CHAPTER 5
Retail Banking

Introduction

The growth of the Islamic retail banking sector shown in the GCC, the subcontinent and the Far East has reflected the growing affluence of Muslims, confident in the appropriateness and efficacy of their religious law. Whereas it would have been easier for retail customers to stick to conventional banks for banking services, many Muslims have instead opted to set up accounts with Islamic banks. In turn the greater demand for Islamic banking services boosts the wholesale sector. Indeed, while the growing successes of the Islamic banking and finance industry has been underpinned by the growth of capital market instruments such as sukuk, the less lucrative but more inclusive Islamic retail banking sector has been a platform off which greater awareness of the sector could be achieved.

Thus, the strengthening of the Islamic retail banking sector has definite knock on effects, and the need to invest, develop and promote the industry is important for the sustenance of the industry. In this chapter, we look at the benefits of the Islamic retail banking sector and how it can be improved for the benefit of the community. We then turn to internal considerations focusing on Information technology. Operational efficiency rests strongly upon strong IT systems, and has beneficial effects on the bank itself and its disbursement of services to customers. The ultimate objective of Islamic banking and finance is not just to gratify Muslims, but to also create a competitive banking institution that can meet the needs of the community at large. It is not parochial in its vision, rather Islamic banking intends to be encompassing.

Financial Inclusion

According to latest survey results published in the "Global Financial Development Report 2014" by the World Bank, about 5% of unbanked respondents cited religious reasons for not having a bank account. The same report estimated that the development of financial products compatible with religious beliefs could potentially increase the use of various financial services. Arguably Islamic banks have been the primary drivers of financial inclusion in several economies. The theory is simple. Muslims, keen to avoid interest based transactions, have resisted opening accounts in conventional banks or have not availed the multiple retail services on offer. The presence of Islamic banks provides the means to both the unbanked and the individual that has used only basic services. With respect to the former group, (one of) the first Islamic banking intermediaries in Mt Ghamr was set up to precisely bring in the financially excluded. Today, Islamic banks are more sophisticated and have the backing of regulators. But it needs to ensure that it does not exclusively focus on the affluent. One of the primary functions of banking institutions is to accept deposits and mobilize them towards institutions and individuals who need them. This is an area that is fundamental to banking in any form. Islamic banking promotes it for community welfare reasons, and this pillar should not be ignored or derogated.

In the absence of banks, the need for basic financial services does not disappear. However, without the services of mainstream banks for the underserved, it leads to unregulated entities appearing at the forefront, exploiting people with highly priced financial products. Increasing the number of banks that meet the demands – both religious and practical – of the underserved will potentially reduce the number of unregulated entities. Effectively more people will have the opportunity to enhance their income generation capacity.

Islamic banks should capitalize upon the fact that com-

merce with the poor is more viable and profitable, provided there is an ability to do business with them. It should develop products, which are uncomplicated and affordable, which can appeal to low income families as well. It should conceptualize custom products that can even accommodate customers with seasonal flows of income from agricultural operations (for example, an innovative and flexible salam finance structure), migration from one place to another, seasonal and irregular work availability and income.

Ensuring financial inclusion has a broader economic and political impact on society as a whole. The spread of financial institutions will add financial depth (defined as percentage of credit to GDP at various levels of the economy). It can link small businesses (SME's) to formal financial institutions and could reduce the role of the informal sector in meeting credit needs of the financially excluded. If a country wishes to extend financial services sector to the poor, unregulated, remote and underserved areas of the country, then Islamic banking is one of the ways for accomplishing these objectives.

Islamic banks must focus upon becoming mobilisers of savings and allocators of credit for production and investment for the underserved segments. Islamic banks have the required potential to contribute to growth of economies by identifying entrepreneurs with the best chances of successfully initiating new commercial activities and allocating credit to them. These banks could be an agenda of change and agents of redistribution of wealth in society.

Developing the Infrastructure

Retail customer expectations are security and safety of deposits, low transaction costs, convenient operating time, minimum paper work, and quick and easy access to credit and other products, including remittances suitable to one's income and consumption. Islamic banking has the potential to reach the masses by providing access to financial products being more responsive to customer needs. In order to achieve this, the sector should focus on three important dimensions: quality of services offered, the fairness and affordability of pricing and the promptness of service delivery. Simultaneously, it is important to improve operational efficiency. In general, retail banking isn't immune from challenges and they need to ensure customer protection through transparent and appropriate pricing of product and services, curbing mis-selling, understanding AML and KYC in all its manifestations, managing risks, inadequacy of MIS, countering the effects of disruptive new technologies, retaining customer loyalty, managing cost and ensuring growth.

To ensure quality, fairness, affordability, promptness and operational efficiency, Islamic banks have to explore new thoughts and ideas. Newer Islamic banks should learn from the experience of established Islamic banks in countries such as Malaysia – which has a strong regulatory infrastructure - and take advantage of latest financial risk management techniques and IT technologies available in the market. Over a period of time, these banks will mature and contribute to the industry as a whole

not only in terms of product development, but also in terms of setting innovative benchmarks in corporate governance, and disclosure of risks they are exposed to. They will be able to ensure an adequate level of capability and financial capital to assume those risks. Islamic banks are gradually strengthening their own risk assessment capabilities and instead of relying on off balance sheet items, and in some cases on- balance sheet assets to absorb risks, they are looking to create markets for risk and liquidity transfers between market participants. In fact, one could argue that Islamic banks have always had a strong concern for managing risks. Shari'a screening represents a strong case for proactive risk management. Through focusing on financially stable businesses – those with low levels of leverage and low debt burden - Islamic banks have tended to err on the side of caution.

IT technology has revolutionised the way banking has been practiced. The banking sector is experiencing a paradigm shift where ''Click and Mouse technology'' will be as important as ''Brick and Mortar structures''. Islamic retail banks have well understood that with increased scale, alternative delivery mechanisms are essential to match it in order to achieve maximum results. To put things in perspective, ''One size does not fit all''. If a consumer is tech savvy and wishes to avoid face-to-face interaction with the bank, then ''Click and Mouse technology'' is the best possible solution. Alternatively, if physical interaction with the bank is a preferred, then ''Brick and Mortar structures'' are available to serve the needs.

This leads us to an important question. Are banks pushing the frontiers of innovation and experimentation in the retail banking space to survive and also to remain relevant? Banks need to rummage through huge amounts of customer data that gets generated every day in the course of daily transactions and use appropriate analytics to develop products thereby keeping with changing customer preferences. Considerable amount of investment is required in innovation, research and innovative product design so as to keep products and service offerings relevant and contemporaneous to emerging consumer needs.

Products and Delivery Channels

Islamic retail banking has reached such an advanced stage that it can handle variety of customer needs very well - customer accounts, credit cards, depository services and other parallel-banking products and services vis-a-vis the insurance products, capital market products, etc. We can safely state that Islamic retail banking is not only growing in size, but also in sophistication.

Looking at the various delivery channels that Islamic retail banking utilizes speaks volumes about its versatility. Banks have physical brick-and-mortar branches, ubiquitous ATMs, smartphone platforms, internet, etc. Taking cognizance of changing trends, many Islamic banks are adopting cloud computing, and iPads in the palms of field sales force to take consumer finance applications and grant credit approvals in minutes. Indeed, Islamic banking has kept pace with Information and Communi-

cation Technology (ICT) paradigms and it has constantly looked for new delivery models, developed by market participants across the globe to best suit the demands of a particular economy. In developed countries, Islamic banking could also overcome the problem of "slow growth of mobile money" with the usage of smartphones to pay bills or send remittances, which are highly encouraged by regulators in many developing countries. Hence, Islamic banking could help facilitate the wish list of various central banks, which emphasize minimum use of offline cash in their economies.

Nevertheless, there is a greater need to address IT planning, strategy, MIS, processing, delivery, monitoring and follow up. Technology based cost-efficient delivery models for products and services would be optimal. For example, in the context of retail lending, deployment of scoring models would minimize the subjective element and thereby fast track the decision making process. Scoring models summarize available, relevant information about consumers and reduce the information into a set of ordered categories (scores) that foretell an outcome. Many Islamic banks in the GCC have already established such systems.

Islamic retail banking could act as a virtual marketplace where it could offer non-banking financial products or services to its customers. A classic example of such a service is bancassurance or bancatakaful. This produces a win-win situation for both the banking and Insurance industry. This is quite popular and is gradually becoming the key distribution strategy for insurance companies wherein the two entities synergize and channel their combined resources to achieve optimal results. This is both effective and efficient and helps build scale, leveraging business units like wealth management

One of the biggest challenges is tackling market perceptions. For example, notions that Islamic banking is only for Muslims, choices aren't many, and complex products, processes and documentation. These perceptions must change through customer education and media publications. Another way of mitigating this problem is to invest into data analytics and assess what are the appropriate products and services for specific segments of customers.

Irrespective, the product suite in an Islamic bank is growing, and new product ideas are slowly coming to fruition. The key to improved growth require Islamic banks to understand current and potential customer needs, including businesses needs, and associated risks arising from disbursement of service to the bank itself. Indeed, Islamic banks need to increase scale so that cost per customer is minimised.

Another challenging problem is the lack of standardization which adds to complexity and business risk. Increased documentation has made Islamic banking products complicated, but efficient use of IT resources could reduce this problem. If Islamic banking could make itself simple enough so as to be understood by all sections of the society, then not only it will have a greater mass appeal, which in essence means a greater degree of business development, but also its being labelled as a "documentation savvy" concept will work

in its favour as in general people like to have "due diligence" but not with added "complexity" and "inconvenience" as a by product.

In the next section, we will explore IT solutions for Islamic banks in greater depth as this is a key component in the delivery of services.

Part 2: Exploring IT Solutions for Islamic Banks

Technology is improving rapidly and increasingly pervading people's daily activities. New technological systems allow banks (both conventional and Islamic) to keep up with the increasing demand for their financial services. In the beginning of Islamic banking, most conventional products were replicated, but with amendments to comply with Shari'a law. This could be regarded as the first phase of the evolution of Islamic banking. With maturisation, the industry is attempting to forge a new direction. At every major Islamic banking conference, there has been a call for banks and researchers to introduce innovative new products that show that Islamic banking is proposing new concepts in personal and corporate banking services. This will eventually require the adoption of standardised banking procedures. But different interpretations of Shari'a are making it challenging to standardise Islamic banking systems. As a result, Islamic banks are seeking customised conventional systems because they are standardised. Information systems in the near future will determine the growth of Islamic banking. The more that Islamic banking adopts new technologies in its front and back applications, the greater the projected growth for Islamic banking. In order for Islamic banking information systems to be accepted by a wider range of customers, it is necessary to ensure that they are built to be compatible with commonly known and agreed-upon global standards among banks.

Islamic Banking Window vs. Conventional Core Banking System

The core banking system is simply a giant system that controls and runs all or most of a bank's electronic services. Most conventional banks are using the core banking system to run their business activities. For these banks, opening an Islamic banking window is not an easy task; it requires many customisations to the conventional core banking system, and these customisations are making the system difficult to support, which thus limits Islamic banking activities. Conventional banks seeking this option are required to maintain separate accounting books and reporting. In this type of system, clients need to ensure that total segregation is established between conventional functionality and Islamic banking functionality, particularly in terms of coding, databases and interfaces.

Islamic Banking Core System

An Islamic banking core system needs to cover all of the banking activity at all levels —personal, commercial,

corporate and treasury—with a profit distribution engine that allows for profit sharing based on predefined pools of capitals. The core system needs to comply with Shari'a and The Accounting and Auditing Organization for Islamic Financial Institutions (AAOIFI) accounting standards.

Open Architecture, Rather than Core Banking

Core banking has become extremely difficult to support and inflexible for new technologies, and this has made banks with core banking systems switch to open architecture, wherein integrated multi-systems cooperate and coordinate with each other to run the bank services. This new methodology allows banks to switch easily between systems and keep up with new banking technology trends. This method makes it easy for conventional banks to start an Islamic window, as they are not required to tweak any current core system used by the bank. Additionally, a few vendors are providing systems based on open architecture for Islamic banking.

Customer Central Design: Mobile Banking is the Solution for Islamic Banking

Islamic banking has been accused of being slow and expensive because most products involve customers' signatures and approvals, which require customers to visit the branch and a relationship officer to visit the clients to obtain the needed approvals and signatures from the customers. This process of obtaining an offer and acceptance is required in Islamic banking products, as some of these products involve buying or selling commodities. It is evident in most Islamic banks' current products that the banks are trying to minimise the customer's involvement in the process of purchasing the product. Let us take, for example, organised tawarruq. Why do banks make tawarruq organised? Why do they buy and sell on the customer's behalf? They ask the customer to sign on the buying documents and give the bank the authority to resell. Then banks try to speed up the process of organising and minimising the number of customers lost in the reselling process.

What if the customer starts the process? In this instance, the customer is the one who chooses the commodity! Signs the contract! Advertise his commodity for selling! Receives offers and chooses the most preferred offer to accept! He can accomplish all of this with his smartphone. Doing this will erase the concern that it is a prefixed product where buying and selling is done by the bank as well as the belief that customers are not involved in the process.

Modern-day technology and the smartphone boom have provided a great opportunity for Islamic banks to design products in which the customers are the central point for the design. Furthermore, doing so will remove the fear of involving customers in the process of the product.

Customer Central Design: Islamic Banking and Human-Computer Interaction

This type of design is related to involving customers in the process of the products' execution. Human-computer interaction is needed for all systems, and for Islamic banking systems it is absolutely essential as customers are becoming involved in the process of buying or selling products and entering into legal agreements. Customers' backgrounds and expertise are not the same, so the creation of useable and easy-to-interact-with systems is needed for Islamic banking.

Customer Central Design: Supporting Tools

If customers are involved in product development, they need supporting tools to assist them throughout the life of the product that they are purchasing from the bank. Additionally, supporting tools can be forecasting tools to help the customer determine which products are better for them to buy, based on their financial objectives.

Customer Central Design: Artificially Intelligent Agent-Based Systems and Islamic Banking

Agent-based systems contain one or more agents in an environment governed by a set of rules, or as "an active, persistent (software) component that perceives, reasons, acts and communicates". Agents may have a number of properties, depending on their application domain. Listed below are some examples of general agent properties:

- **Autonomy Agents** should act without user instructions and should control their own behaviour and internal state. Agents should choose the right action, at the right time, for the right situation, in a fully automated way.

- **Proactivity** Agents should react to changes in their environment, particularly if the current state of the environment does not lead to goal-directed behaviour; in other words, agents should generate and attempt to recognise opportunities to achieve goals that are provided in the environment.

- **Reactivity** An agent's environment will not remain static. As the environment changes, agents should continue interacting with and responding to the environment in a timely manner to ensure that their responses are useful to other agents and human-users.

- **Social ability** As described above, the real world is a multi-agent environment. Some goals cannot be achieved by a single agent. Cooperation with others may be needed to achieve a goal, so agents need the capability to interact with other agents and humans, rather than simply to communicate with them.

To make intelligent agents more powerful, extra properties may be included, such as beliefs, desires, intentions and knowledge.

From the description of the above properties of agent-based systems, these appear to be promising technological advances for Islamic banking. Agent-based systems can replace human agents appointed by the bank to help customers in their buying and selling, which will reduce the product cost for both customers and banks.

Multi-agent systems can offer a robust environment for Islamic banking products, keeping customers active 24/7, as they are represented by their smart agent in an agent-based environment. One particular advantage of agent-based systems is that they are flexible in their communication protocols, which support their adoption of Shari'a rules. Another advantageous feature of the agent-based system for the software provider is that the protocols can easily be updated or configured based on different fiqh; they can also be made either stricter or more flexible.

Agents can make decisions on the customer's behalf—for instance, they can buy, sell, sign a contract or participate in musharaka or mudaraba contracts on the customer's behalf.

Islamic Banking Obstacles and Solutions

From the information systems point of view, Islamic banking is facing obstacles that are slowing down its growth and limiting the banks' activities. These obstacles are solvable, and the rapid improvement of technology is providing more and more solutions for current obstacles.

Standardisation has been an ongoing issue for Islamic banking since the beginning. Different Shari'a boards with different fiqh interpretations affect Islamic banks' adoption of high-quality, stable systems because IT solutions providers are going to take the most frequently adopted interpretation of Shari'a used by the bank and build their systems in line with this specific interpretation. This in turn will limit other banks that have different fiqh interpretations regarding the adoption of these solutions.

The changing of Shari'a interpretations are slowing IT solutions providers in improving their current products and injecting modern technology into them, as they are hampered by customising their current systems with every new feature or update of the Shari'a interpretation. For example, tawarruq was permissible. Information systems were developed and sold supporting tawarruq products. Then AAOIFI issued a fatwa claiming that tawarruq was not Shari'a compliant. From the technological point of view, the banks had bought the system with tawarruq functionality; they paid for it, and now, they cannot use it! Furthermore, the technology supplier had a module in its system that it had implemented to invest in developing human capital. Now, after the fatwa, this module will be hard to sell. This ongoing issue is not benefiting Islamic banks or technology suppliers.

The solution for this issue for the technology supplier is to adopt protocols-based systems, such as the multi-agent systems described earlier, wherein it is easy to update or change the communication protocol without altering the entire system. Thus, the core of the system is the same but the workflow and communication are changeable based on the customer's adoption of the Shari'a interpretation.

Another obstacle for Islamic banking technology is that Islamic banking products are far more complex than conventional banking products. Stakeholders are more involved in the processes of the products, and user actions are required in most steps of the product process. Contracts and agreements exist in the product's execution. This confronts technology providers with two issues. First, they require expertise in the development company to understand this complexity and simplify it in the system. Second, it is important to ensure that banks are not under the risk of violating the contracts with customers and that the internal systematic process is in line with the product flow that has been approved by the Shari'a committee.

The solution for this complex system is to simplify into subsystems interacting with each other under specific rules. This makes it easy to monitor and spot any violation of Shari'a board interpretation. Building scalable architecture is not an easy process for a complex product, but once it is has been built, it will be easier to support and adopt new requirements from the clients.

Islamic banking cannot issue penalties for delayed implementation, so Islamic banks need to find another way to ensure that providers do their work according to the standards required by the bank. There are multiple ideas and solutions to this issue. For example, banks can negotiate with providers to receive free extra modules or user access. They can also fix the price to exclude the penalties from the total amount of the deal, and add a condition for the vendor, such as if they provide the system before the fixed date, the bank will reward the vendor by giving them an extra amount that was agreed in the contract as a reward. If the vendor delays the delivery, the banks will only pay the amount in the contract without the promised reward. In general, each contract is a special case based on size, time of implementation and number of deliveries.

Conventional banks are observing the rapid growth of Islamic banking and want to be part of this business and acquire some share of the market; however, this should not allow them to refuse to address and study the risk associated with Islamic banking information systems. Both conventional and Islamic banks need to clearly define their requirements to avoid any misinterpretations, which will be hard to verify in the testing stage. Any requirements that change as the result of a change request from the bank to the clients need to go through the same process of the original requirements because an IT analyst may not have the knowledge to know what impact this change will have on the compliance of the system. Sometimes, one small change request in the system can take the system from being a Shari'a compliant system to a Shari'a non-compliant system, simply by the developer's altering one single line of code. For example, in a murabaha system, the customer is buying a commodity from the market then reselling it to the bank on deferred payment. Now, let us assume that system requirements are approved by all related departments, including the bank's Shari'a board. The risk department may request the developer to add one single rule, which is that all pledged deposit systems must roll over the deposit on the night of maturity. This rule seems, in the beginning, to be intended to protect the bank from the

customer, as it refuses to allow the customer to take the deposit money, which might put the bank at risk. On the other hand, this small change is causing the system not to be Shari'a-compliant because auto-rollover without the customer's buying the commodity from the market and selling to the bank is causing the product to be a simple interest-based product. Changes with these kinds of issues and requirements are more risky with in-house software developed by the bank IT team, which highlights to us the importance of IT governance to control all requirement changes and ensure that the proper approval is made by the relative departments. If implementation is done by software houses, then banks need to fix the price for implementation, as the risk of overextending the project time will be shifted from the bank to the software house. Only clear, detailed requirements can be accepted by the software house for the fixed price contract; otherwise, development companies will ask for time and a material-based project, which will put the bank at risk if the software house is facing an issue with finding expertise that can interoperate the Islamic banking requirements to be a Shari'a-compliant system.

Islamic Banking Solutions Market

Currently, the Islamic banking information systems market consists of more than twenty-five vendors offering nearly fifty Islamic banking systems. These systems vary from one another in size and functionality. For example, some offer a full core banking system, and others provide specific functionalities, such as capital market Islamic products.