



DIGITAL ISLAMIC BANK

Structure and Mechanism

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1. Introduction

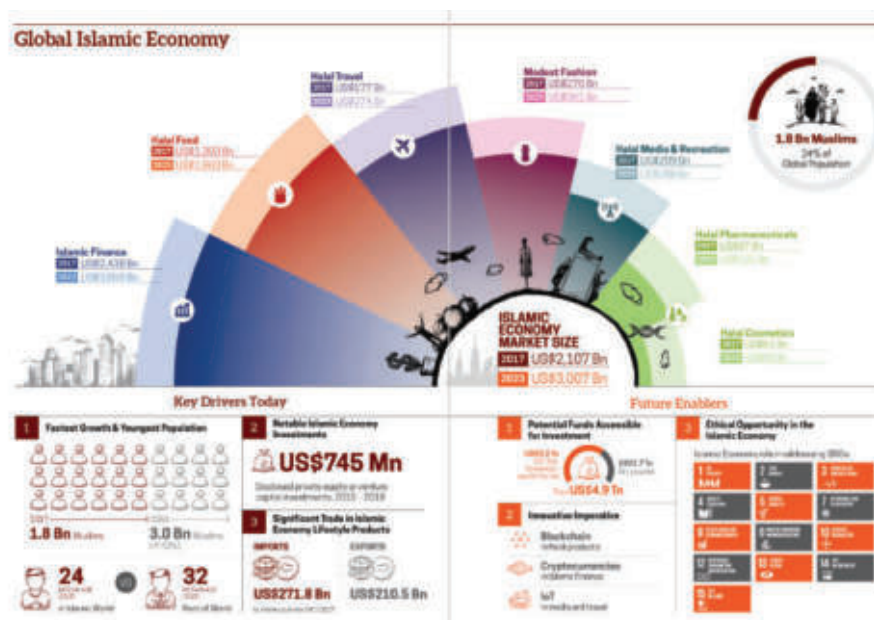
Changing and developing technology changes the way we do business. The digital world, which has been developing rapidly since the 2000s, continues to change and shape the needs of the generation who born or grew in these years. With the development of the Internet, we are moving towards a world where digital needs are formed with technological developments such as social media, while meeting our existing needs through different digital methods. All these developments have affected the evolution and transformation of Islamic Finance, which was founded in 1970s. While Islamic Finance is reaching customers with more traditional channels, changing technology products must be transformed into new business models to meet changing needs. At this point, we see that the existing Islamic banks have begun to change and transform the channels that they reach the customer. There is a rising digitalization trend in the world as well as emergence of the examples of fully digital banks in Islamic Banking. In this research paper, we will explore the digitalization of Islamic banking and the new business models that this digitalization reveals.

2. The Potential of Islamic Banking

The ability to perform banking activities requires a serious know-how. Scaling banking services with a channel such as branch is a costly option. All these scaling efforts require good capital support. This prevents the increase in the number of players in the market. In recent years, emerging technologies have led to the reduction of investment in traditional channels by providing banks ‘ services through channels such as mobile banking and internet banking. In contrast, it has resulted in increased value-added service and income. Fully digital banks are aimed at scaling up faster by eliminating the cost of branches and offering banking transactions to their customers through completely digital channels. Due to the fact that the digital banking approach is completely new, there is quite a way in terms of development.

In order to understand the potential and analyze the opportunities, it is necessary to take a look at the current state of the Islamic Economy and its forecast of development. The State of Global Islamic Economy Islamic report by Thomson Reuters 18/19 offers a good overview.

Diagram 1



When we consider the population, according to the end of 2017, Muslims with a population of 1.8 billion constitute 24% of the world population. The more important point here is that the average age of this population is lower. The median age of all Muslims in the world is 24, while that of remaining population is 32. Although it seems to be a demographic information, it is a very important data in terms of digitalization and technology. The fact that the young population is more prone to technological developments means that the needs of this new generation also need to be digital.

According to the Diagram 1 report, the Muslim population is expected to increase by 40% to 3 billion at the end of 40 years. The impact of this rapidly growing population on demand for halal products is also seen in Islamic Finance. At the end of 5 years, market size of Islamic Finance is expected to increase by 55%. It is not possible to associate this high increase in this short time with the population data only. The increasing awareness of Islamic Finance will allow the market share to increase with a higher acceleration. When we evaluate the two data here, it will not be difficult to reach a conclusion. Like the digitalization of the entire financial sector, the Islamic Finance sector is also rapidly digitalizing. According to demographic data, the target group of Islamic Finance is younger and therefore more technologically oriented. The fact that Islamic Finance is relatively new and open to development compared to conventional finance solutions, and the ease of access to information through the



development of the Internet will increase the awareness of Islamic Finance makes it easier for us to predict that Islamic Banking has a great potential for the coming years.

3. Digital Islamic Banking

Digital Islamic Banking structurally can be divided into two categories. The first is that traditional Islamic Banks offer their products and services through digital channels. Another one is to present all services and operations with a digital-only approach without branches and ATMs with a more innovative approach. In this study, especially the phenomenon of digital Islamic bank will be examined. I am going to try in order to transfer the experience in the process of developing the project of the first Interest Free Digital Only Bank in Europe, which I manage from end to end, onto this research paper.

There are both material and spiritual requirements to implement Digital Islamic Banking. It is necessary to understand the philosophy of Islamic digital banking, to bring together the basic building blocks that are appropriate and then build the digital bank. This chapter will examine both the perspective and the technical requirements to create a digital bank structure and establish its mechanism.

4. Technical Requirements

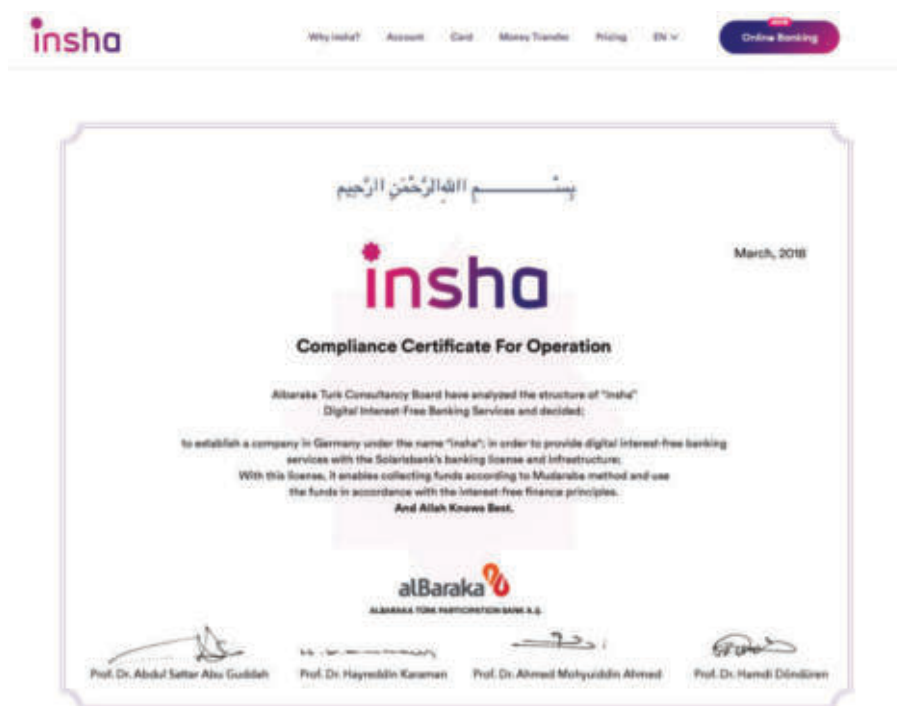
4.1. Sharia Compliance of Operation and Products

It is not possible to claim that the product and service conforms to the rules of Islamic Finance by bringing the word Islamic before the definition of a product or service. The principle that should be the most basic is the principle of interest-free. It should also be clearly stated that this mechanism works in accordance with the rules of Islamic Finance, as well as avoiding situations such as carrying out interest transactions or mediating interest transactions in all operations of the Digital Bank. At this point, the concept of transparency comes to the fore. Transparency means that the operation is approved by competent persons or boards that are in compliance with Islamic Finance rules. These certification documents should be accessible in digital environments. As Digital Banking eliminates the human factor in the operational parts, the answers to all questions that may arise in the customers' minds should be readily available in digital environments.

As indicated in Diagram 2, the certificate of conformity on the website of the Europe's First Interest-Free Digital Only Bank clearly states that the operations of Insha comply with the rules of Islamic Finance.



Diagram 2



Establishing the digital bank with a clean capital, ensuring that customers' money is safe, customers' deposits not being used in interest transactions or providing support to mediate these transactions constitute the most fundamental issues. Debit or credit cards, which are the only physical products offered by digital banks, should not be used in sectors that do not comply with Islamic Finance. Customers should be kept informed about the Bank's operations.

4.2 Regulation

One of the most important parts affecting the structure and mechanism is the regulation in the target market. With each country having different banking approaches, many countries do not have Islamic Banking regulation. In order to provide the most optimal service for customers, it is necessary to determine the points that are crossing and contradictory between the rules of Islamic Finance and the regulations of the target country. These contradictory or intersecting points should be consulted by central or



local advisory boards. For example, if the regulations in the target market prevent the debit or credit cards from restricting transactions in certain sectors, it means not being able to limit the use of this card in alcohol and gambling businesses. In such a case, it is not possible to carry out an operation in accordance with the rules of Islamic Finance. In such cases, it is extremely important to examine the regulation before entering the target market.

4.3. PSD2 ve Open Banking

The European Payment Service Directive 2 regulation, which paves the way for digital business models and collaborations, is spreading in Europe at full speed. With this legal arrangement, banks have to open their data to third party companies with the consent of their customers. This actually means a revolution in the sense of sharing the data. The fact that the customer data on the servers of the banks can be shared with 3rd party companies has led to the emergence of fully digital banks which we call the challenger bank with a lean approach without making huge investments. Opening the APIs of large banks to 3rd party companies will strengthen the fintech ecosystem and enable the creation of new business models by using customer data.

4.4. Technical Infrastructure

Providing a fully digital customer experience seems to be appropriate with a completely digital-oriented core banking system. Operations like opening or closing a new account, ordering a new card should be made entirely via digital platforms. The client's front-end demand must find a response in the core banking system. Consider the case in which a customer closes his account, and the customer realizes this request via the mobile application. There are two methods for performing this account closure process. The first method; the agent to review the incoming account closing request and manually delete the bank account of the person through the core banking system. The second method; is the automatic deletion of the account from the core banking system and the sending closure information to the customer. We can position these two methods in digital banking. But as the scale of the bank grows, it is very possible for this manual operation to become inapplicable. Another fundamental issue is that the core banking system must comply with the rules of Islamic Finance. The working mechanism of many Islamic Banking products from Murabaha to Mudaraba differs with conventional banks.

4.5. Structure and Functionality

In this section, the functionality that a digital bank and a digital Islamic bank should offer to its customers will be analyzed through the arguments contained in the EMEA Digital Banking Maturity 2018 report. According to Deloitte's research, there are 826 different functionalities under the 6 main functions in the digital banks examined. These 6 functions can be listed as follows.

Diagram 3



Information Gathering: In previous chapters, as we evaluate the accessibility of the Islamic Digital Bank, all products, services and pricing of the digital bank should be accessible from public platforms.

Account Opening: The account opening process should be designed so that a physical activity (such as going to a branch, writing a petition) is not needed.

Customer Onboarding: This process is one of the most important functions in establishing a digital bank. In order to become a bank customer in most parts of the world, it is still necessary to go to the branch and sign agreements. There are also countries that have fully digitized this process. In Europe and the UK, a wet signature is not required to become a customer and open an account in a bank. At this point, it is necessary to verify that the person who wants to open an account and the person who wants to open an account are the same. This verification process is possible with the Know Your Customer process designed using technology. The customer's onboarding process, which is one of the main points in the establishment of a digital bank structure and mechanism, is one of the areas that should be designed in the optimum way. Both people who are accustomed to being bank customers with an



agent from traditional bank branches and those who are inclined to technology must experience the process and must provide feedback to be able to design best experience. While it is more customary for traditional banks to present their existing services in digital platforms, the process of becoming a customer is mostly carried out with physical processes and paper. It is a difficult and challenging process to bring this paperwork and physical process into a completely digital process. Integration with technology initiatives can be a good option. Established in 2014, the German digital only bank N26 has more than 1 million customers. It has gained customers with completely digital processes. The customer acceptance process is realized by integrating it with an initiative called IDNow. Customers are redirected to a video call with a link after completing a customer form via a digital platform. In this call, the KYC agent asks the customer to bring his / her identity card or passport in front of the camera and gives the customer the small tasks in order to carry out the verification process. After approximately 1 minute of discussion, the system confirms the customer's information with specific APIs of the state and sends it to the core banking system of the bank. Thus, the process of becoming a customer is completed. With the developing and changing technologies, this process can be made shorter or can be realized without a call.

Day-to-day Banking: Digital products and services mean instantaneous transactions, sending the transaction request to the system and getting the transaction result from the same platform. The basic requirement here is to provide instant access to the customer's account information, card debt or other information.

Expand Relationship: In addition to the products offered to the customer as a digital bank, deepening the relationship with the customer and giving the customer the ability to perform every cross buying transaction in the same digital environment in order to increase the product variety per customer.

End Relationship: If the customer wishes to terminate his / her relationship with the bank, this process should be ensured that the customer performs on a completely digital platform without going to the bank branch.

As stated above, these 6 items constitute the building blocks of a digital bank. On the way to establishing an Islamic digital bank, besides the conditions required by Islamic finance, these basic technical requirements should be provided.



5. Spiritual Requirements

5.1. Understanding the Market

The different banking practices we see in different parts of the world have been created as a result of the different dynamics and culture of the market. Market is the most important factor shaping the product and service as it is not only in banking but also in many other sectors. Before designing a digital banking experience, it is necessary to examine the market from different perspectives. The user habits, the most widely used platforms, the opinions of people about Islamic Finance, the expectations from a bank, many of the data that we have difficulty in counting from the market should be obtained through various research methods. A digital experience to be built with these datas will be more widely accepted by the user than the other approaches.

5.2. Innovation Approach

Digitalization was reflected in our daily life as a result of technological developments. The technologies used in every stage of digital processes appear to be an important factor in the quality of the experience. However, as mentioned in the onboarding process, the approach to new business models also contributes to the digital experience that will be offered to the customers. The basic requirement here is to give the customers the feeling that they are always using the latest technology. The approach to innovation must always be proactive in order to create this experience and create sensation. Innovative development and business models need to be closely monitored for areas such as measuring not only sensation and experience but also performance and productivity.

5.3. Collaboration and Cooperation

It can be said that in-house execution of all digital banking operations is almost impossible. We see that traditional banks are actually cooperating in their operations (ATM cash management, card distribution operations, etc.). Whether the installation of a digital bank is an initiative of a bank in another market or the main activity of a start-up, the most important target is to be scaled at low cost using the advantage of being digital. Therefore, it is not reasonable to develop or carry out all services in-house. Implementation of card printing and distribution works with a provider, integration with a KYC initiative instead of a technological investment such as the KYC process will ensure the sustainability of the digital business model. One of the

most important approaches of Digital Islamic Banks should be this cooperation and collaboration.

5.4. Understanding Muslim Millenials

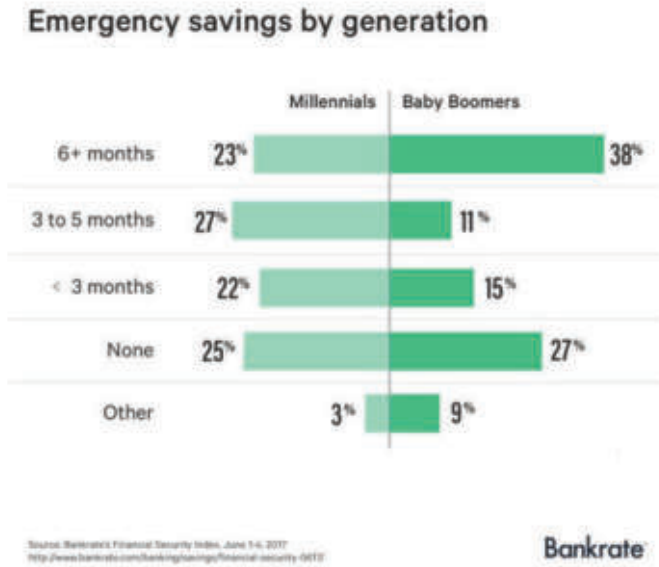
This topic is too different to be evaluated under the market and has its own dynamics. Many researches categorize the generations as Baby Boomers, X Generation, Y Generation and Millenials. Millenials can be said to have the highest level of digital inclination. Especially Baby Boomers and Generation X have grown in an environment where technology is not intense and their habits have developed in this direction. The Y generation represents a generation who had experienced the development of technology and learned by experiment. In fact, the concept of millenials encompasses the generation between the ages of 18-34 and represents a generation beyond the Y generation. It is necessary to get to know this target group in which we will provide a digital banking experience. Source:KPCB INTERNET TRENDS 2016 REPORT

Diagram 4

				
Birth Years	1928 – 1945	1946 – 1964	1965 – 1980	1981 – 1996
Year Most of Generation is 53 Years Old	1983	1989	1995	2014
Summary	<ul style="list-style-type: none"> Grew up during Great Depression Fought that "war to end all wars" Went to college on GI Bill Raised "nuclear" families in time of great prosperity + Cold War 	<ul style="list-style-type: none"> Grew up during time of idealism with TV + car for every suburban home Apollo, Civil Rights, Women's Liberation Disillusionment set in with assassination of JFK, Vietnam War, Watergate + increase in divorce rates 	<ul style="list-style-type: none"> Grew up during time of change politically, socially + economically Experienced end of the Cold War Reaganomics, shift from manufacturing to service economy, + AIDS epidemic Rise of cable TV + PCs 	<ul style="list-style-type: none"> Grew up during digital era with internet, mobile computing, social media + streaming media on iPhones Experiencing time of rising globalization, diversity in race + lifestyle, 9/11, war on terror, mass murder in schools + the Great Recession
Core Values	<ul style="list-style-type: none"> Discipline Dedication Family focus Patriotism 	<ul style="list-style-type: none"> Anything is possible Equal opportunity Question authority Personal gratification 	<ul style="list-style-type: none"> Independent Pragmatic Entrepreneurial Self reliance 	<ul style="list-style-type: none"> Globally minded Optimistic Tolerant
Work / Life Balance	<ul style="list-style-type: none"> Work hard for job security 	<ul style="list-style-type: none"> Client corporate ladder Family time not first on list 	<ul style="list-style-type: none"> Work / life balance important Don't want to repeat Boomer parental workaholic lifestyles 	<ul style="list-style-type: none"> Expanded view on work / life balance including time for community service + self development
Technology	<ul style="list-style-type: none"> Have assimilated in order to keep in touch and stay informed 	<ul style="list-style-type: none"> Use technology as needed for work + increasingly to stay in touch through social media such as Facebook 	<ul style="list-style-type: none"> Technology dismantled seamlessly into day-to-day life 	<ul style="list-style-type: none"> Technology is integral Early adopters who move technology forward
Financial Approach	<ul style="list-style-type: none"> Save, save, save 	<ul style="list-style-type: none"> Buy now, pay later 	<ul style="list-style-type: none"> Cautious, conservative 	<ul style="list-style-type: none"> Earn to spend

Financially, millenials have very different financial habits compared to baby Boomers. According to the report contained in Diagram 5 Bankrate Millenials doing more short-term savings. It's a generation that lives the cycle of "spend as you save." Their approach to financing products is more cautious.

Diagram 5



Source: Bankrate © 2014 Fair Isaac Corporation.

When developing digital bank products, it is necessary to understand the priority needs of the digital as opposed to moving existing products to digital. According to the survey conducted by Fair Isaac Corporation in 2014, the most frequent banking activities of the millenials are shown in the diagram in 7. However, another question of the research conducted by the same institution is the channel through which customers want to communicate with their banks (Diagram 6). When we look at the answers, it is seen that millenial wants to get support by texting via digital platforms. The success rate will be higher in the digital bank experiences to be built by taking these datas into consideration.

Diagram 6

Preferred Communication Channels



Email



Text Message



Bank Website



Mobile App

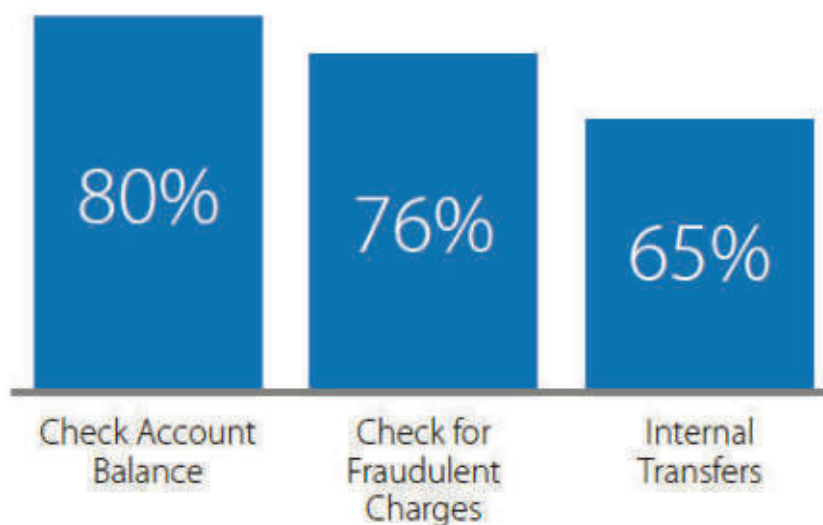
Base: 18-24 (Wave 2, n=76), 25-34 (Wave 1, n=147; Wave 2, n=143), 35-49 (Wave 1, n=287; Wave 2, n=262), 50+ (Wave 1, n=557; Wave 2, n=503) - Q18B: For each of the following types of information you might receive from [PRIMARY BANK], what would be your preferred way of receiving each type of information?

Source: Millennial Banking Insights and Opportunities © 2014 Fair Isaac Corporation.



Diagram 7

Top Digital Banking Activities

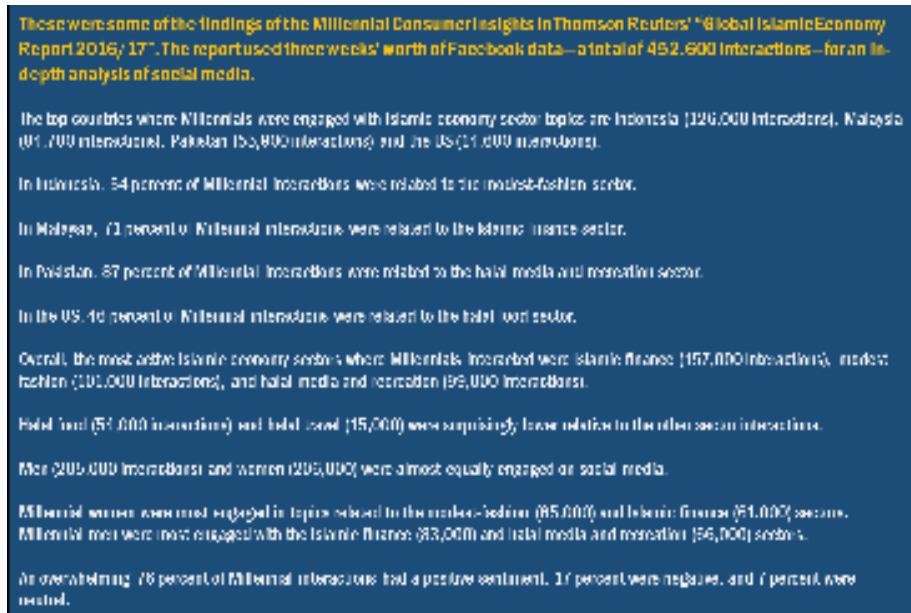


Base: Total (n=984); 18-24 (n=76), 25-34 (n=143), 35-49 (n=262), 50+ (n=503) - Q17: For each of the following account activities with [PRIMARY BANK], A) How do you typically conduct each activity? Q18: For each of the following types of information you might receive from [PRIMARY BANK], A) How do you typically receive each of the following types of information?

Source: Millennial Banking Insights and Opportunities © 2014 Fair Isaac Corporation.

In addition to these datas, it is necessary to understand Muslim Millennial, which constitutes a large part of our target audience. Muslim Millennials have different expectations than previous generations. They travel more, they shop more and they consider halal dining options. They spend a lot of time on social media. Developing products and services suitable for such an audience is only possible by understanding this segment. We can say that a digital banking experience that does not meet the expectations of Millennials is very likely to fail.

Diagram 8



6. Challenges

Conducting digital banking operations is a difficult process. It has processes needs to be very selective such as targeting the right market, finding the right talent and setting up the digital team. One of the most important challenges in this area is the awareness of Islamic banking. It can be easier to explain Islamic banking in traditional banking methods with one-to-one interactions. It is much more difficult to explain Islamic banking through a digital platform. On the financial side, the returns of digital banking investments can last a long time as they progress through an ongoing investment strategy. Apart from the basic investments, technical and regulatory costs are formed due to the fact that it has a dynamic structure that changes rapidly according to the market and the mass. Therefore, budget management is one of the most important challenges.



7. Conclusion

Islamic Finance is spreading more areas and more people every day. In addition to this expansion, it continues its development and transformation in terms of technology and business model. The most important technologies of the last years, from Artificial Intelligence to Machine Learning, from ChatBots to Blockchain, shed light on this change and transformation. Islamic Digital Banking will continue to develop rapidly in the coming years both with emergence of digital only banks that we see the first examples and traditional banks in terms of carrying the their products and services to digital platforms.

8. Case Study – insha; The First Interest Free Digital-Only Bank in Europe by Albaraka Turk Participation Bank, Istanbul, Turkey

As a case study, insha, which is the First Interest Free Digital-Only Bank in Europe, is going to be presented at Fifth Doha Islamic Finance Conference on 19/03/2019. The establishment process of insha will be analyzed as a good example for Digital Islamic Bank topic which is analyzed in this research paper.



Brief of Case Study

The financial participation of Muslim peoples living in Europe is relatively low due to the problems of language and religion. Due to the lack of domination of indigenous languages and interest sensitivity, Muslims are excluded from banking activities except in forced situations. Muslims who migrated to Europe to work send money to their homeland frequently. Muslims, who often suffer from problems with language, interest, and money transfer, do not have a specific financial solution.

To bring a solution to the financial problems of Muslims in Europe and in order to improve participation banking globally, Albaraka Türk launched the insha project, which will provide digital participation banking (name of Islamic Banking in Turkey) services in Europe without branches and completely online. insha is a platform banking service that will provide participation banking services in continental Europe with a modular structure using the infrastructure and banking license of Solarisbank AG, a financial technology company that has received the necessary approvals and licenses from the Bundesbank, the Central Bank of Germany. In the first phase of this banking service, basic banking services such as account opening, account management, debit card, payments and money transfer will be provided. In the next stages, the basic products of participation banking will be included in the system.

The service to be provided via mobile and internet banking will not only be based on financial transactions, but also a variety of services such as prayer reminders, masjid maps, zakat calculators, etc., After the necessary ground is prepared for participation banking, all participation banking services will be provided in accordance with the principles of participation banking. Thus, we will try to bring an enveloping socio-financial solution to the identified problem in Europe.



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