

# PRICE CUSTOMIZATION IN THE INSURANCE INDUSTRY USING BIG DATA

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**Abstract.** The purpose of this research is to identify the using of Big Data in the field of insurance. The vehicle insurance costs depend on many aspects: the make and model of a car, the purpose of using a vehicle, the number of persons who can drive a vehicle and even the car color and the age of the driver. With the help of Big Data analysis, the insurance companies will be able to make more profitable offers for the customer based on detailed information about the client

**Keywords:** Big Data, insurance, price customization.

The volume of the Russian insurance market is more than one trillion rubles in 2015 [1]. The Russian regulator in the insurance field is withdrawing license of market players, in 2015 seventy companies ceased to exist, hundreds are at risk. The consolidation of the market is taking place - more than a thousand insurance companies were on the Russian market in 2005, and at the end of 2016 they were less than 300. The TOP 10 companies account for almost 70% of this volume. Many channels of referring prospective clients no longer give any desired impacts or even are not relevant. Due to this fact, many companies are increasing the budget of their IT departments and they are introducing recent technologies into the development of their companies.

To understand how BIG DATA can benefit companies, the main insurance lines in Russia should be considered more particularly. (Figure1).

In recent years the vehicle insurance has brought insurance companies 30-40% of the total bonuses. The vehicle insurance costs depend on many aspects. Let us analyze what factors are considered by Ingosstrakh Insurance Company, in the Russian Federation. On its website you can calculate the exact costs using the OSAGO calculator. the following factors are taken into account: the type of owners, the place of a vehicle registration, the make and model of a car, the purpose of using a vehicle, the number of persons who can drive a vehicle, the full name, the date of birth, the driver's license number, the type of contracts.

More than that, the fact of accident-free driving can affect the price. How about considering much more data? With the help of this approach, insurance companies will be able to make more personalized and profitable offers for their customers. Such offers will be based on detailed information about their clients. All things being equal, does the color of the vehicle affect the probability of getting into an accident? This question has been asked by many researchers on different continents and in different countries of the world. For example, having analyzed more than 800,000 cases of road accidents, scientists from Australia concluded [2] that more frequently black shade vehicles fall into accidents by 12% in the daytime (at night by almost 50%). The silvery and red shades are also in the lead. The results in different countries and even single cities within the same country can differ significantly. Besides, the geographical location, the state of roads or the legislative framework can affect them. Nevertheless, considering the color of vehicles, there is a direct opportunity to increase the company's profit on MTPL policies by streamlining of payments. Nevertheless, taking into account the color of vehicles, there is a direct opportunity to increase the company's profit on MTPL policies by streamlining of payments. Insurance companies should take into consideration a relationship between the colors of vehicles and being involved in serious car accident. In this case, they can make a better offer to vehicle owners who have a safer color according to this analysis. It is a serious competitive advantage, as most

insurance companies are on the same level. Thus, with the help of an appropriate promotional campaign, insurers will be able to entice many customers.

It is possible to find a relationship between the age of the driver and the probability of getting into an accident. The results can be very illogical. At first glance, it seems that young people may be involved in a car accident more often than the adults. That is why, a significant database (BIG DATA) is necessary to study and find any relationships. A similar research was conducted by the AAA Foundation for Traffic Safety in the USA. The database of road traffic crashes was analyzed from 1995 to 2010[3].

The practical benefit of using BIG DATA involves not only exclusive offers to potential and regular customers. There is an extensive development of telematics. A special device with a specific set of sensors and an ability to transmit data over the network is installed into customers' vehicles. Such sensors can be GPS, GLONASS, accelerometer. These three sensors and a SIM-card will allow to obtain a variety of driving characteristics. Therefore, insurance companies will know about speeding, the location of vehicles and when they are used. In addition, companies will be able to create a map of movements and determine the area where vehicles are most often located. With the help of an accelerometer it will be possible to determine the participation of a vehicle in an accident. It is obvious that this great amount of data must be stored the most important thing is to analyze these data. In this way, companies will have to do it without delay. It is not enough just to receive information from this device, it is necessary to provide this information to drivers themselves.

Through the online service or mobile application, clients can view their statistics. Insurance companies will be able to identify careful drivers and offer them a discount. Obviously, the second option is more effective. A careful driver can get some money back and this fact will prevent from the risk of accidents. Insurance companies will be able to optimize the amount of payouts to their customers, it is directly related to making profits. Some insurance companies are working with telematics, such as "Independence Insurance Company" in partnership with VimpelCom [4]. Consequently, the share of so-called Drive Smart policies will continue to grow. Nowadays there are not so many insurance companies that can offer such services. They should be in a hurry to become a niche market player in this segment! Jawbone is selling anonymized customer data. This company specializes in personal wearable devices such as. It has already earned millions of dollars. The number of its active buyers is constantly increasing. The market of wearable gadgets is developing and growing steadily. Now this startup has begun to sell information – a real resource of the 21st century. A person can receive data on his sleep habits, his pulse rate, his body's mass and his distance travelled. There are more specialized gadgets for professional athletes. There are also BIG DATA smart devices which will allow to determine the disease at an early stage. Thus, insurance companies will be able to know much more about their clients' health than they have known before. Accordingly, the medical insurance has a possibility to open up new levels.

Having personal information about its customers, insurance companies should aim at combining their available data and information from other sources and try to compare them. This approach will allow to have the maximum quantity of customer information, which means predicting customer needs and offering individual pricing.

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