ASIAN DEVELOPMENT BANK

A PROPOSED FINTECH FRAMEWORK FOR THE NON-BANKING SECTOR IN PAKISTAN

Exposure Draft

Feb 2023

PREPARED BY

IFAAS

ISLAMIC FINANCE ADVISORY & ASSURANCE SERVICES

SECP

LIST OF ABBREVIATIONS

ADB	Asian Development Bank
AI	Artificial Intelligence
AMC	Asset Management Companies
AML	Anti-Money Laundering
API	Application Programming Interface
BVS	Biometric Verification System
CC	Cloud Computing
CRM	Customer Relationship Management
DA	Data Analytics
DLT	Distributed Ledger Technology
E-KYC	Electronic - Know Your Customer
ESG	Environmental Social and Governance
ETFs	Exchange Traded Funds
FDC	Fintech Disrupt Challenge
HEC	Higher Education Commission
IFAAS	Islamic Finance Advisory & Assurance Services
KYC	Know Your Customer
MFB	Micro Finance Bank
ML	Machine Learning
MSMEs	Micro, Small and Medium-Sized Enterprises
NADRA	National Database and Registration Authority
NBFI	Non-Bank Financial Institutions
NIC	National Incubation Centre
RegTech	Regulatory Technology
SDG	Sustainable Development Goals
SECP	Securities and Exchange Commission of Pakistan
UK	United Kingdom
USAID	United States Agency for International Development

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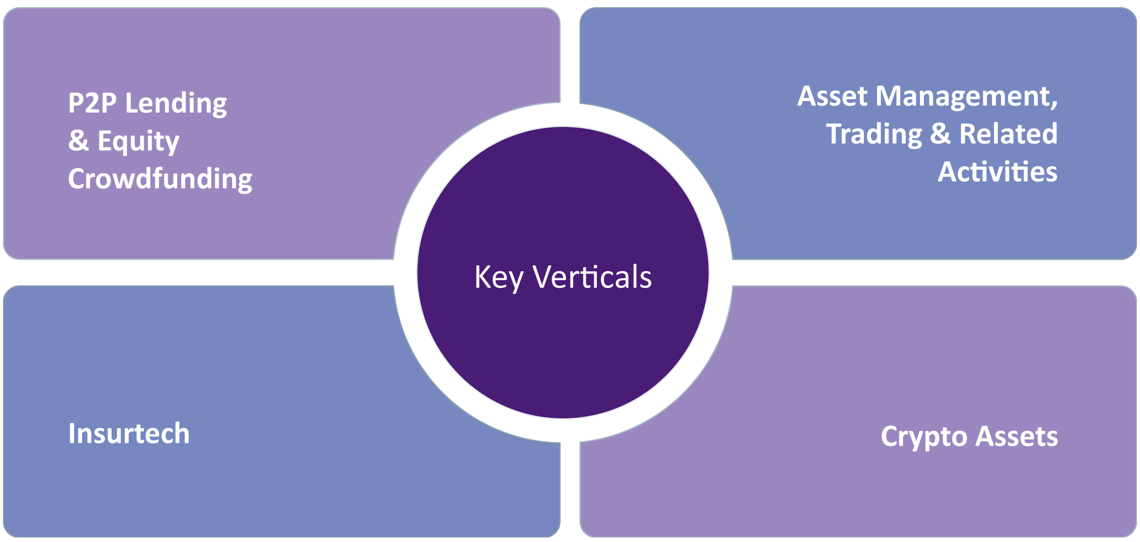
Executive Summary

- The Securities and Exchange Commission of Pakistan (SECP) in cooperation with the State Bank of Pakistan (SBP) and other regulatory institutions has introduced major reforms for the non-banking sector that involves legal, structural, regulatory and operational initiatives for a robust and transparent non-banking system in the country. The efforts for the development of innovative products in the area of Islamic capital markets have brought the non-banking sector to a competitive state. Yet, it is found that there is a need for better offerings of innovative Islamic fintech solutions. Moreover, despite the presence of a robust regulatory environment, a conducive ecosystem that enables the connectivity between fintech solutions and innovative offerings is lacking. Accordingly, the document proposes an overall fintech framework as a guide for regulations and interventions for building a conducive fintech ecosystem to ensure sustainable growth of the Islamic capital market in Pakistan. The proposed fintech framework is unique considering its distinctive nature of specificness, inclusiveness, and adaptiveness.

- The proposed framework elucidates the rational, scope, objectives, regulatory approach, core principles and key pillars of the proposed fintech ecosystem including key verticals, enabling technologies and policy enablers. A well-balanced regulatory principle-based approach that emphasizes the overarching principles is suggested for the advancement of fintech. Accordingly, the framework sets the principles that shall guide the development of the strategies, policies, standards and initiatives of SECP.

- Based on the analysis of product offerings in the non-banking financial sector and global benchmarking study, primarily four key fintech verticals that are contemporary and critical for the non-banking sector in Pakistan are suggested. These verticals, as presented in the figure below, carry developmental solutions for the direction that the non-banking sector may implement.



- The key characteristics, the current state of the verticals in the financial sector in Pakistan, and most importantly the essential policy objectives concerning the development strategies, interrelations with other verticals and the implications for integrating each vertical in the proposed framework are elucidated within this document. These verticals are operated with the support of enabling technologies and policies that are critical for the functioning of the fintech ecosystem. In this regard, the proposed fintech framework highlights five relevant enabling technologies as well as seven key enabling policies as illustrated below.

- Furthermore, essential policy objectives concerning the development strategies of the enabling technologies and enabling policies as well as their interconnectivity with the verticals are also illustrated.

- Based on the framework, some relevant fintech-tailored recommendations covering the three pillars of the fintech framework (i.e., the fintech verticals enabling technologies and enabling policies) have also been suggested. These recommendations are crucial for SECP to move the non-banking sector, especially the capital market segment, to the forefront of the global financial market. In addition, SECP may also consider having a focused development roadmap for Islamic fintech which includes clearly defined goals, the strategies to achieve those goals, the required resources and the timeline. The roadmap shall use a phased approach where small steps are taken in a consistent way via a bottom-up approach. The main components of the roadmap may consist of legal and regulatory frameworks, action plans for developing the technical infrastructure and policies to address the challenges of capacity building of the stakeholders and the public awareness about the new opportunities that may benefit both individuals and businesses. Moreover, an oversight mechanism also needs to be part of the roadmap for monitoring the implementation process and measuring the progress against the budget and the targets.

Project Background

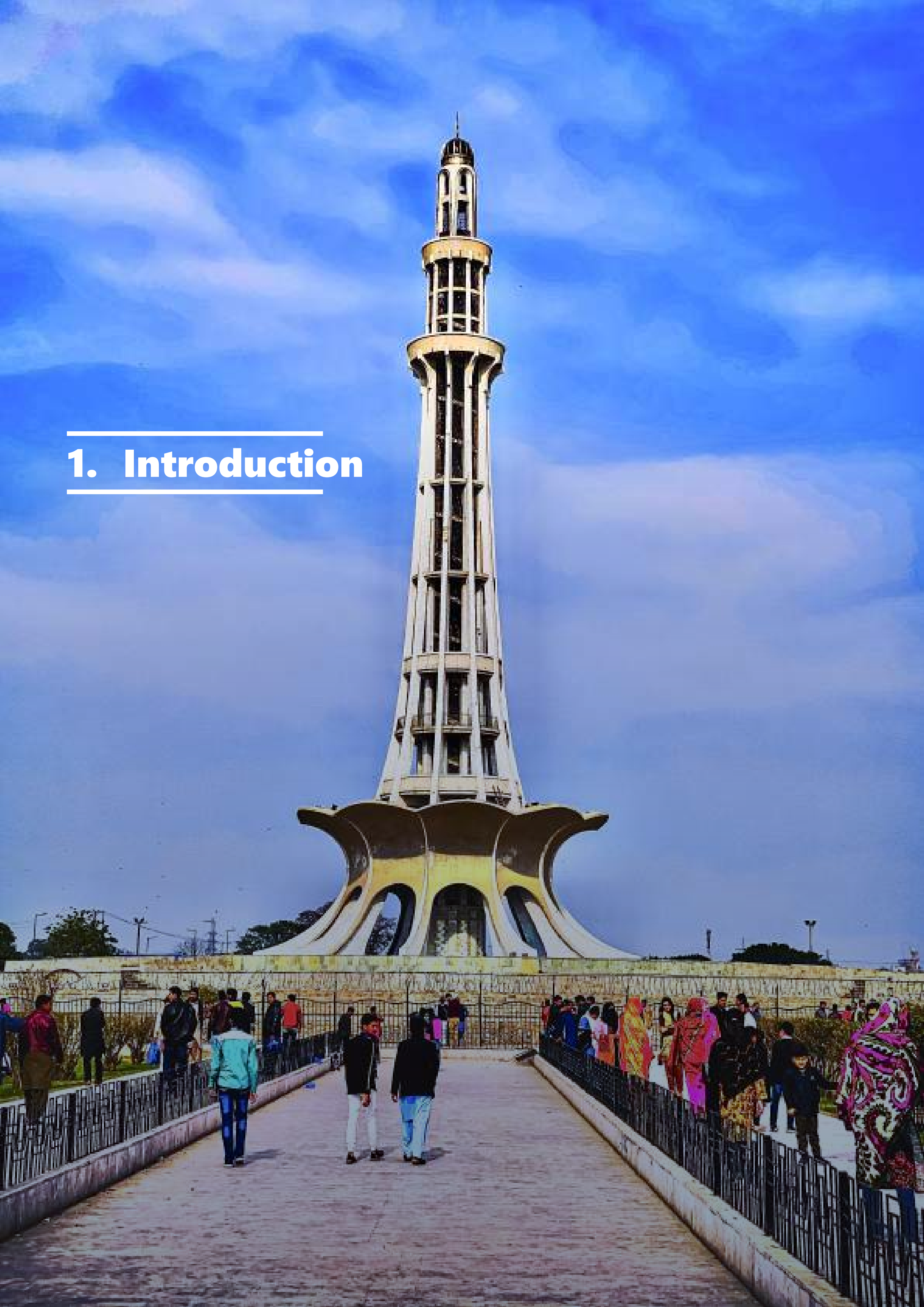
- The ADB has sponsored the 'Islamic Finance for Inclusive Growth Project' (Project) under its Technical Assistance No. 9453-REG to the Government of Pakistan, with the overarching objective to support the development of Islamic finance in Pakistan in an inclusive and sustainable manner. Hence, the ADB has commissioned IFAAS, an international Islamic finance consulting firm headquartered in the UK, to lead on the delivery of the said objective in Pakistan. In this regard, SECP is the Lead Government Agency and the primary stakeholder for this Project. In line with the said Technical Assistance No. 9453-REG, one of the key workstreams is to assist the SECP in revamping the existing legal framework related to Islamic finance and provide opportunities for policy interventions to support Islamic finance market activities. Hence, in order to assess the current legal, regulatory, and supervisory environment of Islamic finance in Pakistan, IFAAS has embarked on an on-site fact-finding mission by conducting a set of meetings and roundtable discussions at the offices of each stakeholder from both public and private sectors, among others.

- Furthermore, a diagnostic study mapping the landscape of the local Islamic capital market, Non-Banking Finance Institutions (NBFIs), and takaful, among others was conducted. While the non-banking sector in Pakistan is found to have a well-established regulatory framework for traditional financial offerings, it is established that the focus should be on encouraging more innovative products and building a comprehensive fintech ecosystem that can effectively connect and leverage Islamic fintechs. This is particularly relevant given the high level of information and communication technology penetration in the country, along with a large and tech-savvy young population. By providing innovative financial services to the public, fintechs can help to reach and serve the unserved and underserved market segments. Additionally, the development of a strong fintech ecosystem can support the expansion of Islamic finance in non-banking sector, which aligns with the national goal of transforming the economy into an "equitable, asset-based, risk sharing and interest-free" system.

- Accordingly, a benchmarking exercise has been conducted to explore the new fintech instruments/solutions in several peer-jurisdictions that can play the role of catalyst for the Islamic capital market growth. The benchmarking exercise in the report 'Islamic Fintech: Global Trend and Use Cases' explores 6 leading Islamic fintech markets, covering a snapshot of these jurisdictions, legislative and regulatory environments, and highlights from their fintech ecosystem. Furthermore, it has been agreed that a comprehensive finetch framework for the non-banking sector shall be developed to support the advancement of the innovative products offering and fintechs in the country. Such framework shall specify the regulatory approach and guide the interventions of the regulator to ensure building a conducive fintech ecosystem that may support the sustainable growth of the Islamic capital market in Pakistan.

- This document represents the exposure draft of this fintech framework. A key focus of this framework is the Islamic fintech development discourse for the non-banking sector in Pakistan

1. Introduction



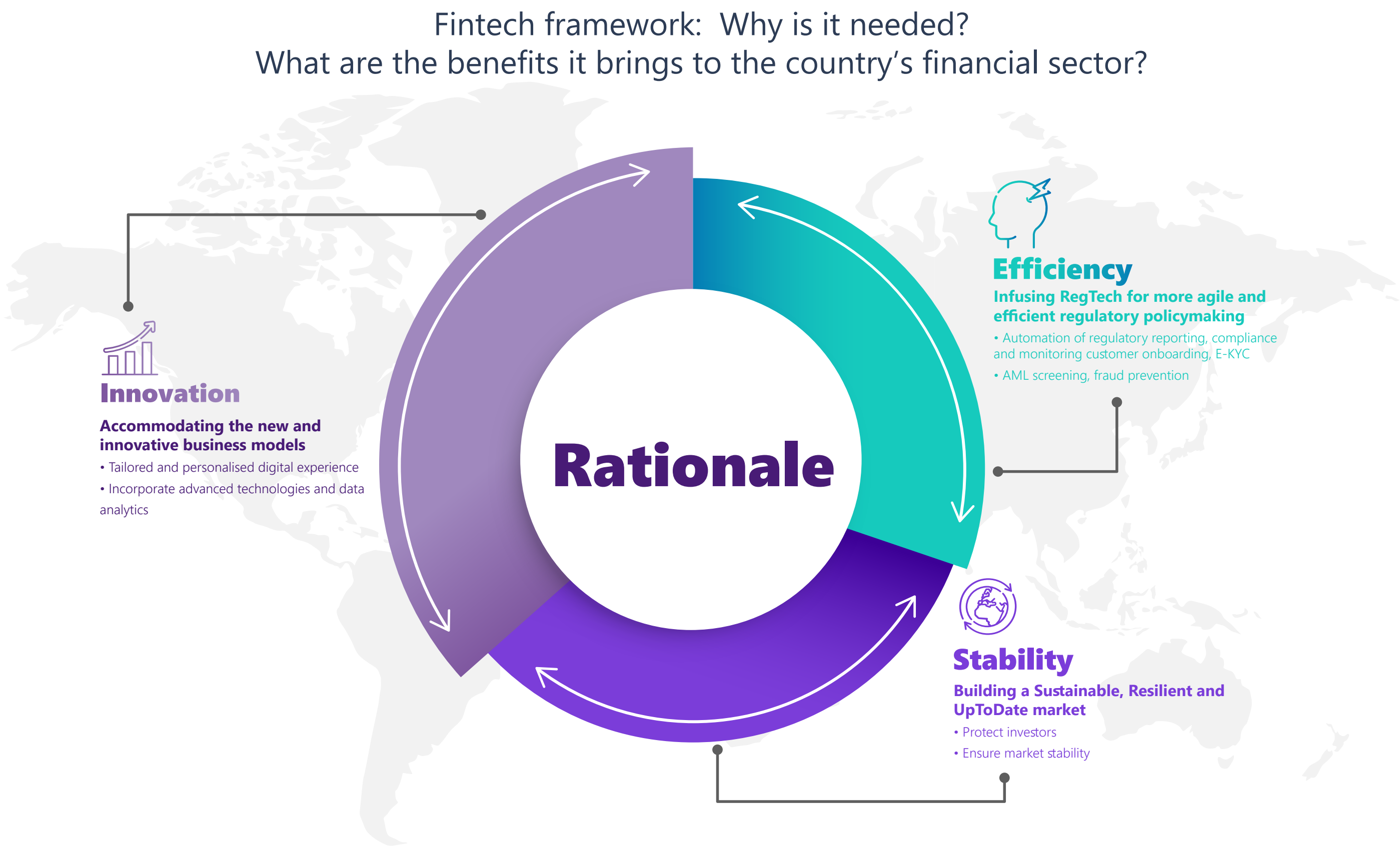
- Digital financial services and fintech solutions in Pakistan started receiving attention only recently; their importance in achieving efficiency as well as reaching underserved areas and unserved populations is now well recognized.[1] Pakistan has a notable information and communication technology penetration with a large tech-savvy young population. There are more than 194 million biometrically verified mobile connections in Pakistan (approximately 68% of the population owns mobile phones)[2] 50% of those who have access to a mobile connection possess a smartphone[3] with 88 million active mobile wallet accounts[4]. These statistics signify a high opportunity for fintech in the country and confirm that introducing innovative and tech-enabled capital market solutions and products have the potential to spur further growth.

- Fintech can play an important role in developing the financial system of a country. Although there is a robust regulatory environment for the non-banking sector in Pakistan, a comprehensive ecosystem is found necessary to strengthen the nexus between fintech solutions and innovative offerings of the non-banking sector. Furthermore, a comprehensive approach to developing fintech in the country is highly needed as it spurs innovation, increases efficiency, and maintains sustainability in the financial markets which will ultimately lead to the resilience of the overall financial system. Recognizing the importance of this proposal, SECP with the support of ADB and IFAAS, being the consultant appointed by ADB, decided to develop a fintech framework to support fintech offerings of the NBFIs in Pakistan. To this extent, this study proposes an overall fintech framework as a guide for regulations and interventions for the development of fintech-driven solutions for the non-banking sector, specifically for the Islamic capital market.

[1] Pakistan published its first National Financial Inclusion Strategy (NFIS) in 2015 which had a target of including 50 percent of the adult population by 2020. This target was then revised to '65 million digital accounts by 2023' in the updated NFIS in 2018 (Enhanced National Financial Inclusion Strategy - Ministry of Finance, 2018) .
[2] PTA - Annual Report 2022
[3] Fintech Ecosystem Pakistan Report
[4] PTA - Annual Report 2022

- This framework is further motivated by the factors illustrated in Figure 1.

Figure 1: Rationale for Fintech Framework



Accommodating New and Innovative Business Models

- Evolving expectations from digital fundraising and investments have put pressure on capital market participants to improve their customer experience to remain relevant. With more consumers demanding faster, tailored, and personalised digital experience, a deeper understanding of individual clients and the ability to offer bespoke products that meet investor needs are required. To achieve this at scale, market participants need to incorporate advanced technologies and data analytics effectively into their businesses and operations. Beyond the existing applications of technology in the capital market, a wide range of new applications and products are emerging. This includes funding platforms, digital investment management applications, Investment robo-advisory, insurtech, crypto tokens and crypto exchanges, e-services and many others. Regulatory policies and guidelines shall be developed to cover such new emerging fintech applications.

Building a Sustainable, Resilient and UpToDate Market

- While the COVID-19 pandemic accelerated the digitalisation agenda of most of the sectors, it disrupted the supply chain and had a severe impact on the economy. As such, the emphasis today is shifting towards building a sustainable strategy for the country. For the capital market, the need for more tailored financing options that are appropriate for each stage of a company's growth cycle and suited to its specific needs has never been greater. It is imperative to develop a deeper understanding of the market needs, greater insights into each sector, and greater efficiency in completing fundraising and investment exercises. It is crucial to build up a comprehensive and clear digitalisation framework that supports the market participants, protects investors, ensures market stability, and ensures that the offering remains dynamic and relevant when faced with fast-shifting market demands. Furthermore, SECP is committed to facilitate the introduction of innovations in financing models, markets and intermediaries. Along this, the risk landscape is also being reshaped. As boundaries are blurring with new and more complex interlinkages within and beyond the financial sector, regulators need to increase their efforts in managing the emerging technology risks by improving awareness of new technologies, understanding their applications and the potential risks to the capital market as well as designing appropriate regulatory risk mitigation policies and governance standards.

Infusing RegTech for More Agile and Efficient Regulatory Policymaking

- With the help of advanced big data analysis and Artificial Intelligence (AI) technology, capital market regulators around the world are continuously improving their capacity in using data for better regulatory policymaking. Regulators are transforming their organisations by developing new capabilities, recruiting new talent, and enhancing the way intelligence is used to take better regulatory actions leveraging on the automation of regulatory reporting and processes as well as data collection for intelligence purposes. These efforts will pave the way for regulators to gain deeper insights into markets and investors while also being more agile when responding to emerging risks and potential harm to investors and investees while being more efficient in the use of resources. New solutions have also emerged to enable a more efficient and effective approach towards managing risks, client onboarding as well as regulatory reporting, compliance and monitoring. These new solutions include, but are not limited to, Know Your Customer (KYC), transaction monitoring, Anti-Money Laundering (AML) screening, fraud prevention, personal data protection, compliance risk analysis and regulatory reporting. They are collectively referred to as RegTech. Today, regulators across jurisdictions play a crucial role in building greater awareness and promoting the growth of RegTech within their markets.
- A robust fintech framework is critical for attaining the aforementioned capacities. The robustness of the framework is determined by its capability to achieve the formulated key objectives. The following subsection portrays the methodology of the framework followed by its scope and objectives in the next section.

1.1. Methodology

In developing the proposed framework, the following bespoke methodology has been implemented:

- **Desk Research** – conducting secondary research to obtain reliable data/information related to the development of the capital market and non-banking offerings and fintech in Pakistan.
- **Analytical Appraisal** – analysis of the data and information gathered.
- **Documentary Reviews** – review of relevant documentation including policies, strategies, laws, regulations, industry reports, etc.
- **Benchmarking** –analysis of the ecosystem of the top Islamic fintech markets.[5]
- **Gap Analysis** –identifying gaps and potential issues that are adversely affecting the sector.
- **Findings and Recommendations** – documenting key findings and recommendations taking into consideration the stakeholders' aspirations and market readiness.

[5] The benchmarking study is not included in this document.

1.2. Scope of the Framework

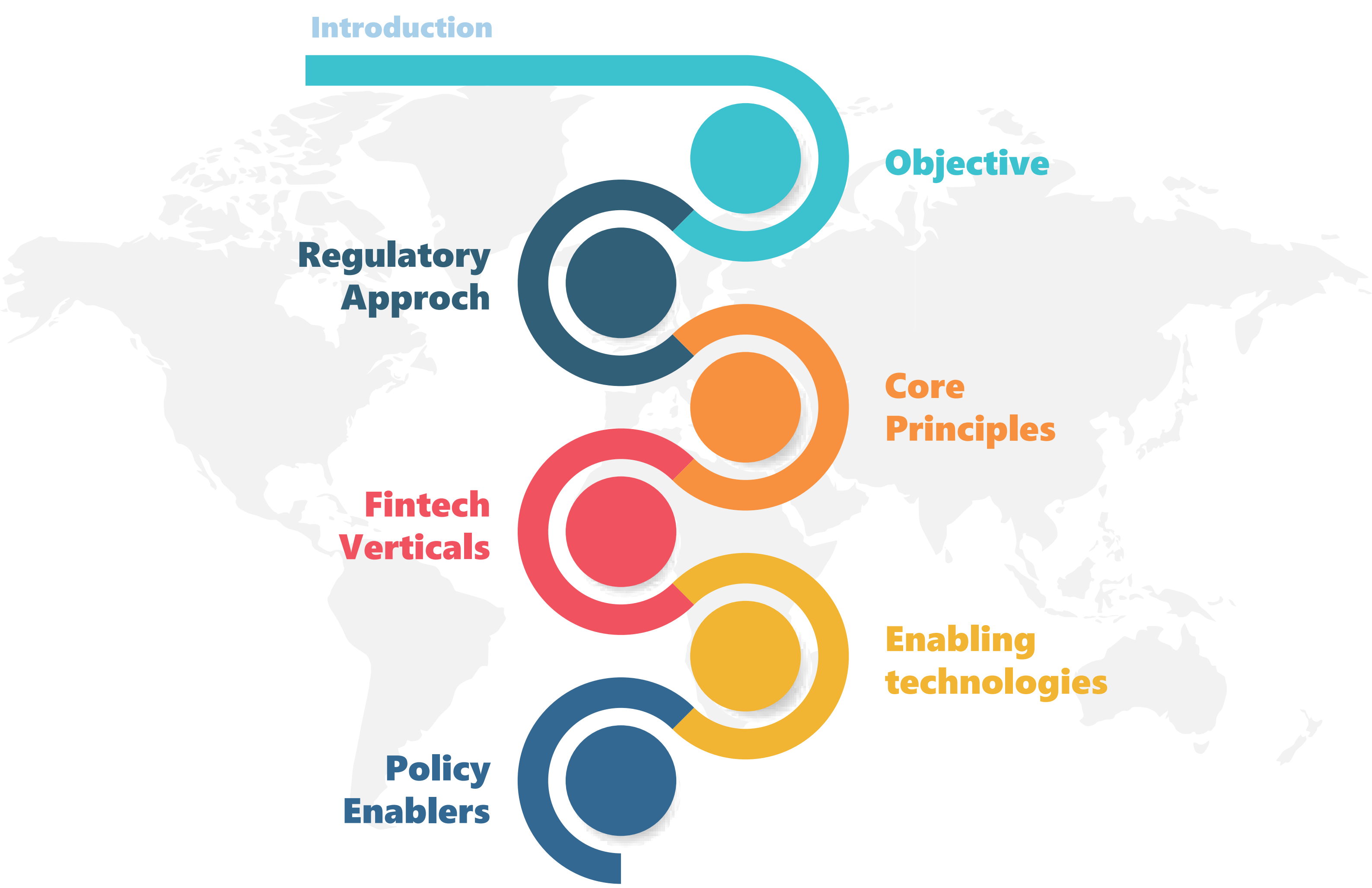
The scope of the framework is set to cover the following:

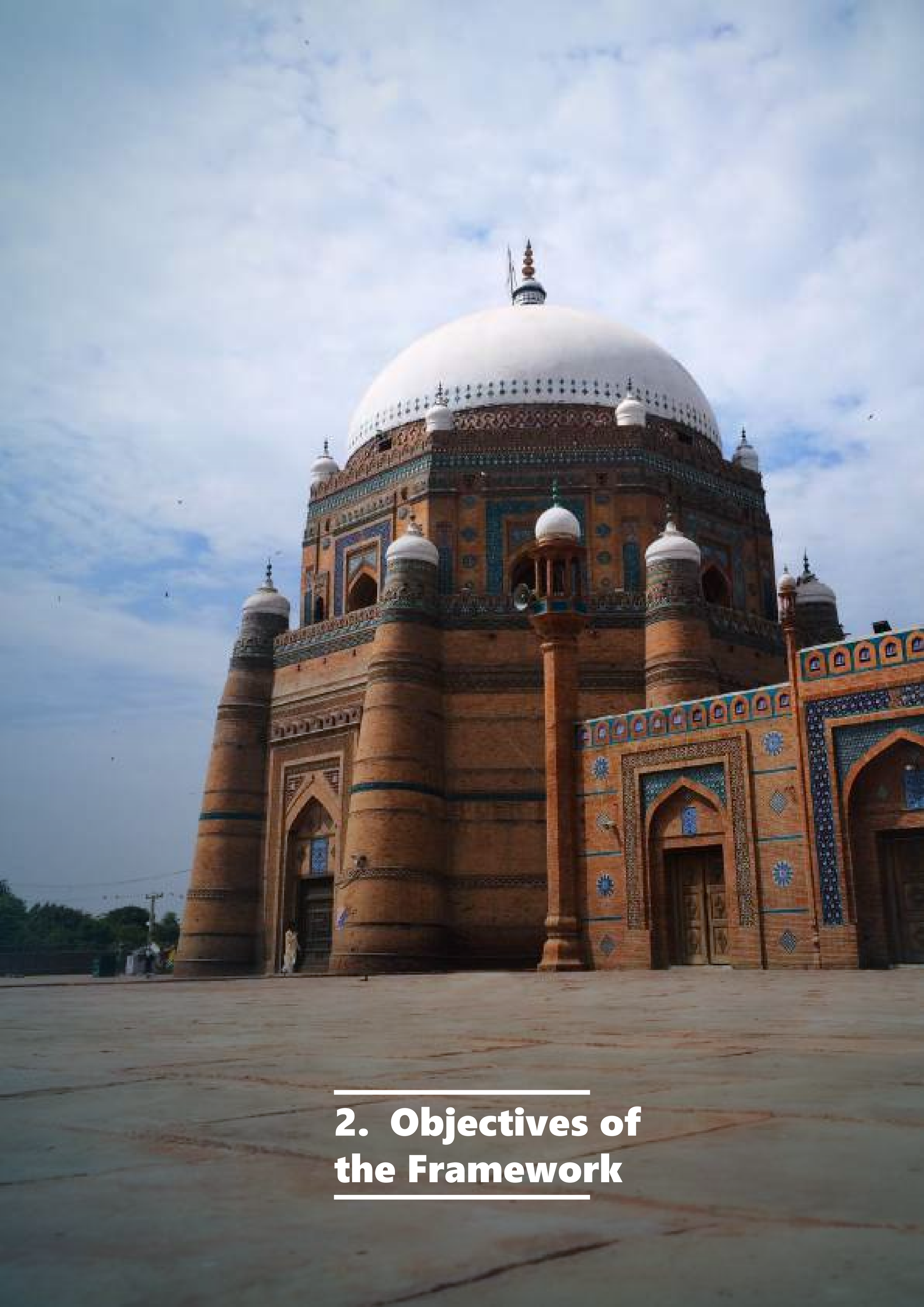
- Clarifications of the objectives of the fintech framework and its related regulations;
- Elucidating the approach followed by the regulator;
- Discussing the regulatory objective for the key fintech verticals that are under the purview of SECP;
- Highlighting the key enabling technologies required for an effective fintech ecosystem; and
- Outlining the policy enablers including strategies and initiatives to be adopted by SECP.

1.3. Structure of the Framework

- The structure of the framework follows the order of scope mentioned above. Accordingly, it commences with clarifying the objectives of the proposed fintech framework followed by explaining the regulatory approach that is chosen to be principle-based functional approach. Accordingly, the framework sets the principles that shall guide the development of the strategies, policies, standards and initiatives of SECP. The framework further identifies and elaborates the policy objectives and areas to be regulated for some of the key verticals that are relevant to the mandate of SECP. The section also highlights key developments that are needed, and some initiatives for the respective verticals are also suggested. Lastly, the framework elaborates on some key enabling technologies, followed by a discussion around the wider explanation of policies pertaining to the efficient functioning of the stated verticals. For the ease of the reader, key recommendations have been highlighted within the relevant sections. The structure of the framework is illustrated in Figure 2.

Figure 2: Structure of the Framework





2. Objectives of the Framework

The fintech framework serves as a guide for regulations and interventions for digital finance and the fintech ecosystem for NBFIs in Pakistan. While new and innovative business models increase financial inclusion and create opportunities for the market players, regulations are needed to reduce information asymmetry and moral hazard and minimize the risk of monopoly. In this context, the fintech framework and the following regulations and interventions aim to achieve the main objectives of: empowering access and enabling use, investor and consumer protection, financial stability, market integrity, spurring innovation and improving market efficiency and transparency, as presented in Figure 3..

Figure 3: Objectives of the Framework

Regulations shall aim at achieving:

The ultimate objective is

higher market share of Islamic capital and non-banking products & services, deepening of financial markets, contribution of IF in country's economic development and well being of the nation.

Empowering Access by Providing Alternative Fund-Raising Channels

Micro, Small & Medium Enterprises (MSMEs) often find difficulties in obtaining funding through traditional sources to meet their financing needs. Despite being a vital component of the economy, MSMEs have limited access to the traditional banking and capital market. Digitalisation of fund management, crowdfunding, P2P (Peer-to-Peer) platforms and crypto token issuance are found to be amongst the potential solutions for such challenges. Regulatory and governance initiatives, particularly in the last two years, have remarkably contributed to the development of such fintech operations in the financial market of Pakistan. A robust framework can bring more clarity to the market and assure the sustainable development of an impactful fintech development in the non-banking sector.

Enabling Use by Increasing Investor Participation and Enhancing their Experience

In this day and age, it is vital to encourage the participation of the emerging "digitally-inclined" generation of investors to invest in the capital market. Inspired by the digital user experience, investors would demand a similar level of experience from financial services providers. With suitable intervention and regulations, the industry is expected to develop new, more cost-effective and transparent ways of delivering investment products and services to consumers. Such services would complement the existing suite of investment channels to enable more participants, particularly those with limited savings to access these services at a relatively affordable cost. Online equity brokers, Digital Investment Management (DIM) companies, Robo-advisories and crypto-asset trading platforms are some of the prominent entities in this regard.

Investor and Consumer Protection

In general, information asymmetries cause uncertainties in protecting investors and other consumers of the financial markets. Fintech has an additional challenge that arises from the digital discourse compared to traditional finance. Further, the regulatory uncertainties and decentralisation add more challenges. Hence, regulations need to maintain a balanced view to promote innovation while ensuring investor protection.

Financial Stability

Regulations aim at the soundness and effectiveness of the financial system as a whole. Stability risks are usually associated either with the relative size or the connectivity of financial market participants. Particularly, the recent entry of large technology firms (Bigtech) presents new and complex trade-offs between financial stability, competition, and data protection.

Market Integrity

Trust is the basis of financial transactions. For building trust, it is essential to safeguard the system from illicit activities and fraud which inter alia include money laundering, cybersecurity, and data privacy. In order to address market integrity and safety and soundness concerns, regulators should provide a supervisory framework for fintech markets that is unambiguous and can be applied consistently.

Spurring Innovation for Vibrant, Efficient, Dynamic and Comprehensive Ecosystem

Markets are not developed only by regulations; they require a vibrant, dynamic and comprehensive ecosystem. An ecosystem requires service providers that include custodians, trustees, rating agencies, information vendors, brokers, etc. `Digitising' these ecosystem players will allow faster, and more seamless access to these services, thereby creating a more transparent and efficient market. Furthermore, this will spur innovation. SECP is committed to developing the necessary regulations to push collaborations and issue initiatives which aim to facilitate collaboration among regulators and relevant stakeholders. Hosting labs, innovation, and sandboxes are some of the relevant initiatives in this regard.

Improving Efficiency and Providing Higher Level of Transparency

By leveraging technology, the goal of greater transparency of information within the capital markets can be achieved. With greater transparency, markets would become more efficient and would be able to attract greater investor participation. For instance, information about new issuances and listing out from the secondary markets shall be made easily accessible to all potential participants. Attention shall be paid to ensure that post-issuance information is not fragmented and is made available not only to large institutional investors but also to retail investors in an affordable way. Online platforms that are automatically fed with updated information from different sources can be of great help to achieve such objectives. AI, big data analysis and advanced data visualization techniques are also helpful in this context.

3. Regulatory Approach

Among regulators and policymakers, three groups can be identified in the fintech environment through which policy and regulatory responses can be analysed.

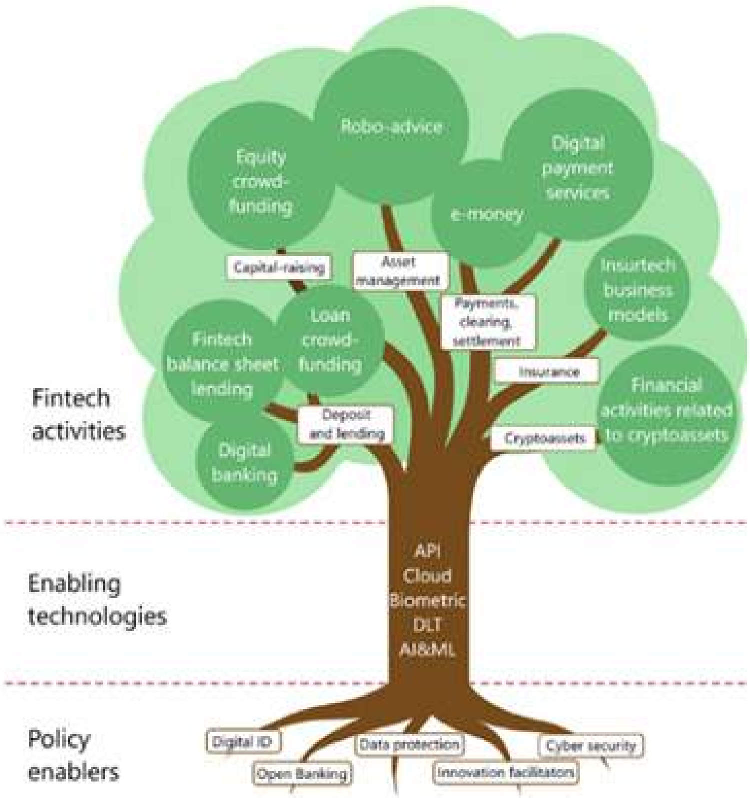
(i) Those that directly regulate fintech activities. This group relates to the regulation of specific activities such as P2P lending or equity raising and robo-advisory.

(ii) Those focused on the use of new enabling technologies in the provision of financial services. Enabling technologies are those that make innovation possible in the provision of financial services and, as such, form the backbone of fintech activities. This group includes new rules or guidelines on market participants' use of technologies such as cloud computing, biometrics or artificial intelligence.

(iii) Policy enablers that focus on public policy measures and initiatives that support the development of fintech activities and the use of enabling technologies. This group covers enabling policy initiatives such as those related to digital identities, data-sharing and the establishment of innovation hubs, sandboxes or accelerators.

Over the last few years, most jurisdictions have applied policy measures in some or all of these three areas which are further illustrated in the Figure (4) below:

Figure 4: Fintech Tree – A Taxonomy of the Fintech Environment [6]



[6] Policy Responses to fintech: a cross-country overview, Bank of International Settlement https://www.bis.org/fsi/publ/insights23.pdf

Figure 4 illustrates different angles of the aspects that regulators shall consider to ensure a “fintech-enabling” regulatory environment. The figure further illustrates the three key components of a fintech ecosystem. In this illustration, enabling policies are the root of developing the ecosystem, while technologies form the body of the ecosystem. Only by having these two components, fintech activities can be fruitful.

Regulators adopt different regulatory approaches to build up a favourable environment for such fintech ecosystem. While these approaches differ from market to market, unlocking the full potential of fintech in Pakistan requires a flexible regulatory approach as the country is at a developing stage of the fintech market. This approach is mainly a principle and functional based approach.

A principle-based approach means that the regulator sets the principles or guidelines for entities to follow to achieve the desired regulatory outcomes. Principles-based regulation involves moving away from detailed, prescriptive rules and relying more on high-level, broadly-stated principles to set standards for regulated firms and products. For instance, adopting technology neutrality and proportionality (risk-based) principles implies allowing new fintech business models and technology-based solutions to operate. Regulations will be introduced only based on the identified specific risks. This proposal allows the regulator and entities to adapt to changing market conditions and the emergence of new technologies, whilst still addressing systemic risks, consumer protection and money laundering concerns.
This principle-based approach is complemented by a functional-based regulatory framework that categorizes entities broadly through their functional activity (vertical) rather than by the type of entity. Accordingly, entities that fit a functional description of a service or vertical can provide the services, regardless of who they are. This proposal allows dynamic classes of entities to be authorized or licensed by the regulator (if at all needed), and is usually not based on any particular technology, class, or size of the entity. This approach provides much more flexibility as compared to an institutional rules-based approach that requires a designated company to fit within an institutional framework and specific set of activities listed by the regulator, which severely limits entities from operationalizing new innovations, products and technologies and competing with larger entities on a level-playing field.

Given the rapid pace of innovation and the markets supporting it, adopting the proposed principles and functional based approach to regulating fintech products and activities would permit a period of development and observation. After fully understanding the outcomes and potential risks of fintech products and activities, it may be appropriate afterwards to adopt more tailored and targeted rules or a more balanced combination of principles and rules. Companies will then be responsible for finding the most efficient way of satisfying those standards. Such an approach affords greater flexibility to the tech sector. It also suits regulating in the era of the rapid pace of technological innovation and enables the regulator to stay ahead of the curve by reacting more quickly to changes in technology and the marketplace.

Accordingly, the following section elucidates some of the key core principles of the proposed fintech framework that complement the principle-based approach. SECP may consider these principles in formulating policies and strategies based on the proposed fintech framework. These principles not only envelope secular values but also account for Islamic principles which cater to the requirements of Islamic financial institutions. It can attribute to the roadmap of SECP towards the development of an Islamic fintech framework in the near future. Followed by the core principles, fintech taxonomy is further clarified by specifying the policy objectives for the key verticals under the purview of SECP, suggesting some key enabling technologies and enabling policies.

01

Recommendation 1:
Issuing a fintech framework to support the fintech offerings of the NBFIs in Pakistan to achieve innovation, stability and efficiency. This framework is a guideline for the key stakeholders of the non-banking sector which promulgates the regulatory approach, principles and policies as well as strategies of SECP in the discourse of the Islamic fintech ecosystem. After internal deliberations, SECP may hold some focus group discussions with selective experts and practitioners representing various types of NBFIs and fintech players to further deliberate the proposed framework including the recommendations. The amended framework shall then be disseminated as a guideline for the industry.

02

Recommendation 2:
Adopt a principle-based approach and a functional-based regulatory framework to build up a favourable environment for the fintech ecosystem and unlock the full potential of fintech in Pakistan.

4. Core Principles

The proposed fintech framework is built upon several core principles. These principles are serving as key guidelines for future policies, regulations and initiatives in relation to the fintech and digitalisation agenda of SECP. The principle-based regulatory approach adapts more easily and cost-effectively to new and quickly developing digital business models due to its less-demanding frequency and volume of legislative adaptations. Principles can ensure sound regulations without unsound consequences for innovation. Following are the aforementioned core principles of the proposed fintech framework.

Principle 1: Technology Neutrality

- Digitalisation is a key enabler, but it is not an end goal in itself. Digitalisation is about leveraging technology for better offerings, increasing efficiency, and serving better the stakeholders. Neutrality implies prioritizing desirable outcomes over preference for specific technologies. The regulations will be agnostic to different technologies, systems and approaches.

Principle 2: Shariah Compliance

- The adoption of a well-structured Shariah governance framework is of paramount importance for effective regulation in the business practices and operational aspects of Shariah-compliant businesses. The harmonization of the Shariah compliance parameters within the key components of fintech discourse is critical for enhancing inclusiveness which Pakistan currently strives for through an equitable, asset-based, risk-sharing and interest-free economy [7]. For this, SECP shall give further importance to promoting the Islamic fintech ecosystem by issuing reports and guidelines and disseminating them among the market players. SECP may also consider holding awareness programs on Islamic fintech and collaborating with training centers and universities to promote capacity building programs on fintech among Shariah scholars and fintech experts in the market. Given the fast-paced evolution of technology, the digitization agenda, policies and initiatives on Shariah compliance shall ensure sufficient rigor as well as flexibility in providing mechanisms for licensing, certification and screening criteria, to accommodate for a reliable as well as attractive regulatory and Shariah compliance-friendly environment in the digital space. Policy makers shall ensure not letting overregulation in Shariah compliance stifle innovation.

[7] In April 2022, the Federal Shariat Court of Pakistan (FSC) ruled that 'riba' or interest is prohibited in Islam, including relating to banking transactions. The FSC directed the government to adopt Shariah-compliant modes and set an implementation timeline of five years to convert the economy of Pakistan into "equitable, asset-based, risk sharing and interest-free economy" by end 2027. Interestingly, an appeal was filed in the FSC in September 2022. A final decision is yet to be concluded

Principle 3: Inclusiveness

- Services should be accessible and beneficial for different population segments. No one should be left behind. Special attention shall be paid to, and care shall be taken of those who do not have proper access to the internet or those who have limited knowledge and experience of digital products and services. Digital exclusion occurs when segments of a population have unequal access to digital services. The digitization agenda, policies and initiatives shall ensure that all segments are served and that vulnerable segments are not missing out on opportunities and critical information. Relevant awareness programs and education might be initiated. Inclusiveness also implies that the services provided are Shariah compliant to include all population segments.

Principle 4: User-friendly, Seamless & Secure Transactions

- Technology enables building stakeholder-centric services that cater for the needs of individuals. It enables policies, services and infrastructure to be better designed through the use of data and evidence-based policymaking. This means that transacting with SECP and companies offering capital market products and services shall be made easy, seamless and secure. Ideally, customers and businesses shall be able to engage among themselves and deal with SECP digitally. Stakeholders shall find the digital services intuitive, easy to use, and relevant to their needs. Ultimately, they shall enjoy the convenience of completing transactions in a paperless form, from start to finish, anytime, anywhere and on any device. They shall be required to give information or request help once the relevant data are stored and shared with relevant departments and/or other parties, if applicable. Yet, everyone shall feel confident that their data are secure. In this regard, developing interoperable systems is a key component of the digitalisation journey.

Principle 5: Privacy Protection

- For better efficiency and to support greater data-driven policymaking and service delivery, data might be shared between different agencies. Businesses might be enabled to use government-verified data to provide services to clients without requesting additional documents and sensitive information online. However, data shall be shared in a safe, responsible and appropriate manner. Personal data shall be protected through a robust set of safeguards, including access control, and shall be de-identified when used for analysis and policy design. This may require tackling legislative, policy, capability, and technical challenges simultaneously.

Principle 6: Proportionality (Risk-Based)

- Proportionality implies balancing benefits and risks. The regulations will consider the nature of risks and public interests. The rigor and intensity of regulation and supervision will be calibrated in a way that is commensurate with the level of risk. This requires a combination of activity- and entity-based regulations. A purely activity-based approach can be suitable for circumstances where the risks are simpler and relatively insulated. Entity-based regulations are appropriate where certain activities – when combined as part of a business model – can give rise to a more complex risk profile, as well as interdependencies that can amplify market-wide disruptions.

Principle 7: Legal Certainty

- In the face of sweeping technological changes, legal clarity and certainty must be the paramount objective to allow the development of business models with the proper protection for all participants.[8] As it is a sector in constant evolution, it is necessary to have a sufficiently stable, predictable and clear regulatory framework to design a reliable and attractive regulatory environment, adapted to the practical needs of providers and users of financial services in the digital environment

Principle 8: Necessity

- Any legislation proposed must include the necessary regulations to cover the objectives sought and, above all, the measures identified and included in that legislation must not be restrictive and burdensome on operators as possible.

03

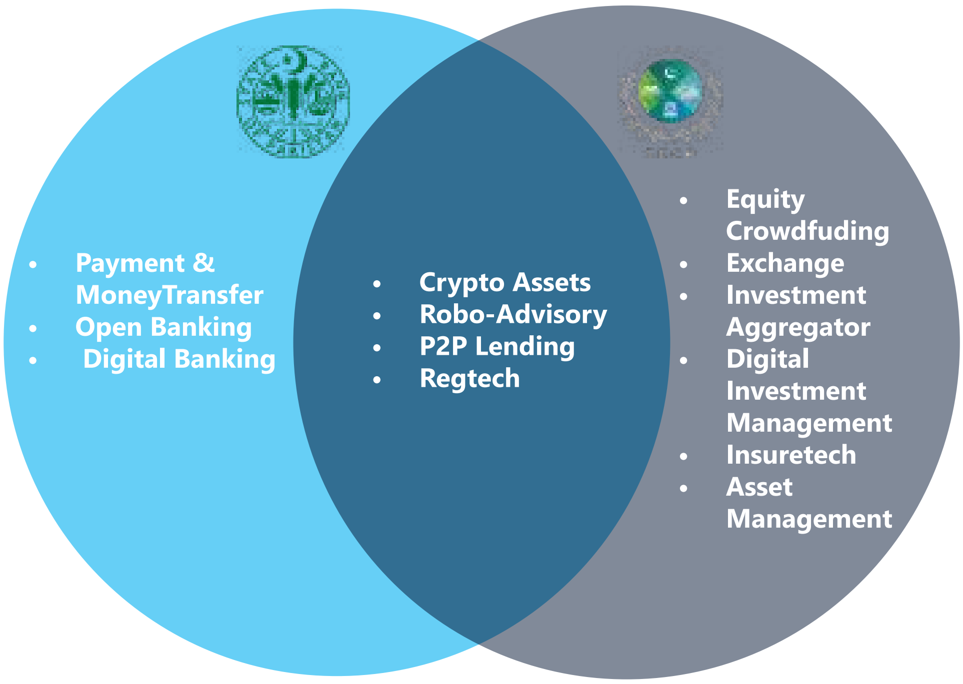
Recommendation 3:
Adopt the following core principles for fintech regulation: technological neutrality, Shariah compliance, inclusiveness, user-friendliness, seamless and secure transactions, privacy protection, proportionality, legal certainty, and necessity.

[8] https://www.imf.org/-/media/Files/Publications/FTN063/2022/English/FTNEA2022001.ashx

5. Key Fintech Verticals

- SBP and SECP are the key regulators of the financial markets in Pakistan. SBP acts as a regulator for banking institutions and activities related to payment and money services while SECP regulates the capital market, insurance companies, NBFIs and private pensions. Following this setup, fintech regulations shall follow the nature of financial activities a platform facilitates. Accordingly, fintech providing banking solutions shall be regulated and supervised by the SBP, while SECP shall be responsible for fintech activities concerning capital markets, such as equity crowdfunding and P2P lending, insurtech and asset management. However, some aspects might be jointly regulated by both authorities. For instance, a P2P and crypto exchange might be requested to follow AML regulations issued by SBP.[9] Figure 5 clarifies the scope of the regulatory authorities in relation to fintech.

Figure 5: Fintech Activities and Supervisory Scope of the Regulatory Authorities



- In terms of fintech verticals classification, fintech activities can be found in these financial services categories: (i) deposit taking, (ii) lending and financing including P2P financing; (iii) capital-raising and alternative sources of funding including equity crowdfunding; (iv) asset management, trading and related services; (v) payments, clearing and settlement services; (vi) insurance; and (vii) crypto-assets (viii) open banking and open finance. Adopting a principle and functional-based regulatory approach, regulators may issue fintech regulations covering a wide range of verticals. Yet, four verticals; namely: P2P lending and equity crowdfunding, asset management, insurtech, and crypto-assets, are notable verticals that fall under the purview of SECP. These verticals may require specific regulations and policy interventions. The following sub-sections provide detailed discussions about these verticals and clarify the objectives of the required policies.

[9] We need SECP feedback on this. This includes clarifying the main regulator for P2P

[10] We acknowledge that most crypto-assets could be classified under the other categories of financial services, depending on their underlying economic function, rights attached and business model features. Yet we decided to keep them separate for the purposes of this framework because crypto-related services involve a range of unique approaches with quickly evolving use cases.

5.1. P2P Lending & Equity Crowdfunding

- **P2P lending** (or loan/debt crowdfunding) refers to a credit activity facilitated by internet-based platforms that match borrowers with lenders. Here, individual loan contracts are established between borrowers and lenders, without the platform being engaged in risk transformation. Therefore, it is not balance-sheet lending. With only 8.4% of Pakistani citizens saving through formal means, P2P lending represents an opportunity for saving and investments. P2P lending platforms perform the brokerage function of financial intermediaries by matching lenders' supply and borrowers' demand for funding, according to the risk and the maturity of their needs. Unlike banks, P2P lending platforms do not create money and do not perform risk and maturity transformation.[11] P2P financing platforms may also include non-loan debt funding such as invoice financing. Financial returns of P2P lending platform brokers' financial products depend on their future cash flows. It targets the general public (the "crowd") over the internet and matches buyers and sellers in a manner comparable with a marketplace like a stock exchange. It does not engage in risk transformation and balance sheet intermediation (losses are borne by lenders) and earns its profits from fees rather than carrying risks.

- **Equity crowdfunding** refers to the practice of matching people and companies raising funds with those seeking to invest for a financial return without traditional financial institutions as intermediaries. In equity crowdfunding, investors provide funding to private companies in the form of equity. The fintech platform matches investors with companies they want to invest in, enabling them to participate in the early capital-raising activities of start-ups and other companies. Similar to P2P lending platforms, the financial returns of equity crowdfunding brokers' financial products depend on their future cash flows. It targets the general public (the "crowd") over the internet and matches buyers and sellers in a manner comparable with a marketplace like a stock exchange. It does not engage in risk transformation and balance sheet intermediation (losses are borne by investors) and earns its profits from fees rather than carrying risks.

[11] https://www.researchgate.net/publication/322258377_The_Financial_Intermediation_Role_of_the_P2P_Lending_Platforms

Policy Objectives:

- Many jurisdictions have introduced P2P lending and equity crowdfunding regulations. When issuing such regulations, most authorities seek to expand the direct financing channels for MSMEs. In terms of policy objectives, customer protection has been the most cited by authorities, followed by level-playing-field issues and financial stability. The key policy objective in the regulations for P2P lending and equity crowdfunding is investor/ lender protection, particularly retail investors. P2P and equity crowdfunding platforms may unexpectedly fail, engage in fraudulent behaviour or enable parties seeking funding to commit fraud. Moreover, lenders or investors have to rely on the platform for accurate information. They do not know the quality of borrowers or investment projects and may have to rely on the platform for sound due diligence and risk assessment[12]. In addition, P2P and equity crowdfunding platforms are subject to operational risks, such as the risk that identity, payments or other data could be stolen through cyber-attacks.

- The regulatory considerations for P2P lending platforms are applied also to equity crowdfunding. In line with the outlined policy objectives for P2P lending as well as equity crowdfunding, the following illustrates the main areas of regulatory requirements for P2P lending and crowdfunding:

Figure 6: Areas of Regulatory Requirements for P2P Lending

[12] Lenders/investors are compensated for bearing the risk that the issuer/borrower may default. The higher this risk, the higher the compensation should be.

- Observing heightened interests by MSMEs to tap into alternative fund-raising channels, the SECP may allow P2P financing and equity crowdfunding platforms to operationalise in secondary trading and encourage the offering of more financial products to the growing online trading community in the country. Further, SECP may consider allowing P2P and equity crowdfunding platforms to operate a secondary market for the trading of investment notes. In this case, the regulations need to ensure market integrity and that access to the secondary market is fair, transparent and objective, including treating all its users fairly by, among others, providing equal access to information. Further, the matter of Shariah compliance in relation to offering P2P financing and equity crowdfunding in the secondary market should be taken into the consideration in future.

- For investor/lender, investee/borrower and operators' protection, the following are some regulatory considerations that apply to P2P lending as well as crowdfunding:

Figure 7: Policy Measures Suggested for P2P Lending and Equity Crowdfunding

Risk assessments of the borrower/investee and Lender/Investor	Carry out a risk assessment on prospective stakeholders intending to use the platform. This includes 1) Fit and properness 2) Business proposition of the platform operator 3) Borrower/investee creditworthiness and AML/CFT checklists of the Lender/Investor.
	Ensure there is an efficient and transparent risk-scoring system in place relating to the Lending/investment note. The final risk scoring for the purchase of the investment note must be made available to the Lender/investor at the time of the offer.
Transparency/disclosure requirements	Ensure the borrower/investee and Lender/Investor disclosure document lodged with the platform operator is verified for accuracy and made accessible to Lenders/investors through the platform.
	Disclosure documents include 1) KYC documents of Lender and Investor 2) Details of requirement/business plan of borrower/investee; 3) The key features of the agreement e.g., offering amount, Tenure, profit/interest rate, etc.
	Disclosure about the platform itself, and any conflicts of interest.
Monitoring requirements	Have in place processes and policies to manage any default by stakeholders including using its best endeavours to recover outstanding amounts and compensate the loss arising from breach of contract by the operator to the participants and vice-versa.
	An interface that provides relevant statistics of the business transactions engaged with the platform.
Investment/lending limit	To manage the risk exposure of retail investors/lenders, operators must encourage retail investors/lenders to limit their investments on any platform to a maximum at any period of time. The maximum amount is to be determined by the regulator.
	A sophisticated investor/lender or angel investor shall not be subjected to any restriction in respect of his investment/lending amount.
Operation of trust account	Establish and maintain a Shariah-compliant trust account with a licensed Islamic bank, relating to monies received for issuers and the monies received as repayments to investors/lenders.
	The operator shall not withdraw from or deal with investors'/Lenders' monies in a trust account except for the purpose of making a payment to the person entitled thereto (Investee/Borrower, Investor/Lender or Operator itself).
Rate of financing cap	The regulator should consider setting out a rate of financing (cap) that is not more than the predetermined threshold to protect the interest of the borrowers[13 14].

[13] https://assets.publishing.service.gov.uk/media/57a08a0de5274a31e00003d0/Interest_rate_caps_and_their_impact_on_financial_inclusion.pdf
[14] https://blogs.worldbank.org/developmenttalk/interest-rate-caps-theory-and-practice

P2P Lending and Equity Crowdfunding in Pakistan:

- SECP has granted approval for the launch of a P2PLending Platform under the first cohort of Regulatory Sandbox in November 2020. The participant testing Digital P2P Lending Platform received an encouraging response both from lenders and borrowers.
- In March 2022, the SECP notified draft amendments to the regulations for the non-banking financial services sector which, if approved, will for the first time set out the regulatory framework where NBFIs wish to provide P2P services or undertake business as a P2P service provider.
- Finja, Pakistan's leading digital supply chain financing NBFI has launched Pakistan's first P2P lending platform: Finja Invest, which is licensed and regulated by the SECP.[15]

04

Recommendation 4:
One of the main issues in financial inclusion is having access to financial services. The barriers to access revolve around costs, commercially unattractive terms and conditions, or other barriers such as eligibility. Part of the problem could be lack of competition in the market, whereby traditional players feel that there is no immediate threat of another player coming along and offering something better. Apart from competition, accommodating considerations pertaining to Environmental, Social and Governance (ESG) criteria as well as Sustainable Developmental Goals (SDGs) along with the Shariah principles are also critical. Accordingly, SECP may consider integrating these principles into the P2P lending and equity crowdfunding guidelines. This suggestion is aligned with the principle-based fintech framework that SECP may consider for an inclusive, efficient and sustainable offering in the non-banking sector.

05

Recommendation 5:
Conduct a study to explore innovative approaches to P2P and crowdfunding such as involving Modaraba companies in initiating crowdfunding solutions to finance affordable housing.

06

Recommendation 6:
Explore the possibility of involving social finance institutions such as Zakat and Waqf in the P2P and crowdfunding activities to provide blended finance solutions on these platforms.

[15] https://profit.pakistantoday.com.pk/2022/03/11/finja-invest-pakistans-first-p2p-lending-platform-is-here-to-change-the-game/
https://www.finjainvest.com/

5.2. Asset Management, Trading & Related Services

Digital transformation raises both opportunities and challenges for the asset management industry. Fintech solutions enable efficient operations of the asset management industry and allow them to grow and enhance the quality of services they offer to clients. Furthermore, fintech applications enable the asset management industry to differentiate its service offerings as the environment becomes more complicated and busier. Asset management, trading and other related services sectors are undergoing changes with the growth of automated wealth advisers or "robo-advisers." Robo-advisers might assist investors without the intervention of a human adviser, or they might be used in combination with a human adviser. The desired outcome is the ability to provide tailored, actionable advice to investors with greater ease of access and cost efficiency.

Policy Objectives:

- The continuing growth of fintech start-ups forces the authorities to formulate appropriate regulatory frameworks for the fintech industry. In principle, fintech based asset management activities and traditional advisers should receive the same regulatory treatment. Fintech based asset management services/advisories, e.g., Robo-advisers, are typically classified as providers of financial advice under securities regulation and need to be authorised by the concerned regulator, irrespective of whether the advice is provided digitally, face-to-face or a mix of both. In that sense, regulatory regimes for financial advice are technology neutral. This follows from the idea that clients of fintech based asset management services/advisories should enjoy the same level of protection and quality of advice as those of traditional advisers.

- The distinguishing policy objective in the regulations for fintech leveraged asset management entities compared to traditional asset management entities is investor protection. For this, the regulations need to consider the following elements:

    - Ensure that the fintech enabled asset management entities can meet the obligation to act in the best interest of clients and provide only suitable investment advice in the face of limited, if any, human interaction. The respective entities are expected to collect sufficient and reliable information before recommending any investment product. Information will only be reliable if the tool used to collect client information (e.g., an online questionnaire) is clear and self-explanatory, has a mechanism to resolve inconsistent client responses and incorporates a mechanism to identify clients for whom robo-advice is not appropriate.

- Ensure that the algorithm used to generate advice is doing what it is supposed to do. The core of a fintech based asset management business model (e.g., robo-advisory) is an algorithm that translates a client's information into actionable advice. A coding error or bias in the algorithm may harm many clients as it could result in systematic mis selling of financial products and unexpected losses. To mitigate this risk, asset management entities are required to put in place governance and oversight arrangements for algorithms (with the ultimate responsibility assigned to the board or senior management for instance). Aspects considered in these arrangements are the availability of sufficiently qualified staff involved in developing and running the algorithm, regular review of the algorithm's methodology against the best market practice, monitoring of the quality of advice generated, and internal processes and procedures, e.g., for approving changes in methodology or suspending the algorithm if errors are detected.

- The fintech leveraged asset management entities are expected to provide sufficient information to their clients to allow them to make informed decisions (disclosure and transparency). Information should be simple, easily understandable, clear and not misleading. Disclosure of information may also be required on the business model, scope of advisory services and potential conflicts of interest. Also, disclosure of the limitation of the advice shall be made. The advice provided by some of the areas of fintech based asset management advisers such as robo-advisers is often limited in scope and does not consider all aspects of a client's financial situation. In this case, they are expected to communicate the limited nature of the advice and the potential consequences of the scope of the advice.

In the area of trading platforms, regulation may cover:

Obligations related to transparency of services and fees

Mobility of accounts across providers

Conditions for authorisation and execution of orders

Data protection

transparency of terms and conditions

Non-discriminatory accessibility criteria

Suitability tests (e.g., tests of affordability)

Transmission of information to third parties, etc.

Mutual Fund Digital Distribution and Robo Advisory in Pakistan:

- SECP is pursuing a "completely digital asset management ecosystem" comprising mutual fund distribution platforms, digital investment advisors and digital asset management companies.
- SECP issued guidelines for mutual fund digital distribution platforms and welcomed four of such platforms.
- The SECP, in its first cohort of Regulatory Sandbox, permitted a fintech for distribution and advisory purposes solution for testing in a controlled environment subject to certain terms and conditions.
- The tests also paved the way for a framework of mutual fund digital distribution and robo-advisory. SECP issued guidelines encouraging the use of fintech for distribution and advisory purposes.
- Under this framework, digital Asset Management Companies (AMCs) and licensed NBFIs offer asset management services digitally.
- Digital AMCs will be allowed to provide all conventional services including launching Collective Investment Schemes (CIS), online account opening as well as redemption of units and inter CIS conversions through digital means, removing physical interaction altogether.

07

Recommendation 7:
Conduct a study on the impact of the recent framework and AMCs on the level of financial inclusion. The study should help to identify customer adoption, especially among the financially excluded segments and identify the factors that shall help to increase participation.

5.3. Insurtech

Insurtech refers to the insurance-specific branch of fintech which is reflected in new business models that have the potential to transform the insurance business. In this context, insurtech business models refer to technology-driven innovative models that are emerging in two major areas of insurance: (i) distribution, such as comparison portals and digital brokers; and (ii) underwriting, such as mobile, on-demand, usage-based or technology-enabled P2P and parametric insurance. Through innovative applications of digital technology, the expansion of insurance and Takaful coverage to the wider population is made possible with simpler and more affordable covers, along with greater accessibility to wide-ranging protection solutions that cater for the diverse needs of customers beyond traditional coverage.

Policy Objectives:

- In many countries, entities offering mobile, on-demand, usage-based or technology-enabled P2P and parametric insurance are licensed under the existing regimes. Authorities consider that existing regulations adequately cover the underlying risks of these innovative products. However, some authorities consider the potential risks of technology-enabled P2P insurance when it is scaled up to a certain number of customers and policy premium size. Therefore, it may need specific regulations.

- For the protection of customers and service providers and for the stability of the industry, the following are some regulatory considerations that may be suggested for the insurtech market:

  - **Risk Assessments of the Insurtech Service Providers**
    - Carry out a risk assessment on prospective (service providers) insurtech companies intending to provide insurance services. This includes:

      - □ Conducting background checks on the potential insurtech companies to ensure fit and properness of the service provider.
      - □ Verifying the business proposition of the service provider.
      - □ Assessing the service providers’ financial strength.

    - Ensure that there is an efficient and transparent system in place relating to insurtech servicing. The required information regarding the policies must be made available to the policyholders through the appropriate interface at the time of the offer.

- **Transparency/Disclosure Requirements**
  - Ensure that the disclosure documents of insurtech companies are verified for accuracy and made accessible to subscribers through the appropriate digital platform.

  - The disclosure documents include:
    - □ Description of the business model, its vision, mission and strategic plan.
    - □ Background of service providers and their compliance documents.
    - □ Key features of the policy.
    - □ Disclosure about the platform itself and conflicts of interest, if any.

- **Monitoring Requirements**
  - Have in place processes or policies to manage any default by policyholders and failure to transfer the service offered by the service providers.
  - Information including statistics on premiums and claims.
  - Details of technology system architecture to be deployed for the conduct of end-to-end digital-only operations in the areas of customer acquisition, underwriting, administration, claims processing, etc. along with an implementation plan.

- **Data Privacy and Cyber Security**
  - Insurtech entities are required to:
    - □ Have policy documents for the protection of policyholders' data that comply with the Securities and Exchange Commission's (SEC) Guidelines on Cybersecurity Framework for the Insurance Sector.
    - □ Adopt best practices concerning cyber security.
    - □ Ensure fair usage of policyholder information which it has acquired during the course of its business, and be responsible for the accuracy, safety and confidentiality of policyholder data.

Insuretech in Pakistan:

- Technology has mainly been leveraged in respect of insurance distribution in Pakistan such as point of sales systems being utilized primarily in bancassurance, mobile apps and websites used by insurers and distribution partners for information, customer engagement, sale of insurance and online insurance comparison and sales platforms.
- Insurers are offering first-level protection-based products on their own online sales platforms (website and apps), and have also partnered with 3rd party digital platforms, such as banks, mobile network operators, aggregators, insurtech platforms to offer such products.
- In August 2022, SECP developed Rules for micro and digital-only insurer to transact insurance on digital-only basis and small ticket size insurance i.e., microinsurance through amendments to the Insurance Rules, 2017.
- The registration requirements have been designed to reduce barriers to entry in terms of minimum paid-up capital and solvency requirements.
- The registration regime for digital-only insurers and dedicated microinsurers is expected to enable small entities with a vision and plan to innovate and serve the insurance market, to obtain registration with the SECP while complying with lenient regulatory requirements in terms of minimum paid-up capital and solvency requirements.
- In line with the principle of proportionality, lenient capital and solvency requirements have been proposed for the registration of dedicated microinsurers and digital-only insurers.
- A pilot test run approach is proposed for the digital-only insurers wherein the operations will be started on a pilot basis i.e., on a limited scale with specific terms and conditions to be stated at the time of approval of pilot operations, taking into account the strategic plan, business model and operational capacity of the applicant.
- There are still untapped areas such as tech-based innovative products (for example, P2P features and pay-as-you-go insurance), automated underwriting, policy administration, claims processing and payments, among others.

08

Recommendation 8:
In line with the proposed principle-based approach, the regulator may consider the value propositions of the applicants as a main criterion to approve the new applications where the applicant is required to demonstrate, to the regulator's satisfaction, a commitment to driving value propositions for better inclusion and efficiency.

09

Recommendation 9:
Encourage the experimentation of new models for insurance/Takaful through the regulatory sandbox.

5.4. Crypto Assets

- Crypto assets are digital assets that use public ledgers over the internet to prove ownership. It can be any digital representation of value that can be digitally traded, or transferred, and can be used for payment or investment purposes, but excluding digital representations of fiat currencies or securities that already fall within the definition of financial product. It uses cryptography, P2P networks and Distributed Ledger Technology (DLT) – such as blockchain – to create, verify and secure transactions. They can have different functions and characteristics: they may be used as a medium of exchange; a way to store value; or for other business purposes. Crypto assets generally operate independently of a central bank, central authority or government. In general, crypto-assets include payment currencies, blockchain economies, coins (e.g., privacy coins, stable coins, utility coins, security coins), non-fungible tokens, decentralised finance, metaverse, etc.

- Cryptocurrency/coins is a decentralised digital currency that is based on blockchain technology and secured by cryptography. Transactions based on cryptocurrencies are verified and records are maintained by a decentralized system using cryptography, rather than by a centralized authority. Crypto coins are often native to their own blockchain. Crypto tokens are digital assets that are built on top of an existing blockchain (using smart contracts) and can serve a wide variety of functions, from representing a physical object to granting access to platform-specific services and features. The primary difference between cryptocurrency/coin and crypto tokens is in relation to the blockchain platform in which they are built. Cryptocurrencies are the native asset of a specific blockchain protocol, whereas tokens are created by platforms that build on top of those blockchains.

- Initial Coin Offering (ICO) is a type of crowdfunding using cryptocurrencies. An ICO works by issuing digital coins or crypto coins against investments. They are sold directly to investors who may gain profits if the tokens increase in value from the initial launching price. Initial Exchange Offering (IEO) is similar to ICO, but IEO is administered by the cryptocurrency exchange. ICO and IEO could be very risky and prone to scams and fraud. SECP would need to conduct intensive studies before allowing such mechanisms. A proper regulatory framework shall be developed to ensure protection of the investors and the public. Security Token Offerings (STO) are one of the innovative kinds of crypto tokens. It is essentially a digital form of traditional securities. Security tokens are designed to validate and ensure ownership rights and serve as value-transfer instruments for a specific asset, asset bundle, or set of rights. A security token represents the ownership information of the investment product, recorded on the blockchain. Other than security token, Non-Fungible Tokens, often referred to as NFTs, are blockchain-based tokens that each represent a unique asset like a piece of art, digital content, or media. An NFT can be thought of as an irrevocable digital certificate of ownership and authenticity for a given asset, whether digital or physical. SECP would need to develop proper infrastructure and regulations to ensure sound governance in the market of crypto-assets. Crypto exchanges and custodians might need to be regulated to ensure the protection of investors' funds from being stolen or misappropriated during a fundraising exercise.

- Since ICOs, IEOs and STOs are relevant fintech solutions for the financial market development, to support investments in crypto-assets, crypto-assets custodians might have to ensure the protection of investors' funds from being stolen or misappropriated during a fundraising exercise. Though cryptocurrencies and other crypto-assets are developed initially as decentralized technology, cryptos are often traded through centralized platforms. These platforms are part and parcel of the crypto ecosystem. To protect the interest of users, crypto exchanges might be regulated to ensure that they are technically robust and secure. Regulation is also required to ensure that exchanges comply with e-KYC to warrant that trading of crypto is not facilitating money laundering or terrorism financing.

- In Pakistan, the cumulative ownership in cryptocurrencies amounts to $20 billion – almost twice the $10.3 billion in foreign reserves currently held by the SBP[16]. Pakistan is ranked 3rd in the Global Crypto Adoption Index 2020-21, just behind Vietnam and India. In addition, the country recorded the highest growth in cryptocurrencies – expanding at 711% over the period 2020-21[17]. These industry dynamics imply that the base of active crypto participants is quite substantial. However, the regulatory structure is still trailing to accept any change in the status quo. Although there is strong pressure to ban cryptocurrencies in Pakistan due to the lack of a legal framework, there is no formal law that has been enacted regarding it.

[16] Based on the report published by Policy Advisory Board (PAB) of the Federation of Pakistan Chambers of Commerce and Industry (FPCCI).
[17] According to a report by Chainalysis, a blockchain data platform

Policy Objectives

Crypto assets and markets must be subject to effective regulation and oversight commensurate with the risks they pose. Crypto-asset markets are fast evolving and could reach a point where they represent a threat to global financial stability due to their scale, structural vulnerabilities and increasing interconnectedness with the traditional financial system. An effective regulatory framework must ensure that crypto-asset activities are subject to comprehensive regulation, commensurate with the risks they pose while harnessing the potential benefits of the technology behind them. Where crypto-assets and intermediaries perform an equivalent economic function to the one performed by instruments and intermediaries in the traditional financial system, they should be regulated prudently.

For the protection of crypto-asset investors, entities and for financial stability, the following are some regulatory considerations[18] that may be suggested for this market:

- **Administerial Requirements:** SECP should have appropriate powers and tools, and adequate resources to regulate, supervise, and oversee crypto-asset activities and markets, including crypto-asset issuers and service providers, as appropriate.
- **Enforcement Requirements:** SECP should apply effective regulation, supervision, and oversight to crypto-asset activities and markets – including crypto-asset issuers and service providers – proportionate to the financial stability risk they pose, or potentially pose, in line with the principle "same activity, same risk, same regulation."
- **Cooperative and Communicative Requirements:** SECP should cooperate and coordinate both domestically and internationally, to foster efficient and effective communication, information sharing and consultation in order to support each other as appropriate in fulfilling their respective mandates and to encourage consistency of regulatory and supervisory outcomes.
- **Requirement for Governance Framework:** SECP, as appropriate, should require that crypto-asset issuers and service providers have in place and disclose a comprehensive governance framework. The governance framework should be proportionate to their risk, size, complexity and systemic importance, and to the financial stability risk that may be posed by the activity or market in which the crypto-asset issuers and service providers are participating. It should provide for clear and direct lines of responsibility and accountability for the functions and activities they are conducting.

[18] Adapted from Financial Stability Board (FSB) Document on Regulation, Supervision and Oversight of Crypto-Asset Activities and Markets

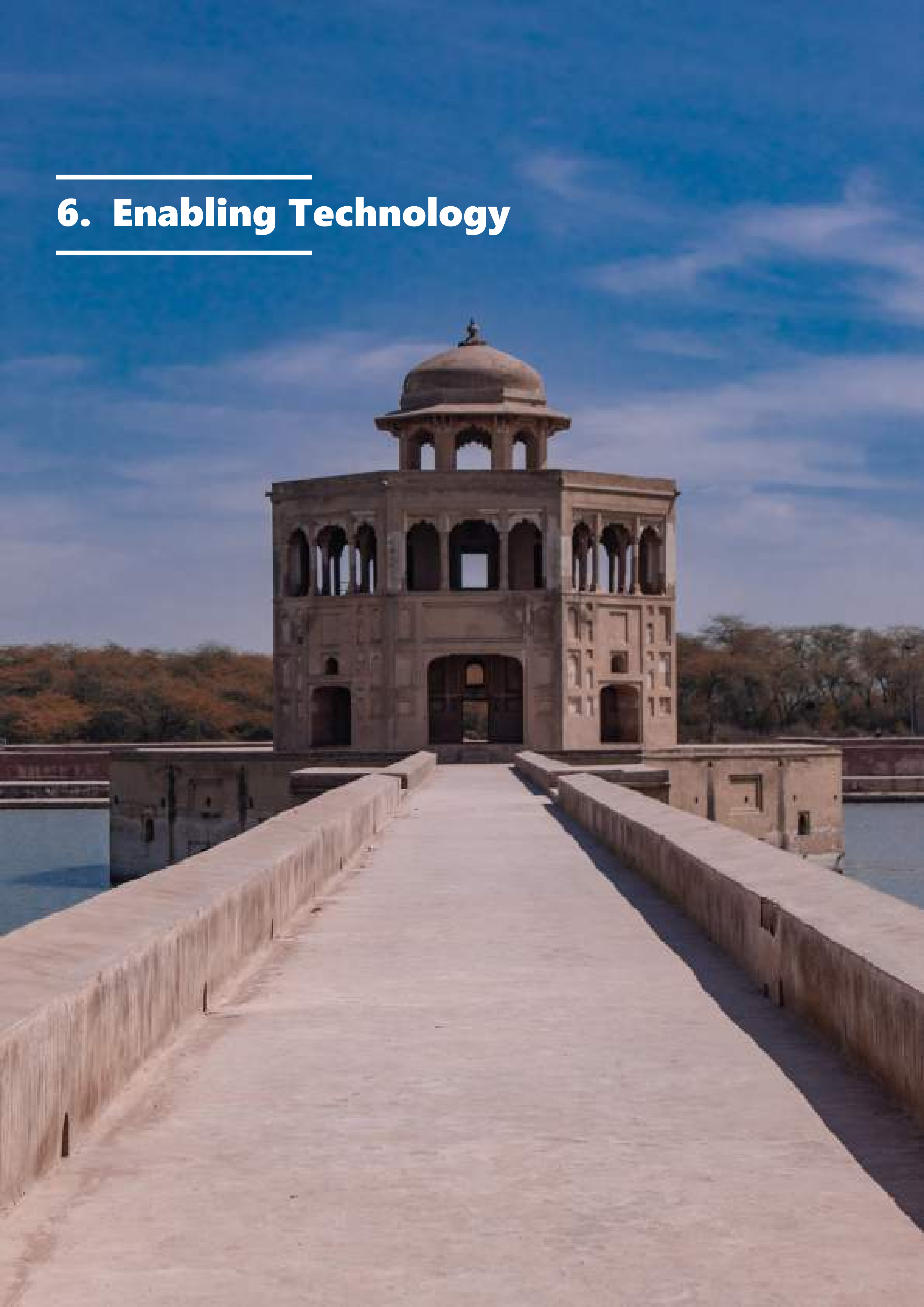
- **Requirement for Risk Management Framework:** SECP, as appropriate, should require crypto-asset service providers to have an effective risk management framework that comprehensively addresses all material risks associated with their activities. The framework should be proportionate to their risk, size, complexity, and systemic importance, and to the financial stability risk that may be posed by the activity or market in which they are participating. Authorities should, to the extent necessary to achieve regulatory outcomes comparable to those in traditional finance, require crypto-asset issuers to address the financial stability risk that may be posed by the activity or market in which they are participating.

- **Data Management Requirement:** SECP, as appropriate, should require that crypto-asset issuers and service providers have in place robust frameworks for collecting, storing, safeguarding, and the timely and accurate reporting of data, including relevant policies, procedures and infrastructures needed, in each case proportionate to their risk, size, complexity and systemic importance. Authorities should have access to the data as necessary and appropriate to fulfil their regulatory, supervisory and oversight mandates.

- **Disclosure and Transparency Requirements:** SECP should require that crypto-asset issuers and service providers disclose to users and relevant stakeholders comprehensive, clear and transparent information regarding their operations, risk profiles and financial conditions, as well as the products they provide and activities they conduct.

- **Requirement for Interconnectivity:** SECP should identify and monitor the relevant interconnections, both within the crypto-asset ecosystem, as well as between the crypto-asset ecosystem and the wider financial system. Authorities should address financial stability risks that arise from these interconnections and interdependencies. SECP should also ensure that crypto-asset service providers that combine multiple functions and activities, for example, crypto-asset trading platforms, are subject to regulation, supervision and oversight that comprehensively address the risks associated with individual functions as well as the risks arising from the combination of functions, including requirements to separate certain functions and activities, as appropriate.

6. Enabling Technology



- Enabling technologies are those that make innovation in the provision of financial services possible and, as such, they form the backbone of fintech activities. These include Application Programming Interfaces (APIs), Cloud Computing (CC), Biometric-Based Identification and Authentication, machine learning (ML), AI, DLT and blockchain.

Figure 8: Fintech Enabling Technologies

- These technologies present new opportunities for financial services. APIs have mainly been used to facilitate access to customers' payments and account information by non-banking institutions in a regulated and secure way. CC enables the storage, management and processing of large volumes of data under an efficient, scalable and flexible IT scheme. DLT is being applied to raise efficiency, reduce costs and lessen the need for intermediation. The most prominent application of DLT is crypto-assets. Biometric data are increasingly employed for customer authentication in mobile banking applications. Predominant areas of AI and ML applications have been credit scoring, high-frequency trading and robo-advice.

- While enabling technologies present opportunities, their application in financial services may also pose new risks or increase existing ones. For financial institutions, these may include data privacy, cyber security, third-party dependency and concentration risks. In addition, there are significant challenges that institutions face regarding the explainability of predictive models used in ML and AI applications related to issues of bias, ethics and fairness.

10

Recommendation 10:

Consider adding technology-specific elements in the process of developing new laws, regulations or guidelines. SECP may also undertake an investigative study exploring the need for adding technology-specific elements in existing laws, regulations or guidelines.

11

Recommendation 11:

SECP may consider issuing a guideline for adopting technologies. This guideline shall clarify the key enabling technologies and set the key principles which should cover data protection requirements, control functions, independent review requirements, skills, knowledge and experience to confirm that the adoption of enabling technologies is supported by resources with the necessary skills, knowledge, and expertise specific to their roles and functions. This guideline should outline the specific requirements related to the key enabling technologies including APIs, CC, BBIA, ML, AI, Data Analytics (DA), and DLT.

The explanation of such requirements is provided in the subsequent recommendations under the respective subsections below.

6.1. Application Programming Interfaces (APIs)

APIs are a set of rules and specifications for software programs to communicate with each other that forms an interface between different programs to facilitate their interaction. While private APIs are used within an organisation to provide interoperability between internal applications in order to help automation and provide flexibility, open APIs are further designed to be easily accessible by interested parties including financial and non-financial institutions. In the context of banking and finance, APIs provide means of interaction between financial institutions and third parties for sharing customer-permissioned bank-held data, which is a key element of open banking and open finance frameworks. APIs are crucial enablers that facilitate financial institutions' push towards customer-focused initiatives by allowing applications to be developed quickly and responsively. APIs have many use cases, for example:

- Bank Account Enquiry: Through APIs, customers can access their bank accounts' details quickly and in real time.
- Real Time Payments: APIs can allow customers to connect directly to financial institutions' payment gateways to make real time payments, and hence create a seamless experience.
- Seamless e-KYC: APIs enable businesses to seamlessly tap on banks' watch lists and public records to conduct KYC.

While the above provides a few examples of possible uses that can support NBFIs to leverage the existing banking sector, having open APIs would allow better integration of the whole ecosystem. To illustrate its wide applications, open APIs cover the following functional categories:[19]

- Product APIs (e.g., to provide information on financial product details and exchange rates).
- Sales & Marketing APIs (e.g., to handle product sign-ups, sales/cross-sales and leads generation).
- Servicing APIs (e.g., to manage customer profile/account details and customer queries/ feedback).
- Transaction APIs (e.g., to support customer instructions for payments, funds transfers, settlements, clearing, trade confirmations and trading).

Each functional category can be further classified into transactional APIs that contain sensitive data where user authentication is required and informational APIs that contain non-sensitive data.

[19] https://www.mas.gov.sg/development/fintech/financial-industry-api-register

12

Recommendation 12:
Establish and open API and open finance framework as a regulatory framework that includes a comprehensive set of regulatory guidelines and technical standards. Open APIs can make it faster and cheaper for partners and other third parties to integrate their digital financial services into the new and existing products of NBFIs. In this context, such a framework shall outline the governance requirements for effective decision making, proper management and control of risk arising from the use of APIs.

These requirements shall cover the definition of the roles and responsibilities of the financial institution, API Provider and API developer including the division of duties; the establishment of appropriate policies, procedures, standards and controls to govern the API lifecycle; the employment of tools and technologies that enable communication, and the development of appropriate testing strategies. It also sets the requirements for having flexible and secure design, control measurements, robust management, supervision, monitoring and auditing functions.

6.2. Cloud Computing (CC)

Cloud computing is a general term for anything that involves delivering hosted services over the internet. Regulators need to clarify their regulatory expectations on the use of CC by financial institutions. This includes the expectations on outsourcing, governance, risk management and cyber security frameworks concerning arrangements between financial institutions and cloud service providers on the provision of material or critical services.

The requirements and clarifications are intended to ensure adequate management of the risks associated with the use of CC by financial institutions. Besides the operational risks of any outsourcing activity, CC may pose additional risks to the financial sector, given:

- Shared computing resources in some cloud deployment models;
- The type of information that is stored and processed;
- The different geographical locations of computing resources and providers; and
- The small number of global cloud providers, resulting in market concentration could have systemic implications.

The cross-border nature of cloud services complicates the effective oversight of all these risks. Accordingly, regulations for fintech may cover the following requirements and expectations for CC.[20]

1. The adequacy of information security, data confidentiality and availability;
2. The strength of IT and cyber security capabilities at cloud service providers;
3. The effectiveness of recovery and resumption capabilities;
4. The adequacy of audit rights (i.e., the supervisory authority's access to documentation and information, and ability to conduct on-site inspections at the provider);
5. Data residency requirements: SBP, earlier in 2020, had enhanced the scope of its guidelines on outsourcing to Cloud Service Providers (CSPs). Previously, for all types of cloud services, the CSPs had to be located in Pakistan. Under the revised guidelines, financial institutions can now avail of all types of cloud service models from domestic as well as off-shore CSPs for non-core operations based on certain conditions and ensuring satisfactory internal controls in these outsourcing arrangements. SECP shall consider adopting or developing similar guidelines for the institutions that fall under their mandate.

13

Recommendation 13:

SECP issued draft Cloud Adoption Guidelines for Incorporated Companies in August 2021. The SECP's draft of Cloud Adoption Guidelines is in compliance with the draft Pakistan Cloud First Policy (PCFP) 2021, issued by the Ministry of IT & Telecommunication.[21] The guideline provides all business entities incorporated with SECP with the flexibility to decide, upon their needs and requirements, which applications, data, and resources can be put in the appropriate cloud service and deployment model.[22]

SECP may consider extending the scope of the issued guidelines to put more emphasis on the establishment of a governance framework. The governance framework is to ensure effective decision-making and proper management and control of risks arising from the use of cloud computing and outsourcing of cloud computing. The governance framework may cover the following aspects a) clear definition of roles and responsibilities for the operation and management of the cloud computing arrangement, security controls and risk management controls; b) details about the process to conduct a risk-based analysis to identify and classify the IT assets involved in or deployed by the cloud computing arrangement based on criticality and confidentiality; c) guidelines on the maintenance and updating of the log of IT Assets in the cloud environment including their ownership d) appropriate policies, procedures, and controls to govern the use of cloud computing covering risk management, due diligence on the outsourcing service providers and access, confidentiality, integrity, and recoverability of IT assets outsourced; and e) the steps for management and review of the contract between the Institution and the outsourcing service provider, where cloud computing services are outsourced.

[20] The proposed recommendations with respect to CC is due to the absence of specific guideline for CC that connect financial institutions in Pakistan.
[21] https://www.secp.gov.pk/wp-content/uploads/2021/08/Press-Release-Aug-2-SECP-issues-draft-Cloud-Adoption-Guidelines-2.pdf
[22] https://www.secp.gov.pk/document/draft-cloud-adoption-guidelines-for-incorporated-companies/?wpdmdl=42956&refresh=6110ea5813f421628498520

6.3. Biometrics-Based Identification & Authentication (BBIA)

Biometric data help to facilitate non-face-to-face customer identification and remote authentication by financial institutions. A regulatory framework/approval is needed to allow the use of biometric data for onboarding and account opening processes. The requirements related to the collection, use and storage of biometric data are mostly focused on addressing data privacy, cyber security and money laundering risks.[23] In Pakistan, a Biometric Verification System (BVS) that allows for data flows between the telecommunications provider's Customer Relationship Management (CRM) systems and the National Database, and Registration Authority is used for the Issuance of New SIM, Issuance of Duplicate SIM or SIM Replacement, Change of Ownership, Mobile Number Portability (MNP) and Re-Verification (re-verification of existing active SIM). A verified customer SIM Card issued through the BVS can be used for the remote opening of Level 0 digital financial services accounts[24].

SBP has developed a "Customers' Digital Onboarding Framework" for financial players (banks and MicroFinance Banks (MFBs)) for account opening through digital channels. The framework is applicable to banks, MFBs, all types of Pak rupee accounts, and foreign currency accounts. The customers can be onboarded through secure digital channels like websites/portals, mobile applications, digital kiosks, and other technological mediums. Moreover, to enhance customers' experience, onboarding is also allowed through banks'/MFBs' representatives visiting customer premises on request[25].

14

Recommendation 14:

In the area of Biometrics- Based Identification & Authentication, SECP may consider establishing a governance framework for effective decision-making and proper management and control of risks arising from the use of BBIA. The governance framework shall outline the requirement of the institution to ensure compliance with the relevant laws and regulations in relation to data protection. Further, the framework may set the requirement for outsourcing to ensure that access to information is adequately controlled, monitored, reviewed, and audited by the institution's internal control functions in a manner enabling supervisory reviews by SECP. In this regard, SECP may investigate the applicability of the "Customers' Digital Onboarding Framework" for NBFIs.

[23] Such is the case of EU member jurisdictions, where PSD2, GDPR and AML5 require payment service providers to have strong security requirements regarding consumers' biometric authentication.

[24] https://figi.itu.int/wp-content/uploads/2021/05/e-KYC-innovations-use-cases-in-digital-financial-services.pdf

[25] https://www.sbp.org.pk/bprd/2022/CL15-Annex.pdf

6.4. Machine Learning, Artificial Intelligence & Data Analytics (ML, AI & DA)

There is an increase in the adoption of ML, AI and DA in decision-making in the provision of financial products and services. Compared to human decision-making, the nature and the increasing use of AI may heighten the risks of systematic misuse. This may result in impacts that are more widespread and perpetuated at greater speed. When used responsibly and effectively, AI has significant potential to improve business processes, mitigate risks and facilitate stronger decision-making. The use of AI, ML and DA by financial institutions and markets must be accompanied by good governance and risk management as well as sustainable strategies. To ensure the proper use of AI, the players need to adhere to a set of principles to promote fairness, ethics, accountability and transparency in the use of AI in the financial sector.[26,27] The 'Digital Pakistan Policy' issued by the Government sets out goals for AI but there are currently no laws or regulations.

Figure 9: Principles to be Followed in the Application of AI

Fairness

- Individuals or groups of individuals are not systematically disadvantaged through AI-driven decisions unless these decisions can be justified.
- The use of personal attributes as input factors for AI-driven decisions is justified.
- Data and models used for AI-driven decisions are regularly reviewed and validated for accuracy and relevance, and to minimize unintentional bias.
- AI-Driven decisions are regularly reviewed so that models behave as designed and intended

Ethics

- The use of AI is aligned with the firm's ethical standards, values and codes of conduct
- AI-driven decisions are held to at least the same ethical standards as human-driven decisions

Transperancy

- To increase public confidence, use of AI is proactively disclosed to data subjects as part of general communication.
- Data subjects are provided, upon request, with clear explanations on what data is used to make AIDA-driven decisions about the data subject and how the data affects the decision.
- Data subjects are provided, upon request, with clear explanations of the consequences that AI-driven decisions may have on them.

Accountability

- The use of AI in AI-driven decision-making is approved by an appropriate internal authority.
- Firms using AI are accountable for both internally developed and externally sourced AI models.
- Firms using AI proactively raise management and Board awareness of their use of AI.
- Data subjects are provided with channels to enquire about, submit appeals for and request reviews of AI-driven decisions that affect them.
- Verified and relevant supplementary data provided by data subjects are taken into account when reviewing AI-driven decisions.

[26] https://www.mas.gov.sg/~/media/MAS/News%20and%20Publications/Monographs%20and%20Information%20Papers/FEAT%20Principles%20Final.pdf

[27] https://www.mas.gov.sg/news/media-releases/2022/mas-led-industry-consortium-publishes-assessment-methodologies-for-responsible-use-of-ai-by-financial-institutions

15

Recommendation 15:

With respect to ML, AI & DA, SECP may consider establishing a governance framework for effective decision-making and proper management and control of risks arising from the use of ML, AI & DA. The governance framework shall outline the following requirements:

a) Establishing a mechanism to ensure that institutions are required to assess whether the application is suitable for ML, AI & DA implementation and define specific parameters and criteria to enable the institution in its decision-making;

b) Establishing appropriate policies, procedures and controls to govern the design, development, monitoring, review and use of ML, AI & DA applications;

c) Ensuring proper validation of ML, AI & DA applications prior to their launch, and thereafter implement on-going calibration and review to ensure the reliability, fairness, accuracy and relevance of the algorithms, models and data used and the results;

d) Maintaining a transparent record of Big Data Analytics and AI applications and their underlying mechanics;

e) Establishing processes to assess, monitor, report and mitigate risks;

f) Ensuring that material decisions regarding ML, AI & DA applications and their underlying models and data are documented and sufficiently justified; and

g) Covering every stage of the model lifecycle including design, development, deployment, review, update and discontinuation;

h) Consider Consumer data protection when storing data in a cloud server for processing and analysis;

i) Proper use of AI and ML in Customer on-boarding and related KYC, e-KYC, digital KYC, video KYC, and other compliance aspects (including Anti-Money Laundering, Combatting the Financing of Terrorism & Countering Proliferation Financing Regulations).

6.5. Distributed Ledger Technology (DLT)

DLT is a digital system for recording the transaction of assets in which the transactions and their details are recorded in multiple places at the same time. In the financial sector, the application of this technology is mostly related to the creation of crypto-assets. However, DLT may also be used in foreign exchange remittance payments, securities settlement systems, debt issuance programs, parametric insurance and digital identity initiatives. Depending on its application, the use of DLT by financial institutions or intermediaries may be subject to various regulations.

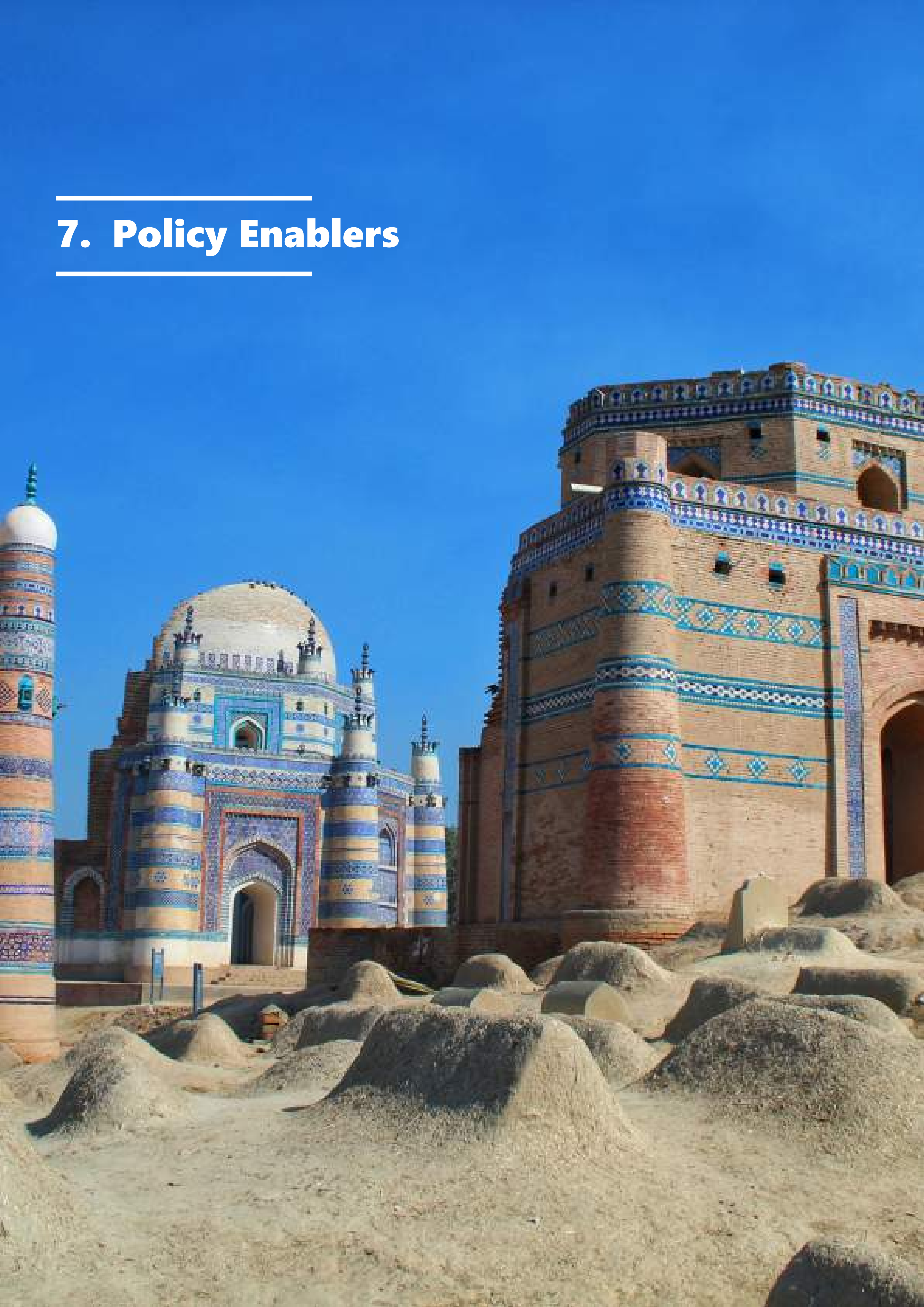
Currently, there is no law/regulation on distributed ledger technology but in 2016 the SECP issued a Position Paper on the Regulation of Digital Asset Trading Platforms in which it categorized the digital ledger technology under the definition of a "Digital Asset/Token". The Paper also states that with regards to the regulation of such tech, the regulator is opting for a 'do-not-harm' approach to avoid overregulation of such technologies. Hence, a robust law/ regulation is to be formulated in this regard.

16

Recommendation 16:

In the context of DLT, SECP may establish a governance framework for effective decision-making and proper management and control of risks arising from the use of DLT. The governance framework shall define the roles and responsibilities of the key groups involved with respect to the design, development, and operation of the distributed ledger(s). It shall also enforce a declaration of ownership model of the DLT platform, and the nodes running on it and outline the rules to govern the ledger(s) including participant and validator rules and restrictions, approval processes and procedures to grant access to create, read, update or deactivate data stored on the distributed ledger(s), consensus protocol; and off-chain procedures.

7. Policy Enablers



Policy enablers are critical to the stability and health of the fintech ecosystem. To develop digital financial services in a market, government bodies are setting up public policies and initiatives that create the foundations of a digital infrastructure required for providing such services. These may include creating a national broadband network, developing digital identities and authentication systems, promoting interoperability of critically important networks and platforms (e.g., telecoms, banking systems), and establishing overarching frameworks/strategies for data protection and cyber security either at the national level or for the financial industry, amongst others.

7.1. Digital ID Systems

Digital IDs enable governments and businesses to deliver digital services which may increase financial inclusion and allow efficiency gains and improvements in service provision. By secure remote identification and authentication of a person's identity via a digital channel, digital ID gives people access to online and mobile digital services, including bank accounts, digital payments, insurance and credit. For governments and businesses, digital ID may offer economic and non-economic benefits, such as increasing efficiencies in registration processes, reducing onboarding costs and strengthening mechanisms against fraud. Digital IDs systems can be developed using different technologies to perform digital authentication (e.g., biometric data, passwords, smart devices or security tokens).

Under the Centralized Know Your Customer (KYC) Organization Rules, 2017 in terms of the Securities Act, 2015, the National Clearing Company of Pakistan Limited (NCCPL) was designated by the SECP as a Centralized Know Your Customer 'KYC' Organization (CKO). The relevant regulations on this are the National Clearing Company of Pakistan Limited Centralized Know Your Customer (KYC) (CKO) Regulations, 2017. The said regulations mention 'computerized identification' rather than digital identification.

In August 2021, the National Database and Registration Authority (NADRA) launched Pak-ID app through which citizens of Pakistan renew their national identity cards. In early 2022, NADRA confirmed that they are working to make the Computerised National Identity Cards (CNICs) into digital wallets under the government's Digital Pakistan vision and citizens who are using the Pak-ID app, can use it as a digital wallet for transactions. Through this initiative, NADRA can facilitate SBP and SECP to perform digital transactions.[28]

17

Recommendation 17:
SECP may explore the need for guidelines and/or regulations clarifying how digital ID systems can be used. These may include requirements on assurance levels and technical standards that must be met for identification/verification at onboarding (account opening) and for ongoing support for customers' due diligence (including transaction monitoring).

[28] In February 2022, State Bank of Pakistan launched an instant payment system "RAAST" to offer a free P2P fund transfer service to promote digital financial services. Now, banks and other financial institutions would allow customers to open accounts using CNIC, after performing e-KYC, their account would open within a day and in some cases take 2-3 days.

7.2. Data Protection Framework

Given the increasing digitalisation transforming economies, public authorities in most jurisdictions have issued new or enhanced existing regulations concerning the collection, use and protection of customer information. Pakistan does not have any extensive data protection legislation in place that specifically regulates matters in connection with the processing of personal data. The Prevention of Electronic Crime Act, 2016 ('PECA') is currently the primary legislation that provides a legal framework for various kinds of electronic crimes and also extends to unauthorized access to personal data. The Ministry of Information Technology and Telecommunication has developed a draft Personal Data Protection Bill, 2021. The draft Bill has passed the consultation stage and, after procedural formalities, will be tabled before the legislature for passing into law. Biometric data is not separately defined but included within the definition of "sensitive personal data".

The Bill includes the following:

- The processing of personal data (including sensitive data) should not be processed by a data controller. For such purposes, getting customer consent is mandatory.
- Best international practices should be in place to protect data from any loss, misuse, modification, or alteration.
- Personal data processing shall not be kept longer than the usage of the data. It is the responsibility of the data controller to destroy or permanently delete the data if the same are not required for further purposes.
- Personal data should not be transferred to any unauthorized system or person.

Following the international best practices, a data protection framework can include the following:[29]

- The basic requirement is to ask citizens for consent before data about them may be collected, used or shared.
- Data portability: citizens have the right to receive their personal data from an organisation in a commonly used form so that they can easily share it with others.
- The right not to be profiled: citizens have the right for decisions affecting not to be made on the sole basis of automated processing unless it is necessary by law or a contract.
- The right to be forgotten: citizens have the power to have their personal data erased when they are no longer necessary for the purpose they were collected.

18

Recommendation 18:
SECP may explore the need to establish a data protection framework for NBFIs.

[29] GDPR, EU.

7.3. Cyber Security Frameworks

As financial institutions are increasingly adopting technology for their operations, it also exposes them to various risks and challenges including unintended incidents and intentional attacks. Financial institutions and markets are more exposed to cyber risk than other sectors given that they are IT-intensive and highly dependent on information as a key input. The financial industry has huge monetary and non-monetary resources including large databases of sensitive and valuable personal information of the public. As such, it offers multiple avenues of profit for hackers and fraudsters. Therefore, the industry is proving to be a special target for unscrupulous elements across the world.

This also raises concerns for the regulators as they have to continuously enhance their regulatory and supervisory frameworks to counter the emerging and evolving risks from these arrangements in a proactive manner. While these frameworks provide a minimum mandatory level of security standards and controls, financial institutions need to put strong internal controls in place to effectively identify, assess, and manage such risks and remain vigilant to the evolving nature of cyber-attacks and threats.

The assurance of cyber security requires proper structures and processes for governance, regulation, implementation, and enforcement. Any absence or weakness in the regulations poses a threat to cyber security. A cyber security framework is needed to facilitate entities' mitigation of cyber risk and effective response to and recovery from cyber attacks.

The ministry of information technology and telecommunication has issued the National Cyber Security Policy 2021. The policy framework is envisaged to secure the entire cyberspace of Pakistan including all digital assets of Pakistan, data processed, managed, stored, transmitted or any other activity carried out in public and private sectors, and the information and communication systems used by the citizens of Pakistan.

The Policy shall serve as the foundation for the construction of a holistic digital ecosystem with supporting frameworks and components for the delivery of secure, reliable, and standardized digital services, applications, and digital infrastructure.

Also, SBP has instituted a comprehensive regulatory and supervisory framework to mitigate cybersecurity risks. The SBP measures to mitigate cybersecurity risks are[31,32]:

- Dedicated Office to Ensure Protection of Network, Infrastructure, and Related IT Systems of SBP.
- Regulatory Regime Based on National Institute of Standards and Technology and the Bank for International Settlements Guiding Principles.
- Enterprise Technology Governance and Risk Management Framework for Financial Institutions.
- Framework for Risk Management in Outsourcing Arrangements.
- Cybersecurity Supervision Framework Based on Risk Based Supervision (RBS) Methodology.
- Ensuring Cyber Hygiene.

19

Recommendation 19:

SECP should impose measures to safeguard customers from fintech scams. Fintechs should be requested to implement the following measures:

- Introduce additional customer confirmations to process significant changes to customer accounts and other high-risk transactions identified through fraud surveillance.
- Providing an emergency self-service "kill switch" for customers to suspend their accounts quickly if they suspect their accounts have been compromised.
- Enhancing fraud surveillance systems to take into account a broader range of scam scenarios.
- Setting a threshold for funds transfer transaction notifications to customers to be set by default.
- Sending notification to the existing mobile number or email registered with the fintech company whenever there is a request to change a customer's mobile number or email address.
- Additional safeguards, such as a cooling-off period before implementation of requests for key account changes such as in a customer's key contact details.
- Dedicated and well-resourced customer assistance teams to deal with feedback on potential fraud cases on a priority basis.
- More frequent scam education alerts.

[31] https://www.sbp.org.pk/whatnew/DRAFT-GovernanceRiskManagement-IT-FIs.pdf
[32] https://www.sbp.org.pk/FSR/2021/Box-8.1.pdf

7.4. Innovation Facilitators

Innovation facilitators include innovation hubs, regulatory sandboxes and accelerators.

- Hubs are set up by supervisory agencies mainly to:
  - Provide support and guidance for the firms on regulatory requirements applying to innovations to be developed and identify the supervisory policy or legal issues and concerns.
  - Serve as a communication channel with the fintech sector.
- Accelerators refer to a partnership arrangement between fintech providers and central banks/supervisory agencies to develop use cases that may involve funding support and/or authorities' endorsement/approval for future use in central banking operations or in the conduct of supervisory tasks.
- A regulatory sandbox is a controlled testing environment, sometimes featuring regulatory forbearance and alleviation through the use of legally provided discretions by the supervisory agency. The objectives of the regulatory sandbox are:
  - Reducing the time and cost of introducing innovative products or services to consumers;
  - Analysing the risks of new business models and underlying technologies; and
  - Assessing if the regulatory approach is balanced for mitigating those risks while enabling innovation in their markets.

There are various hubs and accelerators across Pakistan to build an innovation ground for start-ups to validate their ideas and turn them into Minimum Viable Products (MVP) and help entrepreneurs in the growth stage as well. In the last decade, the technological innovation and entrepreneurship landscape in Pakistan grew exponentially. The National Incubation Centre (NIC) initiative taken by the Government of Pakistan plays a crucial role in setting up a benchmark for all incubators and accelerators working across the country. Though there are incubators and accelerators owned and managed by private organizations to outreach across Pakistan to provide a workspace where innovators and entrepreneurs can share their ideas with industry experts and later generate investment from angel investors and venture capitalists for their start-ups, NIC plays a pivotal role and opened the incubation centres in Karachi, Lahore, Islamabad, Peshawar, Quetta, and Faisalabad. Moreover, there are also other incubators and accelerators currently operating in major cities of Pakistan like IBA CED, LUMS Center for Entrepreneurship, SSK Incubation Center at Institute of Business Management, Invest2Innovate, Nspire, Founder Institute, and many more.

Another entity that provides funding opportunities and framework for digital financial institutions is Karandaaz Pakistan – a non-profit organization founded in August 2014, which promotes access to finance for small businesses. Karandaaz is arranging multiple programs for entrepreneurs to boost digital financial inclusion like Karandaaz Innovation, Karandaaz Capital, and Karandaaz Digital.

To foster innovation, SECP launched a regulatory sandbox in 2019. The regulatory sandbox is a regulatory environment for conducting limited-scale, live tests of innovative products, services, processes, and/or business models in a controlled environment to assess their viability to be launched on full-scale, and to determine the compatible and enabling regulatory environment that will be conducive for the innovative solutions.

The SECP, in its first cohort of Regulatory Sandbox, permitted six solutions for testing in a controlled environment subject to certain conditions. The tests were focused on achieving clarity on whether such product/solution can operate in the existing regulatory framework or amendment or an altogether new regulatory framework is required. The selected participants' tested solutions were digital P2P lending platforms, mutual fund digital distribution and robo-advisory, digital equity crowdfunding platforms, digital insurance brokerage and digital general Takaful providers.

In September 2022, SECP approved 8 solutions under the third cohort of Regulatory Sandbox. This includes business models and technology platforms for telematics-based vehicle insurance, digital-only asset management companies, banking sector Exchange-Traded Funds (ETFs), livestock fund and bond fractionalization, digital platforms for the private placement of debt instruments, AI-based Algorithmic Trading Platform, AI and data analytics-based credit scoring and decision making.

The approved participants shall have an initial incubation period of 2 months to align their business and technology aspects/partners. It will be followed by live testing, which can take 6 to 10 months. At the end of the testing period, applicants shall submit a comprehensive report to the SECP for sharing overall results and statistics.

20

Recommendation 20:
Conduct a study on the performance and impact of the regulatory sandbox of SECP on the fintech start-ups and ecosystem at large. This may also include evaluating the social and economic impact of the graduated fintech solutions.

7.5. Grants For Innovation

Fintech start-ups may need different kinds of funding through grants and investments. The following are some examples:

- Digital Acceleration Grant: to adopt digital solutions to improve productivity, strengthen operational resilience, manage risks better, and serve customers better.
- Focused technology grants: to promote target technology such as AI adoption and strengthen its ecosystem. It is specifically catered to projects that are focused on AI adoption with the objectives to improve decision-making and/or generate better insights.
- Proof of Concept (POC) scheme: it provides funding support for the experimentation, development and dissemination of nascent innovative technologies in the financial services sector.
- Tax exemption: besides grants, start-ups can also tap into tax exemption schemes and other tax reliefs that can help reduce their tax bill.
- The Innovation Centre Grant: the grant seeks to attract financial institutions to set up innovation centres of excellence or labs to test-bed innovative ideas and roll out market solutions.

There are multiple grant opportunities in Pakistan, especially for fintech start-ups. Ignite – National Technology Fund is one of the prominent organisations in Pakistan backed by the government. They have a Challenge-drive Innovation Fund for start-ups. The Higher Education Commission (HEC) of Pakistan has also announced multiple initiatives to boost innovation and entrepreneurial activities by offering grants opportunities such as Innovation Seed Fund,[33] Technology Transfer Fund, Grand Challenge Fund, etc[34]. Karandaaz encourages start-ups to participate in Fintech Disrupt Challenge (FDC) 2022[35] to build financial solutions for low-income and underserved segments of Pakistan through the use of modern technology. There are six thematic areas in FDC i.e., payments, personal financial management, savings, infrastructure, insurance, and credit.

21

Recommendation 21:
Provide a POC scheme that provides funds for the experimentation, development and dissemination of nascent innovative technologies in the financial services sector, especially for impactful purposes (for example, financial inclusion).

[33] https://www.hec.gov.pk/english/services/RnD/ISF/Pages/default.aspx
[34] https://www.hec.gov.pk/english/services/RnD/ISF/Pages/default.aspx
[35] https://fdc.karandaaz.com.pk/

7.6. Capacity Building

Talent is the foundation for the growth of the fintech industry. However, demand for fintech -related talent continues to outstrip supply resulting in shortages of key skills that are impeding growth. Pakistan Fintech Network is the first licensed national-level fintech association. The network membership includes start-ups, solution providers, and other licensed entities to connect the entire financial ecosystem. The vision of the network is to develop the digital financial ecosystem in Pakistan through financial inclusion and promoting digital and financial literacy. One of its aims is to build linkages with universities to raise understanding and interest in the academic community in fintech.

The HEC of Pakistan, National Incubation Centers and the United States Agency for International Development (USAID) are conducting capability development workshops, seminars and hackathons for fintech related start-ups. HEC is also working with the Office of Research, Innovation and Commercialization (ORIC) based in different universities across Pakistan to train, develop and empower students to do research and innovation at the commercial level by collaborating with industry. They are also working with Business Incubation Centers based in these universities to provide a platform for young aspiring entrepreneurs to work on innovative ideas and turn as a start-up.

There is a need for fintech talent development strategy. The strategy can include the following key focus areas:

- Build a talent pipeline that grows future talent.
- Provide tertiary talent with industry-ready skills upon graduation.
- Provide the existing workforce with upskilling and reskilling opportunities.

Under this strategy, programs can be developed to support the growth of talent in the fintech industry including the fintech internship program, fintech jobs fair, fintech jobs portal, and fintech training and learning. The fintech talent development strategy seeks to build on these initiatives and support the development of the know-how and skills needed for the fintech industry through programs for everyone from school leavers and fresh graduates to the existing financial services and regulator workforce.

22

Recommendation 22:
To introduce a fintech talent development strategy and initiate a partnership program with selected reputable educational institutions and training centers to offer capacity building programs that aim at producing a digital talent pipeline to grow the future talents for fintech and the digital finance industry. Future talent needs to have the right skills, attitude, experience and academic qualifications.

23

Recommendation 23:
Provide the internal workforce with opportunities for upskilling and reskilling opportunities, with a focus on data, analytical and digital tech skills, through capacity building programs as well as engagements with the industry players and stakeholders. This includes curriculum development, industry advisory panel members, lecturer attachment at companies and career talks.

7.7. Collaboration

The future of fintech is driven by collaboration. This includes collaboration between the financial services sector and other sectors in Pakistan and collaboration internationally with different markets. Collaboration supports the development of new ideas and transfer best practices and knowledge to drive faster and more impactful innovation. A strategy to enhance collaboration is needed to support the development of local and international collaboration to position Pakistan at the heart of future innovation in financial services.

24

Recommendation 24:
Establish a collaboration network (involving industry players, research community, government and civil society) for disruptive innovation (new product/ service/business models) to develop home-grown high-value fintechs that can enhance the non-banking sector and the Islamic capital market.

25

Recommendation 25:
Establish international collaborations with regulators in other Islamic fintech markets through fintech bridges. The fintech bridge provides a structured engagement that will aid the development of policy actions, enhance assessments of emerging issues, such as the development of distributed ledger technologies and data sharing, and support trade and investment flow between the respective markets.

Conclusion

A comprehensive and principle-centred fintech framework has been proposed in this document that aligns the value propositions of an impactful, inclusive and sustainable ecosystem. The distinct manuscript of the proposed framework has identified the methodology, scope, objectives, regulatory approach, core principles and the key foundational pillars of the fintech ecosystem (the verticals, enabling technologies, and policy enablers). A sensible and practical regulatory approach that underlies the overarching principles of conventional and Islamic values has been suggested for the integration of the proposed fintech framework. These principles have been further elaborated and the relevant implications of each principle in the proposed framework are detailed. The foundational pillars include the key fintech verticals, enabling technologies and enabling policies. The key verticals recommended in the proposed framework are based on their overarching capability of integration into the current offerings of Islamic capital market offerings. Furthermore, the enabling technologies and enabling policies were recommended in line with the potential appetite and readiness of the non-banking sector, specifically the Islamic capital market.

In line with the proposed principle-based approach, the regulator may consider the value propositions of the fintech solution as the main criteria in the process of licensing and approval. Hence, new applicants (fintech start-ups) may be required to demonstrate a commitment toward achieving a positive impact in one or more of the following areas:

1. Inclusion – Enhanced financial resilience of customers whose protection needs are currently not adequately served;
2. Competition – Introduction of more innovative solutions to cater for the diverse protection needs of consumers; and
3. Efficiency – Frictionless consumer experience with greater cost efficiency.

Moreover, specific recommendations have been proposed along the framework, covering the three foundational pillars of the fintech framework including the verticals, enabling technologies and policy enablers. While a sound bespoke methodology has been implemented to form the proposed framework, further research and deliberations with market players and other regulators are required to validate and improve the proposal. Accordingly, the stakeholders are encouraged to deliberate this proposal to verify the initial recommendations which have been highlighted in boxes throughout the entire report. Based on the feedback and the necessary industry consultation, SECP may consider converting this proposed framework into a roadmap and action plan. To this extent, the next step shall include comprehensive qualitative research comprising of online/onsite individual meetings and interviews, group discussions and roundtables with key stakeholders. These interventions will help in understanding the challenges facing the various players and gathering further insights on the market readiness. It shall also cover consultation exercise with industry experts to have their feedback and inputs to ensure the applicability of the recommendations.

SECP may need to translate the suggested framework into a focused development roadmap for Islamic fintech. This roadmap needs to include clearly defined goals, the strategies to achieve those goals, the required resources and the timeline. The main components of the roadmap shall consist of legal and regulatory frameworks defining specific and adequate licensing regimes for different types of fintech verticals, effective supervision providing a sound investor and consumer protection mechanism, Shariah governance, etc. The roadmap shall also include action plans for developing the technical infrastructure (high-speed internet, digital KYC/AML capabilities, legal framework and system for e-signatures, sourcing of market data, cybersecurity, etc). Furthermore, it also needs to address the challenges of capacity building (amongst the concerned authorities, stakeholders and market players) and the awareness where the public is educated on the new opportunities and how individuals and businesses may benefit from them.

The roadmap shall use a phased approach where small steps are taken in a consistent way to build everything from bottom-up. An oversight mechanism also needs to be part of the roadmap for monitoring the implementation process and measuring the progress against budget and targets. The adoption of the proposed principle-based fintech will help SECP to devise a value-based environment and nurturing of value-based fintech institutions in the non-banking sector, through which the core principles are applied in the various segments of the offerings, for instance, offering affordable housing or an agricultural financing model by utilizing crowdfunding and insurtech platforms to provide economical and sustainable solutions and create socio-economic impact.

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