

Insurance telematics: problems and development prospects in Russia

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Abstract — The topic of digitalization of the economy is one of the most popular topics, and the digitalization of financial services is almost the driver of its development. At the same time, digital technologies have gained the greatest popularity in financial services in the banking sector. As the analysis showed, insurance is one of the less “digitized” areas not only in Russia but also abroad, which is due to both the least interest of insured persons in the transparency of their life and the lack of the ability of insurance companies to invest free financial resources in digital technology. If we consider the Russian experience, the lack of financial opportunities for insurance companies is largely due not only to weak support from the state, but, on the contrary, to an increase in the regulatory burden on the insurance business. Therefore, not all Russian insurance companies are ready to use digital technology. However, for the further development of the insurance sector, new growth points are required, which are primarily associated with a decrease in the cost of the insurance policy. It is possible to ensure a reduction in the cost of an insurance policy both by reducing the amount of insurance coverage by policyholders (buying policies with a franchise, buying policies without intermediaries, purchasing policies with proportional liability), and by reducing costs by the insurance company itself. The use of digital technologies by insurance companies (smart contracts, telematics, blockchain, aggregators and price comparison services) can combine both directions and reduce the cost of insurance policies. Insurance telematics in this direction is the most promising and allows determining the risk level of the insurance company client more efficiently, respectively, more effectively carry out risk selection, and reduce the cost of the insurance company to maintain insurance underwriters in the staff, which will lead to the possibility of switching to robotization of this (underwriting) process and improve the efficiency of the insurance business. In this article, the authors revealed the specifics of digitalization of the Russian insurance market, examined the problems and prospects of development of insurance telematics in Russia, taking into account the financial capabilities of insurers.

Keywords — *digital economy, digitalization of the Russian insurance market, insurance companies, digital technologies, insurance telematics, insurance business efficiency*

I. INTRODUCTION

Given the high regulatory burden on the insurance business and the low demand for insurance products, Russian insurance companies are severely limited in their ability to create and promote insurance products that take into account the individualism of consumers, and to realize their costs in implementing digital technologies. In this connection, insurance companies are forced to pursue a cost optimization policy in order to ensure financial stability and increase business efficiency. Therefore, not many Russian insurance companies decide to introduce digital technologies due to the high initial investment in technical equipment and staff training, as well as in the process of application, also training customers to use the necessary telematics devices. In fact, those “not many” insurance companies include companies from the TOP-20, first of all, these are captive companies, i.e. companies included in a financial-industrial (financial) group or holding. Nevertheless, each insurance company has to go through the path of digital transformation on its own, as remote provision of services is becoming a noticeable trend and a real alternative to traditional retail.

One of the first digital technologies that began to be used in insurance is telematics, the technology for monitoring the movement of vehicles was the progenitor of this technology. Telematics in insurance can be used as a tool to increase business efficiency since it allows to manage the risks and expenses of the insurer, reduce the cost of the policy for policyholders and generally allows to build more meaningful and mutually effective relations between the parties to the insurance contract. Insurance telematics gained the greatest popularity in motor insurance making possible to determine the degree of risk of the insured more effectively than traditional insurance scoring parameters that take into account the characteristics of the driver (gender, age, driving experience) and the vehicle used (make and year of manufacture of the car). However, the potential of telematics insurance is not limited to motor insurance. Telematics is gradually being introduced in real estate insurance through the use of smart home technologies, as well as in personal insurance through the use of gadgets for remote health

assessment. The potential of insurance telematics is determined not only by its application in different types of insurance, but also by those advantages that expand the capabilities of the insurance business in improving the management of business processes: sales, underwriting, support of insurance contracts, as well as the settlement of losses of the insured. The use of telematics devices improves the quality of insurance products that take into account the individual needs of customers, and the effectiveness of the insurance business as a whole.

Despite the high potential of using telematics in insurance, as mentioned above, the insurance business is not in a hurry to introduce digital technologies since their application can change both the insurance products themselves and the sales channels, which in turn will lead to the need for new investments to update business itself. In order to be prepared for these changes, insurers will need sources of financing and relevant knowledge and skills in this direction. As a result, insurance companies may encounter a number of problems that could negatively affect their performance and position.

From this perspective, studying the problems of introducing and using insurance telematics plays a strategic role for insurance companies since today the choice of an insurance company by citizens is often determined by the cost of the insurance policy and for many of them, the insurance policy is not available. Determining the fair and correct price for an insurance product (also called pricing) is crucial for both insured drivers and insurance companies. Determining the policy of insurance companies in the context of the expansion of the use of insurance telematics is the main motive of this study.

Currently, there are a lot of research papers on the financial sustainability of an insurer. This is due to the fact that this technology for many countries is an innovative and extremely promising tool, the interest in the use of which has an increasing trend. However, it should be noted that the work is mainly devoted to the use of telematics in car insurance. Firstly, there are research papers aimed at the problems of financial condition assessment of insurers [2,3,4]. The quantitative assessment of insurance risks largely depends on the completeness and reliability of the information received by the insurer from various sources. However, almost all information is of indirect importance, and the data of telematics devices make it possible to directly characterize the driver's driving process itself, which has a direct effect. And the transition to semi-autonomous or autonomous driving in general can lead to a decrease in insurance risk to a minimum, since human error is eliminated. Secondly, a significant number of works dedicated to the study of the influence of telematics on pricing in car insurance are highlighted [5,6,7]. Determining the fair and correct price for an insurance product (also called pricing or pricing) is crucial for both insured drivers and insurance companies. Thanks to better customer segmentation and greater monitoring of their behavior in the process of driving a car, the insurance company increases actuarial fairness in determining the cost of policies for customers. Thirdly, it is necessary to note the studies devoted to the determination of the risks of the insurer and the insured in the application of digital technologies, including telematics [8]. The digitalization process of insurance services is determined not only by the positive aspects (advantages), but also by negative ones, to which various types of risks should be attributed. So technological risks include: cyber attacks, fraud, misuse, theft or manipulation of the insured's digital

personal data. As a result, the costs of ensuring information security will lead to an increase in expenses of insurance companies. As for financial risks, they are largely decisive in the decision to introduce digital technologies. Often, the financial costs of implementation significantly exceed the planned investment limit, and the payback period of this project is several years, which in the context of Russian reality is not always rational.

Nevertheless, with an abundance of scientific works devoted to various aspects of the use of insurance telematics, there are practically no works devoted to the study of the problems of using telematics by insurance companies in the modern economy.

The objective of this scientific research is to study the problems of implementation and application of insurance telematics, as well as to determine its development prospects in Russia.

II. RESEARCH METHODS

As part of the study, an analysis of the current situation in the Russian insurance market was carried out on the basis of statistical data. The use of data from a sociological survey allowed to determine the level of citizens' interest in insurance products.

To achieve the objective of the research we used an induction method, based on a detailed study of changes in the legal conditions for ensuring the financial sustainability of insurers. This information allowed to make proposals of creating conditions aimed at increasing public demand for insurance products.

We also used general research methods, such as: dialectical, historical, comparative.

III. RESULTS

Various digital devices (smartphones, navigators, etc.) become everyday things in our daily lives. So with insurance telematics: some 10 years ago, few people knew about it, today in the global industry insurance telematics is gaining speed and it is used in almost all countries. Russian insurance companies have also begun to introduce telematics devices. Thus, in 2014, a number of Russian insurance companies launched pilot projects for smart insurance. In particular, they began to install navigation and communications equipment to collect information on the driving style of policyholders in exchange for discounts and bonuses. However, the practice has shown that not many owners, after completing participation in the project, wanted to use the telematics device further.

Telematic (also called "smart" in other words) insurance makes it possible to expand indicators on the basis of which the cost of an insurance policy can be calculated. So in car insurance, in addition to statistical indicators (gender, age, driving experience, brand and age of the vehicle, place of residence), dynamic indicators are added that evaluate the driving style of the vehicle (or driving), such as distance traveled, time spent on the road (time of day, range and duration of trips, etc.), features of the road and movement (road surface, an abundance of road signs, driving features, preferred terrain), assessment of the condition and action (movement or stand by) of the vehicle, as well as an assessment of the driver's driving style (speed, acceleration, acceleration-braking, sharp turns, etc.).

The use of insurance telematics has its advantages and disadvantages. Consider the benefits that car owners get when they purchase a smart hull policy:

- the possibility of providing individual tariffs for hull insurance, depending on the driving style and mileage of the vehicle. A driver who follows the rules of the road will pay much less than a driver who adheres to an aggressive driving policy;
- helps car owners save a lot when applying for a hull policy;
- resolve disputes in the event of an insured event, since the availability of recording telematic devices provides evidence;
- increasing the level of safety in the process of driving, as it encourages drivers to drive safely and, accordingly, reduces the likelihood of accidents. Drivers who know that they will have to pay higher for aggressive driving will try to reduce the number of traffic violations;
- the risk of car theft is reduced since the delivered telematics equipment allows to effectively track the movement of the insured vehicle;
- increasing the efficiency of the vehicle, since many telematics devices allow to analyze its condition; and etc.

Insurance companies using insurance telematics also receive certain advantages:

- 1) the possibility of "profiling" the customer base and the development of more targeted tariff plans;
- 2) a tool for motivating drivers to conscious and disciplined driving, which increases traffic safety and reduces the costs of insurance companies;
- 3) the ability to clearly predict and reduce their costs due to:

- a more accurate definition of the risks of policyholders interested in vehicle insurance;
- reducing claims from customers and, accordingly, the costs of processing them and the amount of insurance payments;
- the possibility of early detection or prevention of fraud, as well as reducing the number and cost of fraudulent claims;
- reducing the cost of reinsurance the insurance portfolio;

- 4) the possibility of expanding the customer base due to decent (conscientious) drivers;

- 5) the ability to better adapt insurance products to the individual needs of the insured.

Insurance telematics has also disadvantages:

- telematics equipment cannot evaluate the adequacy of the driver's response. Thus, due to a situation in which the driver needs to brake sharply in order to avoid a collision, and he/she will slow down smoothly in order to please the "black box", which can lead to sad consequences;

- With the growing popularity of the use of telematics devices, insurance companies will have to apply both a reduction in insurance premiums and an increase to cover possible risks. As a result, there may be a situation when a client of a company receives a discount for safe driving, and for unsafe - penal allowances to the cost;
- not all customers will like the implementation of constant control of the driving style, which may lead to certain fraudulent actions on his part;
- telematics devices cannot track all driving features - in particular, driving into the oncoming lane and other offenses that are not associated with sudden acceleration and braking;
- any new gadgets designed to affect the terms of the insurance contract may become outdated, become irrelevant and instead of reducing the cost of the contract lead to its rise in price;
- almost all telematics devices are configured on the Internet.

Considering and comparing the status and development trends of insurance telematics abroad and in Russia, it should be noted that many authors predict fairly high rates of development. Thus, according to the study report [9], the number of telematics insurance policies in the North American and European markets reached 20.9 million units, and by 2023 in the forecast both markets together will cover about 100 million telematics-based consumers of insurance services. The USA, Italy, Great Britain, Canada and France are the largest markets for the sale of telematic insurance policies. The European insurance telematics market is largely dominated by hard secondary black boxes, while self-installed OBD devices and mobile applications represent the vast majority of active sales in North America.

The analysis showed that while abroad the development of digital technologies can be predicted with accuracy, since there are technologies for evaluation and relevant statistics are being kept on them, then Russia is very far behind in this direction: statistics on the use of telematics is carried out only on the basis of each insurance company.

However, there are a number of factors that contribute to the development of "smart hull" in Russia:

- increase in hull tariffs, due to the growth of the exchange rate and deterioration of the macroeconomic situation, as well as an increase in the adoption of decisions of the court on claims of policyholders against insurance companies in favor of the former;
- an increase in the number of car owners who do not want to pay the losses of sloppy drivers and scammers;
- an increase in the number of policyholders wishing to protect themselves from the risk of communication in a judicial proceeding to protect their violated rights.

Not many world analytical agencies undertake to predict the state of Russian telematic insurance, and if they do, they rather positively assess the prospects for its development. For example, according to the forecast of J'son & Partners

Consulting's experts, by 2020 the sales volume of UBI policies in Russia should grow significantly (Fig. 3) and cover more than 5 million vehicle owners (Fig. 1) [10].

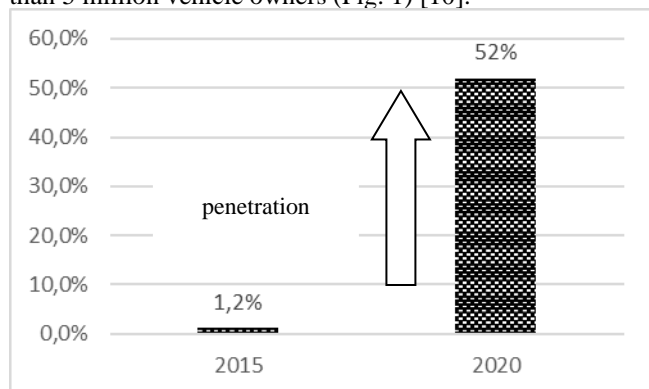


Fig. 1. Forecast of the dynamics of penetration of telematic hull insurance in the Russian market, % [10]

Another consulting company, the Ptolemus Consulting Group, has less optimistic forecasts regarding the introduction of this direction in Russia, with only about 2 million vehicle owners (Fig. 2).

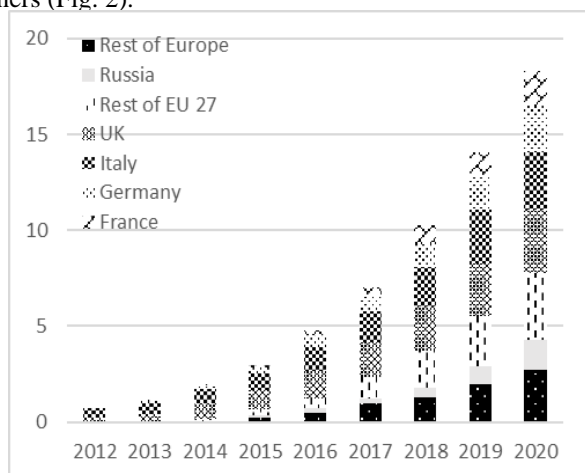


Fig. 2. New telematics-enabled policies (in millions) European personal line market [11]

One of the factors that stimulates the emergence of interest in concluding smart insurance contracts is discounts. As shown by a survey of drivers when giving them a discount, ranging from 1 to 5%, only 2% of policyholders desire to conclude an agreement, while with a discount of more than 20% the number of applicants already increases to 47% (Fig. 3).

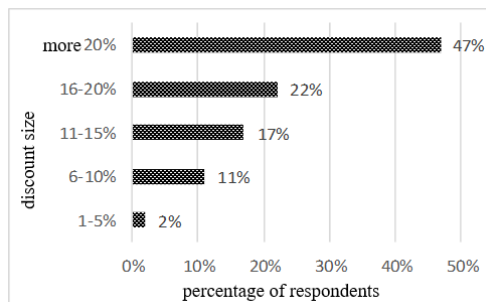


Fig. 3. Relationship between the size of the discount and the desire of drivers to conclude a smart insurance agreement (agreement with a telematic device) [12]

Nevertheless, in Russia the use of insurance telematics is associated with additional problems:

1. a large selection of technical basis (telematics devices on board the vehicle and mobile applications of users);
2. the lack of qualified personnel in insurance companies that could understand the variety of offers on insurance telematics services and select from them those products that really allow real insurance scoring, rather than being loaded with an abundance of telematic indicators;
3. the regulatory, technical and regulatory framework for the use of insurance telematics is weak;
4. the need to rebuild the internal business processes of the insurance company;
5. the difficulty of choosing and rapidly changing existing business models of insurance telematics. Currently, the business model of insurance telematics is systematically moving from the principle of "Pay As You Drive" (PAYD) - analysis of data by time and place of driving, as well as types of roads, to the model "Pay How You Drive (PHYD)" - analysis of data by braking, acceleration, speeding and observing the rules of maneuver, and by 2020, the Manage How You Drive (MHYD) model will increase its share - tracking driver behavior and providing him with feedback. As a result of these transformations, insurance companies will be forced to:

- make changes in the applicable models of insurance telematics, including in documents on actuarial policy;
- call their customers and invite them to re-equip the technological devices used to determine their driving style;
- incur costs for the conversion of technological devices in customers' cars.

6. low rates of full-scale equipment of vehicles in the framework of the ERA-GLONASS project;

7. lack of a unified database of drivers and their driving style, which would be accessible to all participants in the insurance market

8. low information security indicators, including access to the personal data of the insured;

9. the limitations and difficulties with the scalability of the use of technical and technological devices in connection with the need to bear the costs of re-equipment of IT-support of insurance activities and retraining of employees;

10. a low degree of customer interest in purchasing a policy with telematic devices, due to both low financial literacy and low margins for the cost of a policy with a telematic device compared to a policy without a telematic device;

11. the peculiarity of the mentality of the population, primarily the adult population, due to the opinion "everything is new, carries increased costs" both in time to study the devices and their use, and financial costs, because if necessary, proof of their rights in court will require appropriate regulatory-technical design of used telematics devices, the standardization of which is not yet available. "Also, "Concerns about total surveillance are another reason for rejecting PHYD insurance, as it is not known for what purpose the insurance companies will use the information received" [13];

12. satellite navigation (GPS and GLONASS) sometimes does not differ in the exact determination of coordinates;

13. inadequate sensors for determining the driver's driving style, due to malfunctions and technical features of telematics equipment;

14. inadequate scoring model for assessing risk when using telematics equipment due to the lack of accumulated statistics and, therefore, insurance companies are forced to set an overpriced policy to offset unforeseen risks.

Given the above, a number of measures should be taken to develop insurance telematics in Russia. Firstly, to provide telematics equipment to insurers for rent or sublease by insurance companies, respectively, by concluding an agreement for its use and maintenance with the manufacturer of this equipment (telematics operator); secondly, the Bank of Russia, as the regulator of the Russian insurance market, should join forces with the self-regulatory organization of the All-Russian Union of Insurers in creating the necessary conditions for the development of insurance telematics, including the creation on the basis of the All-Russian Union of Insurers of a unified platform for collecting statistics on owners of vehicles funds for the purpose of further use of this information by all insurance companies. This proposal can be implemented by improving the existing unified base of the Russian Union of Insurers; thirdly, to intensify all participants involved in the implementation of the Russian ERA-GLONASS project in terms of increasing the pace of connecting vehicles to the monitoring system. It should also be noted that insurance companies should take maximum information security measures to protect personal data of customers from unscrupulous users, since in the near future as a result of the development of digital technologies, the risk of manipulation or misuse of other people's data will be one of the most dangerous risks not only in Russia, but also abroad.

IV. CONCLUSIONS

Insurance telematics, due to its ability to collect and analyze big data, as well as determine structural and behavioral patterns of driving, allows insurers to individually adapt insurance policies to the needs and habits of individual motorists, thereby expanding the natural reservoir of the market. In addition, the benefits of telematics services (geolocation services for car thefts, telemetry and monitoring of accident dynamics, video recorders, alarms) and a number of developing additional services mean that insurance can attract an increasing number of segments of the population, providing new advantages.

However, when creating new smart insurance products, insurance companies should take into account the mentality of Russian policyholders with regard to additional options, namely, they will be ready to use it only as part of a comprehensive product, i.e. separately pay for additional options and services will not.

Analyzing the specifics of the use of insurance telematics in Russia, it should be noted that the presence of many problems inhibits its development, but they will be resolved as soon as the insurance industry survives another crisis, due to an increase in the regulatory burden on insurers, and due to the coverage of an increasing number of consumers with digital technology products prepare the necessary ground for new insurance products. And it is possible that all forecasts

regarding the pace of development of insurance telematics in Russia will be achievable, but it is too early to talk about this since the situation is at the very beginning of its path.

Based on the foregoing points, focusing on positive foreign experience in introducing smart insurance and taking into account the mentality of Russian citizens, the authors propose to Russian insurance companies continuing to work on the implementation of insurance telematics, including entering into partnership agreements with mobile operators to create unique offers using mobile applications. The introduction of joint integrated products will attract new customers and increase the competitive advantages of insurance companies compared with insurance companies focused on traditional insurance products.

V. DISCUSSION OF RESULTS

Once again we would like to note that implementing of the proposed measures to increase the financial means of life insurers will create more favorable conditions for the population to make decisions on concluding long-term life insurance contracts, which will affect the development of the Russian economy as a whole. This research confirms the opinion of other scientists engaged in similar subjects and its implementation on the example of other countries. Thus, the successful elimination of problems in the application of insurance telematics in the activities of insurance companies will increase the confidence of the Russian population in insurance products.

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