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FOREIGN EXPERIENCE OF INNOVATION IN INSURANCE OF VEHICLES

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Abstract: This article discusses innovative solutions for vehicle insurance using telematics and digital insurance. The US auto insurance market was analyzed using innovative insurance services offered by insurance companies for consumers of insurance services. An analysis of insurance products is made, and the main advantages of innovation in auto insurance are identified.

Key words: insurance, insurance companies, innovations in insurance, smart insurance, telematics in insurance, digital insurance.

1. Introduction.

Entrepreneurs and business communities are constantly on the lookout for new projects. Sometimes breakthrough scientific discoveries are the impetus for the development of new opportunities, sometimes entire sectors of the industry are stimulated by the emergence of new technologies, and often large companies are created due to innovative ideas.

One significant untapped opportunity with enormous potential is Digital Insurance. Moreover, the benefits of these solutions are not limited to additional business potential for various sectors of the economy, but can also provide significant savings to consumers and increase road safety in general.

Digital insurance is a fairly new term. The insurance industry is conservative, but technology is slowly making its way into it too, largely because it saves consumers time.

2. Literature review.

According to the analyzes conducted by Melnichuk (2018), Shevchuk and Polgeim (2014), car insurance faces a large number of problems, therefore, it is necessary to look for ways to immediately solve them, since this type of insurance has good prospects in the future. During the analysis, the following main problems faced by motor insurance were identified:

– the problem of economic feasibility of insurance rates;
– lack of a unified methodology for assessing damage; fraud;
– increase in the minimum authorized capital for insurance companies;
– fraud problems;
– imperfection of the legal framework;
– weakness of insurance supervision;
– problems associated with frequently changing rules and procedures for passing technical inspections.

Mantsurov (2016) argues in his research that in the modern world the scope of telematics solutions is expanding every day. The penetration of topics into various branches of innovative activity is the main trend in the modern information environment. At the current stage of development of telematics, the main interaction format is “Machine to machine " (M2M). The most prominent representative of telematics solutions is the system of satellite monitoring of transport (SMT) - a complex electronic and technical system consisting of a combination of ground and space equipment, designed to determine the location (geographical coordinates and height), as well as traffic parameters (speed, direction of movement, etc.). .d.) for ground, water and air objects.

According to Dromenko (2016), every day modern man is faced with new tasks and modern technical means are offered to solve them. Yesterday, a modern anti-theft system was enough for a car, but today it needs telematics. The essence of telematic services is the use of various technologies (computer, sensor, telecommunication) to provide services to the driver of the vehicle at a distance.

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One of the main functions of telematics is vehicle movement monitoring. That is, at a distance you can tell where the car is located, on what route and at what speed it is moving.

According to the analyzes carried out by Zhilkin and Mantsurov(2016), there is currently no well-established definition of what telematics is, however, it is well known that this term is widely used when talking about the field of telecommunications. Telematics is increasingly mentioned in connection with innovative solutions in various sectors of the economy. The term "telematics" is used by specialists and analysts to describe modern technologies for data exchange between various information objects, people, devices and information systems. Telematics as an industry is based on the result of scientific and technological progress in the field of telecommunications and informatics.

According to Bondarenkov (2017), there are two main approaches to insurance with telematics: 1) pay per you drive (pay while you drive); 2) pay as you drive (pay as you drive).

According to Tsyganov and Bryzgalov (2018), digital insurance may mean part of economic relations due to the presence of insurance interests of organizations and citizens and their satisfaction through digital technologies. In other words, digital insurance is a way to implement insurance protection based on digital technologies.

According to a study by Bryzgalov (2018), the digitalization of insurance activities and the emergence of digital insurance lead to a change in competition in the insurance market. Changing behavior patterns of policyholders when choosing insurance services using digital technologies brings to the fore the competitiveness of insurance companies not for the choice of the buyer, but for the level of recommendation of their service in the digital technology used.

3. Research methodology.

The methodological basis of the research is the dialectical theory of development, the fundamental provisions of the theories, including the analysis and theoretical generalization of the essence, functions, roles and processes of development and implementation of insurance products and services in auto insurance . Methodological research aimed at the effective organization and improvement of the auto insurance system through the implementation and sale of insurance products and services.Also studied are innovative methods of auto insurance in foreign practices.

4. Analysis and results.

At the present stage of development of vehicle insurance, it can be concluded that the auto insurance market is the most dynamically developing branch of property insurance. In addition, this market segment is the most advanced in the implementation of innovative technologies and innovation. The leaders in this area, of course, is the US auto insurance market, which is one of the most mature and advanced car markets in the world.

Innovations taking root in insurance have also gone through multiple innovation cycles. Smart insurance was the first to appear on the insurance market , their further development led to the creation of insurance telematics (1995-2000). Starting from the end of the 21st century , insurance programs began to appear using insurance telematics. However, telematics was originally created to combat fraud and theft.

Today, insurance telematics is a rapidly growing system of telematic technologies, which includes a wide range of innovations, as well as constantly developing infrastructure components.

At the same time, the world does not stand still - technologies have reached a new level, cars themselves have become "smarter", telematics, in many cases, no longer requires additional equipment. All this, in turn, was reflected in Smart Insurance.

With the development of the digital economy, insurance companies have become more technologically oriented, while maintaining industry specifics.

In all areas of our lives, the most advanced approaches are increasingly being used, such as Big Data - which allows you to collect a significant amount of information and new mathematical data models, Artificial Intelligence (AI) - which allows you to process this data and Machine Learning (ML) - which allows you to constantly improve data processing algorithms.

It goes without saying that the “digitalization” of technological processes is largely becoming the basis of “Smart Insurance”, which affects both traffic safety in general and the possibility of

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optimizing actuarial risks. In every sense, insurance telematics from Smart Insurance has deservedly moved into the category of Digital Insurance.

Technologies of "Digital insurance", first of all, are designed for commercial companies (car manufacturers, insurance companies, etc.), which, in turn, in one form or another, offer them to customers. The current market and growth potential of Digital Insurance clearly demonstrates only a small share of the current market and growth potential of the commercial growth opportunities of using Digital Insurance ready-made business solutions.

In 2021, the digital insurance market amounted to 19.6 billion US dollars. And the market forecast for five years was 66.8 billion US dollars. The compound annual growth rate for the next five years will be 27.7 percent.[1]

With the application of new technologies in auto insurance, especially digital insurance, speed, acceleration and hard braking are usually measured, as well as mileage and time of day (telematics) in which the driver is on the road. The better and safer the driver drives, the lower the insurance rates. While driving style is certainly important, there are other factors such as mileage, location, time the car has been used, weather conditions, and even the condition of the car's tires.

The technologies used to track vehicle telematics data vary. Typically, driving data (telematics) is collected in the following ways:

- Via in-vehicle systems such as BMW Connected Drive [2]or GM OnStar ;[3]
- Through a device connected to the vehicle's on-board diagnostics (OBD-II) port;
- Via smartphone app
- Via a device called a "tag", which is mounted on the windshield or rear window and connected to a smartphone via Bluetooth
- Through a device called a "black box" that connects to the vehicle's on-board diagnostic system (CANBUS)

How driving habits affect car insurance rates usually depends on the insurer, but in a typical "Digital Insurance" plan, driving habits are tracked over a period of time. After the initial verification period has ended, the driver may be offered a discount based on telematics data.

“Digital insurance” is certainly beneficial for safe drivers. Some insurance companies even give you an automatic discount simply for participating in the program.

Let's see what kind of discounts are offered to drivers for using certain Digital Insurance solutions for drivers in the United States. From the table below it becomes clear that drivers receive a discount of up to 10% of the cost of the policy simply for participation and, additionally, up to 40% for safe driving. That is, up to half the cost of the policy.

Table 1

Review of insurance discounts based on digital insurance in the United States

Company	Participation discount	Additional discount
Allstate Insurance Company	Yes, cashback	Cashback every six months for safe driving, Allstate rewards for completing the safe driving challenge
American Family Insurance	10% discount for participation	Up to 20%
Farmers Insurance Group	5% discount for participation	Up to 15% when renewing the policy; up to 10% more for young drivers; eligible to win up to $100 in monthly reward
Liberty Mutual Insurance Group	Yes, depending on the state	Up to 30% for the entire term of the policy
MAPFRE Insurance	Yes	Discounts will apply on renewal

[1]https://www.marketsandmarkets.com/Market-Reports/digital-transformation-market-43010479.html
[2]https://www.bmwusa.com/explore/connecteddrive.html
[3]https://www.onstar.com/us/en/plans-pricing

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Nationwide Mutual Insurance Company	10% discount for participation	Up to 40% when renewing the policy
Progressive Corporation	Yes, but depending on the state	Discounts will apply on renewal
Travel Insurance	Yes, the participation discount applies to the first term of the policy	Up to 20% when renewing the policy
Safeco Insurance	Yes, participation discount	Discount from 5% to 30%
State Farm Insurance	Not	Discount is adjusted at policy renewal (usually every six months)
USAA	10% discount for participation	Up to 30% when renewing the policy

"Digital insurance" is officially called " Usage-based insurance". insurance — UBI) [4]and is divided into three main approaches:

1. Paymentonmileage based insurance
2. Pay-when-you- drive (Pay As You Drive – PAYD)
3. Pay - as - you - go (Pay How You Drive - PHYD)

Mileage pay allows drivers to pay at a flat rate, paying only for the mileage driven by the car during the trip and is usually used to calculate the price of short trip insurance.

PAYD and PHYD approaches are commonly used to calculate long-term car use policies, and they have different approaches, advantages and disadvantages. There are solutions that combine both approaches to provide consumers with all the benefits. In turn, there are insurance companies that also offer their customers a choice of Digital Insurance technology that best suits their requirements. (Table 2)

Table 2

Business models of "Digital insurance"

	Focus mileage (PAYD)	**Behavior Focus (PHYD)**
Principle	Pricing based on mileage	Pricing based on behavioral data such as speeding and braking
Advantages	Less intrusive approach in terms of collecting personal data	Analysis of factors affecting user risk
		Rewards users for safe driving to reduce claims
limitations	Lack of important data that can help better assess the user's risk	Complex data scores requiring complex analysis for risk assessment
	Does not reward safe driving	
	Not an attractive proposition for high mileage drivers	Drivers with low mileage are not rewarded

The application of one digital insurance approach or another affects each participant differently. For example, regulators welcome the use of innovative approaches in auto insurance (Table-3).

[4]https://www.forbes.com/advisor/car-insurance/usage-based-insurance/

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Table-3

Regulatory perspective on digital insurance

Want variables that are fair	**Most states require prices to be reasonable and not excessive or unfairly discriminatory**
	UBI scores vary based on driving behavior that is proven to be predictable and clearly "fair"
UBI is savvy and manageable	Regulators are concerned about factors such as the use of consumer credit scores, which in their view, and the difference from UBI "doesn't make sense" to consumers
	Regulators prefer variables that give the consumer "control" to reduce costs without reducing coverage
Support green initiatives	Safer driving and fewer miles significantly reduce emissions
	14 states specifically call for UBI in their climate change plansPAYD
Supports lifesaving efforts	Every year, road traffic accidents cause approximately 3 million injuries and 35,000 deaths, and the government is working to reduce this number through various programs.
	Driver feedback greatly reduces risky driving

Consumers of insurance services also respond positively to innovations in vehicle insurance, especially if digital insurance takes place (table-4)

Table-4

Consumers about digital insurance

Understand and want to have control over the cost of an insurance policy	**Consumers don't like using credit scores because it doesn't make sense**
	"Good" drivers agree, receive discounts for participation and have the possibility of even greater discounts
Want to access useful information about driving style	Accidents are the biggest killers of teenagers. UBI programs provide parents with a variety of tools to help monitor and advise their teen drivers
	Many adults encounter older parents who have impaired driving. UBI can help assess skill deterioration and provide helpful safety tips
Like options for additional services	Consumers generally like the options
	Programs offered range from basic to premium. Some consumers like additional services
Value companies that are "green"	Society is becoming more environmentally conscious and consumers value green companies
	Young consumers enjoy new and different green products, even if they don't like them at first

For these reasons, the majority of consumers are positive about Digital Insurance and the participants are very satisfied.

Digital insurance programs lead to better customer retention and increased profits, respectively, insurance companies are striving to implement them as much as possible. Early adopters of Digital Insurance solutions have a huge advantage. “The key to success in UBI insurance will be an early transition. Insurers feel an overwhelming need to deploy systems as quickly as possible because there is a possibility that the first module a customer installs will be their last. Once an insurer becomes aware of a client's behavior and can accurately and affordably insure their risk, the client is

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unlikely to change insurers. A competing insurance company will always be at a disadvantage in not knowing a customer's driving behavior."[5]

Telematics is also a powerful tool for attracting and retaining customers. For example, a Try - Before - You - Buy (TBYB) telematics product can remove barriers to customer acquisition by providing a no-obligation channel to attract safe drivers. Programs have proven to be more effective customer acquisition tools than price comparison sites, in part because of their ability to predict risk. TBYB programs enable insurers to offer value-added offerings (such as premium discounts, driver training, and gamification) to customers in a fully digital customer experience environment.

5. Conclusion.

There is no doubt that Digital Insurance technologies represent a huge opportunity for technology providers, as well as for insurance companies, car dealers, car manufacturers and consumers themselves.

Companies that consciously and thoughtfully approach these opportunities will reap significant strategic benefits.

After studying this topic, we came to the conclusion that the smart insurance market is waiting for growth, but for large-scale deployment, work is needed to focus services on the client and create a value system for this type of service for the insured.

Also, it should be taken into account that digitalization entails, in addition to improving the quality of services and expanding the range of insurance services provided, increasing the degree of vulnerability of the country's insurance market to external and internal cyber threats . First of all, it is the presence of vulnerabilities in the system, the possibility of data leakage, dishonest and fraudulent actions as a result of cyber attacks.

But, despite all the risks, digitalization is the future. Technology is changing customer preferences and shaping a new insurance culture.

References

1. Melnichuk V.A. (2018) Problems and prospects for the development of car insurance in Russia from the point of view of insurance companies. Bulletin of the Siberian Institute of Business and Information Technologies. No. 2 (26) 49-54 pp.

2. Shevchuk N.A., Polgeim A.V. (2014) Current state and development problems of the auto insurance market in the Altai Territory. Bulletin of the Altai State Agrarian University No. 3 (113), pp. 15-158

3. Mantsurov K.B. (2016) Integration of satellite monitoring systems of vehicles into a single information space of enterprises / / World trends and prospects for the development of an innovative economy: materials of the V Scientific and Practical Conference of Young Scientists Moscow, PFUR, May 19, 2016 - M .: PFUR. - S. 153-161.

4. DromenkoA.Yu. (2016) Telematics in insurance. International Journal of Humanities and Natural Sciences, vol.1, part 6 204-206 pp .

5. Zhilkin O.N., Mantsurov K.B. (2016) Integration of telematic tools into the activities of insurance companies. Smart insurance project. University Bulletin No. 7-8, pp. 202-207

6. Bondarenko I.A., Bondarenko A.A. (2017) Fintech in international trade in insurance services. Russian foreign economic bulletin. No. 12, - 43-53 pp.

[5]https://www.strategyanalytics.com/

Corresponding author: **RUSTAM NAZAROV**

Submitted: 27 July 2022, Revised: 09 August 2022, Accepted: 18 August 2022, Published: Nov 2022

7. Tsyganov A.A., Bryzgalov D.V. (2018) Digitalization of the insurance market: tasks, problems and prospects. Economics and Management. No. 2, - pp. 111-120

8. Bryzgalov D.V. (2018) Digitalization of competition in the insurance market. Economics and Management. No. 2, - pp. 121-128

9. Elmirzaev, Samariddin, and Nazokat Kurbankulova. "Tax Arrears, Tax Compliance and Tax Debt Management in Uzbekistan: Existing Issues and Possible Solutions." Research Journal of Finance and Accounting 7.2 (2016).

10. Элмирзаев, С. Э., and Н. Ш. Шавкатов. "Давлат-хусусий шериклик муносабатларининг илғор хориж тажрибалари ва мамлакатимизда қўллаш истиқболлари.“." Халқаро молия ва ҳисоб” илмий электрон журнали 3 (2019).

11. Elmirzaev, S. E. "Improving tax relations in corporate finance management." Abstract of dissertation in economic sciences. Tashkent (2017).

12. Kler, Rajnish, et al. "Optimization of Meat and Poultry Farm Inventory Stock Using Data Analytics for Green Supply Chain Network." Discrete Dynamics in Nature and Society 2022 (2022).

13. Kumar, Anil, et al. "Smart power consumption management and alert system using IoT on big data." Sustainable Energy Technologies and Assessments 53 (2022): 102555.

14. Khan, Mohd Abdul Rahim, et al. "OPTIMIZING HYBRID METAHEURISTIC ALGORITHM WITH CLUSTER HEAD TO IMPROVE PERFORMANCE METRICS ON THE IOT." Theoretical Computer Science (2022).

15. Shavkatov, N. "ANALYSIS OF INFRASTRUCTURE PROJECTS ON THE BASIS OF PUBLIC-PRIVATE PARTNERSHIP AND THEIR FINANCIAL EFFICIENCY INDICATORS." International Finance and Accounting 2020.6 (2020): 5.

16. Elmirzayev, S., and N. Shavkatov. "Public-private partnership and corporate social responsibility." International Finance and Accounting 2020.1 (2020): 29.

17. Kniazieva, Tetiana V., et al. "Current trends in the formation and development of insurance marketing in Ukraine." Risk Management and Insurance Review 24.3 (2021): 279-292.

18. Ignatovich, Liliya. "Use of innovative technologies by insurance market entities. Telematics in car insurance." Three Seas Economic Journal 1.2 (2020): 7-11

19. Yehorycheva, Svitlana, et al. "Innovations in the insurance market of a developing country: Case of Ukraine." Investment Management & Financial Innovations 17.4 (2020): 175.

20. Martseniuk, Olena. "CURRENT TRENDS AND PROBLEMS OF THE MARKET OF CIVIL LIABILITY INSURANCE OF VEHICLE OWNERS AND WAYS TO SOLVE IT." Publishing House “Baltija Publishing” (2022).

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