



ISLAMIC FINANCIAL
SERVICES BOARD

IFSB 11th PUBLIC LECTURE ON FINANCIAL POLICY AND STABILITY

Fintech, Regtech and Suptech and Their Implications for Regulation and Supervision

Lecture by:

FAHAD YATEEM

*Director, Islamic Financial Institutions Supervision
Central Bank of Bahrain*

Balancing Sharī‘ah Compliance and Technology-Driven Growth: A Banking Perspective

Lecture by:

ASHRAF GOMMA ALI

*Regional Head, Sharia Advisory and Governance
CIMB Islamic Bank, Malaysia*



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2019 | Kuala Lumpur, Malaysia

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The views expressed in this publication are those of the author(s) and not necessarily the views of the Islamic Financial Services Board.

**The publication is available for download from the IFSB website
(www.ifsb.org)**

Published by: Islamic Financial Services Board
Level 5, Sasana Kijang, Bank Negara Malaysia
2, Jalan Dato' Onn, 50480 Kuala Lumpur, Malaysia
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ISBN 978-967-5687-69-3

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ABOUT THE ISLAMIC FINANCIAL SERVICES BOARD (IFSB)

The IFSB is an international standard-setting organisation which was officially inaugurated on 3 November 2002 and started operations on 10 March 2003. The organisation promotes and enhances the soundness and stability of the Islamic financial services industry by issuing global prudential standards and guiding principles for the industry, broadly defined to include banking, capital market and insurance sectors. The standards prepared by the IFSB follow a stringent due process as outlined in its Guidelines and Procedures for the Preparation of Standards/Guidelines, which includes holding several Working Group meetings, issuing exposure drafts and organising public hearings/webinars and reviews by the IFSB's Shari'ah Board and Technical Committee. The IFSB also conducts research and coordinates initiatives on industry-related issues as well as organises roundtables, seminars and conferences for regulators and industry stakeholders. Towards this end, the IFSB works closely with relevant international, regional and national organisations, research/educational institutions and market players.

For more information about the IFSB, please visit **www.ifsb.org**.

ABOUT THE PUBLIC LECTURE ON FINANCIAL POLICY AND STABILITY

In the *Public Lecture on Financial Policy and Stability* series, the IFSB invites eminent speakers with experience in the financial services industry to present papers on financial policy and stability. Although these papers are published by the IFSB, they do not necessarily represent the views of the IFSB.

Year	Venue	Speaker/s	Topic/s
1 st Public Lecture 2007	Kuala Lumpur, Malaysia	Dato' Seri Panglima Andrew Sheng Former Chairman of Hong Kong Securities and Futures Commission	Islamic Finance and Financial Policy and Stability: An Institutional Perspective
		Josef Tosovsky Chairman, Financial Stability Institute	Enhancing Global Financial Stability
2 nd Public Lecture 2009	Kuala Lumpur, Malaysia	H.E. Yves Mersch Governor, Central Bank of Luxembourg	About the Role of Central Banks in Financial Stability and Prudential Liquidity Supervision, and the Attractiveness of Islamic Finance
		Dr Abbas Mirakhor Former Dean of the International Monetary Fund's Executive Board	The Recent Crisis: Lessons of Islamic Finance
3 rd Public Lecture 2009	Kuala Lumpur, Malaysia	Paul Koster Chief Executive, Dubai Financial Services Authority	Implications of International Regulatory Change for Islamic Finance
		Jean Pierre Sabourin	Role of Islamic Deposit

		Chief Executive Officer, Malaysia Deposit Insurance Corporation	Insurance in Providing Stability to the Islamic Financial System
4th Public Lecture 2011	Amman, Jordan	Baljeet Kaur Grewal Managing Director & Vice Chairman of Kuwait Finance House Research Ltd, Malaysia	Constraints on Growth in Islamic Finance
		Dr Rodney Wilson Director of Post Graduate Studies, School of Government and International Affairs, Durham University, United Kingdom	The Determinants of Islamic Financial Development and the Constraints on its Growth
5th Public Lecture 2012	Manama, Bahrain	Professor Dr Vedat Akgiray Chairman, Capital Markets Board of Turkey	Building Resilient Islamic Financial Systems – Securities Market Regulations
		Dr Khaled Al Fakh Secretary-General, Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI)	Building Resilient Islamic Financial Systems – Insurance/ <i>Takāful</i> Regulations
6th Public Lecture 2014	Bandar Seri Begawan, Brunei Darussalam	Professor Dr Mehmet Asutay Director, Durham Doctoral Training Centre,	Islamic Moral Economy and Dynamics of the Development of the Islamic Financial

		Islamic Finance, Durham University, United Kingdom	Services Industry
7th Public Lecture 2015	Jakarta, Indonesia	Dr M. Kabir Hassan, Ph.D. Professor of Finance and Hibernia Professor of Economics and Finance, University of New Orleans	Entrepreneurship, Islamic Finance and SME Financing
8th Public Lecture 2016	Cairo, Egypt	Dr Sami Al-Suwailem Head, Financial Product Development Center, Islamic Development Bank	Morality, Rationality and Financial Stability
9th Public Lecture 2017	Kuala Lumpur, Malaysia	William Coen Secretary-General of Basel Committee on Banking Supervision, Bank for International Settlements	Global Adoption of the Basel Framework: Enhancing Financial Stability across Countries
		Dr Mohd Daud Bakar Founder and Group Chairman, Amanie Advisors	Capital Raising for Sovereigns in an Era of Deficits: Realising Aspirations through <i>Sukūk</i>
10th Public Lecture 2018	Kuwait City, Kuwait	H.E. Emeritus Professor Dr Ishrat Husain Chairman, Centre for Excellence in Islamic Finance, Institute of Business Administration, Pakistan	Islamic Finance Policies: Implications for Industry Stakeholders

		<p>Professor Dr Monzer Kahf Professor of Islamic Finance and Islamic Economics, Faculty of Islamic Studies, Hamad bin Khalifa University, Qatar</p>	<p>Financial Policy and Stability: Islamic Finance Perspective</p>
<p>11th Public Lecture 2019</p>	<p>Kuala Lumpur, Malaysia</p>	<p>Fahad Yateem Director, Islamic Financial Institutions Supervision Central Bank of Bahrain</p> <p>Ashraf Gomma Ali Regional Head, Sharia Advisory and Governance CIMB Islamic Bank, Malaysia</p>	<p>FinTech, RegTech and SupTech and their Implications for Regulation and Supervision</p> <p>Balancing Shari‘ah Compliance and Technology-Driven Growth: A Banking Perspective</p>

WELCOME REMARKS AT THE 11TH IFSB PUBLIC LECTURE ON FINANCIAL POLICY AND STABILITY

Mr Md Abdur Rahim
Executive Director
Bangladesh Bank

Your Excellencies, distinguished speakers, panel discussants, participants and delegates from various jurisdictions, Shari‘ah scholars, experts, officials from international bodies, market players, legal firms’ representatives, academia and other stakeholders, and media personnel.

Assalaamu ‘aliakum wa rahmatuLlah, and a very good morning to all of you.

It is a great pleasure, as well as a privilege, for me to welcome you to the 11th IFSB Public Lecture on Financial Policy and Stability: “Leveraging Emerging Technologies for Value-Driven Innovation in Islamic Finance”.

It is a great honour for Bangladesh Bank to assume, for the first time, the Chairmanship of the Council of the Islamic Financial Services Board for 2019. On behalf of Bangladesh Bank, I express my deep gratitude to Bank Negara Malaysia for co-hosting the IFSB’s Annual Meetings and Side Events for 2019.

I wish to express my special appreciation to Dr Bello Lawal Danbatta, Secretary-General of IFSB, and his secretariat for their excellent efforts in arranging the side events in addition to the annual meetings. The side events, including this public lecture, will illuminate for the IFSB and its stakeholders the issues that pose current and future challenges for the stability of the global Islamic finance services industry. I hope such an intellectual gathering will lead the industry forward to its success.

Let me raise a few issues related to today’s lectures, which will be delivered by learned speakers who have expertise in the areas under discussion.

The global financial services industry has observed unprecedented change brought about by three core technological drivers: automation, disintermediation and decentralisation. According to the *Islamic Fintech Report 2018*, published by the Dubai Islamic Economy Development Centre, “Young, digitally native customers are the main stakeholders driving change, and startups are responding – there are now over 12,000

startups globally, with fintech investments reaching \$57.9 billion in the first half of 2018. The large established financial institutions are embracing the change, with 74% of financial institutions investing in data analytics, 34% in Artificial Intelligence (AI), and with 77% expecting to adopt blockchain by 2020.”

The Islamic finance industry holds much promise, with assets expected to reach USD 3.9 trillion by 2023, according to Thomson Reuters. However, Islamic FinTech is at the very beginning of an exciting, transformative journey for the industry, one still dominated by largely domestic and OIC-based financial institutions. Incorporating emerging technologies in the Islamic finance model may be conducive to financial accessibility and development, as well as reduced operational costs and increased productivity.

However, the regulatory and supervisory authorities are generally cautious, ensuring that a favourable disposition towards financial innovation does not infringe on financial market integrity and stability, financial inclusion and consumer protection. Technological adoption also brings with it new risks – for instance, safeguarding data privacy, cybersecurity, consumer protection, compliance with AML/CFT regulations, and so on.

RegTech, which is a blend of both regulation and technology, is aimed at enhancing the transparency, consistency and standardisation of regulatory processes. Similarly, supervisory technology – or “SupTech” – is also gaining momentum. One reason for this, among many, is the need for supervisors to adopt similar technology to that used by the financial institutions in order to optimise cooperation between the two in matters relating to the collection and sharing of data.

I do feel it is critical to ensure that technological advancement does not compromise the principles of Shari‘ah. Islamic finance is distinguished from conventional finance by its Shari‘ah compliance. FinTech for Islamic finance should therefore include a very prominent role for a Shari‘ah board. The oversight functions of a Shari‘ah board should therefore address Shari‘ah non-compliance issues that may arise from the proliferation of innovative financial products and processes as a result of FinTech.

Thank you.

30 April 2019
Kuala Lumpur

OPENING REMARKS AT THE 11TH IFSB PUBLIC LECTURE ON FINANCIAL POLICY AND STABILITY

Dr Bello Lawal Danbatta
Secretary-General
Islamic Financial Services Board

Assalamu'alaikum, and a very good morning to all of you.

It gives me great pleasure to welcome you all to the 11th IFSB Public Lecture on “Leveraging Emerging Technologies for Value-Driven Innovation in Islamic Finance” in Kuala Lumpur, Malaysia.

My special thanks to H.E. Mr Fazle Kabir, Governor of Bangladesh Bank and Chairman of the IFSB Council 2019, and H.E. Datuk Nor Shamsiah Mohd Yunus, Governor of Bank Negara Malaysia and Deputy Chairman of the IFSB Council 2019, for jointly hosting the IFSB’s annual meetings for 2019 in Malaysia.

This is certainly a testimony both to Bangladesh Bank and Bank Negara Malaysia’s support of the IFSB and to the development of the global Islamic financial services industry (IFSI).

I also want to take this opportunity to thank all the IFSB Council members and representatives of IFSB member organisations who are present here. It is indeed very exciting to see all of you in attendance at this important event.

Let me begin by reflecting on the IFSB mandate.

As you are all aware, the IFSB, as an international standard-setting body, develops prudential and regulatory standards for a robust and transparent IFSI to enhance the stability and soundness of Islamic financial systems in member countries.

The IFSB also supports the member jurisdictions in the implementation of its standards through a range of initiatives such as workshops, technical assistance, policy advice, and capacity building through its e-learning platform and executive programs, as well as by translating standards into multiple languages.

In order to achieve its mandate, the IFSB’s Strategic Performance Plan (SPP) outlines “increasing awareness and knowledge sharing” as one of its Strategic Key Result Areas

under which the IFSB coordinates initiatives to discuss and address industry-related issues by organising conferences, roundtables and public lectures for the benefit of stakeholders in the IFSI.

The IFSB, among others, has also included in its approved SPP a research paper that offers a regulatory perspective on financial technology. This research, which we intend to undertake with leading institutions, would involve a detailed and comprehensive analysis of Shari'ah and prudential issues relating to FinTech, RegTech and SupTech in Islamic finance.

Why are we here?

Let me first reflect on some past and recent developments in the global financial services industry vis-à-vis how technology is defining and redefining the “new normal” and then share with you some of the rationale behind the IFSB Public Lecture series.

This 11th IFSB Public Lecture is taking place at a time when the various financial reforms arising from the Global Financial Crisis (GFC) that occurred just over a decade ago are now being finalised and operationalised. Incidentally, various financial stability reports echo the concerns that the global financial system is again facing declining growth, increasing public and corporate debt, and continuing financial vulnerability, which may have implications for its stability and resilience.

New challenges have also emerged since the GFC, mainly from market structure dynamics due to, among other factors, the continuously evolving fusion between finance and technology. This fusion has resulted in increasing activities by non-bank financial institutions, as well as increasing cyber risks among other operational issues. The IFSI, as an integral part of the global financial ecosystem, is not immune from these developments.

The total worth of the IFSI, which surpassed a landmark USD 2 trillion for the first time in 2017, has increased further to USD 2.19 trillion in 2018. Islamic banking now operates in more than 60 countries globally, of which 12 jurisdictions are now of systemic importance. Notwithstanding this, the IFSI still accounts for a very small share

of the global financial services industry even as the pace of growth of the IFSI seems to be slowing down.

The IFSI therefore needs to reinvigorate and radically explore new horizons, identify untapped potential, unlock opportunities, embrace emerging challenges and adapt to the latest innovations that technological advancement offers.

The adoption of innovative technologies and business models is a prominent emerging trend that is fast changing the ecosystem of the financial services industry. The role of the Islamic finance market players in this regard cannot be discountenanced. This is especially the case in relation to offering innovative Islamic finance products and services in a manner that leverages technological advancement without infringing on the value-based intermediation essentials of Islamic finance.

Alongside the potential opportunities and benefits for the IFSI, standard setters and regulators need to be cognisant of the potential new risks. Thus, developing a “fit-for-purpose” regulatory and supervisory regime is imperative, notwithstanding the formidable challenge it presents in balancing the objectives of facilitating innovation while ensuring effective risk management, financial stability and Sharī‘ah compliance.

These efforts align with the strategic intents of the IFSB, and I believe that with the support of our members, we will surely get there. The annual bringing together of the calibre of people we have here today to generate ideas, and many other initiatives of the IFSB, will help to achieve the IFSB’s mandate.

The main focus of the Public Lecture

As a part of our annual meetings, the IFSB’s Public Lecture series has been published annually since 2007 and is conducted by eminent speakers. It is aimed to promote the sharing of knowledge and experience by acclaimed personalities such as industry practitioners, policymakers and thought leaders who have made significant contributions in their respective field.

The annual lecture provides an opportunity to offer diverse perspectives as well as to exchange ideas with industry stakeholders on related regulatory and policy initiatives and issues. This year's annual lecture provides a platform for discussing pertinent issues and constructive ideas relating to the synergy between the Islamic financial services industry and the ever-evolving financial technology industry.

Islamic finance and financial technology have caused significant disruption to the traditional, conventional financial system. If indeed, as I suppose, there is a significant value in their synergy, then the rationale for discussing the implications of their combined effect on today's value-driven, customer-centric, improved regulatory and prudential oversight and digitalised financial landscape is incontrovertible.

Regulatory authorities have been generally cautious in ensuring that favourable disposition towards financial innovation does not infringe on financial market integrity and stability, growth, financial inclusion and consumer protection. Essentially, RegTech and SupTech in Islamic finance are aimed at enhancing the transparency, consistency and standardisation of regulatory processes in a way that promotes proper interpretation of regulatory standards at a lower cost and ensures risk-based supervision for Islamic banks' regulators.

We must collectively ensure that technological innovation does not also provide a premise on which the principles of Sharī'ah would be compromised. The synergy between Islamic finance and financial technology would therefore entail a very prominent role for the Sharī'ah Supervisory Board at the Islamic financial institutional level and for the Sharī'ah Council at the supervisory level. This role is specifically to ensure that their oversight function adequately addresses Sharī'ah non-compliance issues that may arise from the proliferation of innovative financial products and processes due to the use of advanced technology.

Today's lecture focuses on how to leverage the emerging technologies within the tenets of Sharī'ah law to deliver value-driven innovation to stakeholders in Islamic finance. The current challenge is how to take the IFSI to its next stage of development, and how to reinforce its robustness in a more challenging and dynamic technology-driven environment. In this respect, I hope the lecture by our astute speakers will promote discussion on the digital transformation of Islamic financial institutions, and on the

role of FinTech innovation in ensuring sustainable growth and an enhanced legal and regulatory framework.

Let me conclude my remarks by highlighting to our erudite speakers the following questions on how financial-sector stakeholders can ensure the effective utilisation of technology:

- 1 › How can we pursue innovation without adversely impacting financial stability?

- 2 › How can we facilitate enhanced regulatory compliance, monitoring activities, improving real-time surveillance and prudential supervision, towards enhanced regulatory outcomes with positive implication for financial system stability?

- 3 › How can we protect consumer rights and, in Islamic finance, ensure Sharī'ah compliance of the overall operations and product mechanisms?

- 4 › How can we strike a balance between Sharī'ah compliance and technology-driven growth?

- 5 › Can we devise means for Sharī'ah scholars to be involved in the development of digital products and financial apps in response to those products' and apps' perceived "Sharī'ah neutrality"?

Concluding remarks

I hope that the lecture presentations by our distinguished speakers today will address these related concerns and issues, and motivate us to continue to work together for the development of the IFSI. I wish you very productive deliberations and discussions.

Thank you very much, and *wasslamu alaikum wa rahmatullah ta'ala wa barakatuh*.

30 April 2019
Kuala Lumpur

FinTech, RegTech and SupTech and Their Implications for Regulation and Supervision

Fahad Yateem

Introduction

Assalamu'alaikum.

This short paper will address technological advancements – namely, financial technology (FinTech), regulatory technology (RegTech) and supervision technology (SupTech) – in the field of financial services and examine how they have influenced, and may continue to influence, the financial ecosystem. The paper will discuss some of the recent evolutions in these technologically enabled innovations in financial services – in particular, how they can impact the provision of financial services and the role of central banks in this regard.

Let's start this paper with a quotation from Bill Gates, who stated back in 1994: "Banking is necessary, banks are not." After witnessing the rapid innovations that have occurred in the financial sector and its interaction with technology, we should have no doubt by now about Bill's statement.

At the Central Bank of Bahrain (CBB), we are looking into the FinTech trend and we believe that it will change the whole banking game. We believe that in the near future, probably in the coming couple of decades, financial and banking services will not be offered solely by banks. Instead, we will see new players introduced to the banking equation, which may fundamentally change how banking services are offered, delivered and utilised. We have already started to see FinTech companies selling financial services and related solutions to customers – for example, money transfers, payments, investing, etc. – in direct competition with banks.

This paper is divided into five areas. First, I will briefly describe the main and common objectives or mandates of central banks. I will then elaborate on why FinTech could be perceived to be a game changer for the banking system. We will then glance quickly at the opportunities, risks and challenges of FinTech. Thereafter, we will see how central banks can have an effective role in managing the FinTech trend. Finally, we will review briefly what the CBB has achieved to date with regards to FinTech, RegTech and SupTech.

Central banks' common mandate

It has been recognised that all central banks in the world essentially have almost a common mandate of ensuring financial stability, soundness and safety of the financial system, and economic growth and financial inclusion.

A Bank for International Settlements (BIS) study conducted in 2009 found that over 90% of the world's central banks consider that they had full or shared responsibility for financial stability policy and its oversight.¹

The financial stability tasks undertaken by central banks may include “banks’ regulation and supervision, deposit insurance, the provision of safety nets through emergency liquidity assistance”.² In order to achieve their financial stability goals, central banks apply monetary policy and macrofinancial regulations, such as liquidity reserves and capital requirements.

Most money in the economy is made up of bank deposits that result from the maturation of short-term deposits into medium-term loans. Therefore, a stable financial system depends on the smooth operation of banks. Consequently, any disruption in the operations of banks, or in the transmission or provision of funds, can have serious detrimental economic consequences, a key concern for central banks.

With regard to financial inclusion, records indicate that around 1.7 billion³ people in the world are excluded from the financial system, with no access to any type of financial service offered by the regulated financial entities. This issue raises many concerns, including about matters of inequality and discrimination, and about the risk of undetected monetary transactions outside the legitimate official banking system.

¹ Erlend Nier, 2009. “Financial Stability Frameworks and the Role of Central Banks; Lessons from the Crisis,” IMF Working Papers 09/70, International Monetary Fund.

² Ibid.

³ <https://globalfindex.worldbank.org/>

Why FinTech could make a difference

How can FinTech help central bankers to achieve their mandate? Before we address this question, let us first define FinTech. The Financial Services Board defines FinTech as a “technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services”.⁴

It is important to note here that the secret of success for any new technology, including FinTech, is that it meets people’s needs, demands and expectations. Therefore, the real driver behind the recent FinTech advancement is human demand – the demand for better service, better access and better price.

The growth trend in the banking sector is also illustrated by FinTech solutions, which are advancing at a very fast pace as a result of human demand. History has recorded that the first bank was established in Italy between 1245 and 1250. It then took around another 50 years to open the first branch, another 600 years to introduce the first ATM, a further 25 years to introduce online banking and an additional 10 years to develop mobile applications. The gap between technological developments is now so narrow that banks are finding it difficult to keep up with FinTech-enabled products and services. Today, the range of services provided by FinTech is expanding exponentially. For example, there is an abundance of e-payment platforms, robo-advisory is on the rise, crowdfunding services are becoming increasingly popular, and crypto assets available for investors, which started with a single asset in 2009, now exceed 2,000 in number.

In order to understand the potential impact of FinTech on central banks, it is useful to identify specific dimensions of FinTech innovations whose impact on monetary policy and financial stability can be observed clearly. FinTech innovations may be beneficial for financial stability for several reasons. For example, crowdfunding and peer-2-peer intermediation may reduce systemic risk, since they do not involve money creation

⁴ <http://www.fsb.org/2019/02/fsb-report-assesses-fintech-developments-and-potential-financial-stability-implications/>

through the conventional multiplier/maturity transformation mechanism of banks. These new services can be an affordable alternative for businesses that are not covered by traditional financial institutions. They also facilitate inclusion and economic growth. With regard to payment, transfer and settlement services, digital wallets and digital currencies could potentially manage a massive number of transactions in an efficient manner within controlled and legitimate channels; hence, also facilitating inclusion, growth and stability.

Risk management solutions such as real-time credit assessment, InsurTech and distributed ledgers could help in terms of improving credit underwriting standards, minimising human intervention and distributing risk. This, in turn, supports the regulators' role of having a safe and sound operating environment.

Therefore, FinTech innovations could play a significant role in helping central banks to better fulfil their mandate.

FinTech opportunities, risks and challenges

Some of the main opportunities and benefits of FinTech for society and end-users are as follows:

- 1 > It provides a universal, user-friendly interface layout for consumers and small and medium enterprises wanting to access financial services.

- 2 > By promoting competition and reducing concentration of the financial sector, it pushes the current players to become more efficient.

- 3 > It reduces costs, which results in cheaper products and services.

- 4 > All of the above help to improve the customer experience.

The recent experiences of M-Pesa in Africa and the Unique ID in India are good examples of how FinTech facilitates inclusion and economic growth, which is beneficial to both society as a whole and end-users of the financial services.


Although FinTech has many benefits, it also comes with several risks for financial stability, leading to systemic risk. For example, in the case of financial infrastructure, new systems may have hidden weaknesses that are not apparent in the trial periods and which may lead to financial disruption. Cyber-security is also considered a major threat to regulators, due to the severe negative consequences of cyber-attacks. Users of payment and transfer systems may also be pressed to undertake unwanted credit operations, while automatic “smart contracts” may foster instability if the system fails to check the solvency and creditworthiness of the counterparties. Uninsured deposit taking is an area of particular concern due to its exposure to fraud and/or illegal usage of funds outside the financial system.

As promising as FinTech seems, it therefore poses several challenges for current and potential players, including implementation challenges, resistance due to cultural shift, and the lack of skilled resources. For example, the existing mega-banks may find it difficult to blend FinTech with their traditional, sophisticated (and in certain cases, rigid) models. In an attempt to overcome this challenge, we are seeing large incumbent banks either acquiring or collaborating with small FinTech start-ups.

However, the challenges have not discouraged banks from pursuing FinTech, as the risk of not doing so is significant; that is, that traditional banks will eventually be pushed out of the banking equation.

FinTech also offers specific challenges to industry regulators. For example:

 One of the main potential benefits of FinTech is financial inclusion, as many more people can have easy and affordable access to financial services. However, while this may be clearly positive for the most basic financial products, such as payment services, it may not be suitable for products that pose greater financial risks to unsophisticated customers.

 As a result of FinTech, many relatively small firms may have a large share of the financial industry (decentralisation). Having more firms allows clients to have more choice of financial services and creates increased competition overall. However, scale is important in the financial sector, and having too many firms providing the same service may not be efficient.



When the public entrust their resources to informal or unregulated FinTech entities, they may be taking greater risks than they may be willing to afford, particularly counterparty risk.



The risk of money laundering and breaches of information privacy is bound to increase, as it is difficult to enforce regulations when entities are outside the regulatory boundaries.

Regulators' role in managing the FinTech trend

Central banks have to play a major and proactive role in terms of managing and directing the FinTech trend. This includes establishing the required regulatory framework, leveraging global expertise in this field, and engaging closely with banks and other FinTech players in order to manage an orderly transition.

Today, we can see that the regulators are prudent and conservative, a mindset that fundamentally does not support embracing the FinTech trend. So, the regulators have to go through a paradigm shift in their thinking and their risk appetite if they do not want to risk losing these new opportunities offered by FinTech. They have to find a middle ground that embraces FinTech and promotes innovation, while balancing the risks.

The Central Bank of Bahrain has had some success in embedding technology in a way that helps it to achieve its mandate, as the following summary illustrates.

Central Bank of Bahrain's achievements to date with regard to FinTech, RegTech and SupTech.

In the past few years, the CBB has taken a number of important steps to successfully steer its way through the FinTech trend. They include the following:

- In order to help financial institutions reduce their operational costs and encourage local and foreign investment, the CBB introduced rules in 2004 on outsourcing

of financial services. Today, almost all Bahraini banks are utilising the services of third-party processors through outsourcing arrangements. In 2017, the CBB also began permitting financial institutions to use cloud computing for the same purpose.

- In 2014, the CBB introduced a new financial service activity and related rules under the Ancillary Services License covering payment service provision. This activity includes processing of payments as a third party and issuance of prepaid cards in order to facilitate access for the unbanked segment, hence improving financial inclusion.

- In 2016, the CBB set up a dedicated FinTech & Innovation Unit to undertake research and recommend policy action, in addition to supervising the Regulatory Sandbox companies.

- In 2017, the CBB launched the Regulatory Sandbox, making it the first central bank in the region to do so. The key benefit of the Regulatory Sandbox is that participants are able to test their solution with live volunteer customers in a controlled manner and with lighter regulation. To date, the CBB has authorised more than 30 companies under the Sandbox, of which two have graduated.

- In line with the CBB's objective to further enhance financial inclusion in Bahrain, in 2017 the bank issued rules regulating crowdfunding, both equity- and debt-based funding, which are available to conventional as well as Sharī'ah-compliant segments.

- At the end of 2018, the CBB introduced open banking rules, which require banks to open their Application Programming Interfaces for licensed third parties in order to offer integrated account information service and payment initiation service to the end-user.

- After a detailed round of consultation, in 2019 the CBB issued rules on crypto asset services such as trading, dealing, advisory and portfolio management.

- In 2019, the CBB has issued rules on InsurTech, specifically for insurance aggregators dealing in insurance brokerage services.
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- In February 2019, the CBB also introduced rules on digital financial advisory, also known as robo-advisory.
-

We now come to regulatory technology. RegTech is related to the use of technology in managing regulatory requirements in the financial services industry. The main features of RegTech include regulatory monitoring, reporting and compliance. The rapid advancement in FinTech demands rapid development in RegTech in order to keep up the technological advancements. RegTech offers several benefits to regulators and the industry. For the industry, it can empower financial institutions to reduce their compliance costs and burden, as well as their risk, free up regulatory capital and present new opportunities to FinTech start-ups. For regulators, it leads to more standardisation in practices and services, thus reducing the regulatory and supervisory burden in addressing concerns and problems.

The CBB's RegTech projects include the following:

- In the 1990s, CBB introduced Bahrain's national ATM switch-back. It was managed initially by the CBB before being handed over to the private sector in 1997. The Bahrain national switch was later connected to the Gulf Cooperation Council (GCC) switch, which gave Bahraini customers the flexibility to withdraw their money from anywhere in the GCC.
-
- In 2007, the CBB introduced the Real Time Gross Settlement System (RTGS), which was mandated for all retail banks in Bahrain. RTGS settles local interbank payments and customer payments in real time.
-
- In 2012, the CBB introduced the Bahrain Cheque Truncation System (BCTS). Under this system, cheques presented for payment are scanned at the bank. Instead of the physical cheque, the electronic images and payment information are then processed automatically and transmitted to the BCTS clearing house. As the next step, the CBB is in the process of introducing e-cheques.

- In 2015, the CBB introduced the Electronic Fund Transfer System (EFTS), which is mandatory for all retail banks in Bahrain. EFTS enables customers to do domestic money transfers electronically from the comfort of their home or office at a nominal cost of 100 fils (USD 26 cents) per transaction. In particular, it facilitates fast and cost-efficient salary transfers by companies, which has reduced the burden on banks. It has also facilitated the fast and convenient payment of utility bills. Total transfers in the first full year of operation were BD 7.2 billion (USD 19.1 billion); two years later, in 2018, it had reached BD 11.5 billion (USD 30.5 billion).

- In 2015, the CBB automated the corporate credit reference system. The CBB had already done the same for consumer credit in 2006. Some government ministries and entities that hold credit information also became members of the system, enabling them to utilise the full benefits.

- In 2017, the CBB commissioned the Credit Reference Bureau to work on a nationwide e-Know Your Customer (KYC) solution. It will reduce operational costs for banks and facilitate their compliance with KYC rules. It will also speed up the process of opening new accounts and of maintaining ongoing KYC compliance.

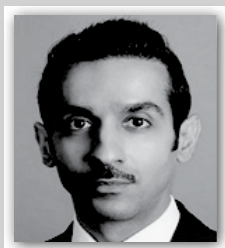
Supervisory technology (SupTech) is the use of innovative technology by supervisory agencies to support supervision.⁵ It includes features of digital reporting and regulatory processes, resulting in more efficient and proactive monitoring of risk and compliance by financial institutions. As the regulators push the industry to embrace FinTech, regulators must also push themselves to deliver better service through SupTech.

The CBB has already introduced an Electronic Submission of Returns system for all licensees, covering periodic prudential reporting and related run of figures and trend analysis. The CBB is also working on an automation project whereby a significant part of its services will be automated, both within the CBB and for external interaction with licensees. This will be a major step forward for the financial sector in Bahrain.

⁵ <https://www.bis.org/fsi/publ/insights9.htm>

Additionally, the CBB is working on its long-term digitisation strategy, which is expected to increase the effectiveness and efficiency of the CBB's activities.

Finally, a cross-border collaboration among central banks is the key to promoting innovation and experience sharing in order to achieve synergies. The CBB has key collaboration arrangements with other regulators on FinTech, including memorandums of understanding with the Crown Prince Foundation of Jordan, the Abu Dhabi Global Market and the Monetary Authority of Singapore to foster innovation and knowledge transfer in financial services. In August 2018, the CBB became a member of the Global Financial Innovation Network, which is an initiative led by the Financial Conduct Authority in the UK. Membership will entail active participation in the networks and in cross-border Sandbox trials.



FAHAD YATEEM

Fahad Yateem has held several posts at the Central Bank of Bahrain (CBB). His current responsibilities include supervision of Islamic financial institutions, particularly Islamic banks, both retail and wholesale, licensed by the CBB. Mr Yateem began his career in 2006 with Bahrain Islamic Bank in the area of Risk Management & Compliance. In 2008, he joined the CBB's Reserve Management Directorate. In 2010, Mr Yateem joined the Inspection Directorate as Superintendent of Banking Examination. In 2016, he was appointed as Director, Islamic Financial Institutions Supervision.

Mr Yateem has a Bachelor degree in Business Management, with a minor in Finance, from the University of Bahrain. He is a Certified Public Accountant with the New Hampshire Board of Accountancy, in the United States. He is also a Certified Management Accountant from the Institute of Certified Management Accountants (ICMA), USA and a Certified Financial Services Auditor from the Institute of Internal Auditors (IIA), USA.

Balancing Sharī‘ah Compliance and Technology-Driven Growth: A Banking Perspective

Ashraf Gomma Ali

Our topic today is “Balancing Sharī‘ah Compliance and Technology-Driven Growth: A Banking Perspective”. I would like to start with a story – to change the mood a little bit, and jump into our discussion afterwards. This story is close to my heart, because it gets to the root of Islamic banking.

The Prophet Rasulullah (PBUH) once told us that in the previous generation there was a woman who was a prostitute and committed a lot of sins in her life. One day, she was in the desert and was thirsty. So she went to get water from the well and saw a dog who was also thirsty. It was licking the wet sand because it was so thirsty. Then she said, “Just like I was thirsty, this dog is also thirsty.” She filled up her shoe with water from the well and gave it to the dog. The Prophet (PBUH) said that all of her sins would be forgiven because of this kind act.

On the flip side, he also told a story about a woman who took a cat from the wilderness and imprisoned it at home. She did not feed the cat or allow it to go and hunt for food. The cat died of starvation. The hadith said that the woman would be punished on the day of judgment, even though she worshipped as required.

How does this story relate to Islamic banking?

A long time ago, when I started working with NCB Group, I thought a lot about what was at the heart of Islamic banking. Where there was a lot of convergence between Islamic and conventional banking, what was it at the heart of Islamic banking that made it different? After all this time in the industry, I understand that Islamic banking is about maximising benefit and minimising harm. What makes Islamic banking “Islamic”? Islamic banking does not want to harm anyone, unlike the woman who harmed the cat and consequently found herself in trouble. We don’t want our banking and financial dealings to cause any harm to anyone – whether individuals or society at large. On the contrary, we want to remove harm. Islamic law is all about removing harm. Secondly, we want to benefit others. We want to benefit individuals, society and even animals, like the woman in the story who gave water to a thirsty dog. By her act of benefiting the dog, all of her sins were forgiven.

What makes Islamic finance “Islamic” is that it is about maximising benefit and minimising harm.

With that initial introduction, I am sure the distinguished audience here is very familiar with FinTech, about how it works and such. Apart from that, I think Dr Daud hasn't left much extra for me to say. I want instead to talk a little bit about our own experience at CIMB in trying to use this technology to implement this vision of maximising benefit and minimising harm to society.

CIMB is organised as CIMB Group and CIMB Islamic. CIMB Islamic leverages the activity of the banking group. Therefore, many of the services are shared between CIMB Islamic and the group as a whole. We have a FinTech unit, which is also shared between Islamic and the group. We have had a couple of accomplishments on the FinTech side in the past year in the overall banking group – details of which are included in the annual report. One thing we have done is use blockchain to join a ripple network that will allow remittances to be sent very quickly and cheaply. We have also established a Chatbot called “Eva” that allows people to carry out transactions very easily in a chat-like format. It is a place where they can chat and tell the bot that they want to do a transfer through a certain account to a nominated account. We've made it like you are talking to somebody.

We launched that a year ago. We now also use a Chatbot internally for our Human Resource (HR) department, so that if you need to leave or if you have any HR-related questions, you can talk through this Chatbot. Artificial intelligence (AI) is another big thing that we are working on in the group overall, which is really going to benefit Islamic banking as well as the overall conventional banking side. We are looking at using AI in credit decisions to improve decision making. We are also looking at the applications of AI in areas of compliance, Know Your Customer and anti-money laundering.

The other thing that I want to mention about CIMB as a group is that we have found there are different strategies that banks can take to integrate FinTech. Consultants suggest having an innovation unit within the bank, which is how we started. We set up a FinTech group under the group CEO office as a strategic department. Or, instead of the bank

having a FinTech unit, it could seek to acquire another FinTech if there was synergy. A third strategy is for a bank to partner with a FinTech, or it could spin-off a separate unit that focuses only on FinTech.

Based on what we have learnt over the past year or two, we recently moved the FinTech unit out from under the CEO's office to an area called "Group Venture Partnerships". This unit functions like an investment arm of the group, in that it holds and manages CIMB's investments. FinTech is now under that department.

What is the difference between FinTech and banking, and why is this important? The most important and strategic thing that I want to share is that FinTech and banking work very differently. Their cultures are very different. For example, the FinTech people wear T-shirts and jeans to the office, while bankers wear dark suits. FinTech people are young, while bankers are a bit older. FinTech people take a lot of risks, while bankers are very risk averse. So, there's a very big difference in culture. That difference in culture makes it difficult for a creative FinTech unit to operate under a traditional bank. It makes it very difficult even in terms of the way decisions are made. For example, when a bank is looking at investments in information technology (IT), it will always look at the potential growth in profit before tax. What profit growth will this investment produce? What are the cost savings? A venture capitalist (VC) doesn't make decisions like that. A VC will say, "I'm going to invest in 10 companies. I know that eight of them will fail, one will break even and I'll make a profit from the tenth one." However, when banks make IT investments, they don't think that way.

I think that the issue of culture may be the reason why we have made the decision to put the FinTech unit under the venture partnerships arm and not under the group CEO, because that unit's culture is more suited to innovation.

Another insight we had related to the question of whether to build something yourself, or buy it. Or should you partner with someone? We were thinking internally of building FinTech solutions and CIMB was able to launch a digital bank in the Philippines and in Vietnam – really big things. Once again, the issue of culture.

When you are building something, it takes a lot of resources and you have to consider whether it is the best use of your resources. Would it be better to let other FinTech

companies build their products, and then connect with and use them or partner with them? With FinTech being under the CIMB group partnerships, it is more about the second model. We are not going to build our own blockchains or our own things. Rather, we are going to look for good partners we can connect with. That is a strategic perspective. We moved away from building things ourselves. The group management moved FinTech to a part of the group that focuses on external investments. The purpose was for us to look for FinTech partners to connect, collaborate or partner with, as opposed to focusing on building our own revolutionary FinTech solutions.

One of the big drivers of that is the difference in culture between something directly under the banking group and something that is in a unit that is more focused on investments.

The other thing I want to talk about is our Islamic experiments. When group Islamic banking engaged with the FinTech department, they were very keen to do Islamic experiments. For us, it doesn't really matter if we do something Islamic or conventional for the group, because CIMB Islamic is consolidated into the group. So if something is Islamic, everyone from the whole country can benefit from it. If it is only conventional, then we won't be able to benefit. That is why we try to prioritise the Islamic experiments. We engaged a couple of service providers who build FinTech solutions. One thing we found was that they don't know anything about Islamic finance, so we have to educate them.

The second thing is that when we were looking at possible solutions, we were faced with one of two directions. Once again, we are looking at maximising benefit and minimising harm. You can look at efficiency gains; how can you gain efficiency in Islamic finance? How can you decrease the compliance cost? We were more focused on that. Of course, you can look at how to open new markets, how to create revolutionary change. As I mentioned, the revolutionary change is much more difficult. For banks, FinTech are low-hanging fruit – especially in Islamic banking, because it is very transaction heavy and compliance driven. If we are doing a *tawarruq*, for example, there are processes. You have to make sure that the commodities you are buying are deliverable. You are selling the commodities, which after that the customer will appoint you as an agent and you sell the commodity on his behalf, bank will deposit. We have *tawarruq* on the deposit side as well as the financing side, like many banks here in Malaysia and around the world have. There are a lot of manual processes.

We are looking at ways to use FinTech to decrease the cost and the errors. We found that Smart contracts were good solutions, because we can automate the whole process. Currently, in many banks, the Treasury department does the buying and selling of commodities. As it is a manual process, mistakes happen – and, obviously, mistakes are costly. If we can automate the whole process, you can decrease those mistakes or maybe even eliminate them. That was one of the areas we were focusing on as a way to reduce the cost and reduce mistakes in *tawarruq*.

The other area that we were looking at was more about the value added – about trying to maximise benefit. That was *murābahah*. *Murābahah* is sort of like bread and butter for Islamic banking. At the same time, we are finding an expansion in *tawarruq*. One of the challenges in *murābahah* is you have to make sure the goods are purchased and the bank buys the goods. Then, the bank sells the goods to the customers. There are certain risks. Maybe the goods are not there, or maybe the customer has possession of the goods. He sells the goods while holding them on behalf of the bank before the sale contract is concluded. There are some compliance issues that are risky. If a mistake happens in *murābahah*, the whole transaction may be invalidated. We were trying to see how the risks in *murābahah* can be decreased by using Smart contracts. We are also looking at an experiment with *murābahah*. The beauty of *murābahah* is that everyone in the world accepts it. For example, we have CIMB Niaga Sharī‘ah in Indonesia, who generally don’t like *tawarruq*. We respect that.

So, the *murābahah* solution can work in Indonesia, Malaysia and most countries. Even in the US, where I am from, we can do *murābahah* in Islamic banking. In any case, we were trying to use Smart contracts to connect the customers, suppliers and the whole value chain to do the *murābahah* in an automated way, so that we can show that we have this ability and that the costs are low and with no risk of error. These were some of the experiments we were looking at, none of which have been implemented as yet.

That is really all I wanted to share in regard to our experience of trying to integrate FinTech and use technology. We don’t see any Sharī‘ah issues. They were the easiest issues to overcome. When we consulted our Sharī‘ah scholars about doing *tawarruq* and *murābahah* in Smart contracts, there was no problem whatsoever as long as the ownership transfer is documented.



ASHRAF GOMMA ALI

Ashraf Gomma Ali is the regional head of Sharia and Governance at CIMB Islamic, where he is responsible for all Sharī'ah advisory and research affairs for CIMB Group. He previously worked with NCB – Saudi Arabia for six years as vice president of Sharī'ah assurance, where he was responsible for overseeing all policies and procedures at the bank, as well as for providing Sharī'ah advice on all Islamic products across NCB Group, with particular emphasis on corporate, treasury and capital markets. He also serves as a Sharī'ah board member of University Bank in Michigan, USA. He holds a BS in Finance from the University of Maryland, an LLB in Sharī'ah from Umm Al-Qura University, and a Masters of Islamic Finance Practice from INCEIF. He is also a certified Sharī'ah auditor and advisor.





ISBN 978-967-5687-69-3



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