

## **Case Study Abstract**

### Science and Revenue Management: “Test Your Gut Instincts”

**Problem:** A district manager with a retail company wanted to find out why one of his units consistently ranked last in a key performance metric, average sales ticket per contractor. Furthermore, the district manager wanted to know whether his “gut instinct” about certain observable factors are linked to a low average sales ticket per contractor.

**Revenue Management Solution:** A modified Applied Methods Methodology (AMM) approach to solving the problem produced the following results.

**Phase I: Problem Definition -** Client feedback, group discussions, and root cause analysis provided a complete formulation of the problem and a mutually exclusive list of possible influential factors.

**Phase II: Analysis -** The regression analysis output revealed that the observable factors such as the number of contractors shopping a store between 6am and 10am, which many assumed could explain the low average sales ticket per contractor, were not influential. However, the analysis did reveal that factors such as the number of telephone orders and the number of account managers per contractor influence the average sales ticket per contractor.

**Phase III: Planning and Execution –** Based on the aforementioned conclusions, two new performance measurements and decision support tools were implemented. The district manager implemented the performance improvement plan and taught management how to use the new performance measurements and decision support tools over a period of 7 days. The district manager began to observe positive changes in revenue from all retail units involved in the project within 60 days.

## **Case Study Abstract**

Science, Prices, and Marketing: “What is the price of that sports car?”

**Problem:** Occasionally sports cars are provided for testing, but prices have not been set. A dealer of sports cars would like to know whether a car's performance metrics such as acceleration time, top speed, and interior noise influence the car's selling price. Furthermore, the dealer intends to use any conclusions or recommendations from the results to set the price of cars and to select the appropriate marketing channels that will emphasize the influential factors.

**Pricing Model Solution:** The Applied Methods Methodology (AMM) produced an optimal pricing model that can predict the price of sports cars based on performance data. The following phases offer a summary of the AMM.

**Phase I: Problem Definition -** Basic techniques from descriptive statistical analysis identified certain characteristics of the data including but not limited to the means for acceleration time, top speed, braking distance, skid pad cornering ability, interior noise, and fuel efficiency. The description of the data and correlation analysis produced a mutually exclusive set of predictive variables with respect to price.

**Phase II: Modeling and Optimization –** Multivariable Regression Modeling methods not only produced a set of models but also produced the optimal pricing model from the set. Analysis of the list of key performance data variables that might explain the sales price of sports cars revealed that changes in top speed, braking distance, speed through a slalom course, and interior noise explains 66% of the changes in the sales prices of sports cars.

**Phase III: Interpretation -** The optimal model has the decision support capacity to help a dealer of sports cars establish based on rigorous analysis rather than guess work. Furthermore, the dealer is in a position to align marketing activities with the new strategic information to maximize sales.