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# Digitalization in the Insurance Industry

***Uzakova Kamola Bekhzodovna***

*Lecturer of Samarkand Institute of Economics and Service*

***Khotamkulova Madina Sanjar kizi***

*Student of Samarkand Institute of Economics and Service*

**Abstract:** the main idea of the article was to characterize the process of digitalization in insurance companies through the implementation of information and communication technologies. This research examined the relationship between the digitalization and insurance industry.

**Key words:** digitalization, insurer, software, premium, claim, expenditure.

## Introduction

The insurance industry has not been left behind in terms of the use of digital technology. The sector has welcomed new digital technologies that are transforming the way insurers and customers interact. Digital transformation is occurring everywhere, and insurance companies are not at all an exception. It is clear that insurance companies are quite responsive to the technological changes in recent years. And this adaption to the changing technological advancements in the current insurance system is inevitable and becoming imperative to help the insurance companies sustain this intense competition.

Hence, most of the insurance companies in the world are opting for high-tech, automated insurance administration system software and majorly benefitting people and offering them a top-notch user experience. With such digital solutions, insurers now have more flexibility to help people recover from various catastrophes and prevent their financial loss, which, in turn, adds up to the social value of the insurance market.

## Literature Review

The process of digitalization is closely related to using information and communication technologies in the insurance sector. There are widely used the expression “digitalization of insurance” [1] that means the implementation of ITC into insurance. Digital transformation in the insurance industry was described through the approach - Digital Transformation Framework in the cases of selected German insurers [2]. Most of the definitions describe digitalization as: – taking processes, content or objects that used to be primarily (or entirely) physical or analog and transforming them to be primarily (or entirely) digital – the expression of information in strings of 0 and 1 called binary or digital strings. Some of the more comprehensive and involve both these items. Digitalization is characterized by some features: volatility, uncertainty, complexity, ambiguity [3]. He also links the actual raising digitalization process in the insurance sector with technological development, profit-reducing and needs of cost-cutting.

The main aim of Information and communication technologies in the insurance market is to create and use the knowledge and exchange the information [4]. The role of ICT has been changing: previously ICT was the instrument for data processing, but after the implementation of Big Data in the economy, it has become the instrument for creating new types of data. The insurance industry is totally dependent on the ability to convert raw data into intelligence – intelligence about customers, markets, competitors, and business environment. Modern insurance business looks for

opportunities to reduce the asymmetry of information under the condition of the rising cost of risks. So, insurers are looking for new knowledge about the probability of the risks. Heeks [5] explains the relationship between knowledge, information, and data as data is processed into information is assimilated into knowledge; knowledge explains information and processes data. He also showed a connection between vertical integration in distribution construction of insurance company and the adoption of new technologies (Internet). Some aspects of IT integration into financial institution were discussed in the context of the connection between banking and IT [6] .

**Methodology of the Research**

The methodology of the research includes mathematic-statistic analyzes, historical analyzes and modeling methods. Statistics of the research have been made by the authors based on the official statistics of the world.

**Results**

For many years, people found it a challenge to buy, renew and raise a claim due to poor communication between the insurers and the customers. However, with digitalization, insurance companies are reaching out to their customers through websites, social media, apps, text, email, live chat, and other digital channels.

**Table1. Top 10 digitalized insurance companies in Europe [7]**

| № | Company's name | Description of the Company |
|---|---|---|
| **1** | **AkinovA** | The company is building an electronic marketplace purposely for the transfer and trading of insurance or reinsurance risks. AkinovA will achieve this through partnerships and collaborations in the industry. Further, it will maximize the risk transfer value chain through the provision of a trading platform and clearinghouse that is industry regulated and capital markets grade. So regulators and participants will be able to get valuable data and analytics harvested from the aggregated data from the marketplace. AkinovA is located in Liverpool Street, England. |
| **2** | **AKUR8** | The Paris-based insurtech is set to revolutionize insurance pricing using transparent AI that automates the insurance companies modelling. Regulators across the world want insurance firms to keep control and maintain full transparency on the models they create. The company reconciles actuarial worlds and machine learning in order to enable customer lifetime value-based price optimization. This insurance company was developed specifically for non-life insurers. |
| **3** | **Anorak Technologies** | The technology company has brought to the market a world-leading protection sales software platform that helps to unlock the potential of the insurance market. Today lenders, banks, advisers, brokers, insurers and other digital disruptors can now sell income protection, life insurance and health insurance coverage more efficiently and at scale. The London-based digital company is made up of tech geeks, data experts, life insurance specialists and design gurus. The aim is to change the way people insure their future and help insurance companies reach the millions of UK unprotected individuals and families. Anorak is bickered by Triple Point Ventures, Outward VC, and Kamet Ventures. |
| **4** | **Artificial Labs** | The company's mission is to make complex underwriting frictionless for insurance firms with a powerful automated platform. In other words, Artificial builds tools to empower commercial insurance providers to quickly, accurately and efficiently write better risks. With data ingestion, the insurer replaces manual data entry |

| | | |
|---|---|---|
| | | with digital, real-time extraction. Generating accurate data reduces loss ratios and enhances risk selection. |
| **5** | **Asistensi** | The Madrid-based insurance company offers migrants protection against financial setbacks of health emergencies that their families back home may experience. This helps them to take care of their loved ones' wellness. Health is a vital element in every nation's prosperity and Asistensi has a goal to help countries with its digital-first approach towards health insurance. Further, the company offer emigrants the support they want. |
| **6** | **AWARE7** | The Germany-based firm offers Risk Rex to help SME assess and link cyber security risks to solutions, loans and insurance. |
| **7** | **Axieme** | This is social insurance based in Italy that provides coverage to communities comprising people of the same coverage needs. Thus policyholders put in groups or circles, generate and share data about claims they experience. Policyholders with fewer claims get high giveback. The goal is to improve awareness, transparency, and equity at the same time reducing moral hazards and frauds |
| **8** | **BestDoctor** | It's a healthcare company with the second-highest number of users interested in its tech insurance products. BestDoctor is a strong player in the b2b market due to its risk management innovations, digital medical services and customer-centric product development. Doctors from this company perform almost 30 telemedicine consultations every day while over 200 insured users visit its partner clinics for treatment. |
| **9** | **Bequest** | The insurance company offers hassle-free setup, no middlemen, hidden fees, tie-in contracts or probing questions. Instead, its policies are tailored made for the customer, are reliable and honest. Thus Bequest ensures that your loved ones are looked after. |
| **10** | **Bikmo** | The company applies technology when developing its insurance products to ensure policyholders are protected against unexpected events. Bikmo manages its policy in an ultra-simple manner and uses its team of bike geeks to offer exceptional customer experiences to the bike holders and the adventure sports community. |


**Figure 1. Benefits of the digitalization of the insurance industry[8]**

A conducted research by the Geneva Association [ 8] concluded that there are mainly three types of benefits of the digitalization of the insurance industry (figure1). They are risk reduction, cost

reduction, and new product creation. When it comes to **risk reduction**, in many instances, better aligning premiums and risk has clear economic and societal benefits. It allows premiums to signal risk and encourages risk reduction. By establishing a feedback loop to policyholders, digital monitoring allows them to reduce risk by adapting their behavior. Moreover, enhanced data facilitates the establishment of advanced risk management and early-warning systems that allow for timely interventions to reduce losses and lead to additional benefits for policyholders.

**Cost reductions** - a key feature of insurance markets is the prevalence of two types of informational asymmetries: moral hazard and adverse selection. They represent market inefficiency and imply that insurers must invest considerable resources in assessing the risks of their contractual partners and verifying information provided by policyholders. In fact, a considerable fraction of premiums is spent on claims handling, acquisition and administration. Accordingly, a considerable amount of employee time is spent on processing data. There is therefore a great potential for automation of data processing. McKinsey[McKinsey Global Institute (2017) "What's now and next in analytics, AI, and automation". Executive briefing, May 2017, Exhibit 6. The data refers to the U.S., but it is reasonable to assume that this is true for other regions as well. ] estimates the automation potential to be 43 per cent of the time spent by finance and insurance employees. In non-life insurance, insurance fraud alone consumes almost 10 per cent of premiums. Automation therefore has the potential to considerably enhance market efficiency and lower costs by reducing informational asymmetries. In a competitive market environment, this will ultimately be reflected in lower premiums, boosting affordability and coverage and contributing to narrowing the protection gap. Moreover, better estimation of distribution functions at the portfolio level through big data and artificial intelligence allows insurers to charge lower premiums by reducing the risk load.

**New and enhanced products** - data that is more granular allows insurers to offer products that are tailored to the needs of the insured, including insurance on demand or pay-as-you-use propositions. Such usage-based insurance ensures that consumers pay based on the actual risk, e.g. when they drive as opposed to when the car stays in the garage. Better understanding of risks also facilitates the development of new types of coverage and enhances the insurability of existing and emerging risks (such as cyber risk, for example). The enhanced use of data may also enable insurers to develop insurance products for high risks that so far could not be insured. For example, patients suffering from previously uninsurable diseases could share data related to their physical condition and benefit from individualized care offers.

To sum up, the societal and economic benefits of the enhanced use of data are highest in business lines in which are indicated in figure 2:

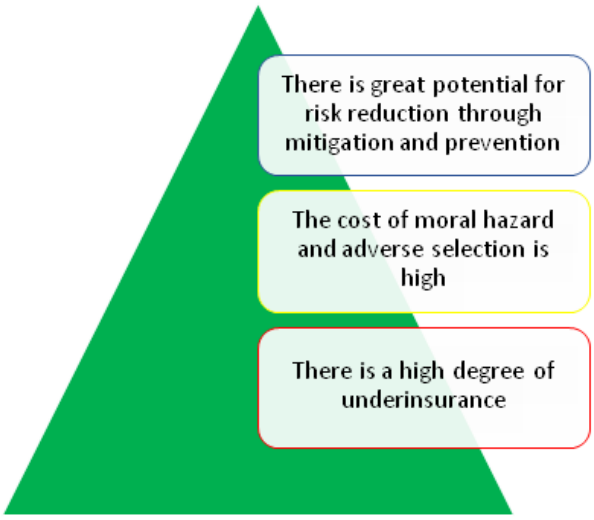


**Figure 2 Concerns of Digitalization of the Insurance industry[8]**

Carried studies have also shown that digitalization of the insurance industry tends to bring certain concerns as well as bringing positive impacts. These concerns are identified in the following figure 3 and their concepts are broadly explained below the figure.

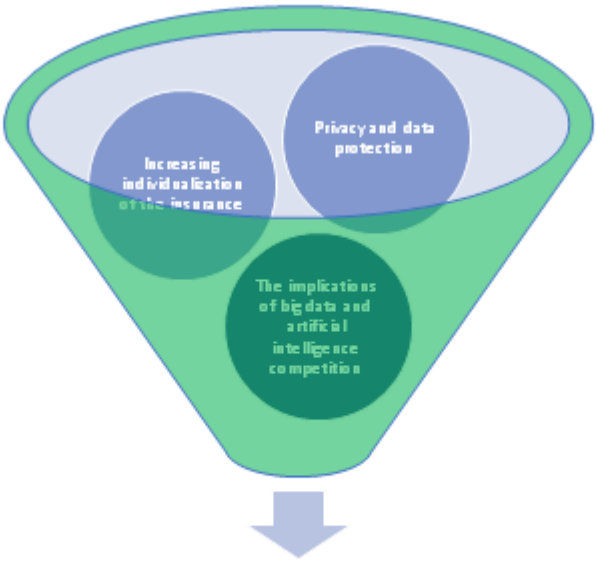


Figure3. Main Concerns about digitalization of Insurance [8]

Privacy and data protection concerns relate to issues like fairness and discrimination, intrusiveness and the right of (informational) self-determination, as well as the contextual integrity of personal data.

The changing role of data implies that the individual's premiums are no longer determined based on their grouping in a specific risk class but on their risk profile. Such individual risk profiles allow for a more granular and accurate assessment of an individual's risk. Three types of concerns are often mentioned regarding this development: high risks may no longer be able to afford risk cover and may be excluded from insurance; the principle of solidarity may be eroded; and consumers may face frequent changes in premiums, i.e. premiums could become more volatile.

Digitization has resulted in the disruption of several industries, stirring up existing market structures and marginalizing incumbent market players. Take the taxi industry, for example, where Uber gained large market shares within a short period of time. Such fundamental transformations of industry structure are not unusual with the emergence of new and superior production technologies. They are a feature of the market economy and the process of creative destruction. Such shifts, however, are problematic if they are based on predatory behavior that aims to drive out competition in order to gain a position of market dominance, or made possible by an unleveled playing field.

**Conclusion**

With the advent of digital platforms, mobile apps, and big data , customers now expect quicker and more effective service than ever before. And they expect that enhanced level of service from the moment they buy a policy right through to the settlement of a claim. Social distancing measures introduced during the ongoing COVID-19 pandemic have also forced many laggards to become early adopters of digital and seek out online solutions. Meanwhile, global firms are also seeking to harness the power of digital solutions to help them understand their customers better—and increase effectiveness and minimize losses as a result. Digitalization has been affecting positively in the industry of insurance and creating opportunities for further developments in this sector.

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