PYTHON PREDICTIONS

CUSTOMER SUCCESS STORY

# PREDICTING CHURN

Increasing the detection of customers at risk at Mobistar Belgium


## SUMMARY

Companies active in telecommunications are operating under very dynamic market conditions. As different competitors are prospecting using aggressive benefits, customers are strongly convinced to switch operators on frequent occasions during their relationship. In these dynamic markets, such switching behavior – called *churn* behavior – is of crucial importance to a company's bottom line. The slightest improvement in customer retention may result in a huge impact on overall company performance.

It is beneficial to develop and maintain a system capable of pinpointing the customers currently at risk. Also, creating an understanding of *why* certain customers are at risk can deliver insights for new marketing campaigns towards these specific customers. In this project, we successfully predicted which customers were at risk and why each individual customer was tempted to switch providers.


## ABOUT MOBISTAR

Mobistar is one of the main actors in the world of telecommunications in Belgium and Luxembourg, active in mobile telephony, fixed telephony, fix data, ADSL and on other services with a strong growth potential. The company develops innovative products and services for the residential and the business market. Mobistar is listed on the Brussels Stock Exchange and is part of the France Telecom group.

## PROJECT CONCEPTION

In 2009, Mobistar (www.mobistar.be) hired Python Predictions with the request to update and improve of the current churn risk predictions for a well-defined segment of customers. The current system – although once very well-performing – was deteriorating quickly due to new market conditions and the continuous introduction of new tariff plans. Additionally, the availability of a new internal data structure enabled the use of about 5.100 descriptive variables – which could each in turn be used as additional predictors. Main goal of the project was to improve the detection of Mobistar's customers at risk. Additionally, it was important to deliver an insight into why customers churned. With the future in mind, Mobistar also hired Python Predictions to deliver coaching towards the internal analytical team.

## PREDICTING CHURN

As a first step, the problem definition was refined into detail. When preventing churn behavior, it is of crucial importance to understand first which customers should be retained. Not every customer is profitable – or has the potential to become profitable in the future. Python Predictions and Mobistar clearly defined the group of customers of interest. For this group, all historically available information was gathered, and the development of different (candidate) predictive models leaded us to the selection of a champion model – by carefully selecting and combining only 15 variables out of the available 5.100 pieces of descriptive information. In order to stand the test of time,

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the customers analyzed were selected throughout different historical periods with their own market conditions. This allowed to validate and stress-test the performance of the predictions.

## CHURN PROFILE

Besides the prediction of the churn probability, Mobistar wanted to understand why customers were at risk. On a global level, the customers at risk were profiled on a number of crucial dimensions. These included the analysis of churn risk across different tariff plans, age groups, call behavior, etc. Hence, both demographical and transactional data was used to profile customers. While this generated insights on the overall profile, Python Predictions also provided – on a customer level – a shortlist of reasons related to the individual churn risk score. Using these reasons, Mobistar's commercial teams would have the potential to address different customers using a customized approach.

## MODELS IN ACTION

After validation of the predictive results and churn profiles, Python Predictions industrialized the new churn scores in Mobistar's data environment. Next, Mobistar leverages these scores in the context of commercial activities in order to enable customer interaction points to qualify churn risk on an individual customer level.

> "Python Predictions succeeded in accurately predicting which customers were at risk and why. Mobistar's challenge continues with the development of creative marketing strategies to retain these customers."
>
> **Bart Haenen**
> **Marketing Product Manager**
> **Mobistar Belgium**
> (September 2010)

Additionally, after validation by internal analytical experts, the methodology used in the construction of the churn models was transferred to the analytical team by means of a two-day in-company coaching, explaining the 'what' and 'why' of the developed predictive models. This enabled different analysts to embrace a common vocabulary and methodology, while the current practices by the team members were validated and improved.

## CONCLUSIONS

In this project, using SAS® technology, Mobistar and Python Predictions have realized the improvement of Mobistar's current churn detection systems. In light of the first results, Python Predictions succeeded in accurately predicting which customers were at risk and why. The current challenge lies foremost in developing creative marketing strategies to convince customer at risk to continue their relationships with Mobistar.

## ABOUT PYTHON PREDICTIONS

Python Predictions is a Brussels-based consulting firm specialized in creative customer intelligence. Its expertise lies in delivering highly performing yet interpretable predictions of future individual customer behavior. Python Predictions develops tailor-made solutions (and offers coaching) in the fields of response analysis and segmentation, cross-selling and up-selling analysis, long-term value analysis, churn analysis, data enrichment and consumer credit scoring.

PYTHON PREDICTIONS

For additional information, please visit www.pythonpredictions.com