Profitability forecast, combining planning and data science

Dutch LeasePlan is one of the largest leasing companies in the world, managing a fleet of around 1.8 million vehicles in more than 32 countries. In Brazil, it manages more than 2,000 vehicles. The business consists in acquiring and managing vehicles including administration and maintenance issues, according to the agreement with its customers – this business model is called “car as a service.”

The challenge

With the expansion of operations, the complexity also increases. Every vehicle from every customer has specificities and several cost components that influence its profitability for LeasePlan. The impact of vehicle maintenance varies depending on where and how it is used. Vehicle manufacturer also has an influence on the company’s maintenance costs. As we know a vehicle loses its value over time. All these factors have a direct impact on the company’s profitability at the end of the agreement with its customers. Because of these many variables, the main challenge for the company was to set a price that was suitable for its business model.

Basically, the company had a hard time answering a simple question: What is the final profitability in the future of an agreement made today?

The solution

Data science applied to financial planning

CTI offered to help LeasePlan answer this difficult question. It required the development of financial models to forecast profits from each of all 2,000 vehicles in the portfolio, considering the various variables affecting their costs. In addition to projecting manageable costs, the company had to learn from old agreements and perform statistical simulations to predict uncontrollable variables.

For this reason, CTI used IBM Planning Analytics for financial modeling, and SPSS for statistical modeling, data science and machine learning.

The benefits

Understanding the past to address the future

First, all information from old agreements was provided. Then the behavior of variables could be analyzed and understood and some hypotheses were outlined regarding how they would behave in the future.

Algorithms to predict the most impactful variables: maintenance, tire cost, and value at the end of the agreement

In order for help LeasePlan understand the impact of these variables on its agreements, we developed an algorithm that not only addressed the historical data entered in the system, but also made more assertive predictions based on new information that started to be inserted (for example, variations of the FIPE price table).

Machine learning for constant updates

As the system is fed monthly with new information about the vehicle, it constantly recalculates and updates forecasts, allowing the company to change its profitability models for new agreements.

Tool attributes

Solution combines financial planning and data science

Like any project, we developed the solution with customer collaboration, understanding what had to be solved and delivering a customized tool with different attributes:

- ☑ Knowledge transfer, ensuring the customer's autonomy and evolution of financial and statistical models.
- ☑ Use of well-known [and recognized] technological tools from IBM.
- ☑ The company's operation in Brazil has become an innovation benchmark for other countries.

CTI always develops safe robust solutions that can process huge amounts of information and variables. It was not different with LeasePlan, as the company has now a powerful tool that can learn at all moments, improving its analyses and forecasts. And more information leads to better reports and analyses.

The tools adopted by LeasePlan will be able to process the huge amounts of data from telemetry systems that LeasePlan may adopt in the future. With telemetry, the amount of information will increase exponentially, making it even easier for LeasePlan to forecast the profitability of its agreements.

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