

## PROBLEMS OF DIGITAL INSURANCE DEVELOPMENT IN THE REPUBLIC OF ARMENIA

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Key words: Digital insurance, CMTPLI, AI, internet of things, blockchain, chatbot

**Introduction.** The new digital era, along with information systems and technologies, play an important role in the development of the insurance industry. Today, almost all insurance companies in the world are trying to digitize their activities in every possible way in order to face the crazy "digital" race, from which Armenian insurance companies are not exempt to some extent. In this context, a new term appears: digital or online insurance, which makes this analysis relevant.

**Methodology.** The methodological basis of the scientific article is the analysis made on the basis of scientific articles of various authors on online insurance, which allowed us to study and analyze the features of online insurance. Using the statistical method, the current state of the global online insurance market and the statistical data of the main digital tools describing it: AI, blockchain, internet, big data were presented. A mathematical, graphic method was used to present dynamics of indicators characterizing the RA online insurance system on a quarterly basis during 2018-2022. Comparisons were made. As a result of all this, the problems of the development of the RA online insurance system have been raised.

**Literature review.** Online or digital insurance is a way to meet traditional or unique needs through digital technology [Tsiganov et al., 2018, 112].

According to another definition, digital insurance is the execution of insurance contracts, reviews, receiving information about accidents and any other insurance-related activities through devices or systems [Cappiello, 2020, 1].

Any innovation that relies on the availability of digital technology can accordingly be considered as a digital innovation, no matter how digital technology exerts its influence, as long as it provides a necessary condition for the possibility of the innovation. Engagement in digital innovation has strategic significance for an organisation, because it accompanies decisions to put business operations on a new foundation, rather than just replacing an old tool by a new one [Bohnert, Fritzsche, Gregor, 2018, p.4].

The implementation of information systems in insurance companies as a result of automation of processes leads to the increase of activity efficiency, improvement of customer service, attraction of new customers, reduction of a number of risks, reduction of costs and increase of income. However, the digitization of activities has a number of

negative effects that should be considered before investing. it's about information security, customer trust and more.

**Scientific novelty.** The work deals with the study of the role of digital technologies in the development of insurance. The scientific article covers the main tools of digital or online insurance, as well as the dynamics of development of indicators describing online insurance in RA. The analyzes carried out in the work allowed us to highlight the problems that hinder the development and expansion of the RA online insurance market. In particular, it refers to the establishment of an actuarial school, raising the level of public awareness, introducing a risk management system, difficulties in concluding contracts on online platforms, security and a number of fundamental issues, the solution of which requires a long time and large resources.

**Analysis.** The most common "tool" of information systems used in the field of digital insurance is *artificial intelligence (AI)*, which is widely used in the insurance industry today, but unlike, for example, the banking system, the use of AI in the insurance system is not so great.

Back-office services (78%), risk management (56%), financial detection (56%), customer service (44%), compliance (22%) provide the greatest results as a result of the implementation of AI in the insurance system [Deloitte, 2017, 12].

According to McKinsey & Company <sup>1</sup>over the next decade, 10-55% of the main functions of insurance companies: actuarial calculations, financial and other operations, processes of implementation of claims , risk management can be automated, which will lead to a 10-70% change in the entire insurance operations. This means that insurance professionals in all positions will need professional training and development to succeed and not lose their jobs.

According to the analysis presented by Alliedmarketresearch, the global AI in insurance industry generated \$2.74 billion in 2021, and is anticipated to generate \$45.74 billion by 2031, witnessing a CAGR of 32.5% from 2022 to 2031.<sup>2</sup>

ChatBot is an AI-based program designed to conduct online dialogue. It provides an opportunity to talk with the customer in natural language through various applications, web pages, telephones. Their purpose is to reduce service time, reduce the formation of queues. With ChatBots, customers can sign new contracts, get rewards, ask questions and get full answers.

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<sup>1</sup> <https://www.mckinsey.com/industries/financial-services/our-insights/insurance-2030-the-impact-of-ai-on-the-future-of-insurance>

<sup>2</sup> <https://www.prnewswire.com/news-releases/ai-in-insurance-market-to-reach-45-74-billion-globally-by-2031-at-32-5-cagr-allied-market-research-301605181>

According to a Statista survey in 2019, 44% of customers are comfortable using chatbots to make insurance claims, and 43% are comfortable using them to buy insurance policies. Chatbots can manage claims instantly and deliver customized quotes to simplify insurance related processes and enhance customer service<sup>1</sup>.

*Big Data & Analytics.* It is one of the most important tools of information technology, which enables to quickly collect and analyze large-scale data on customer behavior and based on them to make forecasts, risk assessment, new offers, which makes insurance companies competitive in the market.

It is expected that insurance industries will invest \$3.6 billion by 2023 in such technologies. This will cause a 30% increase in better data access to insurance services. It will scale up cost savings by 40- 70% and there will be a 60% increase in fraud detection rates [Jeet, Pandey, 2021, 5].

*Blockchain.*Blockchain, a variant of Distributed Ledger Technology (DLT), is a shared database/ledger on which the state (i.e. the current snapshot of data) is confirmed and verified without the need for a trusted centralized authority [Popovic et al., 2020, 2)

Blockchain technology enables automated real-time data collection and analysis, potentially making some types of P&C claims process up to 3x faster and 5x cheaper than at present. Automated "smart contracts" can greatly speed up claims processing and payouts, saving insurers over \$200B a year<sup>2</sup>.

*Internet of Things, IoT.* The Internet of things (IoT) describes physical objects (or groups of such objects) with sensors, processing ability, software and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks.<sup>3</sup>

According to the Cisco Internet Business Solutions Group (IBSG), IoT is simply the point in time when more "things or objects" were connected to the Internet than people. Now consider that IoT represents the next evolution of the Internet, taking a huge leap in its ability to gather, analyze, and distribute data that we can turn into information, knowledge, and, ultimately, wisdom. In this context, IoT becomes immensely important [Evans, 2011, 2]. If in 2003 the number of devices connected to the Internet was 5 million, which was 0.08 per capita, then in 2023 it will reach 13.1 billion, making 3.6 per capita<sup>4</sup>.

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<sup>1</sup> <https://research.aimultiple.com/insurance-chatbot/>

<sup>2</sup> <https://www.cbinsights.com/research/blockchain-insurance-disruption/#:~:text=Blockchain%20technology%20enables%20automated%20real,over%20%24200B%20a%20year.>

<sup>3</sup> <https://hy.wikipedia.org/wiki/%D4%B2%D5%A1%D5%B6%D5%A1%D6%81%D5%A1%D5%>

<sup>4</sup> <https://techjury.net/blog/how-many-iot-devices-are-there/#gref>

The main factors driving the development of the Internet of Things in the insurance sector include equipment that enables the acquisition and analysis of information from multiple sources, which further accelerates processes, especially at the operational level.

The global IoT insurance market size was valued at \$8.63 billion in 2019, which is projected to reach \$304.31 billion by 2027, growing at a CAGR of 57.1% from 2020 to 2027<sup>1</sup>.

There are 6 insurance companies in Armenia. All companies have web pages that offer digital insurance services: online signing of contracts, opening of applications, use of ChatBots, insurance calculators, etc. However, in terms of the rate of application of modern digital technologies, Armenia is lagging behind countries with a developed and developing digital insurance system. The main driving force of the development of the RA digital insurance market is the CMTPLI system introduced in 2011. ASWA<sup>2</sup> system is for signing insurance contracts, which enables to sign a contract with any insurance company online. The system also allows you to check the driver's driving history, register accidents through the mobile application and fill out a declaration without the involvement of a traffic police or insurance agent. Starting from 2018, it is possible to obtain information about CMTPLI online contracts.(fig.1)

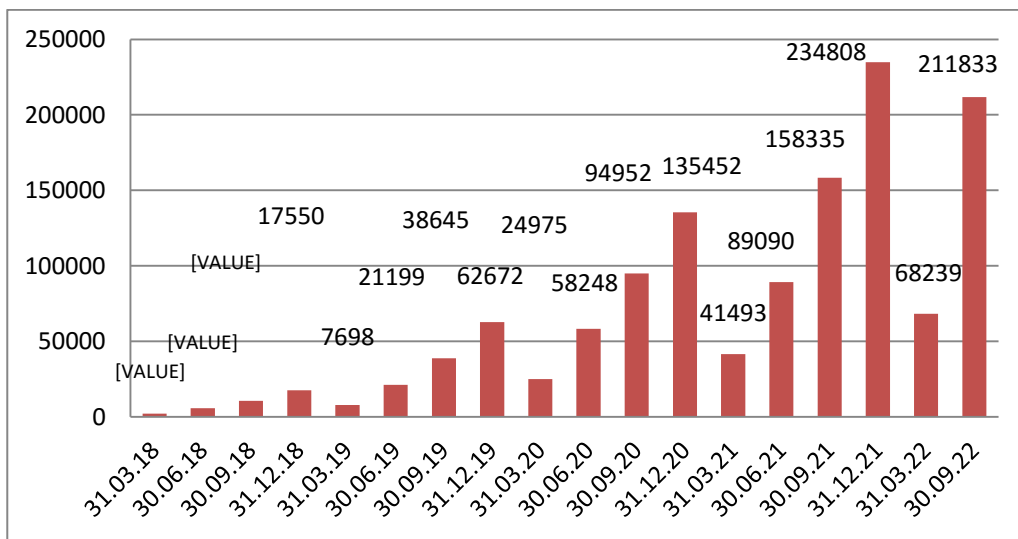


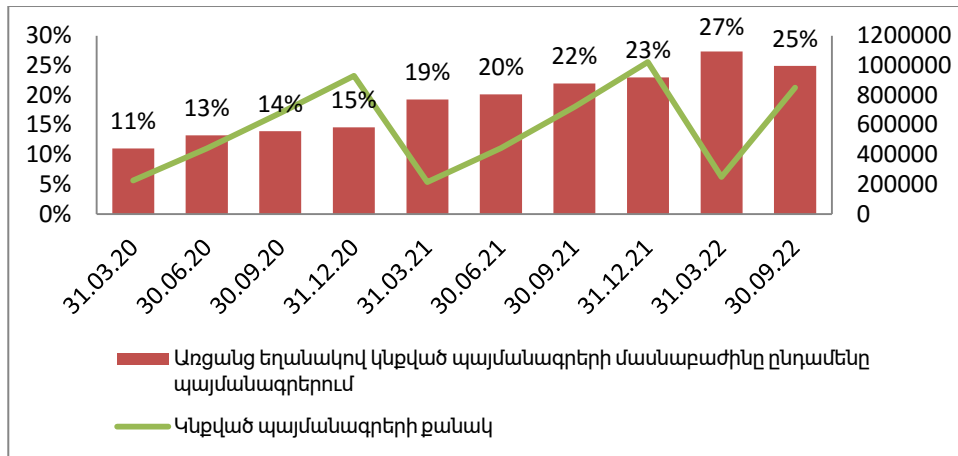
Figure 1. Dynamics of online CMTPLI contracts in 2018-2022<sup>3</sup>

<sup>1</sup> <https://www.alliedmarketresearch.com/iot-insurance-market-A09784>

<sup>2</sup> [https://aswa.am/assets/docs/Mobile\\_Terms\\_Of\\_Use.pdf](https://aswa.am/assets/docs/Mobile_Terms_Of_Use.pdf)

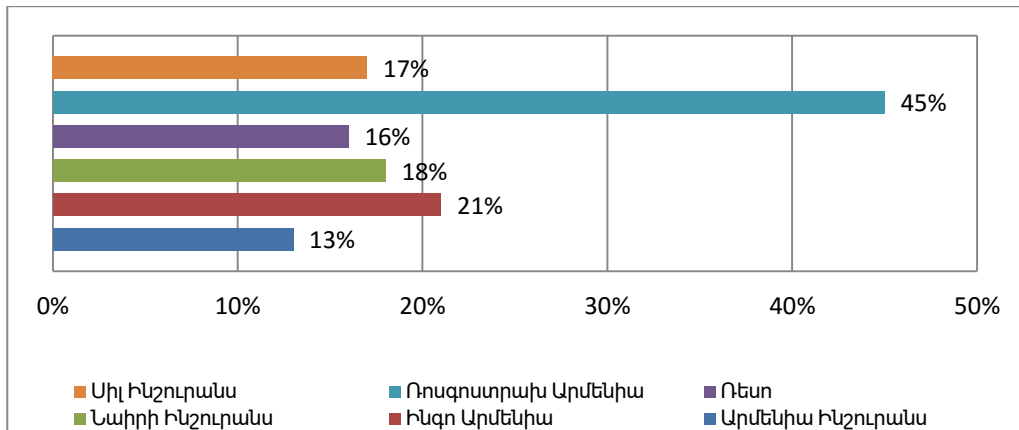
<sup>3</sup> [https://appa.am/index.php?al=appa\\_statistics&actar=archive&pid=4](https://appa.am/index.php?al=appa_statistics&actar=archive&pid=4)

As we can see (fig. 2), the share of online CMTPLI signed contracts among CMTPLI contracts shows growth dynamics in 2020-2022, which indicates that car insurers have started to use online services more. If we carefully analyze the results, we will notice that out of 1.023.006 CMTPLI contracts signed by the end of 2021, 234.808 contracts were signed online. That's just 23% of the total signed contracts, an increase of 8% compared to the previous period. Of course, this is quite a good indicator for our passive insurance market.



**Figure 2.** The share of online CMTPLI contracts in total CMTPLI contracts (%) in 2020-2022

As of August 31, 2022, the leader in the number of online CMTPLI signed contracts is "ROSGOSSTRAKH-ARMENIA" with 91,527 contracts, which is only 45% of CMTPLI contracts, and the lowest figure is "Armenia Insurance" with 13%.



**Figure 3.** The share of online CMTPLI contracts of insurance companies in the total number of CMTPLI contracts

For other types of insurance, online insurance tools are not applicable. Although the websites of insurance companies offer, for example, the service of signing a health insurance contract online, the process is not completely digitalized, that is, the customer must necessarily visit the insurance company to sign the contract and settle other documentary and legal issues.

**Conclusions.** The low level of development of the online insurance market is caused by a number of factors.

- Insurance companies have a problem of full establishment, that is, the insurance market is still at an early stage of development and there are many problems and gaps that need to be solved.

- Public attitude towards insurance services is not very good. If the given type of insurance is not mandatory, such as CMTPLI, then people are either not informed or have no desire to purchase the given insurance product. The problem here is multi-layered, related not only to being uninformed, but also to socio-economic, national, cultural factors with world perception and other problems.

- The personnel of insurance companies need training, we are talking about actuaries, who are very much needed by insurance companies.

- There is a number of problems related to the implementation of the risk management system.

- Difficulties in concluding contracts on online platforms are also among those factors, as citizens aged 50 and older have difficulties using websites.

- Accidents filed through the ASWA system application are currently the cause of major fraud. The main reason is that insurance companies do not have the ability to carry out subrogation in connection with claims filled online.

- One of the obstacles to the ineffective development of online insurance is the strict supervision of the insurance sector by the Central Bank. This control does not allow insurance companies to have a more flexible field of insurance premiums. And in international practice, one of the conditions for introducing online insurance is the system of flexible insurance premiums, which is used for different types of insurance. This is one of the main reasons why other types of insurance do not develop faster.

Based on the need to solve the existing problems in the insurance sector, as well as to increase the welfare of the population, increase economic stability, and regulate the activities of insurance companies, RA has a great potential to expand insurance products on online platforms, which can be facilitated by various insurance tools, as well as the introduction of mandatory insurance types into the insurance system.

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### Anush TUMANYAN

#### **Problems of digital insurance development in the Republic of Armenia**

*Key words: digital insurance, CMTPLI, AI, internet of things, blockchain, chatbot*

Today, almost all sectors of the economy use information systems, technologies, especially various artificial intelligence tools, the use of which leads to the emergence of such a term as digital insurance. Digital insurance does not have a clear definition, but in general it can be described as signing insurance contracts, reviewing, receiving information about an accident, and performing any other insurance-related activities using devices or systems. The article presents the definitions of digital insurance, an attempt is made to present and analyze the main insurance tools (internet, big data, chatbot, blockchain) that are used in the global and insurance markets of the Republic of Armenia. A numerical analysis of artificial intelligence tools of the global insurance market has been carried out. As the main direction in the development of online insurance, the dynamics of online insurance premiums, which characterizes the RA CMTPLI system, the share of online CMTPLI *contracts* of insurance companies in the total number of CMTPLI *contracts* and the share of online CMTPLI *contracts* in the total number of CMTPLI *contracts* (%). Also, issues were raised that impede the development and expansion of the RA digital insurance market.