



Marriott International

Decision Support System Model

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Project Overview

Our project focuses on developing a Decision Support System (DSS) for **Marriott International**, aimed at optimizing revenue through strategic room allocation and employee scheduling.

Business Decision Model #1: Optimize Revenue Model for Marriott Booking Channels and Room Allocation

- **Objective:** Maximize revenue by optimizing Marriott's booking channels and room allocation strategies.
- **Key Data:** Booking channels (e.g., Marriott Call Center, Mobile App, Travel Agency), Marriott products (Ritz-Carlton, JW Marriott), room types (Executive Suite, Standard Room), and associated nightly costs.
- **User Input:** Select a Booking Channel, Room Type, or Marriott Product to view the Total Profit
- **Decisions:** Pricing strategies, room allocation, and promotional planning.
- **Goal:** Adjust pricing, channel usage, and promotions to meet or exceed revenue targets.

Business Decision Model #2: Optimize Marriott Employee Shift Schedule

- **Objective:** Efficiently allocate staff to shifts based on availability and staffing needs while minimizing payroll costs.
- **Key Data:** Shift times, staff roles, pay rates, required staff for each shift.
- **User Input:** Staff availability, shift constraints, and scheduling needs.
- **Decisions:** Optimal staff assignments for each shift to minimize costs and ensure sufficient coverage.
- **Goal:** Ensure each shift is staffed efficiently while maintaining operational quality and reducing payroll costs.



Data Analytics



SUMIF Functions

- **Idea:** Implement SUMIF functions to dynamically calculate total profits for key categories such as Booking Channels, Room Types, and Marriott Products.
- **Methodology:** Use SUMIF to aggregate data efficiently.
- **Outcome:** Keeps data organized and provides actionable insights into profitability metrics.

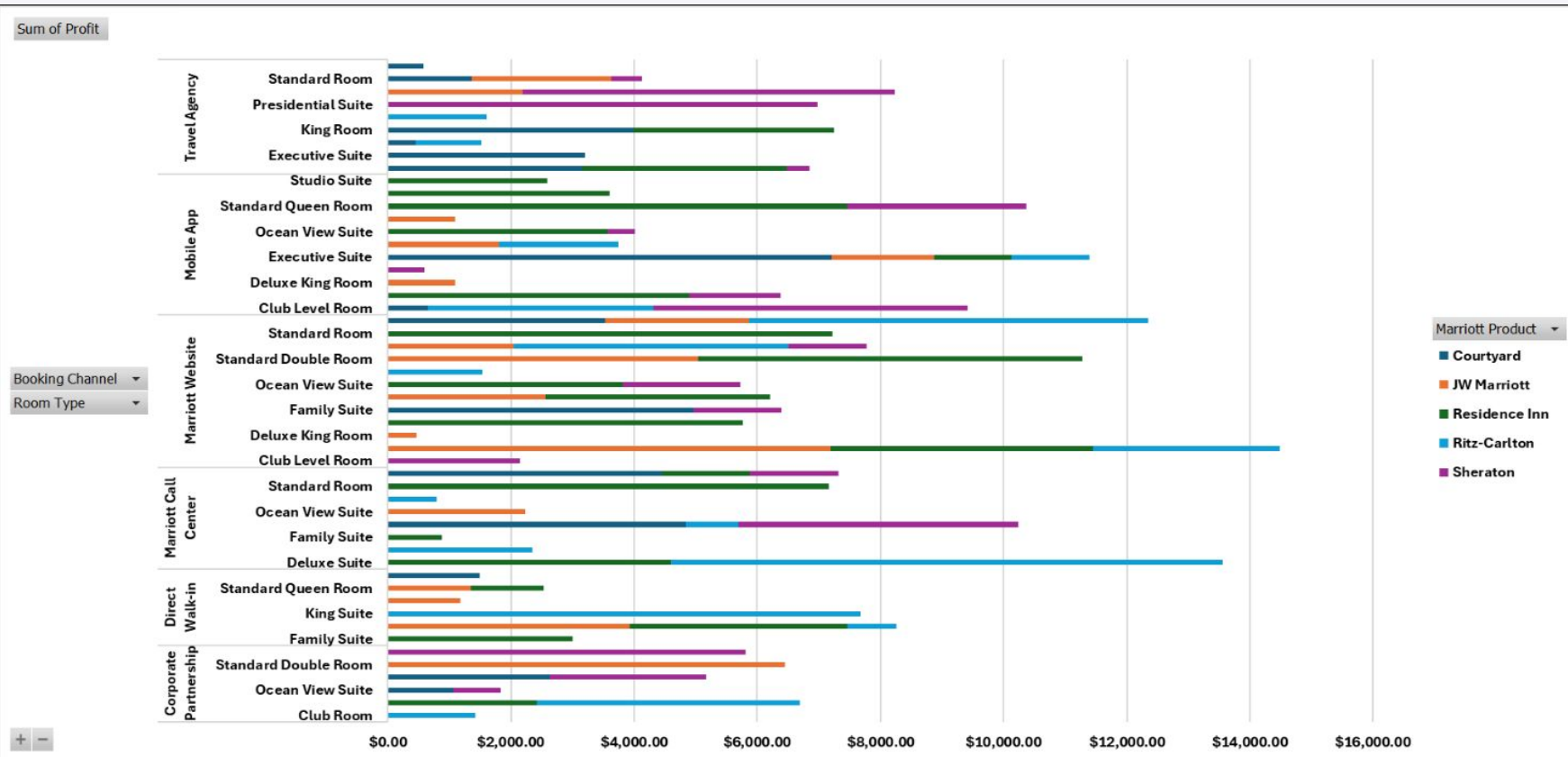
Pivot Tables

- **Idea:** Analyze room booking trends, employee scheduling metrics, and revenue distribution.
- **Methodology:** Utilize pivot tables to examine data across dimensions like Booking Channels, Room Types, and Marriott Products.
- **Outcome:** Helps optimize marketing, resource allocation, and decision-making based on key insights.

Insights for Decision Making

- **Revenue Distribution:** Aggregates profits by channel, room type, and product, highlighting key revenue drivers.
- **Operational Patterns:** Identifies profitable room types and booking methods, improving resource allocation.
- **Strategic Actions:** (*Data from Excel Workbook*)
 - Invest in high-performing channels (e.g., Mobile App, Travel Agency).
 - Focus on premium room types (e.g., Executive Suite, Deluxe Suite).
 - Reallocate resources to top-performing channels and properties.

Revenue Management



Luxury Brands Lead Profits

Ritz-Carlton and JW Marriott dominate profitability, particularly with premium offerings like the Presidential Suite and Club Level Room. These luxury brands excel across all booking channels, with Ocean View Suites consistently generating high profits.

Budget Brands Focus on Volume

Courtyard and Residence Inn prioritize affordability, with Standard Rooms and Family Suites driving revenue. While profit margins are lower, these brands cater to price-sensitive travelers and rely on higher occupancy rates.

1

Direct Booking Supremacy

The Marriott Website and Direct Partnership Walk-ins outperform all other channels in profitability, especially for premium rooms and suites.

2

Intermediary Channel Performance

Travel Agencies and the Mobile App show moderate profitability, with Travel Agencies performing well for luxury brands' premium rooms.

3

Corporate Partnerships

These partnerships generate consistent profits for mid-tier and luxury rooms, particularly Deluxe King and Ocean View Suites.

Marriott User Types

User Perspective: Leveraging the Revenue Model to Optimize Profitability

- **User Actions:**

Marriott associates can input:

- **Booking Channels:** e.g., Marriott Website, Call Center, or Mobile App.
- **Room Types:** e.g., Presidential Suite, Deluxe King, or Standard Room.
- **Marriott Products:** e.g., Ritz-Carlton, JW Marriott, or Courtyard.

- **Point of View (POV) as a Marriott Associate:**

- **Why Use This Model?**

- To identify which room types and booking channels generate the highest profits.
- To strategize promotions by focusing on:
 - High-performing brands like Ritz-Carlton for luxury customers.
 - Direct booking channels like the Marriott Website for cost-efficient reservations.
- To encourage bookings that maximize profitability while minimizing reliance on costly intermediary channels.

- **Key Outcome:**

- Associates gain actionable insights to promote specific brands, rooms, and channels, aligning with Marriott's revenue goals.

Booking Channel	Total Profit
Travel Agency	40321.05
Room Types	Total Profit
Executive Suite	16939.72
Marriott Product	Total Profit
Ritz-Carlton	52151.79

User Perspective: Leveraging the Shift Scheduling to Reduce Operational Costs and Optimize Profitability

- **User Actions:**

Marriott associates can:

- Input or adjust **Employee Availability** (hours/day).
- View and modify **Operational Requirements** (minimum hours/day).
- Monitor **Total Hours Worked** for individual employees.

- **Point of View (POV) as a Marriott Associate:**

- **Why Use This Model?**

- To identify which employees are currently available and which are overbooked.
- To optimize scheduling, ensuring adequate staffing levels without unnecessary overtime.
- To minimize operational costs by reallocating employees to fill gaps efficiently.

- **Key Outcome:**

- Improved workforce management leads to reduced labor costs and ensures smooth operations without overstaffing or burnout.