

# **FinTech Vision**

**(Report by the Study Groups on the Integration of Industry,**

**Finance and IT (Study Group on FinTech))**

**<Summary>**

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Ministry of Economy, Trade and Industry

## Chapter 1 What is Happening?

- **FinTech=Finance x Technology: FinTech refers to the use of cutting-edge technology, including internet of things (IoT), big data analysis, artificial intelligence (AI) and blockchain, to create innovative financial services provided through mobile terminals and other devices.**
- **FinTech is triggering dramatic changes in all economic activity associated with (i) the form and (ii) flow of money, (iii) perceptions of credit and risk, and (iv) financial service providers.**
- The changes concerning money are occurring in response to the Fourth Industrial Revolution. New competitive environments driven by the Internet of things (IoT) and artificial intelligence (AI) are transforming the economic behavior of people and industries, **demanding an overhaul in the way money is handled.**
- Competition of collecting data is intensifying in every industry, resulting in increasing business consolidation and restructuring across various sectors. The FinTech movement reflects the facts (i) that the financial sector is no exception to the changes and (ii) that **the money that underlies all economic activities needs transformation.** There is also dynamism whereby the new form of money proposed by the FinTech movement is bringing changes to economic activities.
- **The driving force** of this dynamism is user-inspired innovations that resolve challenges faced by individuals and companies and **people with an entrepreneurial spirit** who are creating the innovations.
- In order to take advantage of FinTech, it is necessary to **look at things from the users' viewpoint** without being constrained by the conventional concept of finance.
- From this viewpoint, the FinTech Vision shows how FinTech will look like in the future, sets forth challenges and the path to realizing the vision, and presents a comprehensive range of policy initiatives.

### 1.1 FinTech changes “money”

- FinTech accelerates and changes money-related trends such as a shift to cashless payment and electronic money. Virtual currencies and mobile money dramatically change what form money takes, how it is used, and on which occasions it is used.
- **Money can accompany every economic transaction in real time as all forms of money** are transmitted, calculated and recorded instantly as electronic data through a network. Money can move around everywhere, including cyberspace, between mobile terminals and from machine to machine (M2M).
- This change creates new value and business opportunities and makes it necessary to respond

to new risks and challenges at the same time.

### 1.2 Technologies driving FinTech

- FinTech uses the results of various technological innovations in combination. Blockchain, personal identification, application program interface (API) represent the core technologies of FinTech and are also used in non-financial sectors.
- While these technologies as narrowly defined are important elements, what is driving FinTech is broadly defined technologies and innovations that create new products, services and business models from the viewpoint of resolving challenges for users.

### 1.3 FinTech changes finance

- Resolving money-related problems faced by individuals and companies is the fundamental role of finance. FinTech reviews the notion of finance as a fixed business, such as the banking business, the securities business or the insurance business, from users' viewpoints.
- FinTech is about to trigger innovations to provide new value to users by (i) creating a **new flow of money** via the internet and smartphones and (ii) finding **new ways of identifying new risks** through the use of big data analysis and AI.

#### **[Remittance and settlement]**

- (i) Increasing variety of interfaces
- (ii) Change in money as a means of settlement
- (iii) Initiatives to remove the barriers between means of settlements and between financial asset classes

#### **[Household finance management and asset investment]**

- (i) Formation of new credit information using a variety of information; the financial inclusion initiative
- (ii) Entirely new levels of savings, asset management and household finance management

#### **[Corporate accounting and funding]**

- (i) Raising the level of management as a whole by automating the flow of money associated with all business activities and making the flow more sophisticated
- (ii) Formation of new credit information and means of funding, including the use of trade flow data and crowdfunding

#### **[Insurance]**

- (i) Response to risks associated with new business activities generated by the Fourth Industrial Revolution
- (ii) Optimization and personalization of insurance using IoT

#### 1.4 FinTech changes players in the financial sector

- FinTech resolves challenges faced by users and provide new financial services across the existing barriers between industries. Blockchain technology may change how players supporting financial infrastructure operate.
  - (i) Venture companies achieving remarkable growth
  - (ii) New market entrants from non-financial business sectors
  - (iii) Financial institutions

#### 1.5. Expectations for FinTech to resolve social challenges–financial inclusion

- Financial inclusion, which refers to the provision of financial services through new methods using FinTech to people who have until now been without access to finance (financial exclusion), has become a global theme.
- In addition, there are initiatives focusing on the aspect of FinTech that enhances the transparency of funds and transactions.

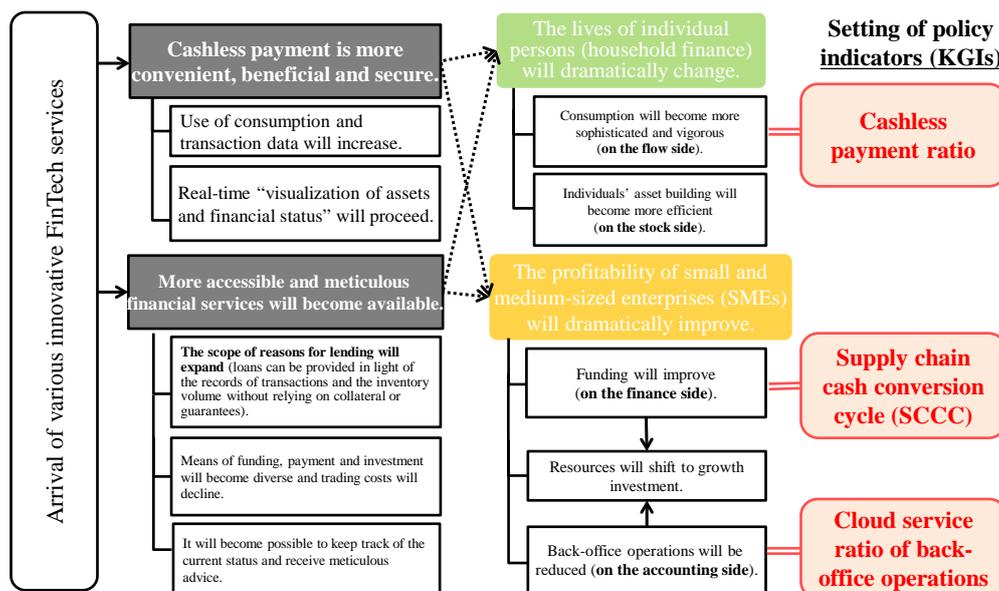
#### 1.6. Expectations for FinTech innovations and creation of new value

- Around the world, the establishment of a system to promote FinTech innovations is proceeding rapidly.
- There are “regulatory sandbox” initiatives in the United Kingdom and Singapore and a consumer-friendly financial innovation initiative in the United States. Estonia has fully digitized procedures and business processes in the public and private sectors based on personal identification (KYC), which constitutes the core of FinTech.

## Chapter 2 Vision of a Desirable Society with FinTech

Japan analyzes the effects that FinTech could bring to Japan's economy and society from the viewpoints of individuals (household finance) and companies and sets forth the path to realizing a desirable society with FinTech.

<Figure 1: Path to realizing a FinTech society (i) vision of a desirable society>



### 2.1 Daily life (household finance) will dramatically change

#### 2.1.1 Consumption will become more sophisticated and vigorous (on the flow side)

- Everyday life related to consumption may become more convenient, safer and higher-quality as a result of the diversification and full digitization (cashless shift) of means of payment. Automated collection and management of one's own purchase information will enable consumers to manage household finance more efficiently.
- In order to realize a cashless society, it is a prerequisite to ensure that cashless transaction is more convenient, beneficial and secure than cash transaction. It is important to improve infrastructure by securing safety and reliability and to promote new market entrants of FinTech companies that provide new payment services.

#### 2.1.2. Enhancement of asset building in a future-oriented manner (on the stock side)

- FinTech "visualizes" each user's asset status and expenditures to be needed in the future by

utilizing daily consumption and transaction data and it will enable users to make asset investments suited to their life plans and risk preferences.

- While household financial assets in Japan are heavily tilted toward cash and deposits compared with Europe and the United States, it is important for individuals to make asset investments and build assets from the med-to-long term perspective. How FinTech can contribute to that is important.

## 2.2 SME profitability will improve dramatically (production revolution)

### 2.2.1. FinTech supports innovations and players leading regional economy

- Amid the growing uncertainty due to drastic changes in the economic and social structures and the competitive environment, the ability to adapt to changes promptly and flexibly is the key to success. There are high expectations for nimble innovations by venture companies and SMEs, while large companies need to establish systems to cooperate with venture companies and internally start venture companies.
- The main challenge faced by SMEs, which account for 99.7% of all companies in Japan, employ 70% of all employees and create more than half of all value added, is a labor shortage in terms of both quality and quantity due to the aging of society and the population decline.
- FinTech is expected to help venture companies, and SMEs in particular, resolve their challenges and unlock the potential of people who lead innovations.

### 2.2.2. FinTech supports productivity improvement and innovations

#### (1) Productivity improvement by reforming back-office operations

- The key to improve SMEs' productivity is thoroughly increasing the efficiency of back-office operations in order to enable limited human resources, including managers, to concentrate on jobs that create value. The introduction of cloud services will contribute to nimble innovations.

#### (2) Strengthen funding capability and cash management (productivity revolution on the financial side)

- FinTech enables real-time tracking of financial information by utilizing information obtained through various contact points of economic activities and big data analysis. It discovers invisible assets (intangible assets) owned by individuals and companies, forecasts cash flow and risks to be generated by those assets and meticulously provides funds in accordance with the needs.
- It will become possible to secure growth funds promptly as a result of improved funding

efficiency and increased funding capacity of not only individual companies but also of the entire supply chain, including trade credit and cash management.

(3) Raise the level of management and allocate business resources to growth

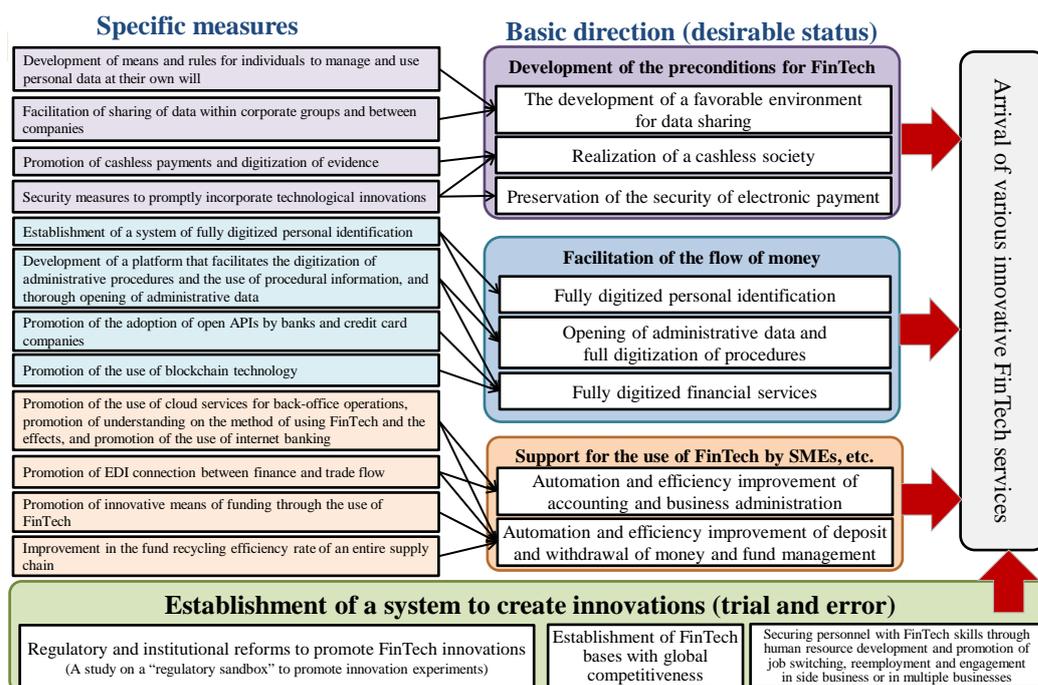
- FinTech supports SMEs' challenges for growth. For example, FinTech creates a new interface comprised of customer contact points, such as settlement, and enhances marketing and sales by automatically processing and analyzing a vast volume of data. In addition, FinTech also makes management decisions speedier and more sophisticated through real-time use of corporate financial information and KPI information.
- In order to enable venture companies, SMEs, etc. in Japan to achieve remarkable growth amid these drastic changes in the competitive environment, it is necessary to connect information feedback and external resources directly for the enhancement of managing and profit-earning capabilities.

## Chapter 3 Challenges and Policy Measures

### 3.1. Path to realizing a society with FinTech

- METI will draft a comprehensive range of policy initiatives to create a dynamic market environment which nurtures innovative FinTech services and attracts entrepreneurs and companies from around the world.
- This report sets forth challenges, the basic direction and specific measures concerning the four policy pillars—(i) laying the groundwork for FinTech : which is developing rules and processes to enable individuals to manage and use their own personal data; (ii) facilitating the smooth flow of money; (iii) promoting the use of FinTech among SMEs; and (iv) creating regulatory framework to promote innovations. Shown below is a summary thereof:

<Figure 2: Path to realization of a FinTech society (ii) specific measures>



## 3.2 Challenges and measures to lay the groundwork for FinTech

### 3.2.1 Developing a supportive environment for data sharing

- The essence of FinTech service is creating new value by combining user data that have not so far been utilized using big data analysis and AI analysis. Therefore, Japanese government will develop an environment to make the most of data in a safe way.
- With the Basic Act on the Advancement of Utilizing Public and Private Sector Data in mind, Japan will develop a supportive environment for individuals to manage and use their own personal data between companies and make it possible to select and use high-quality FinTech services combining various data.
- Japan will also facilitate data sharing within corporate groups and between companies while appropriately protecting personal information.

#### **[Specific policy measures]**

- Realization of data portability
- Facilitation of data sharing within corporate groups

### 3.2.2 Realization of a cashless society

- In order to promote innovations through the interaction between the FinTech movement and a shift to cashless settlement, Japan aims to realize a cashless society by promoting the dissemination of electronic means of settlement. While promoting the use of data through the digitization of evidence, Japan will develop an environment that accommodates cashless settlement safely and smoothly.

#### **[Specific measures]**

- Adopt the cashless settlement ratio for policy benchmarking
- Conduct trials of electronic receipts and individual-driven data
- Ease the requirement for providing written documents at the time of credit card settlement (revision of the Installment Sales Act)
- Rationalize the labeling requirement concerning IC chip-type prepaid cards (revision of the Payment Services Act)

### 3.2.3. Developing security measures featuring the latest technological innovations

- As a precondition for promoting cashless settlement through FinTech, Japan will take measures to remove security concerns. When doing so, Japan will create a system featuring technological innovations based on the recognition of the importance of resolving the challenge of achieving convenience and safety as well as ensuring low cost and security at the same time by taking

advantage of technology.

**[Specific measures]**

- Promote IC compatibility for card payment terminals (revision of the Installment Sales Act).
- Promote voluntary guidelines by private organizations.

3.3 Challenges and measures for facilitating the flow of money

- FinTech aims to create services that enable users to access financial services in non-face-to-face settings through smartphones, etc. and to use related services smoothly and seamlessly. In order to enhance user convenience by promoting FinTech innovations, Japan will develop an environment that enables a fully digital personal identification and administrative process for financial services.

3.3.1. Establish fully digital personal identification system

- In order to enable users to smoothly receive non-face-to-face services through FinTech, Japan will develop a favorable environment for full digitization of personal identification (KYC) concerning the opening of accounts while taking countermeasures against money laundering into consideration. A smoother KYC method will be studied in consideration of advanced ideas adopted abroad. The use of the “Individual Number Card” will also be studied and implemented.

**[Specific measures]**

- Leverage the data reading features of the “Individual Number Card” and expand application of the data to be used for KYC
- An initiative to equip smartphones with a public personal identification function

3.3.2 Digitalize administrative processes and open access to administrative data

In order to develop a fully digital personal identification process for financial service, Japan will realize fully digital administrative process through e-government initiative, regarding administrative organizations as one of “service providers” of FinTech. It will also promote digitization of administrative processes and open access to administrative data.

**[Specific measures]**

- Launch a corporate portal site to share information about administrative processes across all ministries
- Build a new platform to support ventures (provisional) and open APIs
- Identify priority areas and draft set of guidelines for open access to administrative data

### 3.3.3. Full digitization of financial services

- In order to seamlessly connect the activities of individuals and companies with FinTech services, Japan will promote the adoption of open APIs. It will promote open innovations by various FinTech service players and financial institutions (banks, credit card companies, etc.) and conduct initiatives to enhance user convenience and security.
- Concerning security and protection of users, Japan will promote risk-based initiatives by the private sector, while keeping in mind the perspective of personal data portability and corporate competition, as well as promotion of various innovations and new market entrants, and responsibilities related to information management.
- Detailed studies will be conducted concerning the setting of contract terms and prices as well as standardization of technologies in light of the method of usage, the contents of information, functions and challenges to be tackled.
- Meanwhile, blockchain technology may make it possible to fully integrate processes from remittance to settlements seamlessly at a low cost. In order to enable safer, smoother use of this technology, Japan will verify the possibility of applying it to a broad range of fields, align with international standards, and promote test trials by FinTech companies and financial institutions.

#### **[Specific measures]**

- Promote the adoption of open APIs by banks
- Develop institutional systems concerning the treatment of intermediary service providers for banking settlement
- Promote the adoption of APIs by credit card companies
- Clarify required security protocols for open APIs
- Promote test trials using a blockchain partnership platform
- International cooperation and collaboration concerning blockchain technology

### 3.4 Challenges and measures for SME's management and productivity reforms

#### 3.4.1. Reform back-office operations to improve SME's productivity and management capabilities

- Japan will adopt the “diffusion rate of cloud services in back-office operations” as a policy benchmark and encourage the introduction of cloud services. It will support the reform of back-office operations of SMEs by showing model cases.
- In line with the renewal of settlement infrastructure, Japan will also promote EDI connectivity between corporations across industries. The goal is to develop an environment that all commercial transactions, including financial ones, are fully connected through EDI.

#### **[Specific measures]**

- Adopt the “diffusion rate of cloud services in back-office operations” as a policy benchmark
- Promote the use of internet banking by corporations
- Support SMEs in introducing FinTech-capable IT tools and demonstrate positive examples of FinTech application and benefits
- Promote EDI connectivity between finance and commerce

#### 3.4.2. Strengthen SME funding capabilities and cash management

- Japan will promote initiatives to create innovative funding methods through the use of FinTech that meet various corporate needs by analyzing information of finance and commerce in real time through IoT.
- In order to digitize financial services, including trade credit, and diversify funding methods for SMEs, Japan will also promote the use of electronically recorded monetary claims and asset-based lending (ABL).
- Furthermore, in order to improve cash conversion efficiency across whole supply chains, Japan will continuously track and analyze the “supply chain cash conversion cycle (SCCC)” as a policy benchmark. This will be used as the basis for the policy to enhance cash conversion efficiency.

##### **[Specific measures]**

- Promote the introduction of innovative FinTech services
- Promote the use of electronically recorded monetary claims and ABL
- Adopt the “SCCC” as a policy benchmark

### 3.5. Develop a supportive environment to promote innovation in FinTech

#### 3.5.1. Regulatory reform designed to promote FinTech innovations

- Japan will trial a “regulatory sandbox” as a catalyst for generating a dynamism that encourages small challenges beyond existing frameworks, promotes innovations and maximizes user benefits.
- The basic ideas and requirements are as follows:
  - (i) Administrative organizations, service providers and users should agree on testing methods and evaluation criteria through trial and error and verification of hypotheses.
  - (ii) The essence of this system is providing new services on a trial basis to verify them. Business administrators and operators should understand that the regulatory environment remains a work-in-progress and not limit services to those that are novel or meet a specific market need. Through the verification process, value to be brought to consumers, risks

involved, and measures to be taken become clear.

(iii) Service providers should be mindful of monitoring and feedback capabilities available in the sandbox environment, fully leveraging FinTech's advanced data analysis and management. Suggestions which will be gained by this might possibly be more valuable than those expected in advance by regulatory authorities.

- Existing regulatory systems should also be verified and revised in order to promote innovations and maximize user benefits, guided by trial evaluations.
- For example, from the viewpoint of promoting innovation while safeguarding consumers and maintaining a fair competitive environment, this system may include mechanisms to (i) stay technology neutral to accommodate technological innovations, (ii) adopt risk-based approach, (iii) encourage new market entrants, (iv) promote voluntary private-sector initiatives, and (v) incorporate learnings from the "sandbox" trial.

**[Specific measures]**

- Establish a framework to promote new challenges ("Japanese-version of regulatory sandbox" ) under the Council on Investments for the Future
- Develop rules and guidelines based on the Revised Installment Sales Act
- Conduct a study on the legal system related to payment and settlements
- Support regulatory reforms and standardization (IoT Acceleration Lab)
- Develop a supportive environment for FinTech ventures
- Leverage RegTech to regulate and supervise effectively and efficiently

3.5.2 Establish globally competitive FinTech hubs

- Invigorating the financial sector is an important pillar of any initiative to strengthen a city's competitiveness. Leveraging the city's status as a global financial center is also a challenge critical for invigorating FinTech.
- The Tokyo Metropolitan Government (TMG), together with the Financial Services Agency and private business operators, established a study group concerning how to attract foreign financial companies and announced measures that can be implemented from the 2017 fiscal year. In addition, in order to carry out drastic reforms to turn Tokyo into a global financial center, the TMG established a task force comprised of financial experts and domestic and foreign business managers to study how to establish Tokyo as a global financial center. The TMG is considering ways of improving the business and daily life, promoting market entrants and developing a market friendly to investors from around the world.

3.5.3. Cultivate a labor pool equipped to support FinTech

- The government will explore a range of ways to cultivate a labor pool equipped to support the

development of a FinTech sector, including training for groups such as those changing career, reentering the workforce and freelance workers, as part of the development of human resources with IT and data skills as proposed by the Council for Human Resource Development for the Fourth Industrial Revolution, which was established in December 2016.

**Path to realization of a FinTech society (overall picture)**

