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Improving Insurance Operations in Nigeria Through the Digital Technologies

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ABSTRACT

This paper aims to evaluate the impact of digitalization technologies on the insurance industry in Nigeria. Data were obtained from primary sources only. The primary data were collected through the mailed questionnaires that were administered to selected Chartered Insurers in Nigeria. The questionnaires were designed to reveal issues on digital transformation in Insurance industry in Nigeria. Seventy (70) questionnaires were sent to the respondents across the country in the six Geo-Political zones in Nigeria. It is noteworthy that 45% of the respondents were the Chief Executive Officers of different insurance companies, 30% of them were at Senior Manager Level of the Life Assurance Companies while the remaining 25% were the General Managers of Underwriting, Claims, Marketing and Human Resources Departments. It was found out that Nigerian Insurance companies as well as the NAICOM had transformed more than 40% of their services into digital technology. Besides, the research further revealed that almost every insurance company in Nigeria has a digital platform. The research recommends that the Federal Government should create sufficient budgetary allocation to invest in InsurTech and improve the training of the staff of the Government owned insurance companies such as NICON, Nigeria Reinsurance Corporation, LASACO, on the acquisition of digital skills. This will quickly encourage and mandate the private owned insurance companies to equally invest in InsurTech and arrange digital training for their staff so as to acquire digital skills necessary for the full digital transformation. The National Assembly should also amend the existing Constitutions on big data and recommend strict penalties for cybersecurity breaches. All these will disrupt the insurance services in Nigeria.

Keywords: Digitalization, InsurTech startups, Transformation, Digital Technology, Insurance Companies, Internet of Things (IoT)

INTRODUCTION

Since the late 1980s, the digital revolution has transformed the economy and society. In Nigerian society, digital disruption has led to changes in communication, interaction and consumption models and has led to greater demand for devices and software with more functionality, cloud computing and data traffic services. This has made the insurance industry

to provide the basic digital skills for their staff that would be needed to use the associated technologies.

The development of the digital economy has systematically changed the value and the marketing of goods and services due to the exploitation of information from data generated and shared on digital platforms with the consequent reduction in the transaction and intermediation costs.

In fact, digitalisation is destined to deeply modify the financial and insurance ecosystem, impacting all activities that compose the whole insurance value chain, from product development to pricing or underwriting, sales and distribution, new policies, fast claims management as well as modern asset and risk management.

With digitalization, insurers will be able to assess their customers' needs, target products and services to individuals and businesses, support underwriting decisions and reduce the cost of fraudulent insurance claims. In this regard, the importance of Big Data lies not just with the collection and storage of large and disparate pieces of information, but also in the ability to analyse and extract tangible and useful knowledge from said data (Antonella, 2020).

One example of using digital technology for risk underwriting and analysis is that both Machine Learning and Artificial Intelligence will help with post - loss assessment, fraud detection and predicting customer behaviour. The Climate Corporation in USA that uses climate and soil data to offer farmers insurance against losses from weather events is another example. Not only these, AllLife in South Africa offers life and disability insurance to policyholders, who suffer from HIV or diabetes in such a way that in their monthly health checks, every client gets a personalized analysis and advice on managing their conditions. To assess their clients' conditions the insurer has direct access to medical data from medical providers. If clients do not follow the check-up plan, coverage can be reduced or cancelled (Sherif, 2019)

More so, with the digital technologies, policyholders' data will be analysed and processed by algorithms in order to accurately calculate the claims reserves to be held in the event of a claim and thereby enable the insurance companies to use the resources available in a more efficient way, directing them towards profitable investments. The blockchain solutions will equally provide more transparency and reduce both the administrative costs and the premiums and finally help to speed up the claims services.

In addition, Risk selection will become ever more accurate and precise as emphasized by Antonell (2020) in the ways in which technology is improving risk selection. This includes the use of data gathered from connected sensors with the support of Internet of Things. Big Data will equally help to enrich underwriting decisions and assist in forward-looking and sophisticated risk measurement (catastrophe modelling). Digitalisations of insurance will also make data more readily analysed and products more readily adapted.

Summarily, digitalization involves the use of Artificial Intelligence (AI), Internet of Things (IoT), robotic process automation (RPA), cognitive technologies (CT), online platforms, big data analysis, distributed ledger technologies (DLT), machine learning (ML), cloud computing and 5G networks.

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It has been established that digital technology is the key to the insurance sector for its evolution and overall growth. It not only adds value to the industry, but also directs its future to some extent with the changing time and its requirements. In fact it has helped companies not only to conduct market research, market penetration, market development and business promotion, but also to provide after-sales services and understanding customer satisfaction.

To cap it all, data collection and data analysis of insurance companies has been made possible with the use of digital technologies.

The digital technology started with the development of the Internet, followed by the roll-out of broadband networks and large scale use of smart phones, with the consequence that every human being has access to information, social networks and audiovisual entertainment. There is also an increasing use of digital platforms as business models for the supply of goods and services. The end result of development of digital technology is the use of devices and applications for complex analysis of big data, cloud computing, blockchains, chatbots and artificial intelligence.

Besides all these, the digital technologies are equally forcing a fundamental transformation of business activities like changing the relationship between the service renders and their customers, bringing new entrants and their disruptive technologies, driving new channels, creating new products and services, breaking down the walls between industries and, in many cases, forcing a basic rethink of the business model (Sherif, 2019).

It is now practically impossible to predict what will be the future of our insurance and other business activities with the speed of the changes brought about by the digital technology.

With digitalization, customers can now literally buy insurance policies with the click of a button. Modern policies developed are fully automatic and are updated using a database, with self-serving dashboards that make it easier for customers to decipher complicated insurance policies, calculate monthly premiums and easily enter into longer term life assurance policies and annuity plans. The complicated policy coverage costs can now be seen virtually, helping customers understand the rates of change and thereby, determining which plans will suit them best (Sherif, 2019).

In Nigeria for instance, an AutoGenius is an insurTech founded in 2014 and offers Auto Insurance and Insurance Brokerage services digitally. Cassava, another insurTech registered with NAICOM offers both General and Life Assurance services. It pays its claims within 48 hours. More so, Sherif (2019) further expressed that digitization also makes it easier for customers to track the speed at which their policies are growing. For instance, in several countries including Nigeria, customers can use their smartphone to upload a picture of property or assets they would like to insure and request a policy. The application uses available data about the property or product and responds with an immediate insurance policy offer within seconds. ETAP, a Nigerian insurTech startup, with its game-changing app, allows drivers to buy insurance policy in 90 seconds and complete a claim in 3 minutes.

LITERATURE REVIEW

Bohnert et al. (2019) conducted a study of 41 public insurance companies in Europe in terms of the relationship between a company's use of digital technology and business success, as measured by the market value of companies. The study revealed that insurance companies that digitize their internal procedures and use IT technologies when interacting with customers have an average market value of 8% higher than companies that do not pay attention to digitalization issues.

Sherif (2019) in his research on digital technology emphasized that new technologies change the way insurers and customers interact (e.g. social media, chatbots and robo-advisor). He further explained that digital technologies can be used to automate, standardize and improve the effectiveness and efficiency of business processes (e.g. online sales, digital claims settlement) and create opportunities to modify existing products (e.g. telematics insurance) and to develop new ones (e.g. cyber insurance).

The DE4A Initiative, being part of the World Bank Group's support for the Digital Transformation Initiative for Africa, wants to see every African individual, business, and government to become digitally enabled by 2030.

For a successful and inclusive Digital Economy according to World Bank Group (2019), African countries would require building key foundational elements of a digital economy which are synergistic and consists the Digital Infrastructure that provides the way for people, businesses, and governments to get online and link with local and global digital services, thus connecting them to the global digital economy. For a digital economy, good and affordable Internet connectivity is a critical foundation.

According to the research on "The State of ICT in Nigeria 2018," there is a digital gap regarding mobile broadband, with just over 20% of Nigerians owning smartphones, 44.84% owning feature phones, and 32.16% having basic phones. The report further revealed that males are more likely to own a smartphone than females, while females are more likely to own a feature phone and basic phone (Gillwald, et al., 2018). The ITU (2018) reported that fixed broadband penetration in Nigeria is very low, with a household penetration rate of 0.04% at the end of 2018, below the African regional average (0.6%) and well below the world average (13.6%). On individual Internet penetration, it is relatively low in Nigeria, at around 30% when compared to other countries in Africa where the individual Internet penetration is at 53%, despite the fact that they have considerably higher prices (Gillwald, et al., 2018).

Digitalized Financial Services initiated by financial technology companies (fintechs) in Nigeria, by applying digital tools to provide new and innovative services to customers, has contributed immensely to the development of the Nigerian digital economy and have attracted investments. Although fintechs seem to be in competition with traditional financial institutions, they are actually not but they are providing more of a complementary solution that helps address some of the gaps in financial services in the country.

Investment funding for Nigerian start-ups, including fintechs, was more than $100 million in 2016 and increased to $117 million in 2018. Recent deals have included $9 million for Flutterwave, $8 million for Paystack and $13 million for Mines (World Bank Group, 2019).

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As described in the Digital Financial Services pillar, 67% shoppers preferred cash on delivery, 23% use credit cards while only 10% used mobile payments. This indicated that majority of Nigerian population prefer cash transactions rather than making digital payments owing to lack of trust.

Similarly to banks in Nigeria, insurance companies have been very slow in adapting to digitisation and in taking advantage of the opportunities offered by digital transformation. Large number of insurance companies has not started investing in InsurTech unlike the insurance companies in overseas.

Technologies that are relevant to digitalizing the insurance service

The following are some of wider technological innovations that support digital insurance:

Artificial Intelligence (AI)

AI refers to intelligence exhibited by machines and machine is considered "intelligent" when it considers an action to maximise the possibility of achieving its given goal. It is widely used when computer programmes are developed to have cognitive functions such as speech recognition, decision making, learning and problem solving.

Algorithms

Algorithms are part of AI, where there is a set of rules to be followed for a computer programme to achieve a task under certain conditions such as problem-solving operations. In the financial sector, algorithmic trading, such as high frequency trading, is wide spread. It refers to a method of executing orders using automated pre-programmed trading instructions to execute large trading orders.

Robo-advice

Robo-advice, or automated advice, is similar to AI and is becoming prominent particularly for online investment and savings platforms. It refers to on-line automated advice model that has the ability to deliver advice in a more cost-efficient way.

Robo-advice is primarily being applied for investment advisory, and as a result of this, its use in the insurance sector is yet to be wide spread. However, some insurers are starting to provide robo-advice on insurance in conjunction with other financial services they provide.

Smart Contracts

Smart contract refers to a computer program intended to automatically execute and enforce a contract by it. They are written as programming code which can be run on a computer. This code can define strict rules and consequences that emulate a traditional legal document, stating the obligations, benefits and penalties due to either party being in various circumstances. Smart contracts enable people to trade and do business with strangers, usually using the internet, without the need for a large centralised authority site to act as an intermediary.

Blockchain/Distributed Ledgers Technology (DLT)

Blockchain or distributed ledger technology (DLT) is a protocol for the exchange of values or data over the internet which does not require an intermediary. The protocol of blockchain technology is to create a shared, encrypted database of transactions and other information.

Examples of ants and flocks of geese have been given to demonstrate what a perfect blockchain society would be like; decentralised yet coordinated.

One of the promising example of insurance using blockchain is the start-up InsurETH. InsureETH uses one of the blockchain platforms, Ethereum. Ethereum is one of the most popular blockchain platforms which is public and has smart contract functionality. InsurETH offers automated flight insurance which relies on Ethereum smart contracts, and recording premium payment in the Ethereum blockchain. Travel insurance policies often cover delay of flights or lost baggage, but policyholders are not often aware of this coverage and often only make claims for higher expense claims such as delays due to a medical emergency or to access medical benefits. This is in contrast to the flight delays and lost baggage being a much more frequent incident and one which can be tracked using third party data sources. InsurETH uses this advantage by selling flight insurance, and automatically sources proof for claims using a public data feed Oraclise. This automates the process, in that if a flight delay occurs claims are paid automatically based on the data feed information.

The Internet of Things (IoT)

The Internet of Things (IoT) is when sensors and actuators embedded in physical objects from roadways to pacemakers are linked through wired and wireless networks, often using the same Internet Protocol (IP) that connects the Internet. The connection permits large volumes of data to flow to computers for analysis (McKinsey, 2010). Telematics insurance is the best known example of insurance using the IoT. Other examples of IoT devices being used for insurance are sensors in private homes, farms or businesses to alert policyholders about risks such as bad weather conditions and security surveillance, or to provide feedback about individual risks.

Telematics and insurance is another avenue in which data analytics is being used to monitor the behaviour of policyholders and mitigate risks in advance as well as discounting premiums where applicable. Telematics insurance is when a device is fitted into motor vehicles and used to track driving. For instance, in South Africa, some insurers have gone further by using 'in-sensors' to measure how safely policyholders drive and offer lower premiums to more careful road users. This encourages the policyholders to drive safely on the road and assist the insurers to lower their claims costs.

Besides, with the digital technology, biometric data such as electrocardiogram and arrhythmia detection, pulse and variability, blood pressure, respiration information, blood sugar level, muscle activity, sleep patterns, body temperature, blood oxygen levels, skin conductance levels, brain activity, hydration levels, posture, eye tracking data, ingestion and fertility information can also be generated and applied in data analysis for insurance purposes.

One example of such endeavour is the marriage of longevity data, face recognition technology with underwriting for the provision of life insurance. Face recognition technology is used to predict factors such as chronological age, gender, smoking habits and body mass index. Based on this data, and accompanied by an activity sensor, such a FitBit or physical activity tracker on a mobile phone, life expectancy is provided.

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Digitalization of Insurance in Nigeria

In addition to the InsurTech companies that have established in Nigeria, large number of insurance companies has started transforming their services to suit digital technology needs. The following are some of the InsurTech startup companies:

SL DRA

This is an insurance data and analytics company with the primary focus on emerging economies that uses advanced technologies to collect and analyse millions of records and draws on unique domain expertise to provide innovative solutions. The company not only offers analytics and decision-support to members in the rate making, underwriting claims, and catastrophe and weather risks but also helps members in making decisions about risks, investments, and operations with greater precision, efficiency and discipline.

FSD Africa

On the basis of low penetration of insurance in Nigeria, a specialist development agency, FSD Africa, funded by the UK government and working to reduce poverty across sub-saharan Africa, in partnership with the NAICOM, organised the BIMALAB insurTech acceleration programme to support Nigerian insurTech startups that are building innovations in micro-insurance and digital brokerages, B2B data analytics supporting the insurance sector, developing ancillary revenues and insurance add-ons to micro- and small and medium enterprises (MSMEs) and SaaS solutions addressing agriculture, cyber and climate change.

ETAP

ETAP is another insurTech startup that makes buying and claiming on car insurance as easy as taking a picture. It provided drivers with access to a range of daily, weekly, monthly and quarterly plans to choose from. ETAP uses machine learning to build intelligent risks profile that determines appropriate premiums for each driver, allowing them to achieve lower premiums by driving safely. By using advanced telematics, the driving experience is gamified to improve driving behaviour and drivers can earn Safe Driving Points that can be exchanged for shopping vouchers.

Cornerstone

Cornerstone, for the first time in Nigeria, provided customers with an online platform with end-to-end transaction processing for insurance. The platform started in 2013 with motor insurance. Cornerstone later extended it to other classes of insurance with the consequence that online sales increased by more than twenty-five times within three years of the inception of the e-platform.

The company has made major headway in penetrating the market, especially for those who previously did not have any insurance cover. Initially, Cornerstone did not specifically focus on low-income earners, but sought to increase insurance penetration on a large scale.

In order to achieve the desired scale and to reduce its dependency on agents, Cornerstone partnered with Airtel in 2014 to launch a life and hospital cash insurance policy open to all subscribers at no additional cost (Deloitte, 2017). The size of the insurance cover is based on the amount of airtime spend per month. Registering for insurance cover is done via the subscriber's mobile phone using USSD technology within 180 seconds. Another important

element of Cornerstone's drive to digitalise its services was the launch in 2013 of a platform that eased registration for customers and provided quick transaction time. It processes an online transaction in four minutes. The result of the 2013 platform is that the gross premiums of Cornerstone grew by 2,441% in three years. Policy holders have to claim via an interactive voice response number and claims are paid promptly via bank drafts, cheques or electronic funds transfers. In 2018, Cornerstone paid N3.4bn (US$10.2m) in claims.

Other insurTech startups in Nigeria include the Pay U (that provides affordable, flexible, cheap and honest pay-as-you-use motor insurance for Africans through building trust), Insurpass, Izanu Africa, Turaco, etc.

Challenges to insurance industry on new products: A case of Autonomous cars

The advent of autonomous or driverless cars in advanced countries like France, Singapore, Switzerland, United Kingdom and United States where it is permitted the use of certain roads for driverless cars. Several countries have enacted laws on the use of autonomous cars because driverless cars do have the potential to improve road safety by preventing human error, and efficient traffic flows and fuel usage. What will be the appropriate framework for insurance coverage for such for vehicles is an important aspect for governments and insurance companies to consider.

The major problem is how the liability should be allocated among highly automated vehicle owners, operators, passengers, manufacturers, and others when a crash occurs and how the liability of a collision would be addressed when there is a mixture of human input and autonomy involved in driving.

Insurance coverage of a motor vehicle is for damages and third-party liability (TPL). The difficulty for driverless cars is with who the liability is placed with, is it the driver or car manufacturer. The manufacturer may be involved through product liability that resulted in a collision while the driver would be liable when he did not take control of the vehicle in certain circumstances resulting in a collision.

METHODOLOGY

Data were obtained from primary sources only. The primary data were collected through the mailed questionnaires that were administered to selected Chartered Insurers in Nigeria. The questionnaires were designed to reveal issues on digital transformation in Insurance industry in Nigeria. Seventy (70) questionnaires were sent to the respondents across the country in the six Geo-Political zones in Nigeria. It is noteworthy that 45% of the respondents were the Chief Executive Officers of different insurance companies, 30% of them were at Senior Manager Level of the Life Assurance Companies in different zones. Others (25%) were the General Managers of Underwriting, Claims, Marketing and Human Resources Departments. All the questionnaires were returned. The data analysis was carried out using the simple percentages.

RESULTS AND DISCUSSION

It was found out that Nigerian Insurance companies as well as the NAICOM had transformed more than 40% of their services into digital technology. Besides, the research further revealed that today almost every insurance company in Nigeria has a digital platform. Besides, 56% of the respondents expressed their dissatisfaction on the lagging behind of the insurance industry

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in Africa and particularly in Nigeria regarding the adoption of digital technology while 86% of the respondents complained that the reason for lagging behind is not limited to lack of training for the staff but also the digital infrastructure in Nigeria is underdeveloped and it has affected widespread use of broadband especially in rural areas.

Besides, 64% of the respondents expressed that though digitalization has the potential to accelerate Nigeria's socioeconomic development and will surely improve the services of the insurance in terms of reducing the time for document processing, eliminating the manual entry of information and thereby reduce the time of compensation for losses as well as reducing number of errors and finally fasten the claims processing, most of the Board members of insurance companies are yet to fully understand the great benefit attached to digital technology and as result, the Boards are only considering the expenses they will incur on the acquisition of digital technology.

From the questionnaires analysed, it was discovered that large number of Nigerian Insurance companies have considered InsurTech acquisitions as urgent priority. The Chartered Insurers (84% of the respondents) disclosed that before the end of 2025 more than 90% percent of the insurance companies in Nigeria will have their services becoming fully digitalized.

The security of digital data were raised by 72% of the respondents in the Senior Manager Level that Nigeria lack the capacity to manage digital data and there may be cybercrime threats including wrong use of data, hacking from the so-called yahoo boys, malware, impersonation and falsified codes.

FINDINGS AND RECOMMENDATIONS

The research recommends that the Federal Government should create sufficient budgetary allocation to invest in start-up and improve training in the digital skills for the Government own insurance companies such as NICON, Nigeria Reinsurance Corporation, LASACO, etc. This will encourage and mandate the private owned insurance companies to equally invest in InsurTech and arrange digital training for their staff to acquire digital skills necessary for the digital transformation. The National Assembly should also amend the existing Constitutions on big data and recommend strict penalties for cybersecurity breaches. The research found out that digital platforms were not originally covered by Nigerian tax laws so there is a need to bridge this gap. The paper recommends that the Federal Government should ensure that the insurance sector is sound and resilient so as to deliver their promise in the new digital economy. In addition, the insurance companies should consider the investment in InsurTech as a matter of urgency so as to close the widening gap between Nigeria insurers and their counterparts in overseas as regards digital technology. Besides, the insurance companies should equally ensure that the customers' personal data are safe. They should equally establish appropriate data protection measures and organise staff training programs so as to deter unauthorized access, alteration, disclosure, accidental loss, or destruction of customer data.

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