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Financial Technology in Banking Industry: Challenges and Opportunities

Ahmed T.Al Ajlouni * *Monir Al-hakim* **

An overwhelming interest is growing in financial technology (henceforth: FinTech) in recent years. This contemporary financial phenomenon characterized basically by heavy use of technology in communication, some called it network economics. FinTech service encapsulates –but not restricted to- wide range of financial services capitalising from the explosive developments in technology, it includes the payments, clearing and settlement category, followed by credit, deposit and capital-raising services.

Despite the fact that the FinTech players attract the global attention from the financial industry leaders and legislators, the issue as a subject of study still in infant stage, little scientific research has been conducted yet.

The paper aims at first place to shed light on this wave of development in financial industry that combined with high technology, it aims also to clarify the role of FinTech in the financial industry in general and banking sector in particular.

The paper obtained its goals in two main phases, firstly; background and definition of the FiTech, in addition to outlining the current FinTech market segments and landscape and some alternative financing FinTech platforms will be discussed. In the second phase, we will identify the influence of FinTech on banking industry and the required response to face it.

The paper suggested also some future research proposals about the effect of FinTech on the financial industry and banking sector in the Arab countries.

Key words: Financial Technology, Banking Industry, Platform Competition, Network Economics.

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1. *Introduction*

Until recently, the financial sector remained largely untouched. This changed with the breakthrough of the companies that use technology for different financial solutions such as banking, payments, and personal financial management. These firms used to be called FinTech firms.

FinTech firms aim to attract customers with products and services that are more user-friendly, efficient, transparent, and automated than those currently available (Dorfleitner, Hornuf, Schmitt, & Weber, 2017)

Different Examples of innovations that are central to FinTech today include crypto currencies and the BlockChain, new digital advisory and trading systems, artificial intelligence and machine learning, peer-to-peer lending, equity crowd funding and mobile payment systems.

The challenge that new entrants to the financial industry create against banks through FinTech is that it competes banks in the core of its business, i.e. credit, these global widespread electronic platforms became countable rival for the traditional banks in providing credit especially at the personal and household level, these new competitors have advantage and excel the traditional banking system in many aspects. The contemporary financial services providers that successfully target overlooked segments (as crowd funding, p2p, and lending clubs) have the potential power through diverse modes of finance, these modes and ways in providing them considered flexible, cost effective, less regulative requirements, and time saving.

The challenges not restricted to credit function, it includes the marketing strategies, high response and flexibility in providing new services, access to greater number of clients, and reaching the less banked or even unbanked people around the world.

According to Pierrakis and Collins (2013): "Such innovations can disrupt existing industry structures and blur industry boundaries, facilitate strategic disintermediation, revolutionize how existing firms create and deliver products and services, provide new gateways for entrepreneurship, democratize access to financial services, but also create significant privacy, regulatory and law enforcement challenges".

2. *Background, FinTech definition and dissemination*

"Through FinTech, issuers, investors, and intermediaries communicate, research, socialize, share, cooperate, crowd source, compete and trade in ways that are very different from the past, thereby challenging the regulatory paradigm. For example, on social trading sites, investors can follow a lead trader; on angel investment sites, investors follow a lead investor; on market data sites, artificial intelligence and social media analytics help inform retail investors' securities trading and investment decision making".(IOSCO, 2017)

2.1 FinTech Definition

Despite the fact that there's no consensus about the best definition of FinTech and considering that premature to define a field that is rapidly evolving; tracking the different trials to define it will give a good view about this contemporary term. The term "FinTech" denotes companies or representatives of companies that combine financial services with modern, innovative technologies (Dorfleitner et al., 2017). According to IOSCO (2017), The term

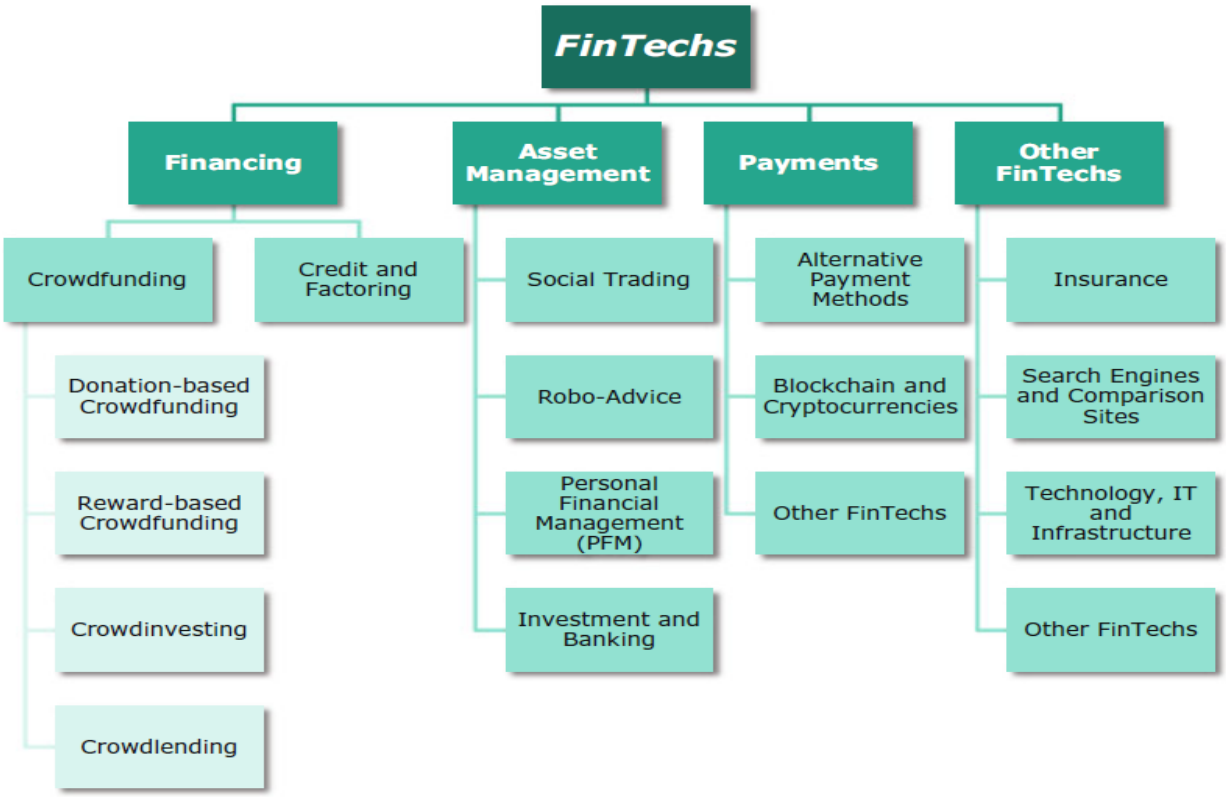
Financial Technologies or“ Fintech ”is used to describe a variety of innovative business models and emerging technologies that have the potential to transform the financial services industry. Financial Stability Board defined FinTech as a "technology-enabled innovation in financial services that could result in new business models, applications, processes or products with an associated material effect on the provision of financial services"(Financial Stability Board, 2017)

2.2 Segments of the FinTech Industry and global landscape

As it is a new field, an official agreement at the segments that shape the borders of this industry doesn't found yet. In spite of the different trials to segment this industry, most of them focus on the firms that depend highly on the technology-enabled innovation in financial services.

Dorfleitner et al. (2017) divided companies in the FinTech industry into four major segments in accordance with their distinctive business models. By analogy with traditional value-adding areas of a universal bank, FinTechs can be distinguished on the basis of their involvement in financing, asset management, and payments, as well as other FinTechs, a loose assortment of companies that perform other functions. Figure 1 illustrates this categorization•.

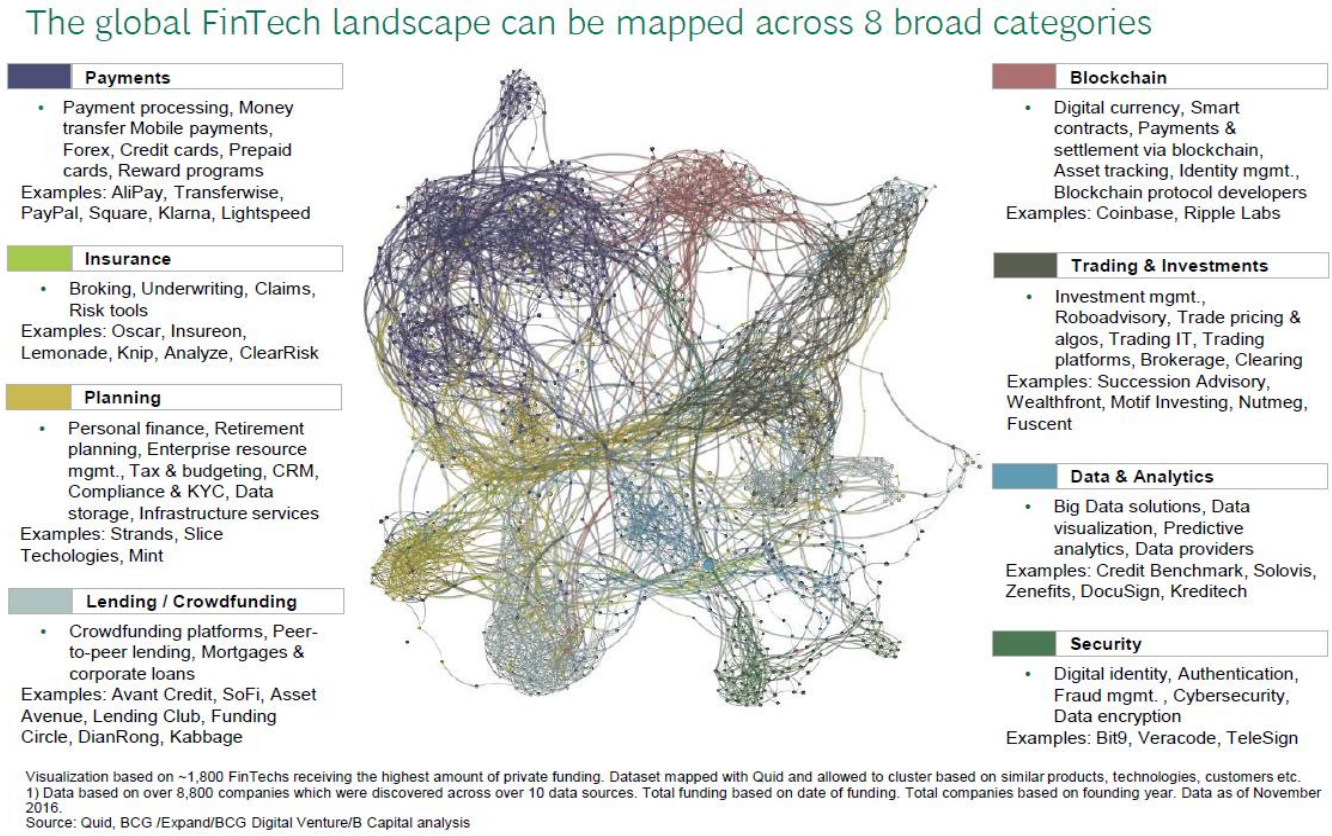
Fig. 1: Segments of the FinTech industry



• Detailed representation of the sub segments of the FinTech industry explained in (Dorfleitner et al., 2017)pp 7-10.

Figure 2 shows the Fintech landscape mapped across eight categories: payments, insurance, planning, lending and crowdfunding, BlockChain, trading and investments, data and analytics, and security. Of these, certain aspects of planning, lending and crowdfunding, BlockChain, trading and investments, data analytics, and security can intersect with securities regulation. United States has the largest FinTech industry as well as the highest number of FinTech adopters, followed by the United Kingdom, Canada, India, and Germany at a considerable distance (Ernst, 2014 ; Haddad & Hornuf, 2016).

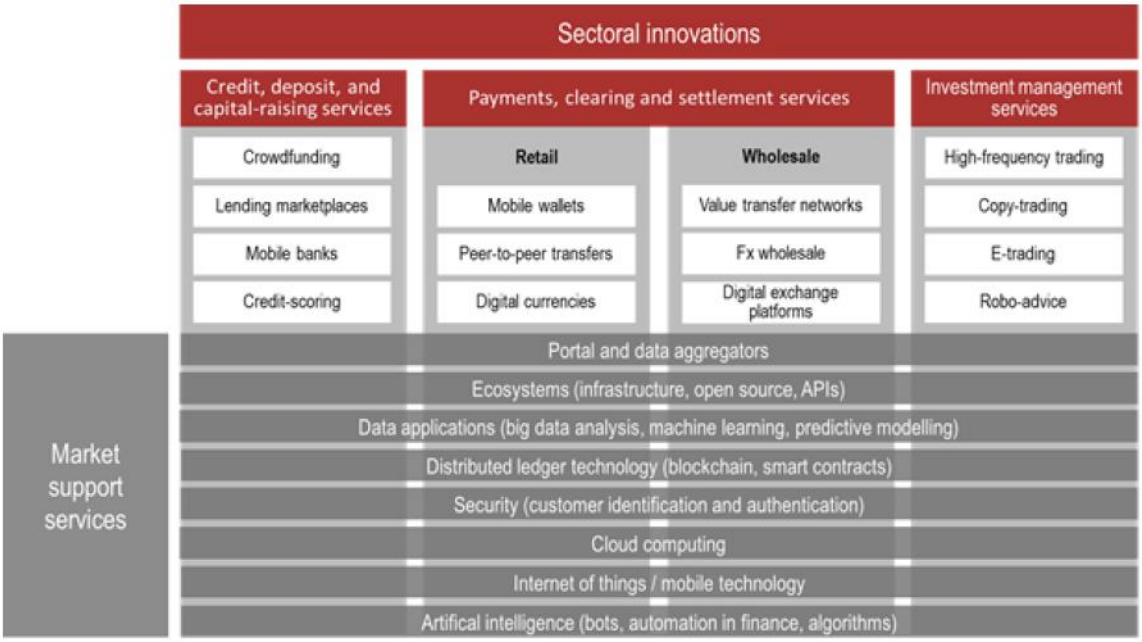
Fig. 2 the FinTech landscape



Source: Fintech Control Tower, Expand, November 2016

In a different way, adopted, the Basel Committee on Banking Supervision categorized this contemporary industry to three product sectors, as well as market support services, that reflect the enabling technologies which support these innovative products. The three sectors relate directly to core banking services, while the market support services relate to innovations and new technologies that are not specific to the financial sector but also play a significant role in fintech developments (BCBS, 2017).

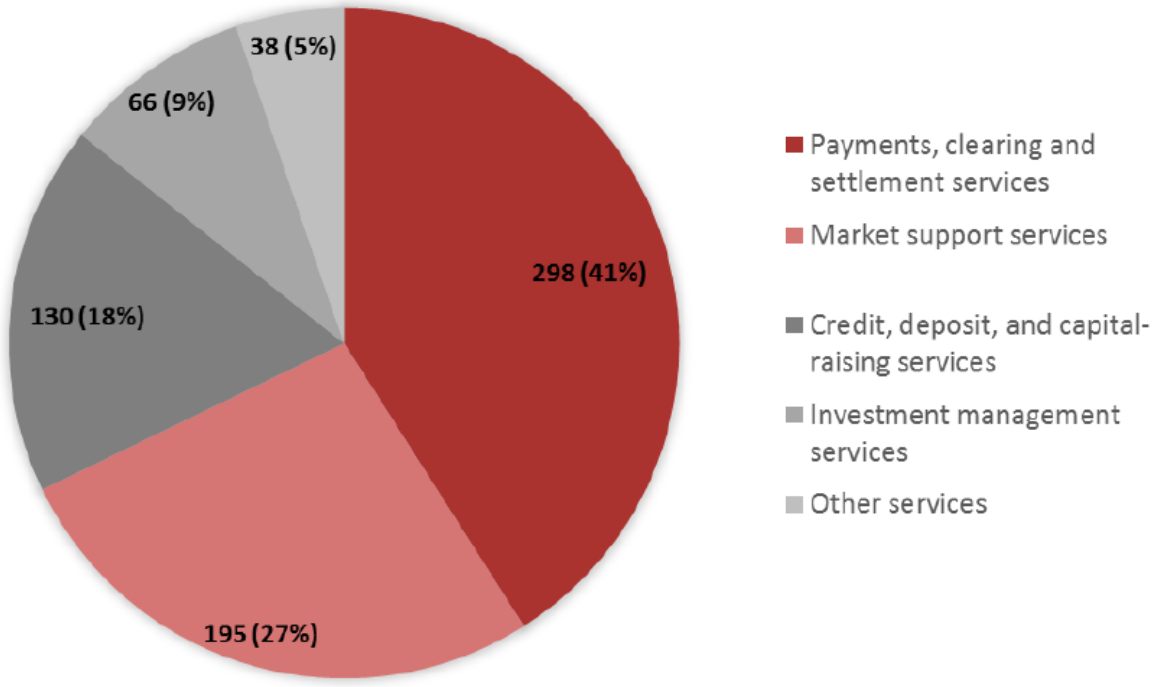
Fig 3: Sectors of innovative services



Source: BCBS.

According to an informal survey conducted by the BCBS within its member countries, asking them to identify the significant fintech products and services within their jurisdictions. The number of fintech companies reported for each sector is shown in Graph 4

Fig 4: key providers per fintech activity



As the above figure shows, the highest number of fintech service providers is in the payments, clearing and settlement category, followed by credit, deposit and capital-raising services.

2.3 Volumes

Though it is not easy to quantifying the size and growth of fintech and its potential impact on the banking industry, a trial to do so by the KPMG (KPMG, 2016)deserve to be seen. In 2016, global investment in fintech companies hit $24.7 Billion across 1076 deals. One growth measure that can be used is venture capital (VC) investment in fintech companies. A KPMG report shows that, in 2016, global venture investment in fintech companies reached $13.6 billion across 840 deals. A report of IOSCOA pointed to cumulative investments of over $100 billion in more than 8,800 fintech companies as at November 2016(IOSCO, 2017).

In 2015, global FinTech investment grew by 75%, exceeding the high 22 billion USD amount, and continues to rise(Skan, Dickerson, & Masood, 2015). This growing number threatens incumbent retail banks as a new wave of digital banking start-ups has emerged.

The BCBS report pointed that despite the large size of investments and the significant number of financial products and services derived from fintech innovations, volumes are currently still low relative to the size of the global financial services sector(BCBS, 2017).

2.4 Alternative Financing FinTech Platforms

The emergence of online alternative financing platforms considered as one of the more notable developments in recent years, it aimed at bringing together firms and individuals looking for capital and others that have money to lend, invest or donate (IOSCO, 2017). The general form of these platforms came through what commonly known as Crowd funding, it implies raising financial resources from a large number of capital providers "the crowd" without indicating the purpose of the funding (Moritz & Block, 2014).

(Schwienbacher, 2010)and Larraide defined crowd funding as "the financing of a project or a venture by a group of individuals instead of professional parties (like, for instance, banks, venture capitalists or business angels). According to Bradford (2012), crowd funding is "the use of the Internet to raise money through small contributions from a large number of investors".

As a common FinTech alternatives that offer credit in contemporary way through crowd funding financing platforms the peer-to-peer (P2P) lending and equity crowd funding (ECF)

2.4.1 *peer-to-peer (P2P) lending*

As a substitute to banks in providing credit shoed promised potential, Peer-to-peer finance (abbreviated frequently as P2P lending) approach one of these alternatives. Since its first existence through "Zopa" in 2005, P2P platforms developed dramatically in that it becomes a reliable choice to finance beyond individuals to business entities.

In its standard structure; P2P is a "platforms that facilitate financial services via direct, one-to-one contracts between a single recipient and one or multiple providers" (Moenninghoff & Wieandt, 2013).

This business model implies that financing may be obtained from many different lenders/ investors whether individuals or institutional investors.

Peer-to-peer lending can also involve platforms similar to micro financing in that individuals directly provide capital to other individuals. Government and corporate accelerators offer a variation of P2P lending by helping entrepreneurs gain access to modest initial amounts of funding together with mentoring support(Bruton, Khavul, Siegel, & Wright, 2015) .

The P2P platforms as a contemporary FinTech premises disseminated around the globe, in the developed and developing countries as a kind of crowd funding (Bradford, 2012; Xusheng, 2014). In USA, personal credit developed in an institutional form is known as Circle Lending. As of April 2013, the largest peer–to–peer business lending site in the UK."Funding Circle" has facilitated approximately GBP100 million in loans to over 1,700 companies to date (Pierrakis & Collins, 2013). The potential market indicates that the projected market of P2P market in USA will be USD150 billion by 2025. (Price Waterhouse Coopers PWC, 2015)[1]

A newly established in 2010, exclusively focused on small businesses; "Funding circle" managed GBP1bn (USD1.5bn) loans to 12,000 businesses in the UK, USA, Germany, Spain and the Netherlands[2].

2.4.2 Equity Crowd Funding (ECF)

ECF is a business model that allows individuals to invest in a company, typically a start-up or early stage business, in exchange for shares of that company. This mode of FinTech firms used to be limited to venture capitalists and angel investors(IOSCO, 2017). The platform is the market-maker, regulated by the relevant financial services authority, and each offering of shares by entrepreneurs (of fixed duration) is denoted a pitch(Estrin, Gozman, & Khavul, 2017).

Estrin and Khavul (2016) defined equity crowd funding as "an open marketplace for entrepreneurial finance that takes place on a two-sided online platform and operates within a social media environment".

ECF has provided the small investors good opportunity to equity investing in private companies. A smaller size of the companies involved in these platforms in comparison to those typically associated with a public securities offering considered as a great addition of these platforms, it provides entrepreneurs and investors access to an online social media marketplace where they can trade equity finance for ownership stakes (Cumming & Zhang, 2016; IOSCO, 2017; Rossi & Vismara, 2017).

Though ECF platforms licensed in the developed countries about decade ago (in Europe, USA, and Australia), UK still the largest ECF marketplace(Estrin et al., 2017). The UK regulatory environment has been more open to ECF than have regulators in much of continental Europe and the USA(Hornuf & Schwienbacher, 2017).

3. FinTech challenge for banks and financial systems (Opportunities and Threats)

FinTech firms considered as a real rival for the traditional banking system, this challenging contender have different fronts to face banks; efficiency is one of these fronts.

[1] http://www.pwc.com/us/en.html
[2] Retrieved from: https://www.fundingcircle.com/uk/about-us/

FinTech firms' efficiency increases are mainly due to loan personalization and the disintermediation of processes by eliminating middlemen, which significantly lowers transaction costs for consumers (KPMG, 2016; Lines, 2016).

New technologies such as "BlockChain" also enhance efficiency(Peters & Panayi, 2016; Wood, 2015). As banks are usually less likely to adopt new technologies quickly due to the regulatory environment (Hannan & McDowell, 1984) and often rely on decades-old IT infrastructure these innovations expected to benefit FinTech firms more. According to Peters and Panayi (2016), reducing counterparty and settlement risks in shortening the settlement cycle from 3 days to 2 days will benefits several markets in reducing counterparty and settlement risks, and BlockChain technologies have the potential to lead to near-instantaneous settlement.

An opposite look at the FinTech asserts that advances in financial technology have failed to reduce intermediation costs (Philippon, 2015).According to Buchak, Matvos, Piskorski, and Seru (2017) FinTech lenders in fact offer higher interest rates than non- FinTech lenders.

In order to provide a comprehensive look at the expected outcomes that encapsulates the potential threats and opportunities that FinTech provides for the financial markets and banking sector, we explored the reports and studies that conducted by the important bodies interested in the financial markets and institutions in addition to published studies. Some of these resources took the opportunities and threats of FinTech in general (BCBS, 2017), others took it for particular segments of FinTech firms (IOSCO, 2017). Though we focus mainly on banking industry, we believe that the FinTech have merely the influence on the financial markets and banks with some slight differences. Keeping in mind that the benefit of opportunities and the degree of exposure to the risks not equal to industry, it depends on many factors as the local environment, management, and global environment changes. The ability to Create Strategic Value utilizing Financial Technology is what makes the required difference between banks.

3.1 *Opportunities*.

Different studies and specialized reports discussed the suggested the opportunities and benefits of Fintech for the financial industry from different perspectives, these opportunities related to consumer and investor protection, market integrity, competition and financial inclusion, in addition to coordination and cooperation to avoid duplication of work and reap synergies from the various efforts at the international level (Financial Stability Board, 2017).

According to the global specialized reports and studies (BCBS, 2017; Financial Stability Board, 2017; IOSCO, 2017; Peters & Panayi, 2016), we summarized the main opportunities as follows:

1. *Greater access to capital*: This appears in the P2P and ECF platforms in providing credit to borrowers, especially SMEs, who do not have access to bank loans and opening new possibilities of access to equity finance.

2. *Financial inclusion***:** Digital finance has improved access to financial services by under-served groups. Technology can reach remote locations. FinTech Platforms are

increasingly targeting larger sized trades and are shifting to firm and executable orders. Inclusion of new asset classes is another side of this opportunity, as example, many Distributed Ledger Technologies (DLT) experts note that one of the benefits of DLT is that assets that are expensive to source, transact, and deliver such as commodities, energy products, art pieces, real estate, and private equities can be "tokenized" for securitization, which in turn makes them available for trading and as collateral.

3. *Better and more tailored banking services***:** banks can benefit from the specialization of FinTech firms to improve their traditional offerings to deliver them in a cost effective and flexible way. Banks may, for example, white-label robo-advisors to help customers navigate the investment world and create a better and tailored customer experience.
4. *Cost advantage*: this comes from the fact that Fintech firms offers Lower transaction costs and faster banking services. fintech players may speed up transfers and payments and cut their costs, as the case of cross-border transfers, fintech companies can provide faster banking services at lower cost. Several markets have experienced benefits in reducing counterparty and settlement risks in shortening the settlement cycle from 3 days to 2 days, and blockchain technologies have the potential to lead to near-instantaneous settlement.
5. *Potential positive impact on financial stability due to increased competition*: The entry of new players competing with incumbent banks could eventually fragment the banking services market and reduce the systemic risk associated with players of systemic size.
6. *Regulation Technology (Regtech)***:** Contemporary innovative technologies can help financial institutions comply with regulatory requirements and pursue regulatory objectives (as prudential requirements including reporting, consumer protection). banks can benefit from regTech with more effective ways to improve their compliance and risk management. It may also be a means of coping with change in the regulatory environment and driving down the costs involved in meeting the corresponding requirements.
7. *Enhancement in security***:** For one of the core developments ik FinTech, security is built into the blockchain through encryption of the blocks and the linkages between the blocks. Furthermore, attacking every node in a blockchain is more difficult with present state technology than to attack a central database. FinTech Platforms also providing various methods to protect anonymity and prevent information leakage.

It is extremely important to note that the clear benefits from fintech, should not be at the expense of safety and soundness, and consumer protection. Banks and bank supervisors need to maintain the same level of risk management, control standards and protections to new emerging delivery channels and services being introduced by financial institutions through fintech.

Banking standards and expectations should be sufficiently flexible to accommodate new innovations within the appropriate statutory authorities of jurisdictions; nonetheless, the high standards for safety and soundness and consumer protection objectives required in the banking industry need to be maintained(BCBS, 2017).

3.2 Threats

Like any development, the Fintech encapsulate not only benefits and opportunities, it presents a wide variety of risks that cut across various sectors and often blend both tactical and strategic risk elements. The FinTech risks and threats come mainly from concerns about the operational risk, compliance, liquidity and volatility of bank funding sources, and the severe competition. The following risk associated with FinTech, particularly in the banking sector.

1. *Competition on market share (Strategic risk)*: The potential for rapid unbundling of bank services to non-bank fintech or BigTech firms increases risks to profitability at individual banks. Existing financial institutions stand to lose a substantial part of their market share or profit margin if new entrants are able to use innovation more efficiently and deliver less expensive services that better meet customer expectations.
2. *Risk of collapse, fraud or malpractice by the platform or some of its users:* certain cases of platform fraud have materialized3. Fraud can occur with parties offering (and buying) securities on the platform.

3. *High operational risk – systemic dimension*: The rise of fintech leads to more IT interdependencies between market players (banks, fintech and others) and market infrastructures, which could cause an IT risk event to escalate into a systemic crisis, particularly where services are concentrated in one or a few dominant players. The entrance of fintech firms to the banking industry increases the complexity of the system and introduces new players which may have limited expertise and experience in managing IT risks.
4. *High operational risk – idiosyncratic dimension*: A proliferation of innovative products and services may increase the complexity of financial services delivery, making it more difficult to manage and control operational risk. Legacy bank IT systems may not be sufficiently adaptable or implementation practices, such as change management, may be inadequate. This kind of risk mainly attributed to the dependence on the robo-advisers, which cause technical dilemmas like errors in algorithms, overly complex algorithms, overly simplistic algorithms, and static client information.
5. *Increased difficulties in meeting compliance requirements and especially Anti-money laundering and countering the financing of terrorism AML/CFT obligations*: The higher level of automation and distribution of the product or service among banks and fintech companies can result in less transparency on how transactions are executed and who has compliance responsibilities. The Risk of conducting general solicitation/ unlicensed activities became more than before, platforms may contend that they do not engage in regulated activities because they only offer execution-only services, information services, and matching services. Besides, many FinTech platforms may lack standardization and provide less detail than securities in the public markets.
6. *Compliance risk with regard to data privacy*: The risk of not complying with data privacy rules may increase with the development of big data, more outsourcing due to

[3] For example, see the CBRC focus in respect to Ezubao: http://www.crowdfundinsider.com/2016/03/83063-chinese-regulators-vow-to-get-tough-on-online-lending/. The fraud case involved approximately USD7.6 billion and 900,000 investors, mostly retail, over the span of 18 months.

tie-ups with fintech firms, and the associated competition for ownership of the customer relationship. The availability of platform being operated by unregistered entities could increase this risk.

7. *Cyber-risk*: Heavier reliance on application programming interface (APIs), cloud computing and other new technologies facilitating increased interconnectivity could potentially make the banking system more vulnerable to cyber-threats, and expose large volumes of sensitive data to potential breaches.
8. *Liquidity risk and volatility of bank funding sources:* The use of new technology and aggregators creates opportunities for customers to automatically change between different savings accounts or mutual funds to obtain a better return. While this can increase efficiency, it can also affect customer loyalty and increase the volatility of deposits. This in turn could lead to higher liquidity risk for banks.

Table 1: List of risks and opportunities emanating from financial technologies and innovation (BCBS, 2017)

	Risks	**Opportunities**
Impact on consumer sector	A. Data privacy B. Data security C. Discontinuity of banking services D. Inappropriate marketing practices	A. Financial inclusion B. Better and more tailored banking services C. Lower transaction costs and faster banking services
Impact on banks and banking system	A. Strategic and profitability risks B. Increased interconnectedness between financial parties C. High operational risk – systemic D. High operational risk – idiosyncratic E. Third-party/vendor management risk F. Compliance risk including failure to protect consumers and data protection regulation G. Money laundering – terrorism financing risk H. Liquidity risk and volatility of bank funding sources	A. Improved and more efficient banking processes B. Innovative use of data for marketing and risk management purposes C. Potential positive impact on financial stability due to increased competition[15] D. Regtech

Source: BCBS.

4. *Future expectations for the FinTech growth and Banks' strategic response to deal with it*

The strategic and long term direction of FinTech is subject to different expectations; these expectations differ according to the backgrounds and experiences of the experts. Some argue that the FinTech firms will gobble up key parts of the franchise of traditional retail banks. Others suggesting either that the digital banking start-ups will simply fail, or that the traditional banks will contain these firms and acquire them.

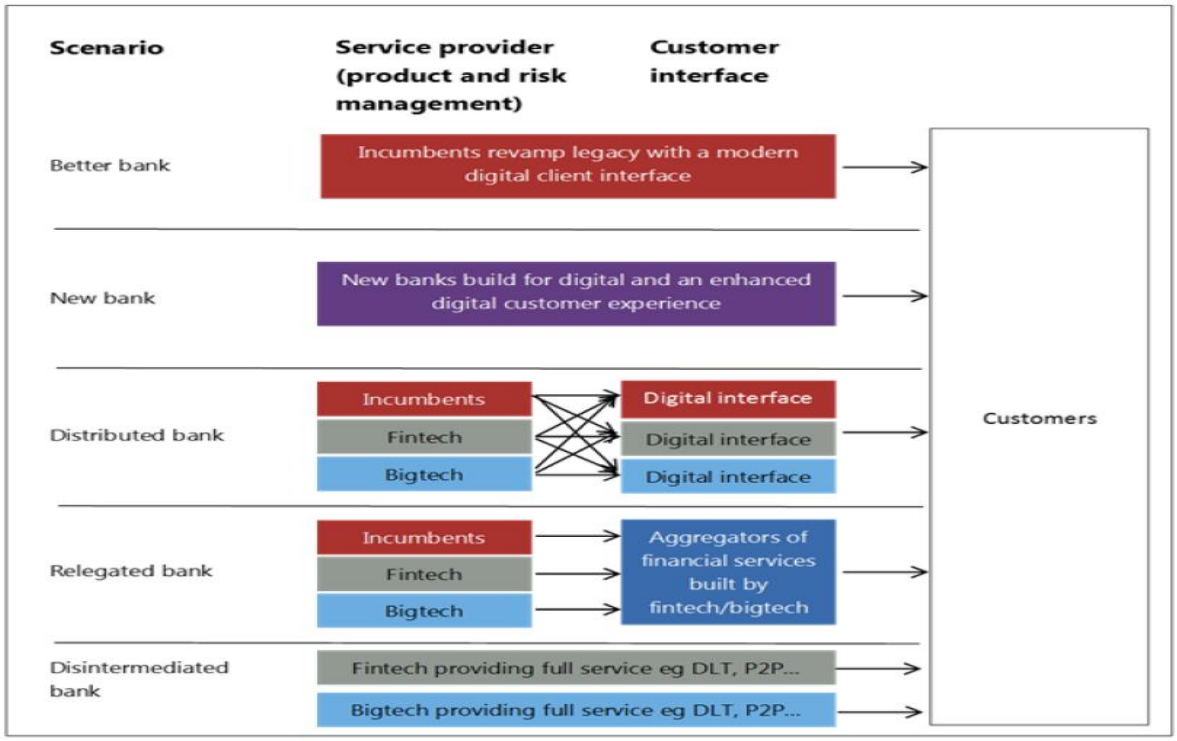
As a new development in the marketplace; the FinTech and its firms represents challenge that banks should face to capitalize from the opportunities and benefits it provides, and minimize to the largest degree the threats and risks associated with it.

4.1 *Scenarios*

As a core global institution interested in banks, the BIS through its Consultative Document prepared by the Committee on Banking Supervision developed five stylized scenarios (which are not mutually exclusive) which have drawn mainly from the following

sources. These scenarios describing the potential impact of fintech on banks, as figure 5 shows, followed by short description of each of scenario(BCBS, 2017):

Fig 5: Overview of the five scenarios and the role players



Colour code: maroon indicates incumbent banks; purple new players; grey fintech companies; and blue bigtech companies.
Source: BCBS illustration of scenarios based on the BankNXT study *The future of banking: four scenarios*, October 2015, https://banknxt.com/53478/future-banking-scenarios/.

- *The better bank: modernisation and digitisation of incumbent players:* In this scenario the incumbent banks digitise and modernise themselves to retain the customer relationship and core banking services, leveraging enabling technologies to change their current business models.

The new bank: replacement of incumbents by challenger banks: The new banks apply advanced technology to provide banking services in a more cost-effective and innovative way. The new players obtain banking licences under existing regulatory regimes and own the customer relationship.

- *The distributed bank: fragmentation of financial services among fintech firms and banks:* In the distributed bank scenario, financial services become increasingly modularised, but incumbents can carve out enough of a niche to survive. Financial services may be provided by the incumbents or other financial service providers, whether fintech or bigtech, who can "plug and play" on the digital customer interface, which itself may be owned by any of the players in the market.

- *The relegated bank: incumbent banks become commoditised service providers and customer relationships are owned by new intermediaries:* In the relegated bank scenario, incumbent banks become commoditised service providers and cede the direct customer relationship to other financial services providers, such as fintech and bigtech companies.

- *The disintermediated bank: Banks have become irrelevant as customers interact directly with individual financial services providers, for instance, using DLT:* Incumbent banks are no longer a significant player in the disintermediated bank scenario, because the need for balance sheet intermediation or for a trusted third party is removed. Banks are displaced from customer

financial transactions by more agile platforms and technologies, which ensure a direct matching of final consumers depending on their financial needs (borrowing, making a payment, raising capital etc).

4.2 Suggested response required by banks to deal with FinTech

In spite of the rising wave of FinTech and aggressiveness in taking place in the global financial and banking system, traditional banks have not yet exhausted the possibilities for improvements along these lines (Mackenzey, 2015). As it's discussed earlier; FinTech as a challenge encapsulates many challenges for the traditional providers of financial services in general and banking industry in particular.

Many bank leaders around the globe looking at FinTech shows it as an opportunity to "pump" new blood to the traditional banking system as a complement to the retail banking services. This can be obtained through joint partnerships, service outsourcing, venture capital funding, or acquisitions. For these banks, FinTechs seem to benefit them more than disrupt them (Lines, 2016). Moreover, collaborations between banks and different FinTech firms as start-ups also benefit these firms, it may get access to global payment systems and the banks' own customer base. This lowers the barriers of entry for FinTech firms to the financial sector and enables them to gain more trust from their customers (Juengerkes, 2016)

Existing banks may also acquire FinTech companies to gain access to new technology, which would make it more difficult to find a direct relationship between FinTech funding and incumbent retail bank stock returns. For example, Capital One, the tenth largest bank in the US in terms of total assets and market capitalization, acquired FinTech start-up Level Money in 2015(Li, Spigt, & Swinkels, 2017). According to Mackenzey (2015); "an overarching challenge for banks is how to "open up" structurally – both in terms of how they leverage partnerships and how they permit other entities to access their capabilities. Those banks that pursue a thoughtful approach to meeting this challenge will be best positioned to evolve their business models and find new sources of value for their customers, while performing well financially".

Different institutions suggested required response of banks to benefit from the accelerating wave of FinTech to maximize the opportunities and minimize the treats that FinTech firms represent for the banking industry or the risks associated with adopting Fintech solutions in banking works. Ten key observations identified by BCBS (2017) and ten recommendations suggested to deal with FinTech base on these recommendations, they concentrated on the required actions to be taken by the banks' management, such as ensuring the safety and soundness of the banking system with minimising the risk of inadvertently inhibiting beneficial innovation in the financial sector, acquiring effective governance structures and risk management processes and effective IT and other risk management processes. In addition to investigating and exploring the potential of new technologies to improve their methods and processes and review their current regulatory, supervisory and licensing frameworks in light of new and evolving risks arising from innovative products and business models.

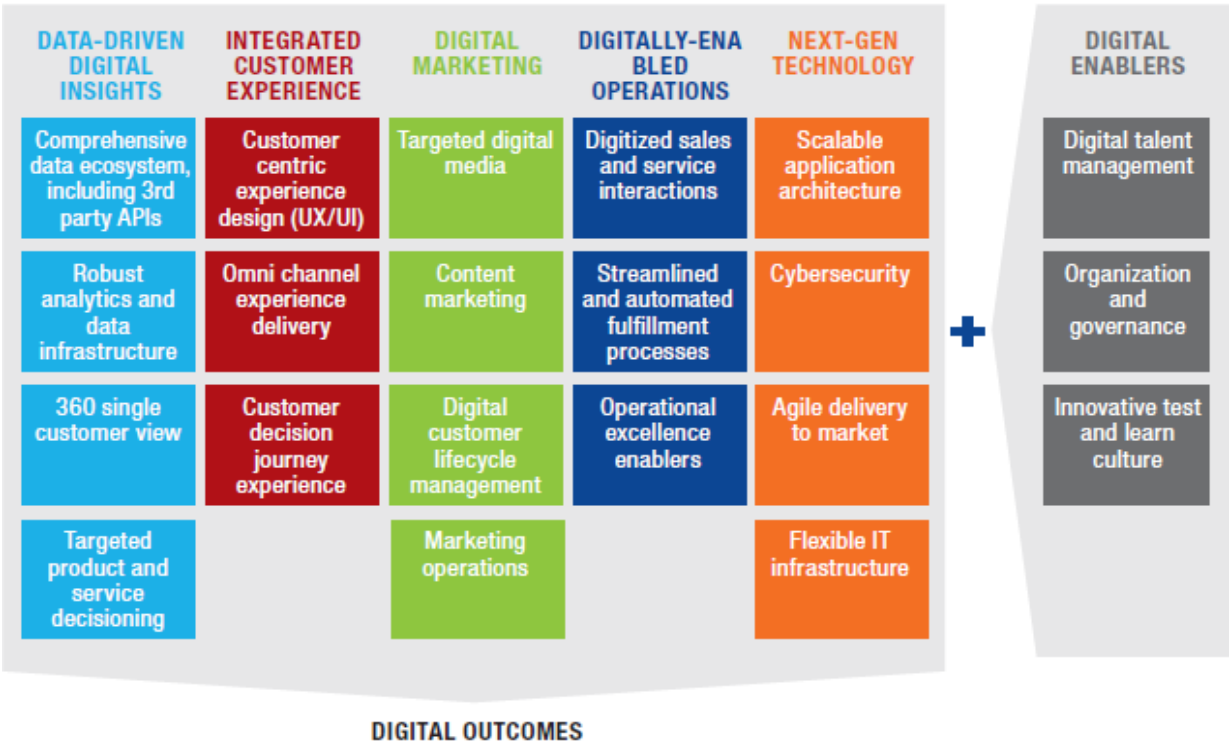
Six priorities/advices to face the FinTech challenge developed by (Courbe, 2017):

I. Update your IT operating model to get ready for the 'new normal'

II. Slash costs by simplifying legacy systems, taking Software as a service SaaS beyond the cloud, and adopting robotics.
III. Build the technology capabilities to get more intelligent about your customers' needs.
IV. Prepare your architecture to connect to anything, anywhere.
V. You can't pay enough attention to cyber-security.
VI. Make sure you have access to the necessary talent and skills to execute and win.

As the FinTech nature "digital challenge", we find that the most proper priorities that Mackenzey (2015) suggested through six digital imperatives as exhibited in figure 6

Fig 6: Banks' digital imperatives



NOTE: The framework illustrated above is a componant of McKinsey's Digital Capabilities (DC™) diagnostic, a 360° objective benchmark of the extensive set of core digital capabilities needed to enable a sucessful digital strategy.

1) *Use data-driven insights and analytics holistically across the bank.*

Competitor FinTech providers powered by data and analytics, large consumer ecosystems (e.g. Facebook, Google, Apple), or some of the more progressive financial institutions are opening up new battlegrounds in areas like customer acquisition, customer servicing, credit provision, relationship deepening through cross-sell, and customer retention and loyalty. Consider the provision of credit - one of banking's last big moats.

The large-scale availability of new and big data (and the fact that banks no longer have a monopoly on such data which they have built and leveraged over centuries) is pushing banks to radically transform just to keep up. Building a comprehensive data ecosystem to access customer data from within and beyond the bank; creating a 360-degree view of customer activities; creating a robust analytics and data infrastructure; and leveraging these to drive scientific (versus case law-based) decisions across a broad range of activities from customer acquisition to servicing to cross selling to collections - all are critical to a bank's future success.

2) ***Create a well-designed, segmented and integrated customer experience, rather than one-size-fits-all distribution.***

The days of banking being dominated by physical distribution are rapidly coming to an end.

The proliferation of mobile devices and shifting preferences among demographic groups mean that customers expect more real-time, cross-channel capabilities (e.g. status inquiries, problem- resolution) than ever before. Physical distribution will still be relevant, but far less important, and banks must learn to deliver services with a compelling design and a seamless unconventional customer experience.

3) ***Build digital marketing capabilities that equal E Commerce giants.***

Today, banks are in a fight for the customer, not only with other banks but also non-banks. In order to fill the gap in marketing skills that currently exists between e commerce players and banks, banks should mastering digital media, content marketing, digital customer lifecycle management and marketing. Building these capabilities and recruiting and retaining digital marketing talent will require considerable time and investment.

4) ***Aggressively mitigate the potential cost advantage of attackers through radical simplification, process digitization and streamlining.***

After the last dot-com boom, banks successfully electronified core processes. Now they must digitize them.

This will be a multi-year process for banks, as it will require the integration of multiple legacy systems and potential re-platforming to enable truly digitized processes. Simplification, digitization and streamlining opportunities exist across large swaths of banking operations.

5) ***Rapidly leverage and deploy the next generation of technologies, from mobile to agile to cloud.***

The technology agenda for banks and bank CIOs has become even more demanding and complex. First and foremost, "mobile-first" is not just a buzzword – it is the clearest directive banks could receive from consumers about how they want to interact with their service providers. Secondly, banks must fortify not only their technologies, but also their internal processes and cultures, to defend customers' data from breaches. Third, the pace of innovation in banking is accelerating rapidly, requiring banks to increase their speed to keep up, including software development through techniques such as agile and continuous delivery. Finally, significantly faster, more nimble and dramatically lower-cost versions of processing and storage technologies are now commonplace.

Banks need to move onto such platforms, retiring and replacing legacy systems quickly. Since such systems are neither easily nor quickly replaced, many banks may choose to move to a "two-speed architecture" approach that builds more flexible layers of technology on top of existing systems, but still draws on and interacts with those systems to provide the next generation of technology agility and seamless customer experiences.

From providing truly scalable application architecture with a particular emphasis on mobile to addressing the cyber security threats they face every day to learning agile delivery

and modernizing their infrastructure, banks have a challenging but important road ahead in building next-generation technology capabilities.

6) Rethink legacy organizational structures and decision rights to support a digital environment.

The typical organization chart of any bank will show a matrix of products and channels, with physical distribution usually leading in size and scope. The P&Ls that accompany these matrices vest power in the owners of the channels and products that are most likely to be in the firing line of FinTech attackers.

These attackers are typically oriented to customer metrics tied directly to their financial performance. In contrast, most banks have consensus oriented cultures that require a long time to build alignment. Banks must complement their existing P&Ls with approaches that enable faster adaptability to external changes and foster cultures that support speedier decision making. Banks must think hard about how best to organize to support the five preceding imperatives.

4. Concluding remarks and future research

We tried through this paper to shed light on FinTech as a wave of development in financial industry that combined with high telecommunication and information technology by clarify the role of FinTech in the financial industry in general and banking sector in particular.

Despite the fact that the FinTech players attract the global attention from the financial industry leaders and legislators, the issue as a subject of study still in infant stage, little scientific research has been conducted yet.

The paper aims at first place to shed light on this wave of development in financial industry that combined with high technology, it aims also to clarify the role of FinTech in the financial industry in general and banking sector in particular.

The paper obtained its goals through giving an introduction to know the nature of this movement; in addition to find out how it defined by the specialists.

We also outlined the current FinTech market segments and landscape around the world by referring to the most recent professional reports and studies that issued by the global bodies interested in the financial industry in general and banking sector in particular. An example of the alternative financing FinTech platforms were discussed also.

In the second phase of this paper, we tried to identify the influence of FinTech on banking industry and the required response to face it. The future scenarios that may shape the situation for the banks, the opportunities and threats that encapsulated in the Fintech, and the recommended responses to face the new challenge of the Fin tech.

At the end, we recommend some proposal for further research in the Arab countries. The expected influence of FinTech on the banking industry, the suggested response of Arabian banks to face the Fintech Challenge, preparing banks to the Fitech era, customer willingness to deal with Fintech firms.

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