## PROJECT BACKGROUND:

Our client, a global resort operator was seeking a solution to improve inventory & pricing management by forecasting occupancy rates according to historical booking patterns thus optimizing Average Daily Rate (ADR) and Average Occupancy Rates (AOR).

## THE CHALLENGE

Our client retained several years of booking data, however, Revenue Managers found it challenging to assess & identify patterns in order to better predict and manage inventory & pricing.  They were using a statistical methods, tools & calculations which were time consuming and often provided questionable accuracy and resulted in lost revenue opportunities.  Identifying the booking patterns / behavior across multiples segments, resorts and revenue streams presents many challenges:

- Multiple inter-related revenue streams while managing demand & allocation.
- Years long of data across multiple seasons / resorts.
- Identifying correlations among different segments & how one affects the other.
- Importance of seasonality & external factors such as events, weather, etc.

A Scientific approach is needed to first identify the booking patterns across multiple segments, resorts and revenue streams.   Then to utilize these patterns to forecast demand & manage pricing effectively. More importantly, the solution should be scalable, cost effective & implemented within a short timeframe.

> **Key Facts**
> - Improved predictability and revenue based on ML insights
> - Feature Engineering, Data Preparation, Automated ML Architecture, Design & Development
> - Dashboard & Report Design & Development

## OUR SOLUTION:

Vertisystem assisted our client in the design & development of a scalable, automated cloud-based Machine Learning solution which forecasts the demand & booking pattern leveraging the client's existing GCP Environment & Looker. Vertisystem contributed to solution architecture, feature engineering, data preparation, batch prediction, data refresh automation and model evaluation/retraining processes.  The complete solution provided a model using Cloud AutoML.  In collaboration with the business users, Vertisystem developed Looker models, reports & dashboards which interact with existing revenue data & provides key  insights using the forecasted data.



## BUSINESS RESULTS:

- Revenue gains by effective management of pricing using the forecast data.
- Greater confidence in results due to leveraging a more scientific approach which reflects changing behaviors in travel situations like pandemic and other anomalies.
- Improved management of demand, allocation & pricing across different segments, properties, revenue streams.
- Visualizations to provide insights to business managers & users to plan effectively.
- Improved insights on expected booking pattern with respect to seasonality & shift between revenue streams.
- Ability to accurately forecast demand & provide booking pattern predictions.
- Scalable solution to support resorts globally with less work.
- Implementation completed in quick time by leveraging available solution opportunities with lesser cost.
- Fully automated data ingestion & management resulting in reduced man cost & managing costs.