rate against the circulation amount of notes and currency in 2007, which is set at 100

Survey result “Which settlement methods did you use in the past month? (Multiple answers allowed)”

	2010	2012	2014	2016
Cash	94%	93%	87%	79%
Debit card	91%	94%	93%	93%
Credit card	27%	29%	31%	32%
Swish	-	-	10%	52%
Online bank	53%	48%	57%	57%

Source: Riksbank, [-] means that the Swish service was not available at that time.

Source: Prepared by MHBK's Industry Research Department

Pipeline

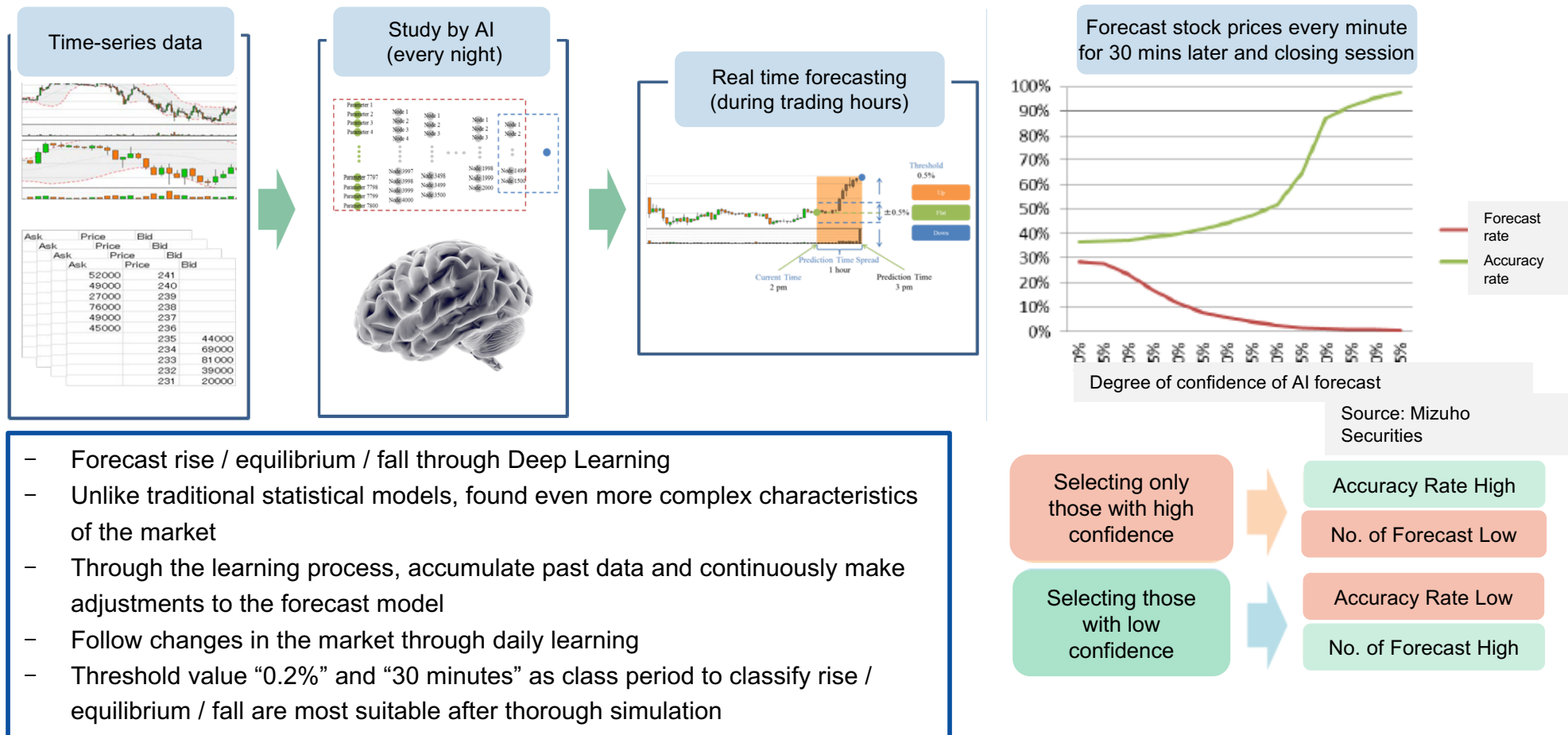
Algorithm Trading

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Algorithm Trading

Improved Algorithm Trade Strategies (forecasting trends in stock prices) through AI, Deep Learning

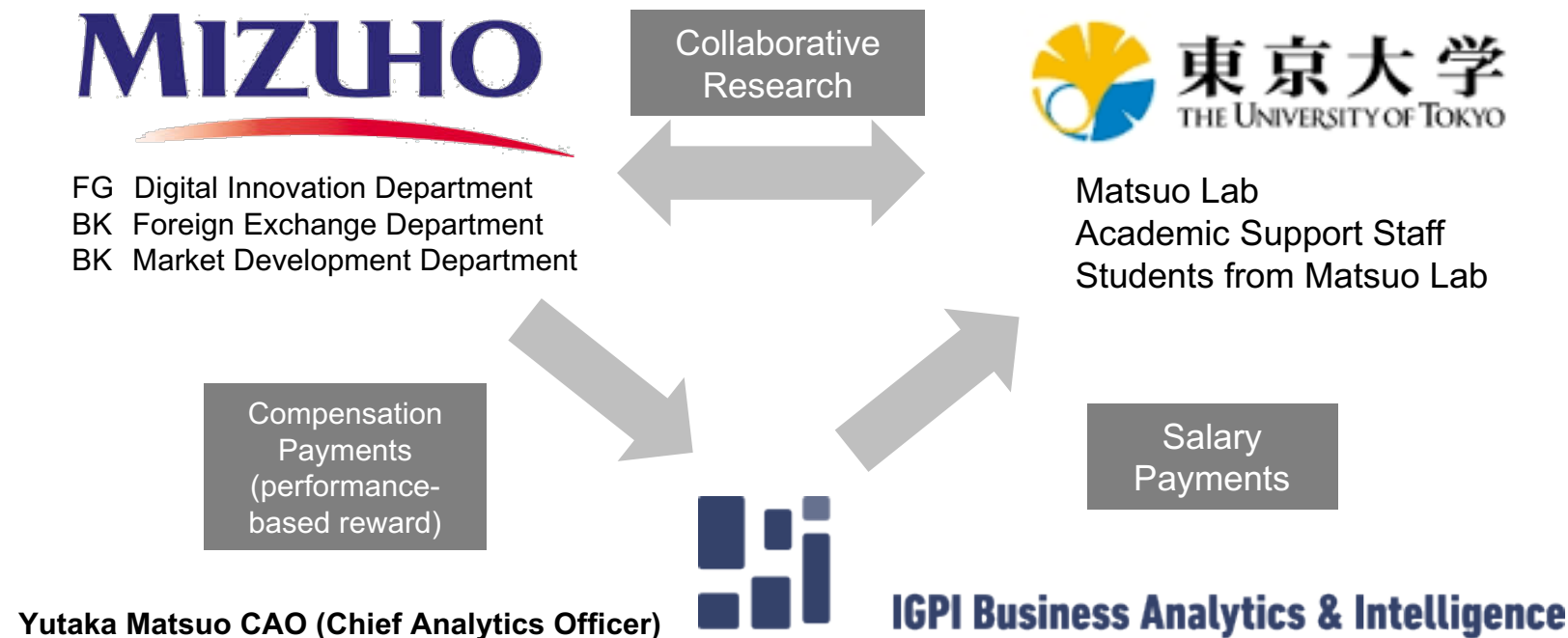
* Preparing for international patent applications (patent pending in Japan)



III Fintech Innovation in Mizuho

Collaborative business • Contract Scheme with Matsuo Lab, University of Tokyo

- Aim : **Collaborative development of High quality Algorithm utilizing AI in 'Market making' and 'Trading' in Foreign exchange**
- Prefer the reward to be paid based on performance (Mr. Matsuo). Since it is difficult for the University of Tokyo to sign a contract which states the reward is based on performance, Mr. Matsuo concluded a contract between 3 companies, including CAO IGPI and BAI.
- Concluded on the date of first contact (Sep.14th 2016) and data was masked when handed over
- Aiming to implement the first AI in 2017 and increase quality by renewing contract once a year

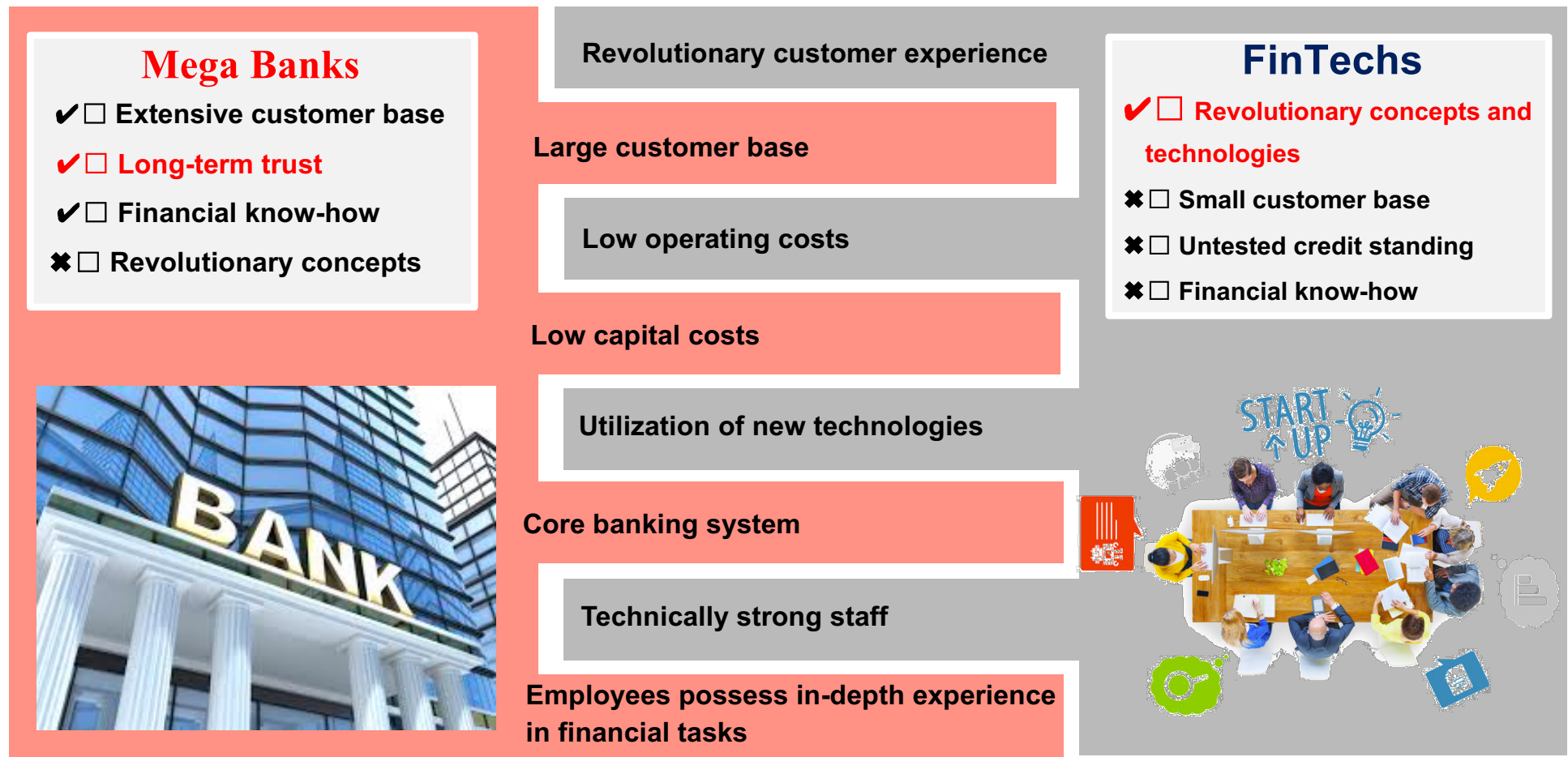


Researching artificial intelligence (reasoning, machine learning, deep learning), natural language processing, social network analysis, social media, web mining and business models in University of Tokyo. Presenting academic papers mainly in the Japanese Society of Artificial Intelligence in Japan and in WWW International World Wide Web Conference and Association for the Advancement of Artificial Intelligence outside Japan. Working as Track Chair in the Web Mining Area in WWW. Now, working on deep learning and collaborative research focusing on data analysis with companies in Japan. Worked as Associate Professor in the School of Engineering in University of Tokyo Institute of Engineering Innovation (Young Leaders Cultivation Program)/ Center for Knowledge Structuring / Department of Technology Management for Innovation and currently as Chairman of Consumer Intelligence Tutorial in the School of Engineering in University of Tokyo and Visiting Associate Professor at National University of Singapore.

III Fintech Innovation in Mizuho

Building FinTech alliances with startups

- Opportunity: The respective strengths and capacities of banks and FinTechs are complementary
 - Potential: The possibility for explosive growth with the right partnership



Source: Prepared by Mizuho Bank's Industry Research Division