Digital Strategy

February 19, 2019
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Part 1: Digital strategy
1. Key initiatives of MUFG Re-Imagining Strategy
Eleven transformation initiatives

- “Eleven Transformation Initiatives” have been outlined in the new medium-term business plan (MTBP) as specific initiatives to achieve the MUFG Re-Imagining Strategy
- “Digital Technology” is essential to support all other initiatives

1. Digital Technology
2. Sales Channel
3. Wealth Management
4. New Model for Wholesale Banking in Japan
5. Real Estate
6. Asset Management in Japan
7. Institutional Investors
8. Global CIB
9. Overseas Operations
10. Human Resources
11. Corporate Center Operations
2. Initiatives for digital transformation
MUFG’s approach

- Promote digital transformation from 3 different perspectives: “Improve”, “Reform” and “Disrupt”
2. Initiatives for digital transformation

Increase in net operating income through various initiatives

Aspiration for FY23 (final year of next MTBP)

As of May 2017
(Announced MUFG Re-Imagining Strategy)

- Revenue growth: 80
- Cost reduction: 120

As of Feb 2019
(Estimate)

- Revenue growth: 140
- Cost reduction: 160

Achieve further by structural reform
2. Initiatives for digital transformation

Initiatives in each area

<table>
<thead>
<tr>
<th>Products</th>
<th>Individuals</th>
<th>Corporates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus area</td>
<td>High-end</td>
<td>The masses</td>
</tr>
<tr>
<td>Areas working with alliance partners, etc.</td>
<td>The masses</td>
<td>Small</td>
</tr>
<tr>
<td>Revenue growth</td>
<td>The masses</td>
<td>Medium</td>
</tr>
<tr>
<td>Efficiency</td>
<td>The masses</td>
<td>Large</td>
</tr>
<tr>
<td><strong>Payment / P2P settlement</strong></td>
<td><strong>SME settlement POS</strong></td>
<td><strong>International remittance</strong></td>
</tr>
<tr>
<td>On-line data lending</td>
<td><strong>Cloud funding</strong></td>
<td></td>
</tr>
<tr>
<td>P2P lending</td>
<td><strong>On-line data lending</strong></td>
<td></td>
</tr>
<tr>
<td>Social lending</td>
<td><strong>Trade finance</strong></td>
<td></td>
</tr>
<tr>
<td>Robo-advisor</td>
<td><strong>Cloud accounting</strong></td>
<td></td>
</tr>
<tr>
<td>Micro investment</td>
<td><strong>API Platform</strong></td>
<td></td>
</tr>
<tr>
<td>Business related to cryptocurrency</td>
<td>Financial information streaming</td>
<td>Streamlining financial operation</td>
</tr>
<tr>
<td><strong>Personal Financial Management (PFM)</strong></td>
<td><strong>Business financial management (BFM)</strong></td>
<td>RegTech (Regulation + Technology)</td>
</tr>
<tr>
<td>Financial information streaming</td>
<td><strong>Real Estate Tech</strong></td>
<td></td>
</tr>
<tr>
<td><strong>RPA (Robotic Process Automation)</strong></td>
<td><strong>Blockchain</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Blockchain</strong></td>
<td><strong>IoT (Internet of Things)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Cyber security</strong></td>
<td><strong>Biometric identification</strong></td>
<td></td>
</tr>
<tr>
<td><strong>AI (ML<em>1, DL</em>2)</strong></td>
<td><strong>Quantum computing</strong></td>
<td></td>
</tr>
<tr>
<td><strong>AI (NLP*3)</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*1 Machine learning  *2 Deep learning  *3 Natural language processing
2. Initiatives for digital transformation

Initiatives in each area

- **Part 2-1**: Settlement, cashless
  - Focus area
  - Areas working with alliance partners, etc.
  - Payment / POS
  - Cloud funding
  - On-line data lending
  - Investment lending
  - Robo-advisor
  - Business related to cryptocurrency

- **Part 2-2**: Transforming customers’ channels
  - Data business
  - Cloud accounting
  - API system
  - Streamlining financial operation
  - Financial information streaming
  - RPA (Robotic Process Automation)
  - BPR*1

- **Part 2-3**: Open innovation
  - Blockchain
  - RPA (Robotic Process Automation)
  - Biometric identification
  - Quantum computing
  - AI (NLP*3)

**Technologies**
- Basic
- Applied

**Channels**
- Products
- Middle / back
- Revenue growth
- Efficiency

**Individuals**
- High-end
- The masses

**Corporates**
- Small
- Medium
- Large

- **Focus areas**
  - Real Estate Tech
  - Trade finance
  - International remittance
  - Trade finance
  - Payment / POS
  - SME settlement
  - POS Payment / P2P settlement
  - Cloud accounting
  - RegTech (Regulation + Technology)
  - New technologies

- **Areas working with alliance partners, etc.**
- Blockchain
- Micro investment
- Social lending
- Personal Financial Management
- Open innovation
- Part 2-2
- Part 2-3

*1 Business Process Reengineering
Part 2: Major initiatives
1. Settlement, cashless

Circumstances where people use payment services

- People can select the optimal payment methods suited to their individual circumstance
- E-money will become a mainstay settlement method, in addition to bank transfers, direct debit payment and credit card payment

<table>
<thead>
<tr>
<th>Brick-and-mortar channel</th>
<th>E-commerce channel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash only stores (shopping streets, small stores)</td>
<td>Shopping websites</td>
</tr>
<tr>
<td>Transportation expense</td>
<td>Credit card</td>
</tr>
<tr>
<td>Stores with cashless payment terminals (convenience stores, supermarkets)</td>
<td>Bank transfer (incl. payroll)</td>
</tr>
</tbody>
</table>

Purchase of consumer goods and services (spot payment)

- Stores with cashless payment terminals (convenience stores, supermarkets)
- Shopping websites
- Subscription

Increased use of new payment services

Individual

- Direct debit / credit card
- Direct debit
- Bank transfer (incl. payroll)
- Money transfer
- Financial instruments such as stocks and insurance
- Deposit
- P2P settlement

Periodic payment

- Rent (mortgage repayment)
- Utility bills
- Mobile phone bills
- Tax

Others
In response to growing calls from around the globe for the prevention of money laundering, banks have spent considerable expenses to put in place monitoring and other countermeasures and establish a safe and secure settlement infrastructure.

### Legal perspective of payment instruments

<table>
<thead>
<tr>
<th>Services</th>
<th>Banks</th>
<th>Money transfer service providers</th>
<th>Prepaid payment instruments</th>
<th>Credit cards</th>
<th>Points</th>
<th>Cryptocurrencies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market size (FY17)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inter-bank transfer</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Spot trading</td>
</tr>
<tr>
<td>JPY 2,860tn / year</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>volume*6</td>
</tr>
<tr>
<td>Ruling law</td>
<td>Banking Act</td>
<td>Payment Services Act</td>
<td>Installment Sales Act</td>
<td>N/A</td>
<td></td>
<td>Payment Services Act</td>
</tr>
<tr>
<td>Exchangability</td>
<td>Unlimited</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KYC</td>
<td>(1) Account opening, (2) Cash transaction over JPY100thd, (3) Withdrawal of cash over JPY 2mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Manage separately</td>
</tr>
<tr>
<td>Consumer asset protection</td>
<td>Deposit insurance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>from provider’s account</td>
</tr>
<tr>
<td>Retaining funds</td>
<td>Possible</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Payment Services Act</td>
<td>Up to JPY 1mm / transaction</td>
<td>Reload: Yes, Exchange to: No</td>
<td>No (withdrawal only)</td>
<td>Exchange to: Yes, Exchange from: No</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Issuance volume</td>
<td>JPY 23.7tn / year</td>
<td></td>
<td>Transaction volume*4 JPY 58.3tn / year</td>
<td>Installment</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Spot trading volume*6</td>
<td>JPY 12.7tn / year</td>
<td></td>
<td></td>
<td>Sales Act</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Issuance volume*5</td>
<td>JPY 1.8tn / year</td>
<td></td>
<td></td>
<td>Installment</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Issuance volume*3</td>
<td>JPY 23.7tn / year</td>
<td></td>
<td></td>
<td>Installment</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Issuance volume*2</td>
<td>JPY 1.1tn / year</td>
<td></td>
<td></td>
<td>Installment</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Issuance volume*1</td>
<td>JPY 2,860tn / year</td>
<td></td>
<td></td>
<td>Installment</td>
<td>N/A</td>
<td></td>
</tr>
</tbody>
</table>

*Notes 1-6 are explained on page 38
*7 KYC based on Act on Protection of Transfer of Criminal Proceeds
1. Settlement, cashless

Three layers of settlement business (S/P/I)

- Services ("S") are provided via coordination between a platform ("P") and infrastructure ("I")
- While a number of new players are entering "S" fields, there is a growing call for more open and secure "P" and "I"

Three layers of settlement business

<table>
<thead>
<tr>
<th>&quot;S&quot; (Services)</th>
<th>Dominant service</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>App</td>
</tr>
<tr>
<td></td>
<td>Issuer (Value)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>&quot;P&quot; (Platform)</th>
<th>Issuance function</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Payment interface (QR code, NFC(^{*1}) etc.)</td>
</tr>
<tr>
<td></td>
<td>Payment processing by merchants (POS etc.)</td>
</tr>
<tr>
<td></td>
<td>Transaction settlement at merchants</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>&quot;I&quot; (Infrastructure)</th>
<th>Network</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ledger / Data Base</td>
</tr>
<tr>
<td></td>
<td>Bank account</td>
</tr>
</tbody>
</table>

- MUFG Wallet / Token requester agent service ⇒ Page 15
- Coin (MUFG coin) ⇒ Page 16
- New Payment Network ⇒ Page 17-18

*1 Near Field Communication
1. Settlement, cashless

**MUFG Wallet / Token requester agent service**

<table>
<thead>
<tr>
<th>MUFG Wallet</th>
<th>Token requester agent service (TR agent)</th>
</tr>
</thead>
</table>
| • Realize secure and centralized management of various payment methods, such as debit cards, credit cards and QR codes, via the tokenization of information being transferred in the course of settlement  
• Future technological advancements are expected to allow smartphones to carry everything people need in their wallets, such as driving license and e-receipts | • Initiate the development of robust infrastructure capable of providing highly secured settlement services in anticipation of an IoT-driven society  
• Work with TIS Inc. to commercialize a “token requester agent service” that utilizes functions for token distribution management developed in MUFG Wallet |

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**Estimated amount of token issued in domestic market as of FY23: 70 to 100mm*1 / year**

*1 Estimated by TIS inc.
1. Settlement, cashless coin (MUFG coin)

Aiming for practical use
- Aim to build an eco-system that goes beyond a cashless tool
- The digital currency issued by MUFG will provide a safe and secure platform to support the economic zones of each business operator

Business operators create their own economic zones

Economic zone network
- Powered by MUFG

 screened image

QR code payment
- Refill

Colored coin service
- Business operators can issue original coins through the use of MUFG coin’s infrastructure

API / Data

coin’s platform

- Flexibility
- Affordability
- Reliability
- Scalability

Value
- Value issuer
- System

Interoperability
- Company A Value
- Company B Value

Platform
• Jointly established Global Open Network, Inc. to strengthen strategic alliance with Akamai Technologies, Inc. ("Akamai")

Establish Global Open Network

- MUFG
  - Strong presence in the payment business

- Akamai
  - Intelligent edge platform, which offers world-class speed and security

Global Open Network

- Aim to provide an open payment network in Japan based on advanced new blockchain platform
- Plan to launch in FY20H1

Service

- High-capacity processing
  - Processing capability of **over 1mm transactions per second**

- High availability and prevention of falsification
  - **Taking advantage of the merits of blockchain** and making it difficult to manipulate transaction records, etc.

- Global accessible
  - High speed connection **from anywhere in the world**

- High reliability and security
  - **Leading edge cyber security** leveraging Akamai’s infrastructure

Name | Global Open Network, Inc.
---|---
Capital | JPY 250mm
Shareholders | MUFG 80%, Akamai 20%
CEO | Hironori Kamezawa

*1 Management and credit/debit of credit limit and account balance for business operators
1. Settlement, cashless
New Payment Network (2)

Strengthen collaborations with IoT platform operators

Emergence of cashless and IoT-driven settlement methods, widespread use of a business model targeting micropayment users

Want to pay the fee according to the volume of the usage

Telematics insurance*1
Purchase contents on automatic driving

Data collection through IoT device

Massive data

IoT platform operators

Global Open Network
Settlement data

Secure responsiveness to a variety of payment methods in the IoT era
A platform supporting a large number of micropayments

Payment business operators

Points, e-money
Credit cards
Digital currency

Car-sharing
Smart home etc.

Data analysis
Filtering

*1 Telematics is a neologism combining “Telecommunication” and “Informatics.” Applications of telematics include communication devices mounted on automobiles or other moving objects for transmitting driving data like distance travelled and hours on the road as well as data on the driver’s operational habits. This information can be used by insurers to analyze driving patterns and thus calculate optimal insurance premiums for individual drivers.
2. Transforming customers’ channels / BPR
Domestic branch network

- Retail and commercial banking units work in close collaboration to meet a variety of customer needs and enhance user convenience while striving toward a more robust and productive branch network (Put full-fledged branch*1 at the center of each area, while arranging “MUFG NEXT” specialized to several features depending on market needs)

*1 A branch that handles all service including consulting service at bank counter by clerk
2. Transforming customers’ channels / BPR
MUFG NEXT

Three New EXperience

New EXperience 1
New banking experience

- Install dedicated counters for internet banking
- Equip service counters with tablets
- Allow customers to directly engage in transactions by providing a hassle-free, convenient platform

New EXperience 2
Banking experience building with customers

- Concierges usher customers to optimal channels
- Help carry out various registration procedures and provide guidance on how to use other services
- Provide lessons of internet banking via smartphone

New EXperience 3
Pursuing customer satisfaction

- Open the Shinsaibashi Branch in Apr 19 to offer services under the new concept
- Roll out new services at other branches after verification testing

New banking experience

Dedicated counters for IB*1

- Concierges help customers carry out registration procedures and provide them with guidance on how to use other services
- Various smartphone apps enable customers to carry out a variety of procedures

Front desks with tablets

- Replace conventional paperwork with faster and more user-friendly tablet-based procedures

STM*2

- Install dedicated ATMs capable of handling such forms as tax payment slips
- Allow customers to directly engage in transactions by providing a hassle-free, convenient platform

LINKS*3

- Offer transactional assistance and consulting services via teleconferencing systems

Banking experience building with customers

Accurately assess customers’ intentions and usher them to services that meet their needs

Help those who are not well-versed in digital technologies carry out various registration procedures

Provide lessons of internet banking for those who are not confident about how to use smartphone

*1 Internet Banking  *2 Store Teller Machine (ATM equipped with functions to handle tax payment, utility bills payment and domestic transfer with a private request form  *3 Low-counter Interaction on Knowledge Station (New terminal that connects to operational center via TV, which can handle consultation related to mortgage, inheritance, etc.)
### 2. Transforming customers’ channels / BPR
**Improve UI/UX**

#### Upgrade functions for smartphone application

- **Nov 18**: Log-in with biometric authorization
- **Feb 19**: Upgrade Eco passbook service*1
- **Sep 16**: New account opening with app
- **Nov 18**: New account opening on web
- **Apr 18**: Replacement of unusable cards
- **Aug 18**: Replacement when lost cards
- **Feb 19 (to come)**: Change of address

#### Smartphone app for various bank services

- **Smartphone app for various bank services**
  - Easy, anytime and anywhere
  - **Replacement of unusable cards**
    - At branch: Approx. 6 mins
    - App: Approx. 2 mins
  - **Replacement when lost cards**
    - At branch: Approx. 10 mins
    - App: Approx. 3 mins
  - **Change of address**
    - At branch: Approx. 7 mins
    - App: Approx. 5 mins

#### No. of transactions at bank-counter

<table>
<thead>
<tr>
<th></th>
<th>FY17</th>
<th>FY18 interim</th>
<th>FY20</th>
<th>FY23</th>
</tr>
</thead>
<tbody>
<tr>
<td>At branch</td>
<td>11.1</td>
<td>10.4</td>
<td>11.1</td>
<td>11.1</td>
</tr>
<tr>
<td>Phone</td>
<td>22.0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>App</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Share by channel

- **FY17 result**
- **FY18 estimated**
  - Phone: +7%

#### Non face-to-face

*1 An online service that allows customer to check their account instead of paper passbook
2. Transforming customers’ channels / BPR
Digitalization of business process related to housing loan

Digitalization of business process related to housing loan

App/Exe

Real estate company
Housing loan office
Branch
HP

Customers

AI

Improve convenience
Shorter credit assessment time
Reduce workloads

1 Electronic contract

- Proportion of electronic contracts have grown as a result of improving user convenience in Dec 18

Device: PC only
- Added smartphone, tablet, etc.

Authentication: My number card
- Added authentication of only inputting password

Breakdown of contract via internet*1

Until Dec 18
Electronic contract
Paper contract
Jan 19
+29%

2 Launched housing loan Quick credit assessment service

- Reach out customers open to purchasing houses via collaboration with SUUMO*2
- Realize easy and speedy credit assessment

Before

After

Reception time
9:00 to 15:00 of weekdays
24 hours a day, 365 days a year

Duration of pre-application
More than a day
At earliest 15 mins

Input item
57 items
Reduced by 50%
(28 items)

Number of applications

(No.)

Oct 18
Nov 18
Dec 18
Jan 19

*1 Contract of mortgage loan via internet application
*2 Real estate portal site powered by Recruit Co., Ltd.
2. Transforming customers’ channels / BPR
Expand web channels for corporate customers

- Build a new web channel that comprehensively handles all transactions with corporate clients
- Achieve greater transaction volumes by improving customer convenience and cost reduction through shifting a part of operations processed at bank counter and carried out by relationship managers to the web channel

Target

<table>
<thead>
<tr>
<th>Corporate clients</th>
<th>Channel for comprehensive service*2 (Gateway to all online transactions)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Released*1</td>
</tr>
<tr>
<td></td>
<td>BizSTATION (upgrade functions)</td>
</tr>
<tr>
<td></td>
<td>On-line application of products</td>
</tr>
<tr>
<td></td>
<td>On-line data lending</td>
</tr>
<tr>
<td></td>
<td>Acceptance</td>
</tr>
<tr>
<td></td>
<td>Web browsing of mailed material</td>
</tr>
<tr>
<td></td>
<td>Utilizing chat bot (24 hours)</td>
</tr>
</tbody>
</table>

- New clients
  - Approx. 20thd/year
- Existing clients
  - Approx. 1.3mm

- Expand the lineup of web-based transactions to improve customer convenience
  - No. of domestic settlement (FY23)
  - Approx. no. 0.5bn

- Cost reduction via the development of alternative functions capable of taking over operations currently processed at bank counters or handled by relationship managers

*1 Trial limited to a few branches (as of Feb 19) *2 More services to come in due course
2. Transforming customers’ channels / BPR
Headcount, branches

Forecast of employees headcount

- Reduce 30% of total workloads*1 (equivalent to the labor of 9,500 personnel) by FY23. Expect a decrease in employee headcount totaling approx. 6,000 compared to FY17 (attrition)
- Despite an increase for FY18H1, expect a decrease at the end of FY18

Forecast of number of branches

- By FY23, no. of branches with bank-counter will halve while total branch no. will decrease by approx. 20% via transforming to “MUFG NEXT” and “MUFG PLAZA”
- Executed consolidation of seven branches during FY18H1

Note: Re-shown from page 50, Fiscal 2018 Interim Results Presentation
*1 Including MUFG Bank’s subsidiaries engaged in operations *2 The figure includes MUFG Bank’s domestic bank staff, part-time and contract staff as well as temporary staff but excludes overseas staff hired locally. The figure also includes employees of other companies seconded to MUFG Bank but excludes employees temporarily transferred to other companies *3 MUFG Bank non-consolidated basis
2. Transforming customers’ channels / BPR

Knowledge sharing with Partner Banks

- Promote digital transformation initiatives globally through periodic conferences and various workshops with Partner Banks, who are engaged in similar initiatives such as branch digitalization, internet banking, etc.

**Partner Banks:**
- Vietnam / Vietin Bank
- Indonesia / Bank Danamon
- US / MUFG Union Bank
- Japan / MUFG Bank
- Philippines / Security Bank
- Thai / Krungsri (Bank of Ayudhya)

**MUFG consolidated subsidiaries (incl. plan*1):**
- US / MUFG Union Bank
- Japan / MUFG Bank

**Other areas:**
- RPA / BPR
- Investment in and partnership with Fintech ventures
- Database Marketing

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*1 MUFG intends to seek the necessary approvals to increase its stake in Danamon beyond 40%. MUFG’s final stake in Danamon is expected to be over 73.8%.
3. Open innovation

Japan Digital Design (JDD)

JDD’s structure

- CEO
- CXO*1
- Deputy President and Head of M-AIS (M-AIS (MUFG AI Studio))
- CBDO and Head of BDD
- CTO and Head of TDD
- Deputy President and Head of CPD
- COO (seconded)
- Business Development Division
- Technology & Design Division
- Corporate Planning Division
- Crowd Money

: Internal personnel
: Outside personnel

Develop an insurance robo-advisor with Minkabu

- The first robo-advisor service in the insurance industry
- Accessible from anywhere at any time, the robo-advisor ushers customers, even those who are not versed in insurance, through a simple set of questions, and suggests easy-to-understand and optimal insurance plans without the intervention of human operators

Launched jStation

- Launched video sharing service for the Chinese visiting Japan, “jStation”, in WeChat’s application on July 20, 2018, which is provided by Tencent, a Chinese SNS giant

Minkabu insurance

Via media

- Started from Apr 23, 2018
- Targeting for consumers

White label

- Started from Dec 3, 2018
- Already introduced by four regional banks

*1 Chief Experience Officer
3. Open innovation
Open API

Collaboration with other companies

BizSTATION

Bank transfer API

Cloud accounting software etc.

Bank statement API

Invoices

API screening agency service

• On behalf of financial institutions, JDD screens electronic payment service providers (EPSPs) prior to allowing them to connect to the institutions’ APIs. This helps reduce costs for both EPSPs and financial institutions

Service by JDD (image)

Reduce burdens to deal with each bank

EPSP A

EPSP B

EPSP C

Japan Digital Design

Results

A Bank

B Bank

C Bank

Reduce burdens to individually screen each EPSP

Reduce each bank’s cost through API screening agency service (image)

In case where each bank does screening respectively

Costs

Screening items unique to each bank

Common screening items

A Bank

B Bank

C Bank

• • •

N Bank

Consolidate screening by JDD (image)

Costs

Reduce social costs via the sharing of screening costs among banks

Increase in costs associated with outsourcing

A Bank

B Bank

C Bank

• • •

N Bank

On behalf of each bank, JDD assesses common screening items

YYYY MM/DD A company ¥123,456

YYYY MM/DD B company ¥123,456

YYYY MM/DD C company ¥123,456
3. Open innovation

On-line data lending

- Scoring based on account activities, not relying on financial data such as financial statement

Corporate clients

- Supplier A
- Supplier B
- Customer C

Client needs
- Unexpected situation requiring urgent financing
- Conventional borrowing procedures, including screening based on financial statement analysis and negotiations of terms and conditions, such as repayment dates and interest rates, can seem troublesome

Japan Digital Design

AI engineers at MUFG AI Studio (M-AIS)

MUFG Bank

- Stored customer data, strong brand and visibility in Japan

Challenge to a new business model

Online lending platform with better UI/UX (front, back-end)

Target clients 500thd

3rd batch Grand prix

Plan to release in FY19H1

Lending application

Credit assessment

AI-based credit screening model

MUFG Bank

Payment

Account activities

Payment

Account activities

Credit

Account activities

Providing model

CreditEngine

Providing application

Japan Digital Design

CreditEngine

MUFG

Supplier B

Customer C

Supplier A
3. Open innovation
Digital asset trust business

Digital asset trust business

Overview

- To create social value added while supporting to preserve and transfer the value by the trust function, which enables the digital assets owners to make use of the property by themselves

Information trust platform “DPRIME” (provisional name)

- Aiming to provide services for the public, started PoC*1 from Aug 18, and distribute beta application for 1,000 individuals from 10 supporting companies

Platform which supports to preserve and transfer the value

Digital assets
- Token
- Personal data
- Digital contents

Conventional assets
- Money, Receivables
- Securities
- Real estate

the Trust Bank

Create social added value

Digital asset trust business

Supporting companies*2

Note: Re-shown from page 31, Fiscal 2018 Interim Results Presentation
*1 Proof of Concept *2 Excluding group companies
### 3. Open innovation

Establish Corporate Venture Capital (CVC)

#### Background

- A growing number of FinTech startups seeking lenders that offer large-scale financing
- A growing trend toward strategic investments among domestic and overseas financial institutions and other players making entries from different sectors

Need to enhance a framework of investment in FinTech startups

#### Established CVC subsidiary under MUFG

- Achieve open innovation beyond entities
- Recruitment of external professionals
- Over 5% investment by the dedicated subsidiary

#### Overview of MUIP

- As a specialized investment subsidiary defined under the Banking Act, MUIP is allowed to acquire over 5% equity stakes in startups that meet prescribed conditions
- MUFG group companies jointly invested to launch CVC Fund with a total amount of JPY 20bn, aiming to step up collaboration with their investees in addition to pursuing business synergies

#### Strategic investment in Moneytree

- Our initiatives through CVC Fund have begun with investment in Moneytree KK (Moneytree), a provider of personal financial management service

<table>
<thead>
<tr>
<th>Name</th>
<th>Moneytree KK</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of establishment</td>
<td>April 23, 2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business description</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Provide “Moneytree”, a personal financial management service</td>
</tr>
<tr>
<td>• Expense settlement service “Moneytree Work”, equipped with function of automated detection by AI</td>
</tr>
<tr>
<td>• Financial infrastructure platform “Moneytree LINK”</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Awards</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Moneytree” received award of an annual best App selected by Apple Inc. (Best of 2013, Best of 2014) and others</td>
</tr>
</tbody>
</table>

#### Track record of collaboration with Moneytree

- Mitsubishi UFJ NICOS provides a smartphone app that enables customers to easily confirm currently billed amounts and the balance of points acquired via the utilization on “Moneytree LINK”
- Moneytree has overseen UI/UX when Mitsubishi UFJ Trust & Banking Corporation developed a smartphone app for “Trust product with proxy withdrawal”

<table>
<thead>
<tr>
<th>Name</th>
<th>MUFG Innovation Partners, Co., Ltd. (MUIP)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Date of establishment</td>
<td>January 4, 2019</td>
</tr>
<tr>
<td>Capital</td>
<td>Capital JPY 250mm, Capital reserve JPY 250mm</td>
</tr>
<tr>
<td>Shareholder</td>
<td>MUFG 100%</td>
</tr>
</tbody>
</table>

NICOS app’s screen image
Part 3: IT strategy supporting digital transformation
### 1. IT investment strategy

- IT investment budget amount for current MTBP is 1.4 times more than the amount for last MTBP
- Preferentially allocate resource to group-wide strategies and growth strategies including digitalization for achieving long-term business targets of each business group

#### IT Investment amount*1

<table>
<thead>
<tr>
<th></th>
<th>Last MTBP</th>
<th>Current MTBP</th>
</tr>
</thead>
<tbody>
<tr>
<td>IT Investment amount*1</td>
<td>Around JPY 650bn</td>
<td>Around JPY 900bn</td>
</tr>
<tr>
<td>1.4 times</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

#### Major initiatives of current MTBP

1. **Enhance “IT governance” that supports group IT strategy**
   - Construct Group IT platform
     - Support business strategy from IT side
   - Build a structure with a vision of progress in group-wide sharing of system
     - Enhance structure of development and operation

2. **“Platform enhancement” that supports MUFG growth strategy from IT side**
   - Enhance development capabilities
     - Improve in both quantity and quality, respond to digitalization
   - Architecture Strategy
     - Drive 2 Way Architecture

3. **“Productivity improvement” to reduce IT costs**
   - Group-wide sharing of systems
     - Construct platform, accelerate to utilize the cloud
   - Enhance IT procurement
     - Centralize procurement, group program

4. **“Enhancement of risk management” dynamically based on environmental change or risks**
   - Development and operation management
     - Enhancement of risk-based project management
   - Enhance threat countermeasures
     - Cyber security, IT security governance

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*1 Total of MUFG (holding company), MUFG Bank, Mitsubishi UFJ Trust & Banking Corporation, Mitsubishi UFJ Morgan Stanley Securities, Mitsubishi UFJ NICOS and Acom. Total amounts for 3 years of MTBP
2. IT architecture

2 Way Architecture

- Promote digitalization based on a concept of “2 Way Architecture” which adjusts to both developments: "development centered on quality and stability" and "development centered on agility"

<table>
<thead>
<tr>
<th>Conventional development fields</th>
<th>New development fields that involve uncertainties and require agility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Centered on quality and stability</td>
<td>Maintain tightly coupled*1</td>
</tr>
<tr>
<td></td>
<td>On-premises*3-centered</td>
</tr>
<tr>
<td></td>
<td>Maintain conventional type of connection</td>
</tr>
<tr>
<td></td>
<td>Stock data-centered</td>
</tr>
<tr>
<td></td>
<td>Waterfall*4 approach fits better</td>
</tr>
<tr>
<td></td>
<td>T-type human resources*6</td>
</tr>
<tr>
<td></td>
<td>Innovate development style and IT skills</td>
</tr>
<tr>
<td></td>
<td>Promote loosely coupled*2</td>
</tr>
<tr>
<td></td>
<td>Cloud-centered</td>
</tr>
<tr>
<td></td>
<td>Mainly API connection</td>
</tr>
<tr>
<td></td>
<td>Flow data-centered</td>
</tr>
<tr>
<td></td>
<td>Agile*5 approach fits better</td>
</tr>
<tr>
<td></td>
<td>H-type human resources*7</td>
</tr>
</tbody>
</table>

*1 A state in which the linkage between the constituent elements of the system is strong and the independence is low
*2 A state in which the linkage between the constituent elements of the system is weak and the independence is high
*3 On-premises. Manage and operate information systems in a company only
*4 System development method that divides the entire process into several phases and complete each phase sequentially
*5 System development method that repeats and adjusts small unit development on the assumptions that changes specifications and designs
*6 Type of human resources who have strength in one specific field while having insights into peripheral fields
*7 Type of human resources who have strength in one specific field while maintaining connection with people in other fields
2. IT architecture

Architecture strategy

- Utilize the cloud in the right place and evolve to an architecture and development style that can respond to the fast pace of business change
- Expand AI services with a wide variety of data collection and accumulation, and promote improvement of business processes as well as enhancement of financial services

To-Be architecture vision in next 3 to 5 years (image)

- UI/UX to promote loose coupling and enhance speed through agile development
- Promote APIs for existing assets to improve collaboration with external parties as well as reusability
- Concentrate and make efficient common functions such as authentication and point systems
- Expand AI services and promote to improve business process as well as to enhance financial services
- Promote a wide variety of data collection and accumulation as an enabler of AI analysis

*1 Area to store various data in their original formats  
*2 Aspects, measures and tools to achieve goals
3. Utilizing the cloud

- Proactively utilize the cloud as a driver of accelerating development speed and reducing costs with appropriate security solutions

**Steps toward full utilization**

**Step1**
Evaluate through trial and start utilizing in production

**Step2**
Accumulate experiences in internal system with Lift & Shift*¹

**Step3**
Utilize the cloud mainly for customer channel / front system

**Step4**
Utilize cloud native services such as AI/data analysis in full scale

**Number of cloud migration (Actual/Plan)**

<table>
<thead>
<tr>
<th></th>
<th>~FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>0</td>
<td>100</td>
<td>200</td>
<td>300</td>
</tr>
</tbody>
</table>

**Applicable areas**

- Support
- Information
- Front-End
- System Platform
- Others

*¹ Migrate the existing system to the cloud as it is
3. (Reference) Examples of cloud utilization
   – Market Risk Management System

- “Market risk management system (under development)” – Cost reduction can be achieved by utilizing the cloud for risk measurement where high-loaded calculation process concentrates over a certain period

- Build a compute grid on cloud required for quarterly high-loaded calculation process in addition to the existing on-premises environment
- Build the environment based on the timing of quarterly processing using the mechanism of automation and delete it after processing
- Cost reduction of about 60-70% compared with on-premises can be achieved by spot purchase of thousands of compute server resources

### Resource

<table>
<thead>
<tr>
<th>Time</th>
<th>Resource procurement amount</th>
<th>Resource usage</th>
</tr>
</thead>
</table>

**Full on-premises development**

- Wasteful period occur as system environment is built based on the maximum amount of resource usage

**Hybrid development (Cloud + on-premises)**

- Cost reduction can be achieved through temporarily use of the cloud when the resource usage increased

**Cost reduction of 60-70% compared with on-premises**
4. Work style reforms

- Aim to create efficient workstyle not bound by location and time in order to focus on serving the customers with genuine value

**Workstyle we aim for**

*Human centric*

- **Tablet**
- **Smartphone**
- **Thin client PC**

*Ubiquitous system environment*

- **Work anywhere free from locations**
- **Office**
- **Satellite office**
- **Global**
- **Home**

*Desktop environment*

- **Chat**
- **Mail / Scheduler**
- **File server**
- **IP phone**

| Promote paperless | **Paperless meeting and operations**  
Reduce paper materials and preparation time |
|-------------------|-------------------------------------------|
| Utilize ICT | **Cloud collaboration services**  
Enhance efficiency through unlimited storage capacity  
**Utilize mobile devices, upgrade functions**  
Location free meeting, reduce travel time |

| Facilitate flexible workstyle | **Further promote telework and staggered working**  
Usage: About 2.5thd employees / month |
|-----------------------------|-------------------------------------------------------------|
| Set up satellite offices | **Exploit off-site space (training center, etc.)**  
Temporal usage on business trip, etc. |
<table>
<thead>
<tr>
<th>Note</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Note1</td>
<td>Excerpt from a report issued by Japanese Bankers Association</td>
</tr>
<tr>
<td>*Note2</td>
<td>Excerpt from a report issued by Japan Payment Service Association dated on Sep 13, 2018</td>
</tr>
<tr>
<td>*Note3</td>
<td>Excerpt from a report issued by Japan Payment Service Association dated on Sep 13, 2018</td>
</tr>
<tr>
<td>*Note4</td>
<td>Excerpt from Japan Consumer Credit Association (JCA), &quot;Credit Statistics of Japan (2017)&quot;</td>
</tr>
<tr>
<td>*Note5</td>
<td>Excerpt from YANO Research, “Loyalty Program (Point Reward Service) Market in Japan: Key Research Findings 2018” dated on Jul 12, 2018</td>
</tr>
</tbody>
</table>

Note: The market size of loyalty programs or point reward services in this research is calculated based on the total amount of reward points issued, which include unique points and mileages issued by some of specific companies.

Loyalty programs, or another words, point reward services in this research include those services that the customers can use reward points within the specified member companies and groups, as well as those services that the points can be used throughout the aligned member companies across the industries (common point reward services.)

| *Note6 | Excerpt from a report issued by Japan Virtual Currency Exchange Association dated on Apr 10, 2018 |