

INTERNET OF THINGS (IoT) AND ITS POTENTIAL IMPACT ON ISLAMIC BANKING AND FINANCE INDUSTRY

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ABSTRACT

Advanced technologies like Block chain, internet of things (IoT's), artificial intelligence (AI), and robotics have become mature enough to create disruption in banking and finance industry both conventional and Islamic finance industry. The main purpose of this study is to investigate the potential impact of internet of things (IoT) on the Islamic banking and finance industry. The results clearly show that IoT has great potential impact on both conventional and Islamic finance industry. This potential impact is in both ways i.e. positive and negative. And, the response and reaction of Islamic finance industry towards the emergence of IoT and its potential impact seems very slow as compared to their conventional counterparts. This study has indicated important points which include the necessity for the Islamic financial institution to cope with the growth of IoT.

Keywords: IoT, Potential Impact, Islamic Banking and Finance, Opportunities.

INTRODUCTION

The present age is witnessing large scale changes in all industries and as old models are being replaced by new, the interim period is wrought with unforeseen disruptions and instability. Among the new technologies that are creating and will go on creating both disruptions and opportunities for the financial sector is Internet of Things (IoT), which will

prove to be as revolutionary in nature as the World Wide Web. A better understanding of these technologies is essential for the Islamic finance sector to counter the problems that arise with them and seize the new opportunities to further their growth and development, as well as provide financial services to the 1.5 billion underbanked and unbanked to gain a strong foothold.

UNDERSTANDING IoT

IoT can be understood more easily as a concept that essentially captures the connectivity of the digital economy. It implies connecting any device with an 'on' and 'off' switch to the internet or to each other. It can be visualised as a giant network of connected things including people, by way of people-people, people-things and things-things relationships. The amount of data generated by interactions between objects in such a huge network would be staggering. It has been predicted that by 2020 the world would have around 50 billion to 75 billion, some even predict more, connected devices amounting to a global economic benefit of nearly \$2 trillion. These connected objects would consist of smartphones, wearable devices, smart homes, headphones, washing machines and everything one can think of. The data available from always 'on' IoT devices can be utilized by banks as they are generated, to enable banks to act on them immediately. IoT is a reality of present times and the sooner the Islamic finance sector acts to utilize it for its benefit the better position it would be in coming times.

Banking of Things (BoT)

IoT is the interconnection of uniquely identifiable embedded computing devices within the existing Internet infrastructure. IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-to-machine (M2M) communications and covers a variety of protocols, domains, and applications. In the financial services space, the interconnection of these embedded devices is expected to usher in automation in several legacy processes.

As IoT led digitization begins to take root, new business models and products are emerging. This is opening up new frontiers of innovation that can potentially reshape customer experiences, and throw up clear winners or losers in the financial services sector.

IoT has the potential to impact traditional business processes in banking such as KYC, lending, collateral management, trade finance, payments, PFM, and insurance. Coupled with other emerging technologies, such as digital identity and smart contracts, IoT can create new P2P business models that have the potential to disrupt banking in a few areas. Listed below are 12 use cases that may be adopted in banking in a time span ranging from near-term to long-term.

IoT - OPPORTUNITIES FOR THE ISLAMIC FINANCE SECTOR

Takaful: The Takaful industry can benefit from the data generated from smart homes and cars via telematics to offer customized premiums to customers based on the amount of risk or loss they can encounter derived from their usage statistics. This would also enable the Takaful Operator to be better prepared for the amount of money that would be needed by a certain individual in the future. A certain person is irresponsible and can face frequent losses while another might not be so and there is less likelihood of him suffering a major loss by means of an accident at home or a car accident. So home insurers or car insurers would be aware of the amount of damage a certain person could encounter and have funds accordingly so that they are prepared in case more than one individual suffers a loss at the same time. This would also promote a sense of justice and harmony between customers.

Payments: The Islamic finance industry is also battling with the use of credit cards which are against the Shariah. Muslim consumers are using credit card services that do not follow the Shariah standards and are prohibited. IoT offers a wonderful opportunity to deal with this situation by introducing Islamic debit cards with a certain allowance to exceed the bank balance in case of necessity based on the past account details of the customer. So a loan would immediately be granted in real time, in case of necessity based on Shariah principles instead of the individual going into the usage of a conventional credit card and falling prey to the evil of interest. This would also curb unnecessary spending and offer a kind of budgeting tool to the customers.

Retail: Consider the company Edo that offers analytics based on location to help banks offer discounts in real time. When a customer swipes his debit or credit card the IoT technology uses data to provide deals and offers from nearby merchants. Data and location based analytics can enable banks to understand the customer needs, offer them financial advice,

products and services suited to their current finances and enhance their savings. This kind of analytics can also help banks to identify ATM usage and frequency and determine the optimum location for future installations based on foot traffic.

Apart from similar uses as discussed for the Islamic finance sector another example of IoT usage in the conventional financial sector is in investment banking, where it has been envisaged that high-frequency trading should not only happen in dark pools but with IoT could include storms that might delay air traffic, transatlantic shipping etc. Banks who are aware would warn the population about the impending storm and simultaneously indulge in safe investments. The data available can thus be used for all kinds of dealings. To safeguard against dubious transactions and ensure transparency, which is the cornerstone of the Islamic finance industry it is essential to be aware of the potential use cases and the impact of the new technologies. Combining IoT with blockchain would be a good initiative for Shariah principles as blockchain would bring about the needed transparency.

The opportunities are endless. The time to act is now. As a Deloitte leaflet states- *"Another major challenge will be to change the face of banking—literally. The bankers of tomorrow will be programmers who can develop algorithms and code to capture valuable data and provide useful analysis and advice to consumers."* As Brett King, CEO and Founder of *Moven*, a mobile banking application provider and one of the world's leading FinTech commentators says- *"We need to be teaching young people coding"* and that *"Technology is changing human behaviour."* These statements show the great emphasis that the thought leaders of the world today are placing on technology, as the coming times will be dominated by a population grown up in technology who would utilize banking services in ways starkly different from their parents.

SMART BANKS

Smartphones, smart systems, smart homes, smart cities all together would make a smart world. It is but logical that the financial sector implements the needed changes to provide smart Shariah compliant financing. A methodical and structured approach to adapt to the changing times is needed which can be understood by the following points:-

1. Recruitment of programmers with knowledge of the financial sector.

2. Incorporation of a digital department in every IFI.
3. Development of courses in Islamic finance with subjects like coding and emerging technologies as an obligatory part of the curriculum.
4. Understanding of data mining to be able to store, track, analyse and understand the vast amounts of data that would be generated.
5. Recruitment of data security experts to tackle the existing and new security threats to the digital data that would be generated.
6. Reaching out to business transformation consultants to revamp existing models.
7. Identification of employees with creative thinking for innovative ideas and review of these ideas by the entire staff for idea generation and innovation.
8. Involvement of customers and youth through an open forum for their suggestions and ideas with a reward system for the best input.
9. Having a problem resolution team that tackles all unprecedented issues arising out of the new technologies and keeps track of the changing digital trends.

CONCLUSION

These are a few suggestions that could be thought of to deal with the disruptions going on. More points can be added or subtracted as per an institution's need. What is vital is that the Islamic finance industry gets involved in the changes happening in the world by increased awareness and analysis of the potential impacts on the masses. It is time to embrace the 'Fin'-ternet of Things and grow and develop with one of the greatest technological and social shift of our times.

INTRODUCTION

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