

Annex B:

# Individual Economy Reports

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## **AEPR 2019: Structural Reform and Digital Economy**

### **Individual Economy Report Questionnaire**

This year's AEPR aims to discuss the linkages between structural reform and the digital economy, with a focus on analyzing how structural policies can help unleash the potential of the digital economy and contribute to a balanced, inclusive, sustainable, innovative and secure growth. As an important aspect of the AEPR, the Individual Economy Reports (IERs) provide an opportunity for economies to identify ways for structural reform to enhance the contribution of the digital economy to their economic growth. The IERs will be incorporated into the report, and will contribute to developing a broader picture of the lessons, gaps, challenges, and opportunities in implementing structural reform pertaining to the digital economy in the region. It will also contribute towards identifying avenues for regional cooperation and capacity building.

For the purposes of the questionnaire, we define structural reforms for the digital economy as reforms relating to: regulatory and legal framework, competition policy, public sector governance and management, ease of doing business. Policies are included if their ultimate aim is to contribute to the development of and promote inclusive growth in the digital economy. Balanced, inclusive, sustainable, innovative and secure growth are as defined in the APEC Leaders' Growth Strategy<sup>1</sup>.

Examples include horizontal structural reforms and regulatory sandboxes, as well as those in specific sectors such as financial (including Fintech, Regtech and Suptech) and public services sectors. Economies may also wish to refer to the EC paper on three approaches of structural reforms for inclusive growth. Where an economy plans to provide a case study that it also wishes to use in this IER, the economy may cross-refer to that case study.

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<sup>1</sup> [https://www.apec.org/Meeting-Papers/Leaders-Declarations/2010/2010\\_aelm/growth-strategy.aspx](https://www.apec.org/Meeting-Papers/Leaders-Declarations/2010/2010_aelm/growth-strategy.aspx)

## Questionnaire

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

**3a. (Specific to Financial Sector) Best Practices:** Of the structural reform relating to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Regulatory framework for Fintech
- Regulatory framework for cryptocurrency
- Regulatory sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments

- International remittances
- Personal and business loans
- Robo-advisors
- Cloud computing,
- P2P lending platform
- Use of open data on financial services
- Open Banking
- Others, please specify: \_\_\_\_\_

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

## AUSTRALIA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
  - Competition policy
- Public sector governance**
  - Ease of doing business
  - Others, please specify: \_\_\_\_\_

**Scoping and Measurement of the Digital Economy:** A key barrier to implementing structural reforms for the digital economy is in identifying and measuring the potential gains and risks from changes in the digital economy. Difficulties quantifying the benefits of digital reform make it challenging to prioritise between projects and to communicate the benefits of the digitized economy to the public, which is concerned about potential risks.

**Regulatory and Legal Framework:** In the rapidly evolving digital economy, getting the balance between supporting innovation and regulating effectively is harder than ever. New technologies and business models emerge quickly and are difficult to forecast, rendering existing regulations redundant. Legislation needs to be tailored to innovative digital practices, including through technology-neutral and principles-based approaches; and regulation needs to be fit-for-purpose, outcomes-focused, adaptable and prepared for rapid change. If the regulatory system unnecessarily impedes business innovation, businesses may not adopt new technologies to grow and create jobs. Inconsistent regulations and standards are also costly to Australian businesses that need to operate across multiple jurisdictions; having consistent or equivalent regulations and standards across the economy, especially where these are aligned with international standards, helps researchers and businesses to quickly apply new technologies. The cross-border nature of the digital economy requires greater international regulator coordination and cooperation. Australia is at the forefront of shaping international rules and standards through many channels. For example, Australia is working to update international trade rules on e-commerce through the WTO and Australia's Free Trade Agreements, to ensure they keep pace with technological change. Through Standards Australia, Australia is also leading the development of international standards for blockchain, and contributing funding to the development of those standards.

**Public Sector Governance:** Systemic barriers to data sharing and use, including legislative, technical and cultural barriers, inhibit government agencies' abilities to share and realise the full potential of public sector data. Addressing these barriers will enable governments to harness the full potential of public sector data, and support broader structural reforms relating to the digital economy. Building public trust and confidence in governments' use of data is a key challenge. Media coverage of Australian Government initiatives such as *My Health Record* and the *2016 Census* increased public awareness of government data activities, and raised public concerns around use of data. The 2017 Productivity Commission's Inquiry (PC Inquiry) into Data Availability and Use highlights gaps and barriers to better public data sharing, including over 500 secrecy provisions restricting the sharing of public sector data. The report provided approximately 42 recommendations on how to reform the Australian data system to better facilitate the sharing and release of data. On 1 May 2018, in response to the PC Inquiry, the Australian Government announced an AUD65 million investment to implement a suite of reforms to improve the way data is accessed, shared and released, and to improve safeguards in our data system. These reforms are outlined in Question 3.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

Australia is taking action to target policy gaps relating to data sharing and digital identity. We also recognise international standards and digital trade rules as a significant gap in enabling the growth and effective regulation of the digital economy.

**Digital Identity:** Australia’s Digital Transformation Agency (DTA) is currently developing the Trusted Digital Identity Framework, to support safe and efficient (e.g. interoperable) digital identities. This framework will ensure businesses, individuals and government agencies are identifiable online, and users feel assured that they are engaging in low risk, transparent interactions with actual service providers.

**Data Sharing and Management:** Australia is also developing frameworks to enable consumers to access and share personal data held by government and businesses. The proposed Consumer Data Right (see Q3), an extension of Open Banking, seeks to develop a framework to empower consumers to authorise safe and secure transfer of information between businesses that hold data, and digital service providers. The proposed Data Sharing and Release Act is a framework for use between government bodies and research organisations, and will allow consumers to access and use their government-held data.

**International Cooperation on Digital Rules and Standards:** Australia recognises the need for the development of a framework to support international regulatory cooperation and coordination. International standards for the digital economy would help to increase certainty for digital firms operating across borders, lower barriers to entry and create an environment in which companies are more confident in making investments.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business
- Other: Data reforms, cyber security**

Reforms from the Productivity Commission’s Inquiry into Data Availability and Use: In May 2018, the Australian Government released its response to the Productivity Commission’s Inquiry (PC Inquiry) into Data Availability and Use. The Government announced a suite of reforms, which seek

to balance privacy and security concerns with the benefits of being able to share and use data more efficiently. Three key reforms under development are:

- establishing an Office of the National Data Commissioner (ONDC) and appointment of an Interim National Data Commissioner;
- developing a Consumer Data Right to give citizens greater portability over their own data; and
- developing Data Sharing and Release legislation to improve sharing, use and re-use of public sector data.

The ONDC will design and implement a new data sharing framework, underpinned by new legislation to remove barriers and build public confidence. The ONDC will work alongside existing regulators to ensure the framework encompasses strong privacy and security protections. Once the new framework is in place, the ONDC aims to monitor and review the effectiveness of the new data sharing framework through a number of mechanisms, including an annual report, public data registries, and an accreditation model for participants in the system. The ONDC will also drive cultural change across the public service and regulate the new data sharing system, by providing guidance and advocacy to promote technical best practice and ethical uses of data. The Consumer Data Right, under development, is a framework to allow individuals and businesses to access and share their personal or confidential information safely and easily. It creates a legal basis to extend the concepts behind Open Banking to other sectors such as energy and telecommunications. The intention of the Consumer Data Right is to address the policy gaps in access to data, and the competition effects that arise from control of this access.

**Public Sector Governance Groups on Public Data Management:** In addition to the above reforms, various senior executive governance groups in Australia monitor implementation of the Government’s data agenda: the Secretaries Data Group, Deputy Secretaries Data Group, and the Data Champions Network. These groups were established in 2015 as part of the Australian Government’s response to the Public Data Management Report. They continue to provide strategic direction to the data agenda, and promote collaboration across the federal government, ensuring a consistent approach and leveraging expertise across agencies.

**Cyber Security Strategy:** Cyber security is a foundational element of the digital economy, particularly in fostering trust and confidence in the online environment. In 2016, the Government released Australia’s Cyber Security Strategy to secure our prosperity in a connected world. The Strategy includes investments of more than AUD230 million across five pillars of action for the period 2016-2020: national cyber partnership; stronger cyber defences; global responsibility and influence; growth and innovation; and a ‘cyber smart’ nation. The Government’s recent review of the Cyber Security Strategy has found that between 2016-18, significant progress has been made across its five pillars, and that Australia’s comprehensive approach to cyber security has yielded economy-wide benefits. A 2017 update on the Cyber Security Strategy has also been published online.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an **effective example**? Please **select from the following categories and elaborate**. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech
- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes
- Digital Banking
- Crowdfunding platforms

**X Digital payments**

- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Other

**New Payments Platform (NPP)**

In February 2018, the Australian Government launched the New Payments Platform (NPP) to support open access, fast payments in Australia. The NPP was developed in collaboration with industry, to enable households, businesses and government agencies to make simply addressed payments, with near real-time funds availability to the recipient, on a 24/7 basis. Each payment message is capable of carrying much richer remittance information than other systems. The NPP infrastructure supports the independent development of 'overlay' services to offer innovative payment services to end-users. The effectiveness of the NPP is being assessed in terms of the relative volume of payments, the ability of payment providers to gain access to the NPP, and the functionality of the NPP. In April 2019, 16 million transactions were processed through the NPP, amounting to AUD13 billion. This is still small relative to the volumes that pass through other retail payment systems. Nevertheless, it is growing steadily, and at least as quickly as some comparable overseas fast payment services when they were first introduced. There has been broad participation by many small financial institutions. Customers of around 50 small banks, credit unions and building societies were able to make and receive fast payments from the first day of NPP's operation, and that number has since grown to nearly 70.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- X Risk management**
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)

**ASIC Internal Natural Language Processing (NLP) Trials**

*Financial Promotions NLP Trials:* The aim of the NLP Promotions Trial was to investigate the feasibility of automatic identification of risk across promotional material relating to consumer credit. A small subset of possible breaches of the National Credit Code (NCC) was examined during the trial. The rules developed perform well on the supplied samples (print and web banner advertisements) and were applicable to a broader web corpus of promotional material.

*Financial Advice NLP Trials:* ASIC manually reviews many financial advice files each year. In this trial, we investigated the application of NLP to Statements of Advice (SOA). Several Key Risk Indicators (KRIs) were studied, with the intention of extracting important information and aiding judgements as to the risk and compliance of the financial advice documents. Varying levels of success were achieved: simpler KRIs led to models with good accuracy while more complex and judgement-

based KRIs had lower performance. Our results suggest that, with appropriate investment, NLP has strong potential to assist staff in the financial advice review process.

*Disclosure and Fundraising Document NLP Trials:* ASIC investigated the application of NLP to Product Disclosure Statements (PDS) for financial products and fundraising documents for offers of securities. The aim was to investigate the potential of NLP to automatically prioritise PDS documents by level of compliance risk and extract key information from fundraising documents. This would reduce the number of documents for manual review and enable analysts to prioritise documents for review based on risk. During the trial an automated framework was developed that extracted text from PDF documents and applied NLP rules. A promising number of rules performed at high accuracy. With further development, the system could be deployed into a working platform.

*Market Announcements and Financial Reporting NLP Trials:* With over 100,000 market announcements made each year by publicly listed companies, it is not practical for ASIC to have complete oversight of information disclosed in all of the announcements. It is useful to be able to cluster similar types of announcements and classify them based on their content, so the analyst is then able to filter their analysis based on relevant topics. This trial focused on investigating whether document processing and NLP could be used to filter events from market announcements and extract certain financial statement line items in company financial reports.

More information on ASIC's NLP trials is available [here](#). More information on ASIC's Regtech Initiatives more broadly is available [here](#).

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

Australia's Digital Economy Strategy: In December 2018, the Australian Government launched its Digital Economy Strategy, 'Australia's Tech Future'. The Strategy sets out a seven year vision (2018-2025) for how businesses, government and the community can work together to maximise the benefits and opportunities enabled by advanced digital technology. The Strategy identifies the further actions required to ensure all Australians can thrive in a global digital economy. These include:

- ensuring education and training meets current and future needs;
- facilitating investment in enabling digital infrastructure;
- improving access to, and use of, data while maintaining strong data safeguards;
- improving trust, confidence and security around digital activities;
- ensuring regulatory frameworks are flexible, adaptable and fit-for-purpose;
- delivering digital government services that are secure, fast and easy to use; and
- championing an open, free and secure cyberspace internationally.

The implementation of the Strategy includes monitoring how Australia is tracking against our stated objectives and outcomes, in order to guide future policy priorities and efforts.

Regulatory Frameworks for Data Management and Sharing: As detailed in previous questions, the Australian Government is developing frameworks to support safe and efficient access to data held by government and businesses: the Consumer Data Right will increase the ability of consumers to access data about themselves collected by businesses; and the Data Sharing and Release Act will make it easier for individuals to access government data relating to themselves. Under these frameworks, individuals will be able to request that data be provided either to themselves or to accredited third parties. These reforms are expected to increase competition and provide a better standard of service for consumers.

**Digital Infrastructure:** Other initiatives to support the growth of the digital economy include improving Australia's digital infrastructure. The Australian Government has committed to delivering high-speed broadband to all Australian homes and businesses over the National Broadband Network (NBN) by mid-2020. Around 80 per cent of Australian premises can now order services over the NBN. Fifty seven (57) per cent have already taken up a service via the NBN. The Government's NBN commitment will see Australia become the first continent fully connected to high-speed broadband by 2020, thus ensuring all Australians will have the opportunity to participate in the digital economy, and benefit from its growth.

**E-government:** Finally, through the Digital Transformation Agency the Australian Government is working to digitalise government service delivery, making services easier to engage with and better tailored to individuals' needs. This will increase the efficiency with which the government can assist citizens, as well as the effectiveness of the services provided (see [Digital Transformation Strategy](#)).

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The Australian Government is reforming the digital economy in a way that promotes inclusivity and equality. For example, the Consumer Data Right (under development) will initially be applied to basic services, such as basic banking products, retail energy and retail telecommunications. This will help achieve better outcomes for vulnerable consumers. The Government's commitment to deliver high-speed broadband to all Australian homes and businesses over the National Broadband Network (NBN) by mid-2020 also supports inclusivity. As the NBN becomes available to more Australian homes and businesses, it will enable greater participation in the digital economy for all Australians. This is particularly important for those areas that have traditionally had poor broadband availability, such as regional and remote Australia.

However, there are significant challenges to ensuring that the benefits of reform are shared equitably, and that shifts to the digital economy do not unfairly impact disadvantaged or vulnerable groups of people. Due to the dynamic structure of the digital economy, understanding the flow of benefits to different groups is very difficult and can therefore make it hard to justify projects on equity or redistributive grounds. This can result in governments pursuing policies that are clearly beneficial to all cohorts, rather than those that particularly benefit marginalised groups. The findings from the recent OECD report 'Bridging the Digital Gender Divide' (commissioned by Australia) show that more needs to be done to address gender barriers in the digital world. These barriers sometimes relate to affordability and a lack of education, but inherent biases and socio-cultural norms represent significant barriers that obstruct women and girls from pursuing opportunities offered by the digital transformation.

The Australian Government is implementing a range of domestic policies aimed at encouraging more women to pursue STEM education and careers, and entrepreneurial opportunities. Since 2016, the Australian Government has invested significantly in boosting the participation of girls and women in Science, Technology, Engineering and Mathematics (STEM) education and careers. This includes the expansion of the Science in Australia Gender Equity (SAGE) pilot, support for the inaugural Women in STEM Ambassador, and a 'Girls in STEM' Toolkit to help school-age girls understand what a STEM career may involve and assist them to match their interests to a STEM career. The Future Female Entrepreneurs Program is supporting and enabling the development of women entrepreneurs at an early stage. Through a digital platform, in-person workshops and mentoring, young women and girls will have the opportunity to learn the skills required to start their own small business. The Government is also supporting Australian women to found startups. The initiative SheStarts is an accelerator program that is helping women to build tech start-ups; and the Boosting Female Founders Initiative will provide targeted funding to support women-led startups by enabling more women to access finance to take their ideas to the global stage.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

As a convener and coordinator for regional economic integration and incubator of new and innovative policy initiatives, APEC is well-positioned to lead regional responses to the shared challenges of the digital economy. In particular, APEC could drive collaboration to develop common approaches to standards and measurement, and cross-border regulatory frameworks. APEC could:

- Lead and coordinate the development of common definitions and measurement methodologies and standards across the region;
- Develop a regional approach to collecting data on digital services, productivity and inclusion;
- Strengthen the capacity of statistical agencies in APEC economies to measure the digital economy, by sharing best practice and expertise;
- Facilitate information-sharing on regulatory approaches to emerging technologies;
- Use sandboxes to develop and trial new approaches to regulation;
- Facilitate greater data sharing cooperation between government and the private sector (to allow for more granular measurement of the digital economy).

In many cases, APEC would work with partners to better leverage, and align with, broader international efforts and initiatives.

## BRUNEI DARUSSALAM

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business
- Others, please specify: \_\_\_\_\_

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business
- Others, please specify: \_\_\_\_\_

For questions 1 & 2:

- To support the growth and development of the digital economy, it is imperative to determine the parameter of the digital economy in order to gauge the extent of it. Equally important is to also identify and implement the enablers to digital economy such as, the legislation on digital signature and digital data governance. These are now the priorities under the Digital Economy Council (DEC).
- Public sector governance is also critical to support the digital economy whereby best practices such as transparency and accountability is enabled by digital technology. This is continuously evolving by enhancing the importance of instilling the usage of digital technology in governance.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business
- Others, please specify: \_\_\_\_\_

Under the purview of the Ministry of Transport and Infocommunications (MTIC), there has been progress in institutional reforms that contribute to the growth of digital economy.

The Digital Economy Council (DEC) was recently set up and its first meeting convened in April 2019 under the co-chairmanship of the Minister at Prime Minister's Office and the Second Minister of Finance and Economy, with the Minister of Transport and Infocommunications, alongside other high level membership from relevant Ministries and representatives from the private sector. The DEC serves as a platform to give strategic leadership on initiatives for the digital economy at the economy level.

Cybersecurity is a key enabler for the growth of the digital economy. In this regard, the Minister of Transport and Infocommunications has been appointed as the Minister-in-charge of Cybersecurity in line with regional best practices. This offers an effective platform for coordination and support for the progress of digital economy in Brunei Darussalam.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech
- Cryptocurrency (digital asset that uses cryptography for security)
- Regulatory Sandboxes**
- Digital Banking
- Crowdfunding platforms**
- Digital payments**
- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform**
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

Regulatory sandbox allows innovative products or services to enter the market while the regulator develops appropriate regulations;

Crowdfunding addresses funding gaps and provides an alternative source of funding for SMEs.

Digital payments allow non brick and mortar sellers (e-commerce) to access a wider market as having a physical location becomes less of a factor for customers to make purchases.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management

- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

A major challenge in addressing the digital economy is the implications and required coordination across multiple stakeholders and sectors. In light of this, the Government of Brunei Darussalam has recently set up the Digital Economy Council. In the short term, the Council will focus on determining the key metrics for measuring progress and development of a necessary action plan to implement/support the necessary policies and/or infrastructure to support the development of the Digital Economy Landscape.

With respect to public sector governance, The Government of Brunei Darussalam has prioritized the realization of the Digital Government Strategy 2015-2020 which falls under the purview of the E-Government Leadership Forum (EGLF) and the E-Government National Centre (EGNC). EGNC is the centralized organization that oversees the development of IT personnel, centralize procurement of IT equipment and to provide common Government-wide applications and shared IT Services among all Ministries.

Initiatives for a Digital Government have been introduced to support the achievement of the Brunei Vision 2035 which will support greater efficiency and collaboration, and to improve all stakeholders' experience, Government processes and services which require transformation and continuous improvement. Information technology enables the seamless flow of information across the Government, citizens and businesses leading to greater transparency and better insights for informed decision making. Brunei Darussalam has been quick to adopt new tools in their current business processes and continuously analyses the possibilities of change brought about by these new technologies.

Six focus areas have been identified to realize the vision and mission:

1. Service Innovation: Government agencies to develop new and innovative ways to deliver services to citizens and businesses with greater transparency and accountability
2. Security: Government to maintain situational awareness of its digital assets and environmental at all times. Adequate measure will be taken to minimize risks and increase capabilities to respond to cyber-incidents effectively.
3. Capability & Mind-Set: To foster a forward-thinking mind set and collaborative culture. This will help to increase the speed of adopting new systems, rate of utilizing systems and proficiency of Government officials.
4. Enterprise Information Management: The Government manages the explosive growth of data by structuring, describing and governing information assets that can then be used to generate insights that aid decision-making.
5. Optimisation: The Government to optimise the use of these digital assets to ensure effectiveness, minimise redundancy and maximise value for money.
6. Collaboration & Integration: The Government agencies to work together to face an increasingly complex environment that requires a Whole-Of-Government approach to enhance the collaboration and integration of Government business processes.

In relation to the Digital Government Strategy, an on-going activity is to improve data sharing across government agencies. These improvements to the National Identity Management system enables better interagency support of businesses, as well as improved emphasis on data governance for policymaking.

With respect to Ease of Doing Business (EODB), the Government recently launched BusinessBN as a whole-of-government service that aims to provide businesses with essential information on government services and reforms related to doing business in Brunei Darussalam. First launched in January 2016 and revamped in the following year, it acts as a single portal that provide the business community with easy access to information on a range of government procedures, legislation, guidelines and services related to doing business. Meanwhile, OneBiz has also been introduced as a one-stop online portal to ease the starting up of businesses in Brunei Darussalam. This portal allow businesses to apply for their business online, tracking the application process status and enable with online payment once the business application has been approved. Plans are currently underway as part of the Digital Government Strategy above to further improve the OneBiz portal to house more services and increase user-friendliness.

As a member of ASEAN, Brunei Darussalam is also implementing the various work plans on digital economy such as the ASEAN Work Programme on E-Commerce which is being coordinated across the ASEAN sectoral bodies.

**5. Inclusion:** Describe your economy’s barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

To address the barriers and challenges, and furthermore support inclusive growth, the MTIC continues to engage key stakeholders in any policy formulation and implementation with regards to the digital economy. This is in line with the ‘Whole of Economy’ approach which emphasises the importance of coordinated and holistic approach on any cross-cutting issues.

On metrics and benchmarks, currently there are no real metrics available for inclusion/inclusive growth in the Digital Economy. The most prominent metric would be the use of internet connectivity within the economy. According to statistics from the Authority of Info-communication Technology Industry (AITI) mobile broadband penetration stands at 131.9% (penetration per 100 inhabitants), while fixed broadband penetration stands at 48.7% (penetration per household).

According to a recent E-Commerce Survey by AITI (of which respondents were roughly equal among men and women), 76% of Bruneians are already users of E-Commerce across a variety of age groups. Older age groups tend to be more reluctant to use E-Commerce due to trust issues which includes credit/debit card fraud and trust in online stores. Only 6% of total respondents avoid E-Commerce due to lack of knowledge.

We are guided by the general economic indicators set by the Department of Economic Planning and Development, Ministry of Finance and Economy.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

It is one of Brunei Darussalam’s strategic policies to leverage on our membership in regional and international organisations, including APEC. It is a platform for policy discussions, exchange of best practices and enhance networking among APEC economies and relevant stakeholders such as the APEC Business Advisory Council on issues of common interests.

Better definition and measurement of the Digital Economy would be beneficial in standardizing discussion and comparison of the Digital Economy readiness. Capacity building programmes to improve policy implementation to support and realize the benefits of the Digital Economy.

In addition to this, participation in regional organisations such as ASEAN and international trade forums like the World Trade Organization also provided Brunei Darussalam with frameworks or guidelines that could supplement domestic policies on digital economy. Such frameworks include the ASEAN E-Commerce Agreement, which was signed in 2018 that reiterated commitment to creating conducive environment for e-commerce, and the Joint Statement on E-Commerce which highlighted the intention to commence WTO negotiations on trade-related aspects of electronic commerce and seek to achieve a high standard outcome that builds on existing WTO agreements and frameworks with the participation of as many WTO members as possible.

## CANADA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: Digital Adoption**

### Regulatory & Legal Framework

Economic Strategy Tables chaired by industry leaders for six high growth potential sectors were established in 2017 to identify challenges and opportunities to innovation, including in digital industries. Their report, released in September 2018, emphasized the need for regulatory agility and a modern regulatory system that fosters innovation and adoption by reducing the burden of multiple reporting requirements for the same issue and focusing on outcomes. At the same time, regulators are under increasing pressure to balance the traditional regulatory objectives of predictability and consumer protection with promoting growth and innovation.

In addition, many disruptive technologies are inherently cross-sectoral and therefore necessitate regulatory cooperation and/or harmonization, as well as interdepartmental approaches. Digitally-enabled innovations that operate across two or more traditional sectoral areas may not fit easily into the remit of regulatory departments, while dealing with multiple regulators increases complexity, and costs, for industry.

### Digital Adoption

While Canada has made great strides through targeted investment to bridge the digital divide, due to its large and unique geography, there are still those who lack access to high-speed, affordable digital services, particularly in rural, remote and Indigenous communities. Small to medium-sized enterprises (SMEs) are less likely to adopt technology than larger firms: 44 percent of small firms used advanced or emerging technologies in 2017, compared with 53 percent of medium ones and 63 percent of large ones. (<https://www.statscan.gc.ca/n1/daily-quotidien/190313/dq190313b-eng.htm>).

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: Digital Literacy**

### Scoping & Measurement of the Digital Economy

There is a need to develop better statistics on the size of the Canadian digital economy and the speed of digitalization by sector and region. Statistics Canada recently released the first measuring of the size of the digital economy in Canada, which provides estimates on the value, growth and nature of digital economic activities in Canada over 2010 to 2017. It is based on breaking out three categories

from the Canadian supply and use framework: digitally enabled infrastructure, digitally-ordered transactions and digitally-delivered products.

Findings show that the digital economy is increasingly important, with faster growing GDP (40%) and jobs (37%) than the overall economy. Yet statistical measurements need further improvements to capture the full extent of the digital transformation, including the economic values of digital-enabled transactions and digital-delivered transactions, the future of work, the role of digital marketplaces, the consumption of “free” products and services, the use and international trade of digital products, and the value of data and related intangible assets. There is increasing recognition that “digitalization” is a process that is spreading throughout the economy rather than a sub-sector of the economy. While efforts to identify the products and services of certain sectors as “digital” and track them is a good first step, it should not be seen as the end-point to efforts to measure the digital economy. Statistics Canada is continuing to work on this measurement issue to better estimate the size and speed of digitalization in the Canadian economy.

<https://www150.statcan.gc.ca/n1/daily-quotidien/190503/dq190503a-eng.htm>

### Digital & Data Literacy

In the digital economy, Canadians must be equipped with the right competencies and be provided with the flexibility to meet the evolving demands of the workplace. To grow and scale-up, firms must be able to fill skills gaps by gaining better access to global talent and recruiting from a broader, deeper pool of Canadians with strong STEM (science, technology, engineering and math), business, creative, and digital skills. All Canadians, including youth, women, Indigenous people, and other underrepresented groups, must continually train and upskill, and have more opportunities to develop key skills. They must also be connected to high-speed internet to participate in the digital economy.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business**
- Others, please specify: Innovation Policy and targeted support for digital firms**

### Regulatory and Legal Framework

In September 2018, the Government implemented the Cabinet Directive on Regulation (CDR) to create a stronger foundation for economic growth and regulatory modernization in Canada. The CDR is the set of rules that regulators must follow when developing, implementing and reviewing regulations. It ensures that decisions are based on evidence and are in the best interest of Canadians. The CDR contains new elements that reflect important evolutions in regulatory policy. One of the Directive’s core principles is that regulations should aim to support and promote inclusive economic growth, entrepreneurship and innovation for the benefit of Canadians and businesses.

<https://www.canada.ca/en/treasury-board-secretariat/services/federal-regulatory-management/guidelines-tools/cabinet-directive-regulation.html>

### Ease of Doing Business

The previous suite of federal government programs for supporting innovation in Canada was difficult to navigate and a number of overlapping programs had similar mandates. Other programs were too narrowly focused for today’s economy. In addition, many Canadians simply did not know where to

go to get government support, preventing them from capitalizing on opportunities to grow and compete.

Canadian firms need a clear point of entry to a streamlined suite of relevant business innovation programs that meet their specific needs at different points along the innovation continuum — whether they are looking for funding, tax credits, expert advice, wage subsidies, or forming new partnerships. As a result, they have asked for a simple, easy to access, and coherent suite of programs that are tailored to their specific situations.

The Government took on a horizontal review of business innovation and clean technology programs across every federal department during 2017. This resulted in the launching of Canada's Innovation and Skills Plan in Budget 2017, with a significant reduction in the number of separate business innovation programs — from 92 to about 35. All government innovation support programs are now accessible through the Innovation Canada digital platform, which integrates artificial intelligence technology to enhance program matching to help firms find programs best suited to their needs. In addition, more funding are dedicated towards innovation support programs, creating four flagship platforms, each targeting support at a different critical stage of firm growth:

- 1) *National Research Council-Industrial Research Assistance Program* targets applied research and commercialization – It provides funding and consulting services to help SMEs conduct research and commercialize technologies.
- 2) *Regional Development Agencies* target scale-up and export – They offer a suite of programs to help firms adopt technologies, grow and enter new markets; to support regional growth across Canada; and to support women and Indigenous entrepreneurs, as well as clean technology companies.
- 3) *Strategic Innovation Fund* targets large-scale, later-stage funding – It supports large-scale projects that can lead to significant job creation, including R&D, technology transfer and commercialization, growth and firm expansion, attraction of large-scale foreign investment, and creation of new partnerships between researchers and industry.
- 4) *Trade Commissioner Service* targets international market linkages – It helps firms of all sizes navigate international markets by providing insights and access to international contacts that facilitate entering new markets and exporting.

Other government programs, especially those provided by the Business Development Canada (BDC) and Export Development Canada (EDC), complement the efforts of the four flagship programs in helping Canadian firms meet the scale-up challenge. The BDC's financing and advisory services help innovators transform their ideas into successful companies, and existing high-growth firms reach new heights. EDC provides the financing, insurance and loan guarantees that firms need to go global and export to new markets. Due to Canada's small domestic market, exporting is critical for Canadian firms looking to become globally competitive anchor firms that will drive Canada's innovation ecosystems.

### **Digital Skills and Literacy**

Strengthening the digital skills and literacy of Canadians, and providing them with the tools they need, is key to maximizing economic and social benefits for all in a digital and data-driven world.

That is why Canada's Innovation and Skills Plan includes programs such as CanCode, It support the youths to learn coding at a young age to develop analytical thinking and foster problem-solving techniques important in in-demand STEM fields. This helps prepare youths for opportunities in the workplace of the future and creates a high-quality talent pool for Canadian businesses.

CanCode works through 21 not-for-profit organizations at local, regional and economy level to support school-age opportunities for coding and digital skills development. It targets underrepresented groups, such as girls and Indigenous youth. CanCode supports partner organizations in providing K-12 (kindergarten and Grade 1 through 12) students and their teachers with training to introduce digital skills, coding and related concepts into the classroom.

The first two years of CanCode proved to be a huge success—it has provided coding training to over 1.3 million students, of which approximately 43 percent are girls, 7 percent are Indigenous, and 17 percent live in rural, remote, and Northern communities. Over 61,000 teachers have participated so far in the CanCode initiatives. Not only has the program surpassed its target of reaching 500,000 by March 2019, but it has also doubled its target, providing students with the digital skills needed to succeed in today's economy.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**X Fintech**

- Cryptocurrency
- Sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments
- International remittances
- Personal and business loans
- Robo-advisors
- Cloud computing,
- P2P lending platform
- Use of open data on financial services

**X Open Banking**

- Others, please specify: \_\_\_\_\_

Open Banking and reforms to support Fintech and Fintech collaboration with federally-regulated financial institutions were two potential structural reforms that arose out of the Government of Canada's most recent review into its federal financial sector framework.

Owing to sunset clauses in its federal financial statutes, Canada conducts a regular renewal of the federal financial sector framework (generally targeting every five years). These regular renewals provide an opportunity to consider how corresponding legislation and regulation positions the federal financial sector framework for the future and ensures that it continues to meet the changing needs of Canadians.

During the most recent review, Finance Canada led two consultation exercises (in 2016 and 2017) to discuss considerations and potential policy approaches to supporting a more competitive and innovative financial sector. Stakeholders observed that the sector is entering a new period of innovation, with Fintechs at the leading edge. Many comments made clear that Canadians benefit through greater access, choice, and competition from the presence of new market entrants and a framework that encourages innovation in financial services. Stakeholders also noted that the sector is adapting to an evolving business environment, both at home and abroad. They urged the framework to keep pace with changes in the business models of financial institutions.

Following this stakeholder engagement, the Government proceeded with two reforms, announced in the 2018 federal budget.

The first reform is clarifying the Fintech business powers of federal-regulated financial institutions. Stakeholders noted an opportunity to modernize the current statutory limitations in order to facilitate investments by federally regulated financial institutions' ability to leverage technology and other commercial activities in-house.

Federally regulated financial institutions are generally prohibited from commercial activities and investments. This long-standing policy keeps institutions focused on their core area of expertise: financial services. Over time, flexibility has been incorporated into the federal financial sector framework to accommodate technology-driven changes in the business of financial services.

Legislative amendments were made through the *Budget Implementation Act 2018 I*, to enable federally-regulated financial institutions to invest in firms that blend financial and commercial services, and expand financial institutions' ability to undertake in-house commercial activities and corresponding investments that are related to the provision of financial services. These new flexibilities are subject to forthcoming enabling regulations.

The second reform is a review into the merits of open banking, with a view to determining whether an open banking framework would deliver positive results for Canadians. Open banking has the potential to offer Canadian consumers—including small businesses—a secure way to control the sharing of their financial transaction data with financial service providers, allowing them in turn to benefit from a broader range of financial products and services at more competitive prices. This could better serve consumers and grow businesses and markets, benefitting Canada's economy as a whole.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

Canada's federal anti-money laundering legislation, the *Proceeds of Crime (Money Laundering) and Terrorist Financing Act (PCMLTFA)* was amended in 2014 to cover businesses dealing in virtual currencies as money services businesses (MSB) or foreign MSBs, as applicable. These amendments are subject to enabling regulation and not yet in force.

Draft AML regulations creating obligations for prescribed entities facilitating specified virtual currency transactions have been pre-published for public consultation. The regulations are subject to change. Under the proposed regulations, businesses would be dealing in virtual currency (VC) when they provide virtual currency exchange or value transfer services. Businesses that offer virtual currency exchange services include those that offer the exchange of funds for virtual currency, virtual currency for funds, or one type of virtual currency for another type of virtual currency.

Businesses that offer virtual currency value transfer services include those that offer the transfer of virtual currency at the request of a client, or the receipt of a transfer of virtual currency to be disbursed to a client. This would include instances where a centralized VC administrator or hosted wallet provider (with some custodial responsibility over the VC) receives VC that is, or is to be, disbursed to a client. Financial entities that provide virtual currency exchange or value transfer services will also have specific obligations under the regulations.

All other business sectors subject to the regulations, which include accountants; Agents of the Crown; British Columbia notaries; casinos; dealers in precious metals and stones; life insurance companies, brokers and agents; real estate brokers and developers; and securities dealers, would have regulatory obligations when they receive an amount of \$10,000 CAD equivalent or more in virtual currency.

Once the legislative and regulatory amendments are in force MSBs and foreign MSBs that are engaged in the business of dealing in virtual currency will need to register with FINTRAC (Canada's financial intelligence unit). In the process of doing so, the business will be required to provide an extensive list of information to FINTRAC, including:

- Identifying information on the business and person applying on behalf of the business;
- Legal status (sole proprietorship, corporation or other corporate structure);
- Date and jurisdiction of incorporation;
- Incorporation number;
- Business number and place of issue;
- Identifying information on the chief executive officer, the president, every director, every person or entity that owns or control 20 per cent of the business;
- Where the business' banking accounts are being held (account number, etc); and
- Approximate annual value of VC activities conducted by the business.

There is no limit imposed on the business operations under the PCMLTFA. The only requirement to operate legally in Canada is to be fully registered with FINTRAC.

In terms of fitness and priority of director and senior management, the PCMLTFA requires that the directors and senior management of the MSB have not been criminally convicted of certain criminal offenses in Canada or abroad. Those offences are listed in the PCMLTFA and include serious drug offences, money laundering, terrorism, fraud-related offences, and criminal non-compliance with the PCMLTFA or its foreign equivalents.

Regulatory guidance specifying regulatory expectations for entities subject to the Act and Regulations will be published when the Act and Regulations are in force. These legislative amendments will come into force once associated regulatory amendments are published in the Canada Gazette Part II.

A consolidated version of the PCMLTFA, including amendments not yet in force can be found at the following link: <https://laws-lois.justice.gc.ca/eng/acts/P-24.501/>

Pre-published draft of the regulations can be found at the following link: <http://www.gazette.gc.ca/rp-pr/p1/2018/2018-06-09/html/reg1-eng.html>

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

**Regulatory and Legal Framework (incl. Sandboxes)**

In Fall 2018, the Government of Canada announced the creation of the Centre for Regulatory Innovation (CRI). The CRI will work as a convener and focal point that is business-facing, helping businesses connect with relevant regulators and managing a roster of sandboxes—such as a physical space with regulators onsite while new systems are being tested—that support innovation and competitiveness, while also ensuring that Canadians’ expectations around the protection of health, safety and the environment continue to be met. The Centre will support a whole-of-government approach to regulatory experimentation in order to promote innovation and competitiveness.

To effectively implement an agile regulatory system at all levels, the Government of Canada has also introduced an annual Regulatory Modernization Bill to help eliminate barriers to innovation and to enable agile regulations that will remove outdated requirements in federal legislation. This will allow the Government to quickly clean up irritants across sectors, and will focus on facilitating innovation and allowing greater regulatory experimentation in Canada by amending legislation to confer authority for regulatory sandboxes and pilots.

**Innovation and Digital Economy**

Innovation is the key to competitiveness, productivity, economic growth, creating good jobs, and improving life for all Canadians. To become one of the most innovative economies in the world, Canada must build a culture of innovation, where Canadians can embrace change and have the right skill sets and tools to leverage emerging opportunities to compete in the global economy.

The multi-year Innovation and Skills Plan (ISP) is Canada's response to this new reality, redefining the innovation ecosystem. The ISP builds on Canada's innovation strengths and addresses areas of weakness along the innovation continuum: from people and skills, through to fundamental and applied research, building innovation ecosystems, commercializing ideas and starting-up companies, to exporting and scaling-up globally competitive companies across all sectors of the economy. At its very core, the ISP builds around Canada's competitive advantage: its people.

The ISP's integrated approach supports firms at all points along the innovation continuum and Canadians at every stage of their lives. Emphasizing partnerships, it brings together stakeholders from across the innovation system. It embraces inclusivity and fosters the participation of traditionally underrepresented groups in the innovation economy. It strengthens Canadian leadership in key sectors by removing barriers to growth and fostering innovation in potential high-growth areas. The ISP is firmly rooted in four interconnected and mutually reinforcing pillars:

- 1) **People and Skills:** Ensuring businesses have the right pipeline of talent to succeed and equipping Canadians with the tools, skills, and experience they need to succeed throughout their lifetimes.
- 2) **Building Ecosystems:** Science, Technology, and Superclusters through new partnerships, bridging the gap from idea, to commercialization, to growing globally-minded firms.
- 3) **Investment, Scale-up, and Growing Companies:** Attracting investment, supporting the growth of leading Canadian companies and start-ups, and exporting.
- 4) **Program Simplification and Reorganization:** Offering a timely, client-centric single window in the delivery of business innovation programs in every region.

For more details on the ISP see: [https://www.ic.gc.ca/eic/site/062.nsf/eng/h\\_00105.html](https://www.ic.gc.ca/eic/site/062.nsf/eng/h_00105.html)

For performance targets see: [https://www.ic.gc.ca/eic/site/062.nsf/eng/h\\_00083.html](https://www.ic.gc.ca/eic/site/062.nsf/eng/h_00083.html)

While the ISP has taken major steps and made significant progress, work must be done to maintain Canada's competitiveness, strengthen regional ecosystems, and reinforce leadership in areas of

highgrowth. Technology is not only accelerating changes in the workplace, but also increasing the integration and convergence of industry sectors. New technologies, such as artificial intelligence, are transforming existing industries and creating new business models. They are offering new sources of growth, while presenting new challenges related to the issues of trust and privacy. These opportunities raise the risk of creating new digital divides without strong connectivity for all Canadians.

That is why Canada launched its Digital Charter in May 2019. It is a principles-based approach that relies on governments, citizens and businesses working together to ensure that privacy is protected, data is kept safe, and Canadian companies can lead the world in innovations that fully embrace the benefits of the digital economy.

The Charter also recognizes that all Canadians need to have the tools for full participation in the digital and data economy. This means moving towards an economy-wide target of 100% of Canadian homes and businesses connected to the internet with speeds of 50/10 Mbps by 2030. It also means providing work integrated learning programs to connect young Canadians with potential employers that will help them develop the digital skills they need to succeed in the future workplace.

For more info see: [https://www.ic.gc.ca/eic/site/062.nsf/eng/h\\_00108.html](https://www.ic.gc.ca/eic/site/062.nsf/eng/h_00108.html)

**5. Inclusion:** Describe your economy’s barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

In 2018 APEC’s Economic Committee approved the policy document *Structural Reforms For Inclusive Growth: Three Approaches*. The second approach involves deepening the application of core structural reforms that have the greatest potential to support inclusion, and the third approach (the integrated approach) involves coordinating core structural reforms with supporting policies and programmes. These more holistic approaches have the potential to tackle deep-rooted structural barriers to inclusion, for example by supporting the full and equal participation of women in the economy (*Three Approaches* pp. 10, 24 and ff.)

Canada’s approach to the digital economy is anchored in core structural reforms such as ease of doing business and competition policy. However, it also includes a range of supporting policies and programs to foster an inclusive innovation culture and ensure that all Canadians are able to participate fully in the digital economy, including members of underrepresented groups, such as youth, women, Indigenous people, seniors, Canadians with disabilities, newcomers, and residents of rural and remote communities. The Innovation and Skills Plan (ISP) is implementing targeted initiatives to give these groups access to the skills, technologies, funding, and other resources that they need to seize new economic and social opportunities.

Most metrics used to measure progress and establish benchmarks are compiled and computed by Statistics Canada’s Centre for Gender, Diversity and Inclusion Statistics, which has now received permanent funding. Statistics are updated at various frequencies varying between monthly to annually to periodically (e.g. every three or five years). Additionally, Statistics Canada publishes on a regular basis a [gender-based statistical report](#) which provides an overview of women and education, including their integration into STEM fields and their entry into and exit from that field.

Some examples of programs that support inclusion under the Innovation and Skills Plan (ISP)

The [Connect to Innovate](#) program is investing CAD\$500 million in rural and remote communities across Canada, helping Canadians to fully participate in, and benefit from, the digital economy. This program is helping to build high capacity internet connection into more than 900 rural and remote communities, including 190 Indigenous communities. The [Connecting Families](#) initiative helps

Canadian families to access affordable home internet. In addition, the Accessible Technology Program provides support for the development of assistive and adaptive digital devices and technologies to help Canadians with disabilities take full advantage of technology.

CanCode equips Canadian youth, including traditionally underrepresented groups, with the skills they need to be prepared for further studies, including advanced digital skills and science, technology, engineering and math (STEM) courses, leading to the jobs of the future. CanCode has a focus on reaching girls, Indigenous youth, youth with disabilities, and youth living in rural, remote and northern communities to increase their representation in science, technology, engineering and mathematics training. Additionally, by ensuring that all CanCode programs are free to participants, CanCode helps to reduce income-based barriers to participation.

The Youth Employment and Skills Strategy (YESS) has been modernized and going forward will focus on providing supports to youth, particularly those facing barriers to employment, to gain essential skills, including digital skills and work experience. Digital Skills for Youth (DS4Y), part of YESS, connects underemployed recent post-secondary graduates with small businesses and not-for-profit organizations where they can gain meaningful work experience to help them transition to career-oriented employment. Program participants are able to use the skills acquired during their studies and apply them in a professional setting. Moreover, they will be able to upskill if required to better meet the demands of the labour market. The Computers for Schools program, also part of the YESS, has provided 7,500 refurbished computers to Syrian refugees in Canada.

The Digital Literacy Exchange program facilitates and encourages the participation of underrepresented groups in the digital economy by investing in initiatives that provide them with the necessary digital tools, access and skills development opportunities.

Innovative Solutions Canada is a new program with over \$100 million dedicated to supporting the scale up and growth of Canada's innovators and entrepreneurs by having the federal government act as a first customer. Twenty participating federal departments and agencies will set aside a portion of funding to support the creation of innovative solutions by Canadian small businesses. Encourage procurement from companies led by under-represented groups, such as women, Indigenous, youth, disabled individuals, LGBTQ+ and others.

The Strategic Innovation Fund provides support to firms of all sizes, as well as networks and consortiums made up of industry, academic institutions, research institutes and not-for-profit entities. Projects selected based on innovation, economic and public benefits. SIF includes criteria related to gender balance and diversity. The Strategic Innovation Fund also monitors how benefits accrue to different gender and demographic groups.

Women Entrepreneurship Strategy (WES) is a whole-of-government approach to helping women grow their businesses through access to financing, talent, networks and expertise. In Budget 2018, the Women Entrepreneurship Fund was allocated \$20 million. Following the call for applications held in fall 2018, over 3,000 applications were received and more than 200 projects were funded. Approximately 100 more projects will be funded with the announcement of an additional \$10 million to provide a total of \$30 million to support women-owned and -led businesses across Canada in growing their businesses and reaching new markets.

A portion of the funds made available under the Venture Capital Catalyst Initiative are dedicated to enhancing diversity and increasing women's participation in the venture capital ecosystem. One of the objectives of VCCI is to improve gender balance among Canadian VC fund managers and companies. As part of their submissions, applicants under all streams were required to submit gender balance strategies demonstrating how they will enhance diversity and increase the participation of women across the VC ecosystem. All recipients will be required to report on statistics relating to the number of women fund managers and entrepreneurs supported.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

As the digital economy is a global in nature, economies can benefit from sharing best practices and collaboration towards common goals. Canada values opportunities to engage internationally and with regional bodies on the challenges of the digital and data-driven economy and learn best practices from others. As an example, Canada is working with France and other G7 partners to create an International Panel on Artificial Intelligence. This Panel will seek to become a global point of reference for understanding and sharing research results on AI issues and best practices. Canada will continue to engage with the APEC, OECD, G7, and World Economic Forum to further advance Canada's digital and data frameworks.

In addition, advancing policy research on regulatory issues, developing case studies, and promoting good regulatory practices are important contributions from regional and international organizations. In the context of regulations for the digital economy and emerging technologies, International Regulatory Cooperation (IRC) can help to minimize the regulatory burden on businesses and play an important role in advancing regional economic integration. In that regard, organizations such as APEC provide an important vehicle for information sharing, including lessons learned and best practices, as well as exchanging information on common challenges and opportunities for cooperation with regards to digital economy standards and regulations.

## CHILE

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance**
- Ease of doing business
- Others, please specify: \_\_\_\_\_

**Regulatory and Legal Framework:** Even though Chile ranks 56 among 190 economies in the World Bank 2019 ease of doing business index, there is still a need to build a comprehensive, flexible, harmonized and modern regulatory and legal framework that fosters technological innovation and the development of new business models. This will boost investment and access to financing, benefiting entrepreneurs and MSMEs, and consequently, facilitating digital transformation and financial inclusion. The main challenge is to regulate without imposing excessive and unnecessary barriers (overregulating), favoring flexibility and the adaptability of the markets and economic agents in order to encourage new business models.

Regarding the Financial Sector, Fintech business models and services are not typified in our current regulatory and legal framework. This provides an opportunity to learn from the experience and best practices of other economies and give appropriate policy responses according to Chile's particular circumstances. The challenge is to move towards a regulatory design that encourages innovation and greater inclusion in the provision of financial services and at the same time adequately protects investors and users of these services, as well as the financial integrity and stability, without creating unnecessary obstacles, thus fostering innovation. There is also a challenge on how to (de)regulate, among other areas, electronic payments, crowdfunding and related services, virtual assets and promote open banking. This also requires providing more effective tools and enhancing the capacities of regulatory and enforcing agencies to effectively supervise and enforce laws and regulations.

**Competition Policy:** It is important to assess how artificial barriers of entry for new businesses in the Fintech area might be hampering innovation. Promoting competition requires access to payment infrastructure, opening to new means of payment and the reduction of artificial or unnecessary costs to stimulate local markets. In particular, continued efforts are being made for adapting tax policies in relation to new business models, and also, for implementing policies that ensure fair competition and tax compliance between traditional operators (incumbents) and new businesses (challengers). In some cases, startups and small businesses must meet the same requirements as large companies, which affects competition.

**Public Sector Governance:** To adapt the way in which the public sector is structured and operates, as well to encourage the incorporation of technologies in companies and state agencies is a big challenge. If the public sector doesn't make a profound digital transformation of its structure, it won't be able to take advantage of the benefits of digital economy. In addition, the absence of a modern Public Sector won't allow public servants to benefit from the new technologies, because they won't be encouraged to acquire new skills. If the Public Sector does not get into the digital economy by modernizing its organizational structure, improving its communication channels between the administrative bodies –and with the citizens- and transforming bureaucracy, eliminating the obstacles and taking advantage of the opportunities of the digital economy, it will be very difficult to close the access gap. Digitalizing the Public Sector will allow to collect data and information which will help to observe where the greatest gaps are, and thus identify the segment of the population that requires more training to face digital economy. Likewise, better data and statistics will help to strategically

adopt more and better public policies. Another great challenge is to enhance the basic skills of the population on the digital economy, and how to close the digital illiteracy gap, especially among elderly people and people in remote and rural areas.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business
- Others, please specify: Digital Literacy**

**Regulatory and Legal Framework:** Chile has identified policy gaps regarding the regulation and supervision of various alternative financial services and the transaction of virtual assets.

**Public Sector Governance:** There is still work to do in order to achieve a deeper and more comprehensive digitization and interconnection of the State.

**Digital Literacy:** Chile needs to make a better job by incentivizing inclusion, closing gaps and providing more tools and better education in order to ensure that nobody is excluded from the benefits of digital economy. This means, to modernize the school programs, adding programming classes starting from elementary school, among other things.

In summary, most of the major barriers for the development of the digital economy in Chile are simultaneously its major policy gaps.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

**Scoping and Measurement of the Digital Economy:** The Ministry of Economy is currently surveying companies in Chile to have data on e-commerce, digital economy, and key ICT indicators, according to OECD survey guidelines. This data will enable to have a baseline to which measure progress in the digital economy of the economy.

**Public Sector Governance:** a) *Digital Agenda 2020:* It is a roadmap to advance on Chile's digital development through ICTs, in an inclusive and sustainable way. Some of its characteristics are to present concrete measures, structured on the basis of the work carried out by a public-private alliance, formed by representatives of the public, business, academic and civil society sectors. It is a living agenda, which can be adjusted along the way, setting new strategic measures or addressing new

challenges. The goal is to reduce inequality through the wide-spread use of technologies, creating more and better opportunities. A work team of representatives from different Ministries elaborate the Agenda, aiming to adopt more and better policies on digital development. The Digital Agenda is structured along 5 topics that set strategic guidelines (Rights for Digital Development, Digital Connectivity, Digital Government, Digital Economy and Digital Competencies); b) In the context of its digital transformation process, the Civil Registry (Registro Civil) delivered a *Password (Clave Única)* to every resident, which constitutes the only means of digital identification in the State. This password allows residents to complete online procedures; c) In recent years, the *General Treasury of the Republic (TGR)* began to modernize its processes, providing digital services to the community and looking for technologies and tools to enhance its digital transformation.

**Ease of Doing Business:** a) *Law 20.659 "Your business in a day"*: Created an Electronic Registry of Companies, which established a Simplified Regime that allows people to set up, modify, transform, merge and dissolve legal entities, making possible to complete online all the procedures needed to set up a company in one day. It allows users to complete the service using the advanced digital signature, or a notary can complete the procedure on the user's behalf. This initiative has led to a significant reductions in terms of time and the cost of completing the service. The Registry is public, free, and can be found on the website [www.registroempresas.cl](http://www.registroempresas.cl). It is administered by the Ministry of Economy, Development and Tourism. In this Simplified Regime, it is possible to set up a company by logging on to [www.registroempresas.cl](http://www.registroempresas.cl) and filling out a special electronic form (the website is user friendly and automatically recommends frequent clauses); b) In 2018, Chile introduced an *electronic system*, which replaced the earlier requirement to submit sealed accounting books and invoices to the Internal Revenue Service, which has helped to improve business climate. According to the World Bank Group's *Doing Business 2019: Training for Reform* report, it now takes six days to start a new business in Chile, compared with 7.5 days earlier; c) Chile has also improved contract enforcement by modernizing its judiciary, digitalizing court records (Oficina Judicial Virtual) and allowing, among other things, to *file complaints electronically*. As a result of this reform, Chile edged up several places to a global rank of 49 in the area of Enforcing Contracts.<sup>2</sup>

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**X Fintech**

- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes
- Digital Banking
- Crowdfunding platforms

**X Digital payments**

- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Use of open data on financial services

<sup>2</sup> <https://www.worldbank.org/en/news/press-release/2018/10/31/chile-carries-out-key-business-reforms-doing-business-report>

Others, please specify: \_\_\_\_\_

**Fintech:** The Central Bank (BCCh) Strategic Plan for the 2018-2022 period focuses on Technology. Consequently, it has created a “Tech Observatory”, which aims to be a relevant and active player in the search and analysis of new technologies, detecting opportunities and potential impacts in the financial sector and other areas. Its Objectives are: a) To agree on common principles and contribute to the coordination, within the Bank, for the treatment of Digital Technologies; b) Agree on main topics of innovation to promote and contribute to its knowledge; c) Create networks with the community to strengthen knowledge and identify opportunities and threats. The Main Innovation Topics are: Digital Money, Digital Payments, Cryptoassets, Cybersecurity and Financial Stability, Big Data and Digital Economy, Open Banking, SupTech. The Strategic Plan 2018-2022 also contemplates experimental instances, like for example a TechLab and FinLab. The TechLab seeks to adopt emerging technologies that are relevant to maintain the quality and availability of the services provided by the Central Bank. The FinLab seeks to enhance the regulatory framework in a timely manner in order to advance in those areas that represent an opportunity to strengthen the financial system and mitigate risks should some of the new technologies become more widespread in the financial industry.

**Digital Payments:** Law No. 20,590 of Means of Payment (2016): Authorizes the issuance and operation of means of payment with provision of funds or any other similar system (prepaid cards ") by non-banking companies. The law also authorizes the State to issue and operate means of payments with provision of funds subject to the law. Issuers and operators are subject to the oversight of the Financial Market Commission (CMF) and are required to report to the Financial Analysis Unit (UAF), when applicable. Chapter III J1 of the Chilean Central Bank Regulation makes it possible to apply the 4 Party means of payment model in Chile. Although this Law is a progress, it still has some limitations, like for example, requirements that constitute entrance barriers for small companies or entrepreneurs that want to enter the market. This flaws should be corrected in the future.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy’s short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

**Public Sector Governance, and Legal and Regulatory Framework:**

a) *From a Digital Agenda to Digital Transformation:* The Government is working to launch a Digital Transformation Agenda, which will continue the progress made by the Digital Agenda 2020, and

will add new measures. Its focus will be to accelerate the process of appropriation and use of technologies in every area of social and economic activity.

b) In addition, the Government contemplates the digital transformation of the State Administration. This should be achieved through the simplification of processes, the digitization of procedures and, in general, the use of technologies to optimize and improve the functioning of the government and state agencies, as well as efficiently and effectively improving public management. To this end, in 2018 a *bill on digital transformation of the public sector* was sent to Congress. The objective is to create a digital transformation of the State, through the modification of various legal bodies, in order to become an agile and efficient State which benefit itself from the advantages of electronic and digital developments. This project makes electronic support mandatory, so that all new procedures and services provided by the State are digital, except those exceptions that by their nature are required to be on paper. In addition, it reinforces the 19,880 law, in that state agencies cannot request information that is already in their hands, thus preventing people from carrying out additional steps, duplication of procedures, unnecessary rows and eliminating the requirement of certificates. Regarding notifications sent from public institutions, the project establishes the obligation to carry them out by digital means, according to a regulation issued by the Ministry General Secretariat of the Presidency and the Ministry of Finance. Additionally, it establishes that both the internal documentation management and communications between public institutions will be carried out through digital platforms, as well as that the obligation to storage and preserve documents will be complied by sending digital files.

c) Also, in 2018, the President signed and sent to Congress a *bill on Computer-related Crimes and a Guide on Cybersecurity* for all public agencies, which establishes the obligations for the different public services of the State to strengthen its cybersecurity systems. The bill will replace the current regulation – in force since 1993 - and is part of the National Cybersecurity Strategy.

d) *The General Treasury of the Republic (TGR)* inaugurated its *Blockchain Project*. This project intends to solve the quadrature problems between the TGR suppliers (municipalities and other institutions) and the means of payment (banks). It consists of an automatic quadrature system that allows having a network of multiple nodes that contain the same information, in a reliable way and in real time. Each time a transaction is made, it is stored in a block together with the information of that transaction, generating a chain of blocks (Blockchain). These blocks are transmitted to all the nodes that are participating, having exactly the same information unalterably. In summary, this project will allow TGR to have an automatic, reliable, transparent and secure quadrature among all entities. This could lower transaction and verification costs of each institution, which will benefit the citizenship.

e) *Fintech Bill of Law*: The Minister of Finance announced in April that a Fintech bill will be sent to Congress soon. This Bill seeks to regulate and supervise various alternative financial services and the transaction of virtual assets. Flexibility and financial stability are some of the key aspects of the project, which will seek to ensure that the law can meet the requirements of the rapid evolution of technologies and technological neutrality (to eliminate regulatory asymmetries between traditional financial services providers and those providers who are more technology-intensive user.) The idea is to position Chile as a Regional Financial Center. Fintech regulation will also allow the users to have adequate security and information standards, thus encouraging more users to use Fintech platforms while safeguarding the integrity, reputation and stability of the financial system.

f) In order to identify regulatory gaps and vulnerabilities in the financial system, the Central Bank asked the IMF and the World Bank for a *new Financial Stability Assessment Program for 2020*. g) The Ministry of Finance announced a working group comprised of the main representatives of the financial sector to *effectively initiate the 4-party means of payment model* in Chile.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response

should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

There are still a significant number of households that do not have access to Internet, especially in rural areas. It is imperative to improve access in those places without or with precarious quality of digital services. Investing in infrastructure will allow for better services and low costs and prices, improving the coverage not only of telecommunications, but also of access to other digital services and contents. Although having an adequate infrastructure and having high-speed internet are absolutely necessary steps to face the challenges of the Digital Revolution, it is also essential to work to develop human capital to cope with the digital transformation and automation. There is still work to do in promoting digital transformation in companies (especially in SMEs), digitization of government procedures and encourage the deployment of high-speed, robust and resilient networks. In order to do so, it is fundamental that the State is interconnected and digitalize its processes.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Joint collaboration and the sharing of best practices on the digital economy will certainly help to accelerate the development of digital economy strategies at economy level and promote the harmonization among the APEC region. Capacity building will help public officials, especially from less advantaged economies, to better understand the challenges of digital economy, thus helping to make better public policy decisions.

## CHINA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

At present, the three major barriers and challenges to promoting structural reforms for a better digital economy in China are as follows:

Firstly, the measurement of the digital economy is not complete with undefined scope, posing challenges to predict its trend of development and implement targeted structural reforms. In recent years, relevant research institutions and Internet companies in China have actively studied the measurement of the digital economy and achieved some outcomes. However, due to the inconsistency of the concept definitions, analytical frameworks, measurement methods, and incomplete data or statistics, there are still many controversies over the scope and scale of the digital economy.

Secondly, the existing regulatory framework is yet to tailor to the need of the development of the digital economy. In some emerging areas of the digital economy, some are regulated by several agencies while some are not regulated. Due to the lack of a legal framework for the regulation of emerging areas, some regulations are based on the interim documents issued by authorities or industry self-discipline, which lacks certainty.

Thirdly, competition policies in the digital era are not well guided by theories. The problems, that it is difficult in identifying non-competitive activities and imposing penalties, are common. Although the Chinese government has initiated institutional reforms that greatly optimized the implementation mechanism of competition policies, traditional competition theories do not work well on the digital economy. With theoretical innovation falling behind the practice, the formulation of competition policies is still controversial, which is hard for regulators to implement.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

The three major policy gaps relating to the digital economy in China are as follows:

1. Official policies on the measurement of the digital economy are absent. China has not yet issued an official measurement guide, and the state statistics bureau has not released its estimation of the size of digital economy of China.

2. The regulatory policy system of the digital economy has not yet been fully established, and some new regulatory tools have not been fully utilized. For example, in the financial sector, it is necessary to further optimize the policy system to regulate mobile payment, P2P lending and so on more effectively. Besides basic consensus on promoting the application of new tools such as regulatory sandbox in China, there is still no specific policy coordination for better implementation and regulation.

3. The rules for governing platform companies are still to be improved. China's platform economy is developing rapidly, the practices of some companies need to be reviewed to see if there are collusion, abuse of market power or even monopoly. The existing policies have not clearly defined non-competitive activities of platforms. In addition, the policy to guide the decision making as to a platform's social responsibility and related functions is missing.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

In recent years, China has vigorously pushed forward structural reforms, especially in strengthening and improving regulation, improving public sector governance and ease of doing business. It strives to make advantages of the digital economy through marketization and other legal means. Typical practices include:

1. Strengthen and improve regulation through legislation. For example, on August 31, 2018, the 5th Session of the Standing Committee of the 13th National People's Congress of the PRC voted on and adopted the *E-Commerce Law*, which came into force on January 1, 2019. The law was made based on four rounds of deliberations and three times of public consultation through five years. It is one of the few comprehensive e-commerce laws in the world, covering almost all activities related to e-commerce. The law provides for the registration of legal entities, fines, taxation, platform responsibility, prohibition of false advertising, and Intellectual Property Rights protection. Some surveys after enacting the law show that most e-commerce platforms have disciplined and rectified themselves, and their activities are further standardized.

2. Improve public sector governance through Digital Government and City Brain initiatives. Some local governments have vigorously promoted the construction of digital governments, removed barriers to information sharing among departments, and built high-quality data platforms such as City Brain to build smarter cities. Positive results have been achieved. For example, cities such as Shenzhen, Guangzhou and Hangzhou have optimized the e-government management system and infrastructure, and promoted the integration of government information resources, intelligent government services, and diversified application models to vigorously promote Cloud City, Digital Brain, and public supervision and to accelerate the implementation of mobile government, mobile services and face-recognition-based services.

3. Optimize the digital economy business environment through reforms to delegate power, streamline administration and optimize government services. In recent years, China has vigorously promoted reforms in the commercial administration and administrative approval system, which created a favorable environment for development of the digital economy. For example, China further simplified the business

start-up procedures, and reduced the time for start up a business from 20 days to 8.5 days on average. Joint inspection combining customs inspection, immigration inspection and maritime inspection, has been adopted and reduced customs clearance time in 2018 by 56.4% and 61.2% for import and export respectively compared with 2017. The reform of “separation of business licenses and operating permits” was implemented across the country, effectively solving the problem of “banned operation despite the obtaining of the license”. The latest World Bank report *Doing Business 2019* shows that the number of reforms implemented by China in the past year ranked first in the East Asia and Pacific region, jumping from the 78th to the 46th in the global rankings, which marks the first time for China to be in the world’s top 50 and the re-entry of China in the group of Economies with the Most Notable Improvement in *Doing Business 2019* after ten years.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech
- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments**
- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

China is now the world’s largest digital payment market. In 2018, financial institutions in banking industry handled a total of 60.531 billion mobile payments, with a transaction amount of 277.39 trillion yuan, a year-on-year increase of 61.19% and 36.69% respectively. Mobile payment has not only become an important junction of new consumption pattern and new technology, but also bred new types of business and consumption. It also effectively reduced institutional transaction costs, providing an effective path for the development of inclusive finance and credit-based society.

The rapid development of digital payment in China is closely related to plenty of users and developed e-commerce. With limited popularity of credit card and high institutional transaction costs, digital payment has quickly become a powerful supplement to the payment system in China. In particular, companies such as Alibaba and Tencent are highly focused on the expansion and refining of application scenarios, integrating digital payment fully into people’s lives. In the process of promoting digital payment, strengthening effective regulation is necessary for promoting the healthy development of the industry and for preventing the accumulation of potential financial risks. China has strengthened regulatory intervention by issuing business permits (such as payment business permit) and has gradually incorporated financial regulation to build an effective regulatory framework. This is a good practice worthy of reference.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)**
- Others, please specify: \_\_\_\_\_

Financial regulation technology is a product of full integration of technology and financial regulation. In 2017, China’s regulatory authority proposed to strengthen RegTech application and practice with big data, AI, cloud computing and other technologies to enrich financial regulation tools, and improve the capacity to identify, prevent and dissolve financial risks across industries and markets. A typical case is that many entities have begun to use RegTech to deal with financial fraud.

With the rapid development of the digital economy and the widespread application of digital technology in finance, financial fraud has shown new features. It has become specialized, industrialized, hidden and trans-regional, posing great challenges to traditional anti-fraud methods. In order to prevent financial risks, many local governments and companies have begun to use RegTech to better identify potential financial fraud. China’s existing practices show that anti-fraud in digital finance should focus on data, technology and mechanism. First, it is necessary to strengthen the security of data use and strengthen information disclosure. Second, it is necessary to continuously optimize anti-fraud models and systems, and establish a mechanism that encourages share of advanced technology in the industry. Finally, to strengthen the security mechanism, it is necessary to speed up the construction of an anti-fraud alliance involving regulatory authorities, industry associations, financial institutions, and technology companies, focus on strengthening the protection of consumer rights and interests at the industry level, and improve the mechanism of industry risk mitigation and mutual assistance.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy’s short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

China has put forward the goal of vigorously developing the digital economy and building a Digital China in recent years. In response to the existing policy gaps and challenges, China has proposed the following efforts and key measures:

1. Accelerate the formulation of statistical methods for the digital economy. China will fully draw on relevant experience at home and abroad and develop a evaluating and monitoring system with international comparability.
2. Accelerate the construction of high-quality new-generation information infrastructure. China will build smarter infrastructure and accelerate the commercial use of the 5G technology.

3. Vigorously develop the digital economy industry. China will better promote Internet Plus Initiative, facilitate digital technology to empower traditional industries, and speed up industrial transformation and upgrading.

4. Promote the digital transformation of public sector governance. China will actively build a digital government and improve e-government services. It will increase the investment in digital infrastructure for public services such as long-distance education and medical care.

5. Establish a more inclusive and prudent regulatory system. China will explore more effective regulatory models for new business types and models such as cross-border e-commerce, Internet finance, and sharing economy, and actively explore new tools such as regulatory sandbox.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The key challenge to improving the inclusion of the digital economy is to eliminate the digital gap and prevent the shift from traditional poverty to digital poverty in an era of digital economy. Given China's reality, the key to narrowing the digital divide is people, with a focus on urban-rural gap. China focuses on bridging the urban-rural digital gap and enabling more people to enjoy the digital economy advantages by strengthening infrastructure construction, basic education investment, and rural e-commerce. However, in rural area, there are large lands and many poor people, the grassroots governments have limited source of fiscal revenue, the industries in rural area lack the capacity to be self-reliant, and there are overall backwardness of rural infrastructure and the scarcity of education and medical resources. To bridge the urban-rural digital gap, China still faces several problems, such as big funding gap and poor supporting infrastructure.

In order to solve these problems, China has increased the investment of funding, especially in digital education and telemedicine, targeting at filling the gaps in basic public services. For example, in terms of IT in education, China put forward the strategic plan of "building an effective mechanism to use information technology to expand the coverage of quality education resources, and gradually narrowing the gaps between regions, urban and rural areas, and schools". It promoted the development and application of online synchronous class, top teacher class and top school class, and provided special favor for schools, especially rural schools, in facilitating faster and more affordable Internet connections and network development. According to incomplete statistics, there are currently 24,000 online schools in the country, accounting for 7.7% of the total number of primary and secondary schools nationwide. Among them, 2,211 online schools are serving the whole country, accounting for 9.1%; 1,531 online schools are serving their provinces, accounting for 6.3%; more than 20,000 online schools are serving their own teachers and students, accounting for 84.6%.

At present, nearly 30,000 schools in the country are not yet connected to the Internet. Therefore, the Ministry of Education has coordinated the basic telecommunication companies to claim all the unconnected schools, and introduced a list of 24,085 schools that can be connected to the broadband network by 2020 and the schedule. The government maintained the list of the primary and secondary schools (including teaching locations) without broadband access and track its progress regularly. The further increased efforts have been made in facilitating faster and more affordable Internet connections, and basic telecommunication companies are guided to roll out special rates for schools, especially those in poor areas, to reduce the burden of the schools in accessing the broadband network. The basic telecommunication companies are required to implement the policy related to universal telecommunication services, and to ensure that the network rates in the poor areas are not higher than the average level of the surrounding areas.

**6. Regional cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

APEC may play a greater role in the following four respects. First, facilitate the exchange of statistical classification methods among member economies and improve the comparability of digital economy statistics across economies. Second, promote the active cooperation of member economies, and strengthen the connectivity of new-generation infrastructure in the region through cooperation with the Asian Infrastructure Investment Bank and other institutions. Third, promote the sharing of best practices among member economies in implementing structural reforms to boost the development of the digital economy through seminars, public consultation and other approaches. Fourth, drive the development of cross-border e-commerce, and promote trade connectivity by aligning with international digital trading rules.

## HONG KONG, CHINA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance**
- Ease of doing business
- Others, please specify:** \_\_\_\_\_

Emergence of new technologies and the sharing economy: Emerging technologies coupled with the sharing economy have led to many new products and services. HKC is no exception and, like many other jurisdictions, our established regulations are sometimes at odds with the mode of operation of such new services. It is a challenge to the government to review existing legislation and regulations to remove outdated provisions that impede the development of innovation and technology (I&T).

Relatively low investment in research and development (R&D): The advancement of digital economy is closely related to investment in R&D. Yet the overall investment in R&D in HKC was merely 0.73% of our Gross Domestic Product in 2017, partly due to the prominence of sectors such as financial and professional services in our economy.

Complexity of the digital economy: The digital economy spans many policy areas, including transportation, healthcare, environmental protection, etc., thus requires cross bureaux and even cross government coordination to regulate and nurture its development.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: Talent**

Government procurement arrangements: To embrace digital advancements and encourage local technological innovation, there is a need to recognise I&T as a tender requirement and avoid awarding contracts mainly by reference to the lowest bid.

Government data: It is important to expedite the opening up of government data for free use by the public as raw materials in technological research, innovation and smart city development.

Technology talent: With our blend of Chinese and Western cultures, top-notch tertiary institutions and outstanding scientific research achievements, HKC is the prime location for establishing an international hub of scientific research talent. It is important to develop policies to support the attraction of international technology talents and cultivation of local talents.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from

the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: Smart city development**

Smart City Blueprint for HKC: HKC published the Smart City Blueprint for Hong Kong in December 2017, covering 76 smart city initiatives. HK\$900 million have been invested to take forward three notable digital infrastructure projects: (i) provision of electronic identity to all residents by mid-2020, to bring ease in using e-services and transactions; (ii) installing smart lampposts with sensors to collect real-time city data and small cells to support 5G telecoms development; and (iii) building the Government’s Next Generation cloud infrastructure and a big data analytics platform.

Smart Government Innovation Lab: HKC set up in April 2019 a Smart Government Innovation Lab to facilitate wider application of information technology (IT) solutions and products in public services, e.g. municipal and environmental issues, crowd control, etc.

Open data policy: A new open data policy promulgated in 2018 mandated all government departments to release government data, including real-time city data, in machine-readable formats (via data.gov.hk) for free use by the public. The portal currently provides over 3 490 unique datasets and 1 270 APIs. About 700 new datasets will be released in 2019.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech**
- Cryptocurrency (digital asset that uses cryptography for security)
- Fintech
- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes**
- Digital Banking
- Crowdfunding platforms
- Digital payments**
- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))
- Use of open data on financial services

## **X Others, please specify: Virtual banking and Banking Made Easy**

**Fintech:** The Hong Kong Monetary Authority (HKMA) established the Fintech Facilitation Office (FFO) in March 2016 to facilitate the healthy development of the Fintech ecosystem in HKC and to promote the city as a Fintech hub in Asia. Among other things, the FFO acts as:

- i. a platform for exchanging ideas and conducting outreaching activities;
- ii. an interface between market participants and regulators within the HKMA to help improve the industry's understanding about the parts of the regulatory landscape which are relevant to them;
- iii. an initiator of industry research in potential application and risks of Fintech solutions; and
- iv. a facilitator to nurture talents to meet the growing needs of Fintech in HKC.

**Fintech Supervisory Sandbox (Sandbox):** The Sandbox was launched in September 2016, allowing banks and their partnering technology firms to conduct pilot trials of Fintech initiatives in a controlled environment without the need to achieve full compliance with the HKMA's supervisory requirements. Until the end of April 2019, 49 Fintech or technology products have been allowed in the Sandbox.

**Digital Payments:** The Payment Systems and Stored Value Facilities Ordinance commenced operation in 2015. 15 Stored Value Facilities (SVF) licences (3 licensed banks also have SVF operations) have been issued as of mid-May 2019. SVFs are facilities (both device-based and non-device-based) for (i) storing the value of an amount of money and (ii) use such value stored to make payment for goods or services or to another person.

The Faster Payment System (FPS), launched in September 2018, supports instant payments in both the Hong Kong dollar and the renminbi on a round-the-clock basis. FPS provides full connectivity between banks and SVFs, and the use of a mobile number or an email address as an account proxy for receiving payments.

**Virtual Banking:** The HKMA issued a revised Guideline on Authorization of Virtual Banks in May 2018. By early May 2019, the HKMA has granted banking licences to all eight shortlisted applicants for them to operate in the form of a virtual bank.

**Banking Made Easy:** The HKMA launched a Banking Made Easy initiative in 2017 to identify and minimise regulatory frictions with the aim of further improving customers' experience in using Fintech and digital banking services. Under this initiative, the HKMA streamlined regulatory requirements in relation to remote onboarding, online finance, and online wealth management in 2018.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

### **X Compliance**

- Identity management and control

### **X Risk management**

- Regulatory reporting
- Transaction monitoring
- Trading in financial markets

### **X AML/CFT (anti-money laundering/ combating the financing of terrorism)**

- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)

### **X Others, please specify: Machine-readable regulations**

**Regtech:** The HKMA announced in 2018 initiatives to facilitate Regtech adoption and ecosystem development, including expanding the scope of the Banking Made Easy initiative to facilitate the adoption of Regtech by banks, focusing on surveillance for anti-money laundering and counter-financing of terrorism, prudential risk management and compliance, and machine-readable regulations.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

The HKC Government established the Innovation and Technology Bureau in November 2015 to focus on formulation of holistic policies related to I&T and the digital economy, coordination of the use of technology both internally and externally, and expediting the development of the local I&T industry.

Furthermore, in her 2017 Policy Address, the Chief Executive (CE) identified eight major areas to develop HKC's I&T sectors, which included: increasing resources for R&D; pooling technology talent; providing investment funding; providing technological research infrastructure; reviewing existing legislation and regulations; opening up government data; leading changes to government procurement arrangements; and promoting popular science education. HKC has set a goal to double the Gross Domestic Expenditure on R&D as a percentage of the GDP to about HK\$45 billion a year (i.e. from 0.73% of GDP to 1.5%) by the end of the current government's five-year term of office. Some of HKC's new initiatives to boost our I&T ecosystem include:

**Reviewing existing legislation and regulations:** The Policy Innovation and Co-ordination Unit reporting directly to the CE has been established to work with all policy bureaux to proactively review the policies and legislation within their policy purview to bring them up to date and remove red tape in order to foster the development of a new digital economy.

**Pro-innovation government procurement policy:** HKC has introduced a pro-innovation government procurement policy in April 2019 by raising the technical weighting in tender assessment. We also enhanced exchange with the sector and dissemination of procurement information to facilitate the participation of I&T start-ups and SMEs in government procurement.

**Pooling technology talent:** HKC has progressively introduced various initiatives, such as the Postgraduate Programme Finance Scheme for Local Students, the Technology Talent Admission Scheme, the Technology Talent Scheme and the enhanced Internship Programme, to proactively attract and nurture scientific research talent.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

HKC has implemented a number of measures to help students, workers and elderly adapt to the digital economy through education and training, and to enhance SMEs' business opportunities.

**Students:** HKC has implemented initiatives targeted at students such as launching the eight-year "Enriched IT Programme in Secondary Schools" in the 2015/16 school year to provide funding support for secondary schools to organise various types of IT activities. HKC will also extend this programme to include an "IT Innovation Lab in Secondary Schools" initiative by providing each

publicly-funded secondary school in HKC with up to HK\$1 million to procure IT equipment and organise IT-related extra-curricular activities in the three school years from 2019/20 to 2021/22.

**Elderly:** The ICT Outreach Programme for the Elderly started in 2014 aims to help institutionalised and hidden elderly, and those receiving day care / home care services experience how ICT can facilitate active and healthy ageing. An Enriched ICT Training Programme for the Elderly was introduced in early 2019 for elderly persons with basic ICT knowledge to learn about using digital technology in their daily living and serve as trainers to help more elderly people acquire technology knowledge.

**SMEs:** To promote the use of new technologies among SMEs, HKC has implemented a number of funding schemes, such as Retail Technology Adoption Assistance Scheme and Trade and Industrial Organisation Support Fund. HKC also provides financial support to facilitate enterprises of all sizes to invest in I&T to improve productivity and operational efficiency, such as the Technology Voucher Programme for local non-listed enterprises.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Regional bodies such as APEC supplies a platform of knowledge sharing and cooperation that is conducive to the development of digital economies in the region. Through such platform, economies may learn from the experiences of each other and formulate measures to overcome the many policy gaps, barriers and challenges in their respective contexts. Regional cooperation may also give rise to inter-governmental projects to collectively advance our digital economies, including HKC.

## INDONESIA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
  - Competition policy
  - Public sector governance
  - Ease of doing business
- Others, please specify: Financial and digital literacy and infrastructure.**

### **Scoping and measurement of the digital economy:**

Up to now, Indonesia is yet to have a single definition or a general agreed definition on digital economy. The available references are using different scope to define the digital economy. This is important and pose a challenge to fully understand the digital economy ecosystem.

Data is a crucial element for authorities to formulate policies that will boost digital economy while mitigating the risks. Despite fast development of digital economy in Indonesia, data collection (both primary and secondary data) remains a challenge. To overcome this challenge, the authorities continue to develop clear methods and measures / policies related to the data collection, and continue to improve data security.

Fintech growth very fast, and need to be regulated because of:

1. The interest of Society, whereas in line with the development of technology, digital financial innovation cannot be ignored and needs to be managed to provide maximum for the interest of the society
2. The responsible Innovation, Digital financial innovation needs to be directed in order to produce digital financial innovation that is responsible, secured, prioritizing customer protection and have well-managed risks;
3. Prevent Disruptive, Considering the huge impact of FinTech in the financial industry throughout all the products, services, intermediaries and regulators.
4. Ecosystem Digital Finance, Encouraging the synergy in the ecosystem of digital financial services.

### **Regulatory and legal framework (incl. sandboxes):**

Indonesia is yet to have an integrated economy-wide strategy on digital economy as a framework and reference used for the sectoral regulation. The absence of said economy-wide strategy would lead to partial sectoral policies.

Some innovations bring multi sectors business into a single business entity (re: the super-apps) that would be problematic to regulate. For instance, Indonesian Go-Jek application is a transport service provider while also provides a payment service, and other services such as cleaning service and beauty care. Another example of this type of application is Tokopedia, an Indonesian e-commerce platform that also plays a role of a travel agent by selling airline and train tickets. Further, Tokopedia also offers financial products such as gold and mutual funds.

Balancing between promoting innovation to reap benefits from digital economy and mitigating unintended risks.

The guiding principles for fintech regulation and supervision:

1. Balanced strategy in order to conduct financial stability & provide customer protection and support innovation.
2. Institutional & functional or activity based regulation.
3. Clear mandate and scope/perimeter of fintech regulation. For an example payment system in Indonesia is under supervised The Central Bank and P2P lending is under Financial Services Authority
4. Experimentation and testing of innovation through Regulatory sandbox, Regulatory Sandbox shall be the examination mechanism carried out by authorities to assess the reliability of business process, business model, financial instrument, and governance of the Financial Innovator.
5. Cross border cooperation between authorities specifically regionally to protect data sharing and customer protection around the world.
6. Proactive and agile regulation and supervision. Regulation on fintech firms and their activities to avoid regulatory arbitrage and unsound fintech practice such as shadow banking, etc.
7. Enhancement of market conduct supervision for fintech by design and implement reporting and surveillance system. In addition, fintech association is empowered to perform surveillance to its member and fintech industry development, as well as develop industry standards, code of conducts, etc.
8. Law enforcement for illegal fintech activities to ensure market discipline and customer protection.

#### **Others - financial and digital literacy and infrastructure:**

Recent technological advancement has changed people's life. The emergence of financial technology allows more effective and efficient financial transactions. To take advantage of fast development of digital economic, digital financial literacy is one of pre-requisites.

Indonesian authorities have taken various efforts to improve digital and financial literacy. These efforts have shown positive results: National Financial Literacy and Inclusion Survey conducted by the Indonesia Financial Services Authority (OJK) showed that Indonesia's financial literacy index has risen up to 29.66% in 2016, up from 21.86% in 2013.

Indonesian authorities are also aware of the importance of required infrastructures put in place to boost digital economy. In this regard, Indonesia develops the Palapa Ring which connects telecommunication and communication networks throughout Indonesia. As of December 2018, this project has achieved 100% progress for the western and central parts.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: Coordination among authorities and consumer protection (incl. data protection)**

#### **Scoping and measurement of the digital economy:**

Indonesian authorities are keen to gain optimal benefits from digital economy and finance to support economic growth by encouraging digital transformation across all sectors of economy. To achieve this objective, the authorities are aware of the need to have effective policies put in place. Therefore, the authorities are formulating policies to enhance data collection and measurement. From macroeconomic perspective, this challenge is important to be addressed thus Indonesia can gain

benefit from digital economy and finance for example, on how to measure tax for the digital economy. From the financial authorities perspective, the availability of data related to digital economy is important to prevent the risk of rapid development of digital economy and finance to financial stability.

**Regulatory and legal framework:**

There are several institutions in Indonesia that have authority to regulate and supervise fintech. This condition could lead to regulatory overlap or policy gaps. To respond to this risk, the Indonesian government will periodically analyze the regulatory and legal framework of digital economy to see whether there is a policy / regulatory gap in the framework.

Furthermore, there are also issues regarding different business model and risk of incumbent fintech which required different regulatory and supervisory approaches. Several financial institutions are heavily regulated while, to a large extent, fintech is unregulated. Thus, this create regulatory blindspot or arbitrage.

OJK proposes several initiatives to deal with the issue, which are: (1) mandatory registration for financial technology innovators, (2) proper risks identification in association with Fintech business model, and (3) issuing the multi-tiers licensing started from being recorded, registered, to licensed as the highest status. The multi-tiers licensing will create a system which require Fintech with greater innovation impact to obtain higher license, with more prudent regulation clarity and established in a higher legal status (licensed fintech should register as the financial institution).

**Competition policy:**

Indonesia has yet to have a specific policy pertaining to competition on digital economy. This is important because the digital economy brings a lot of transformation on business process and therefore affect the competition nature. Any dispute related to competition policy on digital economy, will be resolved by referring to existing laws and regulation. There is an urgency to review the relevance of the existing laws and regulation in relation to the nature of transformed business process and competition in digital era. Currently, the revised version of the prohibition of monopoly practice and unhealthy business competition law (Law No. 5/1999) is being discussed by the Business Competition Supervisory Commission and the Parliament.

**Coordination among authorities:**

In response to the digitalisation challenges, there are several initiatives that have been outlined or implemented by the Indonesian authorities, such as the Road Map of E-Commerce, the Strategy of Making Indonesia 4.0, and initiatives for Indonesian Payment System Blueprint 2025. In this regard Indonesian authorities continuously strengthen cooperation among authorities to support the initiatives in an integrated way.

To these critical issues, Indonesia views that well-coordinated policies and regulations are needed to ensure that the financial market is becoming more efficient and stable while technological innovation in the financial industry keeps developing at all levels.

**Consumer protection (incl. data protection):**

Consumer protection policy plays as an important instrument. Particularly in the digital era, one of consumer's asset that need to be protected is their data. Albeit the importance of a data protection law, data protection that taken place in Indonesia is only regulated by the regulation on ministerial level. The relevant law of data protection is still yet to be discussed within the Parliament

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please

select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business**
- Others, please specify: Non-cash social assistance and digital channel/distribution**

**Regulatory and legal framework:**

Indonesia has issued laws and regulations to support digital economy, as follows:

1. Law Number 11 of 2008 on Electronic Information and Transaction
2. Presidential Regulation Number 74 of 2017 on Road Map E-commerce
3. Minister of Communications and Informatics Regulation Number 11 of 2018 on Electronic Certification
4. Bank Indonesia Regulation Number 20/6/PBI/2018 on Electronic Money
5. Indonesia Financial Service Authority Regulation Number 77/POJK.01/2016 on Fintech Lending
6. Bank Indonesia Regulation Number 19/12/PBI/2017 on Fintech
7. Bank Indonesia Regulation Number 19/8/PBI/2017 on National Payment Gateway
8. Bank Indonesia Regulation Number 21/18/PADG/2019 on the National Implementation Standards of the Quick Response Code for Payments
9. Indonesia Financial Service Authority Regulation Number 13/POJK.02/2018 on Digital Financial Innovation in the Financial Services Sector
10. Indonesia Financial Service Authority Regulation Number 37/POJK.04/2018 on Fund Contribution Services through Share Offers Based on Information Technology (Equity Crowdfunding)

**Ease of doing business:**

Indonesia is striving to improve the ease of doing business in recent years. In 2018, government issued the Government Regulation No. 24/2018 concerning electronically integrated business licensing services, to simplify the licensing process. In such case, there is one single submission system for all types of business licenses. As an indicator, Indonesia Ease of Doing Business rank has improved from 106th in 2016, 91st in 2017, and to 78th in 2018 respectively.

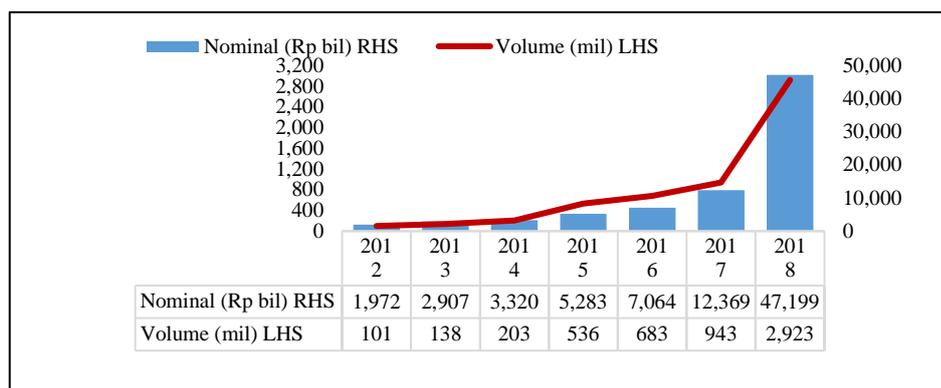
**Others – non cash social assistance:**

The Indonesian government has transformed the social assistance program from direct distribution (cash disbursement) to non-cash disbursement (transfer to bank account) as stated in Presidential Regulation Number 63 of 2017 on Non-Cash Social Assistance Disbursement. This initiative is aimed at encouraging a cashless society and increasing access to finance that would in turn support authorities’ effort to accelerate financial inclusion.

**Others - digital channel/distribution:**

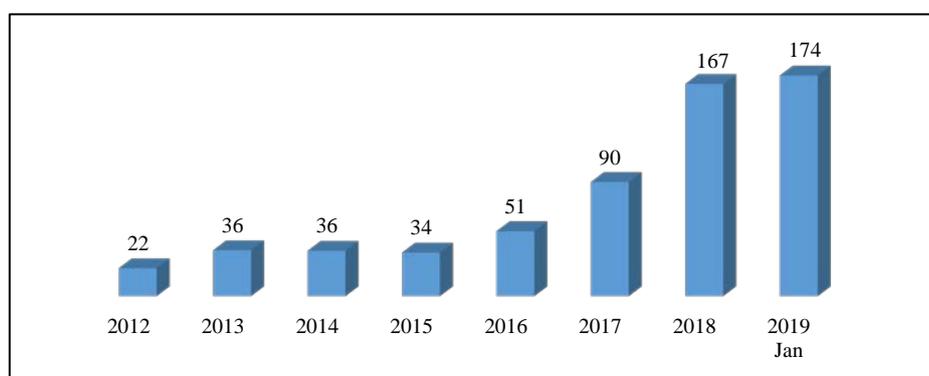
The Indonesian government has effectively improve digital channel/distribution which reflected on the data of electronic money that shows an increasing growth. The number of agent banking has also risen over time although most of them are located in Java Island.

Number of Electronic Money Transaction



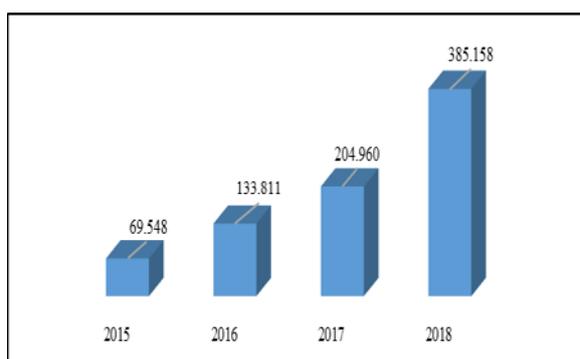
Source: Bank Indonesia

Amount of Outstanding Electronic Money (in Million)



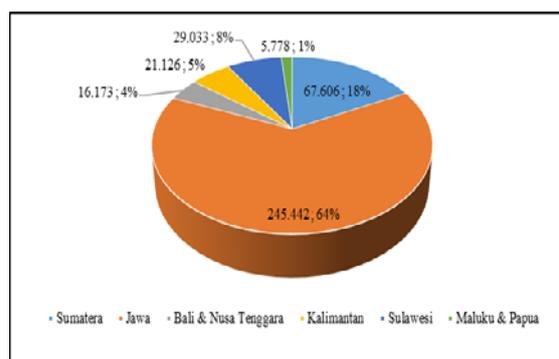
Source: Bank Indonesia

Number of LKD Agents (Banking Agent)



Source: Bank Indonesia

LKD Agents Distribution as of 2018



Source: Bank Indonesia

## Branchless Banking Information as of March 2019

	2018	March 2019
Number of Participating Banks	29	30
Number of Agents	1.004.547	1.073.134
Number of Basic Saving Account (BSA) Customers	22.832.105	23.340.281
Amount of outstanding BSA	IDR 1,57 Trillion	IDR 2.51 Trillion
Number of province of agent location	34	34
Number of districts/ cities of agent location	509	510

Source: Indonesia Financial Services Authority (OJK)

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Regulatory framework for Fintech**
- Regulatory framework for cryptocurrency
- Regulatory sandboxes**
- Digital Banking**
- Electronic Means of Payment
- Crowdfunding platform**
- Digital Retail payments,
- Digital payments and e-money**
- International remittances
- Personal and business loans
- Robo-advisors
- Cloud computing,
- P2P lending platform**
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

In the past 5 years, fintech, sandboxes, crowdfunding, digital payments and e-money as well as P2P lending have grown vastly in Indonesia. The development of digital economy has been supported by several laws and regulations:

1. Law Number 11 of 2008 on Electronic Information and Transaction
2. Presidential Regulation Number 74 of 2017 on Road Map E-commerce
3. Minister of Communications and Informatics Regulation Number 11 of 2018 on Electronic Certification

4. Bank Indonesia Regulation Number 20/6/PBI/2018 on Electronic Money
5. Indonesia Financial Service Authority Regulation Number 77/POJK.01/2016 on Fintech Lending
6. Bank Indonesia Regulation Number 19/12/PBI/2017 on Fintech
7. Bank Indonesia Regulation Number 19/8/PBI/2017 on National Payment Gateway
8. Bank Indonesia Regulation Number 21/18/PADG/2019 on the National Implementation Standards of the Quick Response Code for Payments
9. Indonesia Financial Service Authority Regulation Number 13/POJK.02/2018 on Digital Financial Innovation in the Financial Services Sector
10. Indonesia Financial Service Authority Regulation Number 37/POJK.04/2018 on Fund Contribution Services through Share Offers Based on Information Technology (Equity Crowdfunding)

#### Digital banking:

As the Central Bank of Indonesia, Bank Indonesia will continue to promote digital transformation within the financial sector to sustain banks role as a primary institution in the digital economy and finance through the implementation of standardized open API and the deployment of digital technology and granularity data on their financial product and services. This digital transformation in the financial sector will enable Indonesia to enter digital economy. Bank Indonesia will endorse banking industry to conduct appropriate digital transformation by introducing open API standards that will create a more robust payment system.

Going forward, the full-pledged implementation of digital open banking in Indonesia will be developed by standardizing the open API to allow data sharing and the interlink of bank with fintech through third party providers.

Furthermore, OJK has successfully issued Digital Financial Innovation regulation in 2018, the so called POJK number 13/2018. This innovation friendly regulation aimed to cover the dynamic of unlimited innovation sphere. This regulation also served as legal basis to promote innovation friendly ecosystem, support a robust supervisory system, give a clear message to the market and show a clear vision of the future market.

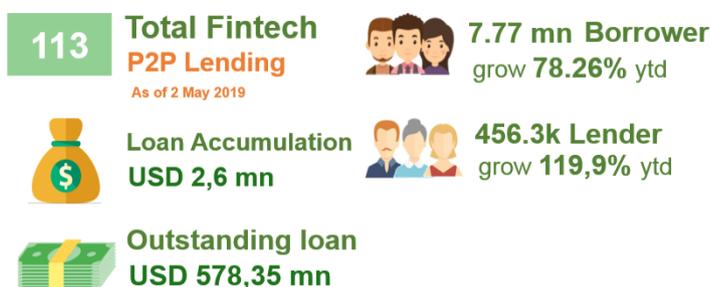
#### On digital payments:

In the retail value payment system, Bank Indonesia operates an economy-wide clearing system (SKNBI) and payment system industries operate payment cards and electronic money. Bank Indonesia has initiated and launched National Payment Gateway which processes economy-wide debit card transaction and operated by three industry institutions, namely Standard institution, Switching institution, and Service institution by National Electronic Transaction Settlement (PTEN). Retail payment transactions are still dominated by ATM-Debit instruments, while the Electronic Money (EM) grows the most rapid pace, driven by stronger non-bank players performance that grows more than 100% in a year.

#### On P2P lending platform and equity crowdfunding:

Considering the risk generated by certain use cases, or any other specific issues that needs special attention, OJK as regulatory authority in Indonesia, formulates “lex specialist” regulation. To avoid regulatory over burden, the issuance of such regulation should be very selective and based on the strong need of the market. On this regard, OJK has issued P2P Lending Platform regulation in 2016 (POJK number 77/2016) and Equity Crowdfunding regulation in 2018 (POJK Number 37/2018) in 2018. The main purpose of these regulations are to maintain the integrity and stability of the market, whilst accommodating the wish from the market.

### Number of Fintech P2P Lending Development as of April 2019



### Outstanding Loan Fintech Industry

Outstanding loan of peer to peer lending increase significantly as of April 2019 valued Rp 8,2 Trillion, grew 458% yoy..



Source: Indonesia Financial Services Authority (OJK)

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**Compliance**

Identity management and control

**Risk management**

**Regulatory reporting**

Transaction monitoring

Trading in financial markets

AML/CFT (anti-money laundering/ combating the financing of terrorism)

Misconduct analysis (e.g. financial fraud; mis-selling, etc.)

Others, please specify:

To ensure fast fintech development to comply with Good Corporate Governance and Market Conduct, OJK sets the supervision standard in the regulation and builds the supervisory system accordingly. "Light touch and safe harbor" approach was chosen as the base of Fintech supervision. Utilization of technology is also a key success factor in applying market conduct-based approach.

Using the latest technology, OJK builds supervisory technology (SupTech) and employs big data analytics. For instance, OJK uses customer handling data to catch the problematic issues as early warning signs.

OJK requires all fintech industry to have regulatory technology in place and expects to have more RegTech services in the market to support fintech ecosystem.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy’s short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

Increasing financial literacy.

Indonesia has conducted many financial education activities in order to increase financial literacy. The efforts of increasing financial literacy through financial education programs will be continued and improved.

Building infrastructure to support digital economy.

As part of technological inclusion, especially for service outreach in information and communication, Indonesia has launched critical technology infrastructure, the Palapa Ring project that will cover all sections (west, central, and east). In addition, as regulatory and supervisory authority, OJK builds fintech infrastructure by conducting regulatory sandbox, ‘Fintech Center’, and RegTech framework and guideline for digital finance innovation.

Strengthening payment system to support digital economy.

Moreover, from a central bank point of view, Bank Indonesia believes that payment system becomes the key to serve as the motor of the transformation. This could lead the way to establish sound digital ecosystem that stimulate innovation while at the same time ensuring monetary and financial system stability. As a response of this reform, Bank Indonesia is developing Indonesia Payments System Blueprint 2025 which will be based on 5 visions:

- First, Bank Indonesia will focus on supporting the integration of digital economy and finance to assure proper functioning of central bank mandate on money circulation, monetary policy, and financial system stability.
- Second, Bank Indonesia will continue to promote digital transformation within the banking industry to sustain banks role as a primary institution in the digital economy and finance through the implementation of open API standard and the deployment of digital technology and granularity data on their financial product and services.
- Third, Bank Indonesia will assure the interlinkage between FinTech and Banks to contain the escalation of shadow-banking risk through the regulation of the use of digital technology (e.g API), business relation, and business ownership.
- Fourth, Bank Indonesia will indemnify the balance among innovation, consumer protection, integrity, and stability as well as fair competition through the implementation of digital KYC & AML-CFT, data/information/public business openness, and the deployment of Reg-Tech and Sup-Tech for reporting, regulatory and supervisory.
- Fifth, Bank Indonesia will maintain the economy’s interest on cross-border use of digital economy and finance through the obligation of domestic processing for all onshore transactions and domestic partnership for all foreign players under the consideration of reciprocity principle.

As the operationalization of the visions, Bank Indonesia have formed 5 initiatives in 5 Working Groups. The first initiative will set the API standards for bank and fintech that consist of standardization of data, technical, security, and contracts. The second initiative will develop mobile based retail payment infrastructure using high end technology. Furthermore, large value payment system and financial market infrastructure will also be reformed based on international best practice. The forth initiative will work on the enhancement of utilization of granular data. Finally, the last initiative will reform regulations, licensing, supervision and reporting mechanism.

**Promoting the use of high end digital technology.**

The use of high end digital technology such as big data analytics, cloud computing, DLT, and AI by banks and fintech will be fostered to promote efficiency. All the initiatives would be complemented by regulatory reform, integrated licensing and robust supervision to improve capability in maintaining market discipline, integrity, risk management, and consumer protection.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

Geographical barriers resulted from Indonesia's geographical features.

Indonesia is a vast and diverse economy with significant gaps among the regions. To improve inclusion through digital utilization, one of the biggest issues is the digital adoption and literacy of the internet users, in addition to infrastructure issue. Thus, access to financial services and adding cost for financial institution expansion (e.g. branch opening). Although Indonesia's internet penetration rate has reached more than 50%, the digital adoption and literacy for productive activities remains an issue.

Financial literacy and infrastructure. As part of enhancing the financial inclusion through financial literacy, Bank Indonesia, as a payment system authority, encourages the implementation of non-cash transactions to increase efficiency, security and ease of transactions. Non-cash transactions has positive impact through encouraging people to learn and access financial product, thus enhances financial inclusion and economic growth. Therefore in 2014, BI launched the National Non Cash Campaign (called Gerakan Nasional Non Tunai) through electronification programs for both government and private transactions. The efforts are made to achieve the inclusive financial targets as stated in the National Strategy for Financial Inclusion (NSFI) launched by government in 2016 targetting 75% Indonesia adult population to have an account in the formal financial inclusion at the end of 2019.

In this regard, BI took various initiatives such as:

1. Non cash social assistance program (conditional cash transfer and non cash food assistance), which targetting low income population and vulnerable groups.
2. Electronification in local government transactions
3. Operational assistance program for basic education
4. Electronification in transportation sectors and toll road payment
5. Harmonization of Digital Financial Services (LKD) and Laku Pandai (Branchless Banking) together with OJK.

To measure the progress of financial inclusion, National Council for Financial Inclusion utilize the World Bank Global Findex Data. The data shows that the number of banked people increase significantly in 3 years, from 2014 – 2017, by almost 14% and was the highest acceleration in East Asia and Pacific Region. To complete Global Findex Data, OJK has conducted Financial Literacy and Inclusion National Survey which shows that Indonesia's financial literacy index reaches 29.66% in 2016, rising from 21.86% in 2013.

Moreover, as information and communication technology infrastructure is a vital aspect for digital financial inclusion, Indonesia has been developing Palapa Ring that will build a connection throughout Indonesia. As of December 2018, the project has accomplished 100% progress for west and central section.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Indonesia views there are 4 areas regional bodies could play important roles: (i) setting benchmarks and regulations; (ii) cross border supervision; (iii) economy experiences / knowledge sharing; (iv) provide technical assistance.

- (i) Knowledge sharing: as trans-regional cooperation, APEC can play a vital role in advancing its member knowledge in addressing structural reform challenges in digital economy through capacity development (knowledge sharing) program, that involves champion economy that has successfully advanced its structural reform to address digital economic challenges.
- (ii) Technical assistance: Cooperation and collaboration with regional and international organization could also be done in the form of technical assistance as well as joint project to support fintech industry development and fintech ecosystem.

## JAPAN

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

### **Improvement of Rules for the Digital Market**

Global data volume has been rapidly expanding in recent years. Digital platform companies are dramatically increasing potential access to global and other markets for SMEs, small business, ventures, and individual users.

Users, meanwhile, have expressed concerns about the difficulty of direct negotiations, one-sided rule changes, and high usage rates. These conditions highlight the need to improve legislation and guidelines for ensuring transparency and fairness in transaction practices.

Another concern is the threat of hindering competition via data monopoly in digital markets. Similar action is also needed.

Coordination of competition policy in the digital market requires high-level expert knowledge and also overcoming vertical divisions among ministries and agencies in order to facilitate timely responses amid accelerating changes. Japan intends to develop a new framework for these issues.

### **Fintech/Finance**

Existing financial regulations use frameworks that are fundamentally divided by industry, such as banks and fund transfer service providers.

Particularly in the payments field, some observers note that the regulatory scheme divided by business categories interferes with market entry by newcomers and flexible provision of services amid diversification of services in recent years.

Furthermore, the value and number of transactions handled by fund transfer services other than Japanese banks are steadily rising with advances by the Fourth Industrial Revolution.

“Business category” laws currently regulate providers of financial transaction agent and broker services in general, not only in the payments field. There is concern about interference with market entry by newcomers in these areas too.

### **Enhancement of Efficiency of Administrative Procedures through Digital Government**

The digitalization of administrative services will not only enable to reduce internal costs of government and private burdens of administrative procedures, but also provide the foundation of 'Society 5.0' which revitalizes new private business. If we get behind in the digitalization, we would see relative deterioration of administrative services and lose driving force to improve productivity and revitalize local economy. Furthermore, as the number of municipalities with less than 10,000 people is predicted to exceed a third of all the local governments in Japan in 2040, there is a concern that the quality and efficiency of administrative services would decrease in the future. While ensuring information security and properly considering protection of personal information, the central and

local government should promote promptly the digitalization of administrative services through cross-government measures.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance**
- Ease of doing business
- Others, please specify: \_\_\_\_\_

See above.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: productivity, inclusive growth**

#### **Regulatory Sandbox**

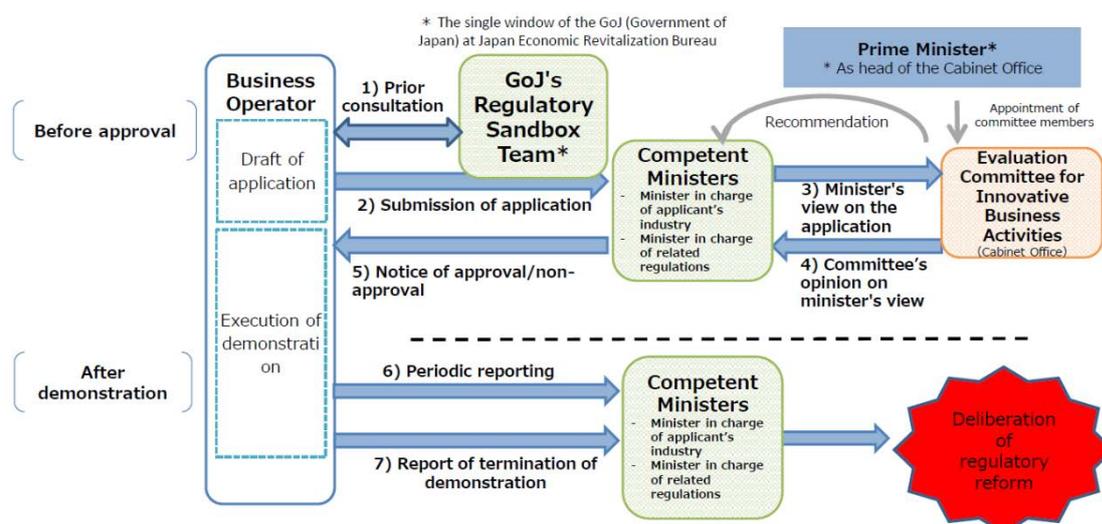
A fledgling business idea or technology needs support and understanding. In the case of government, we are introducing a sandbox approach that seeks to help new ideas develop by limiting administrative barriers and regulations on a case by case basis without being subject to existing regulations.

- Early stage business models or technologies are proposed to the government and evaluated on their merit
- Rules are relaxed to test these innovations within a certain contained “sandbox” (e.g. within an approved company or project). Businesses are able to conduct demonstration tests and pilot projects that are not envisaged under existing regulations inside of their “sandbox.”
- The testing environment allows businesses to conduct pilot projects quickly, building up data that can lead to change in regulations
- If pilot demonstrations of new technologies/business models are successful, government considers extending the same deregulation to the rest of the economy
- A dedicated office for this is set up to ease with the application process
- Law took effect in June 2018

Achievement:

- 8 testing projects in the field of IoT, online medical consultation, and Fin Tech have been certified (as of July 2019)

Process under regulatory “sandbox” is shown below.



## **Regional Development Using Information and Communications Infrastructure**

### **(1) Town Development using ICT**

Toward the Smart City that upgrades city functions through utilization of IoT, big data, and other technologies, Ministry of Internal Affairs and Communications (MIC) started “ICT Smart City Promotion Projects” in FY2017. The purpose is to solve various challenges facing cities by promoting “smart city based on data utilization” where an open data coordination platform for participation of diverse entities including venture companies is constructed and expanded to neighboring local governments and others to maximize ripple effects.

### **(2) Promoting the Development of Free Wi-Fi Environment**

For developing an environment to allow tourists to more smoothly use Wi-Fi services, MIC conducted a demonstration test for realizing authentication cooperation in line with the policies, which MIC formulated in February 2016. Based on the results of the demonstration test, the Wireless LAN Certification Organization was established in September 2016 and new services adopting the certification method commercialized by this Organization were commenced in October 2016. In July 2017, seamless cross-business Wi-Fi connection was realized at more than 200,000 places.

### **(3) Establishing Support Systems through the Deployment of ICT Experts Directed at Regional Stimulation**

MIC has been conducting initiatives to build up local economies and communities by making use of ICT since FY2007. Activities include sending Regional ICT Advisors — experts with knowledge and insight into regional ICT development — to regions motivated to revive their communities through ICT, providing assistance to build success models and propagating the results of these efforts economy-wide.

## **Promoting Teleworking**

Teleworking enables, through the use of ICT, flexible working arrangements that make better use of time and location. Teleworking can realize flexible working styles suited to the life stage and lifestyle of every citizen, including families with small children, senior citizens and persons with disabilities. It can be an ace in the hole of working-style reform. Ministry of Internal Affairs and Communications (MIC) is carrying out various measures to address challenges in introduction of teleworking.

### **(1) Telework Security Guidelines**

MIC has formulated and published “Telework Security Guidelines” to help private corporations wipe out anxieties about information security in implementing teleworking and introduce and utilize teleworking with security. In FY2017 the ministry revised the guidelines and published “Telework

Security Guidelines 4th Version” in the light of the recent social and technology changes (e.g. spread of cloud service and SNS) and new security threats (e.g. vulnerability of wireless LAN, appearance of ransomware and targeted attacks.)

(2) 100 Pioneers in Teleworking and MIC Minister Commendation

Since FY2015 MIC has been selecting “Pioneers in Teleworking” from among corporations introducing and utilizing telework. Proven pioneers are named publicly as “100 Pioneers in Teleworking.” In FY2016 the ministry established the “100 Pioneers in Teleworking – MIC Minister Commendation” to commend outstanding initiatives among “100 Pioneers in Teleworking.”

(3) Telework Day – a National Movement Project toward 2020

MIC, Ministry of Health, Labor and Welfare (MHLW), Ministry of Economy, Trade and Industry (METI), Ministry of Land, Infrastructure, Transport and Tourism (MLIT), the cabinet Secretariat and the Cabinet Office in cooperation with the Tokyo Metropolitan Government and entities concerned are calling for economy-wide implementation of teleworking by corporations as “Telework Day” on July 24 every year up to 2020. July 24 is the day when the opening ceremony of Tokyo Olympic Games is scheduled. The purpose is to reduce traffic congestion through teleworking during the Olympic Games and establish teleworking across the economy.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**X Fintech**

- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments
- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify:\_\_\_\_\_

Digitalization is expected to bring new players into the financial sector, give rise to innovative services, and exponentially enhance user convenience. As digital information is utilized in both financial and non-financial services, which may open the door for more sophisticated consumer-oriented financial services, existing financial institutions are required to adapt their business models in a customer-oriented way so that they can provide financial services better suited to the needs of users. The Financial Services Agency (FSA) developed the “Finance Digitalization Strategy” comprising a total of 11 measures for the improvement of financial services in light of such changes in the environment.

Furthermore, the FSA created the “FinTech Innovation Hub” under the Strategy, which will hold discussions and interact with venture companies and other experts to better understand the trends and direction of FinTech, and utilize the insights obtained to foster sound FinTech-related businesses.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- X Regulatory reporting**
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

The FSA conducts financial monitoring by gathering, accumulating, and analyzing (using) data within Financial Institutions, so it is necessary to respond without delay to the utilization of data by FIs.

In light of these circumstances, in order to resolve the various issues surrounding the collection, accumulation, and utilization of data by FIs and the FSA, it is necessary to establish systems in cooperation between the public and private sectors in the future.

In order to realize this concept, financial institutions will solicit the needs of financial institutions for the enhancement of the sophistication and efficiency of the collection, accumulation, and analysis of data between Financial Institutions and the FSA, and conduct demonstration experiments in cooperation with the public and private sectors from areas where initiatives can be made. With regard to cases where it is deemed appropriate to promote the establishment of systems through public-private partnerships through such efforts, consideration will be started to realize them, while expanding the fields and types of business covered by the system.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy’s short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

#### **Improvement of Rules for the Digital Market**

- Established an expert organization for assessing competitive conditions in the digital market in the Cabinet Secretariat

Building a framework for global data distribution requires construction of a powerful and clear framework for data collection, storage, management, and distribution in Japan. Detailed issues run across many ministries and agencies, including R&D on data security, development of shared, general-use data formats, promotion of data cleansing, ensuring privacy and security for data distribution, promotion of a Society 5.0 cybersecurity framework, strategic management from the standpoint of strengthening industrial competitiveness based on data types and structure ranging

from sensitive technology to general technology information, and formulation of data portability and API disclosure policies.

The government hence plans to create an expert organization on domestic and overseas data and digital markets (Digital Market Competition Headquarters (provisional)) comprised of experts with diverse and high-level knowledge across ministries and agencies. This organization will be given authority to promote innovation through responses to a variety of issues related to above-mentioned data usage, including data portability and API disclosure, authority to obtain survey results and other reports based on the Act on Prohibition of Private Monopolization and Maintenance of Fair Trade (the Antimonopoly Act) and other related laws and regulations from the standpoint of defining and assessing the digital market where global digital platform companies compete and promoting competition and innovation, and authority, authority to plan and handle overall coordination of fundamental policies on the digital market, authority to cooperate and collaborate with competition authorities of other economies.

Specific tasks include (a) assessing the competition situation in digital markets, (b) improving rules for a variety of platform businesses and conducting surveys and making recommendations on issues related to the Antimonopoly Act, protection of personal information, and other matters, (c) issuing recommendation on stimulation of the digital market, including SMEs and venture companies, and (d) participating in rule formulation process related to competition assessment in the digital market handled by the international frameworks such as the G7, G20.

- Improvement of rules to ensure transparency and fairness in transactions between digital platform companies and users

(Mergers and Acquisitions)

Data monopoly in the digital market poses a threat of hindering competition even if a company's sales only hold a small share of the market. Japan therefore needs to prepare guidelines and/or legislation to conduct reviews of business combinations that include assessment of data value. Attention will be given to avoid interfering with innovations in this process.

(Transparency and fairness of transaction practices, etc.)

Digital platform companies dramatically improve potential access to global and other markets for SMEs, venture companies, and freelancers (Gig Economy). However, transactions between digital platform companies and users also face potential problems, such as (a) one-sided application of contract terms and rules, (b) service additions and excess cost burden, and (c) excessive restrictions on access to data.

The government hence needs to improve legislation and guidelines to ensure transparency and fairness of transaction practices and other unique relationships formed in the digital market and aims to submit a bill to the National Diet's 2020 Ordinary Session (the Act on Improving Transparency of Digital Platformer Transactions (provisional)).

Meanwhile, consideration will be given in improving rules to use of rules that respect autonomy with a “comply or explain” approach initially for the purpose of avoiding interference with digital innovation for the Fourth Industrial Revolution.

Specific consideration items will be clarification and disclosure of contract terms and transaction rejection reasons, clarification of rankings (order of presentation for product search results), disclosure in cases of digital platform companies giving preference to their own products and services, disclosure of requests for most-favored-treatment clauses (such as clauses requesting the best terms among business partners), and an obligation to arrange a complaint processing system.

- Toward 5G development and realization of a G-Spatial Society

As part of efforts for realizing Society 5.0, 5G service launches in all prefectures by the end of FY 2020 and the government intends to provide necessary assistance for economy-wide deployment of 5G base stations, optical fiber, and other information and communications infrastructure by telecom carriers and others, while also ensuring security, and accelerate the 5G development plan by FY 2024. At that time, in order to realize regional revitalization, pioneering local public organizations that have specific efforts to solve their own regional issues will be given priority for support.

Furthermore, the government plans to promote social deployment of advanced technologies using geospatial information with a goal of realizing a society with advanced utilization of geospatial information (G-Spatial Society).

### **Fintech/Finance**

The government intends to revise the existing legal framework for financial and commercial transactions divided by business categories and to pursue realization of a function-based, cross-segment framework that applied the same rules to the same functions and risks. It hopes to promote entry by newcomers, innovations through competition among various services, and competition related to financial service quality.

#### **(Payments)**

The government plans to adopt a cross-segment framework in the payments field that has been cited as an area in which the vertical structure by business segment under current laws interferes with free selection of business models and services by service providers. This initiative aims to realize flexible, highly convenient cashless payment methods, besides existing bank fund transfers and conventional relatively high-sum credit card payments, through market entry by newcomers and competition among various services by 1) allowing seamless payments that combine prepaid and postpaid formats (note 1) and 2) creating a new fund transfer type positioned between banks and existing fund transfer firms and thereby facilitating a wide range of fund transfers (note 2) other than just bank fund transfers. In this process, the government also intends to introduce frameworks that enable smooth business deployment by fintech companies and other payment service firms, such as utilization of performance provisions in credit reviews under the Installment Sales Act. It plans to submit necessary bills for these changes to the National Diet's 2020 Ordinary Session.

#### **(Note 1) Seamless payments combining prepaid and postpone formats:**

Facilitate provision of seamless payment service using prepaid, postpaid, and other formats through adoption of a different system for small-sum, low-risk payments than the existing one for relatively high-sum payments.

#### **(Note 2) Non-bank fund transfers with a wide value range:**

In addition to existing fund transfer business that handles fund transfers up to one million yen, create a new type of fund transfer positioned between banks and existing fund transfer business and formulate a system that enables the transfer of funds exceeding one million yen with simpler regulations than applied to banks.

#### **(Cross-segment legal framework)**

The government intends to review measures for realization of a cross-segment financial services brokering legal framework that allows provision across segments of services for various functions, such as payments, fund provision, asset management, and risk transfer. It hopes that this initiative will enable provision of a highly convenient one-stop channel that meeting the needs of individual users utilizing smartphones and other devices, simplify selection of financial services that meet personal needs by users, and encourage competition for financial service quality. The government aim to prepare its fundamental approach for this initiative during 2019.

### **Enhancement of efficiency of administrative procedures through digital government**

With respect to the information system and data of the state and local governments, we intend to integrate, standardize and communalize it so that everyone can utilize it as a public goods which create rich cash flows. Especially, regarding the information system of local governments, we aim to standardize it at the initiative of the central government, including financial support, and promote the expansion of the cloud computing system and make it possible to use the system in large scale local public bodies by restraining customizing and so forth.

Toward the purpose of enhancing convenience, simplification and optimization of the administration through the utilization of IT technology, the government aims to realize the one hundred percent digitalization of the administrative services by reviewing the work, including the abolition of the attached documents, and making the administrative procedures online thoroughly based on the 3 Digital Principles(1. Digital First, 2. Once Only, 3. Connected One Stop).

In the various fields of the local government administration, while comparing with each other, we intend to improve the work efficiency through the utilization of ICT and AI and the standardization of work process and information system. The relevant ministries aim to develop the AI which is suited for the horizontal expansion and spread it economy-wide in the association with the local governments.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The following are policy examples, which aim to enhance inclusive growth with respect to the digital economy.

- Since digital textbook has a great potential to improve students' learning and reduce challenged students' difficulty in learning, the government plans to enhance its effective application in the field of education. While inspecting its effect and influence, the government intends to conduct a research from the perspective of international competitiveness and take necessary measures.
- Through formulating a guideline on management, the government plans to spread "the Community ICT Clubs" economy-wide as a place for bonding of new era so that children, students, working adults, handicapped children, elderly citizens and others can enjoy learning ICT skills and take a chance of social success.
- While sorting and disseminating advanced model of effective teleworking which contributes to utilization of diverse human resources such as women, challenged people and elderly people, the government intends to appoint experts such as Labor and Social Security Attorney and IT coordinator who are in charge of problem-solving of SMEs as a key carrier of spreading teleworking in order to promote teleworking consistent with regional and each company's conditions.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

To ensure reliability related to privacy, security, and intellectual property rights and facilitate unfettered flow without economy border concerns of data that is beneficial to resolving business and social issues, it is necessary to seek promotion of data free flow internationally.

In this context, Japan aims to work closely with the APEC to disseminate the concept of “Data Free Flow with Trust (DFFT)” which was agreed at the G20 Osaka Summit in June 2019.

## KOREA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

Data, network and artificial intelligence are the three major drivers of the transition to the digital economy, which is best represented by the Fourth Industrial Revolution. The Korean government has set the diffusion of the Fourth Industrial Revolution technologies based on hyper-connected intelligence as its main goal to support the various industries.

Korea also views regulatory reform as an important task in helping new technologies and services enter the market in the digital economy because most old regulations are not suitable for the digital economy as it has different features from the existing economic systems.

In addition, various policies related to the digital economy are implemented across the government. Therefore, it is crucial to define the scope of the digital economy and measure the achievements.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

As boundaries among industries get blurry and the competition gets intense, well-balanced policies need to be put in place to protect and foster the industries, taking into consideration Digital Darwinism. Naturally, boundaries among ministries and government agencies are getting vague as well. Therefore, collaboration among different organizations is crucial more than ever. In addition, as we move towards the digital world, existing acts and legislations should be reviewed from a different point of view and revised if necessary.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**

- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

Since 2013, the Korean government has actively promoted administrative innovation to integrate government services and eliminate silos among ministries. This effort has allowed the government to provide proactive and customized services to the citizens and facilitate the disclosure of government data.

Especially, with the enactment of the Act of Promotion of the Provision and Use of Public Data, the open data policy has contributed greatly to the growth of related industries as many businesses and citizens are starting to create services using open data. Moreover, Korea has ranked top on the OECD's OUR Data Index two consecutive times.

Furthermore, the Korean government built AI infrastructure called the AI Hub in January 2018, opened up AI education data to the private sector and provided computing resources for AI products and services development. Thanks to these efforts, there have been great progress in the number of AI companies and the amount of investment for AI research and development. (The number of AI companies increased from 16 to 43 from 2016 to 2018, and R&D investment grew from 130 billion won to 270 billion won during the same period.)

**3a. (Specific to Financial Sector) Best Practices:** Of the structural reform relating to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Regulatory framework for Fintech
- Regulatory framework for cryptocurrency
- Regulatory sandboxes**
- Digital Banking
- Crowdfunding platforms
- Digital payments
- International remittances
- Personal and business loans
- Robo-advisors
- Cloud computing,
- P2P lending platform
- Use of open data on financial services
- Open Banking
- Others, please specify: \_\_\_\_\_

It is difficult to bring innovation to financial services because the regulations on the financial industry are strict, rigid and complex. To tackle this problem, the Korean government enacted the Special Act on Financial Innovation Support, a financial regulatory sandbox for introducing new financial services using emerging technologies such as big data or AI, in December 2018. Since then, 9 financial services\* were designated as innovative financial services as of May 2, 2019.

\* example : the AI credit information service using real-time accounting big data information

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting**
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

Korea's financial authority (the Financial Supervisory Service or the FSS) is working on a pilot project for machine-readable regulatory reporting. To do this, regulations must be translated into a machine-readable language and a standardized interface must be developed for financial institutions and regulators. The machine-readable regulatory reporting is expected to lower the cost of regulatory compliance for financial institutions and increase the accuracy of their data in a more complex regulatory environment.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

The Korean government introduced the Data & AI Economy Vitalization Strategy on January 16, 2019 to vitalize the lifecycle of data value chain, which will in turn innovate the economy and the society with hyper-connected intelligence, and to foster a world-class AI innovation ecosystem. The government also initiated its 5G Plus Strategy on April 8, 2019 to establish a new, 5G-based convergence service ecosystem after the launch of the world's first 5G network in Korea on April 3, 2019.

In addition, the Korean government introduced a regulatory sandbox to help products and services using emerging technologies enter the market on January 17, 2019, and the Regulatory Sandbox Committee has had three meetings and approved 49 cases as of May 10, 2019.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

[Challenges]

The spread of intelligent information technologies prompted by the Fourth Industrial Revolution will facilitate inclusion and innovation. However, there are also concerns that it may cause greater inequalities.

- 1) The ageing society will cause a rapid increase in the number of the old and the disabled, ultimately resulting in a constantly growing socially disadvantaged group.

- 2) Behind the economic, social and cultural benefits brought by ICT development lie inequalities and the exclusion of the disadvantaged. For instance, elderly people who are not capable of using the Internet pay about four times more as offline money transfer charges than Internet and mobile banking users.

[Policies and Action Plans]

As a comprehensive plan to cope with the emerging digital divide, Korea introduced a strategy called “ICT for ALL” in November 2018 with a vision for building “a human-centered intelligent information society for all”. This plan is included as a major initiative (achieving digital inclusion for all) in Korea’s key strategy No.3 — Create a human-centered intelligent information society — under the 6th Master Plan for National Informatization (2018-2022).

The Korean government also operates information villages in rural and mountainous areas to enhance digital inclusion and promote the digital economy. Information villages actively takes part in digital commerce (InVil Shopping) to provide local delicacies and tour programs to consumers in larger cities.

[Performance and Future Plans]

As a result of various inclusion policies, the socially disadvantaged people’s information access level has reached 91.1%, which is almost on par with general citizens, and their levels of capacity (59.1%) and utilization (67.7%) are also showing continuous improvement.

Digital Informatization Level of the Disadvantaged Compared to General Citizens

(Unit: %)

Type	2016	2017	2018
Information Access	84.5	91.0	91.1
Information Capacity	45.2	51.9	59.1
Information Utilization	59.0	65.3	67.7
Total	58.6	65.1	68.9

※ The informatization level of the socially disadvantaged group with the level of general citizens being 100.

Source: Ministry of Science and ICT of Korea, 2018 Status Survey on Digital Divide

As the information capacity and utilization levels of the disadvantaged group are still lagging behind the level of information access, the Korean government is planning to carry out more practical measures to support them. For instance, the Korean government is increasing mobile-focused education to help the disadvantaged group better adapt to changing technologies and services, helping to build their capacity to use new services in their daily lives and expand the scope of their ICT-driven economic activities so that they would not be excluded from online economic and social activities.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

As the volume of the digital economy is expanding and digital connectivity is increasing, regional cooperation has become all the more significant in advancing the digital economy. Considering the cross-cutting characteristics of the digital economy, regional cooperation plays an important role in achieving regional prosperity.

APEC can be a venue for member economies and other external bodies to share knowledge, experiences and best practices. Especially, newly emerging issues revolving around the digital economy needs further discussion between various stakeholders in the region through joint capacity-building activities, and pan-regional issues such as cyber security and personal information protection require joint responses.

To address various policy gaps, barriers and the challenges of the digital economy, APEC should propose and implement cooperative projects for promoting economic growth in the APEC region and narrowing the gap between APEC member economies. For example, implementing the APEC Internet and Digital Economy Roadmap is one of the major tasks of APEC. To facilitate the implementation of the roadmap, Korea proposed the establishment of an APEC digital innovation fund last year. The fund will support various projects for strengthening digital capabilities and regional ties by encouraging member participation.

## MALAYSIA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: Social safety net and labour law review (please refer to Q2 for further elaboration)**

### FINTECH UNDER THE GOVERNANCE OF CENTRAL BANK MALAYSIA (BNM)

Rapid evolution in fintech has compelled regulators to continuously reassess its regulatory and supervisory regime to keep pace with the evolving risks to financial stability. Greater digitalisation of financial services (including those leveraging on shared platforms and algorithm-based decision making in financial transactions) can amplify herd behavior, inter-connectivity and speed to contagion risk across institutions, markets and economy boundaries. Thus, the challenge lies in balancing the trade-offs in facilitating innovation and managing risks and in determining the proportionality of regulation.

However, the subjective nature of 'innovation' in financial services makes it challenging to apply proportionality in regulation without demarcating these financial service providers at the onset. In this sense, there is a need for numerous policies to be attuned to the nature and incidence of particular innovations. The need to deliberate on 'innovation' on a case-to-case basis often leads to a lag in regulation.

As there are often significant time lags between introducing a fintech solution and being able to holistically assess its risks and impact on consumers, there is a stronger need for an ethical underpinning for fintech solutions with stronger focus on consumer well-being. This is a crucial element to maintain trust in the financial system, as financial transactions including those delivered via use of technology rely on trust. Ethical practices are necessary to build that trust. In addition, to promote greater transparency, regulations would also need to consider not just asymmetry of information, but also asymmetry of understanding of risks and rewards on the usage of fintech solutions.

One of the emerging financial stability risks from the usage of fintech is increasing reliance by financial providers on third-party service providers for data provision, cloud storage and analytics. While these may reduce operational risk at the individual institution, it could also pose new risks and challenges for the financial system as a whole. If this trend were to continue, along with a high degree of concentration among service providers, operational failures and cyber incidents could disrupt the activities of multiple financial institutions. This remains an issue for many authorities to consider.

### HOME ECONOMY UNDER THE PURVIEW OF MALAYSIA PRODUCTIVITY CORPORATION (MPC)

Regulatory and legal framework is considered as one of the major barriers and challenges to implement structural reforms relating to the digital economy. For example, the rise of the home sharing economy posed challenges to the existing regulatory framework on the (1) conflict between traditional industries and newly emerging platforms, (2) managing negative externalities on nuisances, noise, traffic etc. (3) safety and security issues - inadequate building's fire protection system, theft and damages to common facilities (4) extra-jurisdictional issues, such as domestic earnings that flow overseas and by-passing local taxation authorities (3) data sharing issues for tax assessment and security reasons, and (5) consumer

protection issues – such as data protection, including the selling of user data by platforms, liability and insurance.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business
- Others, please specify: Alignment of developmental policies**

Need for improvement in dealing with cross-cutting issues on regulatory and legal frameworks for platform-based economy and Artificial Intelligence (AI) activities, ranging from compatibility of privacy regimes, cybersecurity standards and consumer welfare considerations, to the appropriate ethical and governance structure.

Policy makers and regulators faced significant challenges whether to amend existing regulations or to design new regulation to ensure a balance between fostering innovation, protecting consumers, and addressing the potential unintended consequences of disruption.

On an industry-wide level, one of the challenges is in ensuring developmental objectives are aligned across Ministries and Agencies domestically. This is to facilitate the industry to move forward cohesively and to be able to efficiently drive forward the economy’s digital and innovation agenda. Some of these challenges have been addressed via the signing of MOUs between different policy makers from various Ministries and Agencies for them to engage more closely and align initiatives collectively.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: Initiatives on an inclusive digital entrepreneurship**

#### **DIGITAL FREE TRADE ZONE INITIATIVE**

In March 2017, Malaysia formally launched the Digital Free Trade Zone initiative at the Global Transformation Forum. The DFTZ is an initiative to capitalise on the confluence and exponential growth of the internet economy and cross-border e-Commerce activities and to facilitate seamless cross-border trade and enable local businesses to export their goods with a priority for e-Commerce.

DFTZ has three components; eFulfilment Hub (To help SMEs / businesses in exporting their goods easily, with the help of leading fulfilment service providers); Satellite Services Hub (To connect SMEs / businesses with leading players who offer services like financing, last mile fulfilment, insurance and

other services which are important in cross-border trade); and eServices Platform (To efficiently manage cargo clearance and other processes needed for cross-border trade).

### **DIGITAL FINANCING & DIGITAL INVESTMENT FRAMEWORKS UNDER THE PURVIEW**

Malaysia through Securities Commission (SC) believes that there is already a strong regulatory framework for capital market laws, which are underpinned by principles of proportionality and transparency. Malaysia is cognisant that regulation must be able to adapt and respond to market and economic events, innovation and evolving technologies. However, achieving the goals of business efficiency and investor protection would require careful balancing in the design of the regulatory framework.

In this regard, having a clear regulatory framework to facilitate digital finance would provide certainty to market players, issuers, as well as investors. To this end, SC has adopted a facilitative approach where regulation is imposed on a graduated scale in line with the growth of the market and complexity of the product. This is clearly seen through regulatory framework for equity crowdfunding (ECF), peer-to-peer (P2P) financing and digital investment management (DIM) activities, where the regulatory frameworks were socialized and obtained feedbacks via targeted focus group discussions and engagement sessions with members of the Fintech community.

Having clear strategies and objectives are key to drive effective structural reform relating to digital economy. To facilitate the adoption of digital innovations in capital market, SC has crafted a holistic digital agenda for the capital market in 2016 designed towards:

- Enhancing access to financing
- Increasing investor participation within the capital market
- Augmenting the institutional markets
- Developing synergistic ecosystem

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show

- Fintech**
- Cryptocurrency (digital asset that uses cryptography for security)**
- Sandboxes**
- Digital Banking**
- Crowdfunding platforms**
- Digital payments**
- International remittances**
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)**
- Cloud computing,**
- P2P lending platform**
- Use of open data on financial services
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Others, please specify: \_\_\_\_\_

**Fintech**

Fintech activities are regulated according to the areas of activity as elaborated below, under the purview of the respective regulators.

**Regulatory framework for cryptocurrency (digital asset that uses cryptography for security)**

Via the Capital Markets and Services (Prescription of Securities) (Digital Currency and Digital Token) Order 2019 and amendments made to the Guidelines on Recognized Markets, the SC has put in place a new regulatory framework to facilitate the trading of digital assets in January 2019. This framework forms part of the SC's ongoing efforts to promote innovation and facilitate development in the digital asset trading ecosystem while ensuring investor protection. Pursuant to the new framework, in May 2019, the SC has registered three (3) Recognized Market Operators to establish and operate digital asset exchanges in Malaysia.

Moving forward, the SC will also regulate the issuances of digital assets via initial coin offerings (ICO). In March 2019, the SC issued a public consultation paper to seek public feedback on the proposed ICO framework which among others discussed the eligibility of issuers, the need for transparent and adequate disclosures as well as utilisation of proceeds of the ICO.

**Regulatory sandboxes**

BNM launched the Fintech Regulatory Sandbox (Sandbox) in October 2016. The Sandbox is open to all fintech companies including those without any presence in Malaysia as well as stand-alone fintech companies.

A product/ service/ solution is deemed to be innovative if it is not already available in the Malaysian market and this will be evaluated with the value propositions that the product, service or solution may bring to the financial services industry.

Experience in the Sandbox has delivered a number of important benefits including a better approach of formulating appropriate regulations and provides an opportunity for fintechs to become more familiar with operating in a regulated environment. Among the new regulations that have been introduced following Sandbox experiments include the regulations on electronic Know Your Customer (e-KYC) and products aggregators.

**Digital banking**

BNM has received interests to establish digital banks via the Sandbox application and is keen to explore the potential benefits that may be derived for Malaysia. As such, BNM is in process of formulating the regulatory framework for digital banks by Q4 2019.

**Digital payments**

BNM continues to transform Malaysia's payments system through three waves of reforms:

- 1st wave (2013 to 2015): Accelerated cheque decline and greater adoption of electronic fund transfers through the Pricing Reform Framework and e-Payment Incentive Framework;
- 2nd wave (2015 to 2018): Payment Card Reform Framework (PCRF) spurred higher growth in point-of-sale (POS) terminals and debit card transactions; and
- 3rd wave (2018 onwards): Turning every mobile phone into a digital wallet through the Interoperable Credit Transfer Framework (ICTF).

**International remittances**

Promoting the provision of electronic remittance (e-remittance)

- BNM seeks to encourage the wider adoption of technology within the money services business (MSB) sector to increase the provision of more convenient and cost efficient money services. One of the key strategies is the expansion of e-remittance, which entails the delivery of digital solutions for remittance services through mobile and web-based channels. To date, BNM has approved 23 e-remittance service providers (RSPs) in Malaysia.

#### Introduction of e-KYC policy for remittance transactions

- BNM issued a policy document in 2017 to allow qualified RSPs to conduct Know Your Customer (KYC) through digital platforms when on-boarding a new customer. The effective use of regulatory technology to conduct e-KYC enables RSPs to authenticate identity documents and perform facial recognition of customers remotely, with the aim of achieving outcomes that are comparable or superior to face-to-face procedures. This has had a significant impact in encouraging the wider use of formal remittance channels, by reducing the costs of conducting KYC over the counter, and improving access in locations where RSPs do not have a physical presence. To date, 7 RSPs have been approved to implement e-KYC in providing remittance services.

#### Awareness and educational programme - “Project Greenback 2.0”

- BNM, in collaboration with the World Bank, has introduced the Project Greenback 2.0 in 2 champion cities in Malaysia which have a high population of migrant workers. Project Greenback 2.0 is aimed at increasing the efficiency and transparency of remittance products through an innovative approach to enable consumers in making informed decisions when using remittance services. Initiatives implemented under the Project Greenback 2.0 centred on educating the public on identifying formal MSB channels by leveraging on the aggregator applications, and promoting the use of e-remittance solutions among individuals and businesses on a wider scale.

The effectiveness of these initiatives has been reflected by the increase in the migration of remittance from informal to formal channels and the reduction of remittance costs in Malaysia.

#### **Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)**

In the portfolio management services domain, the launch of the digital investment management framework in 2017 is part of the SC’s on-going efforts to bring financial inclusion to the masses through the use of technology. This is in line with SC’s digital agenda to increase investor participation within the capital market, by providing a more convenient, affordable and accessible channel to help investors to grow and manage their wealth.. The framework is meant to allow for automated discretionary portfolio management services to be offered to Malaysian investors, are 2 licensed digital investment managers to date.

#### **Cloud computing**

BNM has released the Risk Management in Technology exposure draft on 4th September 2018. For cloud solutions, the exposure draft details the adoption of a consultative approach instead of prior approval i.e. financial institutions (FIs) to consult BNM prior to use of cloud. However, if the use of cloud involves material outsourcing arrangement, the requirement for prior approval remains as per Outsourcing standards. In the engagement with BNM, FIs need to demonstrate technical know-how e.g. on security requirements and controls, and adequate experience with non-core systems using clouds before considering the use of clouds for core system).

#### **Equity crowdfunding and peer-to-peer financing**

In 2015, the SC introduced regulations for equity crowdfunding (ECF) regulations to address gaps in early stage capital while peer-to-peer (P2P) financing regulations were introduced in 2016 to bridge working capital needs via the Guidelines on Recognised Markets. This is in line with SC’s digital agenda to enhance access to financing. As of March 2019, more than 900 MSMEs have successfully raised close to RM350 million (approx \$USD 84.5 million). Currently, there are 10 ECF platform operators and 11 P2P Financing platform operators who are registered with the SC.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for

other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring**
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

#### Transaction monitoring

BNM assumes the role of the Financial Intelligence Unit (FIU) for Malaysia. This entails responsibilities that include receiving information from reporting institutions, analyzing, and disseminating this information to competent authorities, such as the police, for further investigation and action. A large part of this information is a result of transaction monitoring process, which is an essential part of a robust AML/CFT framework. Financial Action Task Force (FATF) Recommendations<sup>3</sup> require banks to report all suspicious transactions, including attempted transactions, regardless of the amount of the transactions (Recommendation 20), to the FIU.

At institutional level, each reporting FI is required to have in place an effective information management system that will allow it to comply effectively with transaction monitoring and reporting requirement. The suspicious transactions are compiled, analysed and subsequently sent to the Financial Intelligence and Enforcement Department (FIED) of BNM. The task of managing and analysing this information has become increasingly challenging with the advent of financial technology from the automated teller machine (ATM) to online banking, and now, mobile banking which has significantly increased the amount of transactions and, consequently, suspicious transactions that are reported and needed to be analysed.

In order to facilitate this process, BNM has introduced the use of information management system called Financial Intelligence System (FINS) in 2006, to ensure that the information can be transferred between the reporting institutions and BNM, and vice versa, efficiently and securely. FINS is a web-based system that allows reporting institutions to submit suspicious transactions reports (STRs) to BNM online. Compliance Officers of each of the reporting institutions are given secured access to the system in order to file the STRs. BNM can then process and manage these STRs efficiently using myriad of tools available for analysts including to search through the data, compile statistics, and obtaining record. BNM also uses FINS as a secured way to communicate important information to the reporting institutions such as typologies report, guidance, orders, and latest updates on ML/TF.

At present, BNM received between 300-500 STRs in a day from all the reporting institutions.

#### AML/CFT (anti-money laundering/ combating the financing of terrorism)

BNM is currently focusing its reg-tech initiatives primarily on e-KYC efforts. In view of healthy industry appetite and an absence of an economy-wide digital ID in the short term, BNM has introduced a specialised track for e-KYC solutions in the Regulatory Sandbox.

The Specialised Sandbox focuses on e-KYC processes given the potential to enable more efficient and accessible financial services through digital on-boarding. This specialised track aims to accelerate the development of e-KYC solutions in the industry while enabling more flexibility in testing parameters and data collection to inform policy-making on non-face-to-face KYC requirements.

<sup>3</sup> FATF is an independent inter-governmental body that develops and promotes policies to protect the global financial system against ML/TF. The Recommendations are recognized as the global AML/CFT standard.

In 2016, the SC has amended its Guidelines On Prevention Of Money Laundering And Terrorism Financing for Capital Market Intermediaries to introduce new Customer Due Diligence requirements for establishing non face-to-face business relationship. This would facilitate capital market intermediaries to adopt more digital processes to enhance operational efficiencies while ensuring compliance with AMLA requirements.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

Malaysia has in place several near-term economy-wide masterplans underpinning efforts for broader digital structural reforms. Among them are:

1. National eCommerce Strategic Roadmap – 6 thrust areas which will guide and enable Malaysia's stakeholders in eCommerce ecosystem to contribute to the eCommerce agenda.
2. Industry4WRD - In response to the Fourth Industrial Revolution (4IR), Malaysia launched the Industry4WRD to drive digital transformation of the manufacturing and related services sectors in Malaysia.
3. Malaysia targets to publish a regulatory framework for Digital Banks by Q4 2019.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress

#### DIGITAL ENTREPRENEURSHIP

Malaysia has pioneered steps to promote inclusivity through award-winning digital entrepreneurship programs such as eUsahawan and eRezeki. Such programmes focus on becoming a hub consolidating digital tasks between international and local platforms on different categories of tasks complexities - simple digital microtasks, digitally-enabled tasks, and digital work.

The next step is identifying how to match these tasks with an appropriate target community, including the lower income groups to take advantage of potential business opportunities created by the gig or sharing economy. Prior to these, individuals are provided with relevant skills training where necessary. These project have even been piloted with the Malaysian Association for the Blind to encourage their integration with digital platforms to establish or expand business activities.

Since 2015, more than 160,000 students and micro-entrepreneurs have passed through the eUsahawan program, of which approximately 30% of participants generated additional sales of more than RM 320 million (approx. \$USD 77.2 million) over a period of 3-6 months. To date, more than 2,800 participants have on-boarded various eCommerce platforms.

#### DIGITAL LITERACY AND IMPROVING THE INFRASTRUCTURE

There is a need for continuous efforts in social inclusion by improving the ability, opportunity and dignity of the most vulnerable groups (elderly, poor households, women, disabled communities and immigrants) through fairer policy packages. In this regard, Malaysia has ensured strategies to bridge the digital divide and accelerate digital transformation among these group:

1. Improving digital literacy by designing more curriculum for skills upgrading and partnerships with Community Based Organisation or non-governmental organisation (NGOs) for effective dissemination of digital literacy

- Support the development of an economy-wide volunteering network of digital champions and partnerships with the private sector to empower digital skills development (coding).
  - Malaysia has adopted all the standards recommended by the UNESCO’s Global Digital Literacy Framework to harmonise skills development.
2. Expanding outreach of user-friendly government services for active civic participation
    - For example, the Government has enhanced and consolidated over 400 public services within Mobile Community Transformation centres to expand the outreach of digital services, which have benefited over 2.6 million users.
  3. Improving coverage, quality and affordability of digital infrastructure for the vulnerable groups
    - The Government has established an economy-wide target of 1% gross national income per capita for fixed broadband cost. By encouraging common infrastructure sharing and greater transparency in wholesale level pricing, pricing of new entry levels into fixed broadband has been reduced by more than 40%.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified

Provide platform for APEC economies to discuss emerging issues relevant to digital economy e.g. cybersecurity resilience, re-skilling and upskilling of the labour force.

Promote collaboration in the region to drive the digital economy in the areas of common interests such as micro, small and medium enterprises (MSMEs), consumer protection; security of electronic transactions; and electronic payment infrastructure.

Work on improving the current state of trade facilitation and mobility of skilled workers within the Asia Pacific region to support growth in the digital economy.

Promote innovation within capital markets, enhance the cross-pollination of Fintech concepts which will benefit financial services institutions, startups and investors alike besides foster greater understanding of different digital regulatory philosophies through information sharing. This can be achieved among others by exchange of experiences and best practices in this area.

## MEXICO

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

We consider that the three major barriers and challenges to implementing structural reforms regarding digital economy are:

i) Digital economy in Mexico is still flourishing. As of April 2019, the National Banking and Securities Commission (CNBV) has identified more than 500 fintech firms that offer several financial services using disruptive and innovative technologies in the banking, payments and insurance sectors. However, the number of Fintech firms is still growing. Fintech firms with different business models and that offer a wide range of products and services is rising by the second, thus making it hard to measure the depth of the digital economy.

ii) Mexico has a legal framework that requires Fintech firms with business models regarding certain financial activities such as lending and deposits, to be subject to authorization, regulation and supervision by financial authorities. However, there is still work to do. Currently, Mexican authorities are working on developing provisions related to key aspects for the operations of Fintech firms in order to provide the industry with appropriate rules for their operations and a broader risk mitigation framework.

iii) Mexico still has certain challenges regarding ways to enhance business activities in order to promote growth, create jobs and generate income that can be spent and invested domestically. Mexico is in the right path to have in place effective rules to ensure high quality business to realize economic gains, reduce corruption and encourage firms that enhance the digital economy in the economy.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify:** \_\_\_\_\_

We consider that three of the major policy gaps relating to the digital economy in Mexico are the following:

1) Policies to promote partnerships between financial institutions and new entrants (digital economy entrepreneurs) – collaboration between existing financial institutions and Fintech firms remain a challenging process in Mexico. Collaboration and partnerships among those institutions can help

create a more robust financial services sector that can better serve consumer's needs, whether banked or unbanked.

2) Additional policies or measures to enhance financial access to unbanked and underbanked consumers – access to financial services through new and innovative products and services outside the conventional banking system is vital for creating and accelerating sustainable economic growth, creating employment and social development, thus the need of support policies to reach these consumers with new and innovative technologies.

3) Policies that promote the benefits of digital economy innovation in the financial sector – helping create Fintech awareness by educating individuals and consumers regarding the benefits (and potential risks) of Fintech products and services, can help promote the ease of doing business in the sector, provide consumers with tools to make informed decisions, move toward a digitalized economy helping reduce fraud, tax evasion, improving account penetration and payments efficiency.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

Four effective examples of structural reforms relating to the digital economy in Mexico in the past five years are:

1) FinTech Law (was enacted on March 2018). It provides legal recognition to crowdfunding and e-money entities, referred to as financial technology institutions (FTIs), setting the authorization and supervisory frameworks, and granting powers to the financial authorities to set additional requirements in secondary regulation, as well as allowing FTIs and banks to make transactions using cryptocurrencies, subject to the rules issued by the Central Bank. The existing regulatory framework has made Mexico as one of the most important emerging Fintech hub in America with worldwide recognition.

2) National Cybersecurity Strategy (November 13, 2017) Mexico presented the modifies the legal framework for banking institutions regarding cybersecurity issues that would guarantee the protection of personal data, among other relevant modifications. Currently, the amendments to credit institutions regulations (specifically Banks and FTIs) aims at strengthening security controls by establishing minimum standards of compliance such as the implementation of a Chief Information Security Officer (CISO), Cyber Intelligence, Security Master Plan and Vulnerability Management.

3) Federal Telecommunications and Broadcasting Law<sup>4</sup> (July 14, 2014), was published on the Official Journal of the Federation (DOF, by its acronym in Spanish), this Law aims to regulate the use, development, and operation of the radio spectrum, the public telecommunications networks, access to active and passive infrastructure, satellite orbits, satellite communication, the provision of

<sup>4</sup> Federal Telecommunications and Broadcasting Law: <http://www.ift.org.mx/sites/default/files/contenidogeneral/asuntos-internacionales/federaltelecommunicationsandbroadcastinglawmexico.pdf>

public broadcasting and telecommunications interests of a general interest, and their convergence, the rights of users and audiences, and competition processes in these sectors.

4) Federal Economic Competition Law<sup>5</sup> (May 23, 2014), was published on the DOF, the purpose of this Law is to promote, protect and guarantee free market access and economic competition, as well as to prevent, investigate, combat, prosecute effectively, severely punish and eliminate monopolies, monopolistic practices, unlawful concentrations, barriers to entry and to economic competition, as well as other restrictions to the efficient operation of markets.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**X Fintech**

Cryptocurrency (digital asset that uses cryptography for security)

**X Sandboxes**

Digital Banking

**X Crowdfunding platforms**

**X Digital payments**

International remittances

Personal and business loans

Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)

Cloud computing,

P2P lending platform

Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))

Use of open data on financial services

Others, please specify: \_\_\_\_\_

As a result of a long work, on March 8, 2018, the Law to Regulate Financial Technology Institutions<sup>6</sup> (ITF, by its acronym in Spanish) was signed, also known as the Fintech Law, which was published in the DOF on March 9.

Likewise, the Law contemplates, as a principle, the protection of the consumer, the requirements, functions, responsibilities and prohibitions that arise when requesting and granting an authorization to organize and operate as ITF, are clearly established. Therefore, the businesspersons are certain about the way in which they should behave in order not to fall into a conduct that implies a fine or a crime.

The nature and mission of this Law is aimed at promoting financial inclusion throughout the economy, protecting the consumer, generating financial stability and competition, as well as to prevent and mitigate the risk of money laundering and financing of terrorism.

The main figure in this Law are the ITF, comprised by the collective financing institutions (IFP, by its acronym in Spanish), the electronic payment funds institutions (IFPE, by its acronym in Spanish) and the innovative models developed in the regulatory “sandbox”. Supervision and monitoring will

<sup>5</sup> Federal Economic Competition Law: [https://www.cofece.mx/cofece/images/Documentos\\_Micrositios/Federal\\_Economic\\_Competition\\_Law.pdf](https://www.cofece.mx/cofece/images/Documentos_Micrositios/Federal_Economic_Competition_Law.pdf)

<sup>6</sup> Law to Regulate Financial Technology Institutions: [http://www.diputados.gob.mx/LevesBiblio/pdf/LRITF\\_090318.pdf](http://www.diputados.gob.mx/LevesBiblio/pdf/LRITF_090318.pdf)

correspond to the CNBV, the Bank of Mexico and the Ministry of Finance and Public Credit (SHCP, by its acronym in Spanish).

The Mexican fintech law also included the figure of regulatory sandbox, which we expect that it will accelerate the development of new business models in the financial services industry.

The fintech sector in Mexico started to grow up quickly since 2015, given the number of start ups which started to offer some kind of financial services and the systemic risk and fraud risk to the general public, authorities decided to take action and started to define a legal framework to regulate them. The first selected Fintech models to be regulated were crowdfunding and digital payments because these models engage in reserved activities according to the local law. In addition to mitigate the mentioned risks, the new law also gave legal certainty to these startups by recognize them as formal entities in the Mexican financial system and gives the same legal certainty to other players of the system and enable them to do business without the fear of doing an illegal activity.

In summary, the Fintech law aim to promote competition in the Mexican financial services sector by giving legal certainty, enable the doing of business and fostering the creation of new entities in the market.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting**
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

CNBV is working on the development and implementation of a Suptech platform to receive regulatory reports from the soon to be authorized Fintechs and AML/FT data from commercial banks. For CNBV this is a strategic initiative that will transform the supervision process by eliminating manual tasks in the aggregation and data collection, as a consequence, administrative and operational procedures will be streamlined.

For the financial services sector this is also a fundamental change, because it will transform the way regulated entities report information and its periodicity. The communication platform is based in APIs and the availability and granularity of information is finer than in the current way of reporting. We see this effort as the first step to transform the way to exchange information in the financial sector.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

**Ministry of Finance and Public Credit (SHCP, by its acronym in Spanish)**

Considering the barriers, challenges and policy gaps mentioned above, and due to the emerging importance of Fintech firms which are redefining the financial services industry worldwide, Mexico is strongly working on promoting digital economy due to the benefits for financial inclusion, economic growth and generating employments, and tackling the challenges identified.

As mentioned above, Mexican authorities are currently working on the development of secondary regulation that will be issued during 2019 to provide the industry with appropriate rules for their operations. Additionally, by March 2020, financial authorities will issue the last set of secondary regulation setting the obligation to financial service providers to share financial data with other providers and third parties specialized in technology, through standard APIs (Open Banking). According to Mexican regulation, the data that will be shared through APIs will be open, aggregated or transactional data, in which the latter requires the explicit consent from the customer.

An important element that Mexico is considering in its broader Fintech agenda, is based on the fact that existing supervisory tools and resources may no longer be adequate to address the fast changing Fintech landscape. Thus, CNBV is currently working on a SupTech platform based on technological solutions to supervise the new financial participants. SupTech is a shift away from current approaches based on lengthy onsite inspections and often delayed supervisory action, towards a proactive and forward-looking supervision, based on better data collection and data analytics.

Finally, as part of the Mexican government's medium and long term plan to enhance the financial sector, digital economy will play an active role on financial inclusion bridging the gap between unbanked clients and financial services.

**Federal Telecommunications Institute (IFT, by its acronym in Spanish)****FIGI**

One of the projects that Mexico, through the IFT, is carrying out is the Financial Inclusion Global Initiative (FIGI)<sup>7</sup>. This Initiative is a three-year program implemented in partnership by the World Bank Group (WBG), the Committee on Payments and Market Infrastructure (CPMI), and the International Telecommunications Union (ITU) funded by the Bill & Melinda Gates Foundation (BMGF) to support and accelerate the implementation of economy-led reform actions to meet financial inclusion targets, and ultimately the global 'Universal Financial Access 2020' goal.

In particular, FIGI funds economy-wide implementations in three economies– China, Egypt and Mexico; supports working groups to tackle three sets of outstanding challenges for reaching universal financial access: (1) electronic payment acceptance, (2) digital ID for financial services, and (3) security; and hosts three annual symposia to gather authorities, the private sector, and the engaged public on relevant topics and to share emerging insights from the working groups and economy programs.

FIGI economy programs will provide tailored support including: diagnostic assessments, advisory services, technical assistance, capacity building, and pilots of innovative approaches, relevant to digital financial inclusion, with a focus on improving the legal and regulatory framework and financial markets infrastructure. ITU will provide technical advice on ICT regulation and supervision, and network standards, relevant for DFS.

On the basis of the above, the ITU and the IFT signed, in February 2019, the Cooperation Agreement with the aim of collaborating with each other to execute the project for the economy-wide implementation of the ITU Global Initiative for Financial Inclusion.

<sup>7</sup> Financial Inclusion Global Initiative: <https://www.worldbank.org/en/topic/financialinclusion/brief/figi>, and <https://news.itu.int/financial-inclusion-global-initiative-itu/>

**BIT**

The IFT developed the Telecommunications Information Bank<sup>8</sup> (BIT, by its acronym in Spanish), this interactive tool enables the user to consult, analyse, explore and download, simply and rapidly, statistical data relating to Mexico's telecommunication and broadcasting sectors. It can be used to consult information pertaining to the macroeconomic environment of those sectors, such as portability, operator revenue and investment, and indicators relating to services such as fixed and mobile telephony, fixed and mobile broadband, and pay television. This initiative will serve to foster business opportunities for new operators and licensees wishing to enter the Mexican market. Furthermore, this project received in 2017 the Good Practices prize, granted by the National Evaluation Council of Social Development Policy of México.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

**Ministry of Finance and Public Credit (SHCP, by its acronym in Spanish)**

Financial Inclusion is one of the strategic goals for the entrant federal government and digital inclusion is a necessary condition for Financial Inclusion. In that regard, CNBV developed the National Survey for Financial Inclusion (ENIF for its acronym in Spanish), in collaboration with the National Statistics and Geography Institute (INEGI), to generate an economy-wide representative data base, that could contribute to the design of financial services access and usage indicators in order to identify potential challenges in this matter.

The higher penetration of telecom and internet services, in comparison with traditional financial services penetration, enables the offering of new financial services for the underserved and unattended population through digital channels like smartphones. Several incumbent and challenger players recognize this condition and they are working in developing financial products designed specifically to work under this context.

**Federal Telecommunications Institute (IFT, by its acronym in Spanish)**

In 2019, the IFT will continue to focus its efforts on actions aimed at increasing the welfare of citizens, promoting, among other things, universal digital inclusion.

In relation to the above, one of the projects established in the Annual Work Program 2019 of the IFT is to make normative recommendations for the promotion of digital inclusion and the deployment of infrastructure. With the aim of implementing cross-cutting actions and in coordination with the powers of the three levels of government in Mexico, a set of recommendations will be prepared to adapt the regulatory system that impacts the telecommunications sector, in order to increase the provision of telecommunications services in those areas where they are not available, as well as including the population in the use of information technologies for their social, cultural and economic development, among others.

As part of the benefits that are intended to be achieved with this project, it is to have a regulatory framework in the telecommunications sector that allows implementing public policies that promote the reduction of the digital divide and contribute to social welfare through accelerated regional development and more equitable, as well as greater investments.<sup>9</sup>

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

<sup>8</sup> Telecommunications Information Bank: <https://bit.ift.org.mx/BitWebApp/>

<sup>9</sup> Annual Work Program 2019: <http://www.ift.org.mx/sites/default/files/contenidogeneral/transparencia/pat2019.pdf>

**Ministry of Finance and Public Credit (SHCP, by its acronym in Spanish)**

Participation of regional bodies such as APEC would be very helpful. The digital economy covers a broad range of diverse technological innovations, and therefore the regulatory tasks are also becoming more complex, not only because the technological sophistication but also because the new digital models that work beyond specific jurisdictions and borders. In that sense, it is necessary to establish a collaboration across regulatory domains including between financial regulators, telco regulators and other authorities, and regional bodies can help to coordinate the efforts.

Specific actions that can be performed by APEC are:

- Knowledge repository that stores relevant material on digital economy topics.
- Regulatory guidance among APEC members.
- Coordinate systematic and focused dialogue with the private sector, development partners and other international stakeholders.
- Coordinate multiple support activities and offerings as assistance to policymakers and regulators.
- Test-and-learn approaches such as regulatory sandboxes, innovation hubs or RegLabs, which support the development of distinct digital economy models.

**Federal Telecommunications Institute (IFT, by its acronym in Spanish)**

Regional and international organisms serve as forums for their members, which can be economies, academia, industry, civil society, among others, to exchange experiences, find answers to common problems, identify good practices, provide and receive technical assistance, build capacities, as well as establishing synergies among their activities, through cooperation, in order to promote development.

As an example of the aforementioned, we can observe it in the activities that APEC carries out, as it is the case of the workshops that organize. APEC funding from the general project account enabled the organization by Mexico of a 3-day “APEC Workshop on Competition Policy for Regulating Online Platforms in the Asia-Pacific Region” with the participation of 13 APEC economies: Canada, Chile, Chinese Taipei, Indonesia, Malaysia, Mexico, Papua New Guinea, Peru, The Philippines, The United States, Russia, Singapore and Vietnam. Non-member participation included the European Union, the Organisation for Economic Co-operation and Development, the Latin American Internet Association, and participants from academia, legal firms and industry. The discussion benefited as well from the interventions of Mexican institutions that take part in the development of the internet and the digital economy, namely the Federal Telecommunications Institute (IFT, by its acronym in Spanish), the Ministry of Economy (SE, by its acronym in Spanish), the Office of the Federal Prosecutor for the Consumer (PROFECO, by its acronym in Spanish), the Federal Economic Competition Commission (COFECE, by its acronym in Spanish) and the Central Bank. The number of speakers and active participants that attended to the workshop amounted to 74, out of which 44 were males (59.5%) and 30 were females (40.5%).

As a result, the workshop strengthened the understanding of online platforms’ business models and competition authorities’ assessment tools for economic analysis and enforcement actions. APEC’s support was essential to bring together experiences from competition and regulation agencies, policy makers, regional and international organizations. Before the end of 2019, Mexico (IFT) will draft an electronic Report, which will be available as an APEC publication, collecting the main conclusions and providing recommendations to tackle some of the competition challenges raised by online platforms in APEC economies.

## NEW ZEALAND

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Others, please specify: Firm capability**

**Scoping and measurement of the digital economy:** it is difficult for regulators to quantify costs and benefits of regulatory intervention. For example, it is difficult to understand the digital market as it spans across many traditional markets and hence it is difficult to assess costs and benefits to business of digital economy and costs and benefits to consumers in those markets.

**Regulatory and legal framework (incl. sandboxes):** the pace of digital progress proves difficult for regulation to maintain relevance. International cross-border barriers such as data localisation and shortcomings in privacy increase the regulatory challenge. New Zealand is currently reviewing its copyright law in order to ensure it remains fit for purpose in a changing digital environment. This includes looking into claims that the current law is too inflexible properly to accommodate emerging uses of technology (for example, uses of data that underpin machine learning and artificial intelligence technologies). Multiple regulatory regimes covering digital trade can also create complexity and the potential for confusion eg cryptocurrency.

**Firm Capability:** Low uptake of digital technology in particular sectors and overcoming behavioural barriers (such as distrust of technology) as well as cost and other barriers to increase small business uptake of ICT.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: skills development and retention for progressing the digital economy**

**Scoping and measurement of the digital economy:** we need to strengthen our understanding of the scope and size of New Zealand's digital economy and its various parts. This would help us understand the need for and value of regulatory intervention. We also lack solid, baseline data in relation to economic and social digital divides.

**Regulatory and legal framework (incl. sandboxes):** we need a clearer understanding about the regulatory frameworks that could be limiting further growth of the digital economy.

**Skills development and retention for progressing the digital economy:** this includes the specialised digital skills needed for the growth of the tech sector and 'Future of Work' preparedness for workers/small business owners dealing with fast-paced changes in technology.

Note: much of the focus on growing the digital economy has, to date, been non-regulatory for example, supporting the growth of the tech sector through industry studies and eco-system support in emerging areas such as Internet of Things (IoT) and interactive media.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business: see examples below on electronic invoicing and New Zealand Business Number**
- Others: investment in infrastructure to facilitate and grow the digital economy (see example below of the roll-out of ultra- fast and rural broadband).**

Electronic invoicing: The e-Invoicing Arrangement, signed in October 2018, formalised the commitment of the New Zealand and Australian Governments to work together to create and maintain a common e-invoicing approach in association with industry.

The e-Invoicing collaboration will help businesses save time and money by allowing the direct electronic exchange of invoices between suppliers’ and buyers’ financial systems. Economic benefits, which are anticipated at \$30 billion over a ten-year period.

Problems that e-Invoicing will help resolve are inefficient manual processes, misdirection of invoices and unnecessary delays in payment. With a standard format, more accurate invoicing, processes and machine-to-machine activities, much faster payments become possible. The resultant cashflow improvements would be a strong incentive for small businesses to adopt e-invoicing.

In New Zealand, e-Invoicing is just the beginning of an initiative to digitise the full procure-to-pay cycle. When that wider initiative is complete, we can have a true trans-Tasman approach that could extend to other trading partners.

New Zealand Business Number: The NZBN is a globally unique identifier, available to all New Zealand businesses in New Zealand. Each NZBN links directly to core information about a business on the NZBN Register. This is the information that businesses are most often asked to share such as business name, phone number, address and website. The New Zealand Business Number Act 2016 (the NZBN Act) refers to this information as ‘Primary Business Data’. This is the core information that is held securely on the NZBN Register about a business. The NZBN is making it faster and easier for businesses to connect and interact, which will save time and money. By providing a business’ NZBN, customers, suppliers and government agencies can quickly find the information they need about a business. This means that businesses will not have to repeat the same information when dealing with someone new or when something changes.

Business Connect is an initiative related to NZBN. Business Connect will provide government agencies with common tools, templates, data standards and business rules to enable the design and delivery of more consistent digital services. Government is currently in the process of procuring a supplier to design, deliver, manage and support the platform.

Ultra-fast and rural broadband rollouts: The Ultra-Fast Broadband (UFB) programme is one of the largest and most ambitious infrastructure projects ever undertaken in New Zealand. It will see around 87% of New Zealanders, in over 390 towns and cities, able to access fibre by the end of 2022. It is a public-private partnership of the government with four companies and a total government investment of NZ\$1.5 billion. In December 2018 the Government announced significant additional rural broadband and mobile coverage that will be deployed across the economy over the next four years as a result of the expansion of the Rural Broadband Initiative phase two (RBI2) and the Mobile Black Spot Fund (MBSF) programme.

**3a. (Specific to Financial Sector) Best Practices:** Of the structural reform relating to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Regulatory framework for Fintech
- Regulatory framework for cryptocurrency
- Regulatory sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments
- International remittances
- Personal and business loans
- Robo-advisors**
- Cloud computing,
- P2P lending platform
- Use of open data on financial services
- Open Banking**
- Others, please specify: \_\_\_\_\_

**Enabling the provision of robo-advice:** In 2019, the Government overhauled the regulation of financial advice by repealing and replacing the Financial Advisers Act 2008 and amending the Financial Service Providers Act 2008. The amendments included removing regulatory barriers which were preventing the provision of some types of financial advice, including the provision of robo (or online) advice. The reforms required anyone, or any robo-advice platform, providing financial advice to be subject to active regulatory oversight and required this to be done through licensing at a firm level so as not to impose undue costs on industry or Government.

**Open banking:** The Government has supported Payments NZ to progress industry-led moves towards open banking with the threat of regulation should industry fail to do so. Payments NZ was formed in 2010 by industry with support from the Reserve Bank, to govern New Zealand’s core payments systems. Payments NZ has developed and tested two new Application Programming Interface (API) standards that will enable third parties to launch new financial products and services to the public. Payments NZ has completed a pilot with three banks and several third parties to develop two standardised APIs which involve payment initiation and account information. The standards will allow third parties to access customer information, with their consent, for a limited period of time and initiate payments on a customer’s behalf. For example, the standards will allow a customer to pay for goods and services by entering their mobile phone number and then approving the transaction via their mobile banking app rather than using bank cards. The development of the standards is the start of a move to the provision of more secure and accessible financial information. Banks and third parties will be able to apply to Payments NZ to become accredited users of the technology and standards it has developed. The service will go live in early 2019.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

Note: New Zealand has some workstreams underway in the RegTech area for example, on digital identity management and control (as set 'Digital Identity' programme as set out at question 4 below). It is however, in the early stages.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

Short term initiatives:

Future of Work Tripartite Forum: One of the Forum's purposes is to investigate and champion initiatives to address the skills shortage and the pace at which the nature of work is changing. The Forum brings together government, business and unions to improve the use of technology, create more productive workplaces and improve the skills and training of New Zealand workers. The Forum is a partnership between the Government, Business New Zealand and the New Zealand Council of Trade Unions – as representatives of union and business groups – that aims to support New Zealand businesses and workers to meet the challenges and take the opportunities presented in a rapidly changing world of work.

Action Plan for Digital Skills: the Digital Skills Forum (a coalition of government agencies and the main bodies in the digital technology sector) has produced the Digital Skills for Digital Nation report. The report identifies a digital skills shortage and contains a number of industry backed recommendations to address this. The Forum recently hosted an economy-wide Digital Skills Hui (in early 2019) which was an opportunity for industry, government and NGOs to come together for an action-focused day that will shape priorities and next steps on digital skills. Recommendations from the hui (and from the earlier report) will be considered by relevant ministers and by the Tripartite Future of Work Forum and the Digital Economy and Digital Inclusion Ministerial Advisory Group.

Response to the Digital Domain Plan: The stocktake for the digital nation domain plan 2019 provided an overview of the currently available 'digital technologies' statistics and data to help identify gaps and overlaps. The stocktake also addressed issues with government's ability to measure progress of digital transformation across New Zealand. The recommendations list specific actions for agencies to enable information gaps to be filled such as measuring the digital economy and digital inclusion.

**Small Business Council Strategy:** In 2018, the Small Business Council was tasked to help government develop a strategy to drive improvement and innovation in the small business sector. It will pay particular attention to existing government priorities including the digital economy. The Small Business Council will report back to Ministers with a future-focused small business strategy in August 2019.

**Education:** In 2016 the Ministry of Education undertook a review of the positioning and content of digital technologies within the New Zealand Curriculum & Te Marautanga o Aotearoa. The outcome of the review led to digital technologies being strengthened in the curriculum. From 2016-2017 the Ministry of Education worked with curriculum experts and designers, teachers and industry partners to develop and publically consult on new curriculum content for the revised Technology Learning Area and Hangarau Wāhanga Ako.

This strengthened curriculum content aims to support young people to build digital technologies design thinking skills and capabilities, and computer science knowledge to participate, create, and thrive now and in the future. From 2018 the Ministry has invested in a broad professional support programme for schools and kura to implement the new learning into their local curriculum. As of 2020, digital technologies is to be fully implemented as part of learning in Technology in the New Zealand Curriculum and Hangarau in Te Marautanga o Aotearoa. This work is supported by a full evaluation programme.

Medium term initiatives:

Initiatives that will seek to address policy gaps, barriers and challenges identified, in the medium term, include:

An inquiry into Technology and the Future of Work, led by the New Zealand Productivity Commission. The inquiry will identify ways New Zealand can maximize the opportunities and manage the risks of disruptive technological change and its impact on the future of work and the workforce.

**Digital Identity:** In December 2018, the Government approved a two-year Digital Identity Programme to be led by the Department of Internal Affairs. The objective is to create the right environment, set the right rules and take advantage of new technologies to give New Zealand citizens secure digital identities that meet their evolving needs and expectations. Options will be presented to Cabinet at the end of 2020 on a Digital Identity Trust Framework for New Zealand and a proposed way forward for the future role of government in the provision of digital identity infrastructure and services.

Other ongoing programmes

- Business Connect: a cross-agency digital services platform that will ensure that small businesses can interact digitally across local and central government agencies more seamlessly on shared, open digital service infrastructures.
- Cross-government service transformation programmes: continued investment in programmes like Better for Business which focuses on making significant improvements to the business experience with government.
- Driving the uptake of the NZ /business Number (NZBN) and e-invoicing, which supports transformational initiatives such as e-procurement, reducing transaction costs and allowing businesses and government agencies to operate more efficiently and deliver services more effectively.
- Regional digital connectivity programmes: providing improved digital connectivity and collaborative physical workplaces for small businesses (including expanded rural broadband coverage and regional digital hubs) supported by the Provincial Growth Fund.
- Small business uptake of digital tools: Piloting new approaches to increase small business uptake of digital tools, such as provision of resources to support industry associations to

increase the digital capability of their members, and showcasing key technologies for small businesses, such as internet of things and sensor technology through an arable demonstration farm.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

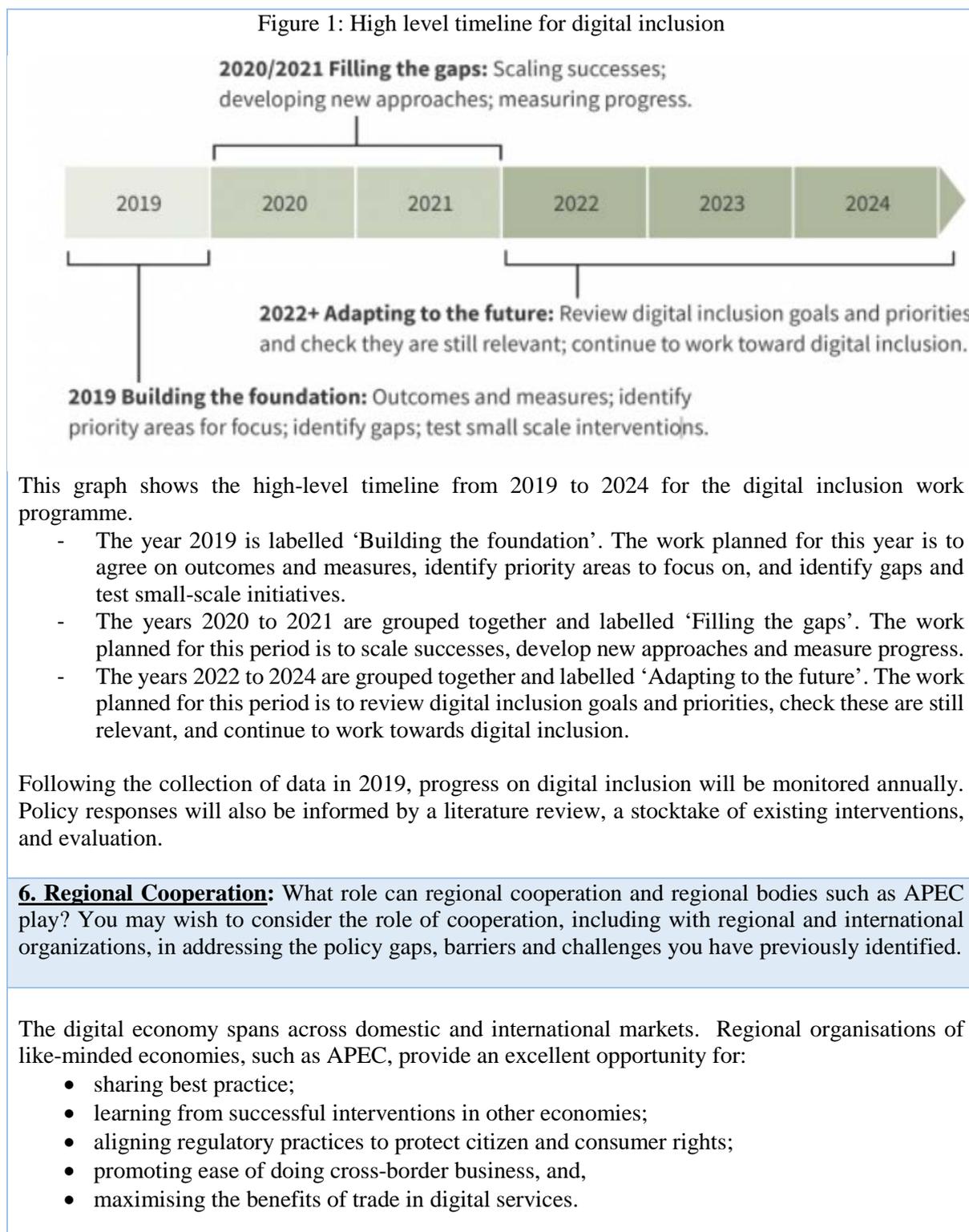
In 2017, the government published the report 'Digital Skills for a Digital Nation.' The report presented results of surveys undertaken to help identify the digital skills shortage in New Zealand. It identified barriers to graduates finding their first job in the digital sector and the need to improve the gender and cultural diversity in digital roles. The survey evidence contained in the report, including on the lack of women in the digitally or technologically enabled sectors, will provide a benchmark against which to measure progress on inclusion.

New Zealand is looking at ways to address the current skills shortage through the Digital Skills Forum. The Forum is a focused coalition of industry associations and government organisations that work together to identify key skills issues and opportunities across the ICT, high-tech and digital sectors. The forum uses the insights, resources and influence of industry and government agencies to help address the ever present digital technology skills shortages. By taking a practical, information and evidence-based approach, the Forum focusses on harnessing collaborative efforts to address significant issues such as the recent Digital Skills Hui. The Hui provided an opportunity for industry, government and NGOs to come together to shape priorities and next steps for New Zealand's digital technology sector. Recommendations and outcomes from the hui will be presented to ministers and will feed into a number of workstreams including the Future of Work Forum Digital Economy and Digital Inclusion Ministerial Advisory Group.

Data to understand fully the range of issues relating to New Zealanders' digital inclusion is expected to be collected by the end of 2019 as part of the Digital Inclusion Action Plan.<sup>10</sup> The Action Plan is the first stage in the high-level timeline outlined in the Digital Inclusion Blueprint. The timeline set out below provides the steps for how government can make strong and sustainable progress towards digital inclusion in New Zealand. The Government's vision is that all New Zealanders have what they need to participate in, contribute to, and benefit from the digital world. This defines digital inclusion as a desired end state, one in which everyone is included. The Blueprint defines being included as having convenient access to, and the ability to confidently use, the internet in the immediate term.

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<sup>10</sup> Digital inclusion refers to be basic digital skills needed by all New Zealanders, not the more complex digital skills need in the tech sector and other New Zealand industries.



## PAPUA NEW GUINEA

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

**Scoping and measurement of the digital economy**

Regulatory and legal framework (incl. sandboxes)

Competition policy

**Public sector governance**

**Ease of doing business**

Others, please specify: \_\_\_\_\_

*i) Scoping and measurement of the digital economy*

The Government established the National Information and Communications Technology Authority (NICTA) to regulate and award licensing of Information Communication Technology (ICT) in Papua New Guinea. That is, NICTA regulates:

- broadcasting
- radiocommunications
- telecommunications

NICTA was established on the 29th of October, 2010, as the sole converged regulator and licensing authority of the ICT industry in PNG. This followed the adoption by the PNG Parliament in November 2009 of the National Information and Communications Technology Act 2009 (the NICT Act) a subsequent creation of the National Information and Communications Technology Authority or NICTA.

The aim of the Act is to ensure the ICT industry contributes meaningfully to the long-term economic and social development of PNG in line with economy-wide goals and directive principles and the basic social obligations of the constitution. The Act also calls for the ICT industry to be regulated in a manner that promotes consumer welfare through an equal, transparent, technology neutral, timely and non-discriminatory measures. NICTA works closely with all stakeholders while ensuring industry compliance with license conditions, codes and standards. NICTA also monitors the effects of regulations to ensure they are responsive to the wider community's needs.

NICTA has also formulated a Digital Economy Roadmap for PNG, however, there are several agencies that are under taking different programs in the digital economy to address different problem areas. In addition, MSME, SME and informal sector individuals and organisations are using digital technologies in varying ways that also gives rise to new and challenging issues. As such proper scoping and measurement of the digital economy is a challenge. It is a challenge as PNG does not fully know the extent of its digital economy activity as there is a lack of a coordinating agency to effectively collect and collate data to better understand the story of the digital landscape in PNG.

*ii) Public sector governance*

PNG has taken positive steps in digitising its budgetary functions of the Economy-wide, Provincial, District and Local Level Government accounting systems through the Integrated Financial Management System (IFMS) is the suitable and appropriate infrastructures that will assist the completion of the IFMS implementation to all provinces. Another challenge also with the implementation is the difficult and rugged terrains of most if the outer provinces that can pose huge cost investments to be made by Government. There is still to be fully effected and realised in terms of reporting expenditure and how this can be used to improve public sector governance. In addition, there is still a lack in other digitising of other major functions of government to improve public sector governance.

**iii) Ease of doing business**

While PNG has done well in a few of the five EoDB measurements/indicators identified by APEC, it has seen little to no improvement in other areas of the indicators. This can mainly be attributed not only to lack of capacity in human resourcing but also a lack of digital infrastructure to support structural reforms in these areas. With the developments of the undersea cable being undertaken, this will surely improve the digital transformation of PNG to a new level. Hopefully, this could reduce costs of ICT and improve access and reliability of the service as well as create more economic opportunities for people.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

**Scoping and measurement of the digital economy**

**Regulatory and legal framework (incl. sandboxes)**

Competition policy

Public sector governance

**Ease of doing business**

Others, please specify: \_\_\_\_\_

**i) Scoping and measurement of the digital economy**

In terms of policy gaps, PNG does have in place a National ICT Roadmap which looks at improving ICT infrastructure, network coverage, and internet access. The challenge is taking a whole of government in creating awareness of the roadmap to assist with the implementation as well taking a team approach towards the implementation phase.

**ii) Regulatory and legal framework**

PNG does have legislation in place to protect its citizens against abuse such as the Cyber Crime Act 2014 but lacks in other areas such as regulatory sandboxes to test regulations. This is a gap that exists in PNG's regulatory framework.

**iii) Ease of doing business**

Also as mentioned above, the infrastructure that is needed to support the EoDB initiatives is lacking

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

Scoping and measurement of the digital economy

Regulatory and legal framework (incl. sandboxes)

Competition policy

Public sector governance

**Ease of doing business**

**Others, please specify: National Payments System**

**i) Ease of doing business**

As part of its EoDB reforms, PNG in 2016 has passed and launched its Personal Property Security Act and registry respectively. This has significantly improved its EoDB rankings in Getting Credit and general ranking as well. PNG is yet to do an overall assessment of the overall impacts of this reform. Also PNG company registrations are now able to be done online with a turnaround time of

less than a day. It has migrated its business registry on to the CLOUD which is now more effective and efficient.

**ii) Others – National Payments System**

PNG through its central bank is continuously upgrading its National Payments Systems. The Kina Automated Transfer System (KATS) over the last few years has the objective of fostering an efficient payment system for processing and settling all payments between all the banks and their customers. This includes cheque and electronic payments. This has seen a reduction in payment clearance from about 4 days to about 2 days, with further improvements expected once commercial banks further adjust to the KATS system.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech
- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes
- X Digital Banking**
- Crowdfunding platforms
- X Digital payments**
- International remittances
- X Personal and business loans**
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

**i) Digital banking**

PNG has done reforms as stated above such as KATS. Also almost all public servants now receive their fortnightly wages from the government through bank accounts.

**ii) Digital payments**

PNG is in its final stages of launching its economy-wide switch which will see almost all financial institutions having a link to each other not only for the use of authorised direct and multilateral access payments but also to ensuring there is interoperability at significantly lower costs to consumers.

**iii) Personal and business loans**

The secured transaction legislation (Personal Property Securities Act) has created the opportunity for individuals as well as SMEs to access finance. The measurement is still to be carried out but there has been a lot of positive feedback in regards to this reform.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be

relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

Because PNG is a developing economy and is still progressing a lot of reforms, some of which would only be in effect for a few years. Their effectiveness would only be confirmed after allowing some time before an assessment is done. As it is PNG is implementing a number of reforms such as the AML / CFT law which was passed in 2015 and operationalised in 2016. The AML/CFT reforms included a suite of laws which were passed and gazetted included the Anti-Money Laundering and Counter Terrorist Financing Act 2015, Criminal Code (Money Laundering and Terrorist Financing) (Amendment) 2015, Mutual Assistance in Criminal Matters (Amendment) Act 2015, Proceeds of Crime (Amendment) Act 2015 and the United Nations Financial Sanctions Act 2015. Their effectiveness would only be confirmed by the implementing agencies administering these laws. These laws were designed to meet the Financial Action Taskforce (FATF) standards and were pursued by the PNG Government as part of its efforts to meet its international obligations on combating money laundering and terrorist financing. These laws have given enforcement agencies the necessary tools to combat money laundering and terrorism financing.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

PNG currently has a few short term plans to overcome the gaps, barriers, and challenges identified above. These include:

- i) Regulators Summit* – regulators in PNG will be called to participate in a regulators summit which will be aimed at gathering views, share experiences and gather feedback from them as to the gaps and barriers that exist in PNG and how regulators will need to effectively work together in closing those gaps. The aim being that the PNG Government take a whole of government approach in developing an efficient and effective Regulatory Framework.
- ii) Financial Sector Development Strategy 2018-2030* – PNG has recently launched this strategy which is targeted at addressing a wide spectrum of areas covering four main thematic areas (Regulatory framework, Government Bond and Capital Market, National Payments System, and Financial Inclusion)
- iii) National Competition Policy* – PNG is now in its final stages of its development of a National Competition Policy. The main aim of the policy would set out the key elements of the Government's approach to competition, the total welfare and other impacts sought to be achieved, the means to be used to achieve those impacts, and guidance on the resolution of tensions that may arise between competition, efficiency, and other goals including social equity and social

inclusion. It is expected that by the end of 2019 PNG will have this policy endorsed with implementation commencing soon after.

*iv) Financial Inclusion Policy and Strategy* – PNG has only recently endorsed its FI policy. This has complement well its FI Strategy which is now its second phase. The aim of the policy is to ensure that all Papua New Guineans are financially competent and have access to a wide range of affordable financial services that address their needs and a provided in a sustainable and responsible manner.

**5. Inclusion:** Describe your economy’s barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

In relation to the above, the Financial Inclusion Policy is not only aimed at closing this gap but also has aspects in relation to the global financial inclusion agenda and the Sustainable Development Goals. PNG in its FI policy has used data from formally banked adults, adults with credit at regulated financial institutions and points of service, and G20 indicators for PNG in its measurement.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

APEC has played a significant role in PNG’s recent development with the lead up years, the host year, and now post 2018. Through the sharing of experiences, best practices, professional expertise, studies and reviews, capacity building exercises, networking and partnerships and cooperation and collaboration, PNG has identified not only the gaps and barriers, but has also better equipped itself in directing efforts in closing those gaps.

## PERU

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: Telecommunications Infrastructure and Internet**

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy**
- Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech
- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes**
- Digital Banking
- Crowdfunding platforms
- Digital payments**

- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

To date, the Securities Market Superintendent (SMV), together with the Central Reserve Bank and the Superintendency of Bank and Insurance, as financial market authorities, and the Ministry of Economy and Finance, have been working on a draft law to regulate the activity of financial crowdfunding (equity and lending crowdfunding), as well as to determine the legal framework that will govern its actions and the SMV as the entity responsible for its regulation and supervision. In addition, the draft law is considering the implementation of a regulatory sandbox as a tool for the development of crowdfunding. The objective of the draft law is to contribute to financial inclusion in Peru, as well as to protect participants who use this type of financing mechanisms.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

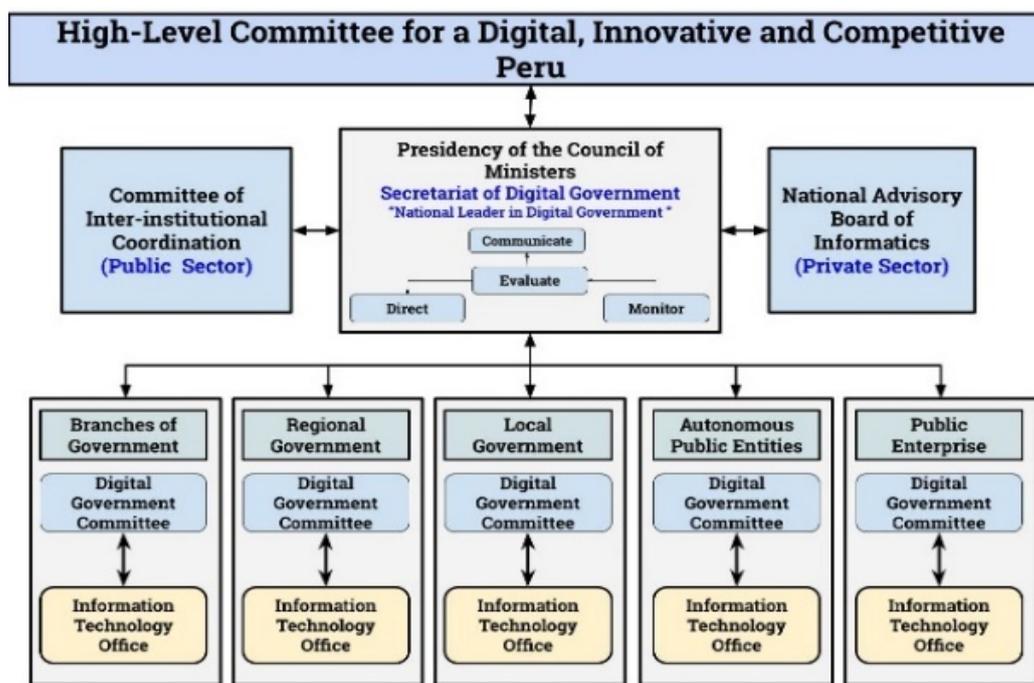
- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

To date, Peru has not worked any initiative related to regtech.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

One of the main actions carried out by the Peruvian state to define its governance model for the digital domain was to constitute the High Level Committee for a Digital, Innovative and Competitive Peru, and declared of economy-wide interest strategies, actions and initiatives for the development of Digital Government, innovation and Digital Economy with a territorial approach. In addition, it was established that the Presidency of the Council of Ministers, through the Secretariat of Digital Government, is responsible for guiding, directing, supervising and evaluating the process of digital government deployment and digital transformation in the Peruvian state.

The President of the Republic and the Presidency of the Council of Ministers chair the aforementioned High Level Committee, and involve the heads of the Ministry of Education, Ministry of Production, Ministry of Economy and Finance, Ministry of Transport and Communications. Furthermore, its Technical Secretariat is in charge of the Secretariat of Digital Government, which gives it a commitment at the highest level to promote the development of the digital economy and digital government in Peru.



On the other hand, in relation to the legal framework, it was approved the Legislative Decree 1412 (Digital Government Law) and the National Policy of Competitiveness and Productivity. Both instruments develop the general framework for strategic use of digital technologies and data with a view to ensuring administrative simplification, digital government, digital payments, digital economy, digital identity and ease of doing business, among others.

The above information is in accordance with the international indicators evaluated: Electronic Government Development Index (IDGE) developed by the United Nations (UN), the Information and Communication Technologies Development Index, developed by the International Telecommunication Union (ITU) and the Global Report on Information Technologies, prepared by the World Economic Forum.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

Promoting the digital economy has connectivity and the development of digital skills as two of its main limitations. However, the Peruvian Government through the Presidency of the Council of Ministers (Secretariat of Digital Government), the Ministry of Education, Superintendency of Bank and Insurance, Central Reserve Bank, among other actors carry out actions to monitor the progress, use and deployment of digital technologies, under the framework of their competencies, with a view to defining actions to reduce gaps in competences and access to digital services in financial areas, educational and government.

Additionally, the Peruvian State has been deploying the fiber optic backbone network at the economy level in order to reduce the access gap to connectivity and the Internet, a task that is under the responsibility of the Ministry of Transport and Communications.

Likewise, in order to promote access and orientation to digital public services, Peru has been implementing the Single Digital Platform for Citizen Orientation - GOB.PE Platform, which seeks to be our one-stop-shop for access to services and institutional and procedural information of the Public Administration in a clear and simple language for the citizen.

On the other hand, there is the PAGALO.PE platform, in charge of Banco de la Nación, which is an online payment platform of the Peruvian State, designed to simplify the payment of fees from different public entities, without the need for the citizen to go in person to an agency of the Banco de la Nación, thus promoting access to secure digital payments through mobile phones and web pages.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

The Peruvian State has close relationships with leading economies in terms of digital government, as well as with international organizations and cooperation agencies, such as:

1. Korean Agency for International Cooperation (KOIKA)
2. Agency for e-Government and the Information and Knowledge Society of Uruguay (AGESIC)
3. Organization for Economic Cooperation and Development (OECD)
4. Electronic Government Network of Latin America and the Caribbean (RED GEALC)

In this line, the international cooperation plays a fundamental role in the exchange of experiences, collaborative spaces, and research, among others, that allow identifying actions to reduce gaps and existing barriers that affect the development of the digital economy.

## THE PHILIPPINES

**1. Barriers and Challenges:** Considering your economy's situation, what are the three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
  - Competition policy
  - Public sector governance
  - Ease of doing business
- Others, please specify: digital infrastructure gap**

Scoping and measurement of the digital economy: lack of official industry data that will measure the contribution of digital trade to the economy's overall economic growth. There is no single standard definition of digital trade and technical innovations and new business models do not exactly fit with in the traditional sectoral classifications (e.g. Grab). Nonetheless, the Philippine Statistics Authority has started efforts in August 2018 to measure the contribution of the digital economy to the gross domestic product (GDP).<sup>11</sup>

Regulatory and legal framework (incl. sandboxes): regulatory barriers inhibit businesses to explore and invest in more digital technology solutions. Reforms and initiatives are needed to clear bottlenecks and obstacles to functioning digital economy.

Digital infrastructure gap: problems on internet availability (74% of secondary schools still do not have internet access<sup>12</sup>), affordability (e.g. prices of information and communication technology services are among the highest in ASEAN) and reliability/quality of digital infrastructure (slow internet speed, internet speed is at the lowest among economies in the Asia Pacific)<sup>13</sup>

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: Internet infrastructure improvements and consumer education on digital economy**

Regulatory and legal framework (incl. sandboxes): entry of new players on the information and communication technology sector is hampered by limitation in ownership. Removing these restrictions will promote competition and encourage innovation. However, relaxation of limitation of foreign participation particularly in transportation and telecommunication through the legislative process are yet to be enacted. In addition, there is lack of legal framework which regulates these business platforms and facilitate new digital products. Further, there is no standard permit issued across LGUs which hampers the accelerated deployment of needed infrastructure.

<sup>11</sup> Cordero, T., (2018 September 26). PSA to measure contribution of 'digital economy' to GDP. Retrieved from <https://www.gmanetwork.com/news/>

<sup>12</sup> Romulo, R.R., (2018 November 9). *A digital readiness blueprint for the Philippines*. Retrieved from <https://www.philstar.com/business/2018/11/09/1866941/digital-readiness-blueprint-philippines>

Competition policy: need to accommodate competitors in the private sector (e.g. telco companies) which play a key role in the digital economy.

Internet infrastructure improvements: need to explore minimum standards for reliable and affordable internet access.

Consumer education on digital economy: key players in the digital economy both from the public (including local government units (LGUs) and private sectors should strengthen consumer awareness relative to the value derived from operating in a digital economy, and the strength of security of these transactions.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: Efforts to expand digital services**

#### **Regulatory and legal framework (inc. Sandboxes)**

The National Retail Payment Systems (NRPS) aims to facilitate more convenient, affordable and secure electronic fund transfers and payments. BSP Circular No. 980 on the Adoption of National Retail Payment System Framework (2017) aims to “to create a safe, efficient, affordable and interoperable electronic retail payment system,” to increase retail payments from 1% electronic payments in 2013 to 20% electronic payments by 2020.

The BSP continues to issue regulations relevant to electronic payments and even virtual currency exchange in response to the dynamic changes in the environment, hence encouraging financial innovation.

#### **Public sector governance**

The main objective of the Philippine E-commerce Roadmap 2016-2020 is to contribute 25% to the economy’s GDP by 2020.

The e-Government Master Plan targets a wider reach of e-government presence and reduction of bureaucratic red tape to provide improved government services (e.g. payroll thru mobile-based e-money or e-banking, digital payments to suppliers upon availment of goods or services, and digital payments from the general public specifically to the LGUs and Non-Government Organizations.<sup>13</sup>

#### **Ease of doing business**

The SEC-iView is an online pay-per-use facility that gives the public the convenience of getting copies of documents (Annual Financial Statement, General Information Sheet and others) of SEC registered companies. The online system allows the general public, other government and private entities to view and print Company reports for a fee.

The Company Registration System is the full automation and online pre-processing of corporations and partnerships, licensing of foreign corporations, amendments of the articles of incorporation and other

<sup>13</sup> The Department of Information and Communications Technology leads the development of the e-Government Master Plan

corporate applications requiring SEC approval. Users can verify the status of their application online at their convenience without going to the SEC office. The CRS Application Status Online Inquiry is available 24/7 from any device-desktop, phone or tablet, anytime or anywhere.

The online Capital Markets Participants Registry system is a web-enabled system designed to manage online submission of applications, evaluation and processing of applications for capital market transactions. The system is expected to lessen face-to-face transactions and reduce the number of clients who will come personally to the SEC office.

### **Efforts to expand digital services**

Partnership between the public and private sector continue to drive initiatives for a digital economy, through continued offering of digital/mobile services to customers, which are approved by regulators upon evaluation.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**Regulatory framework for Fintech**

Regulatory framework for cryptocurrency

**Regulatory sandboxes**

**Digital Banking**

Crowdfunding platforms

**Digital payments**

International remittances

Personal and business loans

Robo-advisors

**Cloud computing**

P2P lending platform

Use of open data on financial services

Open Banking

Others, please specify: \_\_\_\_\_

### **Regulatory framework for Fintech**

The BSP issued circulars/regulations (Circular 649 on E-money Issuance) to allow both banks and non-bank/financial entities to offer electronic services in the form of e-wallets, (i.e. GCash and PayMaya), to support its move toward a cash-lite economy.

### **Regulatory sandboxes**

The BSP has a test-and-learn approach, also known as regulatory sandbox, to enable launching of certain products and services within a live but controlled environment. These include products and services such as e-money wallets, remittance, virtual currency exchange platforms, marketplace or aggregator covering activities and platforms offering financial products and services.

### **Digital Banking**

The offering of “digital banking” services which entails “digital only” experience from customer onboarding to conducting financial transactions is now allowed under existing rules and regulations.

### **Digital payments**

Abovementioned circular enabled the use of e-money and have since approved a number of e-money issuers. The BSP also approved various electronic banking services to facilitate the use of digital platforms for payment and other financial transactions.

### Cloud computing

While the use of cloud among BSP-supervised institutions has already been allowed as early as year 2013, the BSP is now looking into further liberalizing and streamlining supervisory processes with respect to cloud applications.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting**
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: Complaints handling system

### Regulatory reporting

The BSP is now in the final stages of pilot implementation of the Application Programming Interface system that automates the collection, processing and analysis of data from BSP Supervised Financial Institutions. This project involves the development of a program that will allow machine-to-machine reporting by banks to the BSP, thereby fully eliminating manual intervention in the reporting process. Report validation is also kept to a minimum as inclusion of unnecessary data (i.e., generated totals or duplicate entries) are minimized. This in turn allows for a much faster generation of statistics that are used in various financial surveillance tools.

### Complaints handling system

Another initiative by the BSP which is already in the final stage of pilot implementation is the automated complaint-handling system. This would allow financial consumers to file complaints through their mobile handsets through either an app or SMS, thereby creating new channels for them to correspond with the BSP. By improving data quality and access and developing new tools for data visualization and analysis, the prototype will support BSP's efforts to provide all Philippine financial consumers with effective access to a complaint system.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

The Philippine Development Plan 2017-2022 espouses for legislations that would relax restrictive foreign ownership restrictions on certain services sectors including telecommunication to attract more FDI; promotes ease of doing business; as well as pursues the development of services-related statistics to support digital trade and e-commerce, among others (PDP 2016-2022).

The Philippine E-Commerce Roadmap: 2016-2020 addresses a number of issues in the e-commerce ecosystem that requires collective effort of the various stakeholders towards the realization of the goals (refer to page 2) outlined in the Roadmap. The Roadmap is supported by other major initiatives of the government such as: the formulation of the National Broadband Plan, and the National Retail.

The National Broadband Plan aims to improve the overall internet speed and service availability and affordability across the economy particularly in remote areas through the deployment of fibre optics, fibre optic cables and wireless technologies.

The National Cybersecurity Plan 2022 launched in 2017 aims to shape the policy of the government on cybersecurity and the crafting of guidelines that will be cascaded to all levels of a government. The National Retail Payment System (refer to page 2) is built on three core principles, namely: interoperability, inclusivity and “coopetition”.

The National Retail Payment Framework (BSP Circular 980 dated 6 November 2017)

**5. Inclusion:** Describe your economy’s barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

A strong macro-economy and an enabling operating environment will be crucial for the development of a digital economy. An appropriate and enabling business environment has to encourage innovation, ensure that barriers to entry stay low, allows firms to quickly react to new developments and effectively manage ensuing risks. Modernizing physical infrastructure will prepare the Philippines to embrace the digital economy. Collaboration and strengthening partnerships among various stakeholders (government and private sector) is a way to boost capabilities in utilizing digital platforms.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Regional bodies could host avenues where different stakeholders from multiple jurisdictions may get together and explore potential areas for collaboration and benchmarking on leading standards that have proven as ideal approach on managing digital innovations.

## RUSSIA

**1. Barriers and Challenges:** Considering your economy’s current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Other’ and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

According to the economy-wide project Digital Economy of the Russian Federation, several main directions of the development of the digital economy were introduced, among which are ICT, education and information security. A special direction "statutory regulation of the digital economy" was introduced to provide the innovations with the proper regulation. An action plan towards the creation of the legal framework for the digital economy to 2024 was elaborated and accepted.<sup>14</sup> The action plan includes regulatory frameworks for the development of competition policy and ease of doing business via special sections “industry-specific regulation” and “business-government relations”.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

The major barriers for the development of the digital economy in the Russian Federation are simultaneously the major policy gaps covered by the economy-wide program “Digital Economy of the Russian Federation”.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

<sup>14</sup> <http://static.government.ru/media/files/P7L0vHUjwVJPINcHrMZQqEEeVqXACwXR.pdf>

The economy-wide program “Digital Economy of the Russian Federation” was developed by decree of the President Vladimir Putin and is in force until 2024. The program is financed both through the government and commercial sources of funds.

It includes 6 federal projects: "Regulation of the digital environment", "Digital technologies", "Information security", "Information infrastructure", "Digital public administration" and "Human resources for the digital economy".

The main objectives of the program are to remove legal barriers, ensure information security, develop technologies and create infrastructure, introduce innovative approaches to public administration, and provide the economy with competent specialists. The program is aimed at development of the public and private sectors and their integration for the digitalization of the economy in general.

In order to ensure favourable conditions for the development of innovations in the financial market, the Bank of Russia has launched a *regulatory sandbox* in 2018 to test innovative financial technologies, products and services.

At this stage, the target process of an innovative financial technology or service is modelled in a testing environment without any risks to consumers.

Any organization that has developed or plans to use innovative financial technology or service can send an application for piloting to the Bank of Russia. By now the Bank of Russia has already received more than 30 applications for testing in the sandbox from commercial banks and fintech startups.

Professional associations of financial market participants and public authorities are involved in the selection of projects for the regulatory sandbox, evaluation of the results and preparation of proposals for amendments to the existing regulation.

The regulatory sandbox allows to pilot innovative financial technologies and services, test hypotheses regarding their positive impact on the financial market and customers, analyse and model emerging risks and use the results to adapt the current regulatory and legal framework accordingly.

As of now several projects were successfully piloted, and for one of them regulation has already been amended allowing the service’s launch in the market.

As for *Ease of Doing Business*, the government of the Russian Federation evaluates the effectiveness of the programs aimed at enhancement of the ease of doing business by the international rating “Doing Business” – Russia gained 4 positions in the period from 2017 to 2018 and took 31st place in the rating.<sup>15</sup> The benchmark is entering top-20 economies by the ease of doing business. Much of the effort is put towards the promotion of digital governmental services for small and medium enterprises (SMEs) that will help to reduce the red tape and combat corruption.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

Fintech

<sup>15</sup> <http://russian.doingbusiness.org/ru/rankings>

- Cryptocurrency – draft federal law regulating digital assets is expected to be adopted in 2019**
- Sandboxes – in effect from 2018**
- Digital Banking**
- Crowdfunding platforms – draft federal law is expected to be adopted in 2019**
- Digital payments – fast payment system in effect from 2019
- International remittances – draft federal law is expected to be adopted in 2019**
- Personal and business loans
- Robo-advisors – draft federal law is expected to be adopted in 2019**
- Cloud computing,
- P2P lending platform
- Use of open data on financial services
- Open Banking - There is a freeware open API architecture distributed and supported by the Bank of Russia for all financial companies working in the Russian Federation. The use of the software is free of charge.**
- Others, please specify: \_\_\_\_\_

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control**
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)**
- Others, please specify: \_\_\_\_\_

Identity management is promoted in Russia by the Unified System of Identification and Authentication and the Unified State Automated Information System and by the common digital portal "Government Services". The services help to provide both natural and legal persons with identifications. Moreover, a universal digital profile will be introduced by 2022 according to the working plan of the development of the digital economy.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

The *special action plan* for statutory regulation of the digital economy of the Russian Federation was introduced in 2018.<sup>16</sup> The policy covers the spheres of the digital economy such as:

- Fintech – regulation of crypto- and digital assets; regulatory sandboxes; marketplaces; electronic trade;
- Anti-monopoly regulation in the field of the digital economy;

<sup>16</sup> <http://static.government.ru/media/files/P7L0vHUjwVJPINcHrMZQqEEeVqXACwXR.pdf>

- Cyber-physical systems, incl. automotive vehicles and drones;
- Digital economy regulation within the EEU;
- Identification and Authentication;
- Artificial Intelligence regulation.

By now the efficiency of the action plan is only measured by the introduction of the special regulation related to the digital economy. The second stage of the policy will cover the measurement of the regulatory effects.

Meanwhile the Bank of Russia considers introduction of a *special licensing regime* for new market participants with limited licensing (in terms of geographical coverage/ number of clients/ volume of operations/ type of activity/ etc.) that would follow companies exit from the regulatory sandbox and would apply for a limited period of time to test the service on the real customers.

Moreover, within the program "Digital Economy of the Russian Federation" draft federal law was developed providing for the introduction of *industry-specific sandboxes* that will be regulated and operated by respective authorities and introduce limited licensing throughout the period of piloting.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The main barrier for the development of the digital economy in the Russian Federation up to the moment lies in the sphere of regulation. Fintech firms are legally unable to introduce innovations of the domestic market. *Regulatory sandboxes* seem to be a proper and fast solution to this issue. The first cohort in the regulatory fintech sandbox of the Russian Federation was formed in 2018. There were 14 proposals from domestic fintech firms which seems to be a good first shot. After the first launch and effectiveness evaluation, a federal regulation for sandboxes will be introduced.

On 26<sup>th</sup> March 2018 the Bank of Russia Board of Directors approved the *Financial Inclusion Strategy for Russia 2018-2020* (hereinafter the FIS). The Bank of Russia has set forth the following priority goals in the field of financial inclusion for the period of 2018-2020:

- 1) to improve the accessibility and quality of financial services available to consumers in remote or hard-to-reach areas, SMEs and population groups with limited access to financial services (low-income, disabled and elderly persons and other mobility-impaired population groups);
- 2) to increase the speed and quality of access to financial services for the consumers with access to the Internet.

Achievement of the first goal requires a focus on the following major groups of consumers:

- Individuals and communities in remote or hard-to-reach areas;
- SMEs;
- Individuals with limited access to financial services.

To deliver on these goals, the Strategy *focuses on digital products and services*, digital channels and the ICT infrastructure, financial institutions' cooperation with communication service providers and financial agents, as well as the feasibility of providing financial services via satellite TV channels and other alternative technologies. In addition, the document points out the need for improving consumer protection and financial literacy, especially in terms of new financial technology development. Potential risks posed by introducing new financial technology should be taken into account, and so does certain population groups' cautiousness that is due to their insufficient financial experience.

Overall, the Bank of Russia looks to promote physical accessibility (through both physical access points and digital channels), price affordability, product variety and availability, as well as easy use and practical applicability of financial services. Among the directions developed by the Bank of Russia are:

*Financial Inclusion Monitoring*

*Financial Inclusion for communities and individuals in remote or hard-to-reach areas*

*Financial Inclusion for SMEs*

*Financial Inclusion for population with limited access to financial services.*

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

The Russian Federation already closely cooperates on the international level within the Eurasian Economic Union (EEU) in the field of the digital economy regulation. Some barriers can be efficiently tackled on the international level such as financial marketplace organization and regulation, the design of regulatory sandboxes, global traceability of goods. Joint elaboration of bodies of knowledge, best practices, and guidebooks on digital economy regulation seems to be a good start for international cooperation.

## SINGAPORE

**1. Barriers and Challenges:** Considering your economy’s current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Other’ and specify what these categories are.

**Scoping and measurement of the digital economy**

- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

Digitalisation is an economic game changer. It has opened up uncharted territories, created new economic opportunities and delivered tangible benefits to people’s lives. The accelerated pace of technological advancements and disruptions to business models would create new paradigms for almost all traditional industries and companies to compete in. With digitalisation disrupting traditional businesses and trade, it is therefore critical for economies to develop key economic strategies to stay globally competitive and provide sufficient growth opportunities and quality jobs for its people.

However, efforts to scope, define and eventually measure the progress and impact of the digital economy were only explored in depth globally recently. The OECD has launched the “*Measuring the Digital Economy*” report in March 2019 and is in process of developing the template of the “*Going Digital Measurement Roadmap*” which aims to identify core indicators for the digital economy and would include a range of roadmaps highlighting important measurement gaps. The European Commission (EC) has released the International Digital Economy and Society Index (I-DESI) that aims to benchmark indicators on digital performance and tracks the evolution of digital competitiveness. ASEAN is also working with the EU to explore the development of an ASEAN Digital Index.

It is with these developments in mind, that the APEC Telecommunications and Information (TEL) Working Group embarked on the project “*Digital Economy: Strategies and Measurements*”. The project, which is led by Singapore, aimed to drive the adoption and development of an effective and coherent Digital Economy strategies among APEC Member Economies. It also aims to enhance mutual learning and understanding on how the progress of such a strategy can be effectively measured.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the

effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)
- Competition policy
- Public sector governance
- Ease of doing business

**X Others, please specify: Comprehensive Framework to realise the Digital Economy**

Technology has reshaped businesses, industries and economies. It has opened up greater access to the economy for SMEs, and empowered individuals to become content creators and service providers. The already rapid pace of change Singapore has observed in the past decade is expected to further accelerate in the decade ahead. Against this backdrop, Singapore is cognizant that it must prepare our businesses, workers and people for the digital economy that is upon us. Singapore is confident that the digital economy will bring new possibilities and opportunities as it transforms businesses, industries, jobs and lifestyles.

In May 2018, the Ministry of Communications and Information, in collaboration with the Infocomm Media Development Authority of Singapore, launched the Digital Economy Framework for Action. The Framework was developed with the view to build Singapore's competitive edge in the digital era through promoting collaboration and building a vibrant ecosystem. The Framework seeks to enable businesses to transform to digital businesses, empower workers with technology, and create connected citizens. It encourages collaboration and partnership to strengthen digital capabilities across the economy. The Framework comprises three strategic priorities, which are in turn supported by four enablers.

#### Strategic Priorities:

- **Accelerate:** Digitalising industries by ramping up digital adoption across economic sectors to place companies in a better position to seize growth opportunities.
- **Compete:** Integrating ecosystems to foster a conducive environment for the growth of such integrated ecosystems and support our businesses to innovate and evolve their business models.
- **Transform:** Industrialising digital by partnering the industry in transforming the ICM sector and nurture the next generation of digital champions and develop the sector as a key engine of growth for Singapore's future economy.

#### Enablers

- **Talent:** To continuously up-skill, re-skill and raise the digital competencies of the workforce across the economy.
- **Research and Innovation:** To allow businesses to gain a competitive advantage and build an innovation community.
- **Policy, Regulations and Standards:** To ensure the policy and regulatory environment is globally competitive and appropriate for a digital world.
- **Physical and Digital Infrastructure:** To ensure our infrastructure is robust amidst the explosion of data flowing in the digital economy.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If

possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech**
- Cryptocurrency (digital asset that uses cryptography for security)**
- Sandboxes**
- Digital Banking
- Crowdfunding platforms**
- Digital payments**
- International Remittances**
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)**
- Cloud computing,**
- Use of open data on financial servicesxP2P lending platform**
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Use of open data on financial services**
- Others, please specify:\_\_\_\_\_

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control**
- Risk management
- Regulatory reporting
- Transaction monitoring**
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify:\_\_\_\_\_

**Example for AML/CFT:**

By encouraging the use of AI and data analytics, a number of banks are experimenting and implementing AI/DA techniques to improve their systems/processes. In general, for such RegTech systems, the reduction in false positives or increase in true positives are indicators of the effectiveness. As an example of this, some FIs have implemented RegTech in areas of AML/CFT (including identity management & control as well as transaction monitoring).

In a paper by Anti-Money Laundering and Countering the Financing of Terrorism Industry Partnership (ACIP), a bank reported that in a proof-of-concept conducted on an AI machine learning solution, there is a 50-60% reduction in false positives on an AI machine learning name screening module while the transaction monitoring module resulted in a 40% reduction in false positives and in addition demonstrated capability to detect new suspicious patterns which resulted in 5% increase in true positives. Using supervised machine learning techniques which memorise past analyst decisions allows automation of low-risk decisions and allows analyst to focus on higher risk transactions.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress,

please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

The Comprehensive Framework to realise the Digital Economy, as elaborated in Q3 (Best Practices), is relevant in overcoming challenges relating to Singapore's push for digital transformation.

Similarly, APEC Telecommunications and Information (TEL) Working Group project "*Digital Economy: Strategies and Measurements*", which is led by Singapore, will help to overcome challenges relating to the scoping and measurement of the digital economy.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The Comprehensive Framework to realise the Digital Economy, as elaborated in Q3 (Best Practices), is relevant as Singapore's best practices to enhance inclusion/ inclusive growth with respect to the digital economy.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Regional bodies such as APEC can help member economies overcome barriers and challenges to implementing structural reforms relating to the digital economy.

For instance, the APEC Telecommunications and Information (TEL) Working Group project "*Digital Economy: Strategies and Measurements*", which is led by Singapore, aims to drive the adoption and development of effective and coherent Digital Economy strategies among APEC Member Economies. It also aims to enhance mutual learning and understanding on how the progress of such a strategy can be effectively measured.

## CHINESE TAIPEI

**1. Barriers and Challenges:** Considering your economy’s current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Other’ and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

### **Scoping and measurement of the digital economy**

According to the “Digital Nation & Innovative Economic Development Program (DIGI+) 2017-2025”, an administrative blueprint for leading digital development and innovation in Chinese Taipei, the scale of our digital economy increased from US\$72.3 billion in 2008 to US\$106.2 billion in 2015, and is expected to reach US\$213.7 billion by 2025. When measuring the digital economy, we adopt a relatively broader scope of digital economy, which includes digital manufacturing sector (e.g. Manufacture of electronic parts and components), digital services sector (e.g. information and communication products retails and equipment maintenance) and e-commerce (e.g. Internet B2C retail trade), and is in line with the broad definitions of digital economy given by international organizations such as OECD and IMF. However, like other member economies, Chinese Taipei still faces the same challenges for measuring and comparing digital economy, including the absence of a generally-agreed definition of digital economy, and the absence of industry and product classification for digital platforms and associated services. In addition, it is also challenging for including free digital services in the definition of GDP and developing new indicators for welfare created in the digital age.

### **Regulatory and legal framework (incl. sandboxes)**

The rapid development of the digital economy is driving the rise of new business models that are having a corresponding impact on the existing regulatory framework, with respect to e-commerce, privacy and personal data, cybersecurity, protection of intellectual property rights, etc. On the one hand, the government needs to quickly respond to new business models and formulate management policies to assist startups by reducing uncertainty with regard to legal compliance, and give them space to develop; on the other hand, attention has to be paid to fair competition between existing and new business models to maintain market order.

Regarding regulatory sandboxes:

1. Financial business is a kind of business that requires official permission by law and it is subject to a high level of supervision. For example, issue of a license for limited business to a FinTech innovator that has good experimentation results still requires the procedure for amending laws, so the flexibility of being able to immediately open up a business is limited.
2. In Chinese Taipei, different financial industries are supervised separately. In light of the fact that most FinTech involves cross-industry and cross-field innovation and probably spans different financial businesses and involves the area of responsibility of different competent authorities, enhancing inter-agency cooperation and establishing new supervisory thinking are needed to promote FinTech development and supervision.
3. Non-financial industry business innovators are relatively unfamiliar with financial market practice and related regulations. Their innovative thinking may not be implementable in the financial market and risk management is often not solid. In light of this, the supervisory authority needs to spend more time and resources in communicating and providing guidance

with regard to AML/CFT and consumer protection-related accompanying mechanism or operations.

4. The current regulatory system mainly focuses on regulating the behavior of human drivers/operators of vehicles, so there are many barriers and impediments for the development of unmanned vehicles. The comprehensive review and revision of the current regulatory system will also be a challenge, since unmanned vehicle technologies and relevant standards are still being developed.

### Competition policy

The goal of Chinese Taipei's competition law, the Fair Trade Act, is to focus on the efficacy of competition, freedom and fairness of the market, and the maintenance of competition order. The Act's normative purpose is result-oriented and it is not easy to be affected by changes in industrial business models. In contrast, while the industrial laws or regulations set by other competent authorities also have the legal norms related to competition policy, their nature is procedural-oriented. Whereas it is necessary to modify the industrial laws and regulations or formulate industry-specific rules and laws to respond to the digital economy, the challenges faced by competition law are in law enforcement and investigations, including adjustment and updating of competition analysis tools as well as enhancing law enforcement knowledge and skills, since the operating modes and market definitions of the digital economy are completely different from those of the traditional economy. In practice, it is also not easy to obtain digital economy operators' business data to undertake further economic or statistical analysis, so it is difficult to accurately evaluate operators' market power. Furthermore, the innovation and technological development of the digital economy, along with the application of pricing algorithms, big data and artificial intelligence, also make it difficult for the competition authorities to discover operators' illegal activities and increase the difficulty of investigation and law enforcement.

### Public sector governance

1. High costs and risks of legacy system transferring: The existing data and systems are operated in legacy format and regulations, which are not easy to be transferred and shared. However, the costs of modifying these existing structures are high and rush transferring can cause risks in public agencies.
2. Digital data transfer obstacles between agencies: There is no mandatory regulation of data exchanging and reusing among these data collected by different government agencies, which often tend to be quite conservative and do not have the motive to reuse and add value to those data.
3. No broadly-used digital identity: Highly secured and efficient digital identity such as certificate, digital (chip embedded) identity, biometric authenticator are not generally trusted and used. It hinders the promotion of online services.

### Ease of doing business

When promoting EoDB in Chinese Taipei, such as Getting Credit, we have faced problems relating to inconsistency of the legal framework and practices.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance**
- Ease of doing business

Others, please specify: \_\_\_\_\_

### **Regulatory and legal framework (incl. sandboxes)**

1. Amidst the development of the digital economy, the content and form of new business models are changing rapidly as technology develops, with the result that the current operating model may be very different to what it was a few months ago. For this reason, when formulating related management policy, if management is still undertaken by means of directly setting provisions or laws, the problem of being unable to precisely define a particular service model has to be addressed. Also, in response to the cross-border transmission of digital information, the development of international trends needs to be taken into account and suitable alignment ensured in such areas as personal data protection and cyber-security.
2. Chinese Taipei strives to reduce regulatory barriers to investment and avoid excessive controls to keep policies and regulations flexible and agile so that we can quickly respond to changes and thus promote economic vitality and development.

Regarding regulatory sandboxes:

1. There may be a gap in terms of the scope of business a FinTech innovator hopes to engage but the competent authority has hesitated due to concerns about financial stability and consumer protection. Taking Security Token Offering (STO) as an example, innovators emphasize that STO uses blockchain technology and operations, which are different from the traditional capital markets, and thus different supervisory thinking and methods are needed, hoping that the competent authority can open up the business quickly and reduce related restrictions. For its part, the competent authority believes that STO and platform operations still involve securities market issue, trading and supervisory systems, investor protection, AML/CFT and other matters and should only be opened up after careful formulation of accompanying supervisory regulations or after regulatory sandbox testing is done to demonstrate its feasibility, so as to maintain financial market stability and protect the rights and interests of consumers.
2. Startups are often too small in scale and have less experience in terms of legal compliance and internal control; therefore, even if the experiment is a success, they may not be able to meet the requirements for gaining a license in a short period of time. As a result, the innovative experimentation business cannot be realized quickly enough into the market.
3. Unmanned vehicles, including automated automobiles, aircrafts, ships or any combination of these items, are advanced robotic products that utilize artificial intelligence (AI). Chinese Taipei has long been trying to transform and upgrade our high-tech industry. Regulatory reform is still required to lower barriers to the development of unmanned vehicles.

### **Competition policy**

The business model of digital economy often breaks away from the existing model. Enterprises are innovating in a disruptive way to improve operational efficiency as well as enhance efficacy of competition. However, since the business model may not conform to industries' specific laws, it is likely to form a policy gap. As such, major challenges are whether the new business model constitutes unfair competition for other existing legal operators, and whether Chinese Taipei's competition authority, Fair Trade Commission (FTC), should intervene in the norms of law enforcement and how to reconcile with other competent agencies. In addition, should the competition authority aim at the competition issues that may be involved in the new-emerging business model of digital economy, and set different competition law frameworks for digital economic industries from traditional ones in order to take measures to prevent behaviors that harm competition? Or else under the circumstance of not inhibiting the innovation and dynamic competition of the digital economy, it is still unclear as to how the competition authority strikes a balance between law enforcement and inappropriate intervention.

### **Public sector governance**

Difficulties of innovative industry legislation: With the growth of emerging innovative industries such as Uber, Airbnb, etc., it becomes more and more difficult to rapidly establish comprehensive regulations in new fields, because this may destruct the traditional businesses which many people rely on for earning a living.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

#### **Regulatory and legal framework (incl. sandboxes)**

In response to the development of the platform economy that is common in the emerging business models and with reference to international research and “A European Agenda for the Collaborative Economy” put forward by the EU in 2016, Chinese Taipei drafted the Reference Principles for Regulatory Adjustment by Agencies under the Cabinet in Response to the Development of the Platform Economy, which only set out principle-based rules with no individual case determination involved, to maintain the regulatory flexibility of the competent agency. The aim is to spur competent agencies, according to their areas of responsibility, to clarify related disputes arising from new platform economy types or models as well as review and amend related regulations.

Regarding regulatory sandboxes:

1. In 2018, the Financial Technology Development and Innovative Experimentation Act and Unmanned Vehicles Technology Innovative Experimentation Act were drawn up with the aim of meeting the development needs of new technology and with reference to legislative trends in other economies, so as to build a “regulatory sandbox” innovative experimentation mechanism. The intention was, with legal protection and under a suitable degree of supervision from the competent authority, to allow operators to test new products, technologies, services or business models.
2. One effective example is the financial technology innovative experimentation mechanism (regulatory sandbox), the special features of which are: it provides a safe environment for trials of FinTech R&D; FinTech innovators can be exempt from criminal and administrative liabilities and applicable regulations during the experimentation period. The experimentation period is one to up to three years, with small-scale experimentation being used to verify the feasibility of using innovative technology in financial services. The mechanism also has a regulatory adjustment function, since the Financial Supervisory Commission (FSC), by taking into account the experiment handling situations, could review the need to revise related regulations, to speed up the entry of the products or services into the market.
3. Since the mechanism was enacted on April 30, 2018, as of April 23, 2019, 3 applications have been approved to experiment, 1 application has been rejected, and 4 applications are under review; and 28 FinTech innovators are currently receiving guidance from the FSC with regards to their innovative experimentation plans. These figures show that many FinTech innovators want to use innovative models to provide services. The aforementioned three approved cases have successfully begun experimentation and related regulatory adjustment operations have been launched.

### Competition policy

In the past five years, the Fair Trade Act has not amended for the digital economy. As far as the anti-competitive enforcement is concerned, the FTC investigated the “most favored customer clauses” conducted by the e-commerce operators with their suppliers from 2016 to 2017. During the process of investigation, the involved enterprises actively removed the clauses to prevent disputes and effectively eliminated the threat to the competition efficiency for the platform market. In terms of merger control, the FTC reviewed the merger case of Microsoft and Nokia in 2014, paying particular attention to whether the merger will contribute the centralization of data and cause any significant competition restraints, in order to ensure the market structure is still pro-competition. In the past five years, there are 13 merger cases involving digital economy, of which 10 are not prohibited and 3 are terminated due to jurisdiction not exercised or incomplete documentation, showing that these merger cases do not have significant competition restraints, and the overall economic benefits are greater than disadvantages.

### Public sector governance

1. Open data: The public sector has released government open data in a great amount and has built a good mechanism to cooperate with the private sector to find out what additional data should be made open. The government also maintains the good quality of open data by taking the user feedbacks into account.
2. Public free WiFi: Chinese Taipei has constructed many public and free WiFi hot spots. They are located in both urban and rural areas, and bring about good and essential digital services for citizens. It is also very convenient for foreign tourists to use.

### Ease of doing business

Dealing with Construction Permits indicator

Taipei City Government established a One-Stop Counter for Building Permits to issue permits for warehouses in 2011; this was expanded into a One-Stop Counter for Building Permits (for factories, warehouses, or offices under five stories) in 2012 and 2013; in 2014, with reference to actual applications, the application procedure was simplified. Since April 1, 2015, in coordination with the implementation of a digital application paperless operating system, applicants have been able to apply for a construction permit online, further reducing the required time. In the World Bank's Doing Business report of 2018, Chinese Taipei ranked 2nd globally for this indicator.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech
- Cryptocurrency
- Regulatory sandboxes**
- Digital banking**
- Crowdfunding platforms**
- Digital payments**
- International remittances
- Personal and business loans
- Robo-advisors**
- Cloud computing,
- P2P lending platform
- Use of open data on financial services**
- Open Banking

Others, please specify: \_\_\_\_\_

### **Regulatory sandboxes:**

Since the mechanism was implemented on April 30, 2018, the FSC has approved 3 applications for FinTech innovative experimentation (as of April 23, 2019). Among them, 2 are non-financial institutions applying for experimentation involving cross-border remittance innovation cases, which are to provide foreign migrant workers with payroll remittance services in a convenient and low-cost innovation mode and to solve the problem that foreign migrant workers are not easy to visit the bank for remittances. Meanwhile, the non-financial institution FinTech innovators engaged in the experimentation will also have a chance to establish AML/CFT operations during the experimentation period. If the results of the experimentation are good, the FSC will review the need for revision of related regulations and consider the feasibility of issuing limited licenses for foreign currency remittance businesses.

### **Digital Banking:**

1. With the aim of providing the public with convenient digital financial services, the FSC has been promoting the Program for Building a Digital Financial Environment and in January 2015 opened up 12 businesses including allowing customers to close accounts, apply for personal loans, apply for credit cards, and open a trust account online. As of the end of March 2019, 37 domestic banks (including Chunghwa Post) have launched digital banking businesses, comparing that of 27 of the end of July 2015, it was a significant increase of providing such businesses. At present, the businesses that can be applied for online include three deposit businesses, one credit business, three credit card businesses, four wealth management businesses and one marketing business.
2. As financial technology develops, use by the younger generation to obtain services using mobile devices has become a trend and there are already Internet-only banks overseas. To assist banks respond to the business opportunities offered by the development of digitization and encourage financial innovation, enhance financial inclusion and satisfy the needs of new-generation consumers, in April 2018 the FSC has completed the revision of regulations relating to the requirements for establishment of Internet-only banks. In mid-November 2018 the FSC announced the policy direction for opening up online-only banks; applications were accepted from November 2018 to February 2019, and it is expected that the results of review will be announced in mid-2019.

### **Crowdfunding platforms:**

With the aim of providing more options for fundraising for startups, Chinese Taipei established Go Incubation Board for Startup and Acceleration Firms (GISA) in 2014. Also, in 2015 securities firms were allowed to operate equity crowdfunding platforms. As of the end of March 2019, 149 companies had been assisted to raise a total of NT\$488 million (about US\$16.27 million) through GISA. Eight business operators have also won approval to engage in equity crowdfunding platform business to assist micro enterprises raise funds through such platforms.

### **Digital payments:**

In order to speed up the popularization of e-payment and mobile payment, the FSC has established the Working Group for the Promotion of the e-payment Rate, which is actively promoting e-payment in three directions namely rolling regulatory review, developing diverse payment tools, and expanding channel use. In response to the development of new technology and the needs of business operators, the FSC carries out rolling review of regulations at suitable times and has already completed the amendment of regulations governing credit cards, debit cards, stored value tickets, e-payment and other payment tools to increase the security and convenience of payment and lower the interface system costs of specially-engaged stores. Also, domestic financial institutions are actively using new technology and, since 2014, various types of mobile payment have been introduced including mobile credit card, mobile debit card, mobile stored value card, e-payment institution physical channel payment (O2O), mobile acquiring (mPOS); as of the end of February 2019, transaction amount totaled NT\$77.77 billion (about US\$2.59 billion).

**Robo-advisors:**

With the aim to assist securities investment consulting enterprises to provide more personalized investment suggestions and investment portfolio to investors, Chinese Taipei allowed authorized enterprises to implement online securities investment consulting services and investment management services, as stipulated by the “Guidelines for Securities Investment Consulting Services of Securities Investment Consulting Enterprises (SICEs) with Automated Tools (Robo-Advisor)” set on June 26, 2017.

**Use of open data on financial services:**

1. The FSC and the peripheral financial institutions of the National Credit Card Center (NCCC) established the “Credit Card Open Data Application Platform” in October 2016. In addition to continuing to disclose the credit card transaction data of the Chinese Taipei credit card market since 2014, the cardholder profile data such as gender, age, annual income, occupational category, education level, etc., which have been de-identified, are provided to provide quantifiable transaction data to users. The transaction data is open to the public and various industries to add value to their own applications. Through resource sharing, the profit-making industry can explore potential business opportunities.
2. This platform assists data users to effectively use open data. The NCCC regularly uses open data to, using the case analysis method, carry out cross-border, cross-area cross-analysis of the various card swiping situations of card holders in Chinese Taipei to identify potential needs and business opportunities, such as changes in gender and age group consumption, analysis of consumption patterns of card holders in different age groups, analysis of cardholders in different income brackets and analysis of card holders with different levels of education.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

No related case study with RegTech.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy’s short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

**Regulatory and legal framework (incl. sandboxes)**

1. In October 2017, Chinese Taipei launched a policy of deregulation to eliminate investment obstacles with the aim of boosting domestic economic momentum and preventing excessive controls holding back improvements in competitiveness. Agencies were required to actively

review the need to loosen restrictive rules and regulations, administrative directions and interpretive rules so as to promote business and enhance public convenience; they are also required to use forward-looking thinking to formulate concrete programs that would help enterprises eliminate legal obstacles to investment and operation, in line with the rapid environmental changes that characterize the digital economy.

2. A Startups Regulatory Adjustment Platform has also been established to help startup operators clarify uncertainty of applicable regulations for emerging business models; operators can conveniently submit an application online and also submit their requirements in writing. By facilitating face-to-face communication between the competent agency concerned and startups, the applicability and restrictions of regulations can be quickly clarified, actively building a business-friendly regulatory environment.

Regarding regulatory sandboxes:

1. Way of resolving challenges and policy gap: FinTech startups are provided with various consulting and guidance channels, including consulting and guidance services provided by the Fintech Development and Innovation Center of the FSC, “front shop back factory” cooperation mechanism jointly implemented with the Ministry of Economic Affairs (MOEA) and regulatory clinics held by the FinTechSpace, to clear up innovators’ doubts and give them an understanding of supervisory regulations.
2. Promotion of an inter-agency regulatory sandbox mechanism: In light of the diverse nature of experimentation types and involvement of the area of responsibility of other agencies, the Fintech Development and Innovation Center of the FSC has set up an inter-agency regulatory advisory group to discuss and formulate inter-agency policies and set or amend regulations relating the experimental mechanism for FinTech innovation.
3. Formulation of a differentiated management mechanism: During the guidance process, the feasibility of issuing a limited financial business license will be assessed, and it is to lower the capitalization requirement for a single business license by taking into account the business scale and nature.
4. Supporting the development of startups: The FSC supervised the establishment of the FinTechSpace, providing nurturing, matching, creative experimentation space and other resources to startup teams; cooperation with industrial, academia and research circles and enhancing of international links are also planned to give startup teams more opportunity to develop. Accompanying fundraising policies have also been introduced, such as providing incentives to domestic banks to provide loans to companies of key innovative industry and promotion of varied TWSE and TPEX listing channels to create a friendly environment for startup development.
5. The procedure and related regulations of the Unmanned Vehicles Technology Innovative Experimentation Act are currently still being developed. We will soon implement a regulatory sandbox mechanism to reduce regulatory barriers for advanced unmanned vehicle technologies. In the future, relevant authorities can undertake review and revision of laws and regulations regarding unmanned vehicle technologies according to the results of the innovative experiments.

### **Competition policy**

In response to the development of the new-emerging business model in the era of digital economy, the FTC set up a "Digital Economy and Competition Policy Task Force" in April 2017 to discuss potential competition issues arising from the digital economy. In the short term, the "Digital Economy and Competition Policy Task Force" will collect and study relevant literature, research, or report on digital economic issues published by major international competition authorities and international organizations such as OECD, ICN, and APEC. The FTC will also hold symposiums to consult with external stakeholders in order to clarify issues of competition that may be involved in

the areas of sharing economy, e-commerce, big data and platform economy, etc. In the long term, the Task Force will pay close attention to the trend of international competition enforcement and the dynamic development of digital economic industry, and review relevant competition regulations to evaluate the necessity of amendment or formulating specific laws and regulations so as to build a comprehensive competition regime and ensure the maintenance of the competition order.

#### **Public sector governance**

1. (short-term) Value added of open data: to continuously open up government data to encourage citizen's participation and innovation.
2. (mid-term) Integrating government services: to transform all government service processes online and empower citizens to authorize the application of personal data to all system services they want.
3. (long-term) Data-driven policy making: to analyze data as the basis for decision making and create new services by adopting AI and cloud technologies.

#### **Ease of doing business**

With regard to Getting Credit, Chinese Taipei's Financial Supervisory Commission is currently drafting amendments to the Personal Property Secured Transactions Act. As it involves the overall law amendment schedule and practical operating requirements, more communication and coordination with related parties is still required.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

#### **Regulatory and legal framework (incl. sandboxes)**

In response to the development of the digital economy, Chinese Taipei has established an advanced ICT infrastructure. Over the past few years, in terms of enhancing inclusive growth, the focus has been on building a flexible and open, transparent and information-secure regulatory and legal environment for doing business; the concrete measures are:

1. Deregulation has been promoted, actively reviewing and loosening outdated regulations. As of June 2019, 496 regulations have been loosened. Through the Startup Regulatory Adjustment Platform, startup operators are able to quickly clarify doubts about applicable regulations, reducing their legal compliance costs. In response to the development of new technology, related laws have also been formulated to establish a regulatory sandbox innovative experimentation mechanism.
2. Regulatory transparency continues to be increased and the public consulting mechanism enhanced; including increasing the notice-and-comment period for laws and regulations from 14 days to 60 days in principle since October 2016. Moreover, from April 2018, agencies have been required to respond within 10 days of draft regulations being passed to the Parliament after approval by the Cabinet, with the aim of improving the quality of their responses. An explanation as to why opinions received from the public were adopted or rejected should also be provided on the day the draft regulations are promulgated.
3. Personal data and privacy protection continue to be reinforced to build public trust in cybersecurity and assistance provided to domestic enterprises to meet the requirements of the EU GDPR.

Regarding regulatory sandboxes:

1. The experimental mechanism for FinTech innovation (regulatory sandbox) emphasizes the idea of “responsible innovation”. We require that the innovative experimentation plan submitted by innovators includes planning of participant protection measures and a risk management mechanism; it must also clearly explain how the innovative products/services will increase the efficiency of financial services, lower cost or enhance the rights and interests of consumers; the competent authority will also, according to planning, assess whether the plan will have financial inclusion or other benefits.
2. The business opportunities brought by FinTech have removed the regional restrictions of the past and the regulatory sandbox is the experimentation field for molding Fintech innovation. It is beneficial for the market’s provision of customized, fast and convenient innovative financial products or services to different customer groups to fully meet all the financial needs of the public. Through the borderless character of the Internet, service can be extended to remote areas, the disadvantaged groups or small enterprises, even to enterprises or members of the public in other economies, in doing so expanding the coverage of financial inclusion. The FSC has so far approved three applications for innovative experimentation that involve provision of financial services to groups that did not interact much with banks in the past such as new graduates, students and foreign migrant workers.
3. The Unmanned Vehicles Technology Innovative Experimentation Act is expected to facilitate the formation of relevant supply chain systems for unmanned vehicles, construct a safe environment for experimentation, raise public acceptance, and expedite relevant regulatory reforms.

### **Competition policy**

In response to the policy gaps and challenges created by the digital economy to the competition enforcement, the FTC will strive to enhance the knowledge and skills of handling cases through conducting the collection of relevant literature, research, or reports on digital economic issues published by major international competition authorities and international organizations, and gradually adjusting and updating the competition analysis tools for enforcement practice. All these efforts contribute to a level playing field and promote the fairness and transparency of competition enforcement, which would enhance inclusive growth of digital economy.

As to how to measure Chinese Taipei’s understanding of the competition issues relevant to digital economy and assess whether our knowledge and skills in handling cases are improved, we are to use the following indicators:

1. the number of literature, research, or reports related to digital economic issues that we collect and study from major international competition authorities and international organizations;
2. the number of international workshops or seminars for discussing issues related to digital economy that we participate in; and
3. the number of initiatives and advocacy events that we coordinate with other competent authorities on competition issues of digital economy.

### **Public sector governance**

We are to continuously conduct free public WiFi deployment so that remote areas of the territory can also access the Internet without effort. The ISP is required to reduce the internet access fee gradually for people to access internet resources in a more reasonable (lower) price, thus protecting their basic internet human rights.

For the disadvantaged and the elderly, the frontline civil servants would go to their homes with tablet PCs to serve them when they need to apply for government subsidies or other services.

Meanwhile, we are to use the following benchmarks for tracking progress:

Benchmarks	Year 2020	Year 2025
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90% high-speed broadband width penetration	1Gbps	2Gbps
Basic internet human right for minority groups	10Mbps	25Mbps

### **Ease of doing business**

In response to the rise of the digital era and promotion of smart government policy, electronic systems are used to provide a more convenient environment for doing business. For example, a company, business and limited partnership one-stop service request portal has been established, simplifying the process for setting up a business and reducing the time required.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

### **Regulatory and legal framework (incl. sandboxes)**

In terms of regulatory and legal framework reform, we hope to engage in exchanges with related international organizations and economies with regard to the development of new business model management policies.

Regarding regulatory sandboxes:

1. Chinese Taipei's participation in APEC can allow our experiences and implementation situations to be shared and allow friendly relations to be built with other economies. Also, through related areas or international organization research reports, we can obtain an understanding of the APEC regional development situation and the challenges faced by each economy to provide reference for policy formulation and research and the framework for cooperation between member economies.
2. Through the Unmanned Vehicles Technology Innovative Experimentation Act, the government will be able to develop and verify relevant regulations and standards, cooperate with the industry to follow the global trends of unmanned vehicle development while protecting the safety of the community. The Act will also allow international technical cooperation on the experimental procedures of the regulatory sandbox, and forge a friendly regulatory environment for the future deployment of unmanned vehicles.

### **Competition policy**

In addition to the software and hardware advancement and innovation of technology, the development of digital economy has a great impact on the overall social and economic growth, such as people's life, business model and regulatory framework. Therefore, in addition to discussing digital economic issues or organizing workshops for capacity building in various relevant forums, APEC may also hold cross-forum dialogues or invite experts and scholars from other international organizations to share experiences and best practices, so that member economies could gain a better understanding of the technologies that underpin the digital sector and the relevance of analysis tools for competition and competition enforcement. It also could be a useful contribution to the ongoing conversation between competition authorities on the ways that how competition policy or legal framework should adapt to the digital era. With APEC's role as the platform of interaction among member economies, it will promote a comprehensive and integrated understanding of digital economic issues and help forge effective solutions to address the policy gaps, obstacles and challenges created by the digital economy.

### **Public sector governance**

Currently, the general public holds a skeptical attitude towards accessing and utilizing personal data by the government. APEC member economies can share their experiences as to how to gain trust from citizens while promoting a data-driven smart government strategy. In addition, as cyberattacks are serious issues across the region and around the world nowadays, APEC members are encouraged

to share their cyber security information among each other so that those attacks can be prevented and deterred in the first place.

## THAILAND

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: Human Capital Development**

Moving toward digital economy have long been high on Thailand's economic priorities. However, they are still challenges and barriers to implementing structural reforms regarding the digital economy in Thailand. In order to unlock the potential of digital transformation, structural reforms in many areas are required, including financial, health and education services, as well as the public sector itself. One key challenge is the fragmented management of public sector. The lacks of interagency coordination among different public institutions and institutional silos in the government have resulted in incoherent goals and priorities and overlapping responsibilities. Moreover, many authorities in the public sector still require documents to be submitted and kept in hard copies, some are due to legal requirements while some are because of the legacy system that may require some time to change.

Another challenge is the lack of expertise in the public sector to understand the technical details associated with the implementation of structural reforms. For example, the lack of experts and people with skills in big data, analytics, artificial intelligence and other areas crucial to develop the digital economy, as well as inadequate rules and regulations regarding digital technology are seen as an important barrier to implementing structural reforms for digital economy in Thailand. In addition, the changing of landscape caused by digital transformation may affect those who fail to respond to technological changes or upgrade their existing process and knowledge base can potentially go out of business. A lack of adequate protection especially when involving data privacy can also hold back consumers and businesses who embrace e-commerce or online transactions. Moreover, some of the existing rules and regulations are also not fully supportive of innovative business models, particular in terms of speed, compliance cost and opportunity cost.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance**
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

One of the key policy gaps relating to digital economy is the lack of consistent policies and guidelines between different implementing agencies, which make it difficult to implement the digital development plan holistically. Moreover, in a digital era, many business models are transforming into a hybrid involving crosscutting regulators, however, since each regulator has its own legal mandate and authority, the existing legal framework may not be able to accommodate these new

business models. Therefore, the coordination among regulators to properly regulate or oversee these new financial services is extremely essential.

Furthermore, as new technology such as distributed ledgers, blockchain, artificial intelligence (AI), and the IoT have been introduced, the gap between policy and the changes induced by digital transformation have become greater. The government agencies may not be able to respond quick enough to this rapid transformation. There is also a concern regarding the trade-off between growth and associated risks in policy-making decisions. In financial sector, the main challenge is how policy revision could effectively and efficiently drive private sectors towards digital economy, and at the same time, not compromising the security and soundness of customers and financial system as a whole.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy
- Public sector governance
- Ease of doing business
- Others, please specify:

Since 2016, the Ministry of Digital Economy and Society (MDES) has been established to plan, promote, develop and implement activities related to a digital society and economy. Furthermore, to reaffirm the government’s commitment to Thailand’s innovation-driven future under Thailand 4.0 initiative, the National Legislative Assembly (Parliament) passed six technology-related bills in January 2019. The six digital bills include the Data Protection bill; the Cyber-security bill; the Digital Economy and Society Council bill; the Digital Identification bill; the Electronics Transaction Organisation Restructuring bill; and the Electronics Transaction Officer bill.

In addition, three regulators, including Bank of Thailand, Office of Insurance Commission and the Securities and Exchange Commission, under the Ministry of Finance have established regulatory sandboxes to facilitate innovation in the financial services industry (further details on this could be found in 3a.).

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Fintech**
- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes**
- Digital Banking**
- Crowdfunding platforms
- Digital payments**

- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- X P2P lending platform**
- Open Banking (a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: Digital Identity

**Fintech and Sandboxes:** Regulatory Sandbox allows private sectors that provide innovative financial services with new technologies to start providing services faster under regulator's close monitoring. The regulatory sandbox also allows banks, and payment service providers to test the technology, ensuring interoperability among all service providers, as well as to follow industry-led business rules. One of the most successful cases of Sandbox to drive Innovation is the Standardized Thai QR Code for Payment.

**Digital Banking:** The Bank of Thailand has revised its rules and regulations following the Regulatory Impact Assessment (RIA) scheme, to help facilitate the move towards Digital Banking. In particular, on IT operation for more efficient and faster financial transactions while maintaining appropriate risks involved through the permission to use new technology such as cloud computing, and biometrics for account opening process.

**Digital payments:** The 4th Payment Systems Roadmap (2017-2021) has been launched aiming to build the ecosystem for digital payment to become the main channel of payment through the development of 5Is: Interoperable Infrastructure, Innovation, Inclusion, Immunity, and Information. The Payment System Act (2017), or the PSA, has been facilitating digital payment landscape since it was in effect. The PSA supports payment supervision to be in accordance with international standards. Furthermore, the PSA incorporates legal provisions that are essential to introduction of new technology and innovation into the payment landscape, thereby encouraging new players and new efficient services. In addition, the Ministry of Finance and Bank of Thailand has shepherded an economy-wide effort to implement "National e-Payment Master Plan". The Master Plan has helped create a comprehensive and interoperable electronic payment infrastructure that will transform how Thais transfer money, how Thais pay taxes and even how the government disburses public welfare. This transformation will certainly create a conducive environment for digital economy to flourish in Thailand.

**P2P lending platform:** Ministry of Finance has issued notification in 2018 to allow P2P operators to apply for a license, paving the way for information based lending and new entrants in the consumer credit market. Moreover, in April 2019, the Bank of Thailand issued notification on the Determination of Rules, Procedures, and Conditions for Peer-to-Peer (P2P) Lending Businesses and Platforms. These regulations on peer-to-peer lending will expand opportunities for individuals or small-business owners to access financial sources, as well as to ensure the proper consumer protection and risk management of the peer-to-peer lending platform providers.

**Digital Identity:** Ministry of Finance and Ministry of Digital Economy and Society, along with partners in the private sector, have formed a task force to create National Digital Identification Platform, which will serve as an indispensable digital infrastructure for the economy. This National Digital ID Platform has been designed to be interoperable between government and private sector. Electronic Transaction Act B.E. 2544 has also been amended as proposed by Ministry of Finance to accommodate digital authentication and verification.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control**
- Risk management**
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

The Securities and Exchange Commission (SEC), Thailand's regulator of the securities markets, has used technology to manage regulatory process within the financial sector for mutual fund risk management, financial intermediary efficiency improvement, and the off-site monitoring system to monitor, analyze and report the risks and irregularities. Technology supports the mutual fund risk management processes from data input, processing, and output to data disclosure.

The Bank of Thailand has amended several regulations to allow banks and nonbanks to use technology to perform Electronic Know Your Customer (e-KYC) process where they source customer information prior to opening accounts or approving transactions. Banks and nonbanks can thus now comply with the Anti-Money Laundering Office (AMLO)'s requirements more accurately and more efficiently. The off-site monitoring system has also been developed as an instrument to monitor and regulate the entrepreneurs in securities, fund management, and debt securities business.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

In order to move towards digital economy, certain legislation or regulation must be enacted to ensure that electronic data has legal status and can be used as credible document. Thailand promotes the digital transformation by encouraging the use of digital technology in both public and private sector. In 2017, Thailand enacted the Digital Development for Economy and Society B.E. 2560 (the Digital Development Act) and Thailand Digital Economy and Society Development Plan (2018-2037) has released to "Transform towards Digital Thailand". The plan covers six key areas, namely: 1) developing economy-wide high-efficiency digital infrastructure; 2) driving the economy with digital technology; 3) building an equitable and inclusive society through digital technology; 4) transforming the public sector into a digital government; 5) developing workforce for the age of digital economy and society; and 6) building trust and confidence in the use of digital technology. The plan is divided into 4 phases within 20 years including Digital Foundation (1.5 years), Digital Thailand: Inclusion (5 years), Digital Thailand: Full Transformation (5 years), and Global Digital Leadership (10 years). Currently, Thailand is on the 2<sup>nd</sup> phase of the plan focusing on the digital inclusion.

Moreover, the National Legislative Assembly has approved several laws to narrow gaps in the digital age including Cyber Security Act, Data Privacy Protection Act, Royal Decree on Criteria and Procedures for Good Governance, and Royal Decree on Criteria and Procedures.

In the financial sector, the Bank of Thailand continues to support the Thailand Blockchain Community Initiative (BCI) following its official company establishment in May 2019. The BCI will encourage the Blockchain community in Thailand to be more proactive and support practical uses of Blockchain technology that benefits not only financial sector but real sector as well. Secondly, the National Digital Identity (NDID) project will begin to serve as an important fundamental for the digital economy. It facilitates the verification and authentication of identity digitally which could also be further applied to the sharing of other information such as health records. For the medium-term, it uses the digital technology to remove the barriers in doing business and overlapping procedures such as the one-stop service platform. In the short run, the close collaboration among regulators and industries must continue to ensure enabling environment and ecosystem for digital economy, for example, the three-financial regulator collaboration among the Bank of Thailand, the Securities and Exchange Commission, and the Office of Insurance Commission, either in high executive level or in working group level.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The digital inclusion has been identified in the 20-year digital development plan to create public-private participation in digital economy and society and build trust in a business-friendly environment with standardized facilitation system. For infrastructure, it plans to expand high-speed internet network economy-wide and connect with foreign economies. Digital inclusion aims to encourage local enterprise integration and access to the online market, which can help the local entrepreneurs to generate higher income. Furthermore, digital education and literacy are necessary to narrow gaps in Thai economy including rural-urban well-beings and areas, generation gap, firm-size differentiation.

The current 12<sup>th</sup> National Economic and Social Development Plan has set four indicators to measure the extent of digital economy development in Thailand. First, it aims to improve the Network Readiness Index (NRI), which measures the propensity to **take advantage of the opportunities offered by information and communications technology (Thailand was ranked 62<sup>th</sup> by WEF in 2016)**. **Second, the plan expects to increase the number of villages where can access to high-speed internet from 30 to 85 by 2021.** **Third, it targets to introduce at least 1,000 digital entrepreneurs in the economy.** Fourth, the number of government agencies with cyber security system increases from 47 to more than 80 percent by 2021.

In accordance with the Government's National e-Payment Plan and Digital Economy vision, PromptPay was developed as a payment infrastructure that allows a faster and easier money transfer process via electronic channels by using mobile numbers or citizen IDs. Furthermore, PromptPay has served as a fundamental for the development of Standardized Thai QR code that provides more convenient and secure channel of payment. The introduction of the two infrastructure helps promote electronic payment, reduce cost of cash management, thus improving overall efficiency of the economy. In addition, to increase the financial access of the Thai households, Basic Banking Account (BBA) was introduced to widen opportunity for low income earners to access financial services and enhance their daily financial literacy. Moreover, BBA continues to support their chance to access other financial services to support occupation and leading to improve their quality of life. This will benefit the whole economy as promoting financial access for the people at the bottom end of income scale will balance income distribution, reduce social inequality and enhance sustainable economic growth. As for the access of SMEs, the regulation on P2P lending platform was issued on May 2019. This regulation aims to enhance opportunity for individuals or small and medium entrepreneurs to access financial sources because small and medium entrepreneurs face some difficulty to access funding sources because of lagging collateral or no financial history.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Partnership with regional cooperation, such as ASEAN, allows Thailand to create the network for knowledge, data & information, and expertise sharing. It also creates the collaborative framework to deal with the regional challenges and regional risk reduction. ASEAN has launched an ASEAN Master Plan on Connectivity (MPAC) 2025 to promote the regional connectivity. This Master Plan consists of five strategic key areas: sustainable infrastructure, digital innovation, seamless logistics, regulatory excellence, and people mobility. The digital innovation strategy aims to increase MSMEs technology adoption; support access to financial services through digital technologies; enhance impact of open data; and improve data management practices and more cross-border data within the region by 2025. In addition, Thailand can benefit from ASEAN and other partners. For example, ASEAN and Japan established the ASEAN-Japan Cyber security Capacity Building Centre in Thailand to promote the secured “Digital ASEAN”.

Cooperation through regional bodies such as APEC offers the opportunity to share experiences on the lessons learned in improving structural policies for the development of digital economy. APEC has played a vital role in addressing challenges in reform of digital economy through providing assistance that could help developing economies to enhance its capacity as well as accelerate innovation. Member economies can learn from others’ reforms and outcomes. A range of experiences and challenges that are shared through policy dialogues, workshops and capacity building exercises, allowing economies in similar stances to learn from other’s situations.

APEC’s engagement with international organizations, for example, Organization for Economic Cooperation and Development (OECD), and World Bank could also help providing technical support to developing economies to carry out structural reform that bring concrete and effective outcome.

## UNITED STATES

**1. Barriers and Challenges:** Considering your economy's current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Other' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
  - Competition policy
  - Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

The first major challenge of establishing a favorable policy climate for emerging technologies and data utilization is the inability to properly and accurately measure the value of data, ad revenue, or data flows in the same way you can measure the exact value of good trade. Data is not a commodity, nor is it a manufactured good or a statically priced service, so there are significant challenges in scoping a policy and regulatory environment to encourage expansion in the digital economy. Enhancing measurements is a key activity of many economies and multilateral institutions and will have long-term positive impacts on our understanding of digital trade policies.

Given the gaps in knowledge about the value of data, regulatory and legal frameworks, as well as competition policy and consumer protection are key areas of interest, and key challenges for the growth of the digital economy. Supportive policy frameworks have been established in economies and multilateral frameworks; however, there is not yet an international consensus on best practices. Further, some economies are resorting to protectionist policy measures meant to trap data within their physical borders that undermines the future of a global digital economy, hurts economic growth, and disadvantages underserved populations by limiting competition and innovation.

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select 'Others' and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
  - Competition policy
  - Public sector governance
- Ease of doing business**
- Others, please specify: \_\_\_\_\_

The most obvious policy gap hurting the digital economy are divergent regulatory and legal frameworks leading to a balkanization of the Internet and digital services. When economies set up a firewall that effectively prevents the export of data or the import of information, innovation and economic growth are impeded to the detriment of the global economy. APEC has long-served as an incubator for free trade policy ideas; however, in recent years APEC has lost its ability to find consensus around the free flow of data and cooperative work on digital trade initiatives. Without further cooperation and an understanding that data must flow freely to support global commerce, we are disadvantaging our economic competitiveness as a region. Restrictions on cross-border data flows, policy requiring localization of data servers or CLOUD services, and restrictions or duties on digital products and services impede economic growth and competitiveness for APEC as a region.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from

the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

On the topic of regulatory and legal frameworks, the Federal Communications Commission (FCC) is pursuing a comprehensive strategy to promote 5G development and deployment in the United States. The strategy includes three components, which can be considered best practices: (1) making additional low, mid, and high-band spectrum available for 5G services; (2) updating infrastructure policy; and (3) modernizing outdated regulations. For more information, please refer to the [FCC's 5G FAST Plan](#).

Beyond 5G, the Bureau of Economic Analysis (BEA) is developing tools to better capture the effects of fast-changing technologies on the U.S. economy and on global supply chains. The project seeks to calculate the digital economy's contribution to U.S. GDP, improve measures of high-tech goods and services, and offer a more complete picture of international trade. Other goals are to advance research for digital goods and services, the sharing economy and free digital content, and to explore economic measures beyond GDP to better understand Americans' well-being.

In March 2018, BEA released, for the first time, preliminary statistics and an accompanying report exploring the size and growth of the digital economy. BEA includes in its definition of the digital economy three major types of goods and services:

- the digital-enabling infrastructure needed for an interconnected computer network to exist and operate
- the e-commerce transactions that take place using that system
- digital media, which is the content that digital economy users create and access.

Because of the limitations of available data, BEA's initial estimates include only goods and services that are "primarily digital." This means that some components of the digital economy, like peer-to-peer (P2P) e-commerce, also known as the sharing economy, are excluded from the initial estimates. P2P transactions such as ride-sharing services rely on internet-enabled devices to match supply and demand, but also have a non-digital component of in-person provision of services. BEA is continuing to work towards expanding the coverage of the estimates as we work toward a digital economy satellite account. (<https://www.bea.gov/data/special-topics/digital-economy>)

Additionally, in February 2019, the President issued Executive Order 13859, “Maintaining American Leadership in Artificial Intelligence” (<https://www.whitehouse.gov/presidential-actions/executive-order-maintaining-american-leadership-artificial-intelligence/>), which directs the Office of Management and Budget (OMB) to provide guidance to all Federal agencies to (1) inform the development of regulatory and non-regulatory approaches regarding technologies and industrial sectors that are empowered or enabled by artificial intelligence (AI) and (2) consider ways to reduce barriers to the development and adoption of AI technologies. Consistent with Executive Order 13859, OMB guidance on these matters will seek to promote American innovation generally and with respect to the application of AI technologies, while upholding and protecting civil liberties, privacy, American values, and U.S. economic and **domestic** security.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**X Fintech**

**X Cryptocurrency (digital asset that uses cryptography for security)**

- Sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments
- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

Authorities in the United States have taken a number of actions relevant for the digital economy around FinTech:

**Application of FinCEN’s Regulations to Certain Business Models Involving Convertible Virtual Currencies**

- The Financial Crimes Enforcement Network (FinCEN) issued an interpretive guidance to remind persons subject to the Bank Secrecy Act (BSA) how FinCEN regulations relating to money services businesses (MSBs) apply to certain business models<sup>1</sup>. For a discussion of the concept of “business model” as used within this guidance, see *infra*, Section 1.1. involving money transmission denominated in value that substitutes for currency, specifically, convertible virtual currencies (CVCs)  
<https://www.fincen.gov/sites/default/files/2019-05/FinCEN%20Guidance%20CVC%20FINAL%20508.pdf>

**SEC issued a Framework for “Investment Contract” Analysis of Digital Assets**

- As part of a continuing effort to assist those seeking to comply with the U.S. federal securities laws, SEC published a framework for analyzing whether a digital asset is offered and sold as an investment contract, and, therefore, is a security.  
<https://www.sec.gov/corpfin/framework-investment-contract-analysis-digital-assets>

The Office of the Comptroller of the Currency (OCC) today announced it will begin accepting applications for national bank charters from nondepository financial technology (fintech) companies engaged in the business of banking.

- <https://www.occ.gov/publications/publications-by-type/other-publications-reports/pub-other-occ-policy-statement-fintech.pdf>

The CFTC launched LabCFTC as an innovation hub.

- LabCFTC is the focal point for the CFTC's efforts to promote responsible FinTech innovation and fair competition for the benefit of the American public. LabCFTC is designed to make the CFTC more accessible to FinTech innovators, and serves as a platform to inform the Commission's understanding of new technologies. Further, LabCFTC is an information source for the Commission and the CFTC staff on responsible innovation that may influence policy development.
- <https://www.cftc.gov/LabCFTC/Overview/index.htm>

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech's reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting**
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)**
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

The OCC has supported responsible innovation in all aspects of banking, including regulatory compliance. The OCC, along with other U.S. agencies, issued the Joint Statement on Innovative Efforts to Combat Money Laundering and Terrorist Financing encouraging financial institutions to take innovative approaches to AML monitoring.

<https://www.occ.gov/news-issuances/news-releases/2018/nr-occ-2018-130a.pdf>

The Office of Structured Disclosure at the SEC works with investors, regulated entities, and the public to support the submission and use of structured data.

<https://www.sec.gov/structureddata>

Various groups within the SEC use these data analytics in support of monitoring and surveillance.

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy's short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

With the rapid growth of the Internet starting in the mid-1990s, digital technologies have fundamentally impacted business models within every sector of our economy from agriculture to healthcare, education to energy, and manufacturing to the arts. Despite enormous private investment and dedicated Federal grant and loan programs, too many American citizens and businesses lack access to this basic tool of modern economic prosperity.

While the Federal Government owns or manages key assets that support telecommunications infrastructure, the bulk of America's telecommunications infrastructure is owned and managed by private-sector companies. This private market is a significant asset to our economy and has helped the United States innovate and lead the world in each wave of telecommunications technology.

Over the past several decades, Federal partnerships have been especially important for deployment in high-cost rural areas, where the unique challenges of geography, population density, and deployment costs may make it unprofitable to expand or operate networks – creating significant gaps in rural broadband coverage.

The American Broadband Initiative (Initiative) is the Administration’s signature strategy to stimulate increased private investment in broadband infrastructure and services to fill broadband connectivity gaps in America. The Initiative will drive change across Federal Agencies to better leverage public assets and resources through partners to expand our economy’s broadband capacity. This mission is built on three core principles:

- Government processes should be clear, transparent, and responsive to stakeholders.
- Federal assets should provide the greatest possible benefit to stakeholders and the public.
- The Federal Government should be a good steward of taxpayer funds.

Drawing on these principles and the unique responsibilities of Federal Agencies, the Initiative will achieve its goals through three interagency workstreams:

- Streamline Federal permitting processes to make it easier for network builders and service providers to access Federal assets and rights-of-way, reducing the regulatory burden and expediting the deployment of broadband networks.
- Leverage Federal assets such as towers, buildings, and land to lower the cost of broadband buildouts and encourage private entities to expand telecommunications infrastructure, especially in rural America.
- Maximize the impact of Federal funding to better target areas of need, improve consistency, and provide incentives for State/local policies that efficiently and effectively leverage Federal dollars.

More information about the American Broadband Initiative is available at [https://www.ntia.doc.gov/files/ntia/publications/american\\_broadband\\_initiative\\_milestones\\_report.pdf](https://www.ntia.doc.gov/files/ntia/publications/american_broadband_initiative_milestones_report.pdf).

In addition, the United States has undertaken ongoing efforts to benchmark broadband through mechanisms such as annual reports (*e.g.*, the [2019 Broadband Deployment Report](#)), as well as initiatives like the [Measuring Broadband America](#) program, which recently issued the [2018 Measuring Broadband America Fixed Broadband Report](#).

Multiple federal agencies have outlined strategies to promote responsible innovation and FinTech adoption. See the following publications and remarks:

<https://home.treasury.gov/news/press-releases/sm447>

[https://www.fincen.gov/sites/default/files/2018-](https://www.fincen.gov/sites/default/files/2018-12/Joint%20Statement%20on%20Innovation%20Statement%20%28Final%2011-30-18%29.pdf)

[12/Joint%20Statement%20on%20Innovation%20Statement%20%28Final%2011-30-18%29.pdf](https://www.fincen.gov/sites/default/files/2018-12/Joint%20Statement%20on%20Innovation%20Statement%20%28Final%2011-30-18%29.pdf)

<https://www.occ.gov/topics/responsible-innovation/comments/recommendations-decisions-for-implementing-a-responsible-innovation-framework.pdf>

<https://www.occ.gov/publications/publications-by-type/licensing-manuals/file-pub-lm-considering-charter-applications-fintech.pdf>

<https://www.sec.gov/news/press-release/2018-240>

<https://www.sec.gov/finhub>

**5. Inclusion:** Describe your economy’s barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

The United States promotes several efforts to include rural and low-income communities as part of key digital economy projects in providing access to high quality, affordable, and reliable internet for communities across the economy. These projects are undertaken in hopes of increasing access for disadvantaged and rural communities to the internet and allow participation in the fast-growing digital economy.

The Bureau of Economic Analysis is developing key metrics for measuring the digital economy and the impact changing technologies have on the U.S. economy and on global supply chains. The project seeks to calculate the digital economy's contribution to U.S. GDP, improve measures of high-tech goods and services, and offer a more complete picture of international trade. Other goals are to advance research for digital goods and services, the sharing economy and free digital content, and to explore economic measures beyond GDP to better understand Americans' well-being.

Because of the limitations of available data, BEA's initial estimates include only goods and services that are "primarily digital." This means that some components of the digital economy, like peer-to-peer (P2P) e-commerce, also known as the sharing economy, are excluded from the initial estimates. P2P transactions such as ride-sharing services rely on internet-enabled devices to match supply and demand, but also have a non-digital component of in-person provision of services. BEA is continuing to work towards expanding the coverage of the estimates as we work toward a digital economy satellite account. More Information on BEA's definition of the Digital Economy can be found here: [BEA Digital Economy](#)

#### Action Plans:

- U.S. Department of Agriculture Telecommunications Programs: According to a 2018 report by the Federal Communications Commission, 80 percent of the 24 million American households who lack reliable, affordable, high-speed internet are in rural areas. USDA's investments in broadband infrastructure are helping transform rural America, providing innovation and technology to increase economic competitiveness and opportunities. USDA is investing \$91 million through the Telecommunications Programs. The 19 projects will benefit more than 27,000 businesses and households in Arkansas, Georgia, Iowa, Kentucky, Minnesota, North Carolina, North Dakota, New Mexico, Oklahoma, Tennessee, Utah and Virginia. More information can be found here: [USDA Partners with Communities to Bring High-Speed Broadband e-Connectivity Infrastructure to Rural Areas](#)
- National Telecommunications and Information Administration (NTIA) Broadband USA Program: The National Telecommunications and Information Administration's (NTIA) BroadbandUSA program promotes innovation and economic growth by supporting efforts to expand broadband connectivity and meaningful use across America. BroadbandUSA serves local and state governments, industry and nonprofits that need to enhance broadband connectivity and promote digital inclusion. To date, BroadbandUSA has provided support to more than 1,000 communities to help them fully participate in the digital economy. BroadbandUSA provides guidance, tools, insight and thought leadership that guide communities to work with providers to get the connectivity they need. In addition, our expert staff can help connect local and state governments to other federal funding opportunities. Local and state governments can also review BroadbandUSA's Broadband Funding Guide, which provides a roadmap on how to access federal funding to support broadband planning, public access, digital inclusion and deployment projects.
- BroadbandUSA promotes Digital Inclusion by: Guiding communities through broadband planning and digital literacy efforts via free technical assistance, tools and products Working with government entities to remove barriers to broadband efforts and promote a broadband-friendly environment Promoting industry engagement and awareness regarding broadband's

importance Convening community and thought leaders to identify best practices and activities that advance digital engagement and opportunity.

- **USDA ReConnect Program:** Agriculture Secretary Sonny Perdue announced that the United States Department of Agriculture (USDA) is offering up to \$600 million in loans and grants to help build broadband infrastructure in rural America. Telecommunications companies, rural electric cooperatives and utilities, internet service providers and municipalities may apply for funding through USDA’s new ReConnect Program to connect rural areas that currently have insufficient broadband service. This is an innovative broadband pilot program, based on modern, effective strategies that will catalyze increased private-sector investment in broadband infrastructure. These investments will prioritize projects that deploy broadband infrastructure in rural areas that are currently insufficiently connected, with the goal of increasing productivity and improving rural quality of life. More information on the ReConnect Program can be found here: [USDA Re-Connect Program](#) and here: [NTIA Report Rural Broadband](#)

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

APEC has historically been a forum which promoted the incubation of new ideas in a voluntary, but consensus-based approach and allowed economies to share experiences and learn together on how regulatory environments could promote trade and economic growth. For the United States, one of the most significant achievements of APEC was the creation of the Cross-Border Privacy Rules (CBPR) System in 2011. Given the prevalence of economy-wide privacy laws, especially those which include restrictions on the cross-border flows of data, APEC was nearly a decade ahead of the rest of the world in attempting to establish rules to ensure privacy protections without impeding the free flow of information.

Today in the WTO, economies are discussing exactly the issue APEC attempted to solve 8 years ago. The CBPR System – with 8 participating economies – covers more GDP than the entire European Union. If it grew to cover the entire APEC region, the CBPR System would not only elevate privacy protections for consumers, but would create the largest area of free flow of data in the world and set a template for ensuring data flows globally without lowering privacy protections for consumers. Models such as the CBPR System are what APEC has historically done well and an example of the immense value the forum holds when economies agree to work together on shared principles.

## VIET NAM

**1. Barriers and Challenges:** Considering your economy’s current situation, what are three major barriers and challenges to implementing structural reforms relating to the digital economy? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Other’ and specify what these categories are.

- Scoping and measurement of the digital economy**
- Regulatory and legal framework (incl. sandboxes)**
- Competition policy**
- Public sector governance
- Ease of doing business
- Others, please specify: \_\_\_\_\_

Scoping and measurement of the digital economy: Viet Nam aims to develop policy to support the digital transformation and digital economy. In principle, the policy needs to be evidence-based.

However, scoping and measurement of the digital economy is a major barrier. In particular, the digital economy is not fully captured, if any, in the current statistics and indicators.

Regulatory and legal framework (incl. sandboxes): A key challenge with implementing regulatory sandboxes seems to be that the authorities may then be perceived by the consumers/business community as endorsing the underlying initiative, on either economy-wide or sector-wide basis.

Competition policy: Building capacity for competition policy to support the digital economy is important. Competition assessment on digital-economy-related regulations lacks rigorous foundations and evidence, especially when the digital economy platform is in competition with the traditional services (e.g. Uber/Grab vs. traditional taxis).

**2. Policy Gaps:** Describe what your economy considers as the three major policy gaps relating to the digital economy. Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are.

**Scoping and measurement of the digital economy**

Regulatory and legal framework (incl. sandboxes)

**Competition policy**

**Public sector governance**

Ease of doing business

Others, please specify: \_\_\_\_\_

Scoping and measurement of the digital economy: The lack of sound approaches to measuring the digital economy then leads to the inappropriate capacity to assess impacts of regulations to support digital economy, which in turn weakens the evidence-based nature of regulations.

Competition policy: Viet Nam is yet to improve regulations to strengthen competition policy in the digital platform, including e-commerce. This may lead to poor handling of competition cases between the digital and traditional platforms.

**3. Best Practices:** Of the structural reforms relating to the digital economy your economy has undertaken in the past 5 years (2014-2019), what are three effective examples? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

Scoping and measurement of the digital economy

Regulatory and legal framework (incl. sandboxes)

Competition policy

**Public sector governance**

**Ease of doing business**

**Others, please specify: Viet Nam has simplified regulations on e-commerce, which promoted entry of various traders on e-commerce platform.**

Public sector governance: Since 2015, the government of Viet Nam has adopted the Resolution 36a/ND-CP on improving e-government. While promoting IT applications in government-people interactions (including handling of administrative procedures).

Ease of doing business: In 2018, various agencies made way for electronization of specialization inspection procedures. This helped implement the National Single Window and reduced the costs of trading across borders.

**3a. (Specific to Financial Sector) Best Practices:** Considering structural reforms related to digital economy in financial markets undertaken by your economy in the past 5 years (2014-2019), what is an effective example? Please select from the following categories and elaborate. If the categories you wish to elaborate on are missing, please select ‘Others’ and specify what these categories are. Please identify the main reasons for regulatory effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

**X Fintech**

- Cryptocurrency (digital asset that uses cryptography for security)
- Sandboxes
- Digital Banking
- Crowdfunding platforms
- Digital payments
- International remittances
- Personal and business loans
- Robo-advisors (digital platforms that provide automated, algorithm-driven financial planning service with limited human intervention or supervision)
- Cloud computing,
- P2P lending platform
- Open Banking (a system that provides a user with a network of financial institutions’ data through the use of application programming interfaces (APIs))
- Use of open data on financial services
- Others, please specify: \_\_\_\_\_

In the past years, Viet Nam has facilitated start-ups in payment services. As of 2019, the government is promoting non-cash payment, which further induces fintech in payment services.

**3b. (Specific to RegTech) Best Practices:** In case your economy has implemented RegTech’s reforms to deal with challenges posed by digital economy, identify an effective example according to the list provided and elaborate. Please identify the main reasons for the effectiveness that could be relevant for other economies. If possible, please also identify the indicators your economy is using to monitor the effectiveness of the reforms and what the indicators show.

- Compliance
- Identity management and control
- Risk management
- Regulatory reporting
- Transaction monitoring
- Trading in financial markets
- AML/CFT (anti-money laundering/ combating the financing of terrorism)
- Misconduct analysis (e.g. financial fraud; mis-selling, etc.)
- Others, please specify: \_\_\_\_\_

**4. Action Plans:** Considering the policy gaps, barriers and challenges you have previously identified, what are your economy’s short and medium-term plans to overcome them? If your economy has developed metrics and benchmarks to identify the appropriate policy responses and track progress, please provide details. You may wish to consider the structural reform categories listed in the Terms of Reference (e.g. scoping and measurement of the digital economy; regulatory and legal frameworks incl. sandboxes; competition policy; public sector governance; ease of doing business; etc.)

Viet Nam is developing the strategy for digital transformation. In the years till 2020, Viet Nam may focus on improving the legal framework to address the policy gaps, barriers and challenges for the digital economy, apart from other measures to improve the foundations and develop human resources for digital transformation.

**5. Inclusion:** Describe your economy's barriers and challenges, policy gaps, best practices and action plans to enhance inclusion/inclusive growth with respect to the digital economy. Your response should describe any metrics and benchmarks that you may use to measure inclusion, design appropriate policy responses and track progress.

Viet Nam remains in shortage of skilled labour for e-commerce. Various skills related to exploit, utilize e-commerce applications, handling regular computer issues, developing e-commerce plans, etc. In 2017, the survey by VECOM shows that about 30% enterprises has designated personnel for e-commerce, and the share is smaller among small- and medium-sized enterprises. Viet Nam currently has both broad and specific policies to address this, including policy to develop human resources for IT, SMEs, etc.

**6. Regional Cooperation:** What role can regional cooperation and regional bodies such as APEC play? You may wish to consider the role of cooperation, including with regional and international organizations, in addressing the policy gaps, barriers and challenges you have previously identified.

Regional cooperation can be helpful in several ways to Viet Nam in improving structural reform for the digital economy. First, building capacity for structural reform and digital economy can make more sense with demonstrated lessons/benefits from APEC economies. Second, Viet Nam may learn from shared experiences and policy dialogues involving various economies with more advance in structural reform and digital economy. Third, regional bodies such as APEC may develop a more rigorous action plan to facilitate development of digital economy via structural reform.