Digital Transformation in MUFG

MICHISUKE YAMADA
GLOBAL INNOVATION TEAM, MUFG
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Head for Americas, Global Innovation Team, MUFG

[Carrier in MUFG]

2003 Joined The Bank of Tokyo Mitsubishi
- RM at Roppongi Branch, Aoyamadori Branch

2006 e-Business and IT Initiative Division (Tokyo)
- Retail consumer related product (Mobile app, Aggregation)
- Division Planning & Budget/Risk Control etc.

2012 Asian Transaction Banking Office (Singapore)
- VP, Cash Management Service Department (CMS, Pooling etc.)

2014 Digital Innovation Division (Tokyo)
- VP, SNS Marketing, Blockchain

2016 US-ATMC, Stanford University
- Visiting Scholar

2017 Global Innovation Team (US)
- Director, Open Innovation, Digital Transformation etc.

MUFG

Table of Contents

1. MUFG Overview
2. Accelerating Digital Shift
3. Digital Transformation (DX) Initiatives
    1) Reforming Operational Process
    2) Acceleration of the online channel shift
    3) Collaboration with Digital Platformers
    4) Data-Driven Financial Services

Appendix
    MUIP Investment Thesis
    MUIP Portfolio

1. MUFG Overview

Digital Transformation in MUFG | 12 November 2020

1. MUFG Overview

Mitsubishi UFJ Financial Group (MUFG)

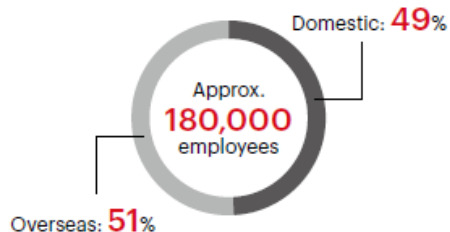MUFG is Japan's Largest Financial Institution and a Top 5 Global Corporate Bank[1]

Customer Base

Number of domestic individual customers

Approx. **34** million

Number of domestic corporate clients

Approx. **1.2** million

Human Resources

Domestic: **49**%

Approx. **180,000** employees

Overseas: **51**%

Global Banks By Total Assets		
Rank	Bank	Assets (US$ Thousands)
1	Industrial and Commercial Bank of China	$3,886,741,098
2	Agricultural Bank of China	3,541,131,638
3	Bank of China	3,218,954,218
4	China Construction Bank Corporation	3,131,955,418
5	**Mitsubishi UFJ Financial Group, Inc.**	**2,889,379,410**
6	JP Morgan Chase & Co.	2,764,661,000
7	BNP Paribas	2,761,977,461
8	HSBC Holdings plc	2,728,347,000
9	Bank of America Corporation	2,426,330,000
10	Citigroup Inc.	2,014,802,000

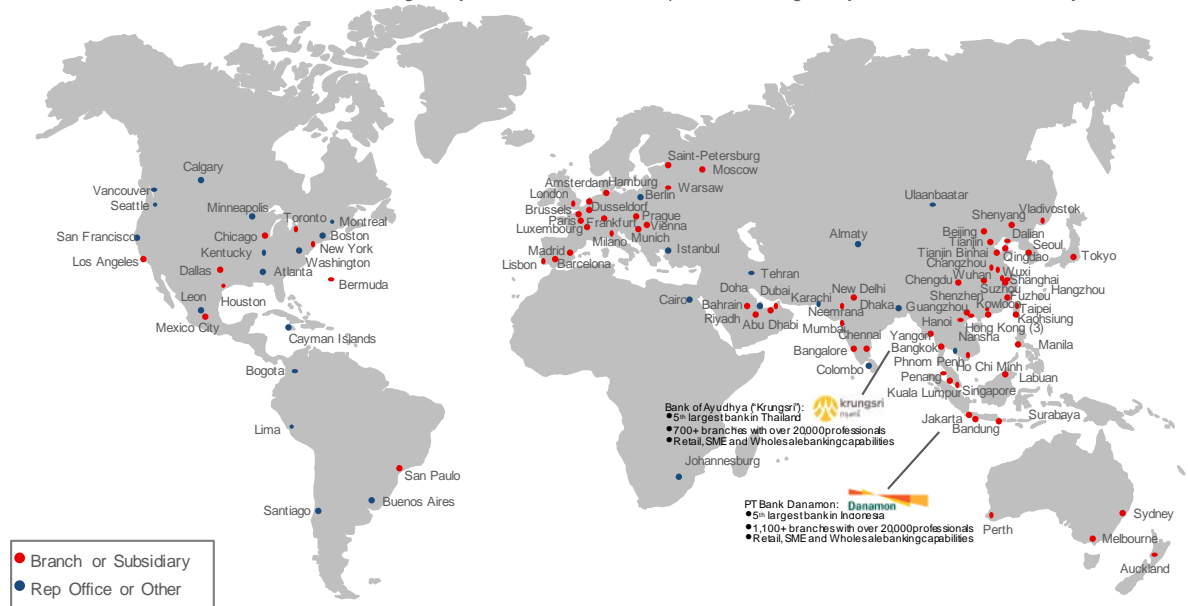| Global Banks By Total Deposits		
Rank	Bank	Deposits (US$ Thousands)
1	Industrial and Commercial Bank of China	$3,030,576,693
2	Agricultural Bank of China	2,665,919,740
3	China Construction Bank Corporation	2,358,614,761
4	Bank of China	2,245,697,912
5	**Mitsubishi UFJ Financial Group, Inc.**	**1,739,985,235**
6	JP Morgan Chase & Co.	1,525,261,000
7	Bank of America Corporation	1,392,836,000
8	HSBC Holdings plc	1,373,741,000
9	Wells Fargo & Company	1,308,495,000
10	Mizuho Financial Group, Inc.	1,241,548,208

[1] S&P Global Market Intelligence as of April 6, 2018.

Extensive Global Network and History

50+
countries

2,700+
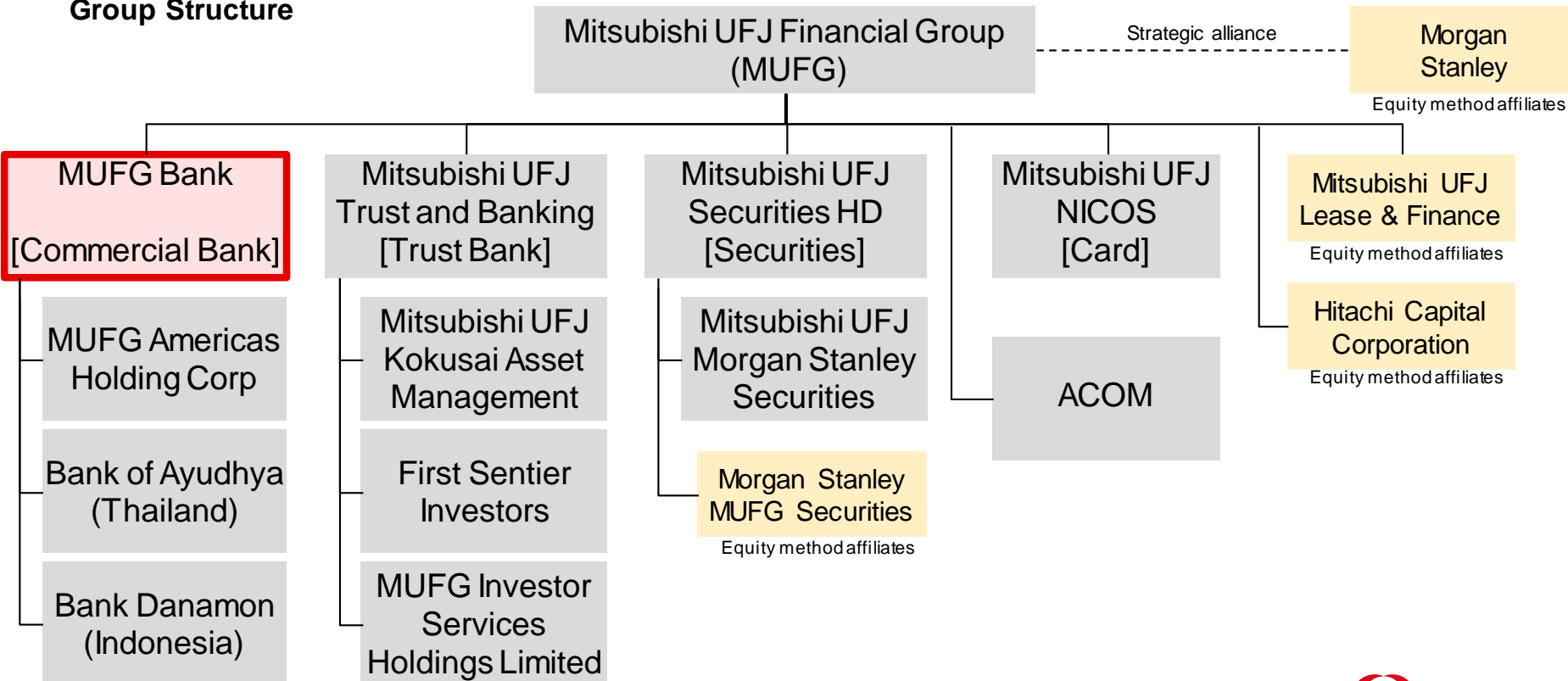locations globally

180,000+
professionals globally

360+
years of history

Bank of Ayudhya ("Krungsri"):
- 5th largest bank in Thailand
- 700+ branches with over 20000 professionals
- Retail, SME and Wholesale banking capabilities

PT Bank Danamon:
- 5th largest bank in Indonesia
- 1,100+ branches with over 20000 professionals
- Retail, SME and Wholesale banking capabilities

● Branch or Subsidiary
● Rep Office or Other

As of March 2019, there are 370 Union Bank branches in the U.S., 700+ Bank of Ayudhya ("Krungsri") branches in Thailand, 1,100+ Danamon branches, and more than 700 branches in Japan.
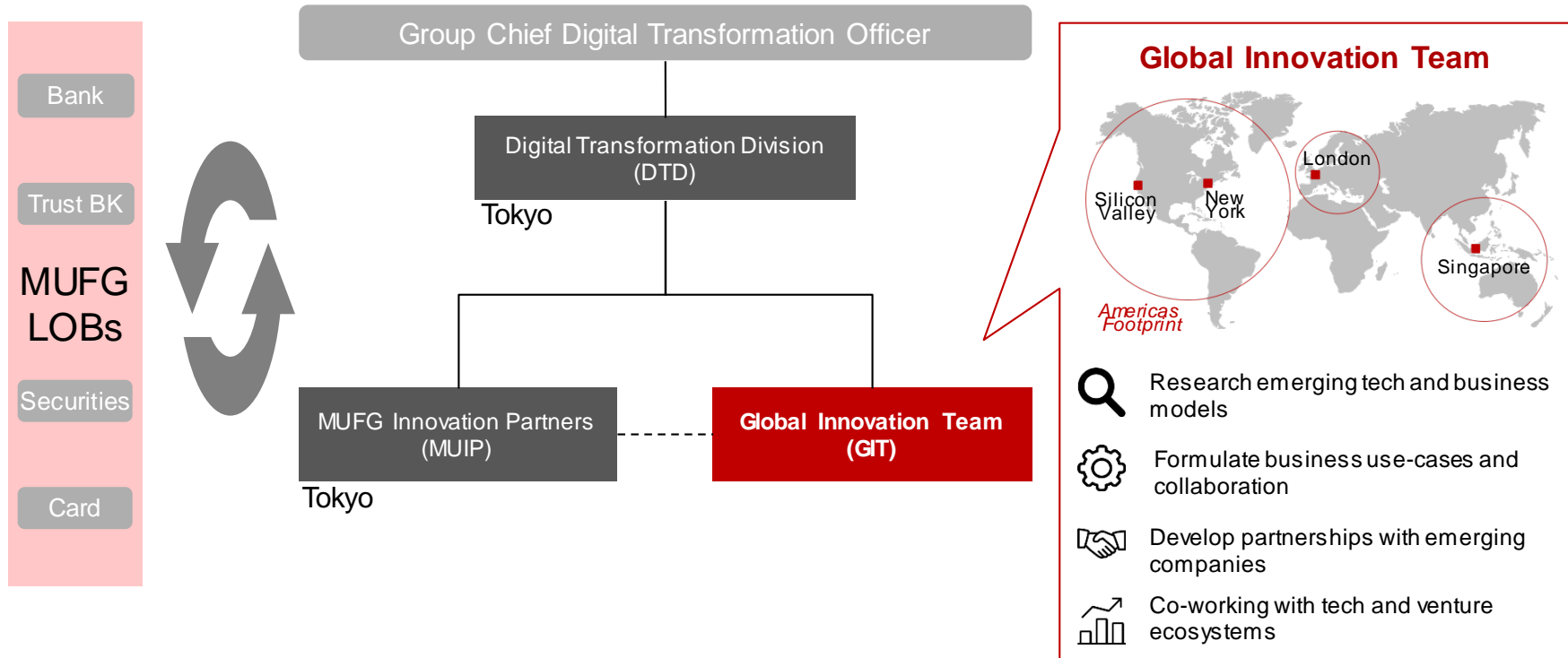
1. MUFG Overview

Group Structure

```
                    Mitsubishi UFJ Financial Group          Strategic alliance          Morgan
                              (MUFG)          - - - - - - - - - - - - - -              Stanley
                                                                                Equity method affiliates
```

MUFG Bank [Commercial Bank]	Mitsubishi UFJ Trust and Banking [Trust Bank]	Mitsubishi UFJ Securities HD [Securities]	Mitsubishi UFJ NICOS [Card]	Mitsubishi UFJ Lease & Finance

Mitsubishi UFJ Lease & Finance — Equity method affiliates

MUFG Americas Holding Corp

Mitsubishi UFJ Kokusai Asset Management

Mitsubishi UFJ Morgan Stanley Securities

ACOM

Hitachi Capital Corporation — Equity method affiliates

Bank of Ayudhya (Thailand)

First Sentier Investors

Morgan Stanley MUFG Securities — Equity method affiliates

Bank Danamon (Indonesia)

MUFG Investor Services Holdings Limited

Digital Transformation in MUFG | 12 November 2020

MUFG

1. MUFG Overview

Digital Transformation Structure

Group Chief Digital Transformation Officer

Digital Transformation Division
(DTD)

Tokyo

MUFG Innovation Partners
(MUIP)

Tokyo

**Global Innovation Team
(GIT)**

MUFG
LOBs

Bank

Trust BK

Securities

Card

Global Innovation Team

Silicon Valley
New York
London
Singapore

Americas Footprint

Research emerging tech and business models

Formulate business use-cases and collaboration

Develop partnerships with emerging companies

Co-working with tech and venture ecosystems

MUFG

2. Accelerating Digital Shift

MUFG

Digital Shift Mega Trends

EC
2020.3.26 Nikkei Shimbun

Delivery
2020.5.21 Nikkei Shimbun

Healthcare
2020.5.18 Nikkei Shimbun

Covid-19 has been changing the way of human interaction by accelerating digital shift in various area

SaaS
2020.6.4 Nikkei Shimbun

Education
2020.5.2 Nikkei Shimbun

Cashless
2020.5.10 Nikkei Veritas

Game
2020.5.25 Nikkei MJ

MUFG

2. Accelerating Digital Shift

Consumer Survey for Banking Business (May 2020)

◆Channel preference for banking

■ Ex-C19 (Feb)   ■ After-C19 (May)

Branch
46.5
30
▲17%

Web/Mobile
38.4
53.1
+15%

Other (Phone, Mail, eMail etc.)
5.8
12.9
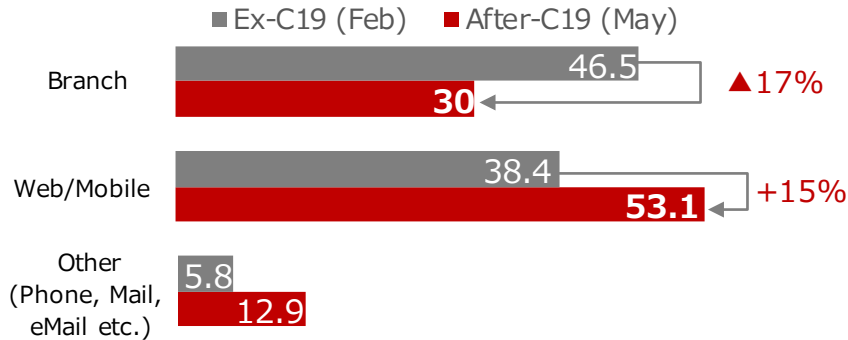
◆Criteria for choosing/switching bank

Digital Capability — **46.3**
Branch Location — 40.9
Price/Cost Merit — 31.2
Customer Support — 20.3
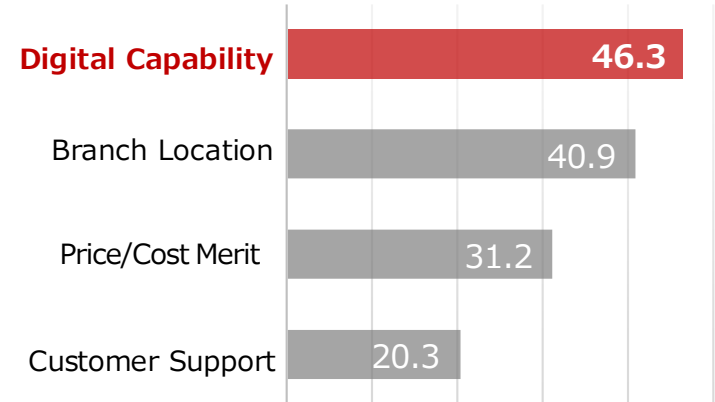
MUFG

2. Accelerating Digital Shift

Customer behavior in MUFG Bank (1/2)

◆MAU in Online Banking Channel

（Million）

5.0

4.5

4.0

3.5

3.6

4.8

19/04 19/05 19/06 19/07 19/08 19/09 19/10 19/11 19/12 20/01 20/02 20/03 20/04
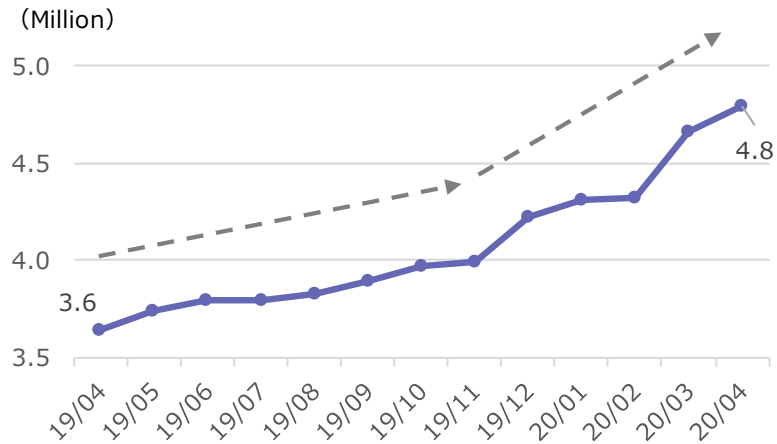
◆Number of Branch Visitors

（Million）

2015 2016 2017
2018 2019

2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2

Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar
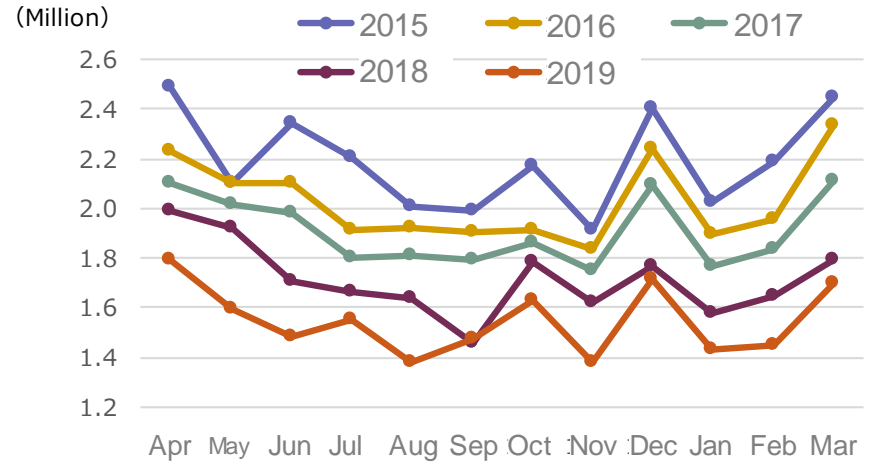
MUFG

2. Accelerating Digital Shift

Customer behavior in MUFG Bank (2/2)

◆Channel Shift in Account Opening before/after Covid-19

Feb 2020

Mail

Online **16%**

TV Teller 21%

店頭 58%

Non-face-to-face 42%

May 2020

Mail

Online **27%**

Branch 39%

TV Teller 30%

Non-face-to-face 61%
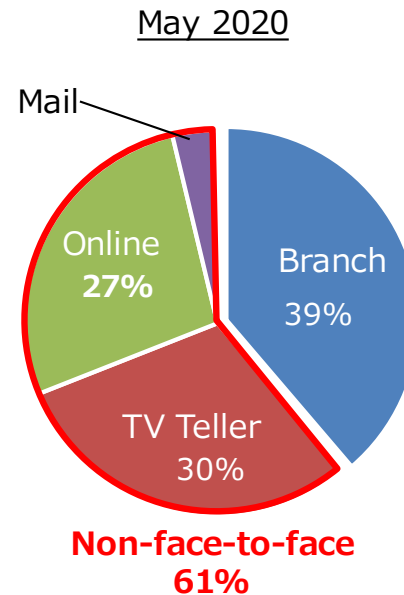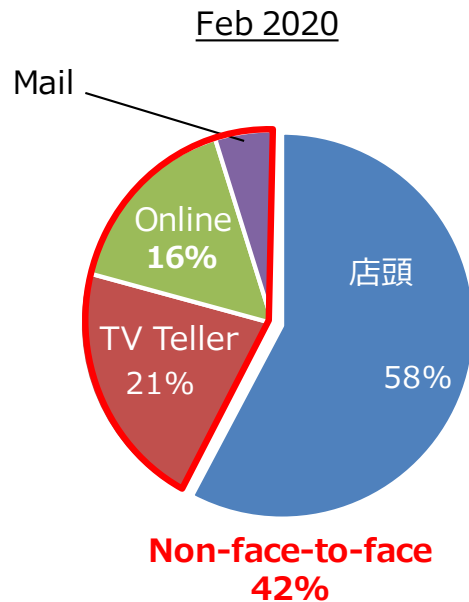
MUFG

2. Accelerating Digital Shift

- Before FY2023, MUFG's headcount will be reduced by 20%

- A third of branch will be maintained as a full-service whereas others will be closed or re-designed

Bank Headcount (Japan)
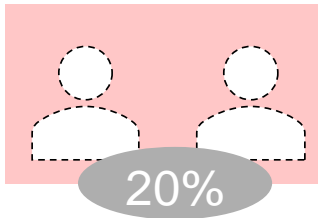
Branch Network (Japan)

Full-Service Branch

33%

20%

40%

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3. Digital Transformation (DX) Initiatives

MUFG

3. Digital Transformation (DX) Initiatives

Core Digital Transformation Areas in MUFG
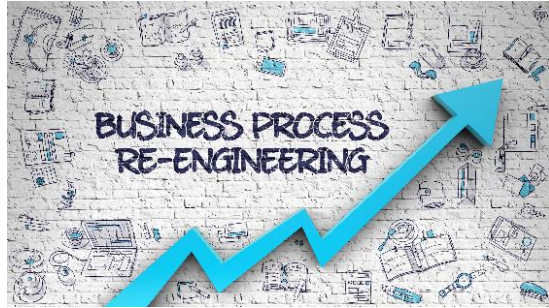
Reforming operational processes

Acceleration of the mobile shift

Collaboration with digital platformers

Data-driven financial services

3-1. Reforming Operational Process

MUFG

3-1. Reforming Operational Process

- MUFG adopted Robotics Process Automation (RPA) in 2015. At that time, no other banks used RPA in Japan
- Since then, wide variety of use cases has been added globally

RPA workflow Image
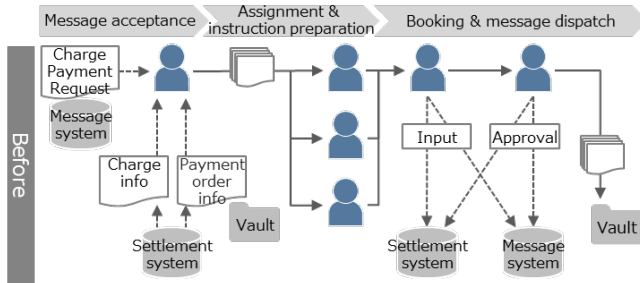
Business Process Restructuring

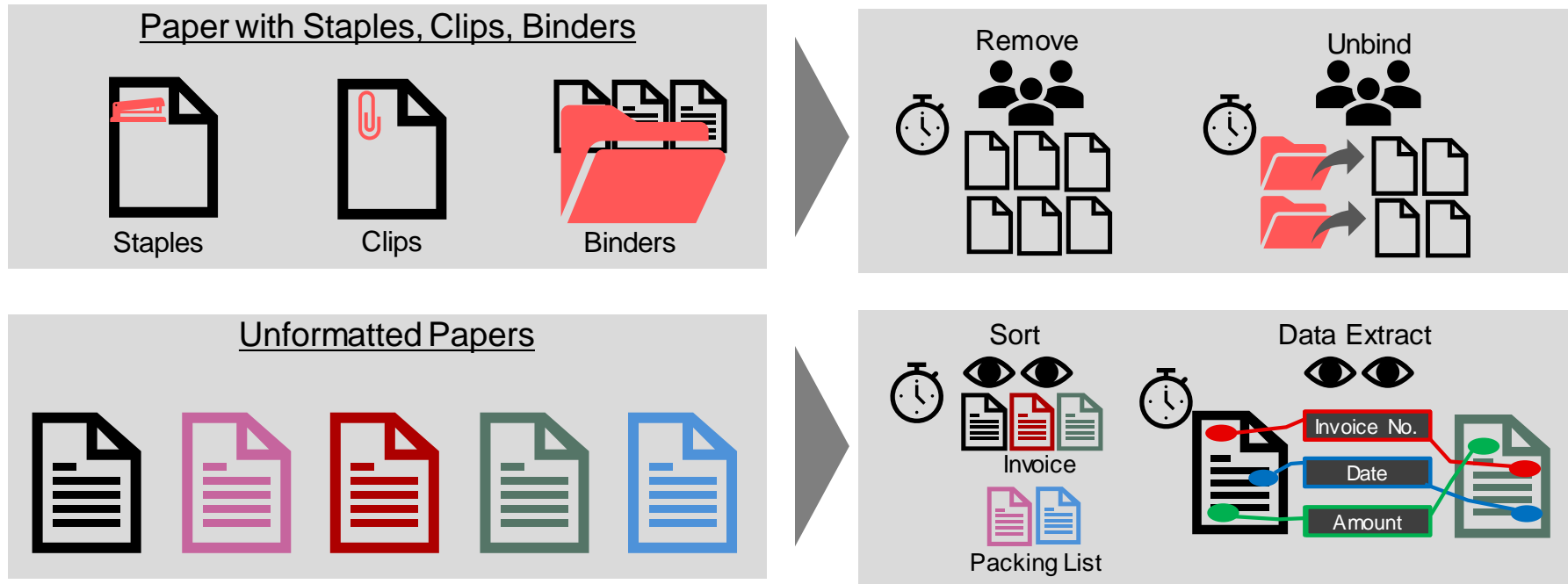❶ Minimize human operation
❷ Paperless operations
❸ Eliminate operations relying on individuals
❹ Progress transparency
❺ Realize location free work
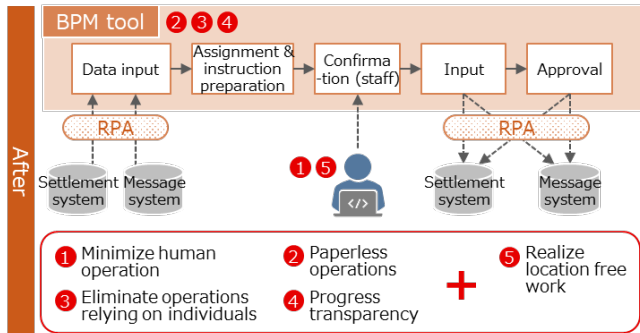
Sample Use Case

Register financial statements in database

- Annually accept more than 100,000 financial statements from customers
- Utilize RPA to automatically register 70% of its work
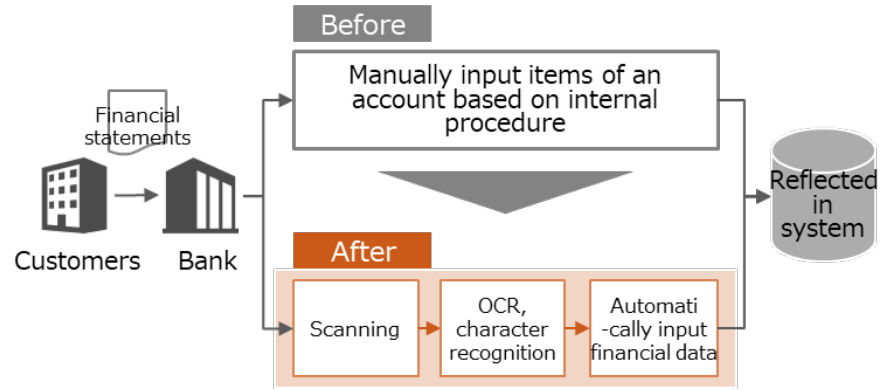
MUFG

3-1. Reforming Operational Process

- However RPA is not always good at anything. Paper is a major barrier to implement RPA in some use case
- Many burdensome manual handling procedures are remaining. Therefore, MUFG made a collaboration with a startup

Paper with Staples, Clips, Binders

Staples

Clips

Binders

Remove

Unbind

Unformatted Papers

Sort

Invoice

Packing List

Data Extract

Invoice No.

Date

Amount

MUFG

3-1. Case Example: Ripcord

Ripcord overview

Ripcord is the world's leading **robotics digitization** company, **combining hardware and software** robotics to process and digitize documents and records via an Integrated SaaS offering. Its platform focused on smart robotics **digitization**, smart **content management** with AI and helping better enable RPA and other business process automation.

Website	**https://www.ripcord.com/**
Location	Hayward, CA (founded 2015)
Area	AI & Automation (Electronic Content Mgmt.)
Funding	Recent: $105M Series B-2 (Feb 2020) Total: $120M ($360M Valuation)
Key Investors	KPCB, Google Ventures, SVB, CDK Global
Customers/ Partners	MUFG, Capital One, Conoco Phillips, CDK Global, Coca Cola, Hartford Group

NIKKEI **Asia**

TECHNOLOGY

MUFG taps US robot startup to scan centuries-worth of documents

Ripcord will help Japanese bank move away from paper and hanko stamps

Bloomberg

Technology

Japan's Largest Bank Plans to Digitize Millions of 'Hanko' Documents

By Taiga Uranaka and Yuki Hagiwara
July 21, 2020, 11:09 PM PDT

Japan's largest bank is installing giant robot scanners to digitize millions of documents, as it seeks to break from the long tradition of using paper records to verify its customers' identities.
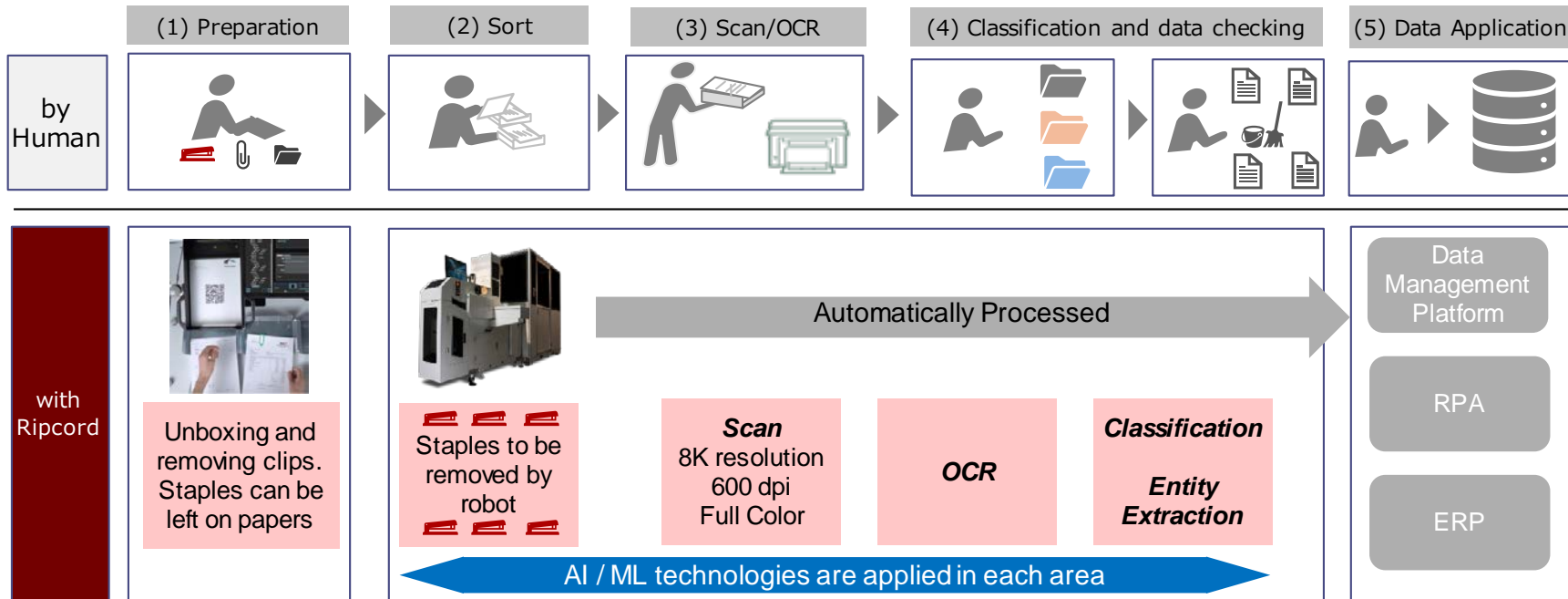
Mitsubishi UFJ Financial Group Inc. will use the machines of Ripcord Inc. to scan 300 million pages of files that record clients' personal seals known as hanko, the Tokyo-based lender said Wednesday. The U.S. startup said last

MUFG

3-1. Case Example: Ripcord

How Ripcord Solution works

(1) Preparation	(2) Sort	(3) Scan/OCR	(4) Classification and data checking	(5) Data Application

by Human

---

with Ripcord

Unboxing and removing clips. Staples can be left on papers

Automatically Processed

Staples to be removed by robot

Scan
8K resolution
600 dpi
Full Color

OCR

Classification

Entity Extraction

AI / ML technologies are applied in each area

Data Management Platform

RPA

ERP

MUFG

3-1. Case Example: Ripcord

First Use Case: Digitizing All The Stored Hanko Documents

- In the past, a hanko (seal) image must be registered to bank when an individual opens a bank account
- Maintain these images with ready for reference requests from branches costs a lot for bank


Hanko document   Attachments

Hanko document   Attachments

Hanko document   Attachments

■ ■ ■

Bank Warehouse
(Centralized location)

> 300mil images
Too many to scan manually

Operational Cost
Many ppl working at the warehouse

Storage Cost
Requires Highest Security
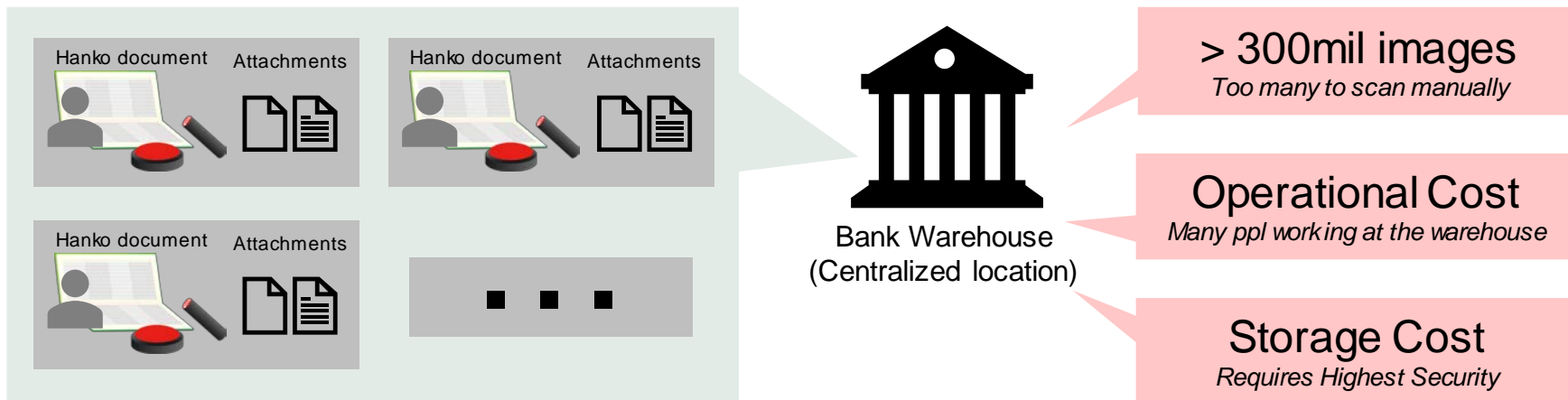
MUFG decided to make all the documents scanned by collaborating with Ripcord

MUFG

3-1. Case Example: Ripcord

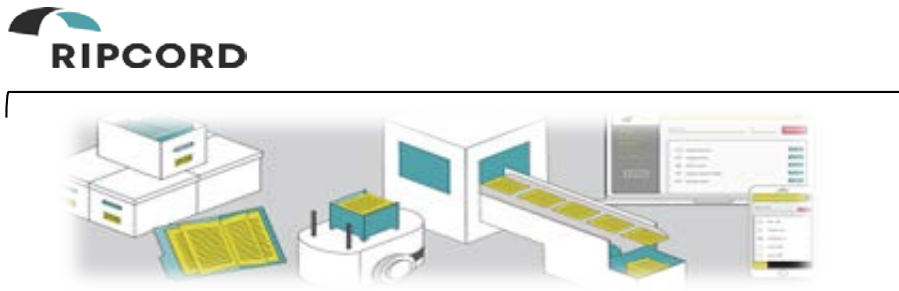## Workflow image for scanning Hanko document

Time to completion

by Manual

4 ppl / team

Remove staples → Sort → Scan/ OCR → Check
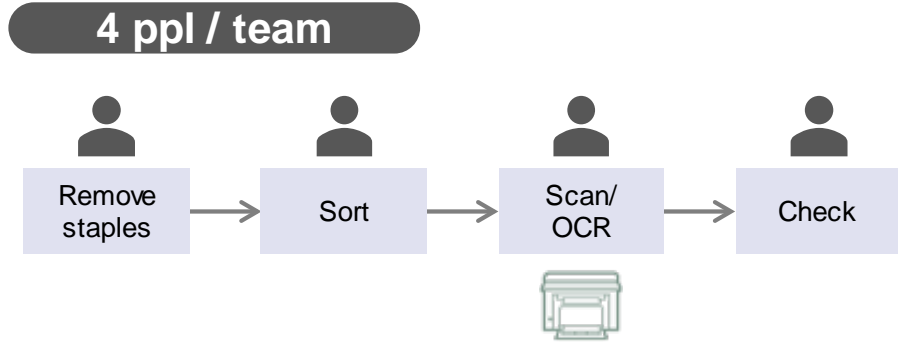
1team (4ppl) → **510yrs**

510team (2,040ppl) → **1yr**

with Ripcord

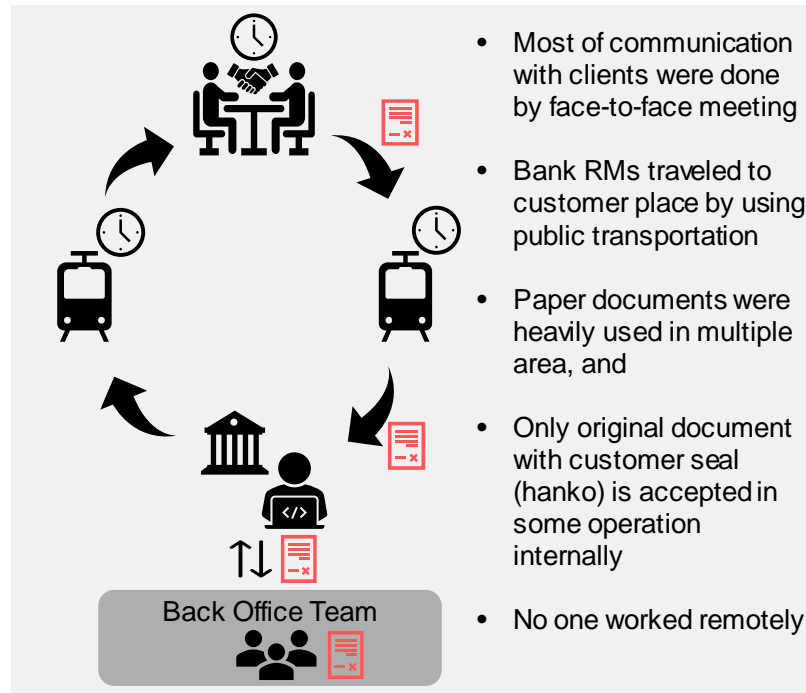**RIPCORD**

1team (30ppl) → **5yrs**

MUFG

3-2. Acceleration of the online channel shift

MUFG

3-2. Acceleration of the online channel shift

Background: The way of business communication

Before Covid-19

- Most of communication with clients were done by face-to-face meeting

- Bank RMs traveled to customer place by using public transportation

- Paper documents were heavily used in multiple area, and

- Only original document with customer seal (hanko) is accepted in some operation internally

- No one worked remotely

After Covid-19

- WfH is widely adopted both in customers and bank employees

- Client communications are done virtually (email, video meeting etc.)

- The transactions which requires original forms are experiencing difficult time

- Hanko culture prevents workers from WfH

MUFG

3-2. Acceleration of the online channel shift

Background: Siloed Communication Channel
- Email, Call and Web Meeting are the main communication way with clients
- However, in terms of platform, everything is siloed. Limited capability for communication history retention
- Maintain consistent communication with clients becomes challenging. Therefore, we looked for the solution.
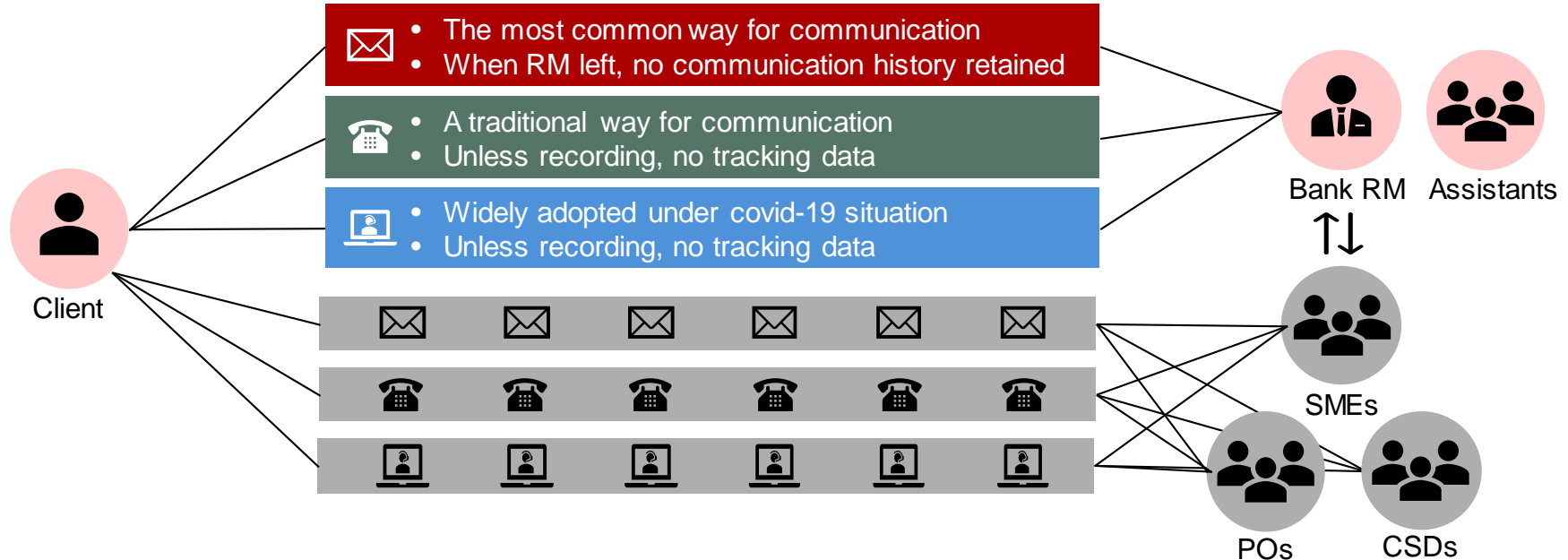
3-2. Case Example: Moxtra (Pilot)
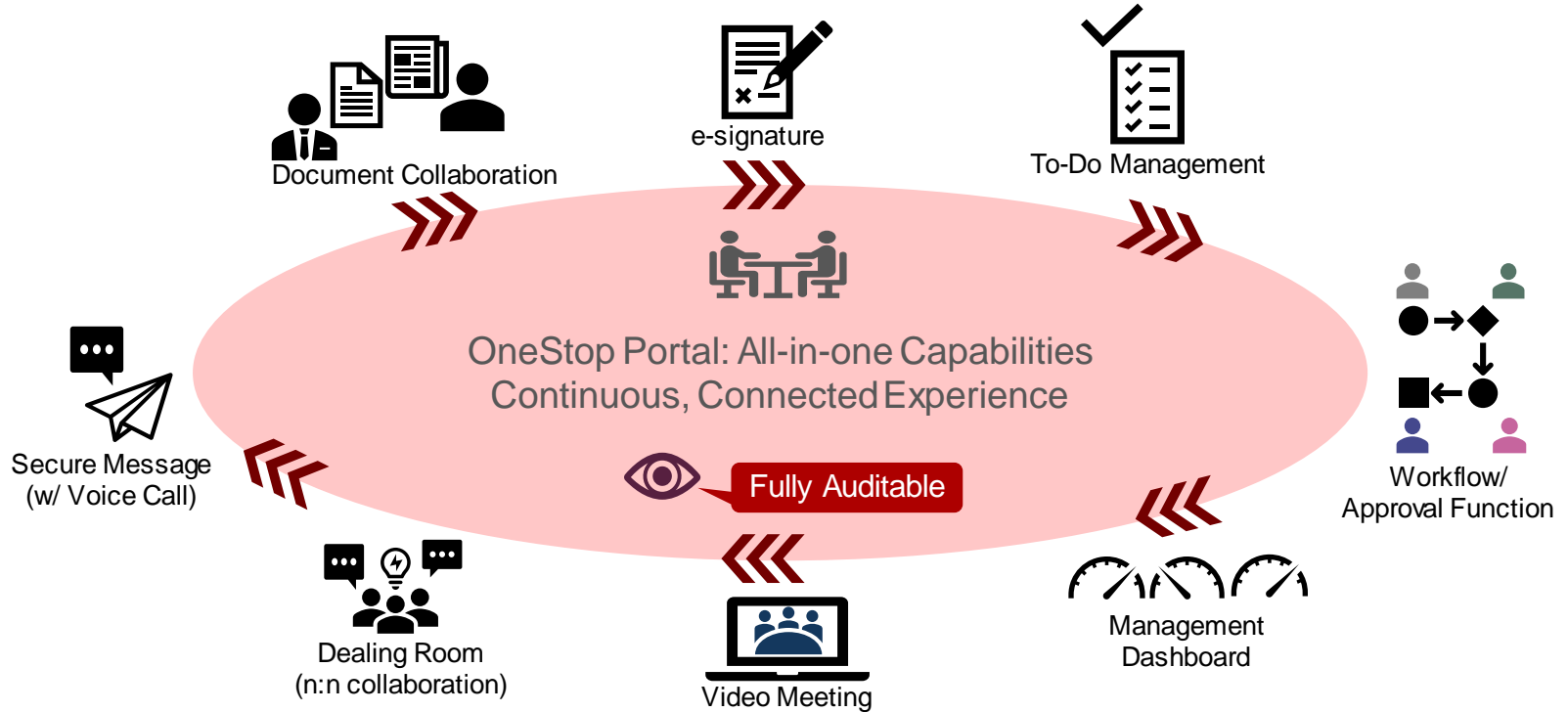
Moxtra overview

Moxtra powers OneStop client interaction apps where your organization and your clients stay in continuous connection to complete business. Moxtra has a heritage in collaboration tracing back to WebEx Communications. Moxtra's co-founder and CEO, Subrah Iyar, was the co-founder and CEO of WebEx. CTO, Stanley Huang was a senior director of engineering at both WebEx and Cisco.
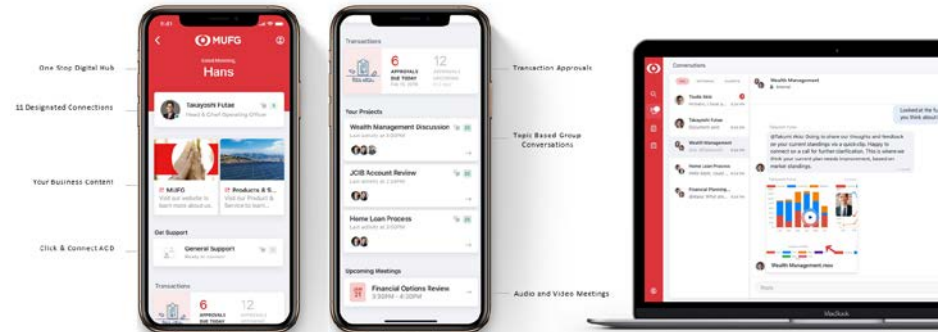
Website	https://moxtra.com/
Location	Cupertino, CA (founded 2012)
Area	Communication Software
Funding	Total: $37.0M
Key Investors	Subrah Iyar (CEO, Co-founder)
Customers/ Partners	Citibank, Standard Chartered Bank, OCBC Verizon, Raiffeisen Bank etc.

Moxtra OneStop Portal Overview

Document Collaboration

e-signature

To-Do Management

OneStop Portal: All-in-one Capabilities
Continuous, Connected Experience

Fully Auditable

Secure Message
(w/ Voice Call)

Workflow/
Approval Function

Dealing Room
(n:n collaboration)

Video Meeting

Management
Dashboard

MUFG

3-2. Case Example: Moxtra (Pilot)

The OneStop MUFG Client Portal

- Moxtra got second prize at MUFG Digital Accelerator in 2019

- Currently, a pilot project is being conducted in Japan

Client Communication

| Video/Voice Meeting |
| Messaging |
| Document Collaboration |

- Retains entire communication history
- Consistent communication with customers

Transaction / Operation

| e-Signature |
| Transaction Approvals |
| Task Management |

- Operational improvement by reducing physical documents
- Streamlines transaction workflow

Connect with banking system for STP purpose

Connect with RPA system to streamline back office process

MUFG

3-3. Collaboration with Digital Platformers

MUFG

3-3. Collaboration with Digital Platformers

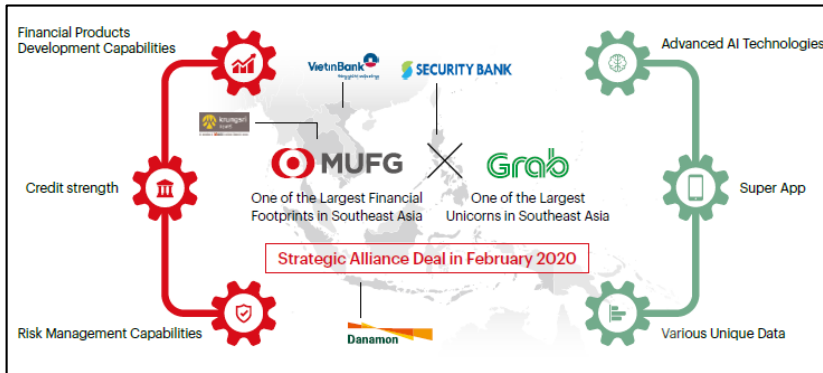**Aim to develop new services by taking advantage of each other's strength**

- Develop new services by combining platformers' advanced technologies with MUFG's financial know-how
- Deliver new value and services to the markets by accessing customer's digital daily activities

Digital Transformation in MUFG | 12 November 2020
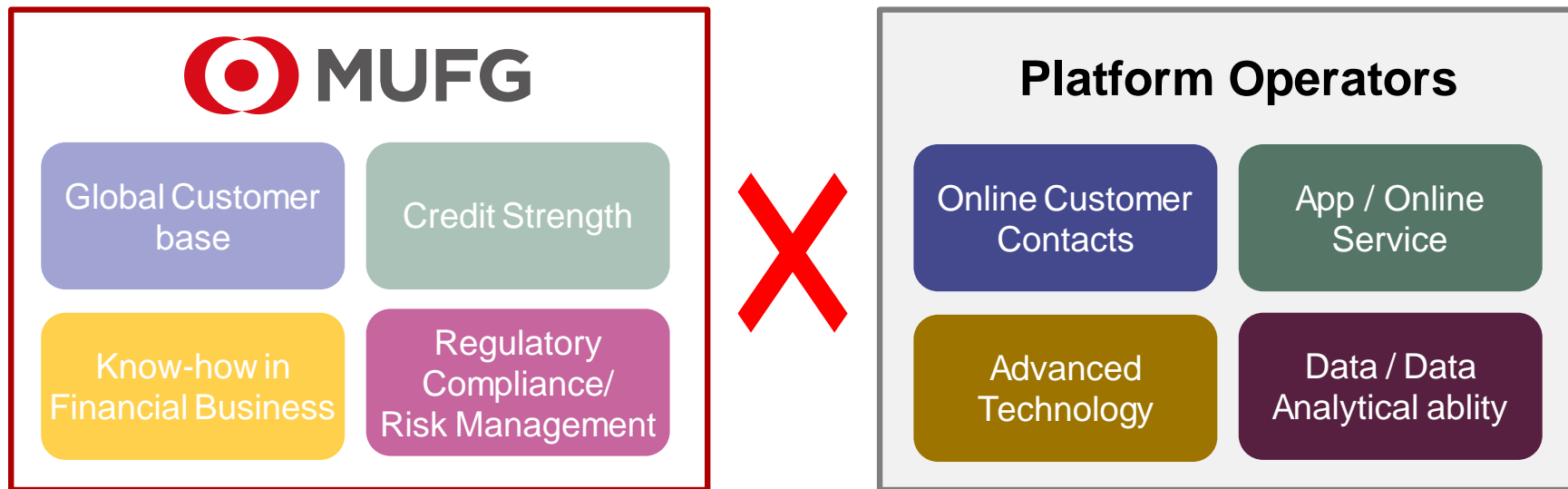
3-3. Collaboration with Digital Platformers

Business Alliance with Grab

- In February 2020, MUFG entered into a capital and business alliance with Grab Holdings, the leading super app in South East Asia.

- This alliance is intended to further enhance MUFG's commercial banking platform encompassing the ASEAN region through digitalization.

Business Alliance with Grab

Grab is leading super app in Southeast Asia

Ride-Hailing ⟷ **Food Delivery**

TAXI

Total use: 4 billion+ times
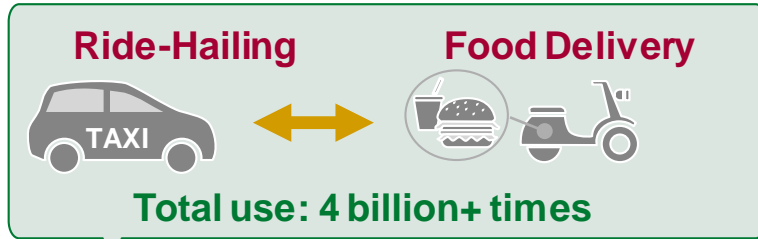
Enters Financial Services Business
9 million+ drivers and merchants
200 million+ downloads

Services launched to date		
PB	**2020**	**Details**
krungsri	May	COVID-19 relief lending for restaurants
	Sep	Data-based Loan to drivers
Danamon	July	Deposit products for app users
	July	Credit cards for app users
VietinBank	March	Account opening for drivers
	June	Micro-loans for drivers

MUFG Partner Banks ⟷ **Grab**

Joint Product

Offered via Grab App

Driver   Driver   Shop   End User

MUFG

3-4. Data-Driven Financial Services

MUFG
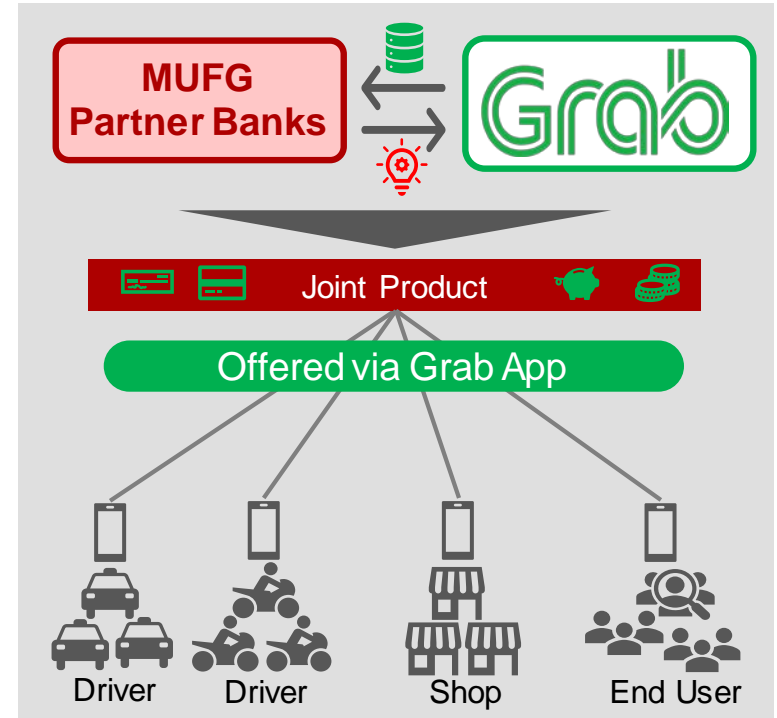
3-4. Data-Driven Financial Services

Overview of data-driven financial services

- Enhance operations through dynamic management and forecasting using alternative data and AI.
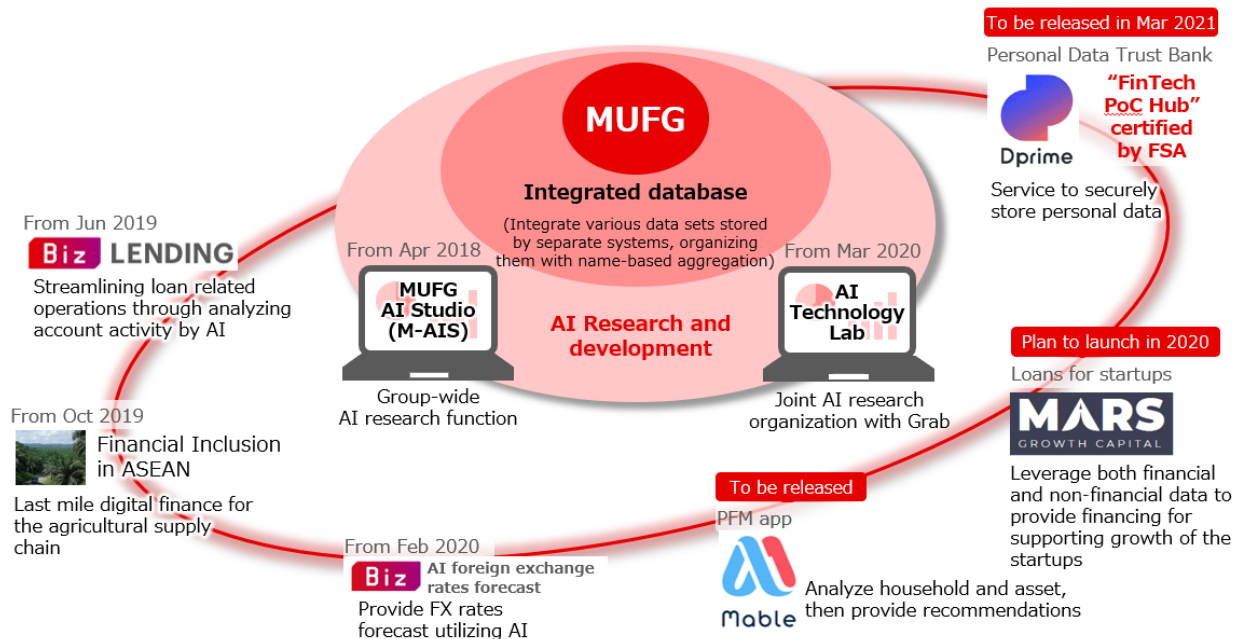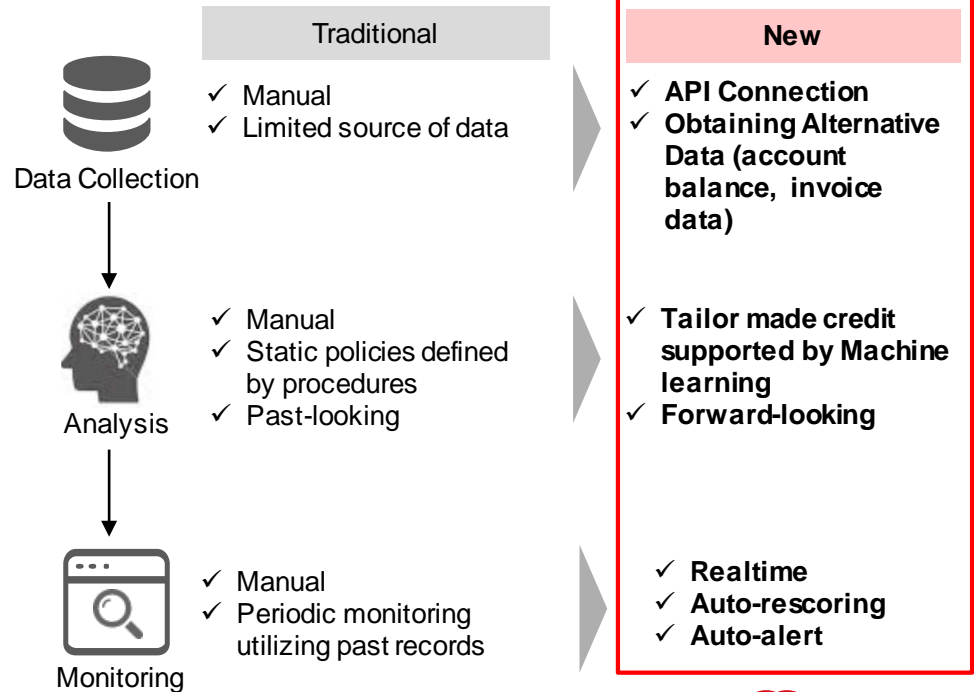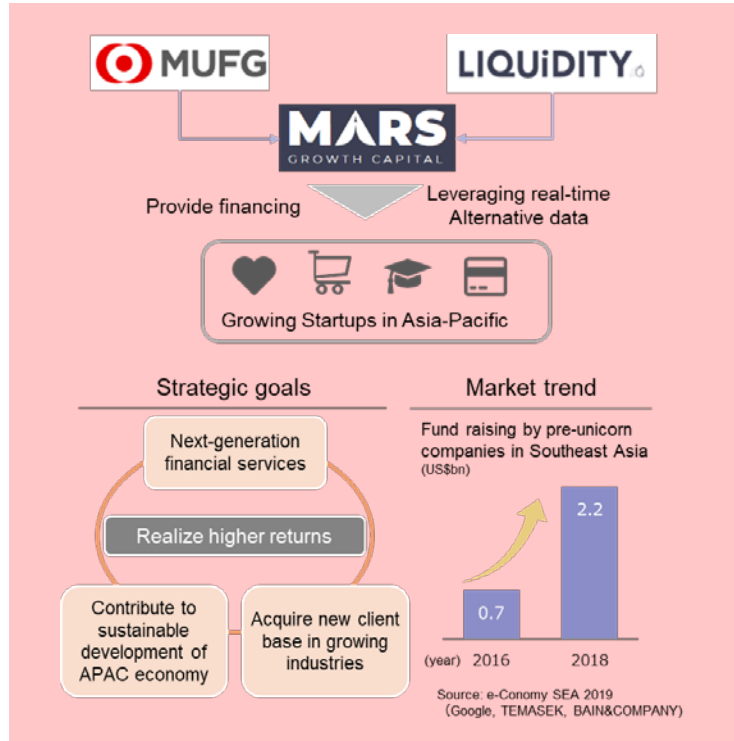
- Adding more use cases for data utilization by mixing MUFG's data with external information provided by partner companies, and aiming for developing new services

To be released in Mar 2021

Personal Data Trust Bank

Dprime

"FinTech PoC Hub" certified by FSA

Service to securely store personal data

MUFG

Integrated database

(Integrate various data sets stored by separate systems, organizing them with name-based aggregation)

AI Research and development

From Jun 2019

Biz LENDING

Streamlining loan related operations through analyzing account activity by AI

From Apr 2018

MUFG AI Studio (M-AIS)

Group-wide AI research function

From Mar 2020

AI Technology Lab

Joint AI research organization with Grab

From Oct 2019

Financial Inclusion in ASEAN

Last mile digital finance for the agricultural supply chain

From Feb 2020

Biz AI foreign exchange rates forecast

Provide FX rates forecast utilizing AI

To be released

PFM app

Mable

Analyze household and asset, then provide recommendations

Plan to launch in 2020

Loans for startups

MARS GROWTH CAPITAL

Leverage both financial and non-financial data to provide financing for supporting growth of the startups

MUFG

Building New Credit Model with Tech-startup

- Financing for growing startups by leveraging digital technologies (Machine learning, API)

	Traditional	New
Data Collection	✓ Manual ✓ Limited source of data	✓ **API Connection** ✓ **Obtaining Alternative Data (account balance, invoice data)**
Analysis	✓ Manual ✓ Static policies defined by procedures ✓ Past-looking	✓ **Tailor made credit supported by Machine learning** ✓ **Forward-looking**
Monitoring	✓ Manual ✓ Periodic monitoring utilizing past records	✓ **Realtime** ✓ **Auto-rescoring** ✓ **Auto-alert**

MUFG

3-4. Data-Driven Financial Services

Collaboration between Krungsri and Grab

Krungsri starts AI lending for Grab drivers

Bank of Ayudhya (Krungsri) announced plans to offer loans to Grab drivers and merchants on Grab's platform in Thailand of up to 100,000 baht with a maximum interest rate of 33%, part of a long-term partnership with Grab Thailand.

Key Features	i. Leveraging big data including dynamic data (Driver salary, driving time keeps, Merchant revenue) to structure scoring model ii. Offer loans based on the "white list" created by pre-screening iii. Fully leverage AI to improve scoring model iv. Collection integrated to Grab app that leads to better collection rate

Crediting Know-how from MUFG

Dynamic Data from Grab
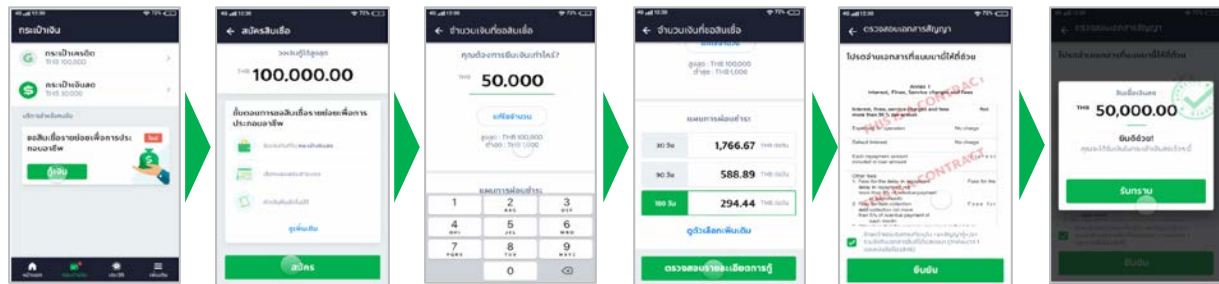
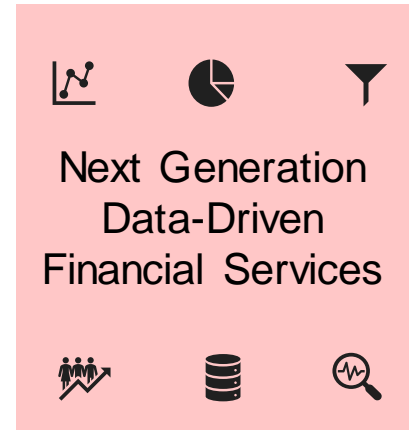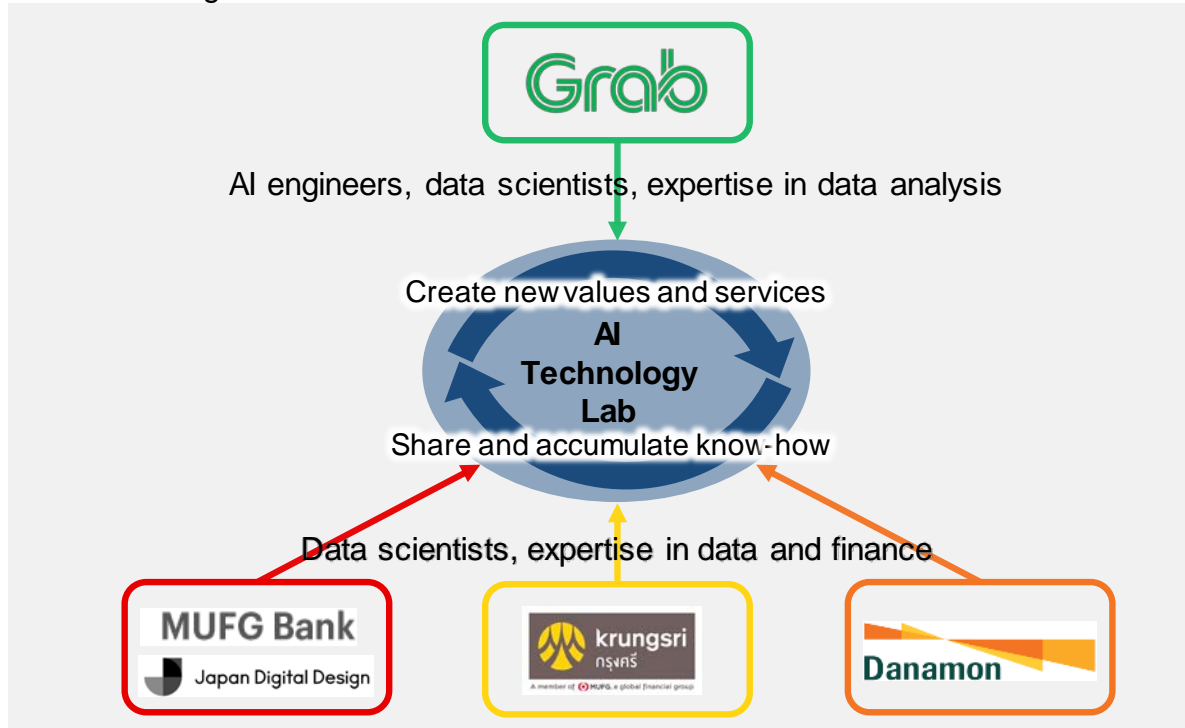| Loan application	Credit limit reference	Loan amount form	Loan conditions form	Contract reference	Loan Execution

MUFG

3-4. Data-Driven Financial Services

AI Technology Lab with Grab

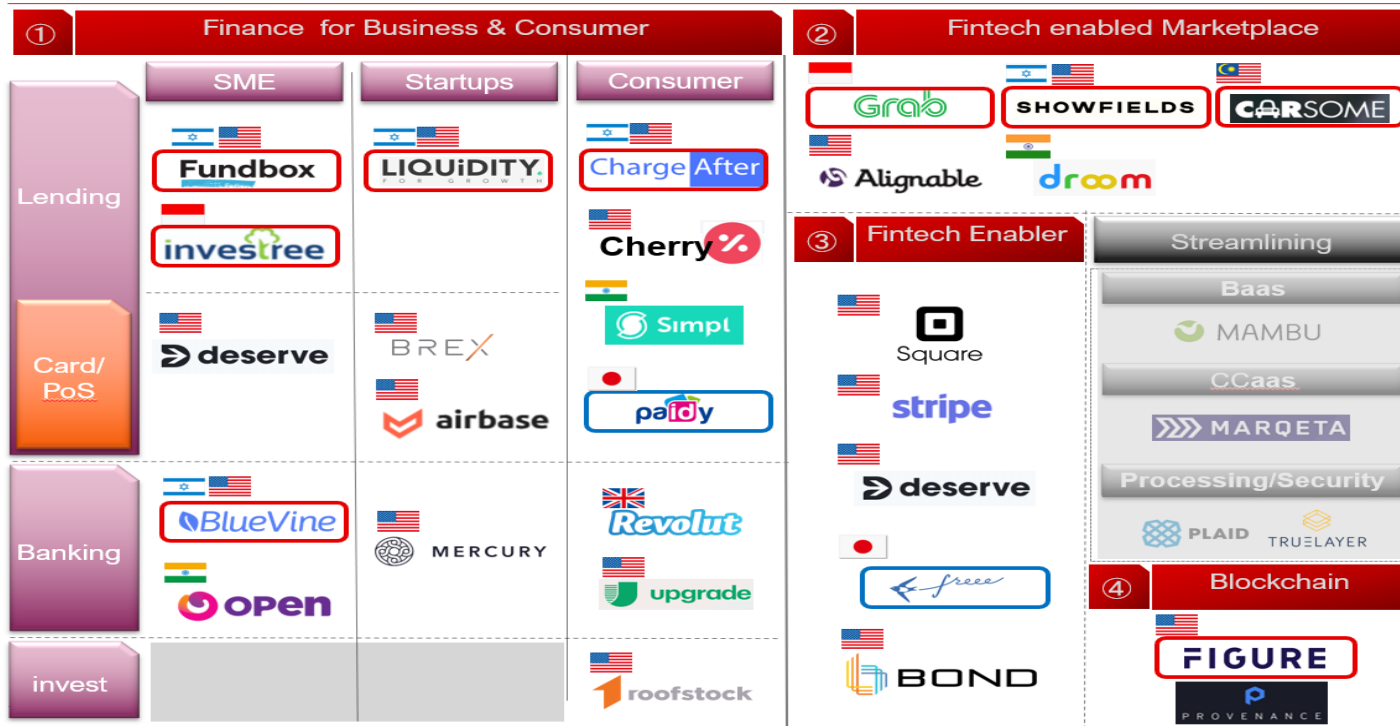- Promote organic collaboration and create new value and services from the Lab

AI engineers, data scientists, expertise in data analysis

Create new values and services

AI Technology Lab

Share and accumulate know-how

Data scientists, expertise in data and finance

Next Generation Data-Driven Financial Services

Appendix

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MUIP Investment Thesis

①	**Finance for Business & Consumer**	Lending, Banking & Investment solutions for SME, Startups & Consumer.
②	**Fintech Enabled Marketplace**	Marketplace that already provide or has a potential to provide Finance to business & consumers
③	**Fintech Enabler**	Technology / API companies that enables banks and companies to provide finance to businesses / consumers
④	**Blockchain**	Blockchain that can have real financial services applications

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MUIP Portfolio

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Q&A

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