FINTECH DEVELOPMENT ROADMAP

2020/08/27

FINANCIAL SUPERVISORY COMMISSION

***Where any discrepancy arises between the English translation and the original Chinses version, the Chinese version shall prevail.**

I. Foreword

For the sake of steering the development of financial innovation and boosting the competitiveness of Taiwan's financial market, the Financial Supervisory Commission ("FSC") has been promoting financial technology (abbreviated Fintech) since 2015 and implemented the Financial Technology Development and Innovative Experimentation Act (referred to as the "Experimentation Act" hereunder) for nearly two years. Aside from successively lessening rules and regulations and building a friendly environment conducive to innovation, the FSC has launched a myriad of measures, such as regulatory sandbox, business trial, approving the setup of 3 Internet-only banks, promoting open banking services, launching management framework for security token offering (STO), promoting online insurance business, establishing a Fintech innovation hub - FinTechSpace, and holding Fintech Taipei Expo/ forum. Those efforts have produced the effect of guiding the market to improve financial services using technology.

To further provide businesses (including fintech startups) with necessary assistance, the FSC has been reviewing fintech development policies as mandated in Item 2, Article 18 of the Experimentation Act and mulling over feasible solutions to challenges faced by businesses in fintech development as the basis for policy formation in the next three years. The FSC Financial Technology Development and Innovation Center (referred to as the "FinTech Innovation Center" hereunder) conducted 24 sessions of interviews with stakeholders between February 10 and March 6, 2020, and organized 3 FinTech development seminars in June and July the same year to gather viewpoints and recommendations from participants in the ecosystem. The FSC also considered the current international FinTech trends as well as the critical areas and actual demands for the current development of FinTech in Taiwan to formulate the "FinTech Development Roadmap."

II. Global Fintech Trends

1. The fintech landscape

In 2020, the Financial Stability Institute (FSI) published the insight report, *Policy responses to fintech: a cross-country overview*[1], proposing a conceptual framework as "fintech tree" to distinguish the fintech environment into three categories: fintech activities (the treetop), enabling technologies (the trunk) and policy enablers (the roots). According to the framework, various fintech-related regulatory and policy responses adopted by the jurisdictions surveyed are further clustered into three groups referred as: (i) those that adjust the regulatory perimeter and/or directly target fintech activities; (ii) those that focus on the use of new technologies in the provision of financial services; and (iii) those that facilitate financial innovation or promote digital financial services more broadly.

(1) Regulatory responses to fintech activities:

i. Digital banking: Most surveyed jurisdictions apply existing banking laws and regulations to digital banking, under which the identical licensing process and regulatory requirements are equally associable to license applicants with a fintech business model and with a traditional business model.

ii. Fintech platform financing:

(a) Banking regulation. A banking license is mostly required whereas a platform involves taking deposits from the public and hold the deposits together with their own funds.

(b) Securities regulation. A platform is typically subject to licensing or registration requirements under securities regulation whereas it issues and sells securities, provides related investment advice or establishes secondary markets for the loans or investments it intermediates.

[1] Financial Stability Institute(2020), Policy responses to fintech: a cross-country overview, https://www.bis.org/fsi/publ/insights23.pdf

(c) Payments regulation. Licensing and oversight requirements in payments may apply whereas a platform provides payment services and intermediates financing.

iii. Robo-advice: License or permit is required in providing financial advisory service irrespective of how the advice is provided and principally, regulatory treatments subject to both robo- and traditional advisers are identical. In addition, to warrant consumer protection and fair competition, some jurisdictions surveyed, including the US, Australia, Canada, UK and Hong Kong, have published guidance to regulate relevant practice.

iv. Digital payment services: Most of the jurisdictions surveyed have specific regulation in place ruling the digital payment service provision, yet the regulated scope may be varied depending on the extent of the service provided (eg. whether if it handles customer funds directly).

v. E-money services: E-money is typically regulated separately from other payment services as there may be other specific risks involved. For instance, as provided in the Payment Services Directive 2 (PSD2), payment service providers are regulated as payment institutions while e-money providers are regulated as e-money institutions and are subject to more stringent requirements.

vi. Insurtech business models: In most of the jurisdictions surveyed, the existing licensing mechanism is considered sufficient in managing risks derived from innovative business models, thus, there's no new licensing requirement initiated. Yet, some jurisdictions have adapted relevant regulations in responding to emerging innovative technological application on insurance service provision.

vii. Financial services related to cryptoassets: Most surveyed jurisdictions classified cryptoassets and determine the applicability of regulatory requirements depending on if there's essential underlying economic function.

(2) Policy responses for enabling technologies: Currently, there are several enabling technologies supporting financial service innovation for the sector, including Application programming interfaces (APIs), artificial intelligence(AI), machine learning (ML), biometrics, cloud computing and distributed ledger technology (DLT). In responding to the increasing utilization of such technologies over financial service provision, regulatory authorities mainly have incorporated technology-specific elements into the existing laws, regulations or guidelines. Some regulators also conduct exploratory analysis and set general principles ruling the use of such technologies. Amongst, technology-neutral is the most crucial principle that the majority of the jurisdictions adhere to enhance regulatory oversight.

(3) Policy enablers: To take advantage of the opportunities brought by digital economy, authorities are exploring ways to enhance digital service provision in their jurisdictions.

(1) Digital ID systems

(2) Data protection frameworks

(3) Cyber security frameworks

(4) Open banking initiatives

(5) Innovation facilitators

2. Fintech Supervisory Principles

Per the research paper, *Key Aspects around Financial Technologies and Regulation Policy report*[2], published by the Center for Latin American Monetary Studies (CEMLA) in May 2019, there are 8 general and basic principles that most policymakers adopted when tailoring regulation to fit the new digital era. The 8 principles include the following:

[2] Center for Latin American Monetary Studies(2019),Key Aspects around Financial Technologies and Regulation Policy report, https://www.cemla.org/fintech/docs/2019-06-KeyAspectsAroundFinancialTechandRegulation.pdf

(1) Functional approach

(2) Proportionality

(3) Technological neutrality and flexibility

(4) Level playing field and competition

(5) Cybersecurity and data protection

(6) Coordination among regulators

(7) International cooperation

(8) Enabling innovation mechanisms

3. Worldwide Key Fintech Initiatives

(1) G20- High-Level Principles for Digital Financial Inclusion:

Globally, there are approximately two billion adults unable to access to formal financial services. The solutions derived from digital techniques may craft affordable financial services and improve their lives. The *High Level Principles for Digital Financial Inclusion* were approved in the 2016 summit and are referred as below:

i. Promote a Digital Approach to Financial Inclusion

ii. Balance Innovation and Risk to Achieve Digital Financial Inclusion

iii. Provide an Enabling and Proportionate Legal and Regulatory Framework for Digital Financial Inclusion

iv. Expand the Digital Financial Services Infrastructure Ecosystem

v. Establish Responsible Digital Financial Practices to Protect Consumers

vi. Strengthen Digital and Financial Literacy and Awareness

vii. Facilitate Customer Identification for Digital Financial Services

viii. Track Digital Financial Inclusion Progress

(2) IMF & World Bank- the Bali Fintech Agenda[3]:

The International Monetary Fund (IMF) and the World Bank (WB) approved and published the Bali Fintech Agenda (BFA) in October 2018,

[3] The Bali Fintech Agenda(2018), https://www.imf.org/~/media/Files/Publications/PP/2018/pp101118-bali-fintech-agenda.ashx

which organized a set of 12 elements aiming to assist member countries to harness the benefits/ opportunities and risks brought by fintech as it advances. The elements are referred as below:

i. Embrace the opportunities of Fintech

ii. Enable New Technologies to Enhance Financial Service Provision

iii. Reinforce Competition and Commitment to Open, Free, and Contestable Markets

iv. Foster Fintech to Promote Financial Inclusion and Develop Financial Markets

v. Monitor Developments Closely to Deepen Understanding of Evolving Financial Systems

vi. Adapt Regulatory Framework and Supervisory Practices for Orderly Development and Stability of the Financial System

vii. Safeguard the Integrity of Financial Systems

viii. Modernize Legal Frameworks to Provide an Enabling Legal Landscape

ix. Ensure the Stability of Monetary and Financial Systems

x. Develop Robust Financial and Data Infrastructure to Sustain Fintech Benefits

xi. Encourage International Coordination and Cooperation, and Information Sharing

xii. Enhance Collective Surveillance and Assessment of the Financial Sector

(3) OECD- Principles on AI:

In considering the application of artificial intelligence and machine learning may lead to problems pertaining to data protection, insufficient transparency, and ethical issues given without proper regulations, the Organization for Economic Cooperation and Development (OECD) put out the Principle of Artificial Intelligence[4] in May 2019 to promote innovative yet reliable artificial intelligence in confronting of human rights and democratic values. The OECD also made 5 recommendations consistent with the above-mentioned principles and values advising governments to implement relevant national policies and enhance international cooperation accordingly. The G20 issued a human-oriented artificial intelligence statement at the Ministerial Conference in June 2019, citing OECD principles and recommendations, and populated the G20 *Principles for responsible stewardship of trustworthy AI* and *Reliable Artificial Intelligence National Policies and International Cooperation Recommendations*[5].

(4) FATF-International Standards on Combating Money Laundering and the Financing of Terrorism:

The Financial Action Task Force (FATF) is an independent inter-governmental body sets international standards aiming to mitigate illegal global money laundering and terrorist financing activities. It released *International Standards on Combating Money Laundering and the Financing of Terrorism & Proliferation*[6] in February 2012 and subsequently updated in June 2019, which is the worldwide generally recognized AML and CFT standards.

4. Recent Fintech Promoting Schemes

(1) European Union (EU)- the European Commission:

The European Commission launched its *FinTech Action Plan*[7] in 2018 aiming to comprehensively augment fintech development in the EU through enabling innovative business models to scale up across the EU, supporting

4 OECD, OECD Principles on AI , https://www.oecd.org/going-digital/ai/principles/

5 G20 Ministerial Statement on Trade and Digital Economy, https://trade.ec.europa.eu/doclib/docs/2019/june/tradoc_157920.pdf

6 FATF, International Standards On Combating Money Laundering And The Financing Of Terrorism & Proliferation, https://www.fatf-gafi.org/media/fatf/documents/recommendations/pdfs/FATF%20Recommendations%202012.pdf

7 FinTech Action Plan: For a more competitive and innovative European financial sector, https://ec.europa.eu/info/publications/180308-action-plan-fintech_en

the uptake of technological innovation in the financial sector, and enhancing security and integrity of the sector. Given the perspectives, 8 actionable measures, including regulation tailoring and cyber resilience enhancement, were plotted out with the premise of harnessing development and risk management.

The actionable laid out in 2018 Plan have been fully accomplished in 2019, yet the digital finance ecosystem unceasingly evolves as technological innovation advances. In addition, the lockdown measures adopted worldwide in combating COVID-19 have further proved the importance of digital finance. Consequently, the European Commission has published the Consultation[8] to seek the public opinions for policy drafting and scheduled to propose a new *Digital Finance Strategy/FinTech Action Plan* in Q3 2020 to set out its focused areas in the guiding policy for the upcoming five years.

(2) United States (US)- Department of the Treasury:

In the report *A Financial System That Creates Economic Opportunities-Nonbank Financials, Fintech, and Innovation*[9] released in 2018, the US Department of the Treasury highlighted that innovation has been a crucial driver for its economic development, especially for the development of the financial service sector, and encouraged all financial regulators to be more responsive to technological developments than in the past and to take meaningful steps to facilitate and foster vibrant financial markets through responsible innovation.

(3) Japan- Financial Services Agency (JFSA):

Japanese Financial Services Agency (JFSA) launched its *Initiatives for*

[8] Consultation on a new digital finance strategy for Europe / FinTech action plan, https://ec.europa.eu/info/consultations/finance-2020-digital-finance-strategy_en

[9] U.S. Department Of The Treasury(2018), A Financial System That Creates Economic Opportunities Nonbank Financials, Fintech, and Innovation, https://home.treasury.gov/sites/default/files/2018-08/A-Financial-System-that-Creates-Economic-Opportunities---Nonbank-Financials-Fintech-and-Innovation_0.pdf

User Oriented Financial Services in a New Era[10] in 2019 outlining its 3 strategic perspectives in promoting fintech developments, including finance digitalization strategy, financial services to accommodate various needs, and financial intermediation and stability.

(4) South Korea-Financial Service Commission (FSC):

The Korean government has been promoting fintech as part of its growth strategy in responding to the global emerging trends on digital transformation and the 4th industrial revolution. Beyond the existing regulatory sandbox, open banking, regulatory reforms and budget earmarks mechanism set for the sector, it has announced its further scaling-up measures[11] on December 4, 2019 outlining 24 key tasks in 8 different policy areas to cultivate the sector's development in Korea.

5. Post-pandemic Correspondence

The outbreak of COVID-19 has led to economic uncertainties and consequently operational impacts in many ways to financial institutions as well as to fintech startups. Yet, it may also yield new business opportunities, whereas new supervisory challenges could arise against the Regulators along with the evolving innovation.

(1) Payment and lending services with a surged growth

(2) Overloan due to insufficient supervision

(3) Financial exclusion worsen

(4) Potential risks derived from fintech industry M&A

(5) Fintech startups operational resilience

III. Challenges and Opportunities

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[10] Japan's Financial Services Agency(2019), JFSA's Initiatives for User Oriented Financial Services in a New Era Financial Services Policy: Assessments and Strategic Priorities 2019, https://www.fsa.go.jp/en/news/2019/20190828/Overview_of_the_policy_agenda.pdf

[11] South Korea's Financial Service Commission (2019), Measures To Promote Fintech Scale-ups- http://meng.fsc.go.kr/common/pdfjs/web/viewer.html?file=/upload/policy1/20191205104043_026c9bec.pdf

1. Challenges

Overall, fintech development can improve the efficiency of financial services, fuel competition in the financial industry, and enhance financial inclusion, which is particularly crucial to jurisdictions with unsatisfactory financial systems.

However, while promoting fintech, there might be potential risks and issues brought to the financial system and its customers along with its development. Key issues of concern to the regulators and the general public include consumer and investor protection, integration and consistency of supervision and regulatory framework, regulatory arbitrage, and financial stability. Thus, regulators shall be mindful and take factors such as market competition, consumer protection and financial stability into consideration when formulating relevant policies.

Through viewpoints and recommendations gathered from the 24 sessions of interviews with stakeholders and 3 seminars conducted in the first half of the year, 8 challenges hurdling local fintech development were identified and are summarized below:

(1) Data deficiency and constrained from sharing: Data forms a critical basis for fintech developments. Yet, to be in compliance with the current personal data protection act and financial regulation requiring financial institutions to safeguard customer data, each financial institution individually collect and manage their own customer data. The practice not only burdens customers with repeated data requests but also duplicate the resources each financial institution invests on relevant handling. With restricted sharing and further utilizing, data is unable to reach synergies and thus being difficult to innovate. In addition, discrepancies in understanding over personal data protection between the public and the financial service providers may also impact in business promotion of the financial service providers.

(2) Lack of a one-stop communication platform: Fintech developments often involve inter-bureau or inter-ministerial issues and further, financial

regulations are diverse and scattered. By lacking a one-stop communication platform, firms often have to approach and consult responsible agency respectively and thus the cost of communication is high.

(3) Stringent Supervision and Slow-paced Regulatory Adjustment: Financial regulations are diverse and scattered, but related innovations have developed rapidly and diversified. Though the FSC has been dedicated in adjusting relevant regulations corresponding to the changes in the past few years, yet in contrast to the pace of fintech development, it may still seem slow-paced. It is therefore suggested that supervision over financial innovation be more flexible, open-minded, and adjust relevant regulations accordingly in a timely manner to accelerate the development of the financial industry.

In addition, it is believed that applying the identical high-standard regulatory thresholds or capital restrictions requirements set for well-established financial institutions to startups may easily curb its development at their early stage. Therefore, rendering innovative firms a grace period or restricted license at their early stage of business operation and under manageable risk control will be a way benefiting their development and has been adopted by other countries.

(4) Insufficient FinTech talents: The financial industry overall faces the shortage of financial information or digital finance talents. The difficulties the industry faces in attracting needed tech talents include lesser mature fintech R&D environment, less attractive compensation package compared to the high-tech industry offering, lack of understanding over financial industry, as well as stringent regulations and restrictions on the qualifications and innovative service provision. Though, currently, there are relevant courses offered by peripheral organizations and in higher education programmes, the overall human resource development mechanism for cross-industry talents is perceived insufficient and out-paced with the needs from the industry. By

lacking of competent talents and heavily relying on suppliers outside the country for system development and maintenance, in the long run, the core capabilities for innovation can't be developed and in the worst case, autonomy of data management could be lost.

In addition to the talent shortage for the financial industry, under the changing digital environment, there is also a talent demand for regulators so as to promote digital supervisory mechanism and enhance supervisory efficiency.

(5) Digital Infrastructure Warrants Enhancement: Regardless which sector in the financial industry, the key element for account opening is to conduct Know Your Customer (KYC) check. However, due to customer data sharing constrains imposed by current regulations, financial institutions can only conduct KYC and subsequent data management respectively, which is often time consuming and duplicated in resources invested. In addition, the future fintech development will lean further on remote and virtual interactions with customers, yet the current relevant regulations still have its emphasis on identification authentication in physical manner. While physical ID authentication often may not be fully interoperable on cell phone, it may therefore limited fintech developments.

(6) Fintech Startups Facing Financial and Operational Challenges: When seeking cooperation opportunity with existing financial institutions, fintech startups may find it difficult as financial institutions are either unfamiliar with them or may consider them as competitors and thus lack of incentives for doing so. From the financial perspective, operational costs for startups at early stage are high and fundraising is not easy. Even if they obtain cooperation or investment opportunities from financial institutions, their expansion may be constrained due to the exclusive nature of investment by financial institutions.

(7) The size and functions of FinTechSpace are limited: The physical space of the existing fintech accelerator "FinTechSpace" merely allows it to accommodate

and serve 43 startups. With limited space, the number of teams the FinTechSpace can serve is also limited. In addition, unlike for financial institutions, there’s no “business trial” mechanism set up for startups. The mechanism is needed by startups for they may experiment their ideas without violating the law or in partner with financial institutions. Lastly, in practice, many self-disciplinary regulations or guidelines are set by industrial associations or peripheral organizations, but there is no representatives from these organizations invited to attend regulatory clinic session for consultation under the current mechanism.

(8) The development pace of SupTech/RegTech shall increase: The development of financial technology has made a tremendous progress in recent years. In responding to changes, the FSC has followed the global trend closely and taken corresponding actions as appropriate, yet it may still seem too slow and the scale of actions taken could be constrained with limited resources.

2. Opportunities

As previously mentioned, fintech development overall can improve the efficiency of financial services, fuel competition in the financial industry, and enhance financial inclusion. The EU Expert Group on Regulatory Obstacles to Financial Innovation (ROFIEG) recognized fintech benefits in four aspects, specifically, cost-saving, facilitating the provision of new and better products and services, enhancing financial inclusion, and uplifting supervisory efficiency.

In addition, the outbreak of the COVID-19 has greatly accelerated the advancement of digital finance. The lockdown and social distancing measures taken against COVID-19 has drastically changed people's consumption habits and surged the growth for electronic transactions. Consequently, the request for fully remote account opening and transaction authorization is increasing. In response to banks and customers being unable to open accounts in person during the epidemic, the FATF issued a report in May 2020 proposing global joint efforts to loosen relevant regulations and to set a risk-based remote opening account standard that is generally acceptable worldwide.

The FinTech Working Group of the United Nations Secretary-General’s Special Advocate for Inclusive Finance for Development released a report in 2019, pointing out that supervisory authorities worldwide are facing the challenges of the rapidly changing financial services market. The new business models, products and services raise issues about whether and how to supervise. The capacity and resources of supervisory agencies are limited. It is necessary to carefully weigh the opportunities and risks of financial innovation to achieve financial inclusion and other supervision goals. Innovative supervision plans adopted by various countries have become increasingly common.

Referring to the key measures taken globally, in 2018, the FSC has implemented fintech sandbox mechanism, established fintech innovation center, and set up the "FinTechSpace." In 2019, “Digital Regulatory Reporting Mechanism Promoting Task Force” has been formed. All of these layout innovation supervision prototype. While fintech development will further lean to realization of financial inclusion, new business models and technological applications are expected to be extended further. In the future, relevant mechanisms are expected to be broadened to ensure a sound fintech ecosystem.

IV. Fintech Development Roadmap

1. Vision

To cultivate a friendly ecosystem which facilitates the provision of fintech services or innovative business models for better efficiency, accessibility, usability, and quality of financial services.

2. Objectives

(1) Inclusive: Promote financial services that serve the varying needs of businesses and consumers to achieve convenience and inclusion.

(2) Innovative: Uphold a balanced principle of "encouraging innovation and

preventing risks" to promote responsible innovation and increase the value of the finance industry.

(3) Resilient: Ensure the capital adequacy as well as operational and financial soundness of financial service providers, fulfill a culture of integrity, and enhance the financial system resilience through robust risk management measures.

(4) Sustainable: Encourage financial service providers to fulfill social responsibility, promote sustainability, and work toward creating prosperity for the economy, environment, and society.

3. Implementation principles

(1) Functional and behavioral supervision: Convert the financial supervision mindset from the institutional management approach to the functional and behavioral approach. Encourage the development of innovative business models and effectively identify and control risks to protect the rights and interests of financial market users.

(2) Technology neutrality: Encourage the use of technologies to enhance operation efficiency and performance, create an environment for fair competition, increase financial consumer benefits, and enhance the competitiveness of the industry.

(3) Innovation friendly: Implement policies to support innovation and entrepreneurship resources to create a vibrant FinTech ecosystem.

4. Implementation strategies

(1) Enhance the FSC FinTech Innovation Center's role as a platform for communication on issues and cross-agency collaboration. Help businesses resolve common issues and assign peripheral organizations to set up the FinTech Co-creation Platform for promoting relevant development.

(2) Adjust digital finance related rules and regulations to facilitate the development of cross-industry, cross-border and scenario-based financial services.

(3) Integrate public and private resources to jointly create data value and provide financial services catered to consumer needs.

(4) Formulate plans for promoting FinTech certificates to increase the capacity of overall R&D applications on the market.

(5) Organize FinTech contests, select and cultivate FinTech international teams, and strengthen connections with the international community.

(6) Expand the domain and functions of FinTechSpace, strengthen the fintech ecosystem, and build a directory of startups and diverse communication channels to assist startups in fundraising and pitch & match.

(7) Select FinTech image ambassadors and continue to organize FinTech exhibitions or forums to increase the visibility of FinTech development in Taiwan.

(8) Advance digital supervision mechanisms and organize the Taiwan RegTech Challenge contest to promote SupTech/RegTech development.

5. Implementation dimensions and key measures

(1) One-stop communication platform

Current status:

The Experimentation Act promulgated on January 31, 2018 by presidential decree stipulates that the competent authority (FSC) should have a dedicated unit in place to handle related matters. Thus, the FSC expanded the functions of the previous “Financial Technology Office” and changed its name to “Financial Technology Development and Innovation Center”(hereunder FinTech Innovation Center) with an “Innovation Development Section” and a “Space Development Section” under it to take charge of promoting fintech development and handling innovative experimentation relevant regards.

Measure 1-1

Strengthen the role of FinTech Innovation Center as the communication window and cross-agency collaboration platform	
Reasons for implementation: 1. There have been comments that fintech development has gone beyond the traditional framework for the categorization of financial institutions that it is a multi-industry undertaking, and the business scope of fintech is extended beyond financial services. Thus, fintech businesses often run into cross-institutional or cross-agency issues that there should be a one-stop service window to assist them in clarifying regulations and supervisory questions. 2. The FinTech Innovation Center can focus its attention on cross-institutional or cross-agency communication, coordination or collaboration involving fintech development. For problems encountered by financial service providers, the FinTech Innovation Center can invite relevant agencies (institutions) to exchange ideas and discuss solutions to facilitate information sharing in the joint efforts to better protect the rights and interests of consumers.	
Key actions:	Timetable
Strengthen the functions of the FinTech Innovation Center, and gather the opinions of fintech related businesses and problems encountered by them. The FinTech Innovation Center will invite relevant agencies (institutions) to meetings to discuss different issues and collaborate in cross-institutional or cross-agency initiatives, including data sharing, adjustment of regulations or self-regulatory rules, capacity building, digital infrastructure, FinTechSpace ecosystem, international connections, and other issues of concern to the public.	Ongoing

Measure 1-2

Establish the Financial Technology Co-creation Platform (referred to as the "Fintech Co-creation Platform" hereunder) to assist in the promotion of fintech development related tasks

Reasons for implementation:

The FinTech Innovation Center is a task force assigned to work on a defined task. Thus, there have been suggestions to expand the organization or increase its staff so the Center can implement fintech development policies with more forward-looking and holistic planning in response to rapidly emerging business models and technologies at home and abroad, as well as to develop supervisory technology. In light that it is highly challenging for the public agency to establish a new unit or increase manpower and budget for an existing agency, the FSC plans to combine the expertise and resources of peripheral organizations to establish a co-creation platform tasked to promote fintech development.

Key actions:	Timetable
1. The peripheral organizations jointly establish the Fintech Co-creation Platform.	2021.8
2. The Fintech Co-creation Platform will assist the FinTech Innovation Center in promoting fintech development related tasks, including development of supervisory technology, capacity building, organizing fintech contests and awards, selecting international fintech teams, recruiting and selecting fintech image ambassadors and advertising/promotion staff, and assisting in promoting Taiwan's achievement in fintech.	Ongoing

(2) Data sharing[12]

A. Open finance

Current status:

a. In respecting market mechanism and development, the FSC encourages banks to adopt "open banking" on a voluntary and self-regulatory basis in view of their operational strategies and business needs. The plan is to take an incremental approach to promote open banking. The three stages are "open data", "consumer information", and "transactional data" queries. Among the stages, stage 1 has gone live in September 2019 and for stage 2, the FSC has agreed to accept the relevant rules set out by the Bankers Association and Financial Information Service Co. (FISC) for reference on June 24, 2020. Under which, banks can apply to conduct stage 2 open banking with application documents and a self-rating checklist filed to the FSC; stage 2 is then projected to kick off at the end of 2020. The FSC will review the outcomes of stage 2 operations before deciding the timetable for amending rules for stage 3.

b. The Financial Conduct Authority (FCA) of UK is a pioneer in open banking. After successfully developing open banking, the FCA published a "Call for Input: Open Finance" in December 2019, asking for comments on the Call[13]. The FCA believes open finance has more potential than open banking to deepen the financial services for consumers and businesses that will make it easier for consumers to compare products, switch service providers, and gain access to complete or a wider range of financial consulting or planning services. However, according to the experience of promoting open banking, open finance may have some shortcomings. For example, misuse of customer data, consumers being

[12] Under the premise of complying with the Personal Data Protection Act, plan and promote data sharing with customer consent and within the scope of fair use.

[13] https://www.fca.org.uk/publication/call-for-input/call-for-input-open-finance.pdf

discriminated (customers with certain characteristics being excluded), intensified competition among service providers undermines the development of the entire industry, and the need to make significant changes to the IT system may affect the operational resilience of service providers. Thus, the FCA requests public comments on those issues as reference for determining how to develop open finance in the future, its benefits, risks and adoptable risk controls and the role the supervisory authority can play.

Measure 2-1: **Accelerate the development of "open banking (open finance)"**
Reasons for implementation: 1. Open banking is a significant global trend. Aside from giving consumers back the control of their financial data, it enables banks to provide consumers with diverse and proper financial services in a convenient and swift manner through "consumer empowerment" by utilizing big data analytics and artificial intelligence. In the process of collaborating and sharing data with third service parties (TSP), banks can undergo digital transformation, increase financial inclusion and promote the welfare of society as a whole. Thus, it is suggested that the government should expedite the promotion of stage 2 and stage 3 open banking. 2. Currently, banks cooperate with TSPs in stage 2 open banking mostly on a one-to-one basis and the collaboration requires the FSC approval which not only limited the number of banks and TSPs participating but also the size of their customer base. Thus, it is suggested that a mechanism that allows multiple banks to concurrently work with a TSP be put in place to expand the open banking market. 3. In light that open banking has been working quite smoothly, consumers also

hope to have access to information on products or services offered by non-bank financial institutions through TSP so they can make comparison and evaluation, and furthermore, integrate the information of non-bank financial institutions on a platform or mobile application. That is, extending open banking to "open finance." 4. Open finance can extend the concept of open banking to pension, investment-linked insurance policy and asset management. According to UK, the potential benefits of open finance to consumers include: A. Automatic switching and renewals reduces the inconvenience caused by conversion of financial services and make it easier for consumers to compare services. B. Personal financial management dashboards developed by TSP enable consumers to understand their overall financial position and based on which, optimize their financial arrangement. C. More accurate creditworthiness assessments of consumers enable TSPs to review consumers' cash flow holistically and identify suitable credit products for them. D. By helping customers make financial decisions, customers are more likely to share information with financial advisors to obtain suitable suggestions and financial support.	
Key actions:	Timetable
1. Continue to encourage banks to conduct stage 2 open banking and simplify the application and review processes. 2. The promotion of stage 3 will be discussed after reviewing the stage 2 outcome.	2020.11 (In view of stage 2 outcome)
3. Consider promoting "open data query" among non-bank	2021.8

financial institutions in reference to international practices.	

B. TSP management

Current status:

a. Currently, banks in Taiwan offer open banking on a voluntary and self-regulatory basis where banks choose TSP that meets their strategic, internal control and security requirements to work with, and with customer's consent, allow the TSP to connect to the bank and access customer data. The financial services industry is a regulated sector that financial institutions must comply with applicable regulations in customer data processing. In case of violation, the FSC may mete out punishment. However, TSPs are not under the jurisdiction of FSC. Thus, there should be a management mechanism in place for TSPs with regard to handling of customer data they obtain from financial institutions to ensure that their customer data and systems are secure and customer interests are protected.

b. The aforementioned management mechanism will be constructed principally by the Bankers Association and FISC. The self-regulatory rules drafted by Bankers Association require that the paid-in capital or working capital of a TSP selected by a bank must be commensurate with the scale of business the bank and the TSP cooperate in; the open API security standards set forth by FISC lay out security requirement levels for situations under which personal information obtained by TSP in stage 1 (open data query) and stage 2 (consumer information query) may be stored or not. Thus, under the open banking framework where banks support open banking on a voluntary and self-regulatory basis, there has existed a risk-based classified, flexible supervisory mechanism for TSPs.

The open API security standards also require TSP to be inspected by an independent third-party certification body (i.e. a certification body recognized by a government-entrusted institution) at the time of applying to a bank for cooperation and every year thereafter, and submit an IT system and security control evaluation report produced by the certification body.

Measure 2-2 **Establish TSP cooperation information disclosure system**
Reasons for implementation: 1. Cooperation between financial institutions and TSPs can accelerate the development of new, innovative businesses. However, the cooperation also involves data exchange and data sharing. Under the prevailing regulations, all financial institutions are required to have high-intensity data management mechanism, while the situation is different for TSPs. TSPs come in different sizes and are not subject to the supervision of any particular competent authority. Financial institutions may be reluctant to work with TSPs when the interests of consumers and security vulnerabilities and risks are a concern. Thus, it is suggested that a TSP classification and certification system be established to assist TSPs in acquiring information security certification, so as to help financial institutions identify efficient and suitable TSPs that meet their conditions. 2. Different from the mandatory implementation in UK, open banking is voluntary and self-regulatory in Taiwan. Under the prevailing legal system, the FSC cannot supervise TSPs directly. However, it may indirectly make requests through the contracts signed between the bank and the TSP. The practice of TSP registration adopted in UK still serves as a reference in case where a financial institution intends to select and work with prospective

partners.	
Key actions:	Timetable
Instruct peripheral organizations to establish an information disclosure system under which when a financial institution enters a cooperation agreement with a TSP, general information about the TSP and the underlying activities shall be disclosed on the designated platform for public reference.	2021.8

C. Customer data sharing between a financial holding company and its subsidiaries

Current status:

Pursuant to Article 42 of the prevailing Financial Holding Company Act, a financial holding company and its subsidiary(ies) shall safeguard their customer personal data, transaction information and other relevant information unless otherwise provided by law or regulations of the authority. Currently, otherwise provided situations merely include for cross-selling by subsidiaries of financial holding companies, for the risk management of the group enterprise, and for anti-money laundering purpose. The provisions on those situations are stipulated in Article 43 of the Financial Holding Company Act, Regulations Governing Cross-selling by and among Financial Holding Company Subsidiaries, FSC Order Jin-Guan-Yin (1) –Zi- 0938011562 dated September 13, 2004, FSC Letter Jin-Guan-Yin-He-Zi-10230001141 dated May 1, 2013 and FSC Letter Jin-Guan-Yin-Fa-Zi-10400259730 dated March 3, 2016.

Measure 2-3: **Establish mechanisms and rules for customer data sharing by financial holding company subsidiaries**

Reasons for implementation: 1. For the sake of improving operating efficiency and managing individual customer risks, many financial holding companies would prefer to create a database and risk assessment models for use by all of their subsidiaries, where the subsidiaries provide customer data to the parent company for model creation. Subsequently, when a subsidiary accepts a new customer, it can refer to the past records of the same customer at other subsidiaries, if any, and assign the customer a risk score using the in-house built models (when a new customer opens an account, the subsidiary can rate the customer risk based on customer attributes and characteristics, also using the in-house built models). It not only reduces the redundancy of resources having each subsidiary build its own database, the subsidiary can also leverage the models built from big data to conduct cross comparison to determine customer's risk rating and address potential risks in advance. 2. However, based on the rules and regulations mentioned above, a financial holding company is not yet able to create customer databases or risk models for its subsidiaries to facilitate know your customer (KYC) and customer risk assessment processing. That is, currently it is difficult for financial holding companies to achieve resources sharing and cost saving for IT equipment and back-end support. 3. Currently, there are some technologies that enable data sharing without violating customers' privacy, such as data de-identification, encryption, and federated learning (collaborative machine learning). Thus, under the premise of complying with the Personal Data Protection Act, along with customer consent and within the scope of fair use, there should be a mechanism allowing financial holding companies and subsidiaries to share customer data, and relevant regulations should be adjusted accordingly.

Key actions:	Timetable

Review relevant prevailing regulations and restrictions for financial holding companies, banks, securities firms and insurance companies, along with reference of the fore-mentioned FSC order of 2004 and anti-money laundering regulations, study whether it is feasible to let subsidiaries assist in creating a customer risk database at the premises of the financial holding company and allow subsidiaries to inquire related information for the specific purpose of managing customer risks, provided this move could help improve customer risk management of financial holding companies and their subsidiaries.	2021.8

D. Cross-institutional data sharing in the financial market

Current status:

a. The financial market data may be classified from three sources depending on the collector of the data, i.e. financial institutions, non-financial institutions (e.g. startups, blockchain developers, P2P service providers, TSPs or outsourcing service providers, etc.), and peripheral organizations (e.g. Joint Credit Information Center ("JCIC"), FISC, Taiwan Depository & Clearing Corporation ("TDCC"), Taiwan Insurance Institute ("TII"), etc.).

b. For customer data in their possession, financial institutions shall safeguard them in line with the Personal Information Protection Act, as well as other industry-specific regulations, such as Article 28 of the Act Governing Electronic Payment Institutions, Article 177-1 of the Insurance Act, Article 34 and Subparagraph 16 of Article 37 of the Regulations Governing Securities Firms, Paragraph 2, Article 7 of the Securities Investment and Consulting Act, Article 63 of the Futures

Trading Act and Article 31 and Subparagraph 5 of Article 55 of the Regulations Governing Futures Commission Merchants.

c. With regard to data held by peripheral organizations, the most coveted for access by outside parties are the credit data of JCIC. JCIC was established pursuant to Paragraph 2, Article 47-3 of the Banking Act and gathers, creates and processes various kinds of credit information from financial institutions and finance-related enterprises, and makes related information for query and use by financial institutions, interested parties, or other parties authorized by the competent authority pursuant to the Regulations Governing Authorization and Administration of Service Enterprises Engaged in Interbank Credit Information Processing and Exchange. As such, financial institutions and FSC-designated enterprises may join JCIC as a member and may inquire the negative credit information of customers. As to whether non-financial institutions can become members and make data inquiries, JCIC needs to undertake further study.

d. The National Credit Card Center of the ROC ("NCCC") was established with donations from financial institutions. NCCC handles credit card related affairs and settlement operation and serves as the window for accepting reports on credit card fraud. The reports include emergency reports, correction reports as well as counterfeit credit card and fraudulent transaction information from entities related to credit card business. NCCC gathers information and intelligence, and establishes a channel for communicating with investigation agencies to effectively prevent credit card crimes. NCCC is considering expanding the application of its "Credit Card Assisted Identity Verification Platform" to insurers and TSPs.

Measure 2-4:

Establish mechanisms and rules for cross-institutional sharing of customer data in the financial market

Reasons for implementation:

1. Financial regulations require financial institutions to conduct know your customer (KYC), and based on which, evaluate the financial literacy of customers as reference for product sales, and perform anti-money laundering related tasks at the time customers open an account and regularly thereafter. Possibly constrained by regulations or competition, each financial institution or peripheral organization has been collecting its own data. It not only costs customers time to fill out or provide their personal information every time they establish relationship with a new institution, each institution must also pour resources into creating and maintaining their own database, which is a waste of resources and produces no synergistic effect.
2. Fintech startups, like financial institutions, have the obligations to conduct KYC and prevent money laundering. But they are constantly faced with shortage of customer data and they are unable to access JCIC data. It is difficult for them to grasp the risk level or risk pattern of customers or they have to spend extra resources on data collection for their KYC and credit evaluation operations.
3. Made possible by financial technology, many financial services are now cross-institutional (e.g. consumers can purchase mutual funds or insurance via electronic payment). Such data sharing between institutions can save customers' time in repeatedly logging in personal data and make it easier for cooperating institutions to keep each other informed, thereby reducing potential risks while enhancing risk management and efficiency of the overall market (e.g. a customer does not have default or irregular record at one institution but has such records at another institution. Such records provide reference value for financial service providers).

Key actions:	Timetable
1. After examining the provisions of prevailing financial regulations on confidentiality of customer data and understanding the types of data collected by peripheral organizations in the financial market (e.g. JCIC's credit data, Life Insurance Association's insurance application data, Taiwan Insurance Institute's insurance claim data), the needs of service providers (including non-financial institutions) for data or information and financial market development needs (including providing customers with more convenient services and better risk management), evaluate and study the scope of customer data that may be shared between institutions under the premise of complying with the Personal Data Protection Act, with customer consent, and within the scope of fair use, regulations that should be adjusted and management mechanisms that should be in place (e.g. the rights and obligations of data users), and if necessary, call meetings inviting relevant organizations and agencies to join in the discussion.	2021.8
2. Based on the results of evaluation and study mentioned above, set priorities and timetable for amending relevant financial regulations and drafting support measures (e.g. information security, protection of personal data, qualifications, rights and obligations of participants in connection with data sharing) under the circumstance that risks are controlled and consumer rights and interests are ensured.	2022.8

E. Cross-market data sharing

Current status:

a. Under the guidance of the Executive Yuan 2019 Smart Government Action Plan that calls for expanding authorization for the use of personal data, the FSC and the National Development Council (NDC) promote together the application of personalized digital services ("MyData") in financial sector. The process flow is as follows: The data provider connects to MyData platform, and after the data principal (an individual or a juristic person) has completed identity verification and given his content, transmits the personal data to the platform. A service provider can also connect to MyData, and after the principal has completed identity verification and given his consent, obtain the personal data of the principal for processing and use, and provide the principal with services. Currently JCIC and 21 banks have participated in the testing of MyData application in financial sector as service providers, and have since July 2019 been undertaking related service process design and system development. The data providers are limited to government agencies so far. MyData is not yet open to private entities as data provider.

b. The NDC publicized the "Guidelines for Trial Run of MyData Platform Connection Operation" in February 2020 and has conducted testing with bank employees as participants. JCIC and 12 banks have applied to register as service provider on MyData.

c. Aside from the cross-market data sharing mechanism, financial service providers have needs for other market data. Thus the FSC has established a cooperative relationship with other government agencies to jointly study the possible scope and means of data or information sharing for use in scenario-based financial services. For example, the FSC Insurance

Bureau has a collaborative project entitled “National Health Insurance and Business Insurance Cooperation Project” with the National Health Insurance Administration (“NHI”). The project encourages insurers to develop complementary policies and use the big data of national health insurance to promote public health. This sets a good example of cross-agency data sharing.

<table>
<tr><td colspan="2">Measure 2-5:
Establish mechanisms and rules for cross-market sharing of customer data</td></tr>
<tr><td colspan="2">Reasons for implementation:
In the process of fintech development, “scenario-based financial services” is believed to be the focus of attention at the present time as financial services have shifted from the venue of financial institutions to any “scenario” in life where consumers engage in monetary transactions. An important foundation for developing scenario-based financial services is “data.” Because financial data is under rigorous regulatory control, the innovation of financial products and services has been confined within the financial industry. With the development of scenario-based financial services and technology, only the sharing of financial data and other market data, such as telecom, healthcare, e-commerce and social media, can suitable products and services be developed to meet the needs of consumers. In addition, big data analysis can help enhance overall market efficiency.</td></tr>
<tr><td>Key actions:</td><td>Timetable</td></tr>
<tr><td>1. Gather cross-market data needed by financial service providers (e.g. consumption of telecom and public utility services, dollar amount and number of invoices, import and export amount, number of people enrolled in labor</td><td>2022.8</td></tr>
</table>

insurance, shareholding of major shareholders, etc.). If such consumer data are available on MyData, encourage financial service providers to register with MyData who can then access their customer data with the authorized consent of customers. In view of the trial run results involving banks described above, MyData service may be extended to securities, futures and insurance industries in the future.	
2. For data that are not available on MyData, call cross-agency meetings to discuss the restrictions imposed by prevailing laws and regulations and the scope of data that may be shared, set the priority and sequence of data sharing and schedule, review and amend regulations or introduce new technologies to open and share relevant data.	2023.8

(3) Regulatory adjustment and codes of ethics

A. Regulations relating to digital financial services

Current status:

a. The financial services industry includes financial holding companies, banking enterprises, securities enterprises, futures enterprises, insurance enterprises, electronic financial transaction enterprises, and other financial service enterprises. The term "banking enterprises" include banks, credit cooperatives, bills finance companies, credit card companies, trust enterprises, and the postal savings and remittance business of postal institution. The term "securities enterprises" include securities exchanges, over-the-counter securities trading centers, securities firms, securities investment trust enterprises, securities finance enterprises, securities investment consulting enterprises, centralized securities depository enterprises, and urban renewal investment trust enterprises. The term "futures enterprises" include futures exchanges, futures commission merchants, leverage transaction merchants, futures trust enterprises, and futures advisory enterprises. The term "insurance enterprises" include insurance companies, insurance cooperatives, insurance agents, insurance brokers, insurance surveyors, and the simple life insurance business of postal institutions, and the businesses and institutions run by other insurance service enterprises.

b. There are regulations and self-regulatory rules in place for each industry described above. In case of violation, financial service providers in respective industry are subject to the penal provisions of applicable regulations. Currently rules relating to digital finance cover identity verification mechanism, digital signature operation, insurance policy underwriting, electronic certificate delivery, electronic trading operation, electronic commerce, online insurance, personal data and file security and maintenance, operational outsourcing, information system standards and security control operation, new technology information security, information security inspection, and preservation of online trading data.

c. Fintech innovations make services more convenient and efficient. But fintech developers come in varying sizes and focus in areas that differ from traditional financial services. Some developers only work on a small part of the traditional financial arena and the risks their business poses to financial market or consumers are comparatively less. Thus practices adopted internationally such as proportional and flexible supervision, restrictive licensing, take into account both innovation and risk control. Take the example of payment service in Taiwan, service providers have the option to operate as a third-party payment or electronic payment institution. The former means the operator collects and pay funds online on behalf of customers as an agent, provided the total balance of funds collected/paid and kept by the institution does not exceed NT$1 billion. Their competent authority is the Ministry of Economic Affairs that administers third-party payment institutions as a regular business. Payment service providers can also operate as an electronic payment institution, which, aside from collecting and paying funds on behalf of customers as an agent, can also accept deposits of funds as stored value funds and transfer funds between e-payment accounts. Because the latter involves receiving funds from the public, electronic payment institutions are required to apply for a business license from the FSC and are placed under more rigorous supervision and differentiated supervision based on the principle of proportionality.

<table>
<tr><td colspan="2">Measure 3-1:
Compile and amend existing rules and regulations accommodating digital financial services</td></tr>
<tr><td colspan="2">Reasons for implementation:
Currently financial services are administered by types of business and types of institution, and some services are rarely offered by certain types of financial institution. Thus the prevailing regulations or self-regulatory rules for digital financial services may be inconsistent or inadequate (e.g. prevailing rules and regulations for securities and futures industries do not touch on outsourcing management). It is best to take an inventory of regulations governing digital financial services and examine if there is any omission or inconsistency, and make adjustment accordingly.</td></tr>
<tr><td>Key actions:</td><td>Timetable</td></tr>
<tr><td>1. Compile prevailing self-regulatory rules for digital financial services and post those rules that do not involve personal</td><td>2021.8</td></tr>
</table>

information, or information security control on FSC website under the fintech section to facilitate search and use by the public.	
2. Gather outside opinions and examine whether there is any inconsistency or omission in the regulations or self-regulatory rules for digital financial services, and make amendment or adjustment based on needs.	Ongoing

Measure 3-2: **Outsource research on the feasibility of the "Rules of the Administration of Digital Financial Services"**
Reasons for implementation: 1. While currently financial services are administered by types of institution, digital financial services have broken the bounds of business sector and operating areas under the rapid development of fintech. A digital finance business model may involve the regulations of multiple sectors. If there is contradiction, omission or inconsistency between regulations, it will not only jack up the compliance cost for businesses, but also delay the development of services while increasing the risk of regulatory arbitrage. 2. In addition, most countries adopt the “technology neutral” stance toward fintech supervision. That is, no matter what kind of technique or technology a business uses, or what kind of financial service a business provides, all businesses offering the same types of services or products must comply with the same rules and regulations. Therefore, to promote the development of digital finance and enhance the relevancy between regulations and actual practice of the industry, the FSC plans to outsource a study on the feasibility of drafting regulations that govern specifically digital financial services, which essentially integrate all provisions of prevailing regulations or self-

regulatory rules for digital financial service providers in different industries and put such service providers under uniform administrative rules.

Key actions:	Timetable
1. Outsource a study to evaluate whether it is feasible to follow the practice for the "Regulations Governing Offshore Structured Products" by integrating the provisions on matters to be complied with by financial institutions and non-financial institutions when they engage in digital financial services that are currently scattered in existing regulations or self-regulatory rules and formulating the "Rules for the Administration of Digital Financial Services" (e.g. opening of a digital account, identity verification, KYC, AML, signing, outsourcing, data sharing, cross-border service, information security, consumer protection, security control, risk control, etc.).	Outsource the study prior to 2021.8
2. Complete the outsourced study with the production of a final report.	2022.8
3. Undertake related tasks based on the conclusions drawn in the outsourced study.	2023.8

Measure 3-3 **Evaluate the feasibility of adopting the principle of proportionality, tiered approach or restrictive licensing for the supervision of digital financial services**
Reasons for implementation: 1. Many start-ups are small in size in the early stage of operation and have little influence on overall market risk and system stability. If they are required to assume responsibilities comparable to those of regular financial institutions

just because their business involves some banking, securities or insurance services, it would hamper their development and smother business innovation in the market. 2. Many countries, in particular regulators in the European Union adopt the principle of proportionality, tiered approach or restrictive licensing to financial supervision that they set out different requirements with regard to financial position, scope of business, personnel qualifications, information security and systems for digital financial service providers of different sizes, with varying degree of influence on the market and offering specific services. Such supervisory approaches aim to avoid stifling innovative technology or business model while maintaining the stability of financial system.	
Key actions:	Timetable
Based on the intensity of innovation needs, evaluate whether it is practicable to adopt differentiated supervision, such as proportional supervision, tiered supervision and licensing for digital financial services and set an implementation timetable.	Ongoing

B. Regulatory sandbox and business trial

Current status:

a. The FSC values financial innovation. Thus it has formulated a special law specifically for the promotion of fintech innovative experimentation (or "regulatory sandbox") and implemented the law in April 2018. Pursuant to the special law, domestic and foreign financial and non-financial institutions can apply to undertake experimentation, and if approved, can test a new technology or new business model according to the proposed experimentation plan without being required to obtain a relevant financial license, approval or comply with relevant financial regulations. If the experimentation results are positive, the FSC may amend existing regulations to facilitate the launch of similar business in the market.

b. To help potential fintech experimentation applicants understand the relevant rules of regulatory sandbox, the FinTech Innovation Center has created a fintech section on FSC website that provides information on laws and regulations, Q&A, application forms, and summary of ongoing experimentation projects. The FinTech Innovation Center also has a telephone number and email account for inquiry by potential applicants, offers consultation and advisory services to assist applicants in preparing application documents, and submits the applications to the review meeting for review. Members of the review meeting include outside scholars and experts who evaluate whether the proposed experimentation plan is necessary, whether it will effectively improve the efficiency of financial services, reduce operating or user costs, benefit financial consumers and the business itself, and whether the expected benefits are practicable and reasonable.

c. The FSC would track and watch experimentation cases in regulatory sandbox. For projects that show good benefits, the FSC would initiate regulatory adjustment mechanism in the hope that once the experimentation ends, relevant business can be legally launched in the market immediately in accordance with the amended regulations without any delay.

d. In addition, the FSC encourages financial institutions to innovate existing products and services by conducting business trial while taking into account risk control, and has since June 2019 introduced the new business trial mechanism for banking, securities and futures, and insurance industries. A financial institution may apply for approval to conduct a trial, provided the new business does not involve items prohibited by laws, regulations or orders, and may expand the business after the trial concludes smoothly so as to accelerate financial innovation.

Measure 3-4: **Enhance the operating efficiency of regulatory sandbox**
Reasons for implementation: 1. There are feedbacks that current application and review rules for regulatory sandbox are not clear or transparent, and the whole application process takes too long. Moreover, even if a sandbox application has passed the review and the experimentation case is completed, the business still cannot be offered in the market because existing self-regulations are not yet amended or the innovative idea of the experiment participants is not protected that the resources invested by the applicant are wasted. 2. The FinTech Innovation Center is in general spends a considerable amount of time advising non-financial institutions on their experimentation application and understands that those institutions know little about regulations, market operation, risk control and consumer protection and need the aid of competent authorities to speed up the process of turning their innovative ideas into action. The regulatory sandbox has been in operation for two years, and sufficient advisory experiences accumulated during the sandbox operation can be passed onto non-financial institutions to help them reduce the time spent on self-exploration or communication. 3. As for speeding up the regulatory amendment process, it is understood that amendment of self-regulatory rules usually takes too long that the existing rules stay unchanged after an experimentation or trial has concluded. In the future, the FSC will coordinate relevant peripheral organizations to speed up the amendment of self-regulatory rules by taking a step-by-step and rule-by-rule approach that clauses that may be adopted without difficulty will be

promulgated and implemented first. This way, new fintech applications may be offered to consumers early.	
Key actions:	Timetable
1. Produce regulatory sandbox guidelines and application guide or dummies guide, and hold workshops to help potential applicants understand matters to note in the advisory and application process.	2021.8
2. Invite bureaus and departments under the FSC and other relevant agencies to communicate with potential applicants or applicants that request guidance or have submitted an application so the (potential) applicants can quickly adjust their business mode, resubmit an application or submit additional documents to speed up the application process.	Ongoing
3. Ask relevant organizations to give opinions on application cases as quickly as possible and contact the relevant industry association to evaluate the amendment of self-regulatory rules while an experimentation case or trial is still under guidance, and ask the industry association to set a specific deadline for proposing the self-regulatory rules amendment after the experimentation or trial has ended so new service can be introduced quickly.	Ongoing

C. Best practices and codes of ethics

Current status:

a. New technology brings opportunities for financial services innovation. But it may also bring new risks or increase existing risks, including data privacy, cyber security, reliance on third parties and concentration risk. Many countries address the risk issues by adding specific technical specifications to existing regulations, orders or guidelines. Some regulators also actively conduct exploratory analysis and establish principles for some common technology-related issues. Currently guidelines have been developed for technologies that are more commonly adopted internationally, such as API, cloud service, and biometric identification. For technologies that have been subject to risk assessment earlier, such as artificial intelligence, machine learning and distributed ledger technology, principles have been established for reference.

b. Artificial intelligence, like machine learning, uses prediction model, which may create discrimination, bias, moral and fairness issues. As described above, international organizations, such as OECD has published Principles on Artificial Intelligence and encourages the development of data trusts. G20 has also issued a statement on human-centered artificial intelligence as well as the " Principles for responsible stewardship of trustworthy AI" and "National policies and international co-operation for trustworthy AI" as guidance for the development of artificial intelligence by countries.

c. In view of the innovation, advantages and impact that may be brought about by artificial intelligence development, Taiwan's Ministry of Science and Technology (MOST), together with four research centers on artificial intelligence and innovation, publish the AI Technology R&D Guidelines in 2019. The Guidelines embrace the core values of "human-centered", "sustainability development", and "diversity and inclusion" and take into account the academic freedom of AI researchers, encourage AI R&D and innovation that also uphold human rights and universal values. It demonstrates our resolve in perfecting and maintaining our AI technology R&D environment.

Measure 3-5

Establish data classification and data governance standards

Reasons for implementation:

1. Fintech services mostly involve the use of data. But there are many different types of data or data with different attributes. The quality of data provided by each institution also differs. Data in different conditions, for example, whether the data involve personal privacy, whether the data are value added or summarized and de-identified, should be governed differently. De-identified data or overall market data can be put under lightweight management without excessive protection.
2. In addition, there lacks clear standard operating procedures and rules for how data should be used by financial service providers. For example, is there a credible institution that verifies the data de-identification and operational integrity of the financial service provider.

Key actions:	Timetable
The Fintech Co-creation Platform, in consultation with peripheral organizations and academic/research institutions, will examine the cross-institution or cross-market data or types of data collected, processed or transmitted by financial service providers, and in reference to international practices, study the feasibility of classifying the data or subject the data to tiered management, and establish appropriate governance standards.	2023.8

Measure 3-6

Track the status of fintech development, study the establishment of subject-specific best practice principles, and enhance consumers' understanding of fintech services and associated risks

<table>
<tr><td colspan="2">Reasons for implementation:
1. Fintech aims to improve overall market efficiency. Thus in the development process, attention should be paid to whether a new technology or business model would produce adverse effect on financial market stability and risk management. For example, given the cross-border nature of fintech, identity verification and money laundering issues should be heeded, and make sure system design bias will not disrupt harmony in the society or normal and stable operation of life.
2. Consumers are an essential component of the fintech ecosystem. Thus consumers should know something about the convenience brought by the application of new technology or new financial service model and possible risks derived therefrom, and develop self-attention and sense of self-protection. When the public has enhanced awareness and sensitivity to personal data protection, it can alleviate the trust issue stemming from information asymmetry between digital financial service provider and consumer, which will in turn help expand the fintech service market.</td></tr>
<tr><td>Key actions:</td><td>Timetable</td></tr>
<tr><td>1. Peripheral organizations will, based on the status of fintech development, study and draft best practice principles (e.g. best practice principles for precision wealth management services) for issues such as processing of customer data and possible effects produced by different technologies or business models on consumers, market competition or stability.</td><td>2022.8</td></tr>
<tr><td>2. Work with relevant agencies and peripheral organizations to undertake publicity activities or provide publications that will help financial consumers learn more about fintech applications (e.g. new service providers, authorization and</td><td>2022.8</td></tr>
</table>

protection of personal data, risks associated with cross-border financial services), enhance their awareness to information security, and their self-attention and self-protection capability.	

(4) Capacity building

Current status:

A. According to the survey conducted by the Taiwan Financial Services Roundtable ("TFSR"), total investment of domestic financial institutions on fintech amounted to NT$16,516 million in 2019, an increase of 40.32% as compared to NT$11,730 million in 2018. The ranking of different industries by investment is banking, insurance, and securities and futures. The percentage of employees of financial institutions whose job is fintech related grew from 2.44% (7,602/311,500) in 2018 to 2.87% (8,824/306,995) in 2019. While the total workforce of financial institutions is reduced, the number of employees engaging in fintech related work bucks the trend and grows, indicating the increasing importance of fintech in the financial sector.

B. The 2017 survey of supply and demand of fintech talents conducted by the FSC shows that 92.68% of insurance enterprises, 64.7% of securities firms, and 56.78% of investment trust and consulting firms reported shortage of talents with fintech skills. In the 2018 survey, 78.77% of insurance enterprises, 65.1% of securities firms, and 60.36% of investment trust and consulting firms reported shortage, indicating there is an increase of fintech talents working in the insurance sector. However in comparison with other industries, the insurance industry is still faced with a higher percentage of workforce shortage, while the shortage edges up slightly for securities industry and investment trust and consulting industry. Banks on the other hand are in a better condition. Only 15% of banks surveyed in 2018 reported fintech workforce shortage.

C. As for fintech occupational competency standards, currently only the banking industry has set out competency standards for product designer, systems designer, data analyst, digital marketing specialist, and risk management specialist, whereas other industries do not have such standards established.

D. Currently fintech specialty has not been included in the qualification requirements for responsible persons of financial institutions as stipulated in the Regulations Governing Qualification Requirements for the Founder or Responsible Persons of Financial Holding Companies and Concurrent Serving Restrictions and Matters for Compliance by the Responsible Persons of a Financial Holding Company, Regulations Governing Qualification Requirements and Concurrent Serving Restrictions and Matters for Compliance by the Responsible Persons of Banks, Regulations Governing Responsible Persons and Associated Persons of Securities Firms, Regulations Governing Responsible Persons and Associated Persons of Futures Commission Merchants, and Regulations Governing Required Qualifications for Responsible Persons of Insurance Enterprises.

Measure 4-1: **Study the establishment of a FinTech certificate system**
Reasons for implementation: 1. The financial sector in general is faced with the shortage of talents in financial information or digital finance. Currently there are academic and research institutions that offer training courses in related fields. But the training capacity and speed can hardly meet the demands in the field of

fintech app development. Moreover, domestic financial institutions still rely on foreign suppliers for their core systems and they themselves do not have enough software engineers. With limited investment in building a new technology workforce and behind in the transformation of existing systems, domestic financial institutions are unable to develop core competency and autonomy in app development or data management and utilization. The government should conjure up specific ways to assist financial institutions in talents training, promote the cultivation of all-round fintech talents and speed up capacity building. 2. Fintech is an important foundation for transforming and advancing the overall financial market. If there is a license examination system (including practical exam) coupled with supervisory incentives (e.g. expedited review of cases and fintech competition), it will call more attention of businesses, financial talents and academic/research institutions to fintech, and furthermore, promote the employment and training of fintech talents, as well as fintech R&D and applications. 3. The setup of certificate classification may attract people working in the fields of science and technology to find careers in the field of finance, and may drive resource preferential to areas with high industry demand but a technology skill or talent shortage. In addition, training and selecting people by using a practical exam approach may bridge the gap between learning and application in the hope to foster trainees' ability to immediately apply what they have learned to their jobs.

Key actions:	Timetable
1. The Fintech Co-creation Platform, in consultation with financial service providers, peripheral organizations and academic/research institutions, will design jointly the classification of fintech license and types of exam	2021.8

(including practical, qualifications, scoring criteria, etc.), and plan corresponding training courses, books and promotional methods.	
2. The FSC will study the addition of fintech cirtificate requirements into relevant rules and regulations, and offer incentives or conditions for approving new business (e.g. expedited trial application review).	2022.8
3. Publicize the certificate exams for financial professionals and fintech specialists, and encourage financial service providers to employ licensed professionals.	2022.12

Measure 4-2 **Study the adjustment of qualification requirements and competency standards for legal representatives of financial institutions**
Reasons for implementation: 1. Currently the qualification requirements for chairperson and president of financial institutions emphasize their work experience at financial institutions. But as financial technology evolves rapidly and more and more emerging technologies are used in financial services, confining the qualifications of responsible persons to finance only probably will not aid the holistic and forward-looking development of an institution. 2. The development of digital service and the application of new technologies such as AI and blockchain in financial sector would need an information technology workforce. Thus the qualifications and competency standards for financial professionals should also be reviewed and adjusted. 3. The relaxation of the qualification requirements for responsible persons and officers at certain positions of financial institutions can bring new ideas to a business and promote the innovation of financial sector.

Key actions:	Timetable
1. The FSC will review the administrative rules concerning responsible persons of financial institutions and consider adjusting the professional qualification requirements for responsible persons and officers at certain positions in respective industry of the financial sector in the direction of including the qualifications of cross-disciplinary specialists (including specialty in technology and information) to meet the needs of digital finance development.	2021.8
2. FSC bureaus in charge of respective industry will review the competency standards for fintech related jobs as reference for future recruitment and training.	2021.12

Measure 4-3: **Enhance industrial-academic cooperation mechanisms**	
Reasons for implementation: Digital transformation is an irreversible trend in the financial sector. For a smooth transition to digital, related finance practitioners must be equipped with cross-disciplinary knowledge in finance and technology. To cultivate and expand the fintech talent pool, not only existing finance professionals should undergo training but industry-academia collaboration programs should be encouraged to let students learn leading technologies and practical skills early so they can make up for the shortage in qualified fintech talents in the financial sector when they are out of school.	
Key actions:	Timetable
1. The Fintech Co-creation Platform together with academic/research institutions will offer fintech practical	2021.12

training programs, develop workshop models, and enhance industry-academia collaboration to cultivate a wide range of finance and tech professionals, and invite people with practical experience in finance to join the programs.	
2. The Fintech Co-creation Platform, in consultation with academic/research institutions in other markets or fields, will develop cross-disciplinary and cross-industry training programs that also include practical training to meet the needs of industry.	2022.8

Measure 4-4: **Establish FinTech learning maps for regulators**	
Reasons for implementation: Through new business models and enabling technologies, fintech improves financial service process or provides consumers with fast financial services or products that meet their needs. However there may be risks or potential unknown risks associated with fintech development. To help regulators understand fintech, development trends of new business models, possible risks arising from reforms, and effects on financial consumer protection and prudential supervision of the overall market, a learning map for regulators should be created to make sure fintech supervision stays relevant to market practices and ensures steady and orderly development of the overall market.	
Key actions:	Timetable
Work with the Fintech Co-creation Platform to plan the creation of a fintech learning map for regulators, which covers fintech activities, enabling technologies and supervisory measures, arrange fintech capability building courses, set suitable class hours and encourage regulators to	2021.12

complete learning specified in the map.	

(5) Digital infrastructure development

Current status:

1. Along with fintech development and the continuing innovation of digital financial services, and more recently, the impact of Covid-19 pandemic, there has been increasing consumer demands for mobile or all electronic account opening and transaction services. Logging into a financial service related webpage or app needs to go through identity authentication. Currently most identity authentication is done by entering account password. However password based authentication has many problems, such as inadequate security, password being stolen, forgotten password and leak of account password that may result in loss to customer's assets.
2. To address the aforementioned problems, service providers hope to combine biometrics with mobile devices to develop a mechanism that enables simultaneously identity authentication and e-signature to get prepared ahead of time for strong demands for not-in-person services in the post-pandemic era. However it is a common issue of concern for all financial market participants as to how to verify in a non-face-to-face manner that the service user is the customer or a person authorized by the customer while taking into account personal data protection, and that there is interoperability between identity management solutions.
3. FIDO (Fast Identity Online) Alliance is a non-profit industry alliance. Its mission is focused on providing a set of open and interoperable standards for all kinds of digital services so as to address the lack of interoperability among authentication solutions and to address the problems that may arise from the conventional way of relying on passwords to authenticate users. The advantage of the FIDO model is to separate identity

"verification" and "identification." "Verification" is performed using biometrics at user device, which initiates the asymmetric public key/private key cryptography to undergo online "identification" to ensure secure access. The FIDO server only stores the public key, not the password or private key or any biometric information of users. Thus there is no privacy issue with the FIDO model.

4. The Ministry of the Interior has constructed and launched the Taiwan FidO service (TW FidO) in accordance with the FIDO protocols. After a person uses his Citizen Digital Certificate to register as a TW FidO member, he can start using the app provided by TW FidO and log into many government websites via biometric authentication to obtain personal services without using password or Citizen Digital Certificate and a card reader for identity verification. Currently TW FidO allows connection by government agencies only. It is not yet open to commercial applications.

5. Currently domestic banks verify the identity of their digital deposit account holders using Citizen Digital Certificate, credit card, or deposit account that does not require handwritten signature. As for identity verification via mobile authentication, banks can start adopting that authentication mechanism after Bankers Association has published the amendment to the Standards for the Security Management Operation of Electronic Banking Business of Financial Institutions.

6. There are specific rules for securities firms, futures commission merchants, and investment trust enterprises with regard to identity authentication of new online account holders, including the FSC Standards Governing Principal Identification and Management of Credit Line Categorization in the Processing by Securities Firms of Account Opening, TAIFEX letter No. Tai-Qi-Fu-Zi-10504000820 dated 2016.02.04, National Futures

Association's Guidelines for Electronic Transactions of Futures Trust Funds, Article 12-1 of Securities Investment Trust and Consulting Association's Rules Governing Matters Related to Beneficial Interest Certificates and Guidelines for Internal Management System of Securities Investment Consulting Enterprises Engaging in Securities Investment Consulting Business.

7. However the identity authentication methods stipulated in the aforementioned rules or regulations still require physical identity authentication or use physical Citizen Digital Certificate supplemented with video call before investors can receive services on a mobile device. For customers who have not gone through physical identity authentication, the types of account they can open and the types of transaction they can engage in are limited. Such limitation could impede business innovation or promotion. Thus the industry suggests allowing more identity authentication methods (e.g. mobile ID or VR) that enable customers to go through secure authentication on their mobile phone for the opening of a digital account and engaging in transactions.
8. In addition, except for futures and investment trust and consulting businesses, the authentication methods for online account opening and transactions mostly are not applicable to corporate customers. In consideration that banks are unable to authenticate online documentation required for corporate account opening, such as articles of incorporation and beneficial ownership, but need to do it manually, that means the time, speed and convenience of authentication cannot be effectively improved. Banks are also faced with the risk of false-identity account opening, and hence are offering online account opening to sole proprietorships only at the present time. Also, corporate account holders engage in a variety of transactions and it is inappropriate to limit the transaction amount of

corporate accounts. Thus it is the objective of future undertaking to introduce a corporate online account opening process that takes into account the convenience of account opening and making transactions as well as secure and effective authentication.

Measure 5-1: **Develop a standard mechanism for mobile identity verification**	
Reasons for implementation: 1. To address the inconvenience of having to use physical identification or account password first for mobile identification, the Ministry of the Interior has introduced the Taiwan FidO service, which however is open to government agencies for linkup but not for commercial applications at the present time. Mobile identification and authentication is the first hurdle for entering the era of digital finance. If there is a set of industry standards that allow more non-physical verification mechanisms or non-account passwords to interoperate so as to make it convenient for customers to go through identification process for financial services, it will help reduce a significant amount of hassle for customers and accelerate the development of digital financial services. 2. Currently financial certificates (including identification and transaction authorization) needed for financial transactions in Taiwan are provided by TWCA and ChungHwa Telecom Financial User Certification Authority. The financial certificates they provide are used in online placement of stock order and access to online banking and online insurance services. Thus at least two companies have the capability to build a standard mechanism for mobile identification.	
Key actions:	Timetable
Facilitate financial institutions to jointly organize a financial	2021.8

mobile identity authentication alliance to study the adoption of FIDO standards. In the early stage, standards of general functions of mobile identification and authorization for low-to-medium risk financial services will be established. Financial institutions will then apply to the FSC for approval to conduct a business trial to validate the feasibility of using FIDO for identity verification for low-risk services.	

Measure 5-2: **Allow online corporate account opening**	
Reasons for implementation: Small and medium businesses make up a lion's share of Taiwan's business community and the key driving force behind economic development and employment. According to the White Paper on Small and Medium Enterprises in Taiwan, 2019, there were 1,466,209 small and medium enterprises in 2018, accounting for 97.64% of all businesses. After the outbreak of Covid-19 pandemic, traditional business model is gradually transformed to electronic business. Thus the government should take swift action to make it easy for SMEs to open online service account while taking relevant risk management into consideration. It should help SMEs grasp business opportunities more rapidly when the economy recovers.	
Key actions:	Timetable
1. Evaluate relevant risks and management mechanisms in reference to the practices in other countries that allow online opening of business account, and ask Bankers Association to study the gradual relaxation of online account opening by businesses in view of the risks associated with electronic transactions and establish management mechanisms.	2022.8

2. Encourage financial institutions to connect to National Development Council's MyData and obtain the data of potential customers from government agencies after receiving customer consent to facilitate online account opening by businesses.	2022.8
3. Examine and evaluate whether current restrictions on digital deposit account are reasonable, and whether there are apps or management mechanisms available to help reduce the inconvenience of online account opening.	Ongoing

(6) FinTechSpace ecosystem development

Current status:

1. FinTechSpace, the physical co-working space built by the Taiwan Financial Service Roundtable (TFSR) under the guidance of the FSC, has been in operation since September 18, 2018. Aside from providing startups with resources for their early operation (e.g. rent subsidy, digital sandbox, compliance and information security diagnostics, as well as accelerator program, etc.), FinTechSpace also collaborates with industry, academia and research institutions, and enhances global connections to assist startups in exploring new business opportunities. As at the end of June, 2020, a total of 63 startups have stationed in the Space cumulatively since its inception, whereas currently, there are 43 startups stationed in the Space, including 6 international teams from Japan, Hong Kong and Philippines respectively.
2. By building a comprehensive fintech innovation ecosystem, FinTechSpace offers fintech startups with development resources, including the signing of startup resources exchange and cooperation

agreement with UK, Australia, Poland and France that give startups the opportunity to collaborate and share with each other. FinTechSpace also provides the digital sandbox mechanism and provide data to startups for testing and development of business model. It has entered cooperation with 16 businesses with regard to the provision of data and 32 sets of API for empirical study on the subjects of "robo-advisor", "IoT finance", "digital identity verification", and "open finance." FinTechSpace has also held 115 sessions of regulatory clinic to provide advisory service to 54 startups, helping them clarify any compliance questions that may arise from the new technology or business model they use and quickly find viable solutions.

Measure 6-1: **Establish mechanisms for field experiment in FinTechSpace**
Reasons for implementation: 1. In the effort to grasp market opportunity or accelerate the innovation cycle, many new projects initiated by a financial institution, a startup or a partnership of both may tread on legal gray areas. If FinTechSpace can be used as a test arena for innovative finance that offers a confined area with controllable risks and expert advice available, it should enable innovative projects to test the marketability of a new product or service in a speedy manner, make adjustment and determine its launch schedule. It will also enable regulators to get a better hold on associated risks and give financial institutions and startups more incentives to work together, while reducing the resources both parties have to put in. 2. Many startups collaborate with several financial institutions concurrently to develop platform-based services and the empirical study results obtained in

FinTechSpace can then be used as reference when the service provider applies to the FSC for regulatory sandbox or business trial in the future.	
Key actions:	Timetable
1. FinTechSpace will plot out the field experiment mechanisms, including participant qualifications, nature of projects that can undergo empirical study, advisory process, the empirical study operation and provision of resources, and methods for observing or examining the study results.	2021.12
2. Promote the aforementioned field experiment mechanisms and assist stationed startups to collaborate with the financial institutions participating in the FinTechSpace's Innovative Lab to work out new products or services in line with the mechanism.	2021.12

Measure 6-2: **Expand the domain and functions of FinTechSpace**
Reasons for implementation:
1. FinTechSpace has been in operation for nearly two years. Its functions and performance have been well recognized by startups and financial institutions alike. However, with limited space, it can only serve a limited number of startups and whereas it is unable to accommodate and advise more fintech startups, their development could also be constrained. In addition, in considering balanced development across the island, if there are demands for fintech hubs in central or southern Taiwan, the FSC may assess the establishment potential of another hub in collaboration with the local government in that area.
2. When seeking collaboration with financial institutions, a startup is often

questioned by its potential partners for its capability to ensure information security and required to obtain ISO 27001 certification as a proof. However, the costs of constructing a business environment that conforms to the aforementioned international standards could be a heavy burden for a startup. Thus, if FinTechSpace can build its physical environment meeting the standard, startups can become complying once they move in, which will greatly reduce their one-time construction costs and enhance their operational efficiency.	
Key actions:	Timetable
1. FinTech Innovation Center will work with the TFSR to seek assistance from relevant agencies or local governments in search of a suitable site to expand the existing one or to build another new hub in central or southern Taiwan.	Depending on availability, the site will be determined before 2023.12 in principle
2. Build a physical ISO 27001 conforming security control environment, possibly at the expansion site in the future.	Proceed in coordination with the aforementioned site expansion plan (2023.12)

Measure 6-3: **Set up a startup directory**
Reasons for implementation: Fintech related businesses come in different sizes, and their scope of business spans across payment, online lending, crowdfunding, robo-advisor, insurance technology, artificial intelligence, blockchain, etc. However, there's currently

lack of complete statistical data and directories set up for them in Taiwan. It puts financial institutions at a disadvantage when they try to look for strategic partners or fintech related investment. In addition, it may also be difficult for relevant stakeholders to obtain a comprehensive overview on the status of the fintech ecosystem development. Thus, if there is a fintech startup directory, it can be made available to all players in the ecosystem, who can then find suitable partners and jointly create synergy in fintech development.

Key actions:	Timetable
FinTechSpace will be asked to establish and maintain fintech startup directories based on different business models or technical services.	2021.12

Measure 6-4:

Expand the participants of regulatory clinic and coordinate common issues in a full-fledged approach

Reasons for implementation:

1. The Regulatory Clinic established in FinTechSpace works effectively and is well received. However, when a service provider is promoting a fintech related product or service, it occasionally runs into cross-industry issues or involve multiple government agencies. In such event, the service provider itself must clarify which agencies are in charge and then contact and communicate with each such agencies, which is labor intensive and time consuming. Thus, it is suggested that if relevant government agencies and/or peripheral organizations are invited to participate in the Regulatory Clinic and give their views on those issues, communications during the Clinic session will be more efficient.
2. Regulatory Clinic is held on a one-on-one basis, which handles the compliance questions of one stationed startup at a time. This way, it can prevent the

leakage of business secrets. However it is also suggested that if stationed startups have some common questions, Regulatory Clinic can increase its sessions or hold theme-based forums to answer those questions and render its operation more effective.	
Key actions:	Timetable
1. FinTechSpace will evaluate the needs of its stationed startups, and if necessary, discuss with the FinTech Innovation Center first. If the compliance questions of a startup involve other peripheral organizations or government agencies, the FinTech Innovation Center can assist in inviting relevant agencies, peripheral organizations or relevant associations to attend the Clinic sessions.	Ongoing
2. FinTechSpace will survey the needs of its stationed startups and hold from time to time theme-based forums, inviting relevant businesses and/or government agencies to attend and communicate their views on fintech related regulations or fintech development matters.	Ongoing

Measure 6-5: **Assist startups in fundraising and pitch & match**
Reasons for implementation: A startup needs to invest significantly on R&D and growing business in the initial stage. But it also lacks partners or track record for reference in the initial stage of operation, which tends to make its fundraising difficult, and thereby affecting its development. Thus pitch & match activities should be held to attract venture capital and assist startups in gaining visibility and obtaining funds.

Key actions:	Timetable
1. Help startups gain exposure and cooperation opportunities through activities such as FinTech Award and FinTech Taipei Exhibition.	Ongoing
2. FinTechSpace will hold more pitch & match events to help residents find investors, such as National Development Fund or venture capital firms.	Ongoing

Measure 6-6: **Organize fintech awards**
Reasons for implementation: 1. The emergence of fintech has created more products and services that satisfy the needs of consumers in different stages at different time periods, thereby creating value. But maintaining the value and winning the enduring trust of consumers or investors can only be achieved through the concerted efforts of all participants in the ecosystem. To encourage all players in the ecosystem to demonstrate their potential, there should be a proper incentive mechanism, which on the one hand acknowledges their contributions and on the other hand increases their visibility. It will strengthen interconnections within the ecosystem and enable fintech to develop more rapidly and soundly under the support of multiple forces. 2. Services developed by startups sometimes do not effectively solve the pain points in the financial market due to information asymmetry, thereby affecting the fintech development. Thus it is suggested that opinions may be collected regarding information on challenges faced by service providers or encountered by consumers when they provide or receive financial services, and pain points be complied to be addressed in market development. Through competition or other programs, startups can team up with financial

institutions to solve those pain points or problems and even undertake R&D.	
Key actions:	Timetable
1. The Fintech Co-creation Platform will join the forces of FinTechSpace, peripheral organizations and private resources to plan and hold fintech awards, and develop relevant evaluation criteria and indicators. The awards will be categorized according to the types of players in the ecosystem. 2. Study the inclusion of fintech solutions competition in the aforementioned award mechanism. The Fintech Co-creation Platform will join the forces of peripheral organizations and/or private resources to collect information on the pain points faced by digital services in the financial market and plan solutions competition.	2021.12 2021.12
3. Hold fintech related request-for-proposal awards, evaluation and solutions competitions.	2022.6
4. Publicly render awards to organizations or individuals with outstanding contribution to innovation, education, R&D, compliance, investment, cooperation, publicity and applications in the field of fintech.	2022.12

(7) International Networking

Current status:

1. The FSC has been actively interacting and collaborating with other countries on fintech related matters. For example, the FSC signed MOUs regarding cooperation for fintech developments with Poland and US State of Arizona in 2018, subsequently with France in 2019 as well as with eight members of the Canadian Securities Administrators in June

2020. It also became a member of the Global Financial Innovation Network (GFiN) in May 2019 and joined the cross-border testing and RegTech workstreams of the Network. Through these MOUs and participation in international organizations, the FSC can make referrals of foreign startups, share information and promote joint innovation projects to boost fintech development.

2. For the purposes to attract talents, venture capital and technologies to fintech as well as to create more pitch & match opportunities through exchange and exhibits, the FSC, in collaboration with the TFSR and Taiwan Academy of Banking and Finance, has been holding Fintech Taipei exhibitions twice since 2018, which drew altogether more than 80,000 attendees, including businesses and visitors, to attend. The FSC will continue to hold the event to increase the international visibility of fintech startups and create more cooperation opportunities for them.

<table>
<tr><td colspan="2">Measure 7-1:
Foster international-calibre fintech teams and enhance oversea business expansion</td></tr>
<tr><td colspan="2">Reasons for implementation:
Taiwan has many financial institutions and fintech startups having excellent ideas and knowhow for digital financial services, and the business models they propose are feasible and well accepted in the market. However due to inadequate publicity and limited financial resources, it is difficult for them to expand their business overseas. Thus effort could be put in to select and foster such service providers and navigate them to expand business overseas while enhancing the visibility of Taiwan’s achievements in fintech development.</td></tr>
<tr><td>Key actions:</td><td>Timetable</td></tr>
<tr><td>1. The Fintech Co-creation Platform will invite experts,</td><td>2022.8</td></tr>
</table>

scholars and relevant units to select and train international fintech teams, as well as to assist them in developing domestic and foreign markets and participating in competitions so as to foster international-calibre innovative service providers.	
2. FinTechSpace will create and maintain an overseas investors database and establish cooperative relationships with foreign law firms to help businesses in Taiwan analyze and deal with compliance, market and business issues in foreign markets.	2022.8
3. The Fintech Co-creation Platform and FinTechSpace will provide assistance to international teams with regard to legal consultation on foreign laws and regulations, and use the resources of embassies and missions abroad and Taiwan accelerator program to enhance the global reach capability of international teams, assist them in participating in trade shows, and provide them with marketing subsidy.	2022.8

Measure 7-2: **Recruit and select fintech image ambassadors and advertising/promotion staff**
Reasons for implementation: The UK has business ambassadors who are successful business leaders and work with the government to promote UK's trade and investment opportunities to help secure inward investment to the UK. Taiwan also has sound policies, ecosystem and fintech companies for which we may take reference from the UK model to enhance the promotion of our fintech related achievements both domestically and abroad to facilitate the attraction of

talents, technologies, funds and business opportunities to Taiwan so as to augment the international visibility of our fintech industry.	
Key actions:	Timetable
The Fintech Co-creation Platform, with assistance from peripheral organizations and academic/research institutions, will recruit and select fintech image ambassadors and advertising/promotion staff (from the sectors including industry representatives, FinTechSpace, academia/research institutions, regulatory authorities, and peripheral organizations) and provide them with relevant information or training to enhance their publicity skills and knowhow.	2022.8

Measure 7-3: **Continue to organize Fintech Taipei exhibition or forum to demonstrate the achievements of FinTech development**	
Reasons for implementation: For the purposes of showing the public how fintech affects the lives of financial consumers and creating business opportunities, attracting venture capital and talents for financial service providers, as well as keeping abreast of the global trends in fintech development, it is best to continue holding Fintech Taipei exhibitions or forums that will focus on specific themes and increase the visibility of service providers.	
Key actions:	Timetable
The FinTech Innovation Center will direct the TFSR and Taiwan Academy of Banking and Finance to hold Fintech Taipei exhibition that targets mainly the public or a forum that targets mainly professionals once every year to explore important fintech issues and showcase Taiwan's achievements in fintech	Ongoing

development.	

Measure 7-4: **Strengthen exchange and develop business opportunities through cooperation**
Reasons for implementation: 1. Most fintech solutions have cross-border or cross-disciplinary applications. We should make better use of the established channels, such as fintech MOUs signed with other countries, to forge cross-border regulatory cooperation or assist fintech companies in developing business opportunities, strengthen substantive exchange with other countries to leverage the benefits of cooperation agreement. 2. FinTechSpace is already offering an "international startups soft-landing" program and holds "exchange activities" to attract foreign startups to Taiwan. It also assists financial institutions or startups that intend to expand business overseas in developing business opportunities through cooperative channels.

Key actions:	Timetable
Take the initiative to identify the needs of domestic digital financial service providers in expanding cross-border business and engage in dialogue with countries that have signed cooperative agreement with Taiwan (including GFiN) to discuss the possibility of cooperation or conducting cross-border testing.	Ongoing

(8) SupTech and RegTech development

Current status:

1. The FSC has formed a "Digital Regulatory Reporting Mechanism Promoting Task Force" in 2019. The Task Force collaborates with Central

Bank and peripheral organizations to discuss the future development of supervisory technology, aiming to enable automatic output of regulatory data and enhance the efficiency of regulatory by leveraging API, data warehouse, big data, interactive dashboard and other emerging technologies.

2. The UK Financial Conduct Authority (FCA) has been hosting TechSprint events since 2016. This twice a year event invites industry, government and academia experts from across and outside of financial services to discuss subjects named by FCA that are related to the digitalization of financial supervision. In addition, G20 and BIS Innovation Hub (BISIH) jointly announced the G20 TechSprint competition[14] in April 2020 that aims to explore the potential of new technology to tackle regulatory and supervisory challenges. BISHI will publish selected problem statements and invite participants to develop technological solutions.

Measure 8-1: **Advance digital supervision mechanisms**
Reasons for implementation: 1. Since the 2008 financial crisis, financial supervisors around the world are posing increasingly stringent compliance requirements on financial institutions. To reduce the costs of compliance and bring about compliance process automation, many supervised financial institutions opt to adopt regulatory technology (RegTech). Later on as digital financial services become prevalent, financial regulators, for the sake of financial stability and risk mitigation, need massive amount and real-time data for supervisory reference. Thus it is pressing for regulators to introduce effective data collection and analysis mechanism and to automate, digitize and

[14] https://www.bis.org/press/p200429a.htm

intelligentize the supervisory operation as the foundation for prudential supervision, conduct administration and policy or measure formulation (SupTech).

2. It is now an international trend to promote SupTech. UK FCA and businesses jointly develop digital supervisory system and use blockchain or API to achieve the purpose of supervision so as to build a sound and innovative financial environment more efficiently.
3. Locally, the FSC should continuously assist financial institutions in adopting innovative compliance tools, processes or platforms to enhance the quality and efficiency of financial supervision and lower systematic risks.

Key actions:	Timetable
1. The Fintech Co-creation Platform will seek the assistance of peripheral organizations in promoting the digital regulatory reporting mechanism, which will be implemented in parallel with the current reporting mechanism and promoted in stages to regulatory reporting by Internet-only banks (short-term), bills finance companies (medium term) and banks (long-term).	Ongoing
2. The FSC will evaluate the needs for automated, digital and intelligentized financial supervision.	2020.12
3. Based on the aforementioned evaluation results and in reference to the practices and technology availability in other countries, the FSC will seek the assistance of peripheral organizations and private resources to study the staged implementation of digital supervision.	2022.8

Measure 8-2:

<table>
<tr><td colspan="2">Organize the Taiwan RegTech Challenge to promote SupTech development</td></tr>
<tr><td colspan="2">Reasons for implementation:
1. Along with the fintech developments in private sectors, the public also expects the regulators to keep up with the corresponding development of Suptech. Holding activities such as TechSprint not only address the pain points and needs of the regulators and businesses over financial supervision, brainstorming in the activities can also help generate feasible solutions.
2. To speed up the development of SupTech solutions through competitions, the government can invite cross-disciplinary experts at home and abroad to identify practical supervisory issues and openly solicit proposed solutions from startups with mature technology.</td></tr>
<tr><td>Key actions:</td><td>Timetable</td></tr>
<tr><td>1. The FinTech Innovation Center will invite the TFSR and Taiwan Depository & Clearing Corporation (TDCC) to host the Taiwan RegTech Challenge event. For which, they will outreach to the regulatory authorities and financial institutions to identify the supervisory pain points and compliance needs, seek advice and suggestions from scholars and experts, openly solicit SupTech/RegTech solutions from both domestic and foreign firms, and lastly choose and reward the winners.</td><td>2020.12</td></tr>
<tr><td>2. For the outstanding solutions won out in Taiwan RegTech Challenge, the organizer will assist in the adoption of relevant applications by regulators and financial institutions.</td><td>2022.8</td></tr>
</table>

V. Conclusion

The emergence of fintech has created more products and services that satisfy the needs of consumers in different stages at different time periods, thereby creating value. However, maintaining the value and the hard earned brand name and winning the enduring trust of consumers or investors can only be achieved through the concerted efforts of all participants in the fintech ecosystem. The core of digital transformation of financial services lies in digital trust. Digital trust comprises the elements of security and safety, consumer privacy and reliability. These are also the key considerations when the FSC formulates the Fintech Development Roadmap.

A journey of a thousand miles begins with a single step. For fintech development, we must dare to dream in order to take it to the next level. At the same time, we need to enhance communication, establish partnerships and create accountability systems. Fintech products and services should not be inherently discriminatory against any person because of religion, race, sex, geographic location or income. Thus, when the market leverages fintech, it should pay greater attention to the issues of ethics and morals that the technology must be human-centered with “benefit others” as its axis in order for the technology to develop in the right directions that take into account of humanity and moral values.

From the perspectives of “technology serves the needs of people” and “financial innovation can bring about a better society”, fintech development policy should take the moral high ground for “With great power comes great responsibility.” Individuals and firms interested in developing financial technology should cherish and make good use of the power and resources at hand and work in concert to help steer Taiwan’s fintech on a path of steady and sustainable development.