GUROBI OPTIMIZATION

Driving Better Decisions and Optimized Revenue Management

With help from Gurobi's solver and a custom solution developed by LTPLabs, Sixt Portugal can determine optimal car rental prices and fleet allocations within seconds—an improvement expected to yield a 2–8% annual increase in revenue per car.

SIXT RENT THE CAR

Sixt Portugal is a franchise of Sixt SE, an international car rental company with locations in over 100 countries. The Portuguese franchise is one of the top car rental providers in Europe and has been in operation since 2015.

Industry: Car Rentals
Location: Europe
Use Cases: Revenue Management, Fleet Rotation
Website: www.sixt.com/car-rental/portugal

Results

- Preliminary projections point to a 2–8% annual increase in revenue per car.
- More information, with greater granularity, has allowed Sixt Portugal to generate up to 1.5 million prices per day.

With locations in over 100 countries, Sixt provides rental cars to thousands of travelers each day. The Portugal branch, opened in 2015, is one of the top rent-a-car companies in Europe, with over 10,000 cars rotated among its fleets.

In their quest to scale operations while maximizing revenue, the Portuguese franchise faced several challenges in their pricing and fleet rotation strategy—requiring a custom solution that could provide real-time updates for better decisions and swifter action.

The Hunt for Better Data

Sixt Portugal has expanded rapidly over the past nine years, with 42 stations spread across the country. But this success hasn't been without its growing pains.

"The bigger we got, the more difficult and important it became to have the right approach to pricing and fleet allocation," explains Tiago Constante, Pricing and Fleet Rotation Manager at Sixt.

Some of their biggest pain points included:

- Tactical and operational decisions with no direct correlation to price implementation;
- Pricing that was defined empirically, based on fleet occupancy and competition rates (rather than scientific data);
- Unintegrated fleet allocation and pricing;
- No real-time solution for making pricing and fleet decisions, which meant several days could pass between a decision and action.

Partner Spotlight

LTP

LTPLabs is a management consultancy company that uses AI and advanced analytics to provide highly customized business solutions.

Learn more at https://ltplabs.com

> “This system has allowed us to make better decisions because we have more data, and better organized information that is already filtered.”

Tiago Constante
Pricing and Fleet Rotation Manager, Sixt

“We quickly understood that we needed to create something that was faster and combined all the data that we wanted, and that could be used in real time,” says Constante.

That’s when Sixt turned to LTPLabs for a custom solution that could provide the data they needed to make the best decisions each day.

A Custom Platform for Optimized Revenue Management

When Sixt’s car prices are lowered, reservations tend to increase exponentially. But just how far should prices be reduced on any given day in order to optimize revenue?

To answer that question, Sixt needed to consider several key constraints—including overall fleet capacity, target on-rents, and price orders.

Based on these constraints, Sixt and LTPLabs worked together to develop a mixed-integer programming model that allows Sixt to holistically manage their prices while safeguarding constraints between groups and days.

This model forms the foundation of the Analytical Revenue Management (ARM) platform, an integrated tool that features:

- On-rents predictive capability
- Dynamic and granular price optimization
- Synchronization between pricing strategy and operationalization
- Coordinated management between fleet and price

ARM is integrated with Sixt’s servers, with automated triggers set to read new data, execute all processes, and solve the models using Gurobi for Python. Customized user interfaces help the planning team easily interact with the models, while dashboards make it possible to monitor forecast accuracy.

With the support and speed of Gurobi’s solver, ARM optimizes revenue on a daily basis by determining the best pricing and repositioning of vehicles for each station and vehicle group. The system is now capable of generating over 200,000 such decisions each day.

Greater Control for Better Decisions

The vast amounts of data and enhanced granularity provided by the ARM platform have allowed Sixt to make better decisions, faster—with the potential to generate up to 1.5 million prices per day.

Thanks to the tactical integration of the model, Sixt enjoys more control and can react almost immediately to price and occupancy rate variations—an improvement that has led to an estimated 2–8% annual increase in revenue per car.

“This system has allowed us to make better decisions because we have more data, and better organized information that is already filtered,” says Constante. “This was a huge change for the pricing team, but also for the organization as a whole, because our pricing is so much more dynamic now.”