Insurtech & Blockchain: Implementation of Technology in Insurance Operations and its Environmental Impact

E H Halima, T Yassine*

Department of economics and management, Abdelmalek Essaâdi University, Tetouan, Morocco

*Email : ytaba.amedouri@uae.ac.ma

Abstract. While the digital had reshaped our world, the insurance industry moves very slow comparing to other domains. Insurtech is the future of insurance industry, it seen as a subdivision of Fintechs; it refers to a wide range of technology that will be introduced to insurers operations to save streamline processes and costs. Indeed, as banking institutions began changing the customer behavior through the combination of technology and finance, to provide self-functionality, this paper research aims to examine and demonstrate the necessity of implementing technology in insurance sector, first to enhance the consumers’ expectations, and second to support the environment case against the use of countless amount of paper. This study combines different factors to find the better way to include technology in Moroccan insurance industry, as well as We discussed the challenges and limitation of the results. With everything taking in consideration there is no better time like the present for the Moroccan insurances incumbents to adopt the concept of Insurtech to their business models, furthermore with the consequences of the pandemic COVID19, which proves that we can do almost everything online.

1. Introduction

Insurance sector is a caution business, highly regulated, which leaves little space to insurance companies for the purpose of innovation [1]. However, the transformation of society, consumer behavior, and social changes gives them the opportunity to use the new technologies in marketing and distribution of insurance products [2]. The sector has achieved an increase in turnover at the end of June 2020. Written premiums reached a growth rate around 4.6%: 27.3 billion dirhams [3]. The new technological revolution has swept the world, introducing new opportunities for the development of the insurance industry. Contemporarily, the fourth revolution in technology, new science and the technologies recently developed such as an Integration of networks is sweeping and driving the entire world. It is considered as the weapon to gain the market and upgrade the customer experience to the next level [5]. Information technologies has emerged and revolutionized the distribution of many services including the financial services based on accessibility, flexibility, and simplicity. The new banking Law 103–12 [6] that introduces the concept of Fintechs, which was the first step of the future of Fintechs in Morocco. Insurance services cannot be the exception in a busy world where everyone is looking for quick solutions. Considering that insurance industry is one of the most conservative industries when it comes to digital transformation, only in the last decade a new concept related to both insurance and information technologies was born: The Insurtech [7].
Meanwhile, Insurtech is a subset of Fintech, which refers to a wide range of technology, in other words, Insurtech is the technology introduced to insurers’ operations to save on costs or streamline processes, essentially the technology that seeks to improve and automate the use of insurance products and drive advancement within the insurance industry. Rajeev Shrivastava, CEO of insurance provider Visitors Cover-age [8] said that Insurtech goes beyond just the technology, and extends into rethinking the industry as whole and driving solutions using a modern approach and technologies that meet current and future consumer expectations and demands. The Insurtech companies focus on improving and breaking the complexity around the insurance products applying technologies as Blockchain [9], internet of things and Artificial intelligence. With The Moroccan strategy in 2020 is around the digitalization: digital as revolution more than evolution for Moroccan economy with a new way of competitiveness, and a tool for the public administration recording to the law 19.55 0 that refers to the adoption of digital innovation in the field of communication and information. This strategy goes further with the paperless project to solve and reduce the environmental crisis.

2. Methods
This research work is based on a literature review employing the large database of Scopus in order to examine the phenomenal domain of Insurtech around the word. We also get through several platforms(ministry of finance- ACAPS- interior ministry – insurance companies) 1. For brief review of Moroccan initiation to automate and digitize insurance services 2. to study the gaps in regulation when it comes to implement technology in Moroccan insurance industry [10,11].

Our research explores the concept of the disruptive innovation of technology in Moroccan insurance industry [12,13,14]. The rest of the article is organized as follows: we will present an overview of the improvement of new technologies in insurance sector, then we will spotlight on Initiation of some Moroccan insurance companies [15]. Eventually we will discuss the challenges and the barriers of the regulatory in insurance sector and finally the role of new technologies to decipher the ecological crisis.

3. Results and Discussion
3.1 Technology is bringing new opportunities
Internet use in new technology innovations is forcing the reinvention of traditional financial intermediaries, such as e-banking, e-insurance and e-cash services, (D.C. Anargiridou, S.C. Anargiridis, and D.L. Papadopoulos). Many financial organizations are integrating new technologies among their business models to gain consumers trust [16].

![Exploitation of electronic services](image-url)
Using the benefits of technology banks offer access to their services around the clock with banking platforms. Online banking has become popular, as the smartphone market has grown 99.8% of Moroccans have mobile phones, and of these, 75.7% have smartphones, 74.2% of people access the internet from their phones [17]. To develop and apply Insurtech, insurance companies have to increase not only the investment in technology and data science but to go hand by hand with innovation to target new consumers and seek to fulfill the consumer requirements [18]. More than the high cost of reaching consumers and high management costs, the automation of insurance operations is relatively very low plus the lucrative nature of underwriting in the insurance industry are not very considering whichever constrains long term industry development [19]. The focus on innovations in insurance distribution including technology makes Insurtech a supportive innovation of the broker channels with the integration of technologies, Supplementation of old media and the Mechanization of the important tasks. According to Sudtsan and Mitomo, New application of science and Technology including cloud computing, future internet, big data, robotics and semantic technologies has changed the global economic with new opportunities and business models. The new revolution of technology is the new foundation; it will lead the improvements of the value chain (product development, cost control, customer services further more risk management) of the insurance industry. Insurtech take advantage of all technological advances to position themselves in all insurance sectors. Gwenaël Hervé, Managing Director of Hiscox France draws our attention to this point: “they generally rely on innovation to stand out and affect all areas: personal data, cars, homes, etc.” [20].

Product development, customer services, cost control, furthermore, risk management, all those areas will be led by applications of technologies such as Blockchain [21], cloud computing, bid data, artificial intelligence and the internet of things insurance companies will incessantly meet the consumer needs by offering diversified portfolio of insurance products. Technology companies should actively promote the exchange of knowledge and experience between the insurance industry, technology and regulators in order to reach the new insurance system. It will reshape the operational of insurance industry from products, claims to distribution channels. While Insurance industry is facing many weaknesses: Insurtech is pushing forward the construction of new insurance infrastructure in short it will drive all operational areas [22]: availability, efficiency and lower costs to a high level of quality. Managing Director of Financial Services at Capgemini and member of the Group General Management Committee said: “Evolving their relationships with Insurtech will help insurers deploy their digitalization faster and more efficiently, and will help strengthen relationships with their clients and resist these newcomers [23]. "As a new trend, Engagement of social media, smartphones and consumer interactions helps the analysis of data, which influence insurance innovation when it comes to products as well as how insurers process claims.

While technology offers, clearly new, attractive and useful solutions to save operate time. McKinsey and company back at 2013 declared [24] there are signs now, which the economics of the traditional agent model are beginning to unravel despite the fact that regulation still require paper contracts. Machine learning or artificial intelligence facilitate the checking of insurance claims through automating processes and tasks with new scenarios and challenges. Nevertheless, increasingly, AI affects insurance in three key areas:

- Speed up and Automated claims and underwriting processes
- Better understanding of business risks
- Impact the interaction with consumer (chatbot)

By automating reiterated tasks, insurance industry will focus more on technical support (servicing and claims) and client relationships, (advising) Insurance companies must considered the customer preferences especially that a vast majority of humans today seeks for quick answers and convenient procedures.
3.2 Accessibility of insurance products need to be improved

Moroccan Insurance industry might adopt the application of technology to promote first, the distribution of insurance products. For the last couple of years, people are very happy and pleasant to see the surprises brought by new technologies, which provoke new expectations. To keep pace with the consumer’s desires and expectations, insurance industry must immunize the space between them and the target consumers [25]. Digital platforms will allow customers to engage closely with insurance company. Consumers can access to their accounts; they can pursue the status of claims and update their coordinates. Automating processes reduce time waiting in front of the agencies for simple operations in consequences more consumer satisfaction [26]. Through the availability of consumers’ data (smart devices), insurance companies are able to determine what consumers needs and offers new product to satisfy them. Long-term growth is related to innovative products: accessible and more affordable. Data analysis and technology specifically automation processes will offer a higher growth to insurance companies and improving their core business by knowing their consumers better, which means they can meet the expectations of their clients. Therefore, the first step for Moroccan insurance companies once they launch exploring technology is to zoom on distribution channels and revolutionize claims procedures.

3.3 Flexibility of claim’s process using technologies

Let us focus in an initial step on the standard insurance in Morocco: car insurance (law No. 17-99 on the Insurance Code of October 03, 2002). Technology is providing support to insurance industry in order to better serve the community and ultimately attend its goals. The web today presents multiples scenarios adopting new technologies like cloud computing and big data, insurance companies will ensure the data processing in an efficient manner in one hand and in the other hand will offer personalized pricing to individuals in the real time. The synchronized practice of connecting numerous devices alongside the big data generated by the internet would create a high marketing potential [27].

Root Insurance, based in Ohio, use the technology of smarts phones to analyze consumer’s behavior as long as you are comfortable leaving the app on while you are driving [28]. Unlike other firms, root insurance firms’ good drivers should pay less for car insurance, in other words, if you improve your driving skills drive you get automatically a rate which depends on how well you drive and many other factors like gender, age etc. The procedure pursued for declaring an accident by calling the assistance, which is designated in a single number for the entire Moroccan insurance industry, cannot be enough. If we focus on the number of accidents per day, we can easily understand that it is difficult to maintain 24/7 availability by offering a single communication channel: hotline assistance.

Lemonade Insurtech firm powered by artificial intelligence; they digitize the process of claim’s declaration by using the mobile application and upload the video and the claim’s pictures. With Lemonade, the entire claim’s process is automated without the use of the big amount of papers per each declaration and treatment of the claims [29]. In this age of smart devices and data revolution, insurance companies as in many other industries understand the need to innovate, and use more data to make effective and optimal decisions [30].
A notable example Cuvva insurance admitted that insurance companies have to change, that is why she was the first one to provide insurance products accessible via an application [30]. It also provides the first insurance product pay as you drive for car insurance.

In order to assist customers and improve the access to information Moroccan insurance industry and technology should integrate more closely to engage more IT channels.

3.4 Blockchain technology reestablish paper procedures
Blockchain technology is the new form of governance mechanism; commute the conception of organizing collaboration and solve complex issues. Blockchain is a disruptive technology, which gives access to every participant; this technology can be used in insurance for distribution [31], claims administration and the verification of policies and transactions of customers that favors the detection of fraudulent operations. Insurtech companies are lining up to utilize Blockchain to streamline complex processes, Everledger is the example, founded in 2015, is using the Blockchain technology in the pursuit of insurance product’s distribution, moreover the Blockchain is used to create a profile for all of the details.

In this way Blockchain technology, foster trust and transparency in insurance industry. The pure structure of Blockchain create a “trusted technology”. Zhong AN insurance, one of the biggest, popular Insurtech companies and the first digital insurance in china. It invests heavily in technologies in particular the Blockchain technology but also the AI – artificial intelligence and automation to improve customer service and bring the best in the future of insurance. With a public Blockchain, that includes every insurance company, each one is connected to a specific block. The users in a chronological order record every transaction to facilitate for any broker or agent the verification of the claim’s data Through the automated verification of payment and past claims in order to Check if this accident has not been declared to another insurer. (Fig 3). Blockchain is the key to eliminate frauds as well as guaranty the security of consumer’s data and files, which set up a high level of trust between insurer and consumer.

3.5 Challenges within the insurance industry
3.5.1 Initiation of some Moroccan insurance companies
Almost three years ago Axa insurance created My Axa digital platform (2018), a mobile application that allows the customer to contact directly his intermediary or the assistance service, besides all customer contracts grouped in a single account accessible for all intermediaries. Axa company want to reduce paper-printing documents, which can be download via the application My Axa [32]. Saham insurance [33]. Also created it digital factory (2018) to reinvent the customer experience to the digital age. The digitalization process is interested in the automotive industry because it is the market leader

![Fig. 3 Inclusion of Blockchain technology in claim’s process](image-url)
in this branch. My auto a tool to optimize subscription, renewal with text messages sent to customer to renewal the contract, moreover the management of the disaster with the whole process online using their smartphones only.

Culture and acceptance of change are fundamental for sure, however since we have a part of the population trust and accept E-services, including banking, commerce and payment (fig. 2), they will greet the new insurance innovation indeed; para contra regulators have a distinct opinion.

On July 2020 Insurance broker, Beassur Marsh and the Geomedia group launched the first online insurance underwriting site. This new platform [34] is planned to be intuitive and easy to access in order to allow Internet users to obtain a quote in 5 minutes or to take out an auto or travel insurance contract simply in a few clicks. AssurH24.ma also offers to take out the contract by phone or directly in the agency located in Casablanca. A team of experts is also available by phone to advise and support clients in their approach.

By June 25, Wafa insurance also launched a digital factory project in Morocco to improve the customer experience and gain competitiveness. This project with a collaboration with Devoteam, (a major player in the digital transformation of companies in Europe, Africa and the Middle East,) They create a multidisciplinary team of 40 talents business experts, marketers, developers, data scientists, architects and specialists in artificial intelligence [35,36]. The distribution model is moving online. Many online sales experiments in morocco are dematerialized but the subscription 100% digital without the necessity to go the agency still not possible.

3.5.2 The necessity of new regulation infrastructure for new insurance

In broad terms, Regulatory environment is a barrier for innovation in insurance industry. Incumbents are the ones who can boost for Insurtech propositions in order to satisfy the customer base they have. Contribution between technology, market rules and regulations will offer the support to the new ecosystem of insurance industry intending to assist the development of regulatory and to preserve the insurance market’s stability. Regulation is the heart of effective, efficient market, above all authorities should be consistent with laws, and standards, then adopt a new vision of regulatory system: an automated one. Technology is employed also to improve the efficiency of regulatory system and reduce human errors [37,]. Morocco still in the first phase of digital transformation automation of processes accompanied by paperless culture [5]. The challenge is to stick to global changes in the insurance industry and create a flexible regulatory infrastructure. Note that, evolution have already started, however success requires a big attention to the regulatory environment.

Everything related to regulation and legislation is long in Morocco. We need an agile and fast Parliament, or perhaps digital to go faster [38]. As a harmful effect of the Covid 19, morocco took a big step in digitalization, still the implementation of regulation stills still slow. Morocco should take advantage of the pandemic to adopt the laws in regards of digital revolution. The Moroccan insurance sector is the first Arab market and the second in Africa recording to FNACAM. The sector generates 41 billion DH [3] . ACAPS is the competent authority for the control of insurance and reinsurance companies, insurance intermediaries as well as social welfare organizations (pension funds, social welfare mutual and organizations managing the Compulsory Health Insurance). In this context, it monitors insurance products and controls their compliance with regulatory provisions and best practices, controls commercial practices, examines complaints and requests for information from policyholders and beneficiaries of insurance contracts and contributes to the dissemination of an insurance culture.

Abdelmajid Mimouni the representative of ACAPS indicates that the only solution approved to the sales processes, however, the contract itself must to be signed manually at the agency, which means a limitation for customers as he said [3]. There are many projects for digitizing the sector; we must note that the digital transformation of the insurance industry including health insurance is one of the regulator’s priorities. ACAPS is currently conducting a study on "Distribution in the digital age". With the Ministry of Finance, the Moroccan Federation of Insurance and Reinsurance Companies (FMSAR) and the National Federation of Insurance Agents and Brokers in Morocco (FNACAM). It is about accelerating the digital transformation across the entire value chain starting by the insurance product distribution business [39]. This will necessarily go through the regulatory upgrade of the texts that come online for distance selling. It should be noted that the regulations already exist; these
include in particular Law No. 53-05, relating to the electronic exchange of legal data, Law No. 31-08 enacting consumer protection measures, and the circular of the insurance supervisory authority, relating to the remote supply of insurance operations of March 9, 2012. What is certain today, the regulator will have to take new regulatory and operational measures to implement the strategy that will result from its study, but also to allow companies and intermediaries to ensure their digitalization [40]. The results of this study would allow a strategy for new insurance distribution in the Moroccan market. Many constraints posed by those texts and the insurance regulations, which slowed down the launch of the digital distribution. The head of ACAPS declared that they would revise regulations to remove the obstacles to support the insurance industry.

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In broad term a majority of Moroccan customer’s place trust in traditional ways of insurance due to fraud protection and their conservative culture however the volume of people using and integrating with digitalized services in the last year with corona virus, reflect the appetite for changes. There is always a psychology behind the consumer’s decision, certain search for the best price, others for the convenience however, the majority search for the peace of mind. Since the insurance industry in Morocco is very conservative to let new entrants as Insurtech startups (according to static.com: from 10 to 15 Insurtech startups launching per month globally. Furthermore, the GAFA (Google, Apple, Facebook, and Amazon) who can invest in insurance sector equipped with the Data they collected and still collect every day. Amazon will compete with other BigTech companies to sell insurance product directly to consumers in India. In this regard there are plenty of companies selling artificial intelligence and provide more support with cloud computing, intelligent automation, human resources systems, loyalty programs, workflow management and more. To note that digital transformation is not about automated selling process, it is about the whole value chain especially when it comes to back office challenges and internal communication landscape that appears when we come to claims procedures. Besides the Integrated technologies are serving the environment by reducing the exploitation of resources which will diminish pollution. The collaboration is the key ingredient to move forward the entire Moroccan insurance industry. The partnership with the Insurtech will accelerate the process of automation; moreover, new products based on differentiation personalization and diversification all along to serve the client’s needs and anticipations.

4. Conclusion

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