

Hotel Eleganté Room Occupancy Forecasting

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Abstract: Hotel Eleganté Conference and Event Center, with 500 rooms and over 48,000 square feet of event space, is the second largest hotel in Colorado Springs, Colorado. Each week, the hotel develops schedules for its 200 employees, prepares its rooms, and sets room rates based on an occupancy forecast that is developed manually by the revenue manager. Its direct competitors use proprietary computer-based software to make room occupancy forecasts that allow them to quickly and competitively price rooms. In order to improve the accuracy of Hotel Eleganté's forecasts, we developed a linear regression model to predict room occupancy that is based on past and present occupancy, along with knowledge of major events in the local area. We show that our forecasting model is able to predict room occupancy faster and with 19.7% less error than the hotel's current method, which will result in a predicted yearly savings of approximately \$40,000.

Keywords: Forecasting, Regression, Revenue Management