Bahrain FinTech Regulations Report 2019

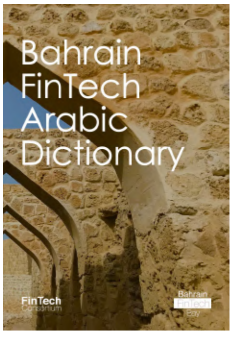
FinTech Consortium

مصرف البحرين المركزي

Central Bank of Bahrain

Bahrain FinTech Bay

Bahrain FinTech Bay Publications



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ACKNOWLEDGEMENT

We would like to express our deep gratitude to all those who helped to make this project possible. A project like the Bahrain FinTech Regulation Report 2019 can only be realized with the enormous support from the project team and external supporters. Several partners have invested significant resources into the project.

Numerous advisors, founders, investors, and industry experts have given us access to their knowledge, networks, and time because they support our vision and wanted to move the FinTech ecosystem forward.

We would also like to highlight the support of the interviewees who trusted us by sharing their views and expert knowledge with us. By providing us with solid quantitative and quantitative data and insights, they created the basis and the heart of our research. Thank you for your support!

FOREWORD

HE Rasheed Al Maraj

Governor of Central Bank of Bahrain

Since its establishment on the 6th of September 2006, the Central Bank of Bahrain has continuously played an active role in the market to maintain and further develop the prestige of Bahrain's financial services industry. Presently, Bahrain is home to approximately 400 financial institutions and a workforce of over 14,000 individuals highlighting the strength of the country's position as a financial services hub.

The rise of FinTech is a crucial ingredient to elevate the financial services industry amongst altering market demands and expectations. The Central Bank of Bahrain regularly advances its efforts to be inclusive of new developments in the financial services industry while maintaining a secure and well-regulated market. The launch of our regulatory sandbox and dedicated FinTech and Innovation Unit during 2017 are prime examples of initiatives that has nurtured and further developed Bahrain's FinTech ecosystem.

Future regulatory initiatives are also being planned out including on e-KYC utility and Digital Financial Advice. Furthermore, the Central Bank of Bahrain understands that open communication channels with the ecosystem is a necessity to ensure our regulatory approach is both progressive and supportive through key initiatives including consultations and roundtable discussions.

We are pleased to be collaborating with Bahrain FinTech Bay on the Bahrain FinTech Regulations Report 2019. The report is crucial to raise awareness on the regulators' role in building the FinTech ecosystem as well as champion achievements that have led to significant contributions.

Moving forward, the Central Bank of Bahrain is dedicated to continuing the momentum at international standards amid emerging developments. The Central Bank of Bahrain is confident in the growth of Bahrain's position as a FinTech hub through sturdy and inclusive regulations that aim to protect and develop varied ecosystem players.

Khalid Saad

Chief Executive Officer of Bahrain FinTech Bay

"Bahrain FinTech Bay is delighted to launch the first edition of the annual Bahrain Regulations Report 2019, which sheds light on the latest regulatory developments that are happening in different FinTech ecosystems globally over the past few years. As FinTech continues to evolve and shape the future direction of financial services and other industries, the role that regulations are playing is becoming increasingly important in such evolution. The report takes a closer look at six leading jurisdictions to understand the different approaches taken to develop their respective FinTech ecosystems.

A regulatory environment that is forward looking, clear, and supports rather than hinders innovation underpins the development of a thriving FinTech ecosystem and future-proofs the financial services industry. In Bahrain, the Central Bank of Bahrain (CBB) acts as the single regulatory authority governing all aspects of financial services including the development of FinTech-related regulations. Key developments by the CBB include the establishment of a dedicated FinTech and Innovation Unit, a thriving regulatory sandbox, upcoming national e-KYC utility tool, and vertical-focused regulations including on crypto-asset operator platforms, robo-advisory, and open banking.

As the pace of technological change and enablement continues to increase, Bahrain will continue to take the necessary steps to ensure that it maintains a business-friendly and innovative regulatory environment. Both Bahrain FinTech Bay and the CBB will continue to support the development of the FinTech ecosystem here in Bahrain and by extension, support regional and international jurisdictions. We hope that you will find this report insightful."

EXECUTIVE SUMMARY

REGULATIONS IN FINTECH

The emergence of FinTech has led regulatory authorities in varied jurisdictions to directly address the altered dynamics in the financial services industry. Presently, there is no universal approach to regulating FinTech as regulators are addressing FinTech developments at different paces. A common theme, however, is that regulators are playing an active role with the intention of cooperating with and supervising market players. Specifically, the report addresses the following reasons for regulators to play an active role in the FinTech ecosystem:

Enabling innovation

Regulators can establish unified regulations that focus on varied ecosystem players to ensure that existing and incoming players are operating in a common standard with low barriers to entry.

Promoting stability

Protective policies can enable consumer-friendly innovation of FinTech solutions as consumer protection has emerged as a priority for regulators in order to promote stability within the financial services industry.

Ecosystem collaboration

Regulating authorities would need to establish and maintain direct ties with ecosystem players to ensure that the legislations remain updated on emerging developments.

BAHRAIN FINTECH BAY REGULATORY DEVELOPMENT STUDY

The Bahrain FinTech Regulation Report benchmarks six leading countries to understand the state of regulations on FinTech and the common ingredients evident through the report. Specifically, the study highlights the following dynamics in progressive and supportive regulators:

International Collaboration

Based on the investigation, regulators' main approach toward international cooperation was through memorandums of understanding (MoU) to build bridges between varied ecosystems. The agreements primarily focused on data sharing and facilitating cross-border operations.

Ecosystem Engagement

Ecosystem engagement gauges the level of direct impact and interest of regulators with ecosystem players. It was commonly found that while feedback on consultations and FinTech department engagement was highly popular amongst studied regulators, roundtable discussions with industry players were infrequent.

Regulatory Initiatives

The studied regulators adopted approximately 75% of the highlighted initiatives. While regulations on artificial intelligence are relatively new to the global market, the regulatory sandbox and alternative lending were popular initiatives across all jurisdictions.

Barriers to Entry

A common barrier to entry was the implementation of case-by-case regulations to accommodate varied FinTech players; whereas regulators were more open to cross-border regulations.

Supportive Programs

Mentorship programs were widely available across the studied jurisdictions. However, the establishment of FinTech focused co-working spaces by regulators was uncommon.

BAHRAIN AT A GLANCE

it appears that the national regulatory authority, the Central Bank of Bahrain (CBB), is on the right path as a progressive and supportive entity for the FinTech ecosystem. Bahrain develops at a competitive pace with leading regulators such as the Monetary Authority of Singapore (MAS) and the Financial Conduct Authority (FCA).

Following the launch of the country's first FinTech regulatory initiative, the regulatory sandbox, the CBB has taken an active approach toward responding to the growth of the local FinTech industry. Recent and upcoming regulatory initiatives focus on:

Global Regulatory Sandbox

Open Banking

Crypto-Asset

Crowdfunding

e-KYC Utility

Digital Financial Advice

Bahrain's strength is apparent in ecosystem engagement and regulatory initiatives. Thus highlighting the CBB's direct cooperation with industry players and reactive stance toward developing regulations to accommodate emerging trends in the ecosystem. Although the CBB has minimal initiatives for the investigated supportive programs, its partnership with Bahrain FinTech Bay gives FinTechs direct access to additional supportive programs, such as a co-working space and accelerating program.

PATH FORWARD

Moving ahead, Bahrain FinTech Bay aspires for global regulatory authorities to refer to the 2019 Bahrain FinTech Regulations Report as a reference point to further develop its capacity and reach amid ongoing developments in the FinTech ecosystem. Primary recommendations provided in the report focus on:

- Increasing international collaboration and eliminating barriers to entry through cross-border regulations
- Implementing emerging vertical-focused regulations such as artificial intelligence and RegTech
- Considering case-by-case assessments for existing and incoming regulations
- Ensuring the provision of direct and indirect supportive programs for FinTechs

METHODOLOGY

The purpose of the report is to identify global trends in FinTech regulations and analyze Bahrain's current position amongst existing regulatory players. The report utilizes a case-by-case approach to views about FinTech regulations in Bahrain through global case studies for benchmarking purposes. In an attempt to allow a wider range of an audience to understand the report; a list of key words are also defined and included for reference in the appendix.

Case studies were implemented to adopt an empirical approach toward investigating the current landscape of regulatory authorities. The case studies were conducted with the intention of generating a theory on the emerging FinTech trends adopted by global regulatory players. Countries were chosen on the basis of the most active regulatory hubs within each region.

The identification was justified through the extraction of cases from the Global Financial Innovation Network, which represented a global regulatory stance toward FinTech development.[1] Additionally, with the inclusion of Bahrain in the network, the selection of countries provides a unique opportunity to analyze Bahrain among its counterparts.

A single case was identified for each available region to control the number of countries that were analyzed while maintaining an investigation of diverse cases and the countries selected were identified as leading examples of regulatory authorities that have produced a high number of initiatives with tangible outcomes.

Once the countries were identified, individual reports were constructed to ultimately draw multiple-case conclusions on key activities that are on the rise and could elevate emerging FinTech hubs through a strengthened regulatory foundation.

Through the collection of such data, the report was then able to provide an analysis on Bahrain's position. Bahrain's position was identified among its global peers to highlight both strengths and opportunities that could elevate its regulatory environment for the FinTech industry in the upcoming years.

Moving forward, recommendations were included to suggest methods Bahrain could adopt to further elevate its regulatory environment in the upcoming years.

COMPONENTS OF A PROGRESSIVE REGULATOR

International Collaboration

Regulators' interaction with external entities through agreements

Ecosystem Engagement

Regulators' initiatives that focuses on the FinTech ecosystem

Regulatory Initiatives

FinTech-specific regulations introduced by regulators

COMPONENTS OF A SUPPORTIVE REGULATOR

Barrier to Entry

Actions that could prevent barriers to entry for FinTechs to operate

Supporting Programs

Programs initiated by regulators to support FinTechs

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REGULATORY LANDSCAPE

REGULATORY LANDSCAPE

1.1 OVERVIEW

As the financial services industry undergoes a transformation with a wave of innovative solutions emerging in the industry, regulatory authorities in varied ecosystems are proving to play a crucial role in shaping the fundamental entry and retention of FinTech solutions.

Regulating such innovative solutions that are playing a prominent role in the financial services industry is a complex task as new business models emerge. Therefore, effective and tailor-made regulations are crucial as regulators can issue constructive policies to address innovation development in the industry and various stakeholders. However, there still remains a growing need for regulatory reforms to be frequently updated in order to accommodate a rapidly growing financial services industry.

Presently, FinTechs have the option of collaborating with traditional financial service providers in order to operate under existing licenses of traditional financial institutions. While this method is highly beneficial for both parties, there are standalone FinTechs that find it difficult to collaborate with established licensees in the financial services industry. Standalone FinTechs should be able to experiment with their innovative solutions and expand their consumer outreach globally through regulatory support in the delivery of financial services. Additionally, emerging FinTech regulations should be uniformed and harmonized amongst varied stakeholders to ensure that both FinTechs and traditional financial institutions are aligning with the established standards.

The emergence of the FinTech ecosystem led to opportunities and benefits for the financial services industry, FinTechs, and regulatory regimes for the selected countries that are emerging as FinTech hubs. As a result, the following section provides a brief overview from all perspectives, as how regulations and FinTechs impact each other.

FINANCIAL INSTITUTIONS

REGULATORS

FINTECHS

1.2 WHY ARE REGULATIONS IMPORTANT FOR FINANCIAL SERVICES?

Regulations play a key role in shaping the impact of FinTechs in the financial services industry with the need to maintain a balance between innovation, adaptability, and stability to further contribute to the growth of the FinTech industry. Over-regulating could suppress innovation; whereas lack of regulations could lead to ambiguity and missed opportunities of attracting FinTechs.

Following the 2008 financial crisis, the financial services industry faced further regulations, increasing transparency, and placing greater focus on consumer protection as a common objective. The introduction of new technologies in the financial services industry is reaffirming a need to ensure that consumers are protected in key areas including the provision of accurate information and data protection. As a regulating authority, it is paramount to place protective legislations such as anti-money laundering, data protection policies, cybersecurity, countering financing of terrorism, and solid know-your-customer (KYC) policies, while maintaining a balance between stability and flexibility.

However, regulations could restrict the capacity of existing and incoming FinTechs to operate and ultimately compete with traditional and larger financial institutions. For instance, high capital requirements would more likely deter incoming FinTechs over established financial institutions.

Ultimately, the growth of the FinTech ecosystem requires supportive regulations that can establish unified standards among market players. Through constant interaction between varied players of the FinTech ecosystem, regulators can broaden their scope of understanding and establish a solid and effective regulatory framework.

Therefore, it is crucial for regulators to identify the barriers to entry and opportunities for FinTechs to successfully operate in the country. As regulatory entities emerge in global FinTech ecosystems, regulators are required to ensure that it maintains a balance in supporting varied actors including consumers and FinTechs alike.

1.3 WHY IS FINTECH IMPORTANT FOR REGULATORY COMPLIANCE?

As FinTech alters the basic functions of varied financial services, it is reasonable for technology to play its inevitable role to perform regulatory checks efficiently and effectively in cost, time, and performance. The amalgamation of regulations and technology is referred to as RegTech. Underlying technologies such as artificial intelligence, big data, robotics process automation, cloud computing, distributed ledger technology, and cryptography are now used to build simplified and efficient RegTech solutions to manage risk and compliance. The use of RegTech can be applied into different operations including:

Regulatory reporting

Through the use of big data analytics, the automation of data distribution and integration of regulatory requirements becomes easier to make real-time reporting of accurate data

Risk management

Assessing risk exposure can be implemented by efficiently managing data generation, aggregation, and distribution through key solutions including artificial intelligence, machine learning, and data analytics

Identity management and control

KYC, due diligence, anti-money laundering (AML), and fraud detection are areas of focus for identity and access management, which is crucial to identify data gathering and transactional data processing with the digitization of customer on-board

Compliance

Solutions can identify and track regulatory requirements to ensure organizations are compliant by embedding the regulatory requirements into the ICT protocols of the system

Transaction monitoring

Auditing real-time transactions for fraud detection and ensuring compliance across varied operations[2]

Ultimately, RegTech solutions add value to existing and incoming regulations by bringing in agility, speed, integration, and analytics as it enables real-time regulation management and automates the process.

The effective implementation of regulations for the FinTech ecosystem can both promote the growth of varied industry players as well as protect their interests, especially in regards to consumers. The significance of regulations for the financial services industry as well as the role that FinTech plays in regulatory compliance highlights the opportunity for FinTechs and regulators to coexist and support each other amid the rise of innovative technological solutions.

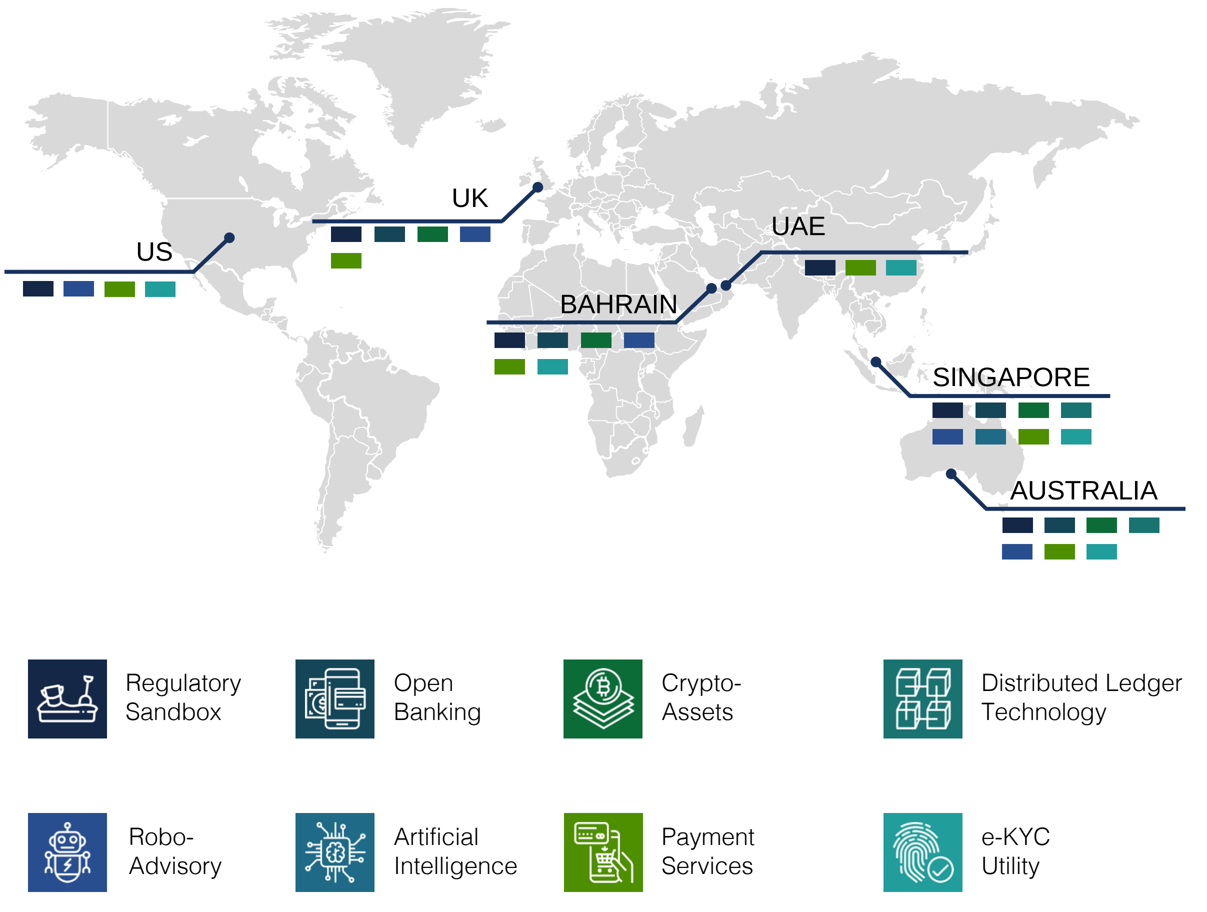
2

GLOBAL FINTECH REGULATIONS

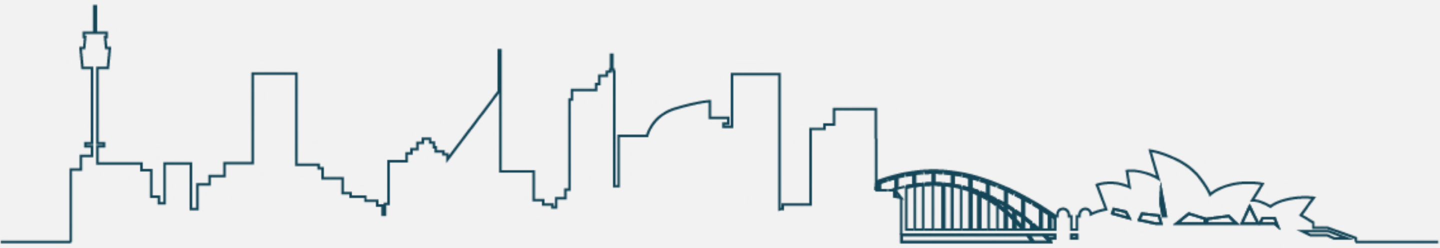
FINTECH REGULATORY LANDSCAPE

2.1 GLOBAL FINTECH REGULATIONS

The FinTech regulatory landscape section will explore five countries from different regions to identify and analyze FinTech regulatory initiatives within each jurisdiction and their contribution toward fostering the respective local FinTech industry. The country selection was based on the Global Financial Innovation Network (GFIN).[3] The selection criteria was focused on the network due to its representation of FinTech hubs that are active globally in regards to the discussion on regulating the industry.



The benchmarking exercise helps shape the standard that is common among leading regulatory authorities in regards to FinTech solutions. Above is a breakdown of the regulator(s) for each jurisdiction as well as an overview of their regulatory initiatives.



AUSTRALIA

Number of FinTechs[4] **500+**

Capital Invested[4] **$25 billion**

Top FinTech Verticals **Payments, WealthTech, and RegTech**

REGULATING AUTHORITIES OF AUSTRALIA

During March 2015, Australian Securities and Investment Commission (ASIC) established an “Innovation Hub” that fosters innovation and helps Australian FinTech startups to navigate the local regulatory system. Through the Innovation Hub, FinTech startups are given access to informal advice from ASIC on the licensing process and regulatory concerns in setting up and deploying innovative FinTech solutions. The current focus of ASIC is on marketplace lending, crowdfunding, robo-advisory, payments, and blockchain technology. The primary role of the Innovation Hub is to;

- Host and attend industry events as a means of engaging with the FinTech ecosystem
- Facilitate companies to develop innovative business models and provide a designated point of contact to provide ongoing support
- Provide key information through its website
- Oversee the Digital Finance Advisory Panel to regularly consult with FinTech experts
- Meet regularly with international counterparts to discuss innovation developments and policy proposals

The Innovation Hub also places a focus on RegTech firms in its primary responsibilities. ASIC established a RegTech Liaison Forum, which invites interested parties in the ecosystem to meet on a quarterly basis to discuss RegTech developments as well as opportunities to further improve the financial services industry.

Furthermore, ASIC signed with several global regulators to further establish FinTech relations and encourage transfer of knowledge with countries including US, UK, Hong Kong, Indonesia, Luxembourg, New Zealand, UAE (Dubai), and Kenya, as well as multi-lateral networks such as GFIN.

REGULATORY INITIATIVES

REGULATORY SANDBOX

During 2016, ASIC launched a FinTech test-bed allowing FinTechs to test their solution within a period of 12 months. However, ASIC is currently working on a new draft of sandbox regulations to allow a wider range of FinTech solutions to be tested for a longer period of time.[5] ASIC placed a strict eligibility criteria for the types of products and/or services that can enter the sandbox as the applicant must have no more than 100 retail clients and a maximum total customer exposure of $5 million. Key types of firms including marketplace lending operators are not eligible to enter the sandbox.[6]

ALTERNATIVE LENDING

ASIC permits the operation of marketplace lending in Australia including peer-to-peer lending. This involves the need for an Australian Financial Services (AFS) license, and an Australian credit license if the loans made through the platform are consumer loans. ASIC has a case-by-case approach for marketplace lenders to relax the requirements to comply with the requirements of the Corporations Act or National Credit Act and Code.[7] In addition, securities-based crowdfunding in Australia is currently developing to become internationally competitive. ASIC updated regulations to allow for greater inclusivity for all players in the crowdfunding market. For instance, only publicly unlisted companies were eligible to crowdsource funds in the laws that were first passed in May 2017; whereas now private companies are also deemed eligible with the updated regulations launched in September 2018.[8]

CRYPTO-ASSET

ASIC issued a guide for the appropriate use of ICO and crypto-assets in Australia. Currently, over 10% of the FinTechs in Australia are dealing in crypto-assets and the guide highlights best practices for the use of crypto-assets. Thus, implying the freedom of operating in crypto-related activities.[9]

OPEN BANKING

Nearing the end of 2018, ASIC announced the development of an open banking regime in Australia. It is expected that major Australian banks will adopt open banking to make data available for consumers on credit/debit card, deposits, and transaction accounts by July 2019. By next year in 2020, all major banks are expected to make available mortgage accounts of consumers, and recommended products by Farrell Review. As the major banks adopt the open banking services, all remaining banks are expected to join by 2021.[10] It is expected that other financial institutions will implement open banking regime following the implementation by major banks. This initiative by ASIC is part of the Customer Data Right regulations granting greater access to consumer data.[11]

ROBO-ADVISORY

In Australia, any entity providing financial advice of any sort is required to obtain an Australian Financial Services (AFS) license allowing them to provide financial services. The laws of traditional financial advice are presently applicable to digital advice.[12] Following the launch of the regulations; two of Australia's largest financial institution, Commonwealth Bank of Australia and Colonial First State, announced plans to launch a robo-advisor service to advise high net worth consumers on asset management.[13]

CLOUD COMPUTING

Australia launched the Secure Cloud Strategy during 2017 following private and public sector discussions. Key initiatives include government agencies implementing tailor-made cloud strategies based on internal capacities as the strategy acknowledges that each entity needs to produce tailor-made cloud models and service readiness assessments. Additionally, the strategy requires the creation of a cloud knowledge collaboration platform to raise awareness and promote data sharing on key components including cloud service assessments and technical blueprints.[14]

E-KYC UTILITY

The Digital Transformation Agency (DTA) developed a digital identity program called Govpass. ASIC issued the Trusted Digital Identity Framework (TDIF) that highlights a set of rules and standards to strengthen the security and accessibility of the system. The application to be used for the program is myGovID that will be run by the Australian Taxation Office. A gateway (Identity Exchange) for the exchange of information between the government service and digital providers will be created for a centralized digital identity solution.[15]

DISTRIBUTED LEDGER TECHNOLOGY

ASIC established regulations for the use of DLT. The obligations to use DLT services include the need for expert human and technological resources to manage the technology, as well as risk management components. ASIC evaluates incoming DLT operators on a case-by-case basis to develop regulations to be inclusive and supportive of technology.[16]

PAYMENT SERVICES

Payments that are not implemented through the physical delivery of cash are regulated in Australia as 'non-cash payment (NCP) facilities'. Exceptions to the license include loyalty schemes and transaction plans that are one-off.[17] Additionally, ASIC also launched the ePayments Code during 2011 as a means to oversee electronic payment transactions that include online payments, mobile banking, and credit card transactions.[18] Key terms of the ePayments Code include for licensees to provide clear terms and conditions to consumers and a framework for recovering mistaken internet payments.[18]

OUTCOME

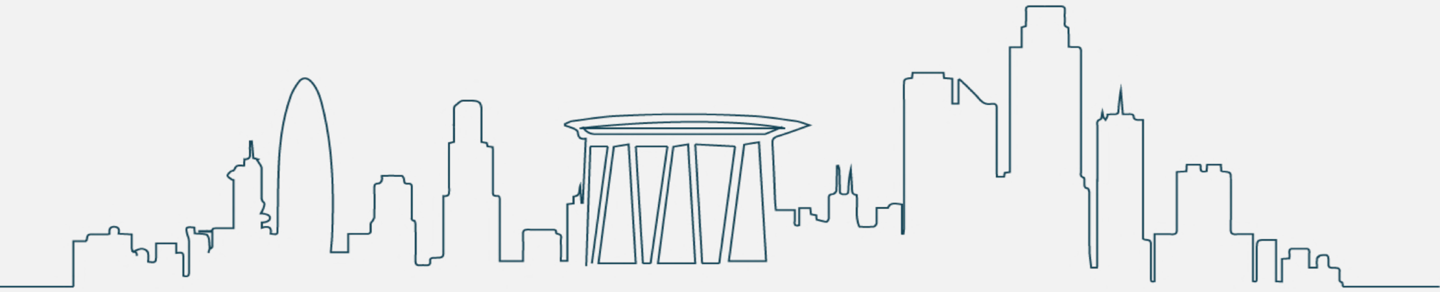
- Australia collaborates with key leading regulators, thus it is recommended that ASIC further expands its network of associations to be inclusive of other regions allowing opportunities such as expanding the global reach of FinTechs.

- The ASIC also established forums and committees to connect with external regulatory bodies to develop policies. In addition, Australia is supportive of the emerging technologies as it provides guides for FinTechs to consult.

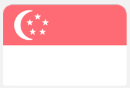
- Australia covered various verticals within the ecosystem to provide regulations for key stakeholders ranging from payment services, to blockchain, and open banking.

- However, ASIC can also be perceived as restrictive as it currently has a limited selection of Fintech verticals that can be approved under its regulations thus increasing the barriers to entry for Fintechs willing to operate in Australia.

- Furthermore, there is high potential to include further supportive programs to elevate its position moving forward as a leading regulatory regime for FinTech.



SINGAPORE



Number of FinTechs[19]	**420+**
Capital Invested[19]	**$30 billion**
Top FinTech Verticals	**WealthTech, Payments, and Blockchain**

REGULATING AUTHORITIES OF SINGAPORE

Established in January 1971 by the Parliament of Singapore, Monetary Authority of Singapore (MAS) regulates the financial services industry and is presently identified as the central bank of Singapore.[20] Being the sole regulator of the financial services industry in Singapore, MAS is agile and efficient in issuing FinTech regulations as apparent in its latest operations.

MAS established a Smart Financial Centre to integrate technology within the financial services industry thus allowing for greater collaboration, efficiency, and transparency. As part of the vision to have a Smart Financial Centre, MAS and the National Research Foundation (NRF) launched the FinTech Office in early May 2016.[21] The FinTech office is an all-inclusive virtual entity for all FinTech-related operations. With their core mission to promote Singapore as a FinTech hub and enable MAS to foster the Smart Financial Centre, the FinTech office enables greater collaboration amongst government bodies in Singapore. Their primary objectives focuses on FinTech funding schemes across government entities, the industry's infrastructure and talent development, competitiveness in the market, and Singapore's reputation as a leading FinTech hub.

Since the development of the Smart Financial Centre, several initiatives were launched under MAS's direction to be innovative and at the forefront of FinTech;

- Financial Sector Technology and Innovation (FSTI) - Proof of Concept (POC): The objective of this scheme is to promote the testing of innovative solutions within the financial services industry and accelerate the development of emerging technologies in the provision of financial services. MAS provides funding capabilities through this program for up to $148,027 for a period of 18 months to Singaporean financial institutions, technology firms, or solution providers working with Singaporean financial institutions.

- FinTech and Innovation Group (FTIG): As a subsidiary of MAS, the FTIG is responsible for regulatory and developmental policies to aid in the technological use of financial services.[22] The branches under FTIG are; (a) Payments and Technology Solutions Office that formulates regulatory policies and develops strategies for simple, swift, and secure payments and other FinTech solutions (b) Technology Infrastructure Office that is responsible for regulatory policies and strategies to develop an enabling infrastructures in areas such as cloud computing, big data, and distributed ledgers (c) Technology Innovation Lab that sources innovative technologies applicable to financial services to test-bed innovative new solutions.

- International Technology Advisory Panel: The panel advises MAS on international developments in FinTech and ways in which Singapore can harness new technologies to enhance the provision of financial services solutions.

- FinTech Innovation Lab - Looking Glass @ MAS: The purpose of the innovation lab is to experiment FinTech solutions, facilitate consultation for FinTechs by industry experts, and provide a location for the FinTech community to train and network.

- **MAS Talent Program:** In partnership with five local polytechnics, the MAS Talent Program will review and enhance the curricula to equip graduates with the skill-sets necessary for FinTech-related jobs.

- **Lattice80:** The world's largest FinTech Hub aims to offer FinTechs with the opportunity to tap into the available network and resources to develop and expand their FinTech solutions internationally.

- **International Collaboration:** MAS signed MoUs with 23 countries, out of which 18 of the agreements were based on FinTech-related initiatives. These countries include: Australia, Bahrain, Brunei, Denmark, France, Hong Kong, India, Indonesia, Japan, Lithuania, Malaysia, Poland, South Korea, Switzerland, Thailand, UAE, UK, and US.

REGULATORY INITIATIVES

REGULATORY SANDBOX

MAS issued regulatory sandbox guidelines during November 2016 and a consultation paper for the "Sandbox Express" two years later on November 2018. The Sandbox Express provides fast-track approval to sandbox applicants enabling FinTechs to embark on experiments without having to wait for the application and approval process. The Sandbox Express is generally applicable for low-risk activities that have a specific predefined sandbox guideline. A predefined sandbox will have a set criteria in place beforehand; thus, allowing quicker acceptance of applications. Some of the FinTech solutions with pre-defined sandboxes are; insurance broking, recognized market operators, and remittance businesses.[23]

ALTERNATIVE LENDING

Singapore introduced crowdfunding regulations back in 2015 for securities-based crowdfunding. During mid-2016, MAS improved SME and startups' access to funds by lowering the base capital requirement from approximately $184,759 to $36,951, eliminating the MAS security deposit requirement of $73,903 and changing the minimum operational risk requirement from $73,903 to $36,951.[24] In addition, offerors of securities may offer up to $3.7 million with a 12-month period with a prospectus. These modifications are applicable to accredited and institutional investors who do not deal with customer assets. MAS also simplified the investor's pre-qualification requirements for their risk tolerance, financial competence, and investment objectives.[25]

CRYPTO-ASSET

MAS has taken a friendly approach to crypto-assets as they currently do not regulate cryptocurrencies but have issued a guideline for its use. Despite not being regulated, MAS requires all forms of digital currencies to comply with Anti-Money Laundering (AML) and Combating the Financing of Terrorism (CFT) laws. Cryptocurrencies in Singapore are treated as a commodity and cannot be accepted as a legal tender. The types of digital tokens that MAS acknowledges are security tokens, digital currencies, asset-backed tokens, and utility tokens.[26] Utility tokens are not regulated by MAS unless the token is considered to be a security or other regulated financial product under the Securities and Futures Act (SFA).[27] Recently, during November 2018, the proposed payment services regulation bill in Singapore included the regulation of different payment services such as cryptocurrencies. The proposed bill will require cryptocurrency exchanges to hold a license based on their activity.

OPEN BANKING

Singapore has high level of banking digitization and therefore, MAS and the Association of Banks in Singapore (ABS) developed a playbook for the use of APIs in Singapore.[28] MAS has been laying out progressive guidelines for the use of APIs within the financial services industry. With an organic approach to APIs, MAS encourages banks to implement APIs for their services, rather than enforce it; thus, open banking is regulated by a non-mandatory governance framework. As per global consultancy firm Accenture, one-third of commercial banks customers in Singapore were open to the idea of trying open banking platforms in 2018.[29] However, MAS requires a different API for each service a bank offers. While this detail allows for greater consumer protection, it results in lagging innovation. To monitor the developments of APIs, MAS created the Financial Industry API register that lists out APIs under different categories:

- **Product APIs:** provides information on financial product details, rates, and branch/ATM locations
- **Sales and Marketing APIs:** product sign-ups, sales/cross-sales, and leads generation
- **Servicing APIs:** manages consumer profile/account details and customer queries/feedback
- **Transaction APIs:** supports consumer instructions for payments, funds transfers, settlements, clearing, trade confirmations, and trading
- **Other APIs:** common services include authentication, authorization, reporting, market data, and compliance

ROBO-ADVISORY

During October 2018, MAS launched a guideline on digital advisory services (robo-advisory). Among the guidelines, robo-advisors are now exempt from the Financial Advisers Act that requires firms to collect the full suite of information from consumers including income and financial commitments. Additionally, robo-advisors can now transfer trade orders from consumers to brokerage firms without the need to apply for a capital markets service license.[30]

CLOUD COMPUTING

MAS acknowledges the benefits that cloud services can bring to an economy such as scalability and efficiency. With the hopes of greater adoption of cloud services in the country, MAS introduced guidelines during October 2018 for the use of cloud computing platforms. With a great emphasis on safeguarding consumer information and outsourcing risk management, MAS recently updated their cloud computing policies. MAS classifies cloud computing as a service within outsourcing and therefore all financial institutions utilizing a cloud computing platform must be in compliance with the guidelines on outsourcing service providers.[31] Currently, cloud computing technology in Singapore is on the rise as the Singaporean government planned to migrate their databanks onto a commercial cloud to provide quicker services to citizens.[32]

E-KYC UTILITY

MAS is conducting a trial on national KYC utility for the financial services industry. In collaboration with MyInfo, the Ministry of Finance and GovTech, MAS tested the operation of the utility with two Singaporean banks in the first quarter of 2017. MyInfo stores government-verified personal information. The pilot test with several banks overtime resulted in 80% reduced application processing time.[33]

DISTRIBUTED LEDGER TECHNOLOGY

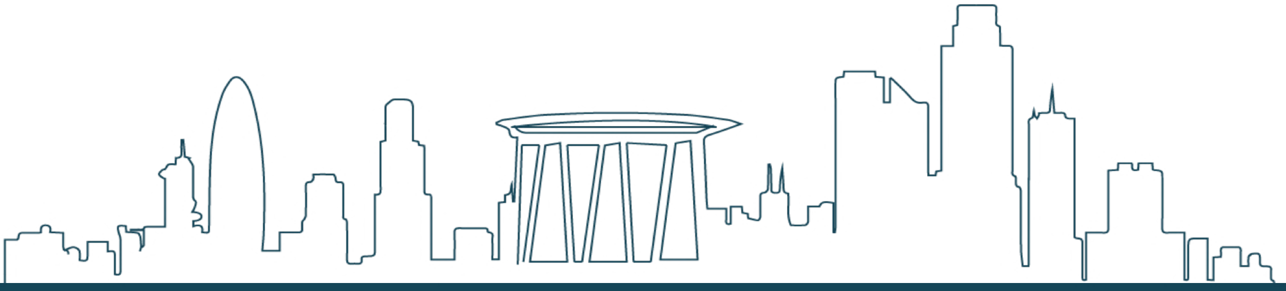
The payment system in Singapore remains progressive as MAS is currently working on Project Ubin; a collaborative effort with the industry to explore the various uses of distributed ledger technology (blockchain) for the clearing and settlement of payments and securities. The project aims to develop new methods to conduct cross-border payments using a central digital currency.[34] Presently, Singapore's largest telecommunications provider, Singtel, launched the first cross-border mobile payment service in the region called Via. This is currently in partnership with Thai digital bank Kasikornbank, further extending to include partners such as the Ping An eWallet in China, Airtel in India, and Globe in the Philippines, among others.[35]

PAYMENT SERVICES

Recently in January 2019, Singapore issued the Payment Services Act that considers digital payments and addresses anti-money laundering, terrorism financing, and cyber risks. This act replaces the previously issued regulations (Payment Systems Act and Money-changing and Remittance Business Act) to create a single legislation with regards to payment services. The regulations for payment services are tailored to different functions of FinTech including opening an account, money transfer, and issuing electronic currency. The act highlights the limit on the amount of e-money to be held (no more than $3,700) in the mobile wallets and the amount transferred to another entity other than the user's personal bank account (no more than $22,202/annum).[36]

ARTIFICIAL INTELLIGENCE

MAS launched guiding principles to promote fairness, ethics, accountability, and transparency (FEAT) for artificial intelligence. With the need for better data management and ICT solutions, these principles enable greater technological adoption to manage risk.



OUTCOME

- By securing several FinTech-related MoUs, MAS has signaled a high level of collaboration with external entities to further develop their FinTech ecosystem through data sharing and cross-border operations across varied regions.

- MAS encourages feedback for open consultation papers and regularly adopts amendments to existing regulations in place for the financial services industry. Moving forward, it is highly recommended that Singapore maintains close ties with industry players and subsequently update its existing initiatives to accommodate ongoing market developments.

- MAS has been supportive of the FinTech activity taking place within the ecosystem by focusing on various verticals within the ecosystem. Moreover, by issuing guides on FinTech-related operations, MAS provides a set of rules to follow that are not mandatory therefore encouraging for greater innovation in product development.

- Being the sole regulator in Singapore, MAS has implemented consistent regulations throughout Singapore. Additionally, MAS's membership in GFIN supports cross-border regulations.

- MAS excels in providing supportive programs and is recommended to ensure that the FinTech ecosystem maintains its access to key resources.

UAE

Number of FinTechs[37] **110+**

Capital Invested[37] **$6.1 bn**

Top FinTech Verticals[38] **Payments, alternative lending, and WealthTech**

REGULATING AUTHORITIES OF UNITED ARAB EMIRATES (UAE)

Active regulatory authorities that focus on FinTech activities include three primary cases that are apparent in the UAE. Firstly, the Dubai Financial Services Authority (DFSA) is the regulatory vehicle of Dubai International Financial Centre (DIFC), which was launched as an economic free zone during 2004. As a regulatory agency, DFSA's primary objectives focus on policy making, authorization and supervision of firms, enforcement of regulations, and international cooperation.[39]

Secondly, the Abu Dhabi Global Market was also launched as an economic free zone during 2013. Similar to DIFC, ADGM's regulatory environment is overseen by a regulatory agency called Financial Services Regulatory Authority (FSRA). The entity's guiding principles include global and domestic cooperation, the production of an internationally recognized regulatory framework, and safeguarding the interests of consumers.[40]

Thirdly, the Central Bank of the UAE is an onshore case of a regulatory authority in the UAE. The Central Bank of the UAE was established in the 1980s with the clear objective to maintain and promote stability while overseeing the management of its foreign reserves.[41]

Regulatory authorities focused on FinTech in the UAE play an active role in establishing global ties as a means to strengthen its regulations. In August 2018, DFSA and MAS secured an agreement to allow their innovation teams to cooperate as a means to support the growth of the FinTech industry both in their jurisdictions and globally.[42] DFSA also entered an agreement with the Hong Kong Securities and Futures Commission (SFC) to cooperate on FinTech developments in regards to data sharing and the referral of FinTechs in each of their jurisdictions.[43] The initiatives align with the DFSA and ADGM's inclusion in the Global Financial Innovation Network (GFIN) that initially represented 11 additional financial regulators including MAS. Additional international cooperation between ADGM and/or DFSA include with regulators in Japan, Australia, Malaysia, UK, China, and Bahrain.[44]

REGULATORY INITIATIVES

REGULATORY SANDBOX

During May 2017, DFSA launched an "Innovation Testing License" for FinTechs allowing such firms to test their concepts within DIFC's territory.[45] The FinTechs are adopted into cohorts with seven firms recently being accepted in January 2019.[46] Similarly, the FSRA launched "RegLab" as one of the pioneering licensing framework for FinTechs in the region.[47] The initiative also accepts FinTechs in batches and currently adopted three cohorts with a total of 26 international and local firms.[48] FinTechs are provided two years to test their innovative concepts and will graduate as a licensed firm in ADGM's offshore territory.[49] ADGM also partnered with ASEAN Financial Innovation Network (AFIN) in November 2018 to launch the first pilot stage of a cross-border digital sandbox that can operate between both hubs.[50]

ALTERNATIVE LENDING

During 31 January 2017, DFSA launched draft regulations on loan-based crowdfunding.[51] The entity accepted two rounds of feedback in February 2018 from the public for two separate series of the framework. The second paper in the series was launched during February 2017 and focused on investment-based crowdfunding.[52] Additionally, DFSA launched P2P lending regulations on 1 August 2017 following the regulation of Beehive as the first P2P platform in the region.[53]

CRYPTO-ASSET

During June 2018, FSRA also launched a regulatory framework for crypto-asset related initiatives including exchanges. The framework was a result of consultation with local and global industry players. FSRA was the first regulating authority in UAE to issue guidance and regulations on the activities relating to crypto-assets. Under the Financial Services and Market Regulations, FSRA issued a guidance on the regulation of ICO and virtual currencies. This initiative was pushed by the UAE Blockchain Strategy 2021 that aims to have 50% of all governmental transactions to be conducted on the blockchain network by 2021. Using the case-by-case approach, FSRA will determine the whether the crypto-asset is a coin token or commodity. In the instance it is a coin token, the crypto-asset will be subjected to the Financial Services and Market Regulations; whereas a commodity token will remain unregulated.[54]

E-KYC UTILITY

ADGM launched, during December 2018, an electronic KYC (e-KYC) plan by completing the first part of a project that helps financial institutions use innovation technologies to meet regulatory requirements. The plan utilized key technologies such as blockchain and the project includes key financial institutions including First Abu Dhabi Bank and Abu Dhabi Islamic Bank. The FSRA played an active role in the initiative through the development of a framework to regulate such technologies.[55]

PAYMENT SERVICES

During January 2017, the UAE Central Bank launched regulations on digital payments through the Regulatory Framework for Stored Values and Electronic Payment Systems mandating licenses for electronic payment services providers. Moreover, the regulations focuses on overseeing outsourcing services by licensees and security protocols for consumer protection.[56]

OUTCOME

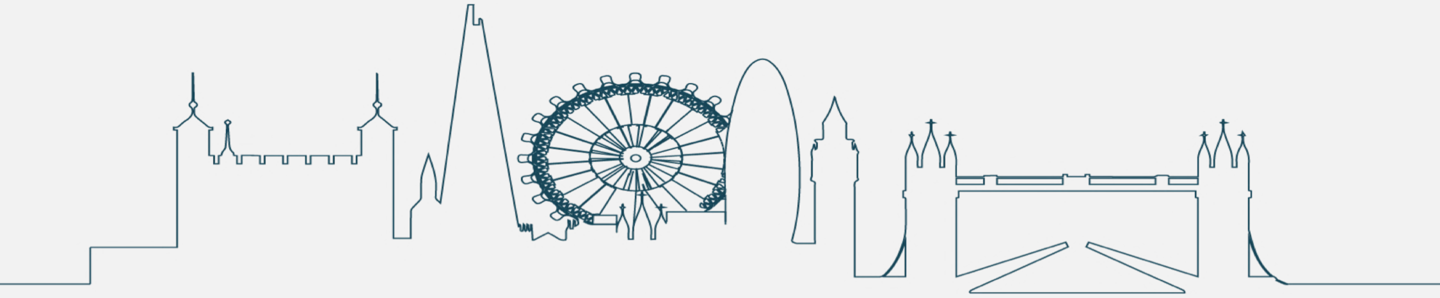
- The UAE has adopted its common approach of aligning with international counterparts to broaden its reach and capacity. Presently, the initiatives to boost international cooperation have been focused on primarily by the offshore regulators.

- The approach that the UAE adopted highlights a strength in ecosystem engagement as they have high level of interaction with industry players.

- The UAE does focus on a variety of verticals with plans to include additional initiatives in the upcoming years. For the time being, the UAE also distributed the necessary documents to guide ecosystem players around its regulations through the FinTech Regulatory Laboratory Guidance document.

- Moving forward, the UAE also needs to consistently ensure that a unified standard and understanding is adopted by both onshore and offshore regulatory authorities to prevent barriers to entry and growth for FinTechs. Additionally, future regulations should ensure that all FinTech ecosystem players are acknowledged alongside their individual capacity.

- Similar to the previous point, the UAE should ensure that supportive programs are readily available both in offshore and onshore sites in the upcoming year.



UNITED KINGDOM

Number of FinTechs[57] **2,000+**

Capital Invested[57] **$64.2 bn**

Top FinTech Verticals **Payments, InsurTech, and open banking**

REGULATING AUTHORITIES OF THE UNITED KINGDOM (UK)

The UK's FinTech environment is regulated by two main authorities: The Financial Conduct Authority (FCA) and the Bank of England's Prudential Regulation Authority (PRA). Both were established on 1 April 2013.

As a response to the rise of FinTech, the FCA launched Project Innovate in October 2014 to encourage innovation in the interests of consumers through key focus areas including knowledge transfer and an advice unit. Additionally, Project Innovate was developed to support authorization for innovative businesses. The FCA also highlighted FinTech in its 2018 business plan as a prioritized industry to maximize opportunities for consumers and firms.[58]

The UK is playing an active role with its ties to global regulators. During February 2018, the FCA proposed the concept of a global sandbox to a group of 11 global regulators to form the GFIN. Recently in January 2019, the network officially announced the acceptance of FinTech applications for the global sandbox scheme.[59] Additionally, the FCA also penned separate agreements with key players including MAS, US's Commodity Futures Trading Commission (CFTC), the Securities and Futures Commission in Hong Kong, Japan Financial Services Agency, and ASIC.[60] [61]

REGULATORY INITIATIVES

REGULATORY SANDBOX

The UK pioneered the concept of regulatory sandboxes in 2016. Since its launch, 89 firms were accepted to test their innovative products and services within four cohorts between July 2016-July 2018.[62] Specifically, the regulatory sandbox operates on two separate six-month trial period per year. In regards to applications, the FCA accepted on average 32% of submitted applications within each cohort suggesting that the selection procedure is highly competitive.[63] The FCA also highlighted that more than a third of the 89 accepted companies from the four cohorts were focused on distributed ledger technologies and/or crypto-assets.[64]

As the inventor of the regulatory sandbox, the UK also established the initial framework. The procedure for the regulatory sandbox is broken into four segments: application, authorization, testing, and exit. The application stage consists of firms submitting an application highlighting their business plan and proof of their eligibility for the regulatory sandbox. Once accepted, firms are required to complete the necessary paperwork to obtain authorization from the FCA that usually leads to the adoption of a controlled environment for testing including by restricting the number of customers and volume of transactions. Moving forward, during the testing period, firms can then test their solutions in a controlled environment for a set period of time.[65]

During the end of 2017, the FCA published a "lessons learned" report to review the success of its regulatory sandbox. Key measures of success included the breakdown of firms that successfully completed their trial period (75% of accepted firms) and the number of firms that secured investment during or after their sandbox trial period (40% of accepted firms).

The procedure highlights the FCA's focus in ensuring that it regularly monitors areas of improvement for its regulatory sandbox.[66]

During 2018, Deloitte also interviewed firms exposed to the regulatory sandbox to uncover areas that could be further improved. Specifically, common suggestions that emerged included the lack of a user-friendly guide on the FCA's terms for the regulatory sandbox and the interest among firms for the creation of stronger communication channels among participants in the regulatory sandbox.[67]

ALTERNATIVE LENDING

In order to regulate crowdfunding in the UK, the FCA uses the Financial Services and Markets Act 2000.[68] The rules were amended in 2014 in order to specifically tackle crowdfunding. The amendments to the rules were:

- Crowdfunding platforms must be authorized by the FCA beforehand
- Firms raising capital through crowdfunding platforms must publish a prospectus
- Crowdfunding platforms must provide transparent information to investors
- Retail investors who are not high net-worth need to certify that they have not invested more than 10% of their investable assets over the past 12 months and will not do so in the next 12 months[69]

CRYPTO-ASSETS

During January 2019, the FCA launched a consultation on crypto-asset regulations and is currently accepted feedback until April 2019. Within the consultation, the FCA investigates three types of crypto-assets and their eligibility to be regulated in the UK. The FCA highlights that security tokens, which are similar to traditional financial instruments including shares or debentures, falls under the perimeter of its regulations. Exchange tokens, on the other hand, are not recognized under the perimeter of its regulations. Finally, utility tokens can be deemed regulated if they are pegged to the value of a currency and enables consumers to process payments with third parties.[70]

OPEN BANKING

The UK pioneered another FinTech initiative: open banking. The UK's Open Banking regime is implemented through the CMA's Retail Banking Market Investigation Order 2017, which requires the UK's nine largest banks to provide access to consumers' banking data via a secure and authorized form.[71] The UK's nine largest banks for open banking are HSBC, Barclays, RBS, Santander, Bank of Ireland, Allied Irish Bank, Danske, Lloyds, and Nationwide. Furthermore, the Competition and Markets Authority created the Open Banking Implementation Entity (OBIE) that works with the UK's largest banks and building societies as well as challenger banks, financial technology companies, third party providers, and consumer groups. The OBIE ensures that open banking platforms are executed in a secure and regulated manner.

Additionally, the European Union Payment Service Directive (PSD2) is enabling open banking in the UK. The European Union's regulatory approach toward processing financial data of consumers is apparent in the PSD2 with a focus on third-party operators of PISPs and AISPs.

CLOUD COMPUTING

During July 2018, the FCA launched guidelines to assist firms with outsourcing third-party IT services including cloud-computing. The guidelines provides an overview for all firms besides banks and investment firms, which is a differing factor from the 2014 guidelines that focused purely on the banking sector. As a result, banks are advised to instead refer to the recommendations finalized by the European Banking Authority (EBA) during 2017.[72]

DISTRIBUTED LEDGER TECHNOLOGY

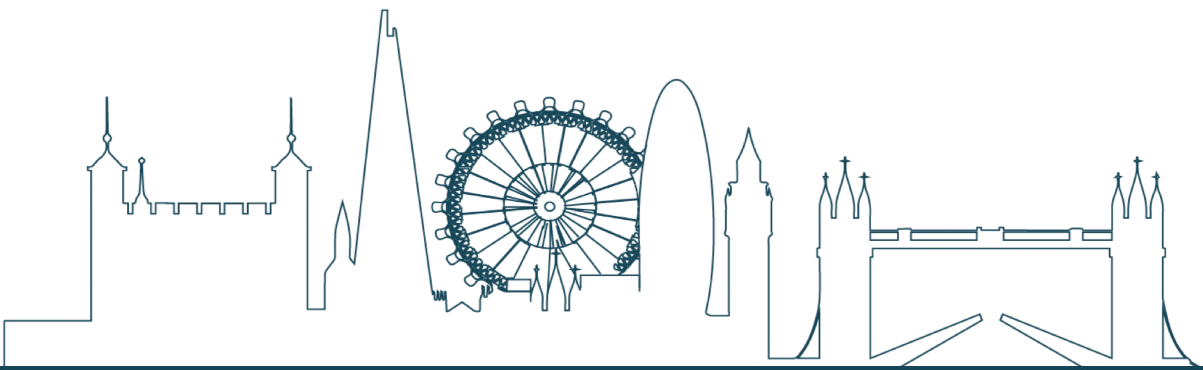
During April 2017, the FCA released a discussion paper on distributed ledger technology to assess opportunities and challenges in a regulatory perspective. Ultimately, it concluded that despite the FCA's interest in continuing its investigation on distributed ledger technology; it did not believe that the solution needed to be integrated into its existing regulatory framework. Furthermore, following the submission of feedback by December 2017, key areas of focus in the feedback summary included the use of distributed ledger technology for crypto-assets and record keeping. However, the FCA ultimately still does not believe that specific regulations need to be adopted although it will further focus its investigation based on the provided feedback.[73]

ROBO-ADVISORY

The FCA launched 2018 guidelines on automated investment services following a review of ten existing firms offering such a service. Following the investigation, the FCA outlined its expectations in regards to the provision of automated investment services under its jurisdiction. The FCA specifically calls on firms to provide clear and comprehensive information to consumers on its services and costs, undergo regular suitability assessments to ensure that recommendations are tailor-made to consumers, and enhance its awareness on the necessary governance measures that need to be implemented including stress testing of solutions.[74]

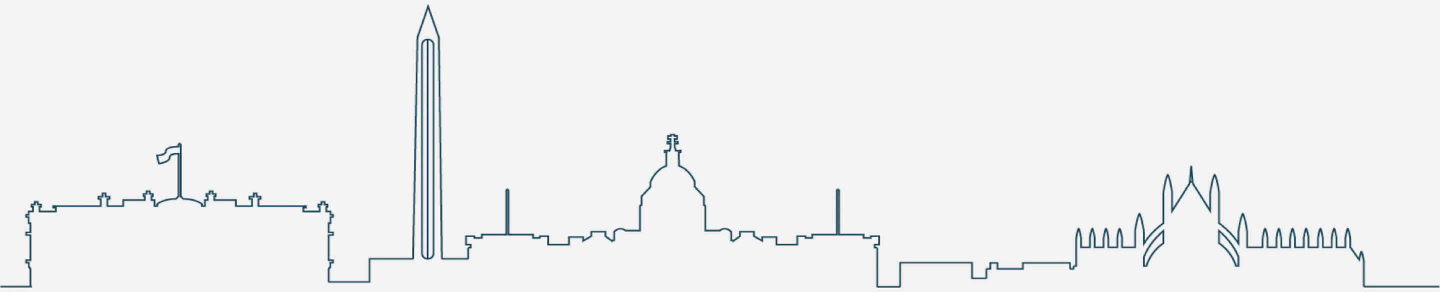
PAYMENT SERVICES

The UK's Treasury included the European Union's Revised Payment Service Directive (PSD2) into its Payment Services Regulations during July 2017. The FCA is primarily responsible for overseeing compliance on the matter.[75] A key component of the PSD2 is that it focuses on reducing barriers to entry for payment service providers (PSPs) and promotes the development of online and mobile payment platforms.[76] The PSD2 also launched on 12 January 2018 allowing financial institutions and third party payment operators to gain access to authorized data on customers through open APIs.[77] In regards to transactions, PSD2 allows customers to complete payments in a unified platform across different currencies.[78]



OUTCOME

- The UK has expanded its network through global agreements to further foster the UK's FinTech industry and engage in data sharing. Additionally, the UK is at the forefront of leading multi-lateral agreements including GFIN.
- The UK has played an active role in its engagement with the FinTech ecosystem.
- FinTech regulations have been implemented across key verticals and areas of focus that have helped advance its FinTech ecosystem as well as foster an innovative environment by pioneering new initiatives such as open banking. Moving ahead, it is recommended for the UK to remain resilient and aware of emerging technologies that are predicted to launch a wave of regulations globally such as artificial intelligence.
- With low barriers to entry, the UK is open to cross-border operations and case-by-case assessments.
- In regards to support, the UK's regulators should maintain and extend its partnership with private sector firms providing supportive programs in the country including incubation and acceleration programs focused on FinTechs.



UNITED STATES

Number of FinTechs[79]	**8,100+**
Capital Invested[79]	**$112 bn**
Top FinTech Verticals	**Payments, alternative lending, and WealthTech**

REGULATING AUTHORITIES OF THE UNITED STATES (US)

The Securities and Exchange Commission (SEC) was formed in 1934 with the main purpose of protecting investors and overseeing the financial market. During October 2018, the SEC launched its Strategic Hub for Innovation and Financial Technology (FinHub) to centralize units and resources into a dedicated department that will focus primarily on FinTech-specific operations. Main areas of responsibility include promoting collaboration and discussion between the public and the SEC on innovation solutions, thought leadership, and liaising with global regulators.[80]

The Consumer Finance Protection Bureau (CFPB), statutorily named as the Bureau of Consumer Financial Protection, was founded in 2011 with the purpose of regulating the financial services industry and supporting consumers to make better informed financial decisions. During July 2018, the CFPB launched the Office of Innovation, which is a successor of a program called “Project Catalyst”.[81]

The Financial Industry Regulatory Authority (FINRA) was established in 2007 as a successor of the National Association of Securities Dealers. During July 2018, the FINRA requested feedback in regards to shaping its operations both in regards to foster FinTech innovation in a general perspective and key specific areas of interest include supervising the use of artificial intelligence.[82] The feedback is part of FINRA’s Innovation Outreach Initiative that oversees FinTech developments. Key outcomes included guides for investors on ICOs and crowdfunding.[83]

The Commodity Futures Trading Commission (CFTC) was established in 1975 to regulate future and options market. The CFTC launched the LabCFTC during May 2017 to dedicate both personnel and non-human resources to a dedicated unit focusing on the promotion of FinTech, protection of consumers, and bridging the CFTC to FinTech stakeholders.

Finally, the Office of the Comptroller of the Currency (OCC) opened up its own Office of Innovation to support “responsible innovation”. The OCC defines responsible innovation as “the use of new or improved financial products, services, and processes to meet the evolving needs of consumers, businesses, and communities in a manner that is consistent with sound risk management and is aligned with an organization's overall business strategy”.[84] The OCC holds regular Innovation office hours to meet with banks and FinTechs across the country.

In regards to international collaboration; the CFPB entered an agreement with 11 other global regulatory authorities to form GFIN. Additionally, the CFTC penned separate agreements with key players including MAS, FCA, and ASIC.[85 86]

REGULATORY INITIATIVES

REGULATORY SANDBOX

During August 2018, the Arizona Attorney General's Office launched the country's first regulatory sandbox under Arizona's jurisdiction. Within the regulatory sandbox, companies are able to test their products for up to two years and serve as many as 10,000 customers before needing to apply for a formal license.[87] Additionally, the CFPB launched a nationwide regulatory sandbox under the Office of Innovation. This separate sandbox was launched to promote FinTech development within the country.[88] The CFPB is currently accepting feedback on its sandbox policy by February 2019.[89]

ALTERNATIVE LENDING

Securities-based crowdfunding are permitted under SEC regulations. The Jumpstart Our Business Startups Act (JOBS Act) allowed early-stage businesses to offer and sell securities. Subsequently, the SEC adopted rules titled as "Regulation Crowdfunding" to implement these policies of the JOBS Act.[90]

CLOUD COMPUTING

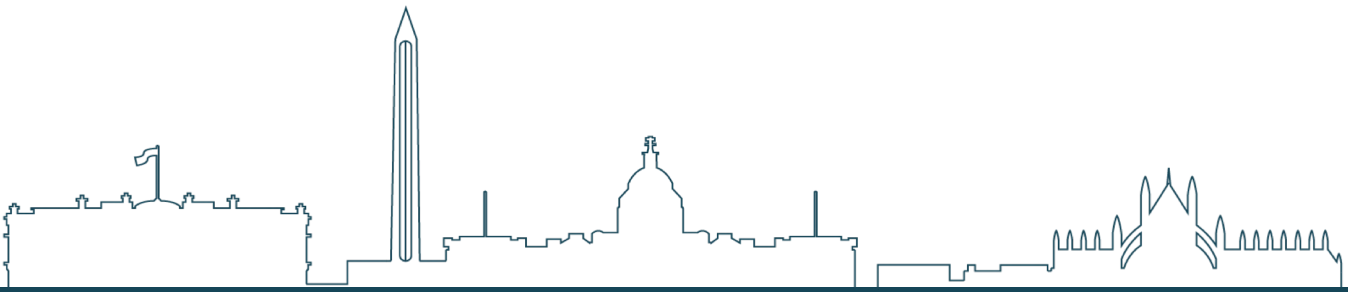
The Cloud Smart Strategy, released in October 2018, is the second version released from the Executive Office of the President's Office of Management and Budget (OMB). The first OMB release titled "Cloud First" was launched in 2011 as part of the Federal Government IT Modernization effort. The latest Cloud Smart Strategy coordinates with the General Services Administration, the Chief Information Officers Council, and the Department of Homeland Security to update the Trusted Internet Connection (TIC) Policy; a mandate that focuses on the reduction of internet gateways in the federal government's network.

ROBO-ADVISORY

The SEC launched guidelines on robo-advisory during 2017 under the Investment Advisers Act of 1940 with a focus on the provision of automated investment advice on either web-based or mobile platforms. Consumer protection is evident in the guidelines as it focuses on the need for advice to be tailor-made to individual consumers based on their financial background. Additionally, it is mandatory for licensees under the SEC guidelines to disclose consumers with clear and comprehensive details on their services and risks.[91]

PAYMENT SERVICES

The CFPB's Electronic Funds Transfer Act is an example of a US-led initiative on payment services. The regulation was amended during 25 January to accommodate key developments including the application of credit-related rules to digital wallets and its role in facilitating payment options online and via mobile platforms.[92]

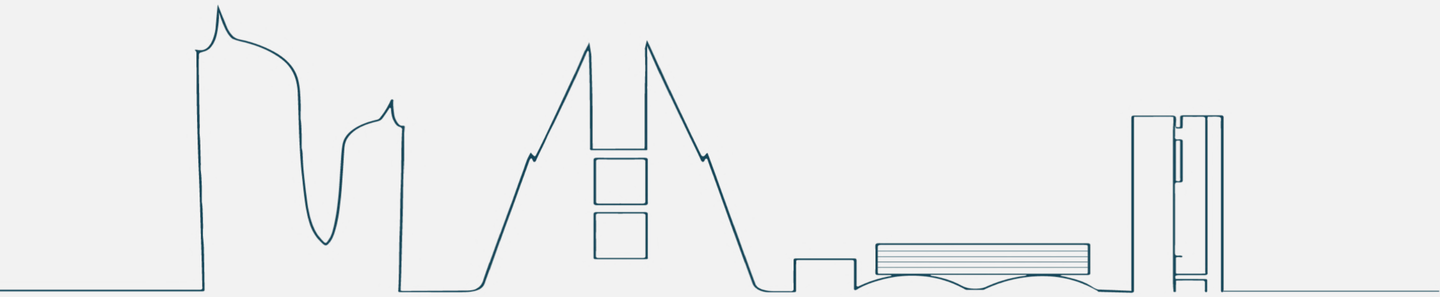


OUTCOME

- There is room for further improvement in regards to expanding the US's international network for collaboration on FinTech with key regulators.
- The US attempts to solidify its ties with ecosystem players through key initiatives including a dedicated FinTech department and ongoing discussion with industry players. Moving ahead, the US should maintain such ties.
- Presently, despite the involvement of a number of regulatory bodies; the US lacks substantial progress with key focus areas including open banking initiatives and cryptocurrency.
- Although the USA is dominant in its capacity to engage with the ecosystem, irregularity within key initiatives is apparent. It is recommended that the US further expands and finalizes its portfolio of regulatory initiatives in a consistent manner to accompany the entry of diverse FinTech players including in regards to open banking and crypto-assets.
- Development in supportive programs is also recommended following the finalization of regulatory initiatives to further maintain the stability of the local FinTech ecosystem.

3

BAHRAIN FINTECH REGULATIONS



BAHRAIN 

Number of FinTechs 70+

Capital Invested[93] $22.5 million

Top FinTech Verticals Payments, crypto-assets, and digital banking

CENTRAL BANK OF BAHRAIN (CBB)

The Central Bank of Bahrain (CBB) is the sole financial regulating authority of the Kingdom of Bahrain; regulating banking, insurance, investment business, ancillary service providers, and capital market activities. As a public corporate entity, the CBB began operations on 6 September 2006 and is responsible for maintaining and monitoring the monetary and financial stability of the economy.

As part of the CBB's plan to nurture Bahrain's FinTech ecosystem and transform the Kingdom into an advanced financial digital hub, the regulatory authority launched a dedicated department called the "FinTech and Innovation Unit" during October 2017. The department is dedicated to the development of digitizing financial services and providing best practices for services that can be accessed by individuals and corporate customers in the financial services industry. The department is responsible for approving regulatory sandbox applicants, supervising activities and operations of licensed companies, and monitoring regulatory development in the FinTech industry.[94]

2017

May 2017
Introduced regulatory sandbox

August 2017
Introduced crowdfunding regulations

October 2017
Launch of FinTech and Innovation Unit

2018

May 2018
Announced plans to launch e-KYC framework

August 2018
Collaborated with GFIN

November 2018
Issued draft regulations on open banking

2019

December 2018
Issued draft regulations on crypto-asset and finalized open banking rules

January 2019
Issued draft regulations on digital financial advice

February 2019
Initiated cross-border testing pilot for FinTechs and finalized crypto-asset rules

Further to the CBB's efforts in creating a safe and healthy regulatory environment for FinTechs in Bahrain, the CBB has grown their international outreach and network through agreements with key entities including Singapore, India, and UAE (Abu Dhabi and Dubai).

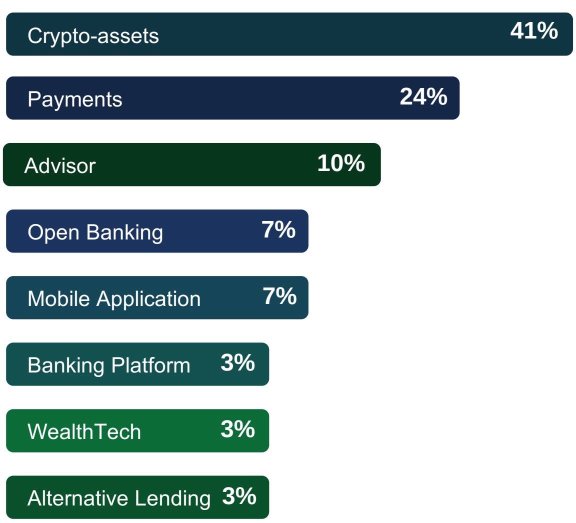
REGULATORY INITIATIVES

REGULATORY SANDBOX

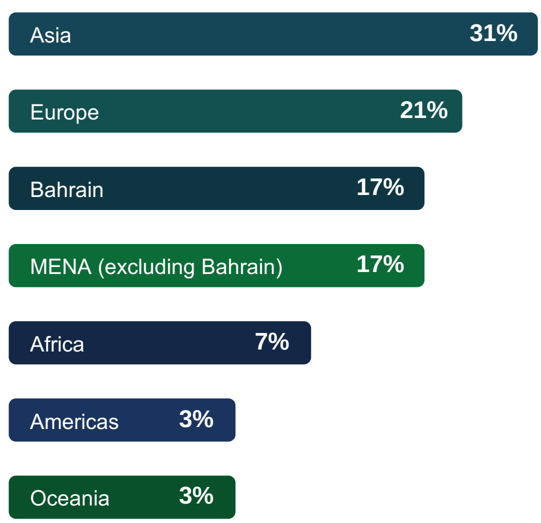
The CBB introduced the regulatory sandbox during May 2017 – the first major step toward the development of the FinTech industry in Bahrain. Bahrain's sandbox provides an opportunity to both attract global FinTechs to expand into the region and elevate Bahrain's position as a FinTech hub on a regional and global scale.

Currently, there are over 25 global and local companies in the sandbox. A majority of the applicants are from the GCC (namely Bahrain and UAE), Asia, and Europe. Crypto-assets, payments, transfers, and remittances are popular verticals in the sandbox.[95]

COMPANIES BY VERTICAL



COMPANIES BY REGION/COUNTRY



WHY DID BAHRAIN CREATE A REGULATORY SANDBOX?

Promote effective competition
A safe space to test innovative solutions enabling companies to try out new solutions that could potentially add value to their proposition and thus increase competition

Encourage financial inclusion
As FinTechs become innovative in developing their solutions, excluded consumers may be able to use those financial services as outreach becomes easier

Improve consumer experience
The applicant has the opportunity to test their solutions under various scenarios, thus enabling greater consumer experience

Embrace new technology
With the use of emerging technologies, the sandbox allows these technologies to be integrated in different applications of financial services

WHAT ARE THE KEY FEATURES OF THE REGULATORY SANDBOX IN BAHRAIN?

- The sandbox applicant will have a nine months testing period (maximum extension of three months)
- The solutions must be within the technology, telecommunication, and professional service firms
- Those with existing CBB licenses and local or foreign FinTechs can apply for the sandbox
- The CBB allows a maximum of 100 customer for the applicant to test their solutions on within a controlled environment[96]

CROWDFUNDING REGULATIONS

The CBB's crowdfunding regulation is another step toward supporting the FinTech ecosystem. Crowdfunding can play a crucial role in providing varied sources of funding. Additionally, crowdfunding regulations can promote the presence of innovative solutions that will provide investors and lenders with greater access to new opportunities to expand. Crowdfunding regulations were revised in November 2018 to make them more enabling and inclusive, adding P2B lending along to B2B lending. Presently, reward-based and donation-based crowdfunding are not regulated in Bahrain.

WHAT ARE THE KEY REQUIREMENTS OF THE CROWDFUNDING REGULATIONS IN BAHRAIN?

- The crowdfunding platform operator must be a member of the Bahrain Credit Reference Bureau with a minimum capital requirement of approximately BHD 25,000
- Equity-based crowdfunding offers in relation to real estate projects. The total amount raised must not exceed BHD 500,000 within a 12-month period, irrespective of the number of projects an equity-based crowdfunding issuer may seek during the 12-month period
- For other equity-based crowdfunding offers, the total amount raised must not exceed BHD 250,000 within a 12-month period, irrespective of the number of projects an equity-based issuer may seek during the 12-month period
- For finance-based crowdfunding platform, the total amount of credit provided must not exceed BHD 500,000 in aggregate, per borrower, in any given calendar year. The tenor of the loan must not exceed five years

CLOUD-FIRST POLICY

During 2017, Bahrain was the first in the region to adopt the international standard cloud-first policy for public sector infrastructure to migrate toward the cloud as a means of streamlining and raising the efficiency of procedures and reducing costs. By adopting the cloud-first policy, the Bahraini government facilitates the modernization of the economy for information and communication technologies (ICT) by influencing operations to be more productive, cost-effective, and secure.

Cloud adoption and utilization in Bahrain's ecosystem is anticipated to further develop in 2019 following key developments including the upcoming launch of an AWS Infrastructure Region and at least three Availability Zones (data centers).[97]

WHAT ARE THE BENEFITS OF CLOUD COMPUTING FOR BAHRAIN?

- Optimum utilization of infrastructure of public and private sector services
- Provides citizens with greater access to information through an agile and productive system
- Achieves greater transparency and accountability of government
- Reduces government ICT costs
- Increases security by using accredited platforms

MODEL LAW ON ELECTRONIC TRANSFERABLE RECORDS (MLETR)

Bahrain is the first nation to enact the Model Law on Electronic Transferable Records (MLETR), developed by the United Nations Commission on International Trade Law (UNCITRAL) for the use of electronic communications and transactions.[98] The law specifically allows the transfer of resources including documents electronically thus promoting technologies that provide such services including blockchain and smart contract solutions. Key areas of FinTech that can benefit from MLETR include InsurTech, Islamic FinTech, crypto-assets, and cross-border transactions.

CRYPTO-ASSET PLATFORM OPERATOR

Approximately 40% of applicants in the sandbox as of January 2018 are companies dealing with crypto-asset. The issuance of draft crypto-asset rules by the CBB during December 2018 is a push toward greater inclusion of crypto-assets in Bahrain. Recently in February 2019, the CBB finalized the crypto-asset regulations and updated the module to Crypto-Asset Module. The new regulations divide the type of crypto-asset services into four categories with a different minimum capital requirement for each. Each category has a different set of services that a crypto-asset operator can provide.

WHAT ARE THE KEY THEMES OF THE CRYPTO-ASSET MODULE?

Categories of crypto-asset services

Category	Crypto-Asset Service	Obligations of Licensee	Capital Requirements
Category 1	• Reception and transmission of orders • Provide investment advice in relation to accepted crypto-assets.	• Must not hold any client assets or money • Must refrain from receiving any fees or commissions from any party other than the client • Must not operate a crypto-asset exchange	BHD 25,000
Category 2	• Trading in accepted crypto-assets as agent • Portfolio Management • Crypto-asset custody • Investment advice	• May hold or control client asset money but must not deal from their own account ("dealing as principal") or operate a crypto-asset exchange	BHD 100,000
Category 3	• Trading in accepted crypto-assets as agent • Trading in accepted crypto-assets as principal • Portfolio Management • Crypto-asset custody • Investment advice	• May hold or control client assets money, may deal on their own account ("dealing as principal") but must not operate a crypto-asset exchange	BHD 200,000
Category 4	• Operate a licensed crypto-asset exchange • Crypto-asset custody service	• Must not execute client orders against proprietary capital, or engage in matched principal trading	BHD 300,000

Security

The CBB will investigate whether a specific crypto-asset has the necessary mechanisms to manage cyber security threats, implement in-built anonymization functions, and secure the safeguarding of private keys. The licensees will also need to ensure that its crypto-asset is traceable and can be monitored in regards to transactions and enables the identification of counterparts. Finally, the CBB will investigate whether the crypto-assets are linked to any form of Dark-net activities.

Crypto wallets

The CBB highlights two primary kinds of crypto wallets that the licensee can consider. Firstly, a custodial crypto wallet restricts the client from having full control of its assets as the licensee is the designated custodian of the client's private keys. A non-custodial (self-custody) crypto wallet, on the other hand, provides clients with full control of its assets. In the case of alternative types of crypto wallet, licensees are encouraged to contact the CBB. Crypto wallets also require to have multi-signature hardware solutions for its assets.

WHAT ARE THE BENEFITS OF CRYPTO-ASSET REGULATIONS IN BAHRAIN?

Attract investments

The regulation of crypto-assets operations encourages foreign investors to refer to the local market in Bahrain following the legitimization of such operations. Specifically, the adoption of regulations protects investors in an area that commonly offers limited to no form of protection due to being a relatively new solution.

Protect consumers

The inclusion of consumer protection at the forefront of the regulatory framework reduces the risk of fraud under Bahrain's jurisdiction. As a result, key areas of concern including anti-money laundering can be supervised in regards to crypto-asset operations.

OPEN BANKING

The CBB issued draft regulations on open banking in Bahrain during November 2018 thus taking the lead in introducing open banking regulations in the MENA region. Within two months, the finalized open banking regulation was published during December 2019. The initiative was a major step toward transforming the financial services industry by enabling greater transparency and inclusivity through open data. The UK conceptualized open banking with the intention of encouraging banks to offer more innovative services and solutions to their consumers. Presently, two open banking modules are included in Bahrain's consultation papers:

Account Information Service Providers (AISPs) for accessing and aggregating account information

Payment Initiation Service Providers (PISPs) for online payment services

An open banking platform allows for greater collaboration and integration amongst financial institutions and third-party service providers. Such tools enable aggregation, automation, and analytics ultimately creating opportunities for financial institutions and third-party service providers to produce innovative business models and healthy competition in the market. The factors that led to the revolution of open banking include;

Increased competition

Financial institutions were historically the sole providers of financial services, however, with the emergence of new market players offering agile, innovative, and cost-efficient FinTech solutions, the level of competition has increased. Open banking provides equal opportunities to incumbents and new FinTechs to succeed through the authorized access of consumer data; thus bringing consumers to the forefront of financial services.

Regulatory support

By promoting open API infrastructure, regulators can directly facilitate and enable innovation to better serve consumers. Consumer data that has been siloed within financial institution will now be accessible to third-party service providers who would not have had access to such datasets otherwise. Access to data will enable third parties to tailor their services based on analytics and unmet consumer expectations.

Changing consumer demands

Presently, recent market developments altered the demands and expectations of consumers interested in greater control and centralized access of their finances. Additionally, consumers expect existing financial products and services to be convenient, accessible, affordable, agile, and most importantly secure. High mobile penetration enables FinTechs to design solutions that leverage consumer behavior and habits in changing ways they conduct financial services; thus capitalizing on the opportunity to target specific markets and deliver their bespoke FinTech solutions.

The introduced regulation is directed toward open banking operators that are providers of account information and/or providers of payment initiation. Following the launch of the draft regulations, the local ecosystem welcomed the first graduate of the regulatory sandbox; the first open banking service provider in Bahrain. With the graduate's solution successfully integrated with over 11 local banks, open banking in the future will enable FinTechs to integrate and innovate more seamlessly with financial institutions.

WHAT ARE THE KEY THEMES OF THE OPEN BANKING MODULE?

Standards for authentication and communication

AISPs and PISPs must have a secure customer authentication process and overall security approach for the following three primary elements:

Knowledge
Information that is only known to the customer of the platform e.g. passwords

Possession
Something that only the customer possesses e.g. algorithm specifications

Inherence
Software or devices that read an element of the customer e.g. biometric sensor

The security measures for each element must be independent to avoid compromise especially in cases when the same device (such as a mobile phone or tablet) is used for more than one operation.

Payment transactions

Customers must consent to initiate payment transactions. The PISP may agree on payment transaction limits and stop the use of a payment instrument if it compromises the security of the payment instrument or there is suspected unauthorized or fraudulent use of the payment instrument. There is no specific amount mentioned as a limit therefore indicating it is a case-by-case situation. The AISPs and PISPs may implement fees and charges, which reasonably correspond to operational costs, but should be explicitly agreed on by both parties in the initial legal arrangements.

Security

Both AISPs and PISPs are obligated to have an annual third-party audit of their IT infrastructures to perform vulnerability assessments and penetration testing.

Technology requirements

AISPs and PIPSs must adhere to the best practices of technical standards, including for application program interfaces (APIs), electronic identification, transmission of data and web security. Technology architecture that uses "screen scarping" method must not be used. AISPs and PISPs in conjunction with licensees maintaining customer accounts shall develop an open banking API standard based on a standard adopted in a leading financial center, which should be subject to independent tests, including testing in a test environment.

UPCOMING REGULATIONS

As Bahrain has introduced several FinTech related initiatives in the past two years, the CBB has performed highly progressive by introducing three new regulations within the span of three months. Further to their agenda of developing the FinTech regulatory landscape, the following are upcoming planned regulations for Bahrain's FinTech industry.

NATIONAL E-KYC UTILITY

As financial institutions and FinTechs require modernized standards for their current KYC policy, the CBB announced intentions to introduce the national e-KYC utility that consists of adopting a paperless method of electronically verifying the identity of customers.

WHAT ARE THE BENEFITS OF E-KYC UTILITY IN BAHRAIN?

Customer protection
E-KYC regulations focus on a consent-based framework to ensure that customers are authorizing the distribution of their data

Environmental
The adoption of e-KYC regulations focuses on a paperless system thus leading to an eco-friendly and cloud-based system that is adopted both by the private and public sector

Time efficiency
E-KYC regulations eliminates the need for a middle-man to process submitted documents as the service is automated online thus converting a process that usually takes day/weeks to verify to only a few minutes

Transparency
Financial institutions and agents would need to have their records and data stored online permanently thus reducing the risk of misuse and fraud as transactions can be traced back to parties[100]

The CBB announced its intention to undertake jointly with Benefit, Information Government Authority, and the Bahrain Economic Development Board (EDB) a live e-KYC database by April 2019.[99]

DIGITAL FINANCIAL ADVICE

On 21 January 2019, the CBB announced the launch of draft rules for digital financial advice (also referred to as robo-advisory) both in regards to conventional, Islamic, and investment banking. The legislation highlights the use of digital financial advice tools, and prudential procedures to safeguard consumer interest.[100] This module is available under the CBB Rulebook Volume 1 (Conventional Banks), Volume 2 (Islamic Banks), and Volume 4 (Investment Businesses) enabling banks and investment firm licensees to offer digital financial advice.

WHAT ARE THE KEY THEMES OF THE DIGITAL FINANCIAL ADVICE MODULE?

Governance of digital financial advice process

Licensees providing digital financial advice must have detailed and effective oversight of the digital financial advice process and the client-facing tool. Governance of the digital financial advice process involves the identification of system design defining purpose, scope, and algorithms. In regard to algorithms, a testing strategy should be implemented to detect errors, biases, or unauthorized access.

Technology supporting the digital financial advice tool

The algorithms need to be able to identify clients who would be classified as unsuitable investors. Licensees are required to maintain a regularly updated security policy document that includes details on the IT system supporting the digital financial advice tool, implemented security measures, location of licensee data centers, policies on system monitoring, and external technology partners authorization.

Licensee obligations to client

Licensees of digital financial advice are obligated to inform clients during the onboarding process of the following:

- Full scope of digital financial advice including the methodologies, assumptions, limitations, and risks of the algorithms
- Specific circumstances in which licensees can replace digital advice with human judgement or discontinuation of the service
- Disclaimer regarding the digital financial advice that does not consider client's personal circumstances
- Changes to key input parameters and algorithms

Consumer Protection

To safeguard the interest of the consumer, licensees should be able to protect the clients from unsuitable advice. It is important for the licensee to protect client data and licensees are required to adhere to Bahrain's Personal Data Protection Law (PDPL) issued on 12 July 2018 to ensure client data protection.

WHAT ARE THE BENFITS OF DIGITAL FINANCIAL ADVICE?

Security and privacy

The focus on assessing and maintaining the security and stability of information is crucial amid growing concerns in the ecosystem. As a result, detailed regulations focusing on the implementation of cybersecurity for operations linked to robo-advisory could reduce public concerns and limit existing risks.[101] The initiative would be relevant especially in the context of Bahrain as the 2018 Bahrain FinTech Ecosystem Report Survey highlighted that at least 60% of Bahraini respondents were concerned about the security of FinTech solutions.

Human bias

Regulations should provide a focus on the algorithms that support the production of digital financial advice to strengthen such solutions. A regulatory foundation that calls for a thorough implementation and processing of algorithms will promote the benefits of robo-advisory over traditional financial advice and eliminate key limitations including human bias.

Talent development

The regulation of digital financial advice will also increase the demand for relevant talent that can support the growth of the FinTech vertical in the ecosystem. As opposed to eliminating job opportunities, the legitimization of key FinTech verticals including robo-advisory will promote the creation of new roles and demand for emerging skills.

Cross-Border Regulations

Recently, the CBB's involvement with the GFIN highlights interest toward such a direction. The network alleviates past difficulties in pursuing cross-border regulations due to the inability to secure universal agreements.[102] As a member of the network, the FCA proposed the idea of a global sandbox program during February 2018. Additionally, in regards to a regional perspective, such a development can further promote Bahrain's position as a gateway to the Gulf by establishing ties with other regulatory authorities.

On February 2019, the CBB announced its involvement in the GFIN's cross-border pilot initiative alongside 17 other global regulators.[103] Following the deadline on 28 February 2019 for the applicants to join the global regulatory sandbox, the initiative will launch in Q2 2019 for a six months period.[104] The approach is another step toward ensuring consistency through cross-border in regards to FinTech regulations.[105]

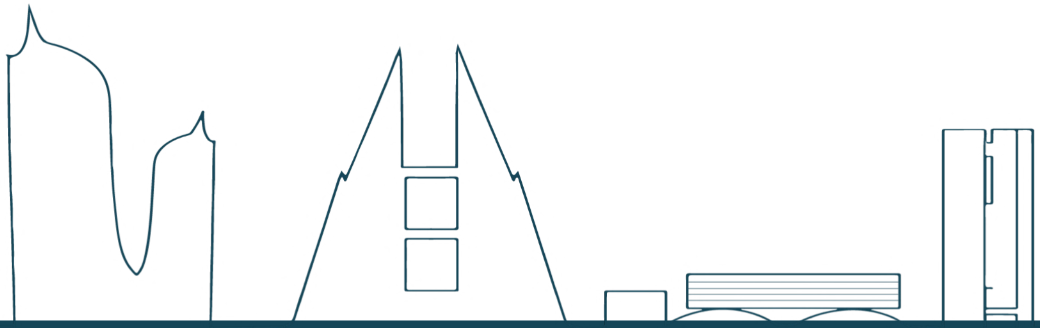
WHAT ARE THE BENEFITS FOR CROSS-BORDER REGULATIONS FOR BAHRAIN?

Establish international ties

The establishment of cross-border regulations can both elevate Bahrain's ties with global partners and also prevent barriers for FinTechs aspiring to develop its global reach. The initiative will both help with the growth of locally based FinTechs and promote Bahrain's position as a regional access point for international market players.

Fuel local competition

The initiative will also likely further fuel competition in the industry as smaller firms gain an opportunity to compete with established financial institutions within a regulatory umbrella that is unified within more than one jurisdiction.



WHERE IS BAHRAIN'S REGULATORY POSITION IN 2019?

The study highlights that Bahrain's current regulatory regime is positioned as highly progressive and supportive that enables the growth of FinTechs through key regulations. The level of support is also relatively high in comparison to other listed countries.

The following section will provide a reference point for general recommendations that regulators can consider to further their capacity in progression and support for the FinTech ecosystem. Additionally, the framework will be reviewed under the context in Bahrain to understand the opportunities that Bahrain can tap into in the upcoming years.

4

LOOKING AHEAD

4.1 LOOKING AHEAD

The Bahrain FinTech Regulations Report 2019 aims to act as a reference point for existing and emerging regulatory authorities interested in playing a prominent role in both the domestic and global FinTech ecosystem. Based on our investigation, the following general recommendations are apparent:

INTERNATIONAL COLLABORATION

Based on our investigation, it appears that multilateral contracts in the FinTech sphere result in more tangible outcomes. As a result, it is highly recommended to pursue such agreements or participate in existing contracts that have already been established to maintain international ties and engage in ongoing knowledge sharing.

ECOSYSTEM ENGAGEMENT

The investigation highlighted that the presence of a dedicated FinTech department is crucial for a regulating authority to develop FinTech-specific legislations. The habit of accepting feedback on consultation papers is also both common among leading regulatory authorities and crucial for the development of the ecosystem.

REGULATORY INITIATIVES

It is highly recommended for up-and-coming regulatory authorities to implement common initiatives that are highlighted in the studyincluding a regulatory sandbox. However, in regards to more established regulatory authorities in the FinTech sphere, it is recommended to refer to innovative initiatives that are uncommon such as regulations on artificial intelligence to be at the forefront globally.

BARRIERS TO ENTRY

Although uncommon among leading regulatory authorities, the study highlighted that it is crucial for regulators to implement case-by-case assessment to ensure that all existing and incoming ecosystem players are given tailor-made terms to be able to compete fairly.

SUPPORT PROGRAMS

Besides mentorship, supportive programs appear to be uncommon except in limited cases. Hence moving forward it is recommended that regulatory authorities consider key initiatives including funding and accelerator programs for FinTechs or collaborate with domestic actors that are a source for such resources in order to play a more proactive role in the ecosystem.

4.2 MOVING FORWARD

INTERNATIONAL COLLABORATION

The CBB adopted an active approach in regards to maintaining both open communication channels and collaboration opportunities with global regulatory players. The study highlighted in section three that the CBB secured approximately four bilateral agreements on FinTech developments. Additionally, the CBB is part of the GFIN highlighting a multilateral approach to international collaboration as the network connects the CBB with other regulators in the region. Moving forward, it is beneficial for the CBB to be able to diversify its bilateral agreements to further its footprint in alternative regions such as Europe due to its highly progressive legislations for FinTech in key initiatives including open banking and awarding banking licenses for FinTechs.

ECOSYSTEM ENGAGEMENT

In comparison to its regulatory counterparts, the CBB's ecosystem engagement has been positive especially with a focus on developments in 2018. CBB's strength remains in the development of a dedicated FinTech and Innovation Unit, regular roundtable discussions with industry experts, as well as its habit of accepting feedback on new consultation papers. During 2019, it is crucial for the CBB to maintain its active engagement with the ecosystem and remain connected with industry players to maintain an updated awareness of the ecosystem. Additionally, further engagement in organizing conferences and events is likely to expand the CBB's network with new industry players within the emerging industry.

REGULATORY INITIATIVES

The CBB's portfolio of regulations highlights diversity through the inclusion of rules that represent different FinTech verticals. Most recently, the CBB launched draft rules on digital financial advice (robo-advisory) on 21 January 2019. In an attempt to remain updated amid ongoing developments, it is crucial for the CBB to both welcome emerging verticals and solutions as well as be on the forefront of launching innovation regulations. Below are emerging focus areas that will likely be under the radar of leading FinTech regulators.

Artificial intelligence

Following the CBB's launch of the "Digital Financial Advice" draft rules, the initiative paves the way to adopt further regulations that can continue to enable innovation in Bahrain's FinTech ecosystem. Activities under the umbrella of artificial intelligence also includes credit scoring, producing insurance quotations, sentiment analysis, debt collection, and fraud detection.[108] As a growing number of FinTech solutions active in the market are designed with the underlying technology of artificial intelligence, it is crucial for regulators to be able to regulate the artificially intelligent solutions to protect consumers.

Challenger banks

Challenger banks are recently established banks that provide financial services to the market. These banks can either provide services as a full-fledge banking institution or target niche areas to provide a particular innovative service, such as lending services for SMEs only. Challenger banks often possess a differentiating factor that is its unique selling proposition (USP) than traditional banks, for instance, geographic advantage or product specialty. These new entrants have a modernized infrastructure that are free of legacy systems (outdated computer system). Based on the use of APIs, challenger banks are developed with the use of open banking. As open banking in Bahrain has been established as the next step for the change within the financial service industry, it presents challenger banks with the opportunity to trigger competition and target niche markets. As the infrastructure to access customer account information will be standardized through a common platform, challenger banks can take advantage of the available data and focus on which niche to target.

Presently, the challenge of achieving scale and reach remains evident. Considering the size and recent entry of challenger banks, high capital requirements, lack of access to the financial services infrastructure, and strict regulations are barriers to entry for challenger banks. It is recommended for the CBB to relax the regulations pertaining to new entrants of the market by lowering the capital requirement, adopting easier access models to interbank payment systems, and reviewing bank licensing requirements for new entrants.[106]

RegTech

As mentioned previously in section one, the use of RegTech can bring about several benefits to the regulators and companies that need to comply with regulatory standards. Encouraging the use of RegTech in Bahrain will help businesses comply with regulations efficiently and cost effectively. RegTech can be implemented in various fields such as regulatory reporting, risk management, identity management and control, compliance, and transaction monitoring. Currently, Bahrain's RegTech industry appears to be underdeveloped. Therefore, RegTech innovation would be largely beneficial to Bahrain's FinTech environment as it would be accommodating an emerging market demand for such solutions.

BARRIERS TO ENTRY

Following the inclusion of Bahrain in our analysis, it was interpreted that Bahrain highlights a position of a regulatory regime that enables innovation. Specifically, Bahrain proved its contribution through regulatory consistency in Bahrain with the exclusion of offshore regulations. Additionally, Bahrain is playing a proactive approach through its involvement in GFIN and decision to participate in the cross-border pilot operation. However, amid consultation with industry experts, it appears that Bahrain's FinTech regulations require additional details to propel Bahrain in 2020 forward. Specifically, as apparent in alternative ecosystems, regulators prevent severe barriers to entry by ensuring that alternative versions of regulations/terms are produced to accommodate different stakeholders including startups and established institutions. The recently finalized crypto-asset regulation is a step toward that direction.

SUPPORTIVE PROGRAMS

The CBB is working closely with key market players including as a supporting partner of Bahrain FinTech Bay to ensure that its contribution is evident. Moving forward, the CBB's ongoing partnership with ecosystem players to support such initiatives will both develop the FinTech industry as a whole and the CBB's stance as a regulatory authority.

CONCLUSION

The 2019 Bahrain FinTech Regulation Report aims to establish a detailed framework in understanding the components that builds a progressive and supportive regulating authority that can promote the growth of FinTech. The report ultimately highlights the primary areas that regulators should focus on as it aims to promote its FinTech ecosystem and compete with global players.

5

APPENDICES

5.1 DEFINITIONS

ALGORITHMS
A set of mathematical rules that translates the data entered into a system through financial modelling techniques to generate financial advice.

APPLICATION PROGRAMMING INTERFACE (API)
A software intermediary that allows two or more applications to interact on a single platform.

CLOUD COMPUTING
The practice of using a network of remote servers hosted on the internet to store, manage, and process data; rather than a local server or a personal computer.

CROWDFUNDING
An online fundraising and alternative lending solution that individuals can use in a collective effort to gather a capital sum. The funds raised can be used for loans, acquiring a property, and financing a project. There are various types of crowdfunding available:

- Securities-based: Firms are able to raise funds via loans or equity in return for interest payment or stake in the company respectively. This form of crowdfunding can also be Sharia compliant equity/finance based where lending and investing is in accordance with Sharia rulings.

- Donation-based: Commonly used for charities and fundraisers, contributors will not receive financial returns or rewards for any funds donated.

- Rewards-based: Contributors will usually not receive any form of financial return, but instead will receive a reward in exchange for their contribution.

CRYPTO-ASSET
Crypto-assets are virtual, digital assets, or tokens operating on a blockchain platform and protected by cryptography. Crypto-assets are also known as cryptocurrencies and digital currencies.

DIGITAL FINANCIAL ADVICE
The provision of financial advice through the use of technology (also commonly known as robo-advice or automated advice). Digital financial advice is subjected to a comprehensive governance and controls framework as the technology is based on algorithms and assumptions that translate consumer inputs into financial advice.

DISTRIBUTED LEDGER TECHNOLOGY (DLT)
A digital database that stores information within varied access points that is distributed across the network. A common example would be blockchain technology.

KNOW-YOUR CUSTOMER
The process by which banks obtain information about the identity and address of the customers. This process helps to ensure that banks' services are not misused.

OPEN BANKING
It is a system that provides a user with a network of financial institutions' data through the use of application programming interfaces (APIs).

REGTECH
It is the use of technology to help businesses comply with regulations efficiently and cost effectively. The main focus of RegTech has been on risk, compliance monitoring, and regulatory reporting. Some examples of RegTech solutions include: monitoring big data compliance, detecting insider trading, trading limit abuse, detecting discretionary sales, legislation gap analysis, transaction reporting, and activity monitoring.

REGULATORY SANDBOX
With the rising refinement and complexity of FinTech solutions and business models, the perceived level of risk also rises with it. This leads to instances where the purpose and process of new FinTech solution remains undefined; whereby regulators are unsure if the product or service is in compliance with the financial regulations. Thus, a regulatory sandbox, as a framework mechanism, provides FinTech companies with a safe and flexible environment to test and develop their products which will ultimately enable them to release their compliant products within the market.

5.2 REGFACT CONFERENCE 2019

Bahrain FinTech Bay's RegFact Conference 2019 is held under the patronage of the Central Bank of Bahrain. It is also held in strategic partnership with the Bahrain Labor Fund Tamkeen as well as the Bahrain Economic Development Board.

RegFact is a regulatory technology platform comprising of local and global regulators, policy makers, and policy advocates. RegFact will act as a platform that will bring together local and global key regulators, and policy advocates to find solutions, and promote best innovative RegTech practices in a collaborative, open, and transparent manner. RegFact will feature an agenda of talks, workshops, and networking sessions with key players in the regulatory space including the RegTech community. The conference will have a dedicated workshop for executive training on artificial intelligence and automation.

Bahrain FinTech Bay's CEO Khalid Saad states that, "RegTech, which is the intersections of regulations and technology is not only standardizing regulation but also increasing transparency, consistency and lowering cost. It is transforming not only financial services but industries overall globally. With RegFact, we aim to make sense of this transformation and what it means."

With over 15 speakers for the RegFact Conference 2019, various key topics will be discussed with a focus on the following:

- Bahrain's regulatory landscape
- Streamlining the compliance process
- Open banking and technology
- The way banks work with FinTechs
- Importance of data protection
- Cybercrime and identity theft
- Growing role of RegTech

1st	RegTech Conference in Bahrain	**15+**	International and local prominent speakers
7	Topics relevant to regulations in FinTech	**9**	Partners

5.3 BAHRAIN FINTECH BAY

Bahrain FinTech Bay (BFB) is a FinTech ecosystem builder that is a private-public partnership between Bahrain's Economic Development Board (EDB) and the FinTech Consortium. Launched in February 2018, BFB is Middle East and Africa's (MEA) leading FinTech hub dedicated to enabling, fostering, and ultimately building a complete FinTech ecosystem while driving innovation and future-proofing Bahrain's financial services industry.

BAHRAIN FINTECH BAY CORNERSTONES

Venture Acceleration Platform

The BFB Venture Acceleration Platform is designed to catalyze FinTech growth, provide a launch pad, and bespoke go to market strategies for innovative FinTechs looking to maximize opportunities in the Kingdom of Bahrain and the Gulf.

Additionally, through the platform, foreign entrepreneurship and expertise will be attracted to further develop local talent. The platform underscores BFB's commitment to the development of local startups and their importance to the robustness of the local FinTech ecosystem.

Conferences and Events

As part of BFB's initiative to spread awareness and value-added resources, a variety of events are hosted to showcase the industry's emerging developments and opportunities. The focus on community engagement is broken down to three segments: conferences, joint engagement with BFB's network of partners, and smaller events to enable the growth of Bahrain's FinTech industry.

Thought Leadership

BFB's publication series will provide in-depth research on the rapidly changing dynamics of the domestic and regional FinTech ecosystem. We act as a reference point for raising awareness and filling the market gap on research for the FinTech industry with a focus on Bahrain. Additionally, BFB analyzes different elements that contribute to the growing FinTech ecosystem of Bahrain.

Physical Hub

BFB's collaborative platform is dedicated to FinTech entrepreneurship, supported by its well-developed infrastructure including a unique contemporary co-working space.

FinTech Consortium Institute

The FinTech Consortium Institute is a center of excellence in FinTech thought leadership, education, and training by connecting candidates with a global FinTech ecosystem. Building on our entrepreneurial expertise and latest innovations in different markets, FinTech Consortium will continuously support the organic development of the FinTech ecosystem by ensuring that candidates have the relevant skill-set and knowledge to capitalize on the new opportunities FinTech creates. The program has programs aimed for professionals and fresh graduates respectively:

- The Georgetown FinTech Course program is split across six month cohorts, providing candidates with the a global Fintech certification from Georgetown University's McDonough. The program is aimed toward professionals with over two years of relevant work experience.

- The FinTech Talent Program is national initiative BFB supported by Tamkeen that aims to provide internship and FinTech certification opportunities to candidates. The best performing candidates will be given an international six-week placement in our global FinTech Bay offices. The program is catered to fresh Bahraini graduates with less than two years of experience.

Alongside the programs, FCI offer the following:

- School of Business, with Georgetown professors conducting their lectures from Bahrain and broadcasting it globally. Additional courses will be provided through BFB's FinTech partners in A.I. and Blockchain

- Access to two large scale FinTech conferences hosted by BFB and will receive career development, coaching, and mentorship

- Annual talent conference with keynotes for educational bodies, FinTech academies, and industry players

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Bahrain FinTech Bay

Arcapita Building, 3rd Floor
P.O. Box 1357
Manama, Kingdom of Bahrain

info@bahrainfintechbay.com

FinTech Consortium

مصرف البحرين المركزي
Central Bank of Bahrain

Bahrain FinTech Bay