



## Introduction of Computer Scoring System for Insurance Decision Making

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### ABSTRACT

The article discusses the need to create a scoring system. The description of the insurance underwriting process and its alternatives - calculating the insurance rating, based on data obtained from the analysis of questionnaires by special scoring system. In this article, the introduction of a scoring system for insurance activities is interpreted as an important part of the socio-economic activities of the insurance company. The current situation with the scoring system is analyzed and the legal framework is considered. The views of leading scholars on this have been analyzed. Suggestions and recommendations for the introduction of a scoring system for insurance activities have also been formulated.

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### Introduction

Insurance is an integral part of the perfect functioning of the economic systems of developed market economies. Insurance services as a type of financial services are considered very important for economic development, together with financial instruments contribute to the development of entrepreneurship and ensure the sustainability of economic development.

While insurance companies take on the risks offered by clients, studying their nature and determining the likelihood of their occurrence requires the organization to make a quick decision. Decisive factors in decision-making are, for example, in car insurance: history of violations, driving experience, year of purchase, its condition and others. Risks are also predicted based on insurance ratings based on clear evidence and statistics [1].

## Main part

Studies have shown that a scoring system is a clear indicator of the risk of an insured event occurring with a particular object. The scoring system allows policyholders to pay a small amount of insurance premiums. It is advisable for insurance companies to actively apply such practices in their activities, otherwise less risky clients may pay for more risky clients. Foreign experience shows that in 2002, in the US state of Maryland, the government sharply restricted the use of credit data in real estate and car insurance. As a result, the volume of insurance premiums paid by customers increased by 14%, which reduced the scope of use of insurance services by direct policyholders.

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The main trends in the development of insurance are related to the need to create a reliable tool to protect the interests of society, the state and business entities from risks. In this regard, underwriting is a key link in the management of the insurance company's operating activities, the outcome of which determines the performance of the insurance company. Increased competition in the Uzbek insurance market poses the following level of difficulty for underwriters: how to maintain the customer base in the context of active dumping policies of competitors, how to improve the quality of insurance services and keep business profitability at the required level. The main problem facing insurance companies is the need to improve the organization and management of the underwriting process in insurance, to enable them to quickly deal with the individual risks of the insured and to improve the results of the insurer's underwriting. The urgency of the issue is related to the growing need of insurance companies for effective underwriting due to the development of the insurance market and the lack of methodological support for the processes of accepting insurance risks.

Insurance companies should refer to underwriting - insurance risk analysis in the successful conduct of business. Underwriting in insurance is the process of analyzing the risks offered for insurance and determining the appropriate tariff rate and insurance terms [2]. A well-organized underwriting policy will increase the profitability of insurance operations. Factors determining the value of underwriting in insurance are:

Objective assessment of risks, determining the level of security of the client;

Creation of a flexible system of prices for insurance services;

Constant control (monitoring) of the structure and quality of the insurance portfolio.

The introduction of modern information technology will significantly increase the efficiency of underwriters. Scoring technologies, which are widely used in the assessment and management of financial risks in the credit policy of banks, can be used with high efficiency in the field of insurance.

Insurance agents initially carried out not only the sale of insurance services, but also underwriting, contracting, its execution and others related to this process. As insurance risks and facilities became more complex, insurers began to specialize in key business processes, including marketing, sales process, underwriting, contract execution, and insurance claim management. In practice, there may also be certain conflicts between sellers and the insurance company during the sales process, which include:

Firstly, any risks are taken to carry out the specified volume of sales, which is the main activity of the seller, which ultimately leads to the payment of large amounts of insurance premiums. An underwriter is a person who prevents a seller from making a sale at “any price” and ensures the profitability of the insurance portfolio;

secondly, the transition to systematic sales requires the seller to know the specifics of underwriting for many types of insurance, which is not possible; thirdly, vendors differ significantly from underwriters in terms of their psychological approach and communicability. Sales and analysis are actually different types of activities, because while the basis of sellers' activities consists of more emotional and sensory factors, the basis of underwriting activities is logic and balance.

The underwriting system created in insurance companies involves two stages: primary and specialized. Primary underwriting (i.e., custom, standard) is done by the vendors themselves. In standard underwriting, standard risks are assessed according to standard rules. Specialized individual underwriting is performed by qualified underwriters mainly for non-standard, individual risks based on the financial results of the types of insurance or insurance portfolio. Specialized underwriting criteria can be called profitability criteria [3].

The most responsible stage of the insurance process is the selection of risks to be insured and the correct setting of tariffs. Insurance tariffs should be set in such a way that insufficient formation of insurance reserves does not lead to a deterioration of the solvency of insurance companies, while careful attention should be paid not to increase the amount of tariffs, so that customers do not feel dissatisfied with the cost of insurance services [4].

It is also advisable to insure objects (risks) with a small amount of damage in order to achieve a positive financial result, such losses are called useful losses in the insurance industry. The positive difference between tariff and profit loss provides a positive financial result, i.e. underwriting profit. The items (risks) selected in this way are called high quality or economical. To select such high-quality facilities, the underwriter should try to reduce the likelihood of insured events and reduce the amount of losses and damages in the event of an insured event.

The following factors can reduce the likelihood of insurance events:

selection of accepted risks for insurance of certain objects;

develop preventive measures to reduce the likelihood of specific risks (e.g., installing a theft prevention system in the vehicle).

The reduction of the total losses of the insurance company can be achieved through: the selection of facilities that are resistant to insurance risks, for example, fire insurance of fire-resistant buildings; limiting the amount of liability of the insurer; implementation of preventive measures to increase the risk resilience of the facility, for example, equipping the facility with a fire-fighting system; development and implementation of reinsurance system [5].

Naturally, the fulfillment of such conditions requires special knowledge from the underwriter and the ability to predict the outcome of the insurance. When concluding an insurance contract between the insurer and the insured, an agreement must be reached on the following important conditions:

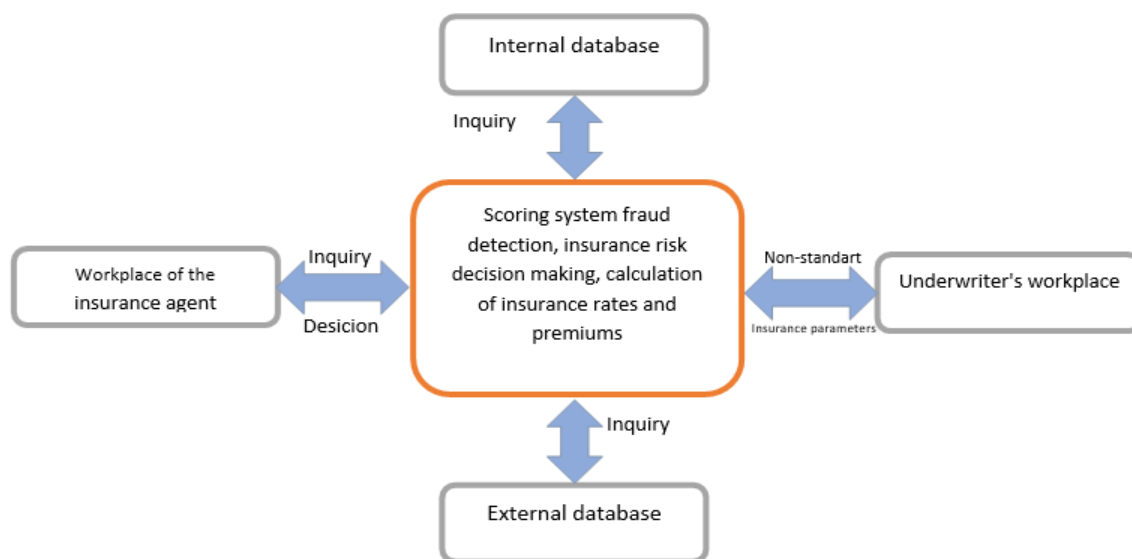
on property interests that are the object of insurance; on the nature of the insured event; on the term of the contract and the amount of insurance sums; on the amount of insurance premium (premiums) to be paid; on the terms and procedure for payment of insurance premiums.

An important step after the analysis of the risks associated with the object of insurance is the decision-

making stage, which determines whether the risks are worthy of insurance and the extent to which the potential losses affect the financial condition of the insurer. This is the most important stage of underwriting, because the future development and financial results of the insurance company's business will depend directly on the decision made. The most important stage of underwriting is the formation of specific terms of the contract, tariff rates, the size of the franchise and recommendations to the insured to reduce risk. The underwriter determines the technical parameters of the contract being prepared and forms the obligations of the insurer, as well as calculates the amount of the insurance premium. It should be noted that the underwriter in his work relies not only on these insurance statements, inspection reports and similar factors, but also on his own experience and feelings. Underwriting complex objects is a creative process that cannot be fully formalized.

After the conclusion of the insurance contract, the underwriter participates in the contract, regularly monitors the condition of the insured object and monitors the implementation of risk mitigation measures, recalculates the insurance rate when the probability of occurrence of insured risks changes and amends the contract. If the insured does not fully fulfill its obligations, the underwriter prepares a conclusion on the termination of the contract or reduction of insurance premiums in the event of an accident.

How scoring systems work. The scoring system is an analytical center that allows an insurance company to forecast insurance events, manage insurance rules, policies and scoring models, identify opportunities for fraud and speed up the processing of appeals. The system provides the number of dynamic jobs required for the company to operate efficiently. The rules of calculation, the order of making payments, etc. can be created or changed by the system administrators of the insurance company. The web interface of workplaces allows remote access to the system via the Internet at any convenient time. The following describes the decision-making process using a scoring system (Figure 1).



**Figure 1. Decision making process using a scoring system [3]**

The system performs the following functions: detection of fraud, decision on insurance or denial of insurance, analysis of insurance risks, determination of the optimal insurance rate, determination of risk insurance conditions. In the scoring system, the most accurate algorithm for assessing the insured object

and detecting fraud is carried out at different stages, ie contracting, occurrence of the insured event, analysis of the insurance portfolio, as well as all types of specialized reporting. The use of scoring systems in insurance activities reduces the risk of fraud by insurers to the lowest possible level, which helps to save money in the amount of insurance premiums; eliminating the risk of fraud by insurance agents, increasing their work efficiency and consequently improving the quality of decision making.

### **Conclusion**

This study shows that currently no insurance company in Uzbekistan has a scoring system. The main reason for this is the limited ability to find and apply statistics for the past period needed to make scoring decisions. The evolving system will serve to improve the quality of decision-making on insurance contracts, reduce the risk of fraud by both agents and insurers, and prevent errors and breaches in the completion of contracts. The system automates the processes of analyzing insurance risks, deciding whether to insure or deny them, setting the most optimal insurance rate and determining the terms of insurance.

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