

## What Can Big Data Offer to Insurers and Insureds?

Insurance market has been heavily relying on its conventional tools of risk assessment. This is now under the transformative and disruptive impact of technology. In particular, big data -i.e. large volumes of data sets that are hard to process using traditional data processing methods ("Big Data") - are claimed to have the potential to replace the conventional tools of risk assessment by their more efficacious equivalents.

The provisions of insurance under Turkish Commercial Code reflect the high reliance on the mentioned conventional tools of risk assessment. Indeed, the law gives vital importance to the pre-contract questions that are raised by insurers to to-be insureds in order to assess the risk and execute insurance contract thereafter based on the optimum balance between assessed risk and corresponding premium. Specifically, the law deems every raised question to be related to substantial matters of the contract regardless of the nature of the question while also regulating that prospective insured's duty to give accurate and true information is not restricted by the mentioned questions. In fact, if there are issues which the prospective insured can be reasonably expected to know that would be regarded substantial by the insurer; the prospective insured is under a duty to proactively disclose these issues without waiting first for the insurer's questions. Serious consequences are attached to failure to provide accurate and true responses to insurer on substantial issues, these sanctions include an adjustment of the premium and avoidance by the insurer of the insurance contract.

Questions as conventional means of risk assessment have had its share of the revolutionary impact Big Data have brought to the insurance market. Insurers have used questions so far in order to understand the involved risks and determine the limits and content of the coverage, but now we observe increasing usage of Big Data for the same purposes. Now, some insurers look into the data collected through technological means to find the answers to the potential questions needed to be answered to offer insurance. This practice saves time and provides convenience to all market players. For example, assuming that a database of an insurance company show a positive correlation between the people who purchase coverage against fire risk for their apartments and the increasing tendency of these people to be or become smokers at some point.

If used correctly, this piece of information would also provide a better chance for the insurer to assess the risks in selling health insurances to those who have already bought fire insurance. There are areas where Big Data is utilized correctly by insurers who avail themselves of what technology has to offer. We believe that as the collections on databases stack up and the methods of understanding the same develop, the mentioned questions as means of conventional risk assessment will lose its importance. Perhaps, it is a win-win situation where finding the right insurance coverage for consumers becomes less time-consuming and where insurers are able to quote accurately by assessing the risk correctly.

On the other hand, we also note that there may be shortcomings in the Big-Data-backed statistics. Indeed, one can try to analyze and understand why smokers are more likely to purchase fire insurance than non-smokers, yet the conclusions may not fit for all potential customers. This probability would mean for some people - who constitute exceptions to the trend and who pose relatively low risk - having to pay higher premiums than they should have. At this point, technology can come to help with striking the right balance between the risk and the applicable premium. For example, risks involved with offering health insurance are closely related to understanding factors such as one's exercising and diet habits. Assuming that people would be willing to share their personal data as to how often they exercise in exchange for lower premiums, there are many wearable technology products available to provide reliable data to insurers as to the exercise routines of the insureds. Thanks to cutting-edge technology, we have new innovative ways to interpret Big Data.

There are other areas where technology can be used aside from data interpretation. For instance, insurance policies for cars are based on the likelihood of accidents, i.e. a risk that varies depending on kilometers driven and individual driving habits. These variables can be tracked for instance from gas consumption trend and sent to insurers who will closely monitor the risk and adjust the premium.

New insurance products can also be offered by finding innovative ways to capture data and relying on artificial intelligence to draw conclusions based on the data. Being able to monitor the activities of the insureds creates the knowledge sufficient and incentives to limit the insurance to only when there is an activity which involves the risk in question.

This option seems to have been realized by some start-ups who provide pay-as-you-go insurance policies such as car insurance that can be purchased for periods as short as an hour via smart phone apps. We believe that this area is ripe for development.

In conclusion, technological developments seem to have already revolutionized the methods of risk assessment and product variety in the insurance sector. One can expect to see in not so distant future the invention of new methods and tools that provide better risk assessment to insurers and therefore better economic terms to insureds. In the same direction, the law may further evolve in the long run in a way that would decrease the importance attributed to the prospective insured's duty to disclose accurate and true information to the extent that the required information in the assessment of risk and corresponding premium would already be known to the insurers.



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