Enhancement of Financial Inclusion through Islamic Fintech with Value-Based intermediation, a proposed second phase for the Islamic Banking industry

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Abstract

Nowadays, almost every bank is trying to come up with cutting-edge technology products and services. It is the trend of the market and need of the hour too. Through these products and services, Islamic Banks can retain their existing customers and also can add new customers, which will enable them to achieve their financial inclusion plan. Ultimately Islamic banks will achieve greater revenue by adding innovative digital products and services. Covid19 compelled the financial sector to develop innovative technology-based products in order to avoid in-person interactions. Financial institutions can achieve their goal by protecting both their employees and their customers by adhering to the standard operating procedures issued by the relevant Islamic banks. There are people in a society who have relationships with financial institutions, but there are also people who have no relationships with any financial institutions. Developing emerging economies are frequently eager to bring their unbanked citizens into the banking and financial sectors, believing that it will help them improve their social and economic lives. Financial inclusion is also used to alleviate poverty. The study's focus is on financial inclusion through Fintech and how to use Technology in Islamic Finance to improve financial inclusion through valueadded propositions. This is a modern trend in the financial sector in which every financial institution wants to provide cutting-edge technology services to customers while also increasing revenue and fee-based income.

Keywords: Fintech, Financial inclusion, platforms, customer, products, modern trend

Introduction

Fintech can be defined as the people and organizations using technology for financial products and services. Fresh deposit is considered blood for the banks. Deposit is the main source along with shareholders' equity on the fund side of the balance sheet. Fee-

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based income in modern banking is considered a valuable income that was not considered before as one of the main sources of income.

In a society, people are maintaining relationships with financial institutions. The majority of the people are not using the Banking or Financial sector in developing countries. Financial sectors want to bring their unbanked people to the banking and financial sector. The purpose is to help them uplift their social and economic life. Financial inclusion is also used as a tool to reduce poverty.

The goal of this research is to identify opportunities for Islamic banks in the upcoming Fintech and blockchain market trends. Creating opportunities for common unbanked people to access the financial sector is also on the agenda. Its goal would be to improve the common people's economic and social well-being. Through digital means, it emphasizes relationships and awareness. In many ways, it will benefit both Islamic banks and unbanked people in developing Asian and African countries.

Data and information were gathered by reading the most recent articles, books, and features. Our research focuses on financial inclusion using Fintech and blockchain, as well as how to use Technology in Islamic Finance to improve financial inclusion. The purpose of this research is to determine how Islamic financial institutions can reach the greatest number of potential customers and offer them products and services via modern technology services platforms.

This is a modern financial trend in which every financial institution wants to provide cutting-edge technological services. In addition, the banks' goal is to retain existing customers while increasing revenue and fee-based income.

Problem statement

Islamic finance has made commendable progress, and research indicates the practical offers of Islamic banking and its effective mode of operation. To interpret the phenomena of Islamic finance and predict the changes that may occur as a result of its acceptance, it is necessary to first understand what has primarily been accomplished in the field of Islamic banking to date, as well as what lies ahead in the future. As we can see, our focus area of modern technology adoption has been new to Islamic banks, despite its great potential. Islamic banks and modern technology companies can both progress. Although utilizing this modern trend is a resolution and part of any progressing organization's goal, it is not without challenges and risks.

a) Some of the challenges are discussed below.

- 1. The challenges in financial inclusion for Islamic Banks
- a) Regulatory challenges
- b) Software System adaptability and interface with the third party
- c) Customer's education on technological products and services

d) Human capital scarcity for using technological services in the financial sector

2. Associated risks

- a) Operation risk
 Data management risk
 Third-party risk in Fintech transaction
- b) Cyber security risk
- c) Shariah non-compliance risk
- d) Ownership and possession risk in a digital sales transaction

There is no specific definition of the term Fintech, but the Financial Services Board (FSB) defined "FinTech" as "technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services."

The common people's access to technological financial services is the key; the more the people use it high will be the ratio of their inclusion in the financial sector. It has provided a great opportunity for Islamic Financial institutions to enhance their customer base. This fintech is a new trend, and conventional banks are equally illiterate in it.

"The new evidence demonstrates that financial inclusion can significantly reduce poverty and boost shared prosperity but underscores those efforts to foster inclusion must be well designed" by world bank (2014)

This trend of using technology for financial services will bring unbanked people to mainstream Islamic banking. By adopting this, Islamic Bank is going to make a lot of technological advancements and training. According to Lochy (2019). "The technological advancements like artificial intelligence (AI), Big Data, Distributed computing, cryptography, and internet or mobile-based products lead to predictive analytics, machine learning, smart contracts, digital wallets, etc."

Islamic finance clearly has room to grow in supporting financial inclusion, given that account penetration rates in key regions such as the Middle East, Sub-Saharan Africa, and South Asia remain fairly low. In the Sub-Saharan African region, amongst the 34% of adults with an account, almost a third of account holders – or 12% of all adults are reported to have a mobile money account only. The mobile money account is increasingly being used in Sub-Saharan Africa to extend financial services past the limits of bank branches," by a Malaysian Marketplace in the report (2015).

In digital transactions, there must be the existence of the subject matter, which should be halal in nature, proper possession and transfer of the commodity, same as the traditional transactions in Islamic Banking. There should be a proper Shariahcompliant process flow duly approved by the Shariah advisor and Shariah Board.

Developing countries with emerging economies should be more focused on the financial inclusion of the common people to bring them into the mainstream financial system. "Governments around the world are increasingly viewing financial inclusion as an important part of economic development as it is important for a sustainable economy. This is evident with over 90 developing countries, representing more than 75% of the world's unbanked population," by World's Islamic Finance Marketplace Malaysia (2015).

Methodology

Technology is improving day by day, and products and solutions are coming more quickly than anticipated by Islamic Financial institutions, so there is a gap. Through our literature review, we will see the work done so far and will analyze the obstacles to acquiring inclusion through financial institutions with modern technology-based products and services. We also studied the advantages of Fintech and Blockchain to Islamic Financial institutions. The methodology for this study is qualitative in nature because, in this study, we answered 'how' to avail this opportunity of Fintech and blockchain and grabbed more business.

A) Value-based intermediation in Islamic Banks

As we know that financial products and services are the main focus of all banks. It has to be broadened to non-financial activities such as the well-being of the society, more disclosure and awareness to customers, a sustainable environment, and profit & growth enhancement. This will lead to higher transparency, and further, this transparency will motivate the stakeholders to some good decisions with wider benefits.

Value-Based Intermediation (VBI) was proposed by the Malaysian central bank. It was rightly devised because the Malaysian Islamic Banking industry is well regulated with proper infrastructure and future vision. Islamic Banks are already offering Shariah-compliant products and services, but it's time to broaden the horizon by focusing on non-financial aspects along with financial aspects. Islamic Banking Institutions' (IBI's) mission shouldn't be restricted to the Shariah compliance of a few products only, Shariah compliance is the base of Islamic Banking, but Shariah in totality will be seen in VBI implementation. Shariah, in totality, will cover all aspects, whether financial or non-financial.

B) Banks' readiness for Fintech

Banks are trying to match the requirements of the upcoming fintech products and services. The innovative technology-based products came quickly and unexpectedly. Covid-19 also compelled IBI's for technological products immediately to offer solutions to customers without coming to the bank. So, it is evident that Islamic banks were not ready, and they have not expected it that early. The preparation could have

been planned for the near future, but immediate launching without proper structure and internal policy made it difficult.

Islamic banks have more challenges than conventional banks while adopting these fintech blockchain services. Making the new technology-based product Shariah-compliant is a challenge for Islamic Banks. A proper evaluation is required to make the process flow and then follow that very process flow step by step from Shariah's point of view. A question arises here that why Islamic Banks were not ready for this change, as people were definitely expecting that.

It can be assumed that Islamic Banks were either aware & reluctant to adopt the innovative technology or there is negligence from them. They should have considered this change with a proper strategy for it in advance.

C) Lack of regulatory framework

Islamic Banks are rapidly adopting modern technology products and services with no comprehensive regulatory framework and are exposed to legal and regulatory risks. The situation can be vulnerable if it bursts in the near future. Islamic Bank is more sensitive to the transfer of ownership of the subject matter and its existence. We need to see the aspect of realism in Islamic Financial transactions. The transaction through modern applications and software should not be something contradictory to the principle of Shariah.

"Islamic finance is a more equitable and just financial system designed to support growth and betterment of society. Hence with proper infrastructure and regulations in place to support the potential of Islamic finance, this will eventually contribute to a more inclusive economic growth," by World's Islamic Finance Marketplace Malaysia - (report, 2015)

Almost all Islamic Banks have their Information Technology strategy and digital transformation vision, but the industry lacks a framework to cater to modern applications-based products and services; the reason is those technology organizations are ahead of the banks in digital products and innovation. This point is interesting that the technology companies who are developing these products and services and modern applications are way ahead of the banking sector, and Banks can't catch them. According to **Invalid source specified.**, "The main problem is that with the recent development and high capabilities of financial and banking services, great risks arise as well, and these services are accompanied by fierce attacks that institutions must prepare for since financial institutions are the most vulnerable to these risks. Therefore, the supervision of banking operations and regulatory bodies should oversee oversight mechanisms that are in line with the evolution of electronic banking operations and the resulting risks".

D) Information technology company license instead of a Banking License

These days an idea is in the discussion that the banking license should be changed to an information technology license so banks can perform better with a high focus on technology-based products, and they will have proper regulations. Banks under the license of IT will have a better regulatory framework than banking licenses. The regulatory framework for IT companies is already in place for two decades since there was the Information Technology boom in the '90s, and it is quite refined by now. This will help the banking sector to adopt modern technology products easily.

E) Shariah non-compliance Risk

The risk that arises from the digital transaction in the case of Murabaha, Salam, and Istisn'a is the existence of a commodity and its physical or constructive possession at the time of delivery during an online transaction, which will lead to ownership risk and further lead to a Shariah non-compliance risk. Islamic Banks are certainly exposed to this risk. For mitigation of these risks arising from modern technology products and services, Islamic Banks and regulatory authorities should come up with comprehensive regulatory guidelines product-wise.

"The use of FinTech in a particular Islamic finance product should not be such as to create harm, deception/ cheating, hidden costs, nor should it inculcate any Riba, gambling, Gharar, or other prohibited elements such as those that make the sale invalid" **Invalid source specified.** This matches with the theory of realism in Islamic Finance, which should be followed with real spirit to make the transaction Shariah compliant and free of all ambiguities. Transparency will be the key to financial transactions via technology, and it should be ensured.

F) Cyber Security challenges

All commercial banks and Islamic Banks are exposed to cyber security risks due to these modern technology products and services. Banks are giving an interface to the third-party technology services for the integration of their application with the banks IT system, by this bank is exposing their system to hackers, and it can lead to the cyber security risk, and unfortunately, we have less or no expertise in-house to detect this risk before it happened. Islamic Banks in some countries are hiring cyber-security experts in-house rather than going to outsource to cater to this high risk. The casual approach of the Islamic Banks in the past hit them with big financial reputation loss due to cyber-attacks. The problem is that Bank should be more vigilant these days to protect those millions of deposits of the customers.

Invalid source specified. Stated that "There is a relationship of effect (FINTECH) in (Cybersecurity)), according to the results of the statistical program (Smart pls v.3). The results showed that the overall effect of the model has reached (0.908). The

impact ratio was positive, which means if (FINTECH) increases by one unit, it will increase (Cybersecurity)".

Banks having the deposit protection off-balance sheet in the form of govt. Guarantee in default as a bailout. This sovereign guarantee of the govt. /finance ministry/ central banks is invisible, although banks are sure about this in case of any default. This surety may lead to a casual attitude of the banks toward the risks arising from different transactions, which further take them to default. This is actually a moral hazard.

The banking sector is important in the sense that all individuals and businesses are in a relationship with it. All Business's and individuals' balance sheets are interlinked through Banking. The bank is the only organization that is linked with other organizations and individuals by the Balance sheet. No other sector has this ability to link the industry and common people. There is a contingent guarantee of the bank to the customers, and in case of default by the bank, the central banks, deposit protection institutions, etc., are coming into action to compensate the customers. So, these regulatory authorities under the govt. Are giving a bailout a contingent responsibility?

Islamic Banks have IT experts, but they don't have cyber security experts who can cater to the modern technology risk and put trigger points in the core banking system to mitigate the cyber security risk from outside before it hits the bank. Cyber security risk is a hot issue these days, and different Islamic Banks have experts in-house for this purpose, but it seems they took this action after cyber-attacks on Banks. On the other hand, the hackers are regularly trying and searching for some week area of the bank to enter into the system.

Cyber security is described as "Protection of the digital environment from unauthorized access/usage and ensuring confidentiality and integrity of the technology systems. Key controls may include platform hardening, network architecture, application security, vulnerability management, and security monitoring" **Invalid source specified.**

Islamic Banks have mostly only one or fewer staff for cyber security purposes, and they are taking it very lightly; one can't imagine how risky it is for the bank. The insensitivity of the Banks is since there is an implicit contingent bailout guarantee. "While most OIC countries have taken measures to improve financial access, there is no comprehensive high level of commitment to reform Islamic banking with the aim of increasing financial inclusion," **Invalid source specified.**

These technology services are provided by third-party software or IT companies which are sometimes small companies just operating a retail application through Mobile or digital devices. The outsourcing of retail technological applications with the sharing of the Banking interface is basically a loophole that is a window where cyber attackers can enter. These small technology provider companies have no

resources to hire expensive cyber security experts and are thus exposed to this risk. Regulatory authorities should evaluate the third-party technology providers and issue the list of approved IT companies after qualifying the risk scorecard. Islamic Banks should pick technological solution providers from this approved list of regulators only. "Comprises of risks arising due to inappropriate controls at vendors/third party operating environment. Key controls would be around data sharing, technology integration, operations dependency, vendor resiliency, etc. **Invalid source specified.**

Modern technology providers are also companies for profit generation, and with the contemporary market competition, they sometimes oversight compliance and risk-related matters to come up with the product and services early from other competitors in the market. Healthy competition is always good for any industry to flourish, but compromising on compliance and risk is not favorable and can lead to disaster.

G) Potential of innovative technology products for IB's

There is a potential for modern technology to overcome the traditional products, and Islamic Banks will also prefer it because it will reduce their dependency on humans and hence can reduce the cost. This is attractive for Islamic Banks to do business without more hassle and effort, and it can also reduce the turnaround time (TAT) while using those Fintech products and services. "With its growing middle class, high mobile phone penetration rates, and strong government support for the digital economy, Malaysia is well situated to take advantage of fintech innovation. From mobile wallets and electronic payments to crowdfunding and insurance, Malaysian businesses and consumers appear ready to embrace the technology", **Invalid source specified.**

Fee-based income is considered a key income of the total revenue, which was not focused on before. Islamic Banks can earn a big amount through digital products and services. It is important in this time of pandemic as Banks avoid customers visiting them physically. Fee-based income these days are consider one among the main income of financial institutions. Islamic Banks should focus on it to increase their overall revenue.

H) Poverty alleviation through modern technology products and services

Islamic Banks' digital products should not only focus on deposit and fund transfer. There should be microfinancing for the poor, destitute, and have-nots from charity accounts. The borrower can be young start-up entrepreneurs and skilled women etc. Specialized Islamic Microfinance organizations can use modern technology applications for financing to poor either with a little Profit margin through Murabaha and Musawamah or give it from Zakah and charity Accounts with Zero profit margin.

Invalid source specified., discussed that "In the microfinance organization we need three kinds of financing: 1) financing loanable money that will be used to giving loans

to the potentially producing poor; 2) financing the administration of the microfinance organization; and, 3) financing the service activities that are designed to educate and rehabilitate the poor" and it is further added that "Financing services to the poor: These services include educating them and rehabilitating their business skills and their investment/saving decisions, providing preliminary health advice, social services related to business and community, professional training, etc. such services aimed at enabling the poor, dignifying and preparing them to become self-sustained and independent. These functions are socially important and financially relevant because they are prerequisites of financing them; otherwise, financing does not produce the looked-for fruits".

Invalid source specified. Stated that "Financial inclusion, a concept that gained its importance since the early 2000s, has been a common objective for many governments and central banks in developing nations. The concept initially referred to the delivery of financial services to low-income segments of society at affordable cost". It is the need of the hour to include more and more people in the financial sector, especially Islamic Banks, and be aware of them to protect them from the evil of riba and also enrich them with innovative technology understanding. Thus, through financial inclusion and access to finance, we can fulfill the Maqasid al Shariah also.

A proposed 2nd Phase for Islamic Banking based on the Doctrine of Realism

It is proposed based on the theory of Realism presented by **Invalid source specified.**, in the Islamic Finance contract, page no. 43 that there are five general conditions of Islamic contracts, and realism is one among them. **Invalid source specified.** Stated that, according to the Islamic law (Shariah), realism means that the rulings of the Islamic law (Shariah) always adhere to things as they exist in the real world, in their actual realistic forms as they occur in real life. He points out that the Qur'an was revealed in accordance with the conditions, situations, and events that transpired in the life of Prophet Muhammad, PBUH, and Muslim society over the course of the Qur'an's twenty-three years of revelation. In fact, some Qur'anic verses have been revealed as replies and verdicts in response to the situation and circumstances. There are numerous examples, and the Qur'an (25:33) describes it in the following words: And they don't come to you with a counterargument, only the truth and the best explanation.

In his various writings, Kahf argues that the principle of realism requires all Islamic finance contracts to be founded on genuine real transactions rather than virtual, supposed, or deemed transactions. Kahf further claims that Shariah forbids making any assumptions regarding future events, claiming that Shariah judgments are not based on assumptions and that assumptions have no impact on Shariah rulings.

Shariah solely considers facts and real-life occurrences as they occur, and the origins of the idea of realism can be found in Shariah's sources (the Qur'an and Sunnah).

Hakim asked (the Prophet PBUH): Messenger of Allah, a man comes to me and wants me to sell him something which is not in my possession. Should I buy it for him from the market? He replied: Do not sell what you do not possess. (Sunan abi Dawud no. 3503)

Anas (Allah be pleased with him) reported Allah's Apostle (ﷺ) as saying: If Allah does not fructify them, then what is permissible for one of you to take the wealth of his brother? (Sahih Muslim no.1555)

It was narrated from Ibn 'Umar that: the Prophet PBUH forbade selling the offspring of a pregnant animal (Habal Al-Habalah) (Sunan an-Nasa'i no.4624)

Invalid source specified. Stated that the Islamic Finance contract must fulfill two sets of requirements: first, the Shariah condition, and second, the law of the land condition. The Shariah condition, which governs Islamic Finance contracts, can be classified into two: 1. General principles of contracting (civil aptitude, consent, and legal permissibility); and 2. Specific Islamic Principles (balance, moral commitment/ethical foundation, Shariah permissibility, and Realism) (Kahf, 2006a; Kahf, 2006b; and Kahf, 2014).

a) Proposed 2nd phase postulate

The second phase is the phase where Islamic Banks should follow some innovative ideas and clean their house. The mess they have created in a few matters should be eradicated. In the first phase, say from 1975 to 2020, Islamic Banks achieved a lot, and we discussed it earlier and admired it. In the second phase, a proposed theoretical framework will be suggested in which all odd practices will be exterminated. The below-mentioned points will be part of the 2nd phase from 2021-2040.

 Realism – The backbone of the 2nd phase, trade on the basis of Realism, No Riba, speculation, Gharar, exploitation, etc.

In the 2nd phase keeping in view the theory of Realism, Islamic Banks should not go into un-real trade like derivatives, etc. The price of Islamic Banking products should be just and competitive in comparison with conventional banks in the same market rather than charging high.

Social Respect: Development of the society, more care for the people

There should be more public-centric policies with more exposure and transparency to the transactions. More clarity of the products and transactions to the public through awareness will enhance the Islamic Banking customer base or retain the existing customers.

Separate Capital Market for Islamic Finance instruments

A specialized separate capital market for Islamic Financial instruments in the 2nd phase is proposed. It will help the Islamic Finance industry to trade with their own Shariah-based market indexes.

• Full compliance of Islamic banks with the Shariah Governance framework

In the literature review, it has been observed that Islamic Banks are not following the SGF fully. (Hassan et al 2021) concluded after a qualitative study that the SGF is not followed 100%, and none of the Shariah scholars of the Islamic Banks claimed they are following the SGF fully in Pakistan.

Qualified people in Shariah Board and Shariah Advisory to prevent problematic Fatwa

The role of the Central bank is important. Ministry of Finance and Central bank should come up with strong laws and regulations through legislation from the parliament for Islamic Banks and cover the issue of hiring and monitoring of the Shariah Boards and their Fatwas and decision as it affects the public directly.

Financing with Social objectives

Islamic Bank should give financing with a social objective. The demographic segmentation of the society can help Islamic Banks to finance low-income people or females with small business with less profit margin. Islamic Banks should not finance those projects harmful to the environment.

Deposit contracts for the society, not for the rich only

It should be a Mudharabah contract. Both small and big deposit holders should be treated equally with similar Mudharabah contracts. Both should be respected equally. There should be no disparities.

Islamic Banking with its own benchmark

The Islamic Banking industry in the 2nd phase should have its own benchmark derived from the real market, not the existing one derived from the money market.

Conclusion and Recommendations

Islamic Banking is a banking system according to the spirit, attribute, and value system of Islam, and Sharia principles guide it. Halfway to this form of banking is that money itself has no integral worth and cannot even add on its own. To increase the money, a productive manner must be chosen and adopted so that it can later be invested in real goods. The Islamic Banking principles are based on the basis of the

scale between prosperity and success. This means not only a company has to succeed, but also a person. Therefore, every step is tailor-made to the banking system.

Islamic Banks can include the unbanked people through Islamic Fintech and blockchain. This is an equal opportunity for Islamic Banks, the same as for conventional banks. Now it is up to the Islamic Bank how to avail of this opportunity and enhance its customer base through these modern trends of innovative technologybased products and services. This market of transactions through Fintech and blockchain is untapped, and their products and services are coming rapidly. Financial institutions should stand out to give a boost to digital products by proffering deposition and loaning the services to unbanked people and businesses.

Inclusion of the customers and aware they from modern technology products can also help the poor to uplift their social life and further their standard of living. Bringing the common people to the mainstream financial sector itself can bring more awareness. People will be aware of the market trend and innovative products when they are connected with the bank via digital products from their mobile etc. Islamic Banks must come up with a hybrid model of deposit, funds transfer as well as microfinancing to deserving people. It will really help society and enhance the inclusion of people, which is beneficial for Islamic Banks as well. It is said that" In Muslim countries members of the Organization for Islamic Cooperation (OIC)—various indicators of financial inclusion tend to be lower, and the share of excluded individuals citing religious reasons for not using bank accounts is noticeably greater than in other countries; Islamic banking would therefore seem to be an effective avenue for financial inclusion" **Invalid source specified.**

We urge all developing countries should have an action plan like Indonesia. "Indonesia has a clear Islamic fintech action plan under its National Shariah Economy Plan, formulated by the National Islamic Finance and Economy Committee, which is chaired by Indonesian President Joko Widodo. Unlike its peers, the Republic has approached Islamic fintech-mediated financial Inclusion by creating a comprehensive digital marketplace surrounding the country's major e-Commerce platforms," **Invalid source specified.** This is for all Islamic countries having Islamic Financial Institutions that they should follow and implement it. Islamic Financial institutions should stand

Out to give a boost to the digital products by extending financing along with liability and fund Transfer and utility payments etc. to common people. Through this, Islamic Banking services will

Help create more opportunities for poor people.

Through these digital means, Islamic Microfinancing to the youth startups and skilled workers would make it more viable. As it is said that "We need to create a Zakahcum-Awqaf based micro-Finance organization that provides financing to the poor at either the market rate while financing. The indispensable supportive poor training and rehabilitation programs form the Zakah proceeds.

Establishing a Cash Waqf to give charge-free or charge subsidized financing to the poor; Establishing a Waqf whose revenues are to be used to finance the poor supportive programs and to subsidize the rate of financing charged to the poor; allocating part of the proceeds of Zakah to Provide grants for an initial investment to the poor as a substitute of micro-financing; etc.

(Monzer k., 2014) The best part of Islamic financing is that it is available for all provided the basic conditions are Met which includes i) the project to be supported must be lawful according to the Islamic Provisions, ii) the project to be supported shouldn't involve a high level of uncertainty, i.e., gharar, in transactions. If the above conditions are satisfied, Islamic Fintech transactions can be openly used to finance gainful ventures which may contribute to socio-economic well-being; therefore, Islamic Finance is social welfare headed model. It evaluates the projects based on social well-being in comparison to conventional project financing, which evaluates them on the rate of return.

Challenges to Islamic Banks

The most prominent challenge which Islamic Banks are facing is the lack of a proper regulatory framework. Islamic Banks are offering some technology-based products and services, but they would be vulnerable in case of any problem in a transaction as there is no regulatory framework in different developing countries.

Cyber security is another vital issue that can occur due to the negligence and lack of regulatory framework for Banks to operate smoothly. There is no proper way of mitigating this risk. Ownership and possession of the subject matter during the transfer can lead to Shariah Non-Compliance risk if not followed properly as per Shariah principle. In Fintech transactions, it can occur as the transaction is normally done within a few seconds.

All these risks are challenging as we know that Islamic Banking is more sensitive. Islamic Banks can have a reputation risk that can't be neglected. Islamic Banks have no in-house experts for digital platform designing and application development, so they are always relying on outsourcing in this regard.

Integration and interface sharing with a third-party application can lead to data breaches and hacker attacks. In case of any Dispute with a third party, it is quite possible for banks to go into litigation and arbitration, which can be a serious challenge. Further, it can lead to legal risk.

The third-party technology application provider is not able to hire a quality resource to cater to their Cyber security challenges due to budget constraints. As there are no

proper regulation from Regulators and Islamic Banks, so the only available arrangement between them is a memorandum of understanding which has no legal value in law.

Regulatory authorities should have a list of approved vendors of the digital app. Providers Technology Companies. Commercial Islamic Banks will follow only those companies on an approved list of the Regulators. If they do business with companies not on an approved list, then it would be the sole responsibility of the commercial banks in case of any dispute and problem.

One of the challenges for Islamic banking in acquiring the fintech products is that they normally Don't have in-house expertise, and they go for third party's application and integration, and sometimes those technology houses are not selling their digital platform; rather, they are launching it independently.

"Since most FinTech companies have an asset-light, digital focus business model, they have a competitive edge over traditional IFIs in terms of costs and scale. There is no requirement to own information technology themselves; they can hire or outsource the cloud for operational infrastructures. Thus, these new market players challenge the industry by capturing business opportunities and empowering competitors by offering their services to them,".

Opportunities

Islamic Banks can increase their fee-based income through Islamic Fintech and blockchain transactions. Due to the pandemic, they have a blessing and disguise to earn and also avoid customers on their Bank's premises.

Islamic Banks can save labor costs and operational activities by using digital platforms. It can reduce human dependency and also can save the paper and printing costs of the bank.

The retail customer base can be enhanced through Islamic Fintech and blockchain by attracting more customers. It will also help in the retention of old customers, which are already adding value to the banks in many ways.

The opportunity in Fintech and blockchain transactions for Islamic Banks and conventional banks are the same. The one who works hard for it can win, so there is an equal opportunity for both. The smarter work, the higher business they get. This is leading to healthy competition among banks in the same industry.

The standard banking system works on the basis of paying interest at a pre-planned rate on deposit. As Shariah prohibits the payment and receipt of interest, Muslims generally refrain from banking. Islamic banking with Shariah-compliant Fintech products and services can attract more customers and enhance the customer base.

One of the boosting components of financial sectors worldwide is the Islamic Financial Institution. Even western societies have designed legislation for the authorization of Islamic Financial Institutions, such as Ireland, United Kingdom, Russia, Netherlands, France, Luxembourg, etc., after identifying its applicability to both Muslims and non-Muslims. The Islamic Banking Subsidiaries have been established by foreign financial institutions and conventional banks as Well in the Muslim states and in Europe and the United States as well, offering Islamic goods that are targeted at even non-Muslims. If they use Islamic Fintech and blockchain services, then they can enhance their business and include the unbanked people.

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