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Predicting hourly Internet traffic in the RTB system – panel approach

Real Time Bidding (RTB) is a common method of providing an online advertise in the real time. The number of shown advertisements each day all around the world is counted in billions. Specialized companies called Demand Side Platform (DSP) prepare campaigns offering online advertisements of the product in the specific geo-region. In the bidding process, econometric models are involved to predict the probability of click, scroll or conversion. Nevertheless, even the low probability has some chance of buying the offered space for the advertisement. Given the Internet traffic, this can lead to loss of large sums of money in just a few minutes.

Often used solution is some kind of filter of the Internet traffic, for example, only the small percentage of the offered bids are considered. Difficult to predict users behavior together with fast changing auction prices due to the competition strategies require the use of mathematical models to predict the amount of Internet traffic, which should be responded. This amount must be high enough to generate a profit and low enough to limit the risk of spending available money in few minutes or hours.

Taking into consideration the historical data it is possible to build a model of predicting limits of hourly Internet traffic to be skipped. To improve the accuracy, a panel econometric model is used, where hours are panels and data are taken from the time



interval of a week, two weeks and one month. Missing data are filled using linear interpolation. Results are evaluated on the basis of off-line comparison tests.

