



Optimization drives \$19 million gains at Avis

success story: optimization



Client	Avis Europe, a leading car rental company in Europe, Africa, the Middle East and Asia
Challenge	Maximize the use of every automobile in the company fleet
Solution	FICO™ Xpress Optimization Suite
Results	Two-point increase in fleet utilization, translating into an economic impact of \$19 million.

AVIS Europe

“Because of Xpress, the utilization of our fleet has gone up by one or two percentage points. This is a big, big deal for a car rental company.”

— *Jens Utech, director of backoffice and station systems, Avis Europe*

In the rental car market, success can be measured by a simple calculation: The number of days a car is rented divided by the number of days the company owns that car. And Avis Europe is continually striving to achieve that perfect number.

“It’s straight supply-and-demand forecasting; taking fleet information and working out which customers to sell to and how to best distribute our cars,” says Jens Utech, Avis Europe’s director of backoffice and station systems. “But getting it right is a complex business process that involves many variables.”

Each year, Avis Europe serves more than 8 million customers at more than 3,800 locations via the Avis and Budget Brands. It’s Europe’s No. 2 car-rental agency, controlling 17.7% of the €8.81 billion market in 2007, which comprised 1.2 million vehicles and 44 million rentals.

Avis Europe is perpetually seeking the ideal car-distribution formula—one that maximizes profit and sets pricing appropriate for demand. Previous methods had relied on managers’ intuition and produced satisfactory results, but Utech and Avis Europe’s board felt that more could be done.

» From “no forecast and no sophistication” to optimization accuracy

For many years, Avis Europe’s methodology was to ask fleet managers and station managers to examine the reservation system, using routines that had been in place for years, and use that information to predict future demand.

“Every Friday at 7 a.m., one transporter of cars would go from London Heathrow to Mayfair, due to demand in downtown London on weekends,” says Utech. “That’s what we always did—but there was no way to evaluate if we could do better.”

Pricing analysts would comb through the same data with “no forecast and no sophistication,” says Utech, in order to come up with their estimation for appropriate rental fees.

It wasn’t difficult to see that margins could be increased through more accurate measurements and decision making so Avis decided to investigate optimization software as a means to more accurately forecast and increase rental utilization. Utech helped narrow Avis Europe’s choices, running head-to-head proof-of-concept tests between the industry’s two top programs, FICO Xpress Optimization Suite and ILOG’s CPLEX, with benchmarks recorded both for long-runtime solutions as well as those derived from truncated optimizations.

"In both dimensions, FICO™ Xpress Optimization Suite was superior to ILOG," says Utech, whose company faces a daily overnight cycle to optimize short-term planning strategy. "In the fixed-time scenario the results were much better, and even when we ran the longer-runtime the results were still better. Xpress is simply a superior product."

» A fast rollout yields impressive results

Using Xpress Optimization Suite, Avis Europe was able to roll out an initial pilot program in only a few weeks. Within the year, a new data-driven forecasting system was deployed. At its heart was the systems-based forecasts which were fed into Xpress. The program then created precise recommendations for fleet distribution and utilization.

"It tells us, for example: On Friday morning, bring only four cars from Heathrow to Mayfair, and bring another four from Stansted Airport," says Utech.

This kind of precise fleet management is just one of the program's benefits. Another is its suggestions for sales restrictions based on rental duration and locations for pick-up and care return. These strategies ensure that the highest possible percentage of Avis' cars go to its most profitable customers.

"To boost profitability, it could tell us not to accept any rental reservations made for less than three days during specific time periods—Christmas, for example," says Utech. And though Avis has not yet implemented pricing-specific optimization, its fleet-use forecasts lead directly to clues for appropriate pricing. "It will tell us that in a special-event situation, we will run out of cars, so it will prompt us to consider raising prices beforehand," says Utech.

» Decisive recommendations, demonstrable improvement

Avis Europe has implemented the program across every key market on the continent. Utech estimates that the program has accounted for a two-point increase in the company's fleet utilization, which correlates to a \$19 million increase in incremental analyzed benefits. "This," he says, "is a big, big deal."

Additional benefits include smoother business processes in the areas of pricing and car distribution. Transparency in decision making has also increased with the Xpress reports on the number of reservations at stake for every decision.

Utech feels that Avis Europe's customer base is also experiencing a more subtle benefit: "Even though we haven't made changes to our customer interface, we're now in a better position to put the right car in the right place for the right customer."

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The overall success of the project is leading the company to implement additional automation with Xpress and begin fleet-planning optimization for car-purchasing cycles.

Through it all, says Utech, the service Avis Europe has received from FICO has been exemplary, with responses to specific challenges often coming in less than an hour and actual code patches arriving in less than two weeks.

"There's a strong desire to help, to listen to our problems and to solve them constructively," says Utech. "FICO is clearly a better proactive partner than just about anyone else I can think of in the industry."



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