Traditional Banks and Fintech: Survival, Future and Threats

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Abstract The FinTech(s) is an economic sector involving a number of enterprises that use technology to offer more efficient financial services. These startups disrupt the classical financial system namely commercial banks by modifying the payments and debts mechanism. Their technology offers opportunities in terms of enhancing the current financial services and widening the consumers' choices. In this paper, the author assesses the different conditions and requirements for the survival of the banking sector amidst the emergence of the Fintech startups worldwide and specifically in Lebanon. In this paper, the author explains the emergence and positioning of Fintech firms before developing a research model for this end. The model shall be based on the behavioral and innovation theories in finance, will be tested on site using structured interviews with banking specialists and officials, and will finally quantitatively be analyzed for research purposes.

Keywords Fintechs · Financial innovation · Banks · Technology

1 Introduction

Throughout history, the World has witnessed many changes that promised opportunities and enhancement: The invention of steam machinery by James Watt and the industrial revolution two centuries ago triggered a substantial swift in world economic models. In the 80s, computers were conceived, followed by the introduction of the internet 10 years later. The world became a global village thanks to the free flow of information. Nowadays, the internet and communication technology have become mandatory in our lives.

In all business sectors, innovation is running at high speed, hence imposing itself as a rule and a policy in any business. The widespread digitalization along with the intensification of data processing are all inducing industrial changes and change in

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the growth and type of companies. Such innovation has transformed the constituents of the ecosystem that have triggered economies of scale that contributed to modifying job profiles and increasing profit. Actually, no person was sufficiently aware of the impact of innovation on businesses and industries. As already said, the internet became mandatory, or has even become akin of raw material needed for the continuity, survival, growth and expansion of any business.

The financial sector and the industry are not excluded from such innovation and stand as no exception. On the contrary, they seem to be widely influenced by the latter due to the economy's digitalization and dematerialization. Classic banks, even the best positioned ones, have reshuffled their "business models" to partially align with the needs of innovation and specifically resist and counter attack the penetration of those newly conceived FinTech start-ups in the financial markets. The hypothesis of replacing classic banks with virtual banks "online" does not stop from spreading, and expanding among the stakeholders and players of the financial markets. In fact, conventional and classic bankers have a volatile and gloomy future ahead due to the invasion of finance technology.

FinTech firms with their new technology offer many substitutes to the classic financial products that help firms grow quickly and rise the appetite of large investors to venture in such firms with excessive financing amounts. With the supply of FinTech, clients tend more and more to demand digital financial products that are being considered a threat to the traditional system, business and market. The latest research has shown that more than 1400 FinTech enterprises are active on the market. In 2008, more than 100 million dollars have been invested in those firms; the total reached 19 billion dollars in 2015. FinTech firms are becoming a substantial source of influence and a driver of international financial institutions. Today, individuals can simply apply for a loan on the Internet; pay the installments using their mobile application and exchange virtual currencies. This so-called success is related to some factors that have facilitated and accelerated the rise of this innovative system:

1. The development and installation of cutting edge technology platforms to facilitate customers' relations management system and become closer to clients
2. The infiltration and acceptance of internet in the business arena
3. The mass usage of mobile telephones especially amidst the youth who seem highly dependent on such technology
4. The introduction of (3G and 4G) technology and more and more implementation of cloud computing projects
5. Changes in consumers' behaviors. Every day, they become more engaged with online purchasing and ultimately require that online banking and financial services are available 24/7
6. Markets are becoming more open due to the shrinking of Government barriers
7. Confidence in classic banks is constantly diminishing due to last decade's financial crisis and the result of Basel (1, 2, 3) that lead to imposing heavy regulations on financial institutions for risk containment purposes
8. Implementation of block chain and Big Data projects
9. Execution of artificial intelligence and business intelligence projects.

It is worth mentioning that every FinTech or finance technology company involves critical risks for.

1. The digitalization of financial market could cause damage to information security, for e.g. a hacking attack etc.…Therefore, FinTech firms must introduce technology security systems to protect the privacy and confidentiality of their information and hence their clients'.
2. Some of the new electronic payment methods for e.g. the use of bitcoins, could also be considered as a risk factor due to its potential impact on the country's monetary policy.
3. Clients can also invest in alternative services and products. For e.g. loans could be awarded based on timely information however, the latter may not be available or could be falsified which could lead to huge losses among investors.
4. Risk of losing a conventional banking job.

A major question arises: What would the Lebanese banks do to mitigate this threat? Today more than ever before, we are aware about the escalating war among FinTech firms and banks. Nowadays clients are becoming more and more demanding as they look for sophisticated products. FinTech firms are a source of innovation for banks; therefore, having them associated with banks could be beneficial for both. Historically, traditional banks have always been capable of creating and developing new products that respond to the needs of their clients. However, presently, clients become more demanding and rely more on digitalization, a technology service that banks cannot fulfill due to their rigidity in response and adaptability to market change.

In fact, with digitalization, banks should invest substantially in upgrading the infrastructure and mobilizing the needed skills. Therefore, the banks optimal solutions could be to collaborate with the FinTech startups and turn threat into an opportunity through potential association, a strategy of many shapes and types. Banks can choose a simple collaboration with a FinTech through a service agreement or also merge and acquire such firms. Banks strategy for merging with or acquiring FinTech firms can carry many consequences:

1. With the acquisition of shares, banks shall have the hands on experience of the acquired FinTech
2. Less time is required for the development of advanced and sophisticated products
3. Acceleration of the innovation process at the Bank.

2 Literature Revue

2.1 The Theory of Behavioral Finance

Though FinTech firms have been threatening banks all the way through, their success is mainly dependent on consumers' behavior not only banks. The theory of Behavioral

Finance, adopted by Kahneman and Tversky [1], is aimed at studying investors' decisions and behaviors. The main hypothesis of this theory is about the irrational status of the investor. Sometimes investment decisions and options are influenced by the investors' culture, background, emotional status like fear, anger, confidence, habit etc….

Researchers say that human psychology plays a crucial role in finance and many cognitive bias has been developed in this regard to back up this theory.

Below are some of the biases feeding the behavioral change of some consumers:

1. The bias of familiarity. An individual sometimes tends to favor one situation over another on grounds of familiarity.
2. The bias reliability. Persons speculate future events. Therefore, investors as well can over-estimate the re-occurrence of an event in the future.
3. The bias of confidence and trust. It has a serious influence on the consumers' reaction. In fact, investors would not invest in a location where confidence is extremely volatile.

2.2 *The Theory of Innovation*

2.2.1 Schumpeter Innovation's Theory

With reference to [2], (1912) radical innovations distress the economic balance. Indeed, they cancel the old and obsolete models or activities. "Innovate" is defined as "new consumer goods, new methods of production and transport, new markets, new types of industrial organizations". The foundations of innovation according to [2] remain applicable, even with the fall of capitalism and since the 1940s innovation represents the source of growth in all sectors.

For [2], innovation takes several types. It could be of a technical, commercial, organizational, social and financial nature. As for financial innovation, it results from the rise of FinTechs.

Financial innovation means according to [3] (1991) the introduction of new products and services on the financial markets or the modification of an existing product using all sorts of improvements.

It was not until the global crisis (2007–2009) that the United States realized the importance of financial innovation. The default of housing payments triggered a global crisis and the recovery was marked by financial innovations.

This tool of change continues to be considered an opportunity for any financial institution especially for banks allowing the following benefits:

Increase in profits
Financial risk reduction
Reduced costs of financial transactions
Implementation of products with a better consumer orientation.

For [1], financial innovation is about offering services and financial products with the purpose of facing financial competition. According to [4], there are 5 forces and competition is one. The company must know how to manage by creating innovative differentiation strategies. Banks are now looking for financial innovations by creating new, differentiated financial products.

Schumpeter [2] also distinguishes several types of financial innovations:

1. The innovation of products made by the research and development department for the implementation of new financial products and services to satisfy customers's needs and increase banking mediation. These institutions develop a wide range of products such as travel loans, personal loans, credit cards etc.…
2. Process innovation through the use of new technologies to try to improve the production processes which will make it possible to obtain cost efficiency (Establishment of ATM). This innovation aims at immaterializing the financial sector and achieving better market competitiveness.

2.2.2 Financial Innovation for Lancaster, Silbert and Kane

As per [5] (1996), a financial product is purchased by a client with reference to its characteristics that push the individual towards favoring it to other products. Some of those characteristics are:

The impositioning of the product

The risk factor level
The availability
The product profitability level.

As per [6] (1983), financial innovation is a simple tool for entreprises; it allows for competition and stands against the risk of changing market regulations which makes the financial sector rigid.

As per [7] (1981), the regulations defined by the Government shall oblige banks and financial institutions to bend the laws and use innovations to enhance the financial sector.

All theorists agree that innovation shall bring transformation to enterprises. However, it is not risk free. Below are some of its cons:

The liberalisation of the financial markets that could lead to crisis and crashes
Risk of fraud, financial crime and tax evasion
Decrease in currency demand due to investments in projects that can replace real currency bills.

Financial innovation shall also contribute in cancelling all kinds of financial intermediary activities. For under developed countries, growth is a necessity and therefore liberalisation of the financial sector can help. In Lebanon, the liberalization of the sector is still questionable.

Financial market liberalization happens when some restrictive laws are cancelled and the sector becomes more flexible and competing. The purpose of cancelling any financial intermediation is to favor the financial market rather than developing a credit based one.

For [8], those changes shall be able to stand and hold against the lack of financial intermediation, which signifies a gap between earning on deposits and expenses on loans. Therefore, new products shall see the light and new sources of financing shall be developed which will lead to more profit.

What is the relationship between the concept of creative destruction announced by Schumpeter [2] and the Fintech? The new entrants take over old players and sometimes try to eliminate them definitively. The innovative services and infrastructure provided by FinTechs transform the traditional banking profession and take it to lose more grounds on the market. With reference to the increasing number of digital products delivered by those enterprises, the conventional agencies become less attractive for the end client.

3 Research Methodology

The research analysis in this paper is of a qualitative nature. The case subject of this paper sheds the light on multiple recurrent events in different situations. It is deemed useful in situations where attention is focused on a contemporary phenomenon in a real life context [9] (1989), and respond to an inductive logic. The analysis should help identify the recurrent phenomenon with their respective evolution. Research information is taken from different sources (exploratory approach), and the structured interviews were conducted with banking specialists and officials. The qualitative assessment method adopted in this study is usually the most recurrent in management science [10] (2005). The questionnaires were designed to cover multiple subject matters aligned with the main purpose of this paper and respective model:

(1) The rationale behind banks investment in finance technology
(2) The benefits of finance technology for banks
(3) In house innovation or outsourcing finance technology firms
(4) The future of hybrid banks
(5) Robots as substitutes in CSO departments
(6) The lure of tap2pay
(7) The charm of mobile banking
(8) The innovative applications and major fields
(9) Threats of FinTech firms on banks using similar products and a more time and cost efficient service
(10) Future of material branches.

In addition to the structured questionnaire, a mass survey was conducted targeting 800 individuals. 168 candidates responded fully to the survey on banking innovation in relation to online banking services. This survey helped researchers assess the common knowledge about banking technology and Fintech enterprises.

4 Context of the Study

With today's advanced cyber technology, individuals no longer depend on material banks. Thanks to the web, smart mobiles, and advanced technology, they can easily conduct banking transactions and manage their time. Physical presence requirements for the conducting of financial transactions, is constantly diminishing.

These advancements have also reduced the role of banks as financial intermediary. Banks profit were mainly resulting from netting between interest revenues and expenses in addition to some increase in intermediary fees every time a new financial product and service is introduced. The current business model is changing and it is highly probable to witness a drastic change in the role and existence of banks. Many innovative financial institutions are penetrating the banking and financial market and offering clients an advanced technology that can support the Banks's virtual model.

The so-called «neo banks» or online banks are gaining ground and momentum as they offer clients quality and time efficient banking services and products that seem unavailable at conventional banks. Those <Neo Banks> compete with national banks as they touch the heart of a wide audience that is interested in services that could be tackled virtually using the cyber space. In general, technological advancement is killing the current business models everywhere.

4.1 Types of Fintech

4.1.1 The Crowd Funding

The most famous FinTech firms are the ones who belong to Crowd Funding. The latter is a means of financing a project or a venture by raising small amounts of money via a large number of people, typically via the internet. Crowd funding is a concept that is rampant worldwide as it offers more appropriate solutions. Many platforms have been conceived by enterprises whereby the entrepreneur is put in direct contact with the investors. This means that the entrepreneur is in direct contact with the funding crowd and does not have to go and chase banking institutions.

Crowd lending is a type of crowd funding, but in this case the money is lend to the entrepreneur against a well-defined monthly installment. Crowd equity is yet another form of crowd funding allowing the investor to purchase shares in the startups against financing, and in this case the entrepreneur would not bear the risk of committing to any monthly installment.

4.1.2 Payment's System Modification

The money market for payments and transfers is also witnessing some modifications by FinTech firms. All got started with the inception of a new payment platform that manage clients online purchasing and respective payments, by allowing clients to subscribe onsite and supply personnel information for better cyber security measures. Today, online payments with smart phones or watches are becoming possible and to the extent of questioning the use of plastic cards. It should also be noted that the four giant Web companies: Google, Apple, Facebook, Amazon (GAFA) position themselves on this smart niche segment. Indeed, Apple Enterprise also stands on this segment line by offering the Apple Pay platform that allows for the execution and management of money transfers through Apple i-message notification; while Android (by Google) is developing the Android Pay. These are all payments mechanisms used in the USA and affecting the operating profit of banks. Hence, mobile technologies have paved the way for the management of banking services that could be offered to a wide range of non-banking users.

4.1.3 The Advisors Robots

The advisors robots or else called "Consult Robot" are presented as technology platforms that can supply people with consulting services in finance and management of online investment portfolio including retirement plans and tax management. Today, people can resort to an effective cost efficient technology service hence, avoiding the burden of physical encounters. Such technology service is absent in conventional banks. Indeed, in France an "advisor robot" costs around 0.2% of the total client's outstanding balance while it reaches 2% with conventional banks. Moreover, in the future these Robots would become available 24/7 to respond to clients queries. In the US, the average standard fee of a Robot advisory service is about $5000 compared to $100,000 for conventional banks.

4.1.4 The Person to Person Loan (P2P)

The person-to-person loan permits individuals to borrow funds without resorting to any financial intermediary. Usually, the interests of P2P are higher than others because such loans are unique and cannot be provided by conventional financial institutions. This type of borrowing is also considered an alternative for banks products and provides for the impact of the innovative digital currency on P2P loans.

Table 1 The 2016 top 10 FinTech firms

Fintech	Countries
1. Ant financial—Ali pay	China
2. Qudian	China
3. Oscar	USA
4. Lufax	China
5. ZhongAn	China
6. Atom	UK
7. Kreditech	Germany
8. Avant	USA
9. Sofi	USA
10. JD finance	China

4.2 FinTech Worldwide Ranking

As already stated, FinTech firms are turning the financial sector industry upside down. The most lucrative firms are the ones who have the ability to change the payment system and project financing principles. In 2016 [11] KPMG ranked the FinTech firms from most to the least lucrative. And as result, the 2016 top 10 FinTech firms are as follows (Table 1).

China is currently a major player in FinTechs and has overturned the US in terms of the investment scale in finance technology platforms. Indeed, Hong Kong is a great potential and holds the necessary finance tools and resources to help FinTech firms prosper and grow [12]. The enterprise “Ant Financial” [13] known as “Alipay” was founded in 2014 and considered an affiliate to the Chinese group of Alibaba that was established in 2004. “Alipay” provides financial services to 450 million people including payments and insurance management. On the Chinese market, mobile payment is more substantial compared to the US. In the US, Paypal, the subsidiary of Ebay provides services for 150 million users only [14].

4.3 The FinTechs in the Arab World

Banks in the Arab world should confront the serious competition of FinTech firms. In this part of the world, finance technology is rapidly growing although it is still considered pre-mature compared with other developed countries. However, there are solid business foundations, especially with the increased usage of smartphone in this region. The Arab population is demanding more solutions, an increased usage of mobile payments and many other innovative mobile electronic financial services and products. It is worth noting that while observing FinTech evolution in this region, encouraging signs float in the horizon with regard to prosperity of FinTechs in the future. In fact, innovative plans are in place to boost such industry in Saudi Arabia and other countries. In Lebanon, the banking sector is reputed for its stability, so time will judge whether this will tone down the competition of FinTech and the challenge they constitute to Lebanese traditional banks.

4.4 Research Model

This research is of a qualitative nature and is aimed at reaching a global understanding of the impact of financial related innovations on the market. Indeed, financial innovation is becoming a very sensitive subject for conventional banks. Therefore, substantial interviews are conducted with banking specialists and banks officials to better understand their attitudes. A mass survey was administered to seek individual and public feedback and try to appraise the viability of the below model that aims

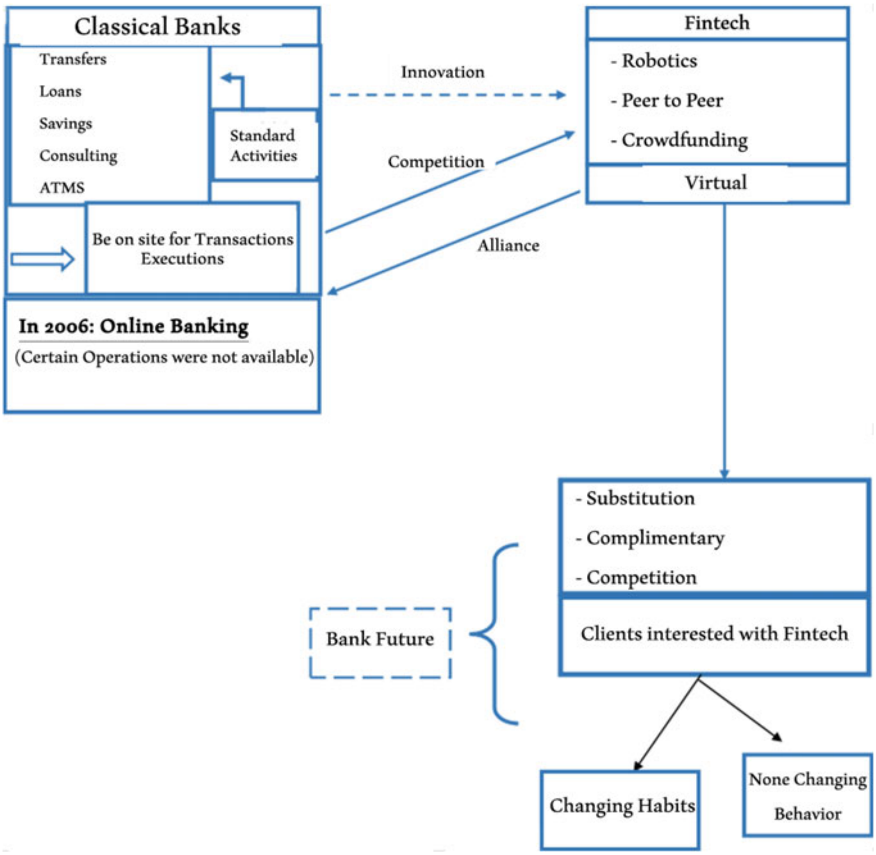

Fig. 1 Research model

at testing the potentiality of collaboration among between banks and FinTech firms along with their continuity and survival (Fig. 1).

5 Research Findings

5.1 Interviews with Banks Officials

The Lebanese Banks officials' responses have converged into admitting the necessity of expanding financial investment to improve the presence of banks on the markets and help them grow further. Banks aim at developing advanced and innovative technology finance products and services to meet and stand up against competition. This is a must to counter the threat caused by technology-leading firms. Banks need to appeal to young generations and advanced finance technology organization that can offer efficient and effective financial products and services to them.

As a matter of fact, one of the interviewee precised that a digital bank shall: "Embrace cutting-edge technology to help the financial product expand, avoid its rapid maturity, enlarge profit, and immerse clients with new experiences by providing customizable products and services, being present everywhere, and enhance business transparency and quality. He also stressed on 3 major objectives:

1. Positioning the bank as a modern bank of a prime choice
2. Recognizing the bank as a provider of quality and innovative products and services
3. Assisting clients with efficient customized offers and personalized services.

As to the robotization of the banking advisory business, the interviewees had different opinions. Bank (2) interviewee claims that robots could, on the short and medium terms, assist the CSO department to a certain extent. On the long run, robots cannot replace humans because in general people and clients prefer human contact when it comes to the management of their financing. Bank (3) candidate stresses on the fact that in addition to Tap2pay and mobile banking. Robots have already been installed and replaced the "sales & CSO" departments while human financial consultants are still gaining ground. Obviously, more technology products will be marketed subject to the new regulations of the Central Bank of Lebanon.

Finally, and based on the 3 banks officials responses, it seems that Lebanese banks can innovate internally or enter into a partnership with technology finance firms to produce and offer the most compliant product and service.

In fact, the threats and competitions launched by FinTech firm shall be a shock to Banks who should, their turn re-organize and upgrade their business model and operating mechanism. Therefore, Banks shall keep operating but differently. With the use of advanced technologies, they shall provide customized innovative financial products to meet the requirements of the different market segments.

Obviously, Lebanese banks are aware of their need to innovate and the impact of FinTech firms on them. As a counter attack, they are already determined to collaborate with technology companies to technically assist in the creation of innovative banking products.

The weaknesses and threats of Lebanon are serious barriers to the development and growth of FinTech firms. Despite Lebanon's weak Internet, communication and technology infrastructure, the banking sector pursues its outstanding performance, whilst technology startups still have a long way to go. Moreover, other obstacles forbid the further growth of those startups in Lebanon. As expressed earlier, Banks are in continuous collaboration with technology firms to develop innovative products, hence Banks can absorb the competition of those startups and sometimes eliminate them due to banks excessive financing capabilities.

However, the Lebanese in general are educated people and the young generation is dramatically active on the internet, smart phones and tablets. This is to say that the market segment is vast and diversified: 44.44% of Lebanese are aged between 25–54 years and 74% of the total population uses the internet despite of its poor current condition. As the rates of un-employment escalate in Lebanon, technology oriented start-ups could be an optimal solution as well because it helps hiring fresh graduates and junior professionals [15]. Despite the above, development of start-ups remains in an unstable environment. The attitude of the end user is crucial to test the future tendency acceptance.

5.2 Questionnaire Analysis

An internet survey was conducted with a random sample of 800 persons whereby 168 were marked as respondents. The survey included 16 questions to test citizens' knowledge level on subjects related to FinTech and try to understand their perception, attitude and behavior with respect to such enterprises. Are they aware of finance innovation? Would they be willing to drop conventional banks for FinTechs and related?

The random sample was varied enough and consisted of the following:

- 84% of candidates were aged between 18 and 50 years of age
- about 50% of respondents were females
- 95% of respondents had a bank account
- 57% of respondents visit their banks branches up to 2–5 times a month to:
  - deposit funds (57%)
  - withdraw funds (22%)
  - seek Bank advices (11%)
  - wexecute transfers (10%).

Internet banking is used by 58% of our sample but also those persons visit their branches from time to time to conduct operations. In fact, 80% of interviewees have claimed to have this habit of visiting their agency.

However, 69% of the sample is unaware of internet banking and has no idea about the meaning of peer to peer, crowdfunding and robots' advisors.

It also seems that clients are not satisfied with the cost or quality services provided by their banks, and they are ready to leave their financial institutions to collaborate with the innovative start-ups.

On the other hand, 33.33% do not wish to work with FinTechs due consumer behavior. Hence, 39.78% claim the necessity of physical interactions when it comes to banks related financial consultation. According to them, human encounter and cooperation is crucial in this regard.

Finally, it looks like 21% of the sample people are ready to work with robots' advisors for consulting purposes. But 72% of them also did not doubt about the continuous presence of banks despite future technological advancements.

The above is in line with what has been previously expressed by banks officials.

The current findings confirm that the Lebanese in general are unconscious about FinTech presence and business model. However, approximately half of the young persons have a certain tendency to quitting traditional banks to collaborate with start-ups whose services and products should be appealing.

Reference to this survey, the following relationships have been proven:

- Age is a crucial factor in changing the habit of dealing with financial firms
- Alliances among banks start-ups is mandatory for innovation growth and fulfilment of market needs.
- Some banks collaborate with FinTechs others prefer to compete.

6 Conclusion

The rapid technological advancement along with the digital revolution are changing factors that are disturbing all business sectors and especially finance. During the past decade, financial innovation encouraged the modification of financial services and products.

When banks adopt financial technology, they will be able to promote themselves as innovators, reduce operations cost, guarantee a better client retention, expand their market share and satisfy their clients by providing to them the required products and services. The future belongs to virtual banks and hybrid-banking structure could be defined as transitory only.

Schumpeter [2] exposes the theory of "innovation cluster". For him, through the process of "creative destruction", the new entrants on the market try sometimes to wipe off current players. Therefore, with the arrival of those start-ups accompanied with their innovative financial products, the financial industry sector is witnessing radical changes. Innovative financial services shall not stop from widening. Clients shall have a huge portfolio of innovative financial services and banks shall be obliged to re-consider and launch their self-transformation to preserve their continuity and survival.

The innovative financial applications could be used for payments, digital wallets, artificial intelligence, robotics, block chain, crypto-currency, and shadow banking etc. Today, most of financial services are provided by non-banking institutions, and the end consumer is the sole beneficiary. With more transparency, choice, flexible technology and better induction, consumers can even be more satisfied in the future.

Lebanon is still lagging behind due to lack of regulations, old rooted habits and confidence in cyber technology… Generally, Lebanese still prefer to visit material banks maybe because the internet and mobile banking is not yet well developed. Moreover, public 3G and 4G infrastructure remains weak, poor and of moderate quality! For this reason and to provide compensation, some Lebanese Banks collaborate with finance technology firms to boost innovation and related tendencies.

It is necessary to consider and observe the banking transformations that are happening elsewhere. FinTechs should become more present on the Lebanese market because they should not really be considered a threat but an opportunity. Their role is to integrate with banks but not replace them. But the threat that should not be neglected is the one that comes from the giants like Facebook, Uber, Google & Amazon because the financial power they hold can rapidly transform their companies into banks or simply establish new banks. This way, they would secure the coverage of all financial services and products that are related to finance technology and conventional banking at the same time.

In conclusion, Lebanese banks seem to seriously consider FinTechs potential threats along with other virtual platforms that are increasingly introduced to the market. It looks like in the years to come physical branches are going to be visited less and less by clients as they will be conducting most their banking transactions online using mobile applications.

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