

Islamic Fintech Report 2018

Current Landscape & Path Forward



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Executive Summary

The fourth industrial revolution has driven tremendous innovation in the global financial services industry, with over 12,000 startups emerging globally to disrupt every aspect of finance. The Islamic Finance industry has begun experiencing unprecedented innovation, but Islamic Fintech has a long journey ahead.

The Global Financial services industry has seen unprecedented change brought about by three core technological drivers, all linked closely to the fourth industrial revolution – automation, disintermediation and decentralization. Young, digitally native customers are the main stakeholders driving change, and startups are responding – there are now over 12,000 startups globally, with fintech investments reaching \$57.9 billion in the first half of 2018.

The large established financial institutions are embracing the change, with 74% of financial institutions investing in data analytics, 34% in Artificial Intelligence (AI), and with 77% expecting to adopt blockchain by 2020.

The Islamic Finance Industry holds much promise, with assets expected to reach \$3.9 trillion by 2023 according to Thomson Reuters, however, Islamic Fintech is at the very beginning of an exciting, transformative journey for the industry, one still dominated by largely domestic and OIC-based financial institutions. A young, digitally native Muslim demographic that is on average younger than the world's non-Muslim population, is driving the growth of Islamic Finance.

This report has identified 90 Islamic Fintech startups globally that are delivering customer-facing financial service solutions, 65 of which are providing peer-to-

peer technology solutions to facilitate consumer and business financing, and a further 14 of which enable deposits and transfers via blockchain technology. Indonesia, followed by the U.S., UAE and the UK, host the largest number of Islamic Fintech startups.

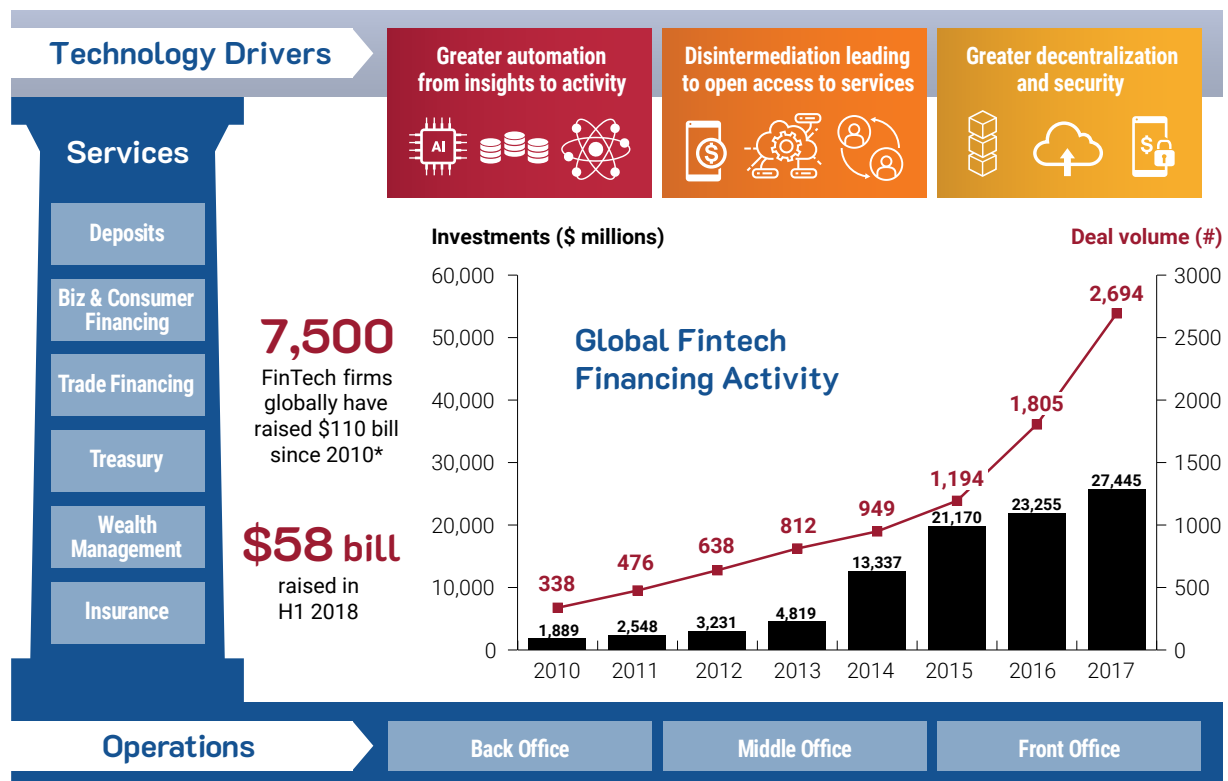
Islamic Fintech has substantial room for growth, however, with largely unaddressed opportunities in several areas, the three most significant of which are: (1) the leveraging of big data and AI in providing Islamic banking services; (2) the use of blockchain in facilitating the growth of Islamic trade finance, which at \$186 billion is a fraction of the global \$12 trillion trade finance industry; and (3) the use of AI in facilitating investments, in particular addressing institutional investor needs.

There are many promising government-led initiatives such as DIFC's \$100 million Fintech Fund, and Bahrain's regulatory sandbox, to support Islamic Fintech. Exciting private sector initiatives have also been launched, such as the Islamic Fintech Alliance in Singapore, and Turkey-based Al Barakah Banks Accelerator arm to support Islamic Fintech.

As the industry develops, a concerted effort will be needed across government entities, financial investors and financial institutions, to help fill the many gaps in the Islamic Fintech ecosystem – doing so is strategically important for many OIC countries, as well as existing Islamic Finance Institutions.



Global Ecosystem & Momentum

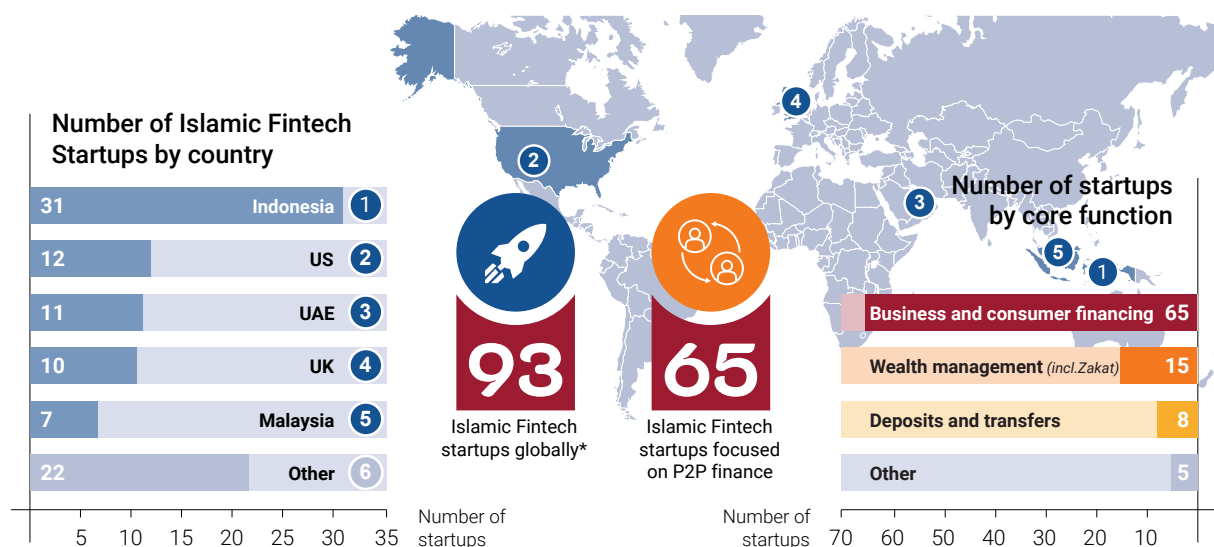


*Source: Accenture Research analysis of CB Insights data

Key takeaway:

Fintech is disrupting every area of the financial services industry, empowered by investments.

Islamic Fintech Ecosystem

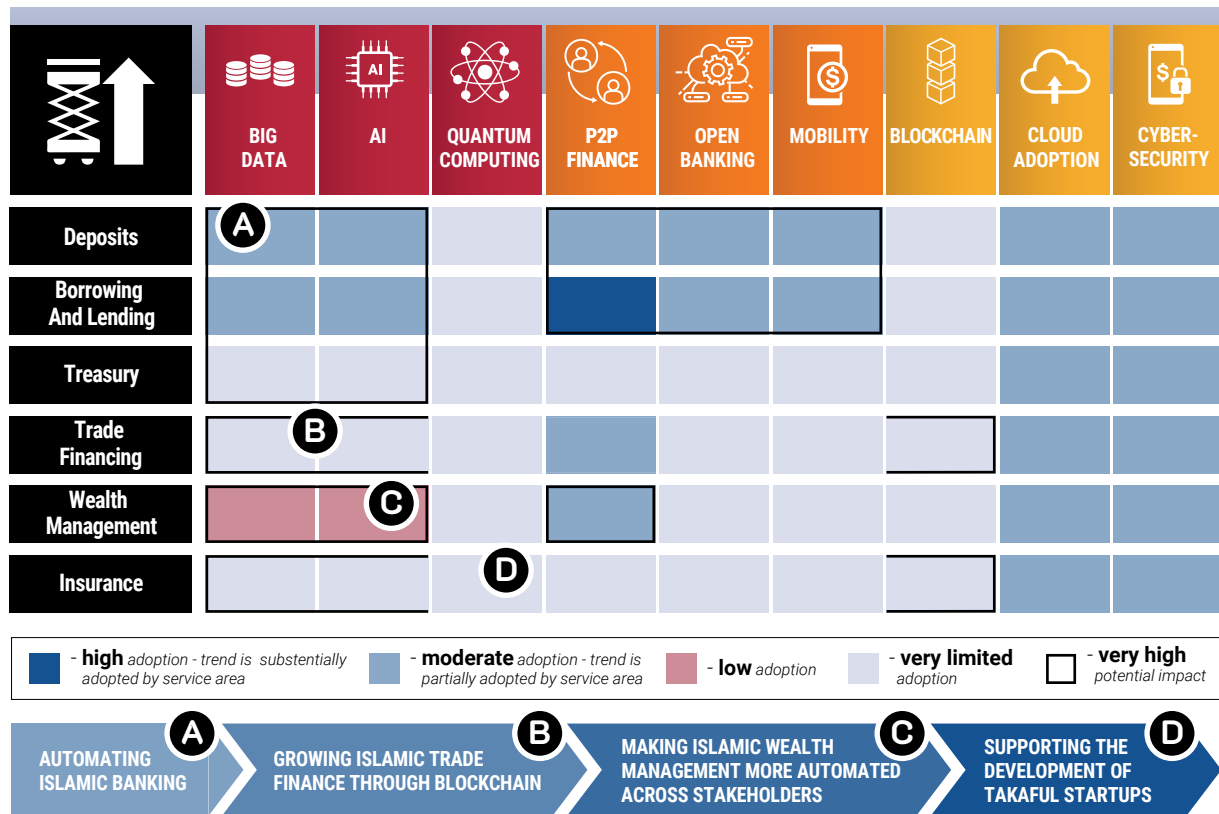


*Note: Includes customer-facing solutions only; excludes software and payment systems

Key takeaway:

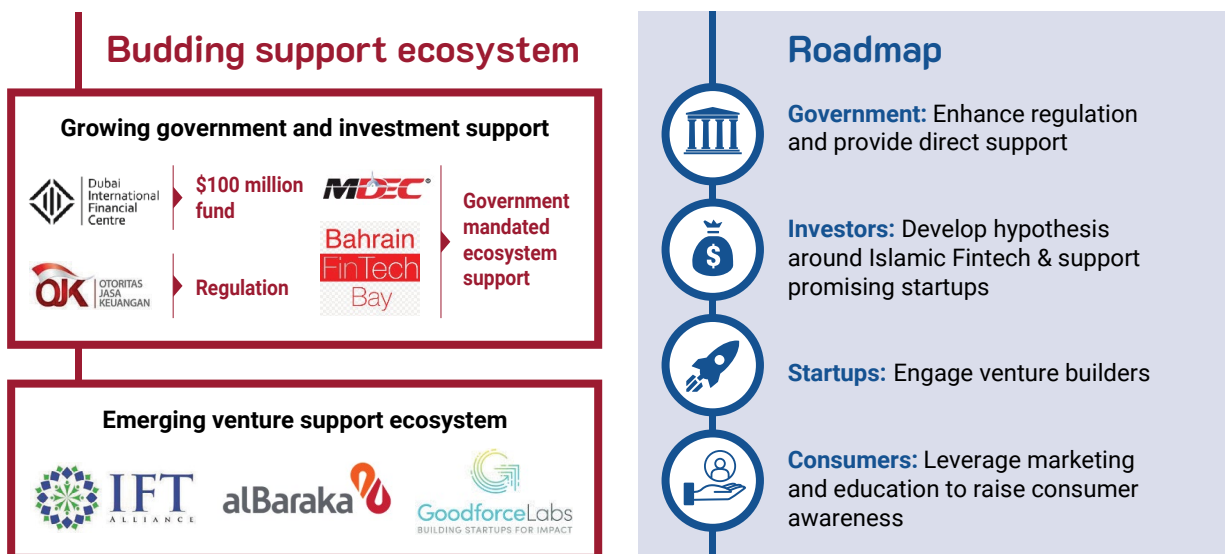
There is an emerging global Islamic Fintech ecosystem, with a strong focus to date on P2P finance.

Gaps and Opportunities in the Islamic Fintech Ecosystem



Key takeaway: There is substantial room for growth across the Islamic Fintech Ecosystem.

The Roadmap for Islamic Fintech



Key takeaway: Stakeholders stand to benefit substantially from supporting Islamic Fintech, with important commitment already seen from a budding ecosystem.

Global Fintech Context

Introduction

The global finance industry has experienced tremendous disruption from financial technology startups – with entrepreneurs identifying a shift in demand from consumers for more nimble, convenient services. This report has identified in particular nine core technology trends that are shaping financial services, spanning automation and decentralization, and that are disruptively shifting market dynamics among the mature, established financial services industry.

3.1 Defining Fintech & Market Overview

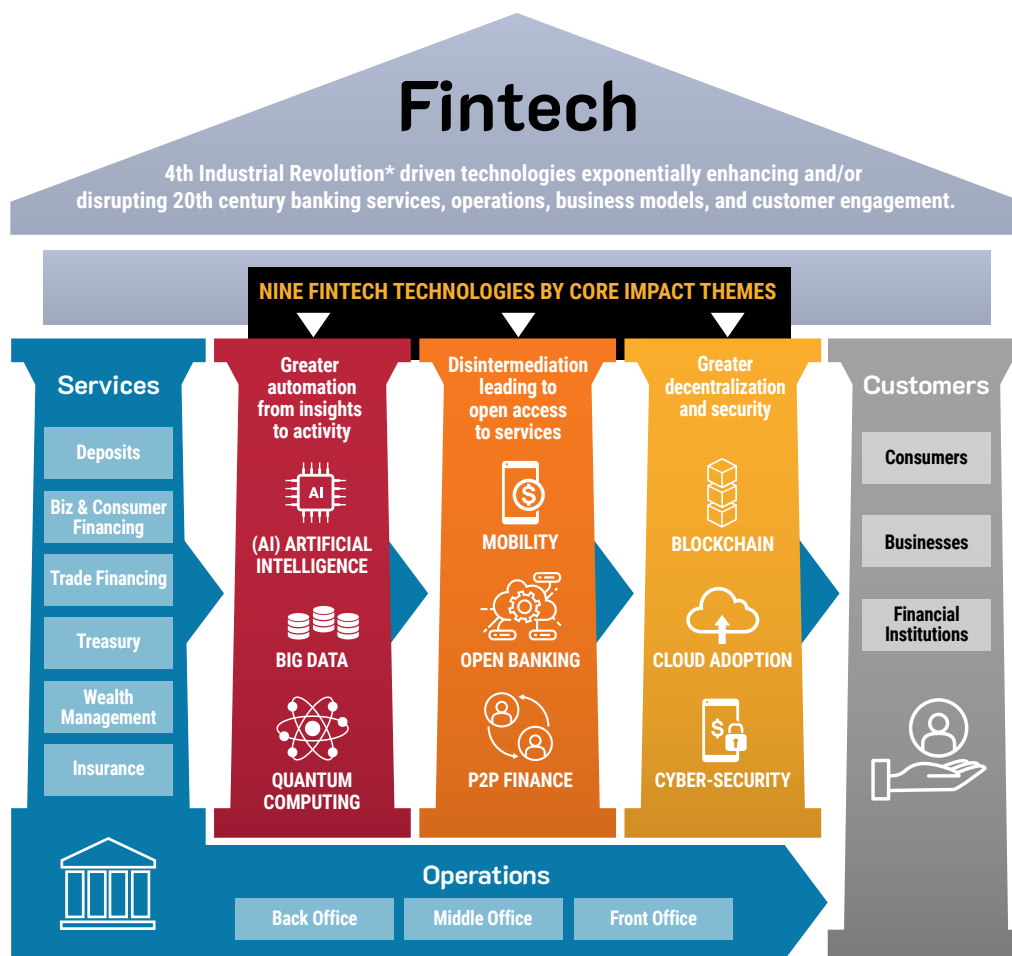
Definition

We begin with a clear definition of Fintech to better scope and evaluate its developments and trajectory. Technology and automation have been a key part of the financial services market worldwide for decades now. However, the emergence of the 'Fintech' revolution has brought about a disruptive shift in the financial services sector. This disruption

is unequivocally reshaping global financial service business models, operational models and customer experience. We are defining Fintech as follows:

"4th Industrial Revolution* driven technologies exponentially enhancing and/or disrupting 20th century financial services, operations, business models, and customer engagement."

Diagram #1: Global Fintech Framework



Source: Global Fintech Framework. DinarStandard. Copyright 2018.

* The term "Fourth Industrial Revolution" was coined by Klaus Schwab, the founder and executive chairman of the World Economic Forum. It is characterized by a fusion of technologies that is blurring the lines between the physical, digital, and biological spheres,

collectively referred to as cyber-physical systems. It is marked by emerging technology breakthroughs in a number of fields, including robotics, artificial intelligence, nanotechnology, quantum computing, biotechnology, and the Internet of Things (IoT).

1 Schwab, Klaus. "The Fourth Industrial Revolution: What It Means and How to Respond." World Economic Forum. January 14, 2016. Accessed March 20, 2018. <https://www.weforum.org/agenda/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>

Global Fintech Framework

A framework to represent the overall Fintech landscape is presented in Diagram #1. It covers end **customers** as the ultimate drivers of Fintech solutions being led by **nine identified Fintech**

technologies. These Fintech solutions ultimately address all the customers' financial **service** needs, while also addressing efficiencies in financial services **operations**.



CUSTOMERS:

- **Consumers:** Key retail customers with core segments of low income, middle income, high income, ultra-high net worth, and youth
- **Businesses:** Corporate/business customers including large corporates, SMEs and social organizations
- **Financial institutions:** Asset managers, pension funds, insurance companies and hedge funds



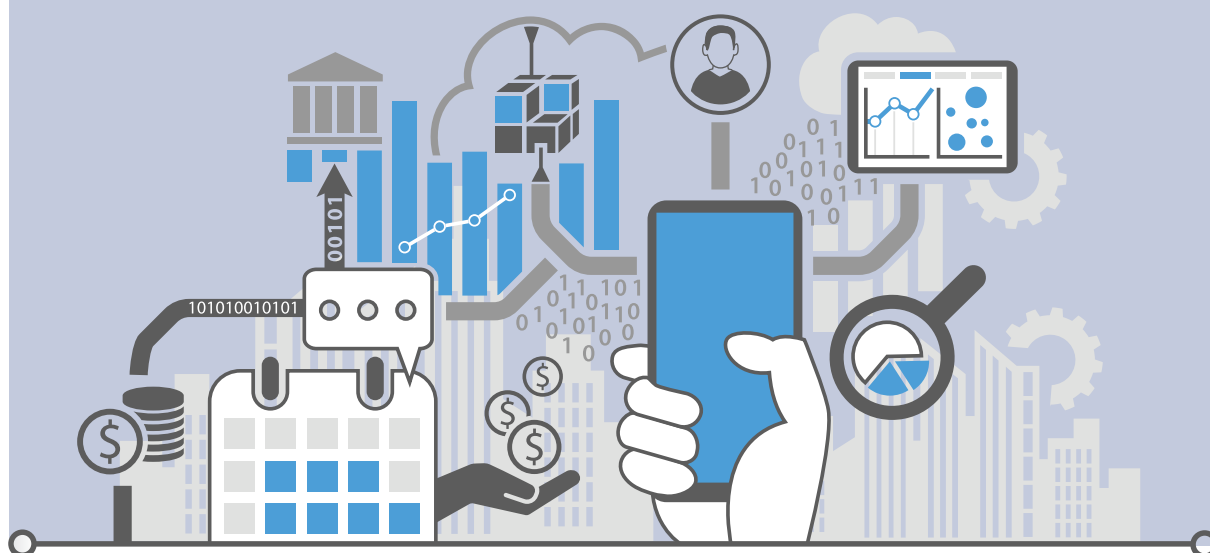
FINANCIAL SERVICE NEEDS:

- **Deposits:** Bank-held deposits and investment accounts
- **Biz & consumer finance:** Unsecured and secured lending; equity-based finance
- **Trade finance:** Working capital/supply-chain finance; letter of credit; collections
- **Treasury:** Bank treasury
- **Wealth management:** Private and retail wealth; institutional funds
- **Insurance:** Direct, re-insurance

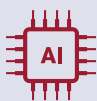










OPERATIONS:

- **Customer lifecycle/front office:** Customer origination/acquisition; due diligence; customer servicing; service delivery; advisory
- **Middle office:** Risk management; treasury; payments
- **Back office:** Collections; data storage/ security; portfolio management; risk management



Core Fintech technologies:

TECHNOLOGIES BY THEME	DESCRIPTION	PROBLEM BEING SOLVED
GREATER AUTOMATION FROM INSIGHTS TO ACTIVITY		
 Artificial intelligence	A set of technologies to enable computers to execute "smart" tasks through technologies such as natural language processing, expert systems and machine learning, a process that applies algorithms to analyze data to generate insights and make predictions.	Automates labor-intensive tasks and helps improve customer experiences by generating insights and making predictions.
 Big Data/ Analytics	Uses analytical tools to process large data sets from multiple different sources driving business decisions.	Significantly reduces the time and error from traditional and often manual business intelligence methods.
 Quantum Computing	Applies principles from quantum theory to develop computers with significantly more processing power.	Solves complex problems much more effectively than conventional computers.
DISINTERMEDIATION LEADING TO OPEN ACCESS TO SERVICES		
 Peer 2 Peer Finance	A technology-based service that connects businesses directly with investors, through a web-based platform for a fee.	Expands access to financing, in particular for SMEs, and makes verification/credit checking easier for investors
 Open Banking	Uses application program interfaces (APIs) that allow third-party service providers to access customer banking data.	Enables customers and businesses to access all their bank data in real-time, allowing more accurate and ip-to-date information on finances.
 Mobility	Describes the ability to access information or applications in an untethered manner, usually through portable, networked computing devices such as smartphones.	Enables user to access information and applications "on the go", without needing to be in a fixed location.
GREATER DECENTRALIZATION AND SECURITY		
 Blockchain	Tracks and records data using a distributed digital ledger system - verifying and storing data across hundreds or thousands of computers globally.	Removes the need, and associated cost, of keeping transactions/ contracts in a central repository database, improves accountability and improves security.
 Cybersecurity	A set of technologies, processes and practices used to protect networks, computers, programs and data from attack or unauthorized access.	Data breaches are a major issue, impacting 22 global financial institutions, incl. Lloyds and Santander. A global market worth ~\$75 billion in 2015.
 Cloud adoption	Stores resources on the internet (in a "cloud") and retrieves them using web-based tools and applications instead of on a direct server connection.	Cloud adoption significantly reduces banks' capital expenditure on expensive internal servers.

Global Market Size & Investments

In Fintech's most rudimentary area of digital/mobile banking, an estimated 2 billion users worldwide were accessing retail banking services via smartphones, tablets, PCs and smartwatches, and that number is projected to reach 3 billion by 2021 (Juniper Research²).

In terms of adoption, 33% of consumers in 20 major markets are estimated to use Fintech services (EY)³. This rate is higher at 46% across the emerging markets of Brazil, China, India, Mexico and South Africa.

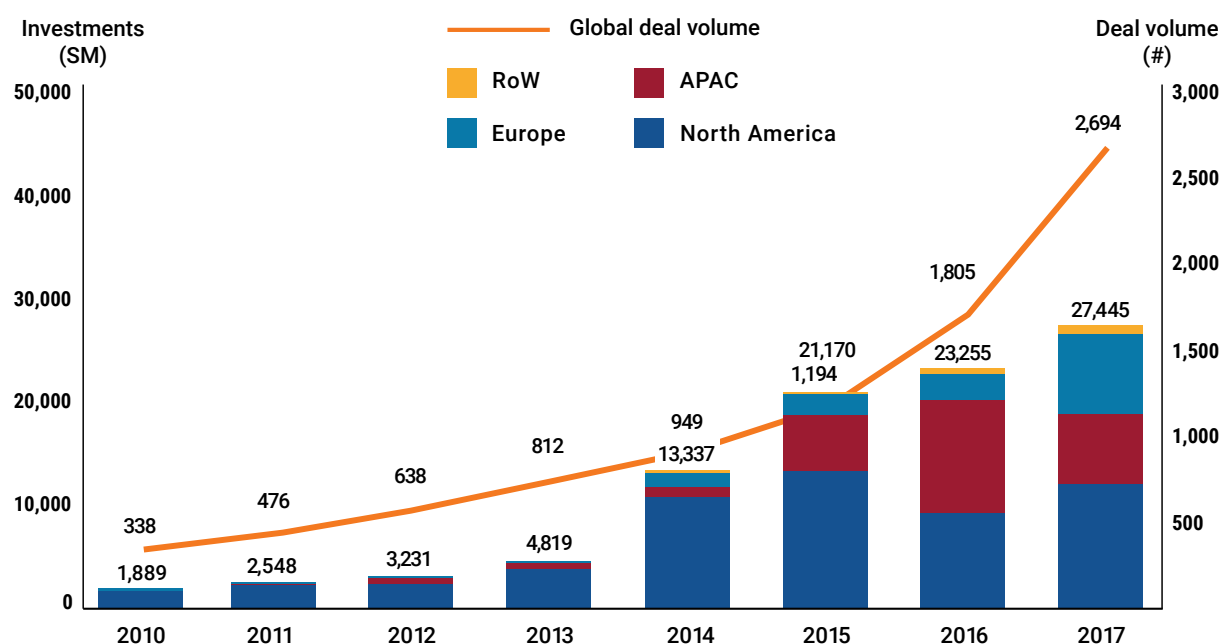
Investments across Fintech space is on the rise and are also a good indicator of Fintech's size and scale. According to

the KPMG Pulse of Fintech report, global Fintech investment reached \$57.9 billion in the first half of 2018, across 875 deals. This is a significant increase from the \$38.1 billion invested in all of 2017⁴.

Payments, Regtech and blockchain investments have been the most prominent in H1 of 2018. In payments, a number of large exits in the first half of the year included successful IPOs by EVO Payments and GreenSky, Paypal's \$2.2 billion acquisition of iZettle, and Vantiv's acquisition of WorldPay in the UK. In the Regtech sector, \$1.37 billion were invested, surpassing the 2017 total⁵. In blockchain, investments included \$100 million+ rounds to R3 and Circle Internet Finance in the US, and \$77 million to Ledger in France.

**NEARLY
US\$100
BILLION
HAS FLOWED
INTO FINTECH
VENTURES
SINCE 2010**

Global fintech financing activity by region 2010 - 2017



Source: Accenture Research analysis if CB Insights data

2 "Digital Banking Users to Reach Nearly 3 Billion by 2021, Representing 1 in 2 Global Adult Population." Digital Banking Users to Reach Nearly 3 Billion by 2021. February 8, 2017. <https://www.juniperresearch.com/press/press-releases/digital-banking-users-to-reach-nearly-3-billion-by>

3 EY FinTech Adoption Index 2017. EY, 2017. [https://www.ey.com/Publication/vwLUAssets/ey-fintech-adoption-index-2017/\\$FILE/ey-fintech-adoption-index-2017.pdf](https://www.ey.com/Publication/vwLUAssets/ey-fintech-adoption-index-2017/$FILE/ey-fintech-adoption-index-2017.pdf)

4 The Pulse of Fintech – 2018. H1 2018. KPMG, 2018. <https://home.kpmg.com/xx/en/home/insights/2018/07/pulse-of-fintech-h1-2018.html>

5 ibid



3.2 Global Drivers of Fintech Growth

Growth drivers

Technology megatrends impacting finance

• **Blockchain is coming to life:** The hype around blockchain, a type of distributed ledger technology, is beginning to gain real traction in its applications for financial services. This is being driven by widespread applicability of blockchain to help harness operational efficiencies. According to a PwC industry survey, 77% expect to adopt blockchain as part of an in-production system or process by 2020. The most likely business use cases of blockchain, as seen by 55% of respondents, is in payments infrastructure, followed by fund transfer infrastructure (50%), and digital identity management (46%)⁶.

• **Regtech is experiencing big growth:** Financial institutions' need to manage compliance in all aspects of business is getting complex and Fintech solutions are coming to the rescue to bring efficiency and cost effectiveness in its management. Besides existing regulations such as Basel and Comprehensive Capital Analysis and Review (CCAR), newer regulations such as the General Data Protection (GDPR) and Revised Payment Service Directive (PSD2) are further driving the need for innovative solutions. According to a PwC survey, 54% of incumbents see data storage, privacy, and protection as the main regulatory barrier to innovation.⁷

• **InsureTech is also growing:** Fintech solutions addressing the insurance sector are also gaining traction. The banking consortium R3 expanded its mandate to include insurance companies while the key insurance consortia B3i has also expanded. Insurtech companies attracted a significant amount of investment, including \$100 million+ megarounds to Oscar and Lemonade⁸.

• **Open banking gaining momentum:** Open banking is continuing to grow worldwide. In Hong Kong, the (SAR) Monetary Authority recently published its open API framework. In Australia, a new open-banking regime has been agreed to by their federal government. All major banks will need to make data available on credit and debit card, deposit, and transaction accounts by July 1, 2019⁹.

• **Artificial intelligence (AI) & data analytics gaining attention:** According to the PwC industry survey, 74% of large financial Institutions are investing in data analytics and 34% in artificial intelligence (AI). AI is expected to drive unprecedented levels of personalization for financial consumers. It is also being applied in advanced risk management.

Customers are driving substantial change

• **The young 'digital natives':** There is now a generation, Generation Z (up-to-22-years-old this year¹⁰) that has been born and raised completely with the internet, and as such, have very strong expectations of digital financial services. This is further driven by the fact that 70% of the world's youth are online, compared to total population at 48% in 2017¹¹.

• **The unbanked:** While a big percentage of global adult population is still unbanked (31% of global adult population in 2017, approx. 1.6 billion people) the rate of financial inclusion is rapidly rising. 515 million adults obtained an account since 2014. Fintech is expected to continue to drive this and is key to achieving the World Bank goal of universal financial access by 2020¹².

• **Heightened expectations:** Customers are harder to acquire and retain due to heightened expectations of banks resulting from the digital technologies they regularly make use of in other areas of their lives.

6 Global FinTech Report 2017. PwC, 2017. <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf>

7 Global FinTech Report 2017. PwC, 2017. <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf>

8 The Pulse of Fintech – 2018. H1 2018. KPMG, 2018.

9 McLean, Asha. "Australia to Force 'big Four' to Open Banking Data by July 2019." ZDNet. May 10, 2018. <https://www.zdnet.com/article/australia-to-force-big-four-to-open-banking-data-by-july-2019/>

10 While no exact date ranges are set, demographers are referring to those born between 1995-2010 as Generation Z, and Millennials are generally referred to as those born beginning in the 1980s through the mid-1990s.

11 ICT Facts and Figures 2017. International Telecommunications Union, July 2017. <https://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf>

12 2017 Global Findex Database. World Bank, 2017. <https://globalfindex.worldbank.org/>

Banks are responding

• **Banks responding to digital disruption:** Banks are responding to customer demands by adapting their core business models to become more "digital" - combining digital services with incumbent physical offerings. According to a PwC industry survey, 77% of financial institutions are increasing internal effort to innovate, and 82% expect to increase Fintech partnerships in the next 3-5 years¹³. Banks' responses are being driven by the threat of digital disruption and the need to keep costs down, as well as the motivation to attract customers and increase profits.

• **Banks seeking efficiency gains:** Banks are also looking to offer fewer branches with more differentiated functions to cater to different regions and customer functions and are looking to make efficiency gains and reprioritize their service offerings. This includes effectively leveraging third-party technologies such as cloud computing, mobility, big data.

Startups are creating new opportunities

• **Startups forcing banks to move at a faster pace:** The increased number of Fintech startups in existence, driving developments such as mobile payments through non-bank institutions, is forcing banks to move at a faster pace in responding to technology changes.

• **Startups posing a considerable threat to incumbent banks:** Startups can innovate at a faster, more agile pace and more efficiently create mobile-focused services or products at a fraction of banks' cost, due to advantages such as being free of legacy technology systems and having to cope with significantly less regulation than banks.

• **Fintech firms are disrupting established players:** Fintech firms have developed a reputation for offering accessible, convenient and tailored services and products that pose considerable disruption to the existing financial services industry players.





13 Global FinTech Report 2017. PwC, 2017. <https://www.pwc.com/gx/en/industries/financial-services/assets/pwc-global-fintech-report-2017.pdf>








3.3 Global Landscape

There are over 12,000 Fintech startups worldwide, with the highest numbers based out of the Americas, followed by EMEA, and then the Asia-Pacific regions.

Below is a profile of select Fintech companies, both startups and larger financial institutions, and their Fintech initiatives.

	Startup example	Conventional provider example (Americas/Europe)	Conventional provider example (Asia-Pacific)
 Artificial intelligence	Personetics Technologies offers a predictive interaction solution for financial institutions to deliver personalized customer experiences.	JP Morgan's Contract Intelligence (COIN) program applied machine-learning-based artificial intelligence to perform manual contract-related tasks in a fraction of the time it previously took. Barclays is investing heavily in developing its artificial intelligence capabilities.	Singapore-based DBS Bank is using artificial intelligence to offer mobile-only banking in India, enhancing customer service by offering a truly branchless banking experience.
 Blockchain	Blockstream is a bitcoin-focused Fintech company that works in cryptocurrencies, open assets, and smart contracts, enabling more secure payments and transparent, more efficient contracts.	R3 , a consortium that includes 42 of the world's largest banks including European banking powerhouses such as Barclays, Deutsche Bank, Commerzbank and Societe Generale, is experimenting with Microsoft's Blockchain-as-a-Service to create a bank-to-bank global transaction system, already developing a smart contract implementation that will lead to more efficient and transparent transactions for end customers.	Singapore-based OCBC Bank has become the first bank in Southeast Asia to apply blockchain in its local and cross-border payment funds transfer services, reducing the time it takes customers to make fund transfers from up to a day to just 5 minutes.
 Cybersecurity	Verafin provides compliance, anti-money-laundering and fraud detection software, helping to reduce instances of money laundering and fraud in the banking sector.	Societe Generale is taking cybersecurity more seriously: given that 86% of their incoming contacts are from digital accounts, and with 700 million mobile logins annually, there are heightened cybersecurity challenges for them. Customers will benefit from enhanced security through fewer cases of cybercrime.	Maybank is partnering with organizations such as Cybersecurity Malaysia to increase customers' awareness of Internet banking safety by conducting an awareness campaign and promoting safe online banking, helping enhance customer service by reducing the number of customers that fall victim to cyberattacks or online scams.
 Peer 2 Peer Finance	TransferWise lets expats, foreign students and businesses move money globally at a substantially lower-cost alternative to traditional transfer services.	UK-based Monzo Bank is a bank that offers current accounts and was funded through crowdfunding ¹⁴ . Zopa , the UK's oldest peer-to-peer lender, applied for a UK banking license in 2016. It will then be able to offer customer deposits and credit cards, offering customers a cheaper alternative to incumbent banks.	In China , all peer-to-peer lending firms must have a custodian bank by August 2017. City commercial banks are taking up this role, and the banks would be responsible for safeguarding billions of Chinese yuan in peer-to-peer assets. This will increase consumer confidence in peer-to-peer finance in China and likely result in increased customer acquisition.

14 Monzo Bank Website. Accessed 24 April 2017. <https://monzo.com/about/>

	Startup example	Conventional provider example (Americas/Europe)	Conventional provider example (Asia-Pacific)
 Big data/ Analytics	<p>Wecash is a big data credit assessment platform that provides extensive credit assessments and builds predictive models that help financial institutions better manage customers' credit risk.</p>	<p>Goldman Sachs has substantially developed its big data and artificial intelligence capabilities, resulting in a significant reduction of the size of its US equities trading desk.</p> <p>Deutsche Bank is making increased use of data analytics in its processes.</p>	<p>Singapore-based OCBC Bank used analytics to better understand their customers' profiles, enhancing OCBC's customer servicing abilities through targeting offerings.</p>
 Open Banking	<p>Simple is a web- and- mobile application that unifies various accounts into one accessible bank card.</p>	<p>Capital One has launched a developer portal and three new open APIs, increasing the provision of open banking services for customers.</p> <p>Deutsche Bank have developed "Autobahn", an app market that gives clients access to apps to meet their banking needs, thus improving customer servicing through infrastructure development.</p>	<p>Mizuho Financial Group Partnered with Fintech startup Moneytree to use Moneytree's API technology.</p>
 Cloud Adoption	<p>Mint is a financial planning app that made extensive use of cloud computing to save on costs and scale quickly.</p>	<p>Capital One is a heavy user of cloud computing service Amazon Web Services, reducing the cost of its servers and potentially creating cost savings for end customers.</p> <p>Deutsche Bank is investing heavily in cloud computing with a 10-year deal with HP Enterprise.</p>	<p>Indian bank HDFC uses software-as-a-service-based cloud services to more efficiently run its entire e-commerce business, its credit card acquiring business, and its merchant services, thus providing customers with more efficient services.</p>
 Mobility	<p>M-Pesa, a Kenyan startup, enables users to make and receive mobile payments using their smartphones, increasing financial inclusion to underserved communities and increasing customer convenience.</p>	<p>US-based Montgomery County Employees Federal Credit Union introduced fingerprint authentication for users of their mobile app, increasing security for existing customers.</p> <p>Swiss-based Postfinance, in co-operation with other Swiss banks such as UBS and Credit Suisse, has launched Twint, a mobile payments solution that provides a viable and serious alternative to Apple Pay and increases customer choice in Switzerland.</p>	<p>Japan's E-Bank provides 24-hour real-time electronic banking services without any physical branches or ATMs, creating a truly branchless experience for time-pressed customers who wish to avoid engaging with physical branches.</p>
 Quantum Computing	<p>Australia-based QuintessenceLabs has created a set of data technology products and solutions based on quantum computing technology to enable secure data transfer and storage.</p>	<p>Goldman Sachs is investing in leading developers of quantum computing technology, such as Canadian quantum computing firm D-Wave, to create better portfolios for clients.</p> <p>Deutsche Bank Securities and the CME Group partnered with quantum computing firm D-Wave Systems to develop "Quantum for Quants", a program that allows financial industry analysts to use quantum computing tools to analyze large, complex data sets and better solve financial problems such as portfolio optimization for existing customers.</p>	<p>Australia-based QuintessenceLabs has created a set of data technology products and solutions based on quantum computing technology to enable secure data transfer and storage, enhancing customer service through infrastructure development.</p>

Islamic Fintech Landscape

Islamic Fintech promises to be a disruptive force in the Islamic finance industry, spearheading necessary innovation.

The Islamic finance Industry has been estimated at \$2.4 trillion in 2017 and is projected to grow at 7.7%

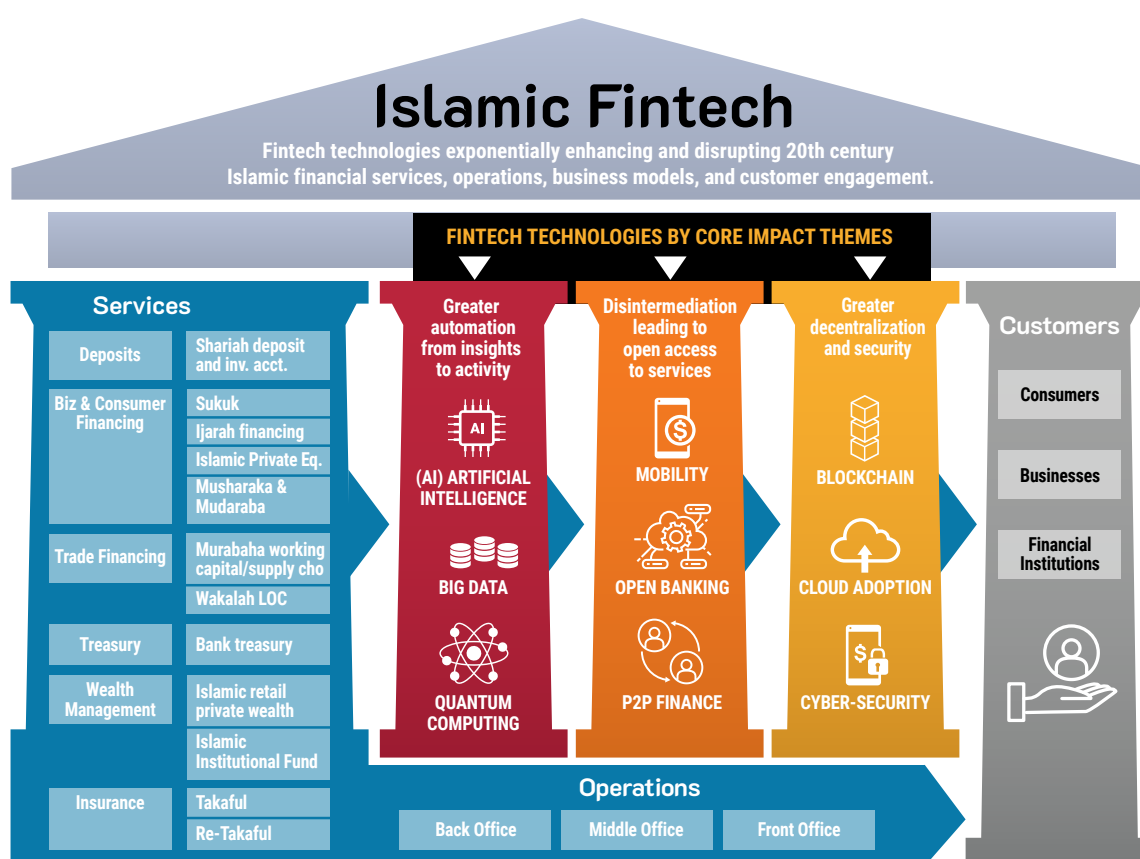
CAGR to reach \$3.8 trillion in 2023. The disruption and innovation that can be observed across the global finance industry is also impacting Islamic finance, with notable developments in particular in the last few years.¹⁵

4.1 Islamic Fintech Overview

Islamic Fintech has potential to disrupt all aspects of the industry. The Islamic Fintech industry has emerged robustly since 2010, mirroring the growth of the broader global Fintech ecosystem, with the focus of development on shariah-compliant business and consumer financing.

The segmentation of Islamic finance services, which comprises twelve categories as outlined in the below diagram, correlates to the six broad service areas identified globally, serving the same underlying needs of retail consumers and businesses, as well as the institutional needs of financial service providers, adjusted of course for the Islamic faith-based requirements of customers.

Diagram #2: Mapping the Islamic Fintech Ecosystem

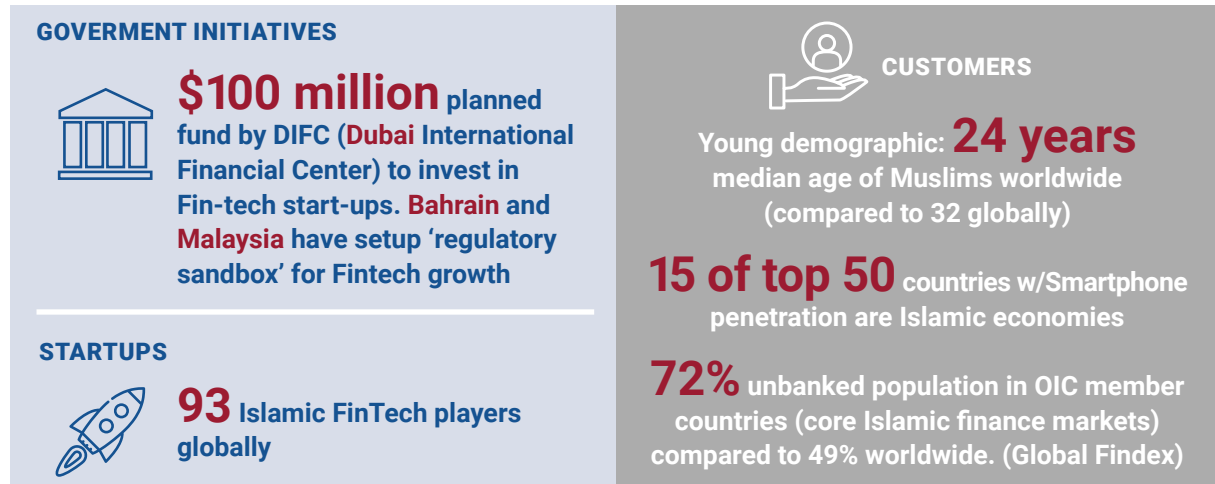


¹⁵ "State of the Global Islamic Economy Report, 2018/19", Thomson Reuters, 2018

4.2 Islamic Fintech Drivers

The young, digitally native Muslim demographic are pushing for innovation in Islamic finance with governments, especially those with broader Islamic economy strategies, leading the response.

Figure: Overview of key drivers



Government is driving change in the Islamic finance ecosystem

The digital Islamic economy is a broader area of strategic importance that several OIC companies are prioritizing, with a particular focus on Islamic Fintech.

Select OIC initiatives

COUNTRY	ORGANIZATION	DESCRIPTION
UAE	Dubai International Finance Center  Dubai International Financial Centre	Dubai International Financial Centre (DIFC), a leading international financial hub announced a \$100 million FinTech-focused fund to investing in Fintech start-ups from incubation through to growth stage.
Malaysia	Malaysia Digital Economy Corporation 	MDEC is a government-owned entity responsible for developing Malaysia's digital business ecosystem. The organization also actively supports halal economy businesses through providing shariah certification and providing a network and link to venture capital investors ¹⁶
Bahrain	Bahrain Fintech Bay 	Bahrain's Fintech Bay is a dedicated co-working space dedicated to attracting and developing Fintech and particularly works with Islamic Fintechs in partnership with leading Islamic finance institutions that operate in Bahrain and across the GCC ¹⁷
Indonesia	Financial Services Authority (OJK)  INDONESIA FINANCIAL SERVICES AUTHORITY	While startups are driving Islamic fintech growth in Indonesia Government agencies are realizing their impact and starting to facilitate. The Financial Services Authority (OJK), has established a regulatory framework for P2P lending platforms.

¹⁶ Malaysia Digital Economy Corporation Website. <https://www.mdec.my/islamicdigitaleconomy/#Wrapper>

¹⁷ "Bahrain FinTech Bay Opens: Announces Startups & Founding Partners." Bahrain FinTech Bay. June 03, 2018. <https://www.bahrainfintechbay.com/single-post/2018/02/26/Bahrain-FinTech-Bay-Opens-Announces-Startups-Founding-Partners>

COUNTRY	ORGANIZATION	DESCRIPTION
Other	UK, Kazakhstan, IDB, Saudi Arabia	UK regulators have been supportive of its domestic Islamic Fintech Panel and startup ecosystem. The launch of Astana International Financial Center is also seeking to develop Islamic finance and fintech. Similarly, Saudi Arabian Monetary Authority has recently launched FintechSaudi. Finally, the multi-lateral Islamic Development Bank has launched a Fintech Challenge supporting Islamic Fintech startups.

Muslim consumers are young and demanding digital change

The global Muslim population is expected to rise from 1.7 billion in 2014¹⁸ to 2.2 billion by 2030 (26.4%), according to Pew Research Center's Forum on Religion & Public Life, growing at about twice the rate of the non-Muslim population over the next two decades – with an average annual growth rate of 1.5% for Muslims, compared with 0.7% for non-Muslims¹⁹

Muslim consumers are younger, on average, than non-Muslims²⁰, and a large portion of the world's unbanked are Muslims²¹. According to a Pew Research Center survey in 2011 of over 38,000 Muslims²², 76.3% of Muslims consider religion to be 'very important'.

With 15 of the top 50 countries with smartphone penetration being OIC countries, the demand for practical, digital Islamic finance solutions are emerging.

Startups are leading the response, supported increasingly by startup builders

Islamic Fintech startups have represented the first line of response for providing innovative digital Islamic finance solutions, with a rapidly emerging ecosystem. Most notably, to support startups, dedicated accelerators and incubators are emerging, which offer the promise of catalyzing funding and sharpening business propositions.

Select examples of startup builders

COUNTRY	ORGANIZATION	DESCRIPTION
Singapore	Islamic Fintech Alliance 	The Islamic Fintech Alliance (IFT Alliance), a global collaboration of Islamic Fintech startups was launched in 2016 to "facilitate the adoption of finance technology among Muslims".
Turkey	Al Baraka Bank 	The Islamic Fintech Alliance (IFT Alliance), a global collaboration of Islamic Fintech startups was launched in 2016 to "facilitate the adoption of finance technology among Muslims".
UAE	Goodforce labs 	Goodforce Labs, established in 2018, is the first social impact foundry in the MENA region, and is working with and supporting 10 startups focused on the Islamic and ethical economy

18 Derived from 2010 baseline and 1.5% growth estimated by *The Future of the Global Muslim Population*, Pew Research Forum, 2011.

19 *The Future of the Global Muslim Population*, Pew Research Forum, 2011. Accessed 8 August 2016. <http://www.pewforum.org/2011/01/27/the-future-of-the-global-muslim-population/>

20 "Why Muslims Are the Fastest-Growing Religious Group." Pew Research Center. April 23, 2015. http://www.pewresearch.org/fact-tank/2017/04/06/why-muslims-are-the-worlds-fastest-growing-religious-group/ft_15-04-23_muslimmedianage/

21 *2017 Global Findex Database*. World Bank, 2017. <https://globalfindex.worldbank.org/>

22 According to a Pew Research Center survey in 2011 of over 38,000 Muslims in the Middle East, North Africa, Southeast Asia, South Asia, Central Asia, Sub-Saharan Africa, and South-Eastern Europe.

23 Augustin, Stephanie. "Albaraka Turk Expanding Fintech Footprint with Own Accelerator, Launching Digital-only Islamic Bank in Germany." Salaam Gateway. September 19, 2018. https://www.salaamgateway.com/en/story/albaraka_turk_expanding_fintech_footprint_with_own_accelerator_launching_digitalonly_islamic_bank_in_germany-SALAAM19092018080315/

4.3 Islamic Fintech Landscape

This report has identified 93 Islamic Fintech companies predominantly leveraging peer-to-peer technology to disrupt personal and business finance and excludes supporting service providers.

The focus on Islamic Fintech companies has been very concentrated on making consumer and business finance more accessible, addressed by 66 of the startups, while simultaneously opening market access to individual retail and institutional investors.

Blockchain, and in particular cryptocurrencies, is beginning to make headway, with 14 startups identified.

The list only includes companies that are active, providing front office, customer facing solutions, and recognized by an Association or through an external credible source. It does not include companies that have not been identified as shariah compliant, or

that provide software or supporting technologies for Islamic financial services, which have been included in other lists of the Islamic Finance Ecosystem.

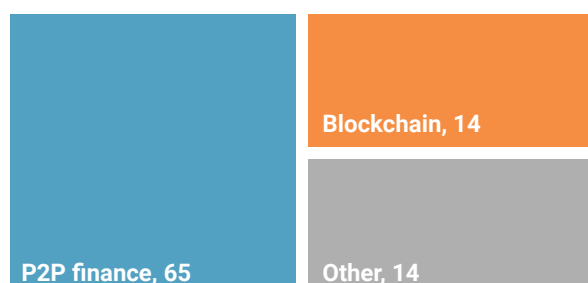
Indonesia has the most Islamic Fintech startups, followed by the US and the UAE.

Indonesia, which has the world's largest Muslim population, is home to 31 out of 93 startups identified, with a readily increasing number of Islamic Fintech companies registering with the country's Islamic Fintech Association. The UAE and Malaysia follow as the next two largest Muslim-majority countries by number of startups, reflecting the broad Islamic Economy strategies that both countries have put in place.

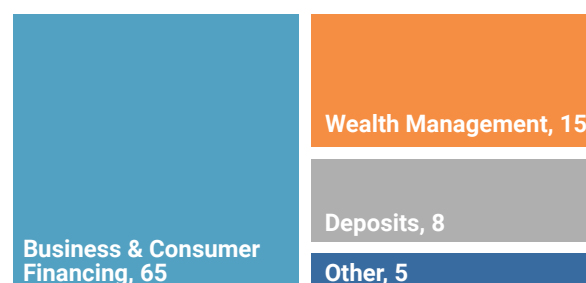
Interestingly, the US and UK together host 21 startups despite having a small combined share of the global Muslim population, both reflecting a robust venture financing ecosystem that has recognized and supported the business case for Islamic Fintech.

Figure: Examination of the Islamic Fintech Ecosystem

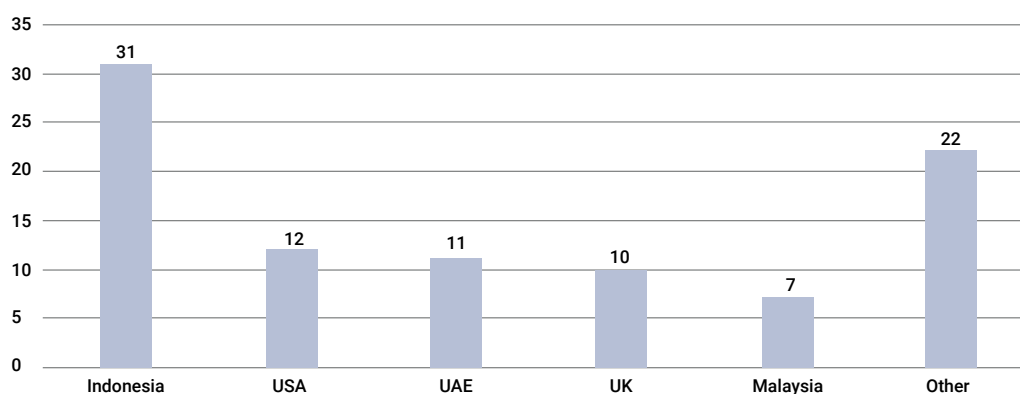
Breakdown by core technology



Breakdown by function



Breakdown by geography



Source: DinarStandard analysis

24 The list has been compiled based on a review of over 60 sources, including a comprehensive list of 120 Islamic finance companies, and a review of associations, top freezones and accelerators in leading Islamic finance markets.

25 The list has been compiled based on a review of over 60 sources, including a comprehensive list of 120 Islamic finance companies, and a review of associations, top freezones and accelerators in leading Islamic finance markets.

4.4 Case Studies

Several case studies have been selected to show a combination of Islamic Fintech startups success stories and successful examples of banks working with solutions providers to address next-generation technology leads.

Case study 1 – Startup success story: Wahed Invest

	<p>The world's first shariah-compliant robo-advisory platform. Wahed Invest is a Shariah-compliant robo-advisory investment platform that was launched in 2015, and leverages automated trading techniques. The company currently operates out of the U.S., and has secured SEC registration, but is seeking to attain global coverage, and provide affordable investment opportunities to Muslims regardless of location and income.</p>			
<p>Global benchmarks</p>	 <p>Wealthfront is the only automated financial advisor to offer the combination of financial planning, investment management and banking-related services exclusively through software.</p>	 <p>Betterment is a smart automated investing service that provides optimized investment returns for individual, IRA, ROTH IRA, and rollover 401(k) accounts..</p>	 <p>FutureAdvisor is a registered investment advisory firm that manages a user's existing IRA, 401(k), and other investment accounts.²⁶</p>	 <p>Personal Capital combines award-winning online financial tools that provide unprecedented transparency into your finances with personal attention from registered financial advisors.</p>
<p>Opportunity being addressed</p>	<ul style="list-style-type: none"> The global market for Islamic Finance assets has been estimated at \$2.4 trillion in 2017 and is expected to grow by 7.7 percent CAGR and reach \$3.8 trillion in 2023. Islamic banking assets are expected to grow from \$1.7 trillion in 2017 by 6 percent CAGR to reach \$2.4 trillion in 2023.²⁷ Although the global Islamic Finance sector is maturing, the American market still has a number of gaps and opportunities. The Muslim Green: American Muslim Market Study 2014/15 has surveyed the Muslim market to find that the demand for Islamic Finance offerings has increased between 2010 and 2014. However, credible and authentic Islamic Finance offerings and Shariah-compliant investment options have not been readily available. Muslim consumer surveys in America have also found that 58 percent of respondents are asking for clarity in Islamic Finance concepts and contracts as Islamic Finance services are complex and difficult to understand. 			

²⁶ Crunchbase business description, FutureAdvisor, 2018, <https://www.crunchbase.com/organization/futureadvisor>.

²⁷ The State of the Global Islamic Economy Report 2018/19, by Thomson Reuters, DinarStandard and DIEDC, 2018.






²⁸ The Muslim Green: American Muslim Market Study 2014/15, by the American Muslim Consumer Consortium and DinarStandard, 2015, <http://www.dinarstandard.com/american-market-2014/>.

Opportunity being addressed	<ul style="list-style-type: none"> • According to Pew Forum statistics in 2011, Muslim-majority countries are among the poorest countries in the world, measured by GDP per capita.²⁹ The average GDP per capita in OIC countries stands at \$4,000, which is substantially less than \$33,700 of developed countries in 2011, according to Pew Research statistics. Muslims in OIC countries that live below the poverty line are in dire need of services, but struggle to access Shariah-compliant investment opportunities due to high minimum investment requirements. • Wahed Invest seeks to make Shariah-compliant investing more efficient, charging lower fees than existing Islamic Finance investment managers, and more accessible, planning to make the platform available to Muslims globally, with low minimum investment amounts required.
Company trajectory	<ul style="list-style-type: none"> • Funding: Wahed Invest raised over \$12.6 million from investors including Cue Ball Capital, BECO Capital, and Other Institutional Investors³⁰ • The company most recently launched its automated investment service in the United Kingdom
Key takeaways	<ul style="list-style-type: none"> • Wahed represents a successful case of innovation, learning from mainstream fintech to address unique needs for Muslim consumers • The company was able to build a powerful case for investment among conventional investment firms

²⁹ The Future of the Global Muslim Population - Pew Forum, 2011, <http://www.pewforum.org/2011/01/27/future-of-the-global-muslim-population-related-factors/>

³⁰ The State of the Global Islamic Economy Report 2018/19, by Thomson Reuters, DinarStandard and DIEDC, 2018.

Case study 2 – Startup success story: EthisCrowd

 <p>ETHIS CROWD</p>	<p>EthisCrowd is the world's first real estate Islamic crowdfunding platform, investing in entrepreneurial, business, trade and real estate activities in 'Emerging Asia'. Based in Singapore, and with a presence in Indonesia, Malaysia and Australia, the company crowdfunds the construction of affordable and commercial housing, mostly in Indonesia, through private and institutional investors, as well as Islamic banks.</p>			
<p>Global benchmarks</p>	 <p>FUNDRISE</p> <p>Fundrise offers an alternative to investing in stock and bonds – the first low-cost, direct private market investment platform</p>	 <p>REALTYMOGUL.com</p> <p>RealtyMogul.com is an online marketplace for real estate investing, connecting borrowers and sponsors to investors</p>	 <p>iFundingSM</p> <p>Revolutionizing Real Estate Investing</p> <p>Leading commercial real estate investment platform giving accredited investors access to investment opportunities online</p>	 <p>PRODIGY NETWORK</p> <p>THE LEADER IN REAL ESTATE CROWDFUNDING</p> <p>Prodigy Network is a company dedicated to Crowdfunding in real estate projects in New York and Bogota</p>
<p>Opportunity being addressed</p>	<ul style="list-style-type: none"> According to the Global Impact Investment Network, impact investing assets - investing made into enterprises, organizations and funds with the intention to generate social and environmental returns, alongside financial ones, are currently valued at \$228 billion in 2018.³¹ According to McKinsey Global Institute in 2014, it was estimated that approximately 330 million households did not have access to affordable housing, and that this figure could increase to 440 million households in 2025—the equivalent of 1.6 billion people. Addressing this gap could cost up to \$16 trillion.³² EthisCrowd seeks to address the affordable housing gap, capitalizing on a booming Indonesian real estate market and an increasingly accessible pool of social and ethical small and medium-sized investors through real-estate crowdfunding, a \$3.5 billion industry in 2016 (according to research and advisory firm Massolution), linking such investors directly with contractors and real estate developers.³³ 			
<p>Company trajectory</p>	<ul style="list-style-type: none"> Funding: The company has 24,373 community members with \$5.59 million in crowd-investments made and \$1.64 million of payouts to crowd-investors. The total value of projects by EthisCrowd in 2018 is \$52.8 million.³⁴ 			
<p>Key</p>	<ul style="list-style-type: none"> Ethis has been an impressive innovator, and shows how an original idea, around Shariah-compliant real estate, can be expanded to cover a range of product areas 			


31 Global Impact Investor Network, Annual Impact Investor Survey, GIIN, 2018, <https://thegiin.org/research/publication/annualsurvey2018>.

32 Tackling the world's affordable housing challenge, McKinsey Global Institute, 2014, <https://www.mckinsey.com/featured-insights/urbanization/tackling-the-worlds-affordable-housing-challenge>.

33 The World Bank's Indonesia Economic Quarterly, Closing the Gap, October 2017, <https://www.worldbank.org/en/country/indonesia/publication/indonesia-economic-quarterly-october-2017>.

34 EthisCrowd, company website, accessed on October 15th 2018, <https://www.ethiscrowd.com/>.


Case study 3 – UAE Startup success story: Adab Solutions

	<p>Adab Solutions, is UAE-based cryptocurrency startup that has announced the launch of the First Islamic Cryptocurrency Exchange (FICE), the only cryptocurrency exchange globally that is designed to adhere to shariah-compliant law.</p>
<p>Opportunity being addressed</p>	<ul style="list-style-type: none"> • According to data from CoinMarketCap the global cryptocurrency market cap is \$186 billion and the number of shariah-compliant offerings are limited.³⁵ • The purpose of the project is to ensure an enhanced quality of assets available for exchange and increase inclusion of Islamic cryptocurrencies. • The project aims to be a universal solution to attract Muslim involvement and users of Islamic finance models in the cryptocurrency market.
<p>Company trajectory</p>	<ul style="list-style-type: none"> • Adab Solutions is launching the project's Initial Coin Offering in September and will be guided by an in-house Shariah Advisory Board to ensure the exchange will be in full compliance with Shariah law.³⁶
<p>Key takeaways</p>	<p>Leverage leading blockchain technology to solve fundamental issues that exist between counterparties seeking to use faith-based products.</p>

³⁵ Total cryptocurrency market cap shrinks to \$186 billion, Mashable, September 2018, <https://mashable.com/article/crypto-market-cap-lowest-2018/#seGMiJEE0sqi>

³⁶ UAE Startup Launches First-Ever Sharia-Compliant Islamic Crypto Exchange, August 2018, CCN, <https://www.ccn.com/uae-startup-launches-first-ever-sharia-compliant-islamic-crypto-exchange/>


Case study 4 – Startup success story: Waqfe

	<p>Waqfe is a fintech digital community banking platform for deposit mobilization. The solution is designed for Islamic banks to build a loyal customer base, attract longer tenor deposits, improve cross-sell and generate higher annual customer value. Waqfe enables Islamic banks to acquire digital-ready customers through an engagement model that is built around their lifestyle needs. Its offerings include an integrated digital saving account, personal financial management tool, and a community marketplace.³⁷</p>
<p>Opportunity being addressed</p>	<ul style="list-style-type: none"> • GCC banking assets are expected to increase to \$110.9 billion by 2020, an increase by 25% per year from \$45.8 billion in 2016.³⁸ However, banks are becoming digitally irrelevant with low customer profitability and high churn. • Customer Solutions: Waqfe offers a fully digital onboarding and community experience for customers opening accounts through the platform. • Bank Solutions: Waqfe offers banks secure digital-ready, deposit-making customers from Waqfe, building longer-lasting relationships with a more loyal customer base.
<p>Company trajectory</p>	<ul style="list-style-type: none"> • Funding: Waqfe has raised seed capital and has a POC developed in Bahrain with the platform's first banking customer signed up.
<p>Key takeaways</p>	<ul style="list-style-type: none"> • Waqfe's success shows the importance of a robust partnership with government and industry entities • The company identified and strongly tested a clear market need for an enhanced digital experience among customers of Islamic Finance

³⁷ Company website, Waqfe, accessed on October 15th 2018, <http://www.waqfe.com/>.

³⁸ EY's World Islamic Banking Competitiveness Report 2016, EY, 2016, <https://www.ey.com/Publication/vwLUAssets/ey-world-islamic-banking-competitiveness-report-2016/%24FILE/ey-world-islamic-banking-competitiveness-report-2016.pdf>.

Case study 5 – Collaboration success story

 <p>بنك العز الإسلامي alizz islamic bank</p> <p>UBANQUITY</p>	<p>Oman's Alizz Islamic Bank partners with Ireland-based Ubanquity to provide customers with enhanced experiences. Ubanquity signs an agreement with Alizz Islamic Bank, a dynamic Oman-based bank pursuing the principles of Islamic banking and digital excellence.³⁹</p> <p>Ubanquity Systems Ltd. Is a leading white-label omnichannel solution provider to banks and financial institutions in Ireland. Ubanquity's API driven Platform integrates with any Core Banking System, ATM switch, Payment Gateway, and all Social Networks. Ubanquity's solutions can be deployed to production in Arabic, English, and French. Alizz Islamic Bank is a shariah-compliant financial institution established in Oman in 2012.</p>
<p>Description of partnership and impact</p>	<ul style="list-style-type: none"> • Core challenge: Alizz Islamic Bank in Oman seeks to become a fast growing and dynamic bank in the GCC. The company aims to enhance customer experiences using real-time analytics. • Solution: Islamic banking is growing in appeal across the globe and Ubanquity is very excited to cater to this segment, bringing leading technology innovation for the further and ongoing prosperity of Alizz Islamic Bank customers. Ubanquity will provide Alizz Islamic Bank with an integrated and rich set of Omnichannel banking solutions. This will grant the bank unique control over its existing systems, using extensive real-time analytics enabling augmented banking experiences.
<p>Key takeaways</p>	<ul style="list-style-type: none"> • Partner with technology-driven solution providers to enhance customer experiences

³⁹ Ubanquity company website, accessed on October 15th 2018, <https://www.ubanquity.com/ubanquity-signs-agreement-alizz-islamic-bank-dynamic-oman-based-bank-pursuing-principles-islamic-banking-digital-excellence/>.

Gaps and opportunities

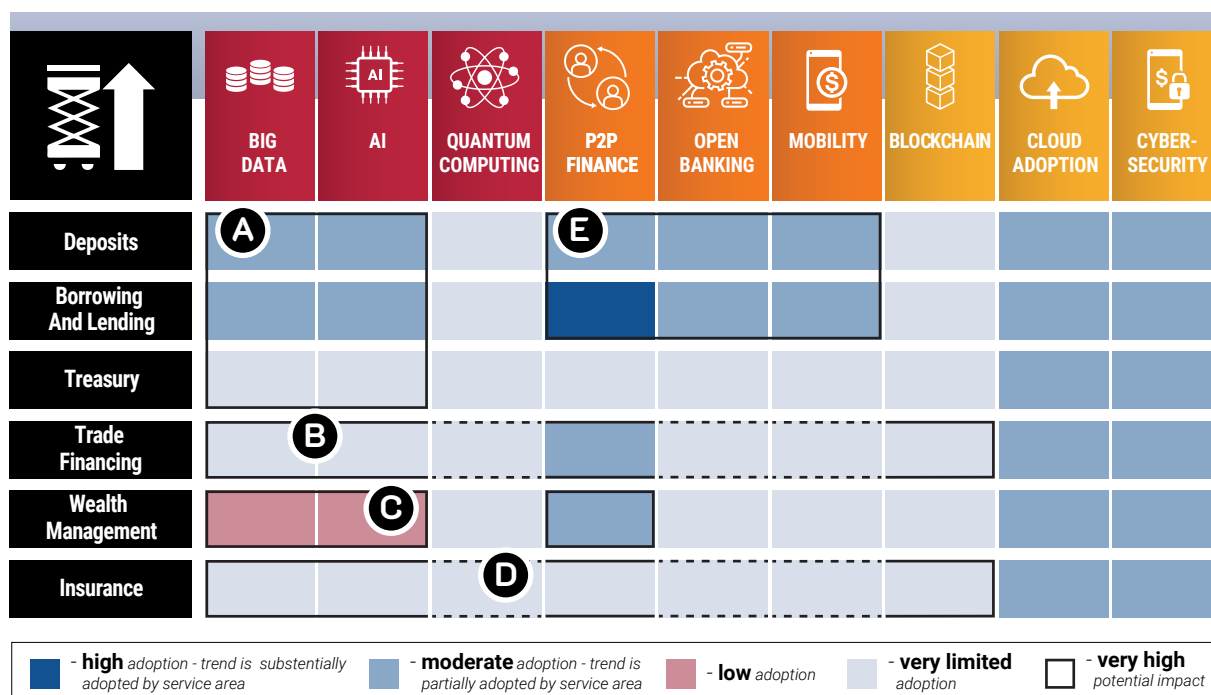
Introduction

While the Islamic Fintech ecosystem has evolved substantially, there has been a clear concentration in peer-to-peer finance, to address the critical need of making shariah-compliant financing more accessible for businesses and consumers. Relative to demand and market potential, however, many gaps remain.

Ecosystem gaps

Reviewing the ecosystem in more detail, there are five particular areas of opportunity that this report identifies, with substantial variation in the extent to which each has been addressed.

Diagram – mapping of current state of innovation across Islamic financial services landscape



Source: DinarStandard analysis and synthesis

A. The role of analytics and big data in Islamic banking

Analytics and big data have played substantial roles in disrupting the global banking system – from identifying and engaging customers to reducing operating costs through deploying machine-learning capabilities.

Islamic finance institutions have sought to incorporate AI and big data into their operations – notably, Maybank has a group finance office that employs analytics, and Emirates Islamic using HR Panda, an AI program that could automate 50% of the bank's recruitment processes.⁴⁰

However, there remains substantial room for greater application of AI and big data across the Islamic finance industry.

B. The critical and varied need for Islamic trade financing – enter the blockchain

Global trade finance is a \$12.3-trillion industry in 2016, representing 75% of global trade⁴¹, with total intra-OIC trade at \$250 billion in 2017, with \$1.8 trillion in imports across the OIC. Despite substantial potential, the Islamic trade finance industry was estimated at only \$186 billion in 2016, with substantial room for growth.⁴²

It is clear Islamic trade finance is a critical priority – and is linked to facilitating greater trade across the OIC, and there is a need for more startups, as well as better investment in innovation among Islamic finance institutions, to fill a substantial funding gap.

Blockchain's use in trade finance – where there is a need for substantial documentation and independent verification, all of which can be simplified through smart contracts, has been strongly validated. Most notably, HSBC issued a letter of credit for US food and agriculture firm Cargill via a smart contract earlier in 2018. The trade finance transaction involved a bulk shipment of soybeans from Argentina to Malaysia. The letter of credit was issued from HSBC to Dutch lender ING.⁴³

By becoming more competitive, Islamic finance can position itself at the forefront of the broader ethical finance industry, with ethical screening applied to \$15 trillion of assets in 2016.⁴⁴

C. Using AI and automation in wealth management

The success story of Wahed Invest is a particularly important development, with the company raising \$12 million across Seed and Series A rounds⁴⁵, solving a fundamental problem for Muslim consumers around the world – providing cost-effective access to shariah-compliant equity investments.

The company has taken an important step towards making Islamic investing more accessible and more automated. However, there remains substantial room for development in this segment of Islamic Fintech – in particular, broadening access to equity investments, as well as introducing innovative models – such as depositing spare change from users' accounts and directly investing in a range of assets – such as Acorns, a US-based startup, or providing a comprehensive and automated assessment of user financial management, as provided by US-based Fintech companies, such as Mint.

40 "Emirates Islamic Fosters Innovation in Islamic Finance." MENA Herald. December 27, 2016. <https://www.menaherald.com/en/money/finance-investment/emirates-islamic-fosters-innovation-islamic-finance>

41 *Shariah-compliant Trade Finance: Developments and Opportunities*. Salaam Gateway, 2017. <https://repository.salaamgateway.com/images/iep/galleries/documents/201704120808265506.pdf>

42 Ibid.

43 Browne, Ryan. "HSBC Says It's Made the World's First Trade Finance Transaction Using Blockchain." CNBC. June 01, 2018. <https://www.cnbc.com/2018/05/14/hsbc-makes-worlds-first-trade-finance-transaction-using-blockchain.html>

44 McKenna, John. "Here's What You Need to Know about Ethical Investment." World Economic Forum. August 23, 2017. <https://www.weforum.org/agenda/2017/08/what-you-need-to-know-about-ethical-investment/>

45 Takahashi, Dean. "Wahed Raises \$7 Million for Halal-based Investment Platform." VentureBeat. November 01, 2017. <https://venturebeat.com/2017/11/01/wahed-raises-7-million-for-halal-based-investment-platform/>

D. The varied need for Takaful and Re-Takaful

The Takaful industry has seen very limited Fintech activity, with a substantial role for startups to address a range of needs. The development of a mutual health insurance scheme in India, which is seen as an alternative to healthcare, is promising, and needs to be built upon, given the varied needs of Muslim consumers from healthcare and auto to travel and home ownership.

With 80 startups identified globally as substantial disrupters to the conventional trillion-dollar insurance industry⁴⁷, Takaful is a hot area of focus in Islamic Fintech.

E. P2P finance and the next stage in its evolution

P2P finance has been a substantial focus to date for Islamic Fintech – with notable and exciting success stories such as the rapid evolution of Ethis Ventures, among several other examples. P2P finance also plays a critical link to the social development promise of Islamic Finance – connecting the unbanked to the financial system and bringing economic benefits to the poor.

The next stage of P2P Islamic Fintech is scaling up – to that end, there is a substantial role for government investment vehicles, as well as venture capitalists, as well as Islamic finance institutions – to provide the financing, as well as the global platform, for established P2P finance startups to have a global impact.

The way forward

Islamic Fintech has much to offer – and there is an important role of collaboration between startups and the established Islamic finance institutions. The case of Al Barakah establishing an accelerator is an important example to learn from – banks that work with Fintechs to accelerate innovation are in a much stronger

position to improve their service offering. Failing to do so could lead to any number of unideal outcomes – existing banks could be relegated to providing back office support, or could lose substantial ground to either existing startups, or conventional financial institutions plugging the gap for market demand.

45 Takahashi, Dean. "Wahed Raises \$7 Million for Halal-based Investment Platform." VentureBeat. November 01, 2017. <https://venturebeat.com/2017/11/01/wahed-raises-7-million-for-halal-based-investment-platform/>

46 Kader, Syed Ameen. "Muslims in India Develop Mutual Health Insurance Scheme as Alternative to Takaful." Salaam Gateway. May 24, 2018. https://www.salaamgateway.com/en/story/muslims_in_india_develop_mutual_health_insurance_scheme_as_alternative_to_takaful-SALAAM24052018121153/

47 "80 Hottest InsuranceTech Companies Shaking up the Trillion-Dollar Insurance Industry." Medici. March 09, 2016. <https://gomedici.com/80-hottest-insurancetech-companies-shaking-up-the-trillion-dollar-insurance-industry/>

Roadmap

Given the tremendous opportunity identified earlier, Islamic Fintech is poised to drive Islamic Finance industry to its next phase of evolution and opportunity. It is also the biggest platform to leapfrog the industry beyond its current market penetration in Islamic economies that ranges from 5% to 30% in most Islamic economies. Below is a high-level roadmap for the Islamic Fintech development for different stakeholders.

• Government agencies:

- **Regulatory sand boxes:** Many of the fintech driven business models are new to the regulators, peer-to-peer lending, blockchain/cryptocurrency, data protection and security challenges arising etc. While UAE, Malaysia, Bahrain are driving fintech sandboxes, there is much acceleration needed around these efforts to be competitive with the conventional fintech markets
- **Fintech innovation hubs & knowledge sharing:** Again, as fintech entrepreneurs and established institutions are seeking to innovate, government support through incentives and sharing best practices are critical to developing consistency and generating best-in-class operating models
- **Cybersecurity/ ML & KYC:** Identifying and assessing money laundering (ML) and Know-your-customer (KYC) risks associated with fintech firms and technology providers.
- **Consumer protection/ awareness:** A key consideration to enabling the Islamic fintech opportunity is to support consumer protection policies and regulations and at the same time promoting consumer awareness of Islamic fintech's viability and trustworthiness. General Data Protection Regulation (GDPR) compliance and other trust factors should be promoted.

• Financial institutions & startups

- **Incumbent institutions engaging with startups/ innovation hubs:** Established Islamic financial institutions have woken up to the reality of the Fintech opportunity. CEO's and their Boards need to treat this as mission critical for the future of the organization and growth. The proven strategy worldwide is driving corporate venture investment by identifying and engaging with startups and innovation hubs.
- **Startups:** Effectively engaging with incumbent institutions is key to the success of Islamic fintechs. FinTech startups don't just need capital, they need customers. At the same time, incumbents need new approaches to drive change and deliver innovation. This is the current global fintech success trend as highlighted by PwC in a 2017 survey showing worldwide, 82% of participants on average, expect to increase partnerships with FinTech companies over the next three to five years.⁴⁸
- **Customer awareness:** The general market, especially retail ambivalence towards Islamic finance, could be seriously addressed with enhanced customer experience, engagement and Islamic finance's social impact potential through fintech adoption.

• Investments

- **VC/PE Opportunity:** Relative to a fast growing global fintech universe, Islamic fintech has seen only a miniscule of investments. While this report has not exactly sized Islamic fintech VC/PE investments, it is a fraction of the \$38.1 billion invested globally in all of 2017 (see Global section).
- **Corporate investments:** Established Islamic banks are now investing in fintech projects. While this is a good sign, the scale and scope of the investments need to be accelerated relatively to global trends.

Acknowledgements



مركز دبي لتطوير
الاقتصاد الإسلامي
DUBAI ISLAMIC ECONOMY
DEVELOPMENT CENTRE

The Dubai Islamic Economy Development Centre (DIEDC) was established in December 2013 to make Dubai the 'Capital of Islamic Economy', as envisioned by His Highness Sheikh Mohammed Bin Rashid Al Maktoum, Vice-President and Prime Minister of the UAE and Ruler of Dubai. The DIEDC is equipped with the financial, administrative and legal tools to promote economic activities compatible with Islamic law in Dubai's goods

and financial services sector, as well as the non-financial sector. In this capacity, it will conduct research and specialist studies to determine the contribution of shariah-compliant activities to the Emirates' gross domestic product and explore how to extend this contribution to boost the economy. The DIEDC is also mandated to create new products and lines of service to law firms specializing in finance structuring.

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Dinar Standard™ is a USA based growth strategy research and advisory firm with branch office in Dubai and partner offices in Kuala Lumpur, Jakarta, Cairo and Istanbul. Its vision is to empower organizations for profitable and responsible global impact. Dinar Standard specializes in innovation, investments and marketing strategies with a focus on halal/Tayyab food, Islamic/ethical finance, halal travel, Islamic NGOs and OIC-member country

sectors. Since 2008, DinarStandard has been global thought leader on future innovation foresight and strategies, the Islamic economies, as well social entrepreneurship. Its market insights are recognized regularly in global media (CNN, BBC, Economist, etc.) It has delivered over 50 high impact consultancy projects for clients from 12 different countries representing most dynamic global corporates and innovative government entities.

Glossary

- **Artificial Intelligence (AI):** A set of technologies to enable computers to execute “smart” tasks through technologies such as natural language processing, expert systems and machine learning, a process that applies algorithms to analyze data to generate insights and make predictions.
- **Big Data:** Uses analytical tools to process large data sets from multiple different sources driving business decisions.
- **Blockchain:** Tracks and records data using a distributed digital ledger system - verifying and storing data across hundreds or thousands of computers globally.
- **Cloud Adoption:** Stores resources on the internet (in a “cloud”) and retrieves them using web-based tools and applications instead of on a direct server connection.
- **Cryptocurrency:** A digital currency in which encryption techniques are used to regulate the generation of units of currency and verify the transfer of funds, operating independently of a central bank.
- **Cybersecurity:** A set of technologies, processes and practices used to protect networks, computers, programs and data from attack or unauthorized access.
- **Fintech:** “4th Industrial Revolution* driven technologies exponentially enhancing and/or disrupting 20th century financial services, operations, business models, and customer engagement.”
- **Ijarah:** Equivalent to lease financing in conventional finance. The purchase of the leased asset at the end of the rental period is optional
- **Insurtech:** The use of technology innovations designed to squeeze out savings and efficiency from the current insurance industry model.
- **Islamic Fintech:** Fintech technologies exponentially enhancing and disrupting 20th century Islamic financial services, operations, business models, and customer engagement.
- **Mobility:** Describes the ability to access information or applications in an untethered manner, usually through portable, networked computing devices such as smartphones.
- **Mudaraba:** A contract between a capital provider and a mudarib (skilled entrepreneur or managing partner), whereby the Islamic financial institution provides capital to an enterprise or activity to be managed by the mudarib. Profits generated by such an enterprise or activity are shared in accordance with the terms of the mudaraba agreement, while losses are borne solely by the capital provider, unless the losses are due to the mudarib’s misconduct, negligence, or breach of contractual terms.
- **Murabaha:** The financing of a sale at a determined markup (cost plus profit margin).
- **Musharakah:** A contract between an Islamic financial institution and a customer to provide capital to an enterprise, or for ownership of real estate or a moveable asset, either on a temporary or permanent basis. Profits generated by the enterprise or real estate/asset are shared in accordance with the terms of the musharakah agreement, while losses are shared in proportion to each partner’s share of capital.
- **Organisation of Islamic Cooperation (OIC):** An international organization with 57-member countries and with 53 countries being Muslim Majority countries. The organization states that it is ‘the collective voice of the Muslim world’.
- **Open Banking:** Uses application program interfaces (APIs) that allow third-party service providers to access customer banking data.
- **Payments/Transactions:** Companies whose business model revolves around using technology to provide the transfer of value as a service and/or ANY company whose core business is predicated on distributed ledger (blockchain) technology AND/OR relating to any use case of cryptocurrency (e.g. Bitcoin).

- **Peer 2 Peer Finance:** A technology-based service that connects businesses directly with investors, through a web-based platform for a fee.
- **Quantum Computing:** Applies principles from quantum theory to develop computers with significantly more processing power.
- **Regtech:** The use of information technology to enhance regulatory processes. It puts a particular emphasis on regulatory monitoring, reporting and compliance and is thus benefiting the finance industry.
- **Retakaful:** A form of Islamic reinsurance that operates on the takaful model.
- **Robo-advisors:** Applications that combine digital interfaces and algorithms, and can also include machine learning, in order to provide services ranging from automated financial recommendations to contract brokering to portfolio management to their clients, with limited human intervention or none. Such advisors may be standalone firms and platforms, or can be the in-house applications of incumbent financial institutions.
- **Sadaqah:** An Islamic term that means to voluntarily give charity.
- **Shariah-compliant:** Meeting the requirements of Islamic law.
- **Smart Contracts:** Programmable applications that, in financial transactions, can trigger financial flows or changes of ownership if specific events occur. Some smart contracts are able to self-verify their own conditions and self-execute by releasing payments and/or carrying out others' instructions.
- **Sukuk:** Trust certificates that are generally issued by a special-purpose vehicle (SPV or the issuer), the proceeds of which are, generally, on-lent to a corporate, financial institution, insurance company, sovereign, or local or regional government (the sponsor), for the purpose of raising funding according to Islamic principles. Sukuk are issued on the basis of one or more Islamic contracts (ijara, murabaha, wakala, among others), reflecting either investment or financing contracts.
- **Takaful:** A form of Islamic mutual insurance based on the principle of mutual assistance
- **Wakalah:** An agency contract where the investment account holder (principal) appoints an Islamic financial institution (agent) to carry out an investment on its behalf, either with or without a fee.
- **Wealth/Investment Management:** Platforms whose primary business involves the offering of wealth management or investment management services using technology to increase efficiency, lower fees or provide differentiated offerings compared to the traditional business model. Also includes technology platforms for retail investors to share ideas and insights both via quantitative and qualitative research.
- **Zakat:** One of the five pillars of Islamic, a religious obligation for all Muslims who meet the necessary criteria of wealth. It is a mandatory charitable contribution, the right of the poor to find relief from the rich, and is considered to be a tax, or obligatory alms.

Appendix

List of Islamic Fintech companies identified for this report:

Company Name	Country	Area of Focus
570easi	France	Business & Consumer Financing
Abundance	UK	Business & Consumer Financing
Adab Solutions	UAE	Business & Consumer Financing
Alami Sharia	Indonesia	Business & Consumer Financing
Amartha	Indonesia	Business & Consumer Financing
Ammana	Indonesia	Business & Consumer Financing
Angsur	Indonesia	Business & Consumer Financing
ArabCoin	UAE	Deposits
ArabianChain	UAE	Deposits
Asy-Syirkah	Indonesia	Business & Consumer Financing
Ataplus	Malaysia	Business & Consumer Financing
Beehive	UAE	Business & Consumer Financing
BerryPay	Indonesia	Deposits
Blossom Finance	Indonesia	Business & Consumer Financing
bsalam	Indonesia	Business & Consumer Financing
CoinBundle	USA	Wealth Management
CoinFunded	Sweden	Business & Consumer Financing
ConexCap	France	Wealth Management
Crowd	Indonesia	Business & Consumer Financing
Dana Syariah	Indonesia	Business & Consumer Financing
DANAdidik	Indonesia	Business & Consumer Financing
Danakoo	Indonesia	Business & Consumer Financing
Divvy	USA	Business & Consumer Financing
Easi Up!	France	Business & Consumer Financing
eCarWorld.in	India	Business & Consumer Financing
efunding	Indonesia	Business & Consumer Financing
Energia Positiva	Italy	Business & Consumer Financing
Ethis Crowd	Singapore	Business & Consumer Financing
Eureeca	UAE	Business & Consumer Financing
Everex	Singapore	Business & Consumer Financing
Finocracy	UAE	Business & Consumer Financing
Finterra	Singapore	Wealth Management
Global Sadaqah	Malaysia	Wealth Management
Goolive	Indonesia	Business & Consumer Financing
Growmada	UAE	Business & Consumer Financing
Habibi Coin	UAE	Wealth Management
HalalSky	USA	Business & Consumer Financing

HelloGold	Malaysia	<i>Business & Consumer Financing</i>
Humming Crowd Realty	UAE	<i>Business & Consumer Financing</i>
Huulk	Switzerland	<i>Business & Consumer Financing</i>
iGrow	Indonesia	<i>Business & Consumer Financing</i>
Indves	Indonesia	<i>Business & Consumer Financing</i>
Insha	Germany	<i>Deposits</i>
Insure Halal	UK	<i>Insurance</i>
InvesProperti	Indonesia	<i>Business & Consumer Financing</i>
Investree	Indonesia	<i>Business & Consumer Financing</i>
Investroo	USA	<i>Wealth Management</i>
Invoice Wakalah	Pakistan	<i>Trade financing</i>
JBK	Indonesia	<i>Business & Consumer Financing</i>
kandang.in	Indonesia	<i>Business & Consumer Financing</i>
Kapital Boost	Singapore	<i>Business & Consumer Financing</i>
kerjasama.com	Indonesia	<i>Business & Consumer Financing</i>
Kitabisa.com	Indonesia	<i>Business & Consumer Financing</i>
LaunchGood	USA	<i>Business & Consumer Financing</i>
Lemonade	USA	<i>Insurance</i>
Liberis	UK	<i>Trade financing</i>
Maliyya	UAE	<i>Business & Consumer Financing</i>
Maslahatkita	Indonesia	<i>Business & Consumer Financing</i>
Mehrabane	Iran	<i>Business & Consumer Financing</i>
Mercy Crowd	UK	<i>Business & Consumer Financing</i>
Mobilima	Indonesia	<i>Business & Consumer Financing</i>
MoneeMint	UK	<i>Wealth Management</i>
Money Fellows	UK	<i>Business & Consumer Financing</i>
Oorth	Indonesia	<i>Wealth Management</i>
Ovamba	USA	<i>Business & Consumer Financing</i>
PayHalal	Malaysia	<i>Wealth Management</i>
PayZakat	Russia	<i>Wealth Management</i>
pitchIN	Malaysia	<i>Business & Consumer Financing</i>
PropTech Crowd	UK	<i>Business & Consumer Financing</i>
Provesty	Indonesia	<i>Business & Consumer Financing</i>
QardHasan	UK	<i>Business & Consumer Financing</i>
Qazwa	Indonesia	<i>Business & Consumer Financing</i>
Ripple	USA	<i>Deposits</i>
Rohingya Project	Malaysia	<i>Business & Consumer Financing</i>
Seedout	Pakistan	<i>Business & Consumer Financing</i>
Shekra	Egypt	<i>Business & Consumer Financing</i>
Skola Fund	Malaysia	<i>Business & Consumer Financing</i>
SmartCrowd	UAE	<i>Business & Consumer Financing</i>
Smile For Charity	USA	<i>Wealth Management</i>
Stellar	USA	<i>Deposits</i>
StrideUp	UK	<i>Business & Consumer Financing</i>
Syarfi	Indonesia	<i>Business & Consumer Financing</i>

SyarQ	Indonesia	<i>Business & Consumer Financing</i>
Tamasia	Indonesia	<i>Wealth Management</i>
Teek Taka	Bangladesh	<i>Deposits</i>
Uplift Mutuals	India	<i>Insurance</i>
Wahed Invest	USA	<i>Wealth Management</i>
Wakapp	Indonesia	<i>Wealth Management</i>
Waqfe	Bahrain	<i>Deposits</i>
Yielders	UK	<i>Business & Consumer Financing</i>
Yomken	Egypt	<i>Business & Consumer Financing</i>
Zakatify	USA	<i>Wealth Management</i>
Zoomaal	Lebanon	<i>Business & Consumer Financing</i>



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