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Tunisian Fintech: An Ecosystem under Construction - Can COVID 19 be the Fuel to Ignite the Construction of Tunisian Fintech?

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Abstract

Fintech leads the most powerful technology and finance in the industry. Appearing recently in the newspapers, this term describes the disruptive challenge in the financial sectors. Fintech has primarily emerged in the world, and then Europe followed the lead before it starts in Tunisia. Although Fintech attracts the customers through the innovation and the technology, it worries users because of the absence of the intermediaries. Fintechs create metamorphosis in the financial field of digital disruption and really shake up the reserved world of banking services, savings, means of payment, and financing. The main idea of this chapter is to describe the Fintech ecosystem in Tunisia. It is about situating the concepts around Fintech by studying the reasons for its emergence and its business segments. Then, the analysis provides the elements of the Tunisian ecosystem of Fintech, the issues, and the challenges. This chapter aims to capture the essence of this phenomenon by discussing the challenges for both Fintech startups and traditional financial.

Keywords: Fintech, startups Fintech, Fintech ecosystem, Tunisia

1. Introduction

Fintech refers to innovation in financial services through technology. This financial technology combines financial products or services with technology to compete with, or cooperate with, financial institutions [1–3].

This term dates back to the 1980s and derives from the confusion between finance and technology. It becomes popular following the 2008 crisis. Innovations give birth to business models, processes and new products, and applications. These will drive the financial markets, financial institutions, and financial services allocation solutions (Financial Stability Board).

The innovations in finance have a phenomenal boom thanks to finance professionals who reconsider the progress of the financial system. These innovations combine with innovation, technology, flexibility, simplicity, and efficiency. Less expensive and more efficient for users, Fintechs are shaking up finance leaders. The term Fintech remains largely unknown in Tunisia.

The Fintech Industry: Fintech global investment in the first half of 2018 is \$ 31 billion. These investments are equal to those of the integrity of the year 2017 [4].

In France, Finance startups insured 200 million Euros in the first half of 2018 [5]. These spectacular revolutions are ensured by Blockchain technology (a division which is evolving rapidly but which has not reached the stage of maturity) and startups which disturb the act of payment.

The technology finance industries are already having a significant impact on the finance industry. Investing in technology finance is a priority [1, 6]. It should be noted that global investments in Fintech technology companies are quite significant, although they are declining following current events [7]. Traditional financial institutions are now investing in external tech startups as collaborative tech companies.

Note that China and the United States are the main countries in startups and Fintechs. According to the 2019 ranking of KPMG and H2 venture [8], the top 10 Fintechs are: Ant Financial (China), Grab (Singapore), JD Digits (China), GoJek (Indonesia), Paytm (India), Du Xaoman Financial (China), Compass (United States), Ola (India), Opendoor (United States), and OakNorth (United Kingdom). These Fintechs are raising more than \$ 70 billion (up 35% from last year) and more than \$ 18 billion in the past 12 months.

Who can be Fintechs?: Fintechs are generally startups. A startup is a young company that anticipates powerful growth and uses innovation to create its activity. These Fintechs can be large groups that have long been subject to financial services and that invest in innovation. Companies that have gone beyond the startup youth and have had great success can also be Fintechs (Fintech scale-ups). Fintech startups differentiate themselves from traditional financial companies with personalized niche services, data-based solutions, an innovative culture, and an agile organization. Fintechs:

- Coexist with traditional financial institutions but differentiate themselves by innovative, efficient, and economical technologies. Traditional financial institutions are looking either to modernize their systems to work with Fintechs or adopt technologies and replace their systems.
- Collaborate with financial institutions through purchasing, investing in financial services and products. The financial institutions are in this case the clients, donors or partners of these Fintechs.
- Compete with traditional financial institutions by directly offering consumers financial products and services at the lowest cost.

2. Literature review: understanding Fintech

To recognize this disruptive innovation, an introduction to the emergence of Fintech and the identification of study segments and areas of Fintechs will be illustrated.

2.1 The emergence of Fintech

Fintech grows through phases of evolution ranging from the electronic medium, the Internet revolution in the 1990s, the use of smartphones in the mid-2000s, and the crisis of 2008 [3].

In 1915, the acceleration of financial data and linkages changed the financial technology infrastructure. Through electronic means, the deposit institutions in the Federal Reserve in the United States (Federal Wire Network) transferred the funds.

From the 1960s, ATMs became more profitable than the creation of bank branches. The adoption of technologies for finance has been developed to illustrate this new financial inclusion. In the early 1990s, the financial market was affected by the reduction of physical contact with banks due to the Internet revolution. This revolution has led to the development of electronic finance (E-finance). Several business models are developed as a result of the synergy between trust and technology such as online banking, online brokerage services, mobile payment, and mobile banking [9, 10]. This financial revolution has disrupted banking and insurance through indirect access to accounts, business negotiation and the gathering of information about online financial products and services, and downsizing of banks. This period is marked by the progress of e-finance.

In the mid-2000, mobile finance flourished thanks to the proliferation of smart phones. Finance is experiencing a revolution through mobile payment and mobile banking. Customers can access their account and make transactions via their mobile device. Mobile technologies are introduced in financial institutions.

In 2008, the global financial crisis combined several economic models to find solutions. Internet technologies, social networking services, social media, artificial intelligence, big data analysis, e-finance, and mobile technologies are used for the financial solution. Technology is no longer seen as a threat to the industry but rather as a sustainable competitive and differential advantage. Following the crisis, the search for opportunities promotes the use of technology in finance.

The Internet and mobile devices have therefore transformed the financial ecosystem by using technology in all the components of the financial activity value chain: transaction costs are reduced, execution times are faster, management information is more up to date, internal communication is more fluid, interaction with existing and potential customers is more practical, and access to professional knowledge in financial management is more convenient.

Thus, Fintech has developed following globalization in the twentieth century which accentuated the transmission of data. Second, the introduction of ATMs negated the need to establish bank branches. Then, e-finance encouraged customers to stay at home to provide their financial services. Finally, mobile finance has made it even easier to access these services.

Today, high-tech developed economies are already talking about Fintech 3.0 with no longer ATMs or electronic finance or mobile finance. The current era encompasses Blockchain, WealthTech and RegTech. The diversity of Fintech startups is spectacular [4].

These Fintechs multiply and are born from threats. Indeed, the evolution of the banking sector is caused by the appearance of GAFA (Google, Apple, Facebook, and Amazon) having today the greatest financial power that constitute a threat for the traditional financial institutions. They constitute the lobbying on the monetary departments and ensure the execution of banking services. Likewise, the proliferation of telephone operators, who have a large customer portfolio and great technological innovation through big data, artificial intelligence, and others, allow startups to become financial operators without banking authorization. Fintech becomes a domain and gives birth to an industry in its own right.

2.2 Fintechs by segment

Fintechs are in strong evolution every year and are increasingly in competition with traditional banks [9]. Indeed, Fintech encroaches on certain sectors reserved for banking such as payment (Paytechs), daily banking services (neobank), credit

(crowdfunding or crowdlending). Some are complementary to the banking sector by monitoring regulatory constraints (regtechs) [11, 12]. The different Fintechs are illustrating in **Table 1**:

Segment	Definition
Neobanks	They are 100% digital dematerialized banks without branches and which offer innovative and low-cost banking services (accounts, payment cards, online pools, payment applications, wealth management or automated investment tools, etc.)
Paytech	It is a solution that optimizes all types of payment
Crowdfunding or crowdlending	It is a crowdfunding platform that connects project leaders, business creators, SMEs or individual or professional investors. This platform calls on a large number of people to finance a project either in donations with or without rewards (crowdfunding) or in the form of loans (crowdlending) or else capital financing (crowdequity)
Insuretech	It is an innovation in the insurance field and plays as a comparator to collaborative insurance and 100% digital health insurance
Regtech	It is an innovation that offers technological solutions that meet the regulatory and compliance constraints of mainly banking players

Table 1.
The segments of Fintechs.

3. Fintech ecosystem

Technological innovation can be valued by two components: the first relates to the roles of ecosystem participants; the second emphasizes the analysis of the support mechanisms of this ecosystem.

3.1 Participants in the Fintech ecosystem

The expansion of the Fintech industry is linked to a stable ecosystem where its players assume their roles. The union between these actors ensures good governance and the value creation. Diemers et al. [13] present three essential participants in this ecosystem which are presented in **Table 2**.

Key participants	Roles
Government	It is called upon to implement a regulatory framework which facilitates the entrepreneurial ecosystem
Institutions	They bring expertise to the ecosystem and tie up relationships with Fintech startups.
Entrepreneurs	They provide technological solutions

Table 2.
The participants in the Fintech ecosystem.

By setting up the procedures and regulations for a Fintech ecosystem, the government is encouraging entrepreneurs who bring technology. The innovative but sometimes disruptive contributions of entrepreneurs are accepted by the institutions. This gives entrepreneurs access to finance and market expertise. These institutions will build relationships with Fintech startups by seeking to strengthen their competitive positions.

3.2 The pillars of conducting a Fintech ecosystem

To contribute to innovation, stimulate the economy, facilitate collaboration in the financial system, and allow consumers to benefit from the financial industry, the Fintech ecosystem must call for efficient management based on the allocation of regulations, the organization between the different participants, and the innovation of technologies (see **Figure 1**).

- **The allocation of regulations** at the level of the Fintech environment ensured by the government can reframe the Fintech ecosystem and define the procedures, rules, and mechanisms to understand and follow. These regulations can soften trade and tax regulations to facilitate the management of Fintechs and facilitate their integration into the economy. The weight of the government and its allocation of regulations can vary depending on the extent of Fintech in the country [13]. The interest of Fintechs depends on their profits with long-term promises of law [14].
- **The organization between the synergies of the different participants** is a performance pillar, the establishment of the Fintech ecosystem. Everyone must find their profit and create value by defending their interests. Startups promote technology in collaboration with technology developers by lowering operating costs and making profits. These startups must collaborate with traditional financial institutions with skills and effective potential in the financial sector. Traditional financial institutions, with competitive advantages in terms of scale costs, focus on unbundled products and services and collaborate with Fintech startups to benefit from their technologies. Mobile network operators provide low-cost infrastructure and benefit from the use of large numbers of consumers. Customers can manage their accounts according to their needs by counting on several financial institutions. The government

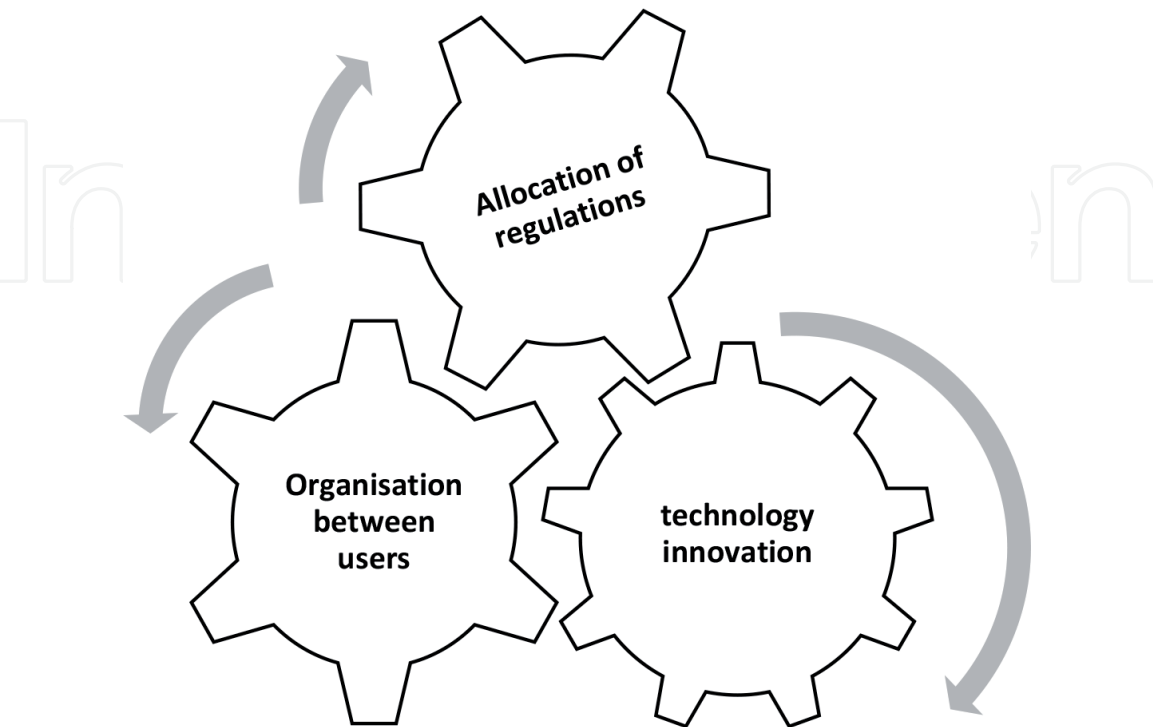


Figure 1.
The pillars of conducting Fintech ecosystem.

succeeds in stimulating technology and innovation by encouraging global technological growth.

- **Innovation in the field of finance** to help startups in launching innovative services to guarantee sustainability and meet user needs. The innovation of financial expertise will help structure the Fintech ecosystem. At this level, regulations must support technology in order to guarantee a technological financial industry.

4. Fintech in Tunisia

According to GFI 2020 [15], Tunisia ranks 196 globally and 6th in the Middle East and North Africa (MENA) region with a score of 3668 points.

The Middle East and North Africa (MENA) has the highest rate of unbanked people in the world. In Tunisia, 64% of adults are financially excluded or underserved, in part because of the difficulty of reaching a physical bank location. Regardless of these results, the GFI 2020 considers that the evolution of Fintechs in Africa and the Middle East will be rapid and a real game changer and essentially in Africa.

In Tunisia, the call is certainly to acquire the necessary skills to better understand innovative financial technologies and seize the opportunities offered by Fintechs. According to the TCB (Tunisian Central Bank) governor, Fintechs master these technologies perfectly, understand user experience effectively, and apply agile organization. Fintechs have successfully changed the banking and financial ecosystem and usage preferences. The various stakeholders in the banking and financial sector (banks, financial institutions, regulators, payment infrastructures, etc.) must adapt to this new situation.

The Fintech industry is already prevailing in Tunisia; it has developed thanks to startups that have emerged and revolutionized technology with innovative solutions to banking products and services.

4.1 Tunisian Fintech segments

The Tunisian entrepreneurial ecosystem offers several indices encouraging technological finance in Tunisia like the venture capital index, technology absorption networking process innovation. In 2018 [16], thanks to the collaboration between the public and the private sector, innovation took off in Tunisia and entrepreneurship registered a very great dynamic.

According to the Global entrepreneurship and Development Institute (GEID) which measures the dynamics of the entrepreneurship ecosystem, Tunisia is ranked in November 2019 the 1st in Africa, 6th in the MENA region, and 40th in the world.

The ecosystem has bet on skills and experience by supporting entrepreneurs at their young ages through coworking spaces, investors, accelerators, incubators and non-governmental organizations without forgetting Tunisian startup. Also the startup act comes to facilitate technology. This legal framework is developed by the government using a participative and collaborative approach between all stakeholders in the entrepreneurial ecosystem. It is dedicated to startups by encouraging entrepreneurs to dare to undertake and launch their startups by supporting their developments and by encouraging investors to invest in these startups.

The startups Fintechs are 38 [17]. Fintechs that have benefited from a startup label being part of the startup act are listed in **Table 3**.

Startups	Presentation of startups	Segment	Promotion
	Development of innovative electronic payment solutions and in the digitalization of compatible banking and financial services	FinTech	March 2019
	Expensya offers automation of expense reports – worldwide	Fintech	March 2019
	Kaoun implements identification and automation products to make financial services faster and more accessible to everyone	Fintech	April 2019
	Dqlick is an insurtech specializing in digitalization and digital transformation in the field of personal insurance	Insurance Tech	April 2019
	MedCretech offers a Blockchain application to trace and streamline the life cycle of real estate. Website: www.medcretech.com	Blockchain & Cryptocurrency	April 2019
	PEAK technologies specializes in the development of management and control solutions for transactional operations based on Blockchain technologies. Website: www.peak-cs.com	Fintech	April 2019
	Development of mobile payment solutions and online payment gateways. Website: www.paymee.tn	Fintech	April 2019
	Swiver is an ERP in SAS mode intended for VSEs and SMEs to digitize their financial management process	Fintech	May 2019
	Develop offshore and Edit digitalization and robotization solutions for the insurance and banking sector	Insurance Tech	May 2019
	DEEPERA is a Fintech. Its objective is to democratize finance by offering “Investment advisory for everyone!” through AI models	Fintech	June 2019
	Insight + designed and developed the first manual currency exchange cloud application (BBE) in Tunisia dedicated to exchange offices.	FinTech	June 2019

Startups	Presentation of startups	Segment	Promotion
	Sobflous is an electronic wallet (web and mobile) that offers users phone recharge, money transfer, and merchant payment and invoice payment services. Website: www.sobflous.tn	Fintech	June 2019
	SmartIN is an AssurTech which offers innovative solutions for enriching and improving services in the insurance sector	Insurance Tech	July 2019
	Catrim develops innovative solutions for the trading rooms of investment banks. Website: www.catrimtech.com	Fintech	July 2019
	Universa is a new generation of blockchain as a cooperative register of state changes, carried out by licensed and trusted nodes, and is capable of handling thousands or tens of thousands of transactions per second ($\pm 20,000$ TPS)	Blockchain & cryptocurrency	July 2019
	GETPAY is a payment platform backed by merchant marketplaces. Website: www.astontechnologies.tn	Fintech	Setembre 2019
	Lightency is developing a platform for the exchange of electricity between individuals and brings together all the stakeholders in the sector on the same platform in order to reduce costs	Cryptocurrency & Blockchain	October 2019
	Tledger offers financial and non-financial institutions access to a network allowing real-time financial transactions through APIs and mobile wallets. Website: www.tledger.tech	Cryptocurrency & Blockchain	October 2019
	K2LIS is a digital microfinance platform accompanied by its electronic web and mobile wallet for microfinance institutions and their beneficiaries.	Fintech	Décembre 2019
	PayGrant is a platform for targeting clearing through mobile payment"	Blockchain & Cryptocurrency	January 2020



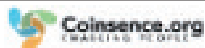
Startups	Presentation of startups	Segment	Promotion
	SQOIN is specialized in blockchain, having developed solutions to facilitate e-commerce through an exchange of tokens on the blockchain. Website: http://sqoin.us/coin/Bacem Bergaoui	Blockchain & cryptocurrency	January 2020
	UTIK provides personalized services to build digital trust through risk identification and preaching, cryptography and an infrastructure for decentralized applications. Website: http://www.utik.co	Blockchain & cryptocurrency	January 2020
	Coinsence offers a central collaboration platform allowing organizations and communities to issue their own community currency to activate resources, facilitate exchange, and finance collaborative projects. Website: http://Coinsence.com	Blockchain & cryptocurrency	February 2020

Table 3.
Fintech startups in Tunisia.

4.2 Support and management mechanisms for the Tunisian Fintech ecosystem

The TCB has taken initiatives and is positioning itself as a regulator and a facilitator with the Tunisian innovation ecosystem and Fintechs. The objective is to assist the operation of Fintechs despite the rigidity of the regulatory framework. In fact, Tunisia is engaging in a participatory approach in order to co-conserve the new financial services. This global approach is based on the vision of the TCB which aspires to be “a modern, proactive and efficient Central Bank at the forefront of economic and financial transformations” [18] (see **Figure 2**).

TCB has set up a Fintech committee, a regulatory sandbox, a TCB Lab, a TCB Web, and regional and international cooperation.

1. Establishment of a *Technological Hub* which is essentially based on optics of inclusiveness and a participative approach thanks to the creation of a Fintech committee. This committee acts as a regulator between the TCB and the Fintech ecosystem. It cooperates with stakeholders on innovative initiatives.
2. Launch of a *Regulatory Sandbox* on January 21, 2020: in order to certify financial inclusion and innovation and transform the banking model by going toward the restructuring and digitalization of banks and the banking and financial ecosystem. This test environment will allow Fintechs to test innovative solutions on a small scale and with real voluntary customers under the aegis of the BCT. The BCT as regulator will be able to understand the innovations and adjust the regulatory framework if necessary. Fintechs will also adhere to the regulations in force.
3. Creation of a *TCB-Lab* in order to digitize certain internal processes, watch over financial and technological innovation, transform the banking and financial profession, spread an image of openness and modernism, and build relationships with the environment.

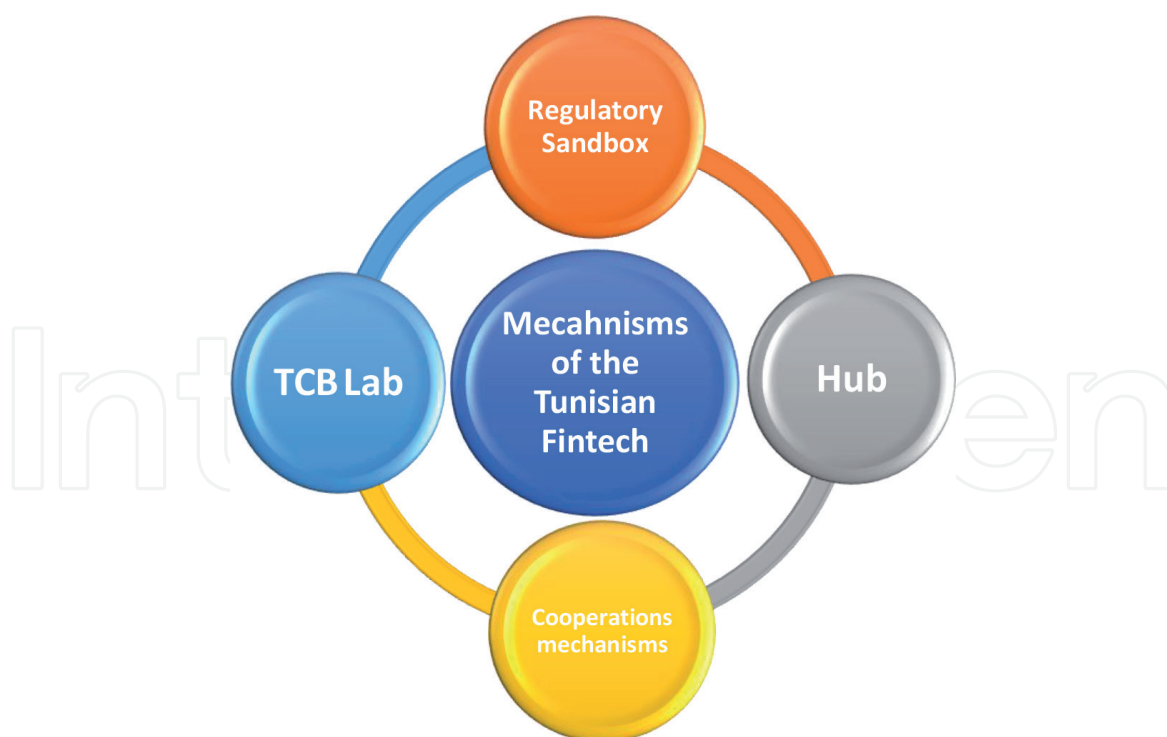


Figure 2.
The mechanisms of the Tunisian Fintech ecosystem.

4. Establishment of coordination and cooperation mechanisms to guarantee *regional and international exchanges*. This was highlighted by the merits of regional and international coordination and cooperation “Bali Fintech Agenda” developed by the World Bank and the IMF (International Monetary Fund). Thus, the TCB participated with the “Maghreb Fintech Committee” and the Board of Governors of Central Banks of the Arab Maghreb and the “Regional Fintech Working Group”.

4.3 Roles of the TCB in the Fintech from the sandbox ecosystem

Tunisia’s policy tends to promote the Fintech ecosystem. In fact, aware of the need to follow technological and financial developments, the TCB is committed to fostering financial involvement, supporting financial stability, protecting Fintech users, and prospering the emergence of Tunisian Fintech on a regional scale, national, and international.

4.3.1 Roles of the TCB as a facilitator

Through the Sandbox, the TCB:

- Fosters Fintechs with innovative solutions that provide access to households and businesses who find it difficult to defend their interests by financial institutions.
- Monitors and tests the innovative completions offered by these Fintechs.
- Guarantees the security of the financial system by assessing the risks associated with these Fintechs.
- Protects Fintech users from risks through innovative solutions and complaint mechanisms.

4.3.1.1 What's the TCB regulatory sandbox?

According to Dorra Marrakchi, Regulatory Sandbox Project Manager Governor's Office, TCB needs to release new challenges and open new horizons in a full scale environment for the benefit of national innovated actors and companies [19]. TCB uses Sandbox consisting in a helpful test environment with high value and powerful tools. This Sandbox has global data's referential and technical and legal expertise in order to hold up innovate potential projects.

Through the sandbox, TCB, as a regulator, improves the development of the position of startups on the market and also helps financial institutions to benefit from the supports and skills made available to them.

Sandbox needs innovate actors of the financial market, startups, and approved institution of the ecosystem with innovate solutions. As a result, the Sandbox is intended for all legal persons with or without an approval, in particular startups, without limiting either the list of activities or that of the products concerned by the Sandbox.

TCB considers regulatory Sandbox as a win-win opportunity. Registered companies will be able to communicate on the skills and experiences of TCB and its partner institution whether legal or technical, to acquire the necessary credibility expertise and maturity for a better competitiveness expertise and international market. On the other hand, TCB as a regulator is taking the chance to approach the market innovators understand the new challenges and difficulties they are facing and then to provide the right answers such as making adjustments to the regulatory framework for the supervisory processes, if necessary.

Applications for the regulatory Sandbox will be open starting from today, January 21, operations will be done in cohort mode and each test phase will last on average nine successive months. The application process is simple and transparent and it's available on the "TCB Fintech" website. Of course, admittance will need strict criteria. These will be listed with more details on the website as well as the international operating rules considered by TCB to ensure a safe work place which all related stakeholders.

4.3.1.2 Conditions of access to the Sandbox and eligibility criteria

To access the Sandbox, certain criteria must be met.

- The solution proposed by startups must be highly innovative and guarantees an expansion of the ancient habits of financial institutions. This solution must provide a significant competitive advantage over existing offers on the market. Thus, potential Sandbox candidates must present a product or service or solution that offers radical or incremental innovation, that changes techniques or tools, transforms existing practices or that changes an existing product.
- The end customer will be able to identify the direct or indirect benefits of the product or financial service. These benefits are estimated or demonstrated quantitatively.
- The objective of testing the innovative solution of potential customers must be communicated clearly and formally. Thus, the TCB guarantees the communication of risks and possible indemnities.
- The solution must be technically tested in a laboratory environment and the test results should be made available to the TCB.

- The regulatory tests must be approved from a protection and technical point of view. Each candidate must present appropriate regulatory plans and respond to client protections and must take into account technological watch in order to minimize risks and losses.
- The solution must be demonstrated by the candidate via a realistic business plan and must be deployed nationally and internationally

To register in the Sandbox, the candidate must complete the online form and describe their skills, financial situation, and area of activity. It is necessary to specify the financial service to be tested, to describe the satisfactory eligibility criteria, to introduce the regulatory test plans, and to specify the impact of the Fintech experience. The application process also includes a communication plan which stops the revelation of the risks and the important information on the candidate and the Sandbox.

4.3.1.3 Operation of the Sandbox

The operation of the Sandbox [20] is based on five pillars:

- Cohorts: the duration of the test period is 9 months from the date of notification of admission to the Sandbox. It can be extended for 3 months on the basis of a written request motivated by the requester. The extension request must be sent at least 1 month before the end of the test period.
- Access fees: access to the Sandbox is subject to an access fee estimated at 100 Dinars payable once Fintech is accepted into the cohort.
- Quantitative thresholds: the parameters of the tests are determined according to the number of clients, funds, and other relevant variables. These parameters are decided on a case-by-case basis depending on the nature of Fintech and its risks.
- Reporting: reporting will be done at a frequency that takes into account the nature and complexity of the solution to be tested. A final report is drawn up at the end of the test period.
- Communication: the communication of information about the candidates selected and the solutions under test is the exclusive responsibility of the TCB.

The TBC reserves the right to make the acceptance of applications subject to certain modifications, and possibly not to follow up on applications if none of them appears acceptable to it either from a technical point of view or because of the details proposed or for any other reason.

The Sandbox process can be interrupted at the request of the candidate and at the request of the TCB.

4.3.2 TCB Fintech regulatory framework

According to Kaouther Bouzamitha, Director of common Law studies and legal Monitoring, Today Fintech has main challenge to financial regulation [15]. This is why at the Central Bank of Tunisia, the managers are keenly aware of the urgent need to develop and to modernize financial regulations to make the country among the countries that allow entrepreneurs to engage in innovate and high value

activities. This can be summed up in one word: anticipation. The TCB vision is clear: technology is not just a tool, it is a source of inspiration and progress.

TCB, as a regulator, is a welfare regulator, and a protector regulator regulation is also a protection and even a freedom. Then TCB takes a proactive approach which aims to develop financial regulation in collaboration with Fintech to prevent it from being imposed the goal that is not to control in order to punish but rather to support the strategy set up by Fintech.

4.3.3 The TCB guarantees national and international exchanges

The BCT is committed to ensure the emergence of Tunisian Fintech on a national and international scale by acting with the various stakeholders. It is developing regional and international coordination and cooperation mechanisms, as highlighted by the “Bali Fintech Agenda” drawn up by the World Bank and the IMF. Thus, it participates in the work of two committees which meet twice a year and each time it is necessary:

- The Maghreb Fintech Committee under the aegis of the Board of Governors of the Central Banks of the Arab Maghreb, created in November 2018.
- Regional Fintech Working Group under the aegis of the Arab Monetary Fund, created in December 2018.

Everyone watching over innovative technologies in the banking and financial industry and international best practices for interacting with Fintechs; contributes to financial inclusion in the Maghreb region and to the harmonization of the Maghreb regulatory framework to remove any barrier to financial innovation; promises financial innovation in the region by giving external visibility to Maghreb Fintechs, coordinates and exchanges experiences and with other regional and international Fintech Committees, sets up a common strategy for managing the risks inherent in the activity of Fintechs; launches studies and surveys on Fintech opportunities and challenges.

5. Tunisian Fintech facing Covid 19

Startups have no choice: they adapt or die. For some sectors, this meant a complete transfer of services, for others, it could mean a change in priorities or road-map. Some industries have been much more affected than Fintechs as the tourism, but the flexibility and the redistribution of resources are essential, especially with fundraising which should slow in the coming months to a few years. Covid-19 could encourage some institutions to invest more in the digitalization of their processes, which can be an opportunity for startups to attract new customers.

Two examples of Fintechs which have ensured innovations to overcome the COVID 19 pandemic are illustrated.

Digiconstat which is a Fintech selected by the financial regulator Al Medina Takaful in Oman (Capital Market Authority CMA) among the 10 Fintechs to digitize the finance sector in Oman and help insurance companies reduce their claims management costs and fight against fraud. This Fintech, which raised 600 thousand dinars, concluded an agreement during this pandemic period to guarantee the continuity of the insurance service for automobile victims via digital. During this period, Al Medina Takaful policyholders will be able to report the claim and be able to follow up on their report via their phone in a few minutes.

In partnership with Trntrust, **Kaoun** is developing client identification software that goes through the eKYC process and can have a free DIGIGO electronic signature. When the coronavirus struck, Kaoun launched a Flouci application allowing you to register for government services or file your taxes. This signing of documents is free until May 31 during this lockdown period.

In addition, Kaoun has launched a service that opens bank accounts for sub-bank and non-bank accounts in free partner institutions. This service will allow them to access financial services regardless of social distance. For small businesses that have had to close their physical location, they have benefited from digital technology to provide a bank account or to benefit from remote credit via partner banks and microfinance institutions.

Likewise, in order to secure donations from Tunisians of any amount to ensure a stock of medical supplies and in collaboration with the SEBITAR platform, Kaoun sets out to secure by its technology the backend any transfer to the SEBITAR team. Thanks to Kaoun, the hospitals which submitted their needs for medical supplies and the Tunisians who made the donations by choosing the supplies to which they wish to contribute ensured the transfers in full safety on the SEBITAR platform which takes care of the purchase of these supplies.

6. Conclusion: challenges of Tunisia

Fintech is a recent development. It is very difficult for Tunisian financial institutions. This chapter is one of the first studies to develop Fintech in Tunisia.

After giving a conceptual overview of the emergence, segments, participants, and pillars of Fintech management, the chapter presents how Tunisia is taking root and how it is building its Fintech ecosystem thanks to the roles of government, startups, and financial institutions.

Tunisia thus adopts financial technological acceleration. Since January 2020, and thanks to the support and steering mechanisms, it has come up to date with Fintech and takes care of the birth of a sector at an embryonic age. The TBC plays strategic and legal roles in maintaining the Fintech ecosystem.

However, the TCB declared in October 2018 its collaboration with Ernst and Young and the World Bank to seek an international operator in Fintech which will help it to get started in e-payment through different services such as Paypal (2018). Knowing that Paypal exists in Tunisia but to ensure consumption and or purchase yet not allow online sale (Paypal merchant). After a long study, this request is refused following the Tunisian exchange laws. Tunisia must change its laws to be able to benefit from this service.

Likewise, Tunisia has a low bank account of Tunisians. Far from being a handicap, it is an opportunity for the development of Fintechs that can conquer a market. In fact, Fintech can exploit a deposit of banking services which is not based on the opening of accounts but on secure and fast payment facilities.

The Tunisian market is too heavily regulated which can slow Fintechs down. The choice becomes either being a Tunisian Fintech that focuses entirely on markets outside with friendlier regulations, or spends more time deploying solutions in local environments and using that expertise to expand to other similar environments using the same learning and techniques when relevant. The type of investors and their motivations here differ, the second being more impact investor driven.

Tunisia hopes to become a pioneer by implanting the blockchain in the TCB, digital payment, and cryptocurrencies according to the declarations of the governor of the TCB. Regarding “deceasing,” the TCB is collaborating with other financial institutions and will launch initiatives soon. The stakes are high.

Note also that Fintechs can threaten certain jobs in finance. According to Marcos Lopez Prado and the British firm TMS Market, finance jobs will disappear in 2020. The forecasts in the United States will record 1.3 million jobs such as customer service positions, financial managers and compliance officers and loans. In parallel, the big banks, according to Lea Nonniger analyst at Business Insider US, will invest in automation where the labor cost is quite low, that is to say artificial intelligence, machine learning, etc.

It is certainly true that digital will bring innovative solutions to the banking sector and establish a high value sector. Tunisia has made great strides in this area but is currently encountering dilemmas such as:

- Management of disruptive innovations following disruptive technologies which invents new technologies such as big data, artificial intelligence, IoT, robotization, blockchain, etc.
- The measuring between an old and structured world and a new innovative and unstructured world. Was it necessary to keep the market shares and develop them afterwards? Opt for IT and intelligent mutations while preserving the operational adaptation to user needs to new innovative and efficient technological solutions?

Will Tunisia be able to conquer these dilemmas?

The central bank has yet to adopt blockchain in practice, and its interest is still at an exploratory level. Initiatives must be taken to speed up the operating mechanisms. It is true that technology has its advantages and disadvantages, but the premise of technology is definitely there. From faster and cheaper transactions and more reliable systems to decentralized nature, better security, and better immutability, the technology has real benefits.

Should we therefore prepare for a profoundly transformative technology, do not allow technological developments to overtake and protect economic operators and the financial system from the risks that may arise from these technologies (money laundering, tax evasion, fraud, etc.) without block access to the technological revolution and deprive itself of its positive aspects.

To change customer behavior, technology is a small part of the equation. Accessibility and a good user experience are essential. There are two schools of thought. One that sees this as a top-down approach (the state imposing a series of measures and use cases on citizens to elicit aggressive behavior from customers) and the other is more of a free market approach that aims to increase competition to make services better and therefore more attractive to customers. The two are not mutually exclusive and one cannot replace the other for optimal long-term results.

The government is called upon to take certain initiatives. This is first and foremost the initiative for the financial consolidation of the public sector – administration and businesses – associated with a better targeted and more equitable social policy, with a view to freeing up budgetary space for the benefit of productive investment.

Then, it is necessary to promote the economic initiative by the reform of the legislative and regulatory device and the simplification of the administrative procedures for the benefit of the companies, and the adoption of a governance system based on the risk management in conformity with the standards and good international practices. However, this requires the acceleration of the promulgation of the law on the regularization of exchange offenses and the effective establishment of exchange offices. At the same time, foreign exchange regulations will have to be deeply reconsidered, in consultation with the authorities and professionals, with a view to greater openness to the outside world for the benefit of residents and

non-residents, companies or individuals.. It is a question of taking care to identify in a precise way the opportune measures to be implemented as well at the level of the current operations as those of the Capital account, in order to give to stimulate the inflows of currencies by an adequate accompaniment of the exporters of goods and services and support for the internationalization of Tunisian companies.

Finally, the strengthening of international cooperation and the support of which is necessary for the consolidation of the national economy in the medium term and its integration into the world economy. Likewise, strengthening the attractiveness of the Tunisia site to foreign investments is essential, in order to climb them to a higher level, even to faithfully reflect the real potential of the country. In this perspective, and while working to consolidate its action inherent in its missions, and at their head price stability, by a deep restructuring and strengthening of its capacities, the BCT will soon adopt a “multi-year strategic plan,” including the objective is to identify the means and resources to be implemented to ensure its qualitative transformation and to reach the tune of modern central banks, to carry out its missions in accordance with its new statutes laid down in the framework of the law 2016–2035.

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