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DIGITAL TRANSFORMATION OF THE INTERNATIONAL INSURANCE MARKET: INNOVATIVE IT SOLUTIONS FOR ENHANCING COMPETITIVENESS

ЦИФРОВА ТРАНСФОРМАЦІЯ МІЖНАРОДНОГО СТРАХОВОГО РИНКУ: ІННОВАЦІЙНІ ІТ-РІШЕННЯ ДЛЯ ПІДВИЩЕННЯ КОНКУРЕНТОСПРОМОЖНОСТІ

Honchar H. P./ Гончар Г.П.*PhD in Economics, as.prof./ к.е.н., доц.*

ORCID ID: 0000-0002-1484-1666

*Chortkiv Educational and Research Institute of Entrepreneurship
and Business of West Ukrainian National University
Ukraine, Chortkiv, 46, S. Bandera St., 48500*

Abstract. This article discusses the impact of digital technologies on the transformation of the insurance market. The introduction of artificial intelligence, blockchain technologies, and big data analysis are contributing to significant changes in business processes and improving customer experience. The main issues highlighted include the need to adapt the regulatory framework and build trusting relationships with customers. The purpose of the study is to examine the impact of the latest technologies on the efficiency of insurance services and their accessibility. The study found that digitalization increases competitiveness, reduces costs and risks for insurance companies, creates conditions for high-tech business, and improves the quality of life of customers. The conclusion emphasizes that the development of technology is a key factor in ensuring financial stability and improving the living standards of the population.

Keywords. Insurance market, competitiveness, digitalization, blockchain, artificial intelligence, Internet of Things (IoT), robo-advisers, digital technologies

Introduction.

In today's world, digitalization is becoming an integral part of our lives, changing standards and approaches to doing business. The insurance market is no exception, and its transformation under the influence of the latest technologies, such as artificial intelligence, blockchain, and big data, is becoming extremely relevant. In view of this, the article is devoted to studying the impact of digital technologies on the insurance industry, analyzing the main challenges and benefits of implementing these innovations.

The main focus of this study is to identify the impact of digitalization on the competitiveness of insurance companies, the availability and quality of insurance services. Particular attention is paid to the adaptation of the regulatory framework to



the new conditions arising from digital transformation.

Main text

The digitalization of all spheres of life, along with the expansion of artificial intelligence technologies, has profoundly changed the standards, approaches, and requirements for the business environment in recent years. National digital transformations began with the digital society in the global dimension of the digital economy. These processes undoubtedly could not bypass the insurance sector, which required special resilience in the face of the ongoing crises associated with the global pandemic and numerous military conflicts around the world.

The transformation of the insurance market in Ukraine is influenced by integration into the European and global space, which affects the level of financial security of the domestic insurance market and requires constant monitoring. Problems and trends in the regulation of the insurance market in Ukraine during transformational changes are considered by researchers [1]. The transformation of insurance culture in the insurance market is closely related to customer relations and efforts to build trust.

The financial and insurance sectors are undergoing a digital transformation driven by the rapid development of new technologies. At the forefront of this revolution are blockchain and generative artificial intelligence technologies that have the potential to change the way these industries currently operate.

Until 2018, the insurance industry was largely dependent on outdated data and systems, but recently it has been actively using new technologies. In addition, since 2018, we have seen the development of insurance infrastructure, artificial intelligence systems, digitization of insurance data, and blockchain technologies. Nevertheless, before getting acquainted with the latest trends and innovations in the insurance industry, it is important to understand what these technologies mean [2].

Big Data: The use of big data allows insurers to analyze large amounts of information to better understand customer risk and behavior.

Big Data can include structured, semi-structured, and unstructured data that can be mined for insights and used in machine learning, predictive modeling, and other advanced analytics programs [3].



Artificial intelligence and machine learning: these technologies help automate processes, improve customer experience, and allow for more accurate risk analysis.

Time-based insurance (UBI): This model allows customers to pay for insurance according to how they use their assets.

Telematics: Telematics technology allows insurers to collect detailed information about driver behavior, which can be used to calculate premiums.

Insurance for the IoT sector (Internet of Things): IoT technologies allow insurers to collect real data on the state of customers' assets, which can be used to accurately determine risks.

Robo-advisors and chatbots: These tools help automate customer interaction, including processing inquiries and settling claims.

Blockchain: Blockchain can be used to create prosaic and immutable records of insurance policies and payments.

These technologies help insurance companies improve their services, optimize processes, and provide customers with a better experience.

Technological advances have changed the world and become a powerful tool that is reshaping the insurance industry. Insurance companies are providing their customers with more customized and tailored products and services by leveraging their industry expertise and the latest advancements. Although the insurance business has long been a sales-based business, it has moved to a hybrid model - “physical” - after digitization.

Standard and vital insurance processes, such as policy issuance, claims handling, pre-employment medical examinations, etc., which were predominantly paper-based, are now being supplemented by digital integration to ensure a seamless customer experience and optimize processes. In the insurance sector, this has dramatically changed the rules of customer interaction.

Machine learning, artificial intelligence, automation, and data analytics are examples of technologies that have contributed significantly to the digitization of insurance processes.

In the context of the Covid-19 pandemic and military escalation, technology-based insurance companies can instantly provide personalized customer service



through virtual assistance and AI-powered chatbots that monitor claims, renewals, and even customer complaints.

Nevertheless, the Ukrainian financial market is becoming increasingly saturated with technological products, such as mobile wallets, contactless payments via smartphones using NFC technology, and blockchain developments. Regulation and use of cryptocurrencies in Ukraine are becoming increasingly common. In addition, several private and public platforms have recently emerged aimed at expanding and developing Ukrainian startups.

The insurance market is constantly changing under the influence of new technologies, which allows insurance companies to improve their services and provide more efficient insurance for customers. Technology also helps in collecting and analyzing data, which contributes to improving the decision-making process in the insurance industry.

As a result, insurance companies can more accurately assess risks and offer customized solutions for each client. Technologies also help automate processes, which reduces the time for concluding transactions and simplifies customer interaction. The use of the latest technologies in the insurance industry helps to reduce risks and improve customer service.

This contributes to the development of innovative products and services that meet the needs of the modern consumer. This opens up new opportunities for the development of the insurance market and improvement of its competitiveness. Such innovations allow insurance companies to be more flexible and adaptive to changes in the market.

The use of the latest technologies in the insurance industry helps to improve the risk management process and ensure more efficient customer interaction. This contributes to the creation of innovative products and services that meet the needs of modern consumers and makes the insurance market more competitive.

Digital technologies allow insurance companies to improve customer service by introducing online services and quick resolution of issues.

In the face of uncertainty and intense competition, insurers are forced to develop



new company management strategies based on modern methods of analyzing and evaluating both the insurance market in general and the insurance company in particular. Revolutionary technologies and software for collecting and processing large amounts of data help them in this. Such tools allow them to respond quickly to changes in the industry and make informed management decisions.

New management strategies allow insurers to effectively adapt to changes in the market and ensure the company's competitiveness. The use of revolutionary technologies helps to improve analysis and decision-making processes. For example, the use of artificial intelligence and data analytics allows insurance companies to more accurately predict risks and build effective strategies. This helps to increase the competitiveness and success of the business in the face of constant changes in the market.

The pace of change in the insurance industry is increasing, which contributes to an increase in the number of available insurance products on the market, escalates innovation to meet market needs, and helps improve the country's financial stability. This is possible due to the right combination of traditional strategies with modern technologies, as well as cooperation in the industry and the introduction of the latest technologies.

Therefore, the transformation in the insurance sector, the introduction of innovative and modern digital models of economic development in general, taking into account political stability and overcoming possible attempts to split the Ukrainian population, which will obviously be inspired by the Russian side in the face of losing an open war, should be an important aspect of the future of the Ukrainian economy.

Modern technologies such as artificial intelligence (AI), Big Data, and blockchain are transforming the insurance industry, and the industry must embrace these technologies to remain competitive. The ability to efficiently automate tasks at scale will set successful companies apart from their competitors. The rapid development of technology can disrupt traditional insurance models. InsurTechs that use artificial intelligence, Big Data, and blockchain can provide innovative insurance products and services to change the traditional approach to insurance. Failure to adapt to modern



technologies can lead to a loss of market share.

However, at the same time, insurance companies are also facing new challenges related to cybersecurity and data protection. They have been quick to adapt to new requirements and challenges by adopting digital technologies to improve customer service and optimize processes. This has allowed them to remain competitive in the market and ensure stable development in the difficult conditions of today.

Digital technologies allow insurance companies to optimize processes, increase efficiency and provide better customer service. At the same time, it is important to take into account the needs and expectations of modern consumers, as well as to ensure reliable cyber protection of the entire insurance process.

The insurance industry stores huge amounts of confidential customer data, making it an attractive target for cybercriminals. Data breaches and cyberattacks can lead to financial losses, reputational damage, regulatory fines, and legal liability. Cyberattacks are becoming increasingly sophisticated and pose a serious threat, as high-profile cyberattacks have recently hit the industry. The stakes in the fight against cyber risks are high, as hackers can steal sensitive data such as customer information and financial records, disrupt operations, affect financial stability, and severely damage a company's reputation.

Artificial intelligence tools and automation strategies are revolutionizing the development process with AI-assisted design. This will lead to better software quality, more efficient testing, and faster release cycles. A low-code and no-code AI development platform automates documentation to ensure reliable software quality. The main goal is to use scarce inertial resources as efficiently as possible by automating routine tasks with AI.

Robust security protocols and resilience strategies are crucial to increasing customer trust and minimizing business risks in the digital world. Companies must rely on a zero-trust architecture, cyber resilience, and rapid response to cyber incidents. Restricting access with minimal rights and multi-factor authentication (MFA) are central. Network segmentation and real-time analytics help to proactively identify and mitigate threats, while visibility and compliance further strengthen customer trust.



Technology is evolving rapidly, and new methods of risk mitigation are being developed at a rapid pace.

The most popular technological solutions already used in insurance are: big data, artificial intelligence and machine learning (20%), time-based insurance (“pay as you drive”) (13%), telematics (13%), insurance for the IoT sector (12%), robo-advisers and chatbots (10%), blockchain (4%). The integration of telematics technologies demonstrates the latest revolution in the insurance industry. The use of telematics in car insurance is traditionally called usage-based insurance (UBI), where premiums are based on the actual use of the car.

Insurance telematics options that have become popular over the years include behavior-based auto insurance pricing models such as Pay-As-You-Drive (PAYD), Pay-How-You-Drive (PHYD), Manage-How-You-Drive (MHYD), and Distance Based Insurance (DBI). The Pay As You Live (PAYL) concept could be a game changer in health insurance. In the insurance sector, with innovative transformations, the use of advanced technologies such as virtual reality (VR) and augmented reality (AR) for risk control, such as simulating risk scenarios for training purposes, is growing. Insurers are realizing the opportunities and are beginning to apply immersive AR/VR technologies to improve services [4].

Insurance companies should be prepared for five major trends in the insurance industry, according to the Top Ranking of the World's Largest Insurance Markets. These trends include increased dependence on technology, the introduction of embedded insurance products, and so on.

1. The trend toward trust in technology is expected to increase over time. Many customers already prefer to file claims via mobile phone, as technology has become an important part of insurers' operations. Usage-based insurance (UBI) has been growing significantly. Using telematics devices or mobile apps, UBI insurance tracks driver behavior and calculates rates based on individual driving patterns rather than traditional risk profiles. In the coming years, this type of personalized underwriting may become more common, so insurers need to know how they can use this data to set rates.

2. Interest in usage-based insurance (UBI) has clearly increased. Using telematics



devices or mobile apps, UBI insurance tracks driver behavior and calculates rates based on individual driving patterns rather than traditional risk profiles. In the coming years, this type of personalized underwriting may become more common, so insurers need to know how they can use this data to calculate rates for their customers.

3. In a highly competitive market, the speed to market of new products and services will become even more important than ever before. Insurers need to be able to quickly create insurance programs that meet customer needs without sacrificing quality or accuracy. An insurer risks losing potential customers if it fails to meet the needs of its clients.

4. Bundled insurance is insurance that can be purchased with another product, such as a car or home loan. In 2023, this type of insurance will be the most important as companies try to simplify their complex products by providing integrated solutions that meet the needs of consumers. To better advise clients looking for this type of insurance product in the future, agents and intermediaries will need to have knowledge of embedded products.

5. Due to the pooling of resources, large insurance companies will continue to outperform medium-sized insurers in market share. Smaller companies, on the other hand, are targeting smaller niche customers who are looking for specialized insurance coverage solutions at the regional level that larger players cannot offer due to the challenges of operating in small towns. Medium-sized insurers should focus on expanding their services.

The choice of significant advantages, the use of digital technologies is accompanied by a number of challenges and concerns, including: replacing employees with artificial intelligence, compatibility of understanding and interpretation of decisions made using it, and preventing the possibility of misuse or establishing undesirable consequences. However, experience shows that those insurers that demonstrate agility and willingness to learn on the path of digital transformation.

Results and Conclusions.

Insurance companies need to be prepared for five major trends that are reshaping the industry, according to the Top Ranking of the World's Largest Insurance Markets.



These trends include increased reliance on technology, the introduction of embedded insurance products, and more. The adoption of digital technologies, despite challenges such as AI-driven job replacement and data interpretation concerns, remains essential. Insurers demonstrating agility and a willingness to embrace digital transformation are poised to succeed.

The use of digital technologies in the insurance market will help to increase the competitiveness, accessibility, and quality of insurance services. The introduction of such technologies reduces costs and risks for companies, and creates conditions for high-tech business that improves customer safety and quality of life. In today's environment, insurers are encouraged to consider the development of technology and preventive services as part of their business transformation, and regulators are encouraged to adapt legislation to facilitate the introduction of digital innovations.

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