Prediction and Fuzzy Logic at ThomasCook to automate price settings of last minute offers

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Keywords: Fuzzy Logic, Predictive modelling, Price effects, rpy2

ThomasCook Belgium provides sun and beach holidays to more than 70 Short Haul destinations around the Mediterranean and some Long Haul destinations in the Americas. During the summer approximately 1.25Mo promotional prices for holiday packages including hotel and flight are put on the market. Flight frequency for some destinations goes up to 5 times a day. The prices of these holiday packages can change on a dayly basis as well in the upwards as the downwards direction.

Bookings on these packages depend on a whole range of factors. Namely: prices, holiday information, flight information, competitor risk, weather risk and cannibalization risk (risk of losing passengers to yourself).

We present a practical user case where we automated the price settings of these promotions. This includes the setting up of large predictive models to evaluate the impact of these influential factors as well as the setup of an expert system based on fuzzy logic which automates the price setting.

We will also cover our experiences using the PL/R PostgreSQL interface and our usage of RPy2 to build a simple GUI to help our Yield department in the interpretation of the automation process.

References

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