

The Future of the banking industry in the era Of digital transformation

مستقبل الصناعة المصرفية في عصر التحول الرقمي

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Abstract:

One of the major changes in the industry is the digital transformation that is undergoing a profound transformation of the banking system. The recent focus on FinTech - essentially, new players in technology entering the financial services industry provide the same services as banks, possibly more efficiently because of technologies.

The article aims to identify digital transformation in the banking sector, determine what both banks and FinTech companies are doing in the market.

The study concluded, that there is a strong competition between Fintech startups and traditional banks, but on the other, there is room for cooperation between them, Banks and FinTechs will need to work cooperatively with other ecosystem players through adoption the open banking which is the future of banking industry.

Keyword: Banks-Digital transformation- Financial technology "FinTech"- Open banking.

JEL classification code : G21-G23-O33

ملخص:

يعتبر التحول الرقمي أحد التغييرات الرئيسية التي أحدثت تحولات عميقة في الصناعة المصرفية، وقد تم التركيز على FinTech - بشكل أساسي بصفتهم لاعبين جدد في التكنولوجيا في قطاع الخدمات المالية يقدمون نفس الخدمات التي تقدمها البنوك، وربما بشكل أكثر كفاءة بسبب التقنيات. يهدف المقال إلى تحديد التحول الرقمي في القطاع المصرفي، وتحديد ما تقوم به البنوك وشركات FinTech في السوق. خلصت الدراسة إلى أن هناك منافسة قوية بين شركات FinTech الناشئة والبنوك التقليدية، ولكن من ناحية أخرى، هناك مجال للتعاون بينهما، ستحتاج البنوك و FinTech أيضا إلى التعاون مع لاعبين آخرين في النظام البيئي من خلال تبني المعاملات المصرفية المفتوحة التي تعتبر مستقبل الصناعة المصرفية.

الكلمات المفتاحية : البنوك-التحول الرقمي- التكنولوجيا المالية "FinTech" - المعاملات المصرفية المفتوحة.

تصنيف JEL : G21-G23-O33

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Introduction :

The financial services industry is undergoing massive changes, Information technology is key in this process of change, Technology has transformed the way we do pretty much everything from shopping to socializing and it's also turning the financial services industry on its head. Over the last few years, a crop of fintech startups has emerged, using technology to make it easier for people to invest, make payments and even get a loan.

These new entrants were quickly dubbed FinTechs, and their rise has been dramatic. In 2008 FinTech attracted some 1.4 billion US dollars in investment. By 2013 that had more than doubled, to four billion dollars. In 2014 the amount tripled to nearly 12 billion, and estimates are that investors will pour close to 20 billion into these companies in 2017 (Oliver Bussmann, 2017,P474).

As a result of the big changes that are facing the demand for financial services, bank entities are acting in different ways to this digital challenge ,banks realised If they plan to keep up with—or better yet, outperform—the competition, they need to adapt to the digital age sooner than later.

The importance of this article is to identify key aspects of digital transformation in the banking sector and its impact on the future of the banking industry, then proceed in an attempt to understand its main consequences for banks along with the entrance to FinTech and the development of a new wave of competition and cooperation in the market.

1-The Digital transformation of the banking industry :

The banking industry has undergone a fundamental transformation of the banking system. Since the recent financial crisis, banks have been changing very rapidly as a result of successive developments and innovations in digital technology, including the rapid spread of technologies such as smartphones, artificial intelligence and big data analytics, the entry of new competitors and the changes in customer attitudes and behavior.

Digital banking is the digitisation of every level, from front- to back-end, of banking. This means that digital banks rely on artificial intelligence to automate back-end operations such as administrative tasks and data processing — which in turn alleviates pressure put on employees to complete day-to-day tasks.

Not only do digital banks allow users to make account deposits and transfers remotely; but they also provide them with the opportunity to more easily apply for loans and access personalized money management services.

The penetration of the internet has produced a profound transformation of the habits and preferences of consumers who are becoming increasingly used to interacting via digital media to share information about themselves, conduct their dealings with the authorities, shop online or access new services.

More than half of the world's population is now online. At the end of 2018, 51.2 % of individuals, or 3.9 billion people, were using the Internet. This represents an important steps towards a more inclusive global information society. In developed countries, four out of five people are online , reaching saturation levels (ITU Publications, 2018).

The internet has also represented a huge showcase for consumers, where they can compare all kinds of goods and services and share their experiences as customers of various firms. Online comparison sites have proliferated, especially in sectors such as insurance, telecommunications and financial services (featuring comparisons and rankings for products

and services such as deposits, mortgages or brokers). This phenomenon has endowed customers with greater empowerment and hastened the smoother functioning of market forces to the benefit of customers (Carmen Cuesta, 2015,P01).

Another key factor that has greatly helped to the digital transformation process is the penetration of mobile devices. According to the figures, the average penetration rate of mobile phones in the world is around 70% (Statista, 2019). This phenomenon has become a platform to run the developments of new mobile apps to use far beyond social media.

It's not surprising also that the development of mobile banking applications is the front of modern banks, that have estimated that their customers are more mobile than ever, reaching their accounts via smartphones and tablets on the go. If the banks are unable to provide their basic services. In a safe and easy-to-use application, they risk losing that customer in the competition.

According to a survey by Bain & Company (2014) of digital consumers from 22 countries, utilisation of mobile banking apps grew by 19 percentage points over 2013 and 2014, whereas usage of computer-based banking services remained virtually unchanged (Carmen Cuesta, 2015,P02).

In 11 of the 20 countries covered by GlobalData's Annual Retail Banking Insight Survey, the proportion of online consumers who use mobiles for banking at least once a week increased by at least five percentage points between 2017 and 2018. Overall, the global proportion of frequent mobile banking users witnessed a 3% growth from 39% in 2017 to 42% in 2018, but there was significant regional variation (GlobalData, 2018).

By the end of 2019, 2 billion people will be using their smart devices for digital banking - nearly 40% of the world's adult population, according to Juniper Research's forecast.

The changing habits of consumers and the new competitive environment are forcing banks to address their digitalisation process as a matter of urgency. There are three successive stages in a bank's digitalisation process: the first, where new channels and products are developed; the second, featuring adaptation of the technological infrastructure; and the last, involving far-reaching changes in the organisation.

Figure 01 : The process of transformation towards digital banking



Source: Carmen Cuesta and others, 2015, P04.

Digital transformation has become an inevitable goal for banks as it is linked to growth, continuity and interaction with financial consumer changes, and from an organisational perspective, digital transformation changes the business models and requires some strategical changes, even if the organisation is not at the beginning of their digital journey.

Being more adaptable to the continuously changing business environment is essential. Organisations can adapt the digital transformation by providing new digital solutions to improve their existing business model and professions, or by offering new digital solutions and products to penetrate new business areas (Mustafa Al-Chalabi, 2018,P05).

The wave of digitalisation in banks has led to the emergence of a much more complex and dynamic ecosystem for growth and innovation (Omarini Anna, 2017,P02). It has also provided banks with new prospects for digital transformation in products, services and processes with a view to gaining a better understanding of the financial consumer's desires in the digital age and meeting their needs in the face of growing competition from financial technology companies « FinTech » who have fully relied on digital technology to deliver their products and services.

2-FinTech – the digital revolution in the financial sector :

Financial technology is not a new phenomenon ,Financial institutions and financial services have a long history of adopting modern technologies.FinTech's development has gone through many stages, most notably since the global financial crisis in 2008, where new companies and technology companies began to provide financial products and services directly to companies and the general public.

We can point to a number of factors which have contributed to this sudden rise of FinTech, By shaking clients' trust in the financial system, the financial crisis left many people more open to nonindustry alternatives than had been the case in the past. The crisis also forced banks and other industry players to focus inward, rebuilding balance sheets and regrouping. During this period, technology investment has also generally gone towards meeting postcrisis regulatory requirements (Oliver Bussmann, 2017,P474).

2-1-What is FinTech ?

The term FinTech has exploded in popularity in recent years and is used variously to describe a wide array of innovations and actors in a rapidly evolving environment. According to the World Economic Forum 2015, the term "FinTech" is a dynamic ecosystem that defines "companies that provide or facilitate financial services by using technology".

The Basel Committee on Banking Supervision (BCBS) has opted to use the Financial Stability Board (FSB)'s working definition for fintech as “technologically enabled financial innovation that could result in new business models, applications, processes, or products with an associated material effect on financial markets and institutions and the provision of financial services” (BCBS, 2018,P08).

The term's origin can be traced to the early 1990s and referred to the “*Financial Services Technology Consortium*”, a project initiated by Citigroup in order to facilitate technological cooperation efforts.

However, it is only since 2014 that the sector has attracted the focused attention of regulators, industry participants and consumers (Federico Giovanni Rega, 2017,P02).

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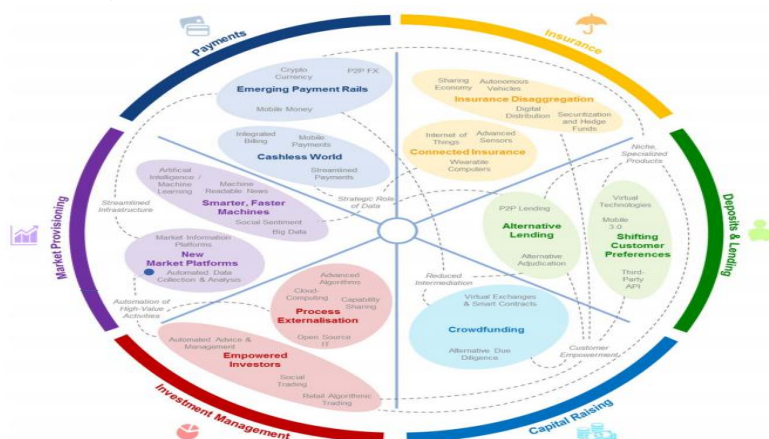
The FinTech had applied in three important and interrelated spheres (Richard Bates, 2017,P05):

- ✓ **In the systems sphere:** where banks and other financial institutions utilise technology to upgrade and update corporate systems and processes, either internally, or as participants in a consortium. The development of the Paym – a mobile payment system – by UK banks and building societies under the Payments Council umbrella is one example of the latter.
- ✓ **In the B2B9 sphere:** where a bank is the client, backer, or partner of a FinTech enterprise – purchasing, investing in, or co-developing FinTech products in order to modernise its existing customer-facing services, or to offer new ones. For example, Backbase provides digital banking platforms to leading financial institutions.
- ✓ **In the B2C sphere:** where FinTech enterprises compete against incumbent banks and other financial services institutions for market share. They do so either by reimagining conventional products and services – such as payment services and loans – in ways that offer superior value and user experience; or by using technology to build a market around responding to needs that conventional financial services providers had left unmet. The result is a transformation of how consumers interface with financial services, who provides those services to them, and how they transact in the wider economy.

Many segments of the fintech ecosystem provide services that retail consumers are already familiar with and use in everyday lives. Such as mobile payment. other services however are just beginning to take hold and could experience rapid growth over the next decade, FinTech firms can touch virtually every aspect of financial services industry, but are particularly active in:

- Payments ;
- Deposits & Lending ;
- Market Provisioning ;
- Investment Management ;
- Insurance ;
- Capital Raising.

Figure 02 : Sectors of FinTech Financial Services



Source : World Economic Forum , 2015, P12.

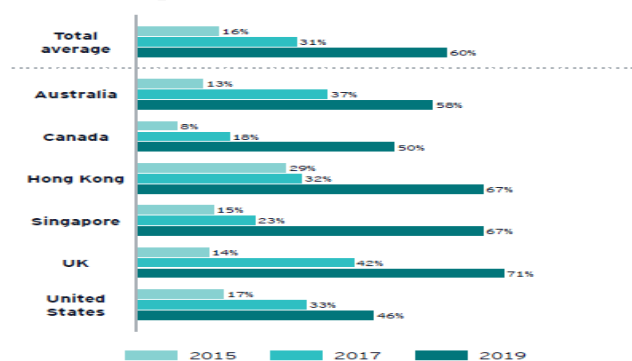
2-2-The Rise of FinTech :

Consumers like what they see. Adoption of FinTech services has moved steadily upward, from 16% in 2015, to 33% in 2017, to 64% in 2019. Awareness of FinTech, even among non-adopters, is now very high. Worldwide, for example, 96% of consumers know of at least one alternative FinTech service available to help them transfer money and make payments (Global FinTech Adoption Index, 2019,P06).

Clearly, FinTech has caught on around the world, entering the mainstream in all markets studied. Emerging markets are leading the way: in both China and India, the adoption rate is 87%. Close behind are Russia and South Africa, both with 82% adoption. Among developed countries, the Netherlands, the UK and Ireland lead in adoption, reflecting in part the development of open banking in Europe.

Indicatively, the adoption rate for the six markets from first survey — Australia, Canada, Hong Kong, Singapore, the UK and the US — has surged from 16% in 2015, to 31% in 2017, to 60% in 2019. Over the course of five years, these six markets have become excellent case studies in the maturation and globalization of the industry. In the past 18 months, EY research has shown that more than half of the top FinTech fundraises in these six markets intend to use some or all of funds raised for international expansion.

Figure 03 : FinTech adoption in six markets from 2015 to 2019



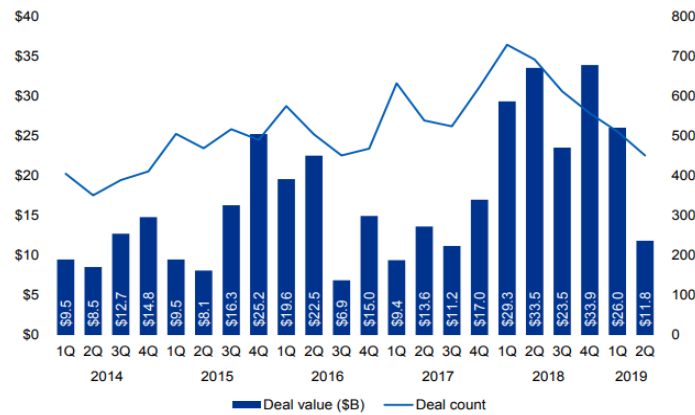
Source : Global FinTech Adoption Index 2019, P08.

The majority of statistics and specialized studies in this field - chiefly those published by KPMG - indicate that the global financial technology market is witnessing growth a year-by-year. In H1 2019, global investment in fintech companies hit \$37.9B with 962 deals .

After a record-setting 2018, the first half of 2019 got off to a quiet start for fintech investment globally — mirroring a trend seen in the broader VC market. The steep drop-off in investment reflected the lack of blockbuster deals such as the \$14 billion raise by Ant Financial or Vantiv's acquisition of Worldpay for \$12.9 billion during H1'2018. Global uncertainty, regulatory changes in China, and the US-China trade tensions likely also contributed to the decline.

FinTech investment in Asia Pacific plummeted during the first half of the year, driven by uncertainty and increased regulatory scrutiny in China. Meanwhile, despite the ongoing concerns around Brexit, fintech Investment got off to a very strong start in Europe. While well off the pace required to match 2018's massive investment record, fintech investment in the Americas was also very good during H1'2019 (KPMG, 2019,P09).

Figure 04 : Total investment activity (VC, PE and M&A) in FinTech



Source : KPMG,2019, P09.

2-3-The impact of FinTech on banking industry :

Fintech, financial services providers based on digital technology, is revolutionizing the way in which financial services are conducted, with increased convenience and lower operational costs being its key differentiators. Examples of innovations that are central to fintech today include cryptocurrencies and blockchain, new digital advisory and trading systems, AI (artificial intelligence) and machine learning, equity crowdfunding, peer-to-peer (P2P) lending and mobile payment systems . (Tatiana Zalan, 2017, P415).

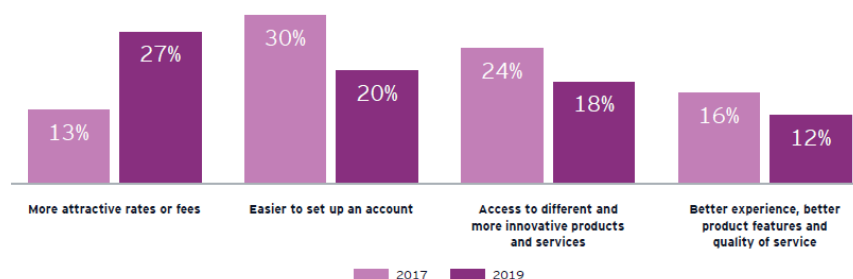
FinTech has focused on reducing the gap between customer's satisfaction and expectations. In doing so, they have started looking for and leveraging the relationship with customers by developing their business models on the following main characteristics (Omarini Anna, 2017, P03):

- Simplicity;
- Transparency;
- Ease of customer acquisition;
- Ease of distribution and commercial attractiveness; and
- Specialization.

From the customers' perspective, FinTech firms have value in being easy to use (81,9%), offering faster service (81,4%), and providing a good experience (79,6%) (Omarini Anna, 2017, P04).

One telling sign of the FinTech industry's maturation is the evolution in consumer priorities when they look for a provider. in2017, 30% of adopters ranked the ease of opening an account as their top priority when selecting a FinTech provider, while only 13% said attractive fees or prices were most important. In the 2019 survey, the priorities flipped, with 27% ranking price first and 20% picking ease of opening an account.

Figure 05 : Select reasons for using FinTech



challengers

Source : Global FinTech Adoption Index 2019, P12.

FinTech is already transforming how consumers interact with and access financial services. Key amongst these transformations are FinTech's impact on (Richard Bates, 2017, P06):

- ✓ Where and how consumers interface with financial services (channel shift): Banking becomes a non-physical consumer experience – interactions with providers shift to online channels, transactions shift to e-money.
- ✓ The means by which consumers make (or receive) payments when engaging in transactions: while cash still accounts for around 85% of global consumer transactions, between 2009 and 2014 the total value of cash-free transactions worldwide increased by almost half, from £269 billion to £389.7 billion.
- ✓ Whether consumers can make payment using an alternative cryptocurrency : large mainstream retail brands, such as Dell, Expedia and Subway are already accepting payments in Bitcoin, the virtual currency.
- ✓ Consumers' own awareness of their financial behaviours and wellbeing: as personal financial management apps track and analyse incomings, outgoings and expenditure. These services typically consolidate data from across all of a user's account providers in one place, visualising it in a dashboard. The apps function like a personal financial adviser and utilise user data to provide insights, plans and prompts to help the user budget better, ensure bills are paid and achieve financial goals.

FinTech has the potential to lower the cost of intermediation and broaden the access to finance increasing financial inclusion (that is, is fintech could be a door for unserved parts of the population and for less developed countries) (Xavier Vives, 2017, P99).

With the generation of new business models based on the use of big data, FinTech has the potential to disrupt established financial intermediaries and banks in particular. Big data can be treated with algorithms from artificial intelligence (AI), profiting from advanced computing power. The result of the application of the new techniques could be lower costs of financial intermediation and improved products for consumers. For example, FinTech facilities may help to better assess the creditworthiness of loan applicants when an institution screens them, and improve the interface between financial clients and their service providers. Indeed, it is found that the online origination technology allows FinTech outlets to provide more convenience for their borrowers and that they command an interest rate premium among the borrowers that value more this convenience. Fintech firms better screen potential borrowers using improved statistical models based on big data and are more capable to price mortgage risk and price discriminate (Xavier Vives, 2017, P98).

FinTech is also very active in the area of cross-border payments. Today it can still take hours and even days to send money between financial institutions in different countries

through the standard infrastructure. FinTech has already spawned at least two alternatives that do the job better. On the one hand there are decentralized systems using cryptographic protocols to transfer money, often via cryptocurrencies like bitcoin. These generally rely on distributed, trusted ledgers that allow for safe, secure, fast, and inexpensive transfer of value directly between parties, bypassing the middleman. There are also mobile money schemes, like MPESA, that rely on a trusted central party but leverage mobile communications to, among other things, reach the unbanked in developing countries (Oliver Bussmann, 2017, P 476-477).

As a digital industry that's dependent on the Internet to function, FinTech is particularly vulnerable to cybercrime and espionage, with the latter increasingly important in geopolitics. This digitization and consequent vulnerability.... will remain a major concern for governments, policy-makers, regulators and industry participants, as well as customers (Richard Bates, 2017,P26).

A study from Juniper Research in 2016 has found that the value of online fraudulent transactions is expected to reach \$25.6 billion by 2020, up from \$10.7 billion last year. This means that by the end of the decade, \$4 in every \$1,000 of online payments will be fraudulent.

While banks have some disadvantages compared to startups, they also have advantages. Banks benefit from the anxiety of people about the safety of their liquid wealth. The financial crisis of 2007-09 may have created anxiety about the stability of banks, but banks are still seen as the place where money is safe. Whatever the popularity of Apple, will people trust technology companies in safeguarding their money? Being a bank with a license and an implicit guarantee from the government has value (Arnoud W.A.Boot, 2017,P91).

3-The relation between Banks and FinTech Competition or cooperation ?

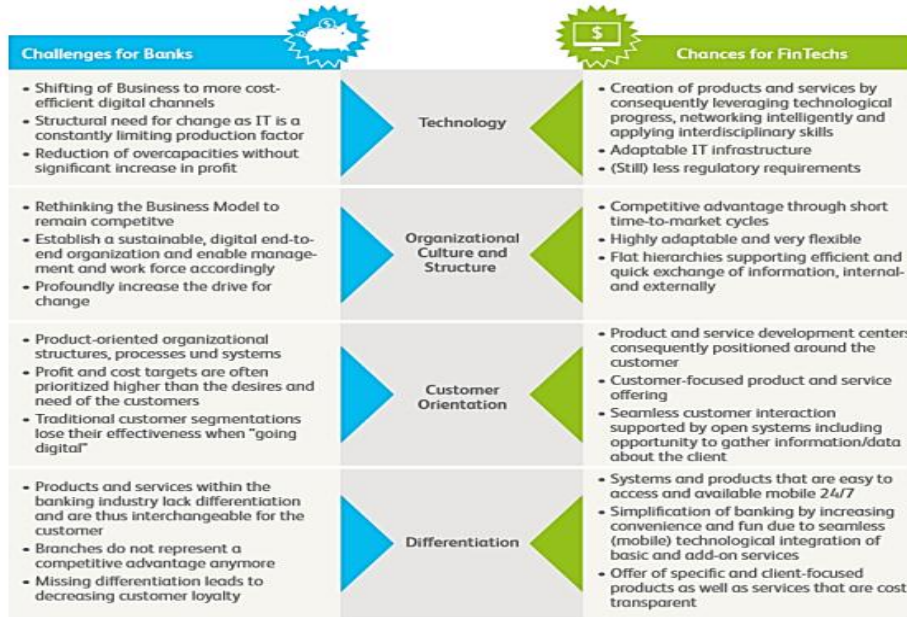
The latest incarnation of information technology has led to a « FinTech Revolution » where banks face new competitors with different– more Specialized – business models forcing a disaggregation of the value chain. With technology-driven solutions they offer alternatives to key banking services including payments and lending (Arnoud W.A.Boot, 2017,P92).

Nowadays, at least a third of consumers of digital products use a minimum of two Fintech services, demonstrating the appetite for new technologies, especially in niches that previously found it difficult or not convenient to access banking services, and almost 90 per cent of the banking executives think that they could somehow lose business to disruptors.

Banks have traditionally focused on products, while new entrants are More focused on customers. FinTech competitors are putting pressure on the traditional business model of banks. Two competitive advantages of retail banks which may be eroded by the new entrants are that (1) banks can borrow cheaply with their access to cheap deposits and explicit or implicit insurance by the government, and (2) they enjoy privileged access to a stable customer base that can be sold a range of products (Xavier Vives, 2017,P102).

Shrinking profit margins, changing customer behavior, exponentially increasing use of mobile devices, digitalization and rising competition exert pressure on the banking industry. Some call the development a “Revolution”, emphasizing its speed and disruptiveness. Others name it an “Evolution” (Alejandro Castejón Teruel, 2018,P36)

Figure 06 : Revolution or Evolution?



Source : Alejandro Castejón Teruel, 2018,P36.

From the above, we find that Banks face significant challenges due to big competition not only in the provision of new products and services, but in the way financial services are produced delivered and consumed. According to Lautenschlager speech (2017): « Banks have to deal with both kinds of change: the ordinary and the extraordinary. They have to find their way in a digital world; they have to adhere to stricter rules and make the best out of very low interest rates ».

Banks have started rethinking the way they do business, they have realized an effective application of technology allows to standardize the provision of services, and therefore, reduce labor and service costs. In addition, new technological developments allow expanding delivery options and reaching consumers who did not have access through other channels.

More innovative incumbent banks and financial institutions are moving rapidly to embrace digital. Most of them have invested heavily in transaction migration. They have also significantly upgraded web and mobile technologies and created innovation and testing centers, both in-house (i.e. JPMorgan) and through an innovation division separate from the broader business (i.e. Citi Fintech). Some other banks have decided in developing new products (some of them new FinTech products in end-to-end digital banking, digital investment services, electronic trading, and online cash management) (Omarini Anna, 2017,P05).

Other banks find that collaboration with FinTech are the best way to improve their consumer offerings, cooperation is possible between traditional large financial institutions and disruptive financial innovators like FinTech firms. The possibility of creating partnerships is a real option that many individuals of this ecosystem are applying,

Therefore, instead of sending all banking reality into chaos, there is real ground for cooperation between FinTech companies and traditional banks (Alejandro Castejón Teruel, 2018,P47).

According a study by Federico Giovanni Rega on a data panel of 38 European Banks for the period 2013-2015, The aim of the study was to determine the impact of bank innovations on

financial performance (measured by the return on equity, ROE) of leading european banks. The study was based on secondary data which was collected from the published annual reports for commercial banks spanning three years during which technological innovations (FinTech) have been intensely invested in by banks. Data was analysed using R, STATA 12.0 and gretl.

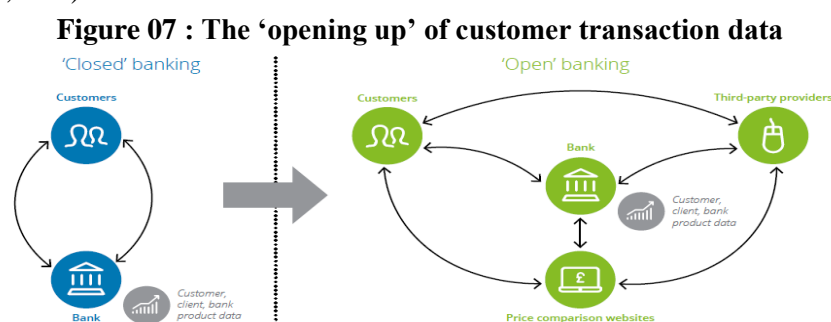
The results note that technology and financial innovation can create cost-cutting and cross-selling opportunities for the banks. This disruption can enhance profitability by reducing traffic at branches and staffing can be reduced. More digitally-oriented banks, such as Nordea, SwedBank, Fineco and mBank, has shown growing profitability (ROEs around 13-15%) at a time of falling interest rates as well as a strong focus on building a customer-oriented bank for the future (Federico Giovanni Rega,2017,P12).

Banks have realized that the landscape is changing and in order to survive they need to evolve. Some banks will succeed and being able to develop this culture of innovation and entrepreneurship along the organization, nevertheless, many will not, and this has consequences.

4-The new world of open banking:

The days of traditional financial services – of merely providing products – are over. The digital transformation train has left the station, and open banking destinations are gaining global ground (World FinTech Report, 2019,P08).

Open Banking is a pioneering initiative designed to increase competition and innovation in the UK's banking market. It is the first significant attempt to use technology to rebalance markets in favour of consumers (Fingleton, 2019,P04). Open banking is the structured sharing of data by consumers with (and between) their financial service providers, based on the needs of and consent by consumers. The sharing of data is discrete and reversible (FDATA North America, 2019, P02).



Source : Delloite, 2019,P09.

In particular, the Open Banking Standard has been inspired by the rise of Application Programming Interface APIs in other industries (Delloite, 2019,P12) , APIs show to be the heart of Fintech revolution, this is because they affect the way in which customer consume products and services online, The most concrete example of the collaboration between FinTech and banks could be (API) a technological protocol that allows communication between different information systems , and in this case those of banks and FinTech, allowing the former to connect their customers with the services offered by the latter (Alejandro Castejón Teruel, 2018,P50).

Given these opportunities the second wave of role of Fintechs in the market moves from being disrupters to partners, in fact some Fintechs in the market have started a framework of collaboration with incumbents, (Omarini Anna2, 2018,P27).

The most concrete example of the collaboration between FinTech and banks could be (API) a technological protocol that allows communication between different information systems , and in this case those of banks and FinTech, allowing the former to connect their customers with the services offered by the latter.

Banks now need to embrace Open Banking to remain competitive, relevant and win in the digital economy. In survey of executives at 100 large banks, 65 percent of respondents see Open Banking as more of an opportunity than a threat; 52 percent see it as a way to differentiate from their traditional competitors; and 99 percent plan to make major investments in Open Banking initiatives by 2020 (Accenture, 2018,P5).

Open Banking and open data continued to be front and center for incumbent and challenger banks alike. FinTech companies are not only providing customer-focused value propositions but also seizing opportunities to help incumbent banks leverage open banking (e.g. data sharing, customer management, consent, entitlement and digital identity management). For their part, incumbent banks are allying with FinTech to gain access to the technologies required to improve their customer experience. Looking forward, open banking is expected to continue to act as catalyst for the development of partnerships that will both allow FinTechs to grow and incumbent banks to enhance their competitiveness in the digital banking era. (KPMG, 2019,P06).

Conclusion :

New digital technologies automate a wide range of financial activities and may provide new and more cost-effective products in parts of the financial sector, from lending to asset management, from financial advice to payment system. In these sectors, the influence of FinTech competitors began to be felt in the banking sector and capitalmarkets, FinTechs enhance competition in financial markets, provide services that traditional financial institutions do less efficiently or do not do at all, and widen the pool of users of such services. But they will not replace banks in most of their keyfunctions. In most cases, FinTechs provide a more efficient way to do the same old things. Yet banks are well placed to adopt technological innovations, and do the old things in the new way themselves.

Finally,the integration between banks and Fintech on an open platform is a new model for banks to scale up innovation, because banks can leverage on the breadth of offering, a chieve an interesting growth, and be back to compete in the market arena .

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