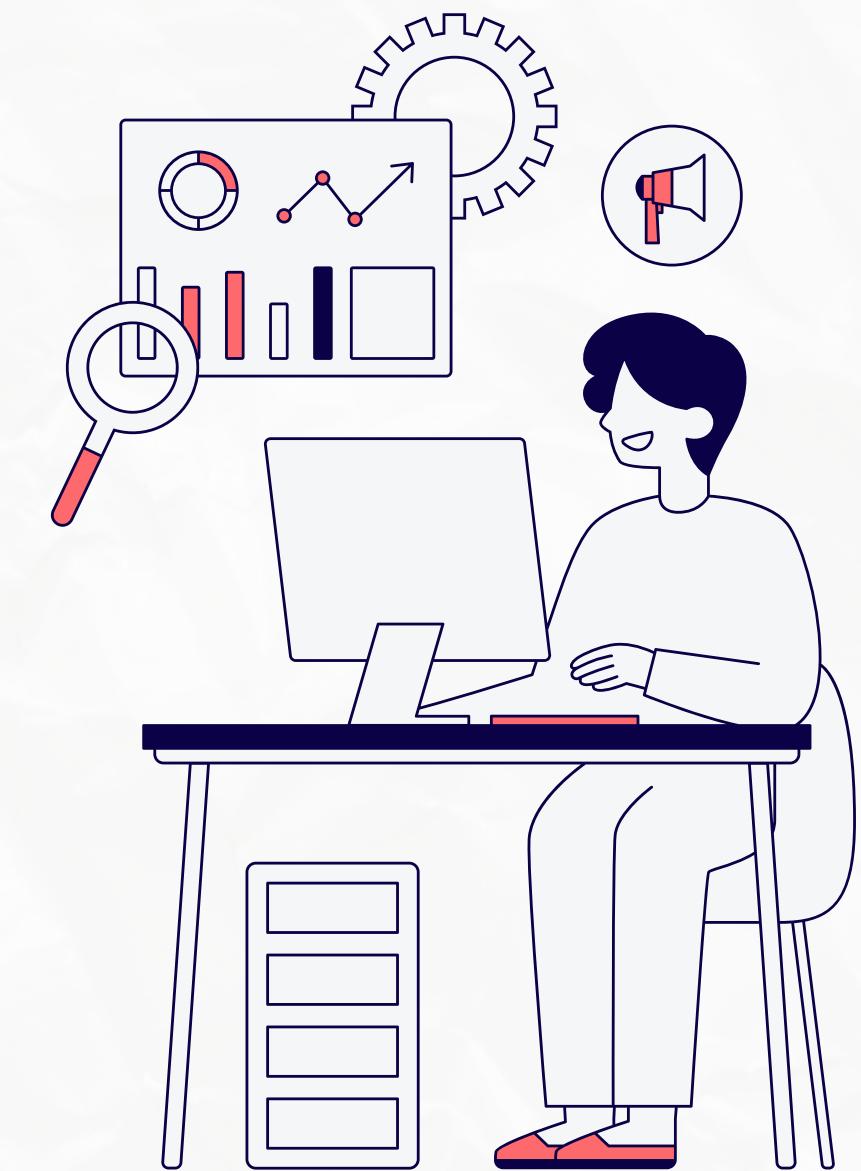


HOTELREVAI – POWER BI REVENUE INTELLIGENCE DASHBOARD

Group 3

Team Members:

- 1)Dhanasree
- 2)Sucheti
- 3)Ayush Nayak
- 4)Sumit Raj
- 5)Shaik Nasreen
- 6)Mehul Kumar
- 7)Ranjita



Problem Statement



1. The Idea

Hotels aim to maximize revenue by monitoring KPIs such as ADR, RevPAR, Occupancy, and Cancellations in real time, while adapting to seasonal demand and customer behavior.

2. The Reality

Most hotels rely on static reports and manual processes. Key metrics are not visible in real time, cancellations are poorly tracked, and seasonal demand fluctuations are not captured accurately.

3. The Consequences

This results in revenue leakage from high cancellations, missed opportunities for dynamic pricing, inefficient occupancy management, and a lack of data-driven decision-making.

Project Goals

- 1 Build an AI-driven revenue analysis solution in Power BI.
- 2 Clean and model hotel booking dataset → ready for analysis.
- 3 Create calculated measures for KPIs (Revenue, ADR, RevPAR, Cancellations).
- 4 Deliver interactive dashboards for:
 - Demand forecasting & dynamic pricing.
 - Cancellation & revenue leakage analysis.
 - Customer & agent performance insights.





Dataset Overview

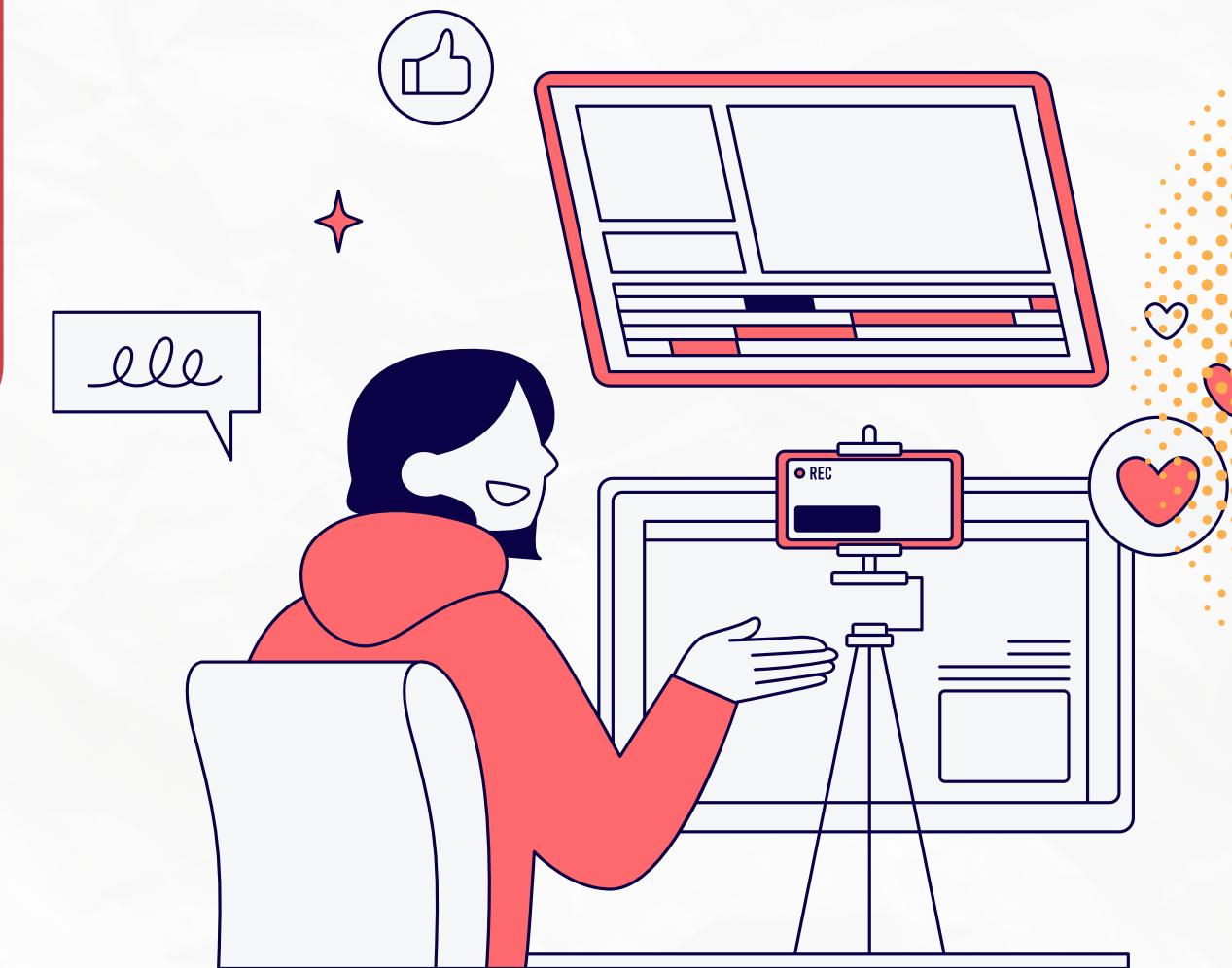
1. 119,390 rows × 32 columns.
2. Covers: bookings, cancellations, ADR, guests, agents, channels, countries.
3. Power Query transformations:
 - Dropped company (94% missing).
 - Grouped agent into Top-N + “Other”.
 - Fixed negative/zero ADR.
4. Prepared dataset → loaded into Power BI data model.

Data Transformation & Derived Features



Created in Power Query / DAX:

- TotalNights = stays_in_weekend_nights + stays_in_week_nights.
- RevenuePerBooking = ADR × TotalNights.
- ArrivalDate = merged Year, Month, Day into a date field.



Why:

- Enables time-series visuals.
- Supports occupancy, revenue, and cancellation KPIs.
- Simplifies drilldowns and slicers in dashboards.



KPIs & Metrics

1 Revenue KPIs:

Total Revenue (non-canceled), ADR, RevPAR.

2 Efficiency KPIs:

Occupancy Rate, Avg Lead Time, Avg Length of Stay.

3 Risk KPIs:

Cancellation Rate, Revenue Lost to Cancellations.

4 Customer KPIs:

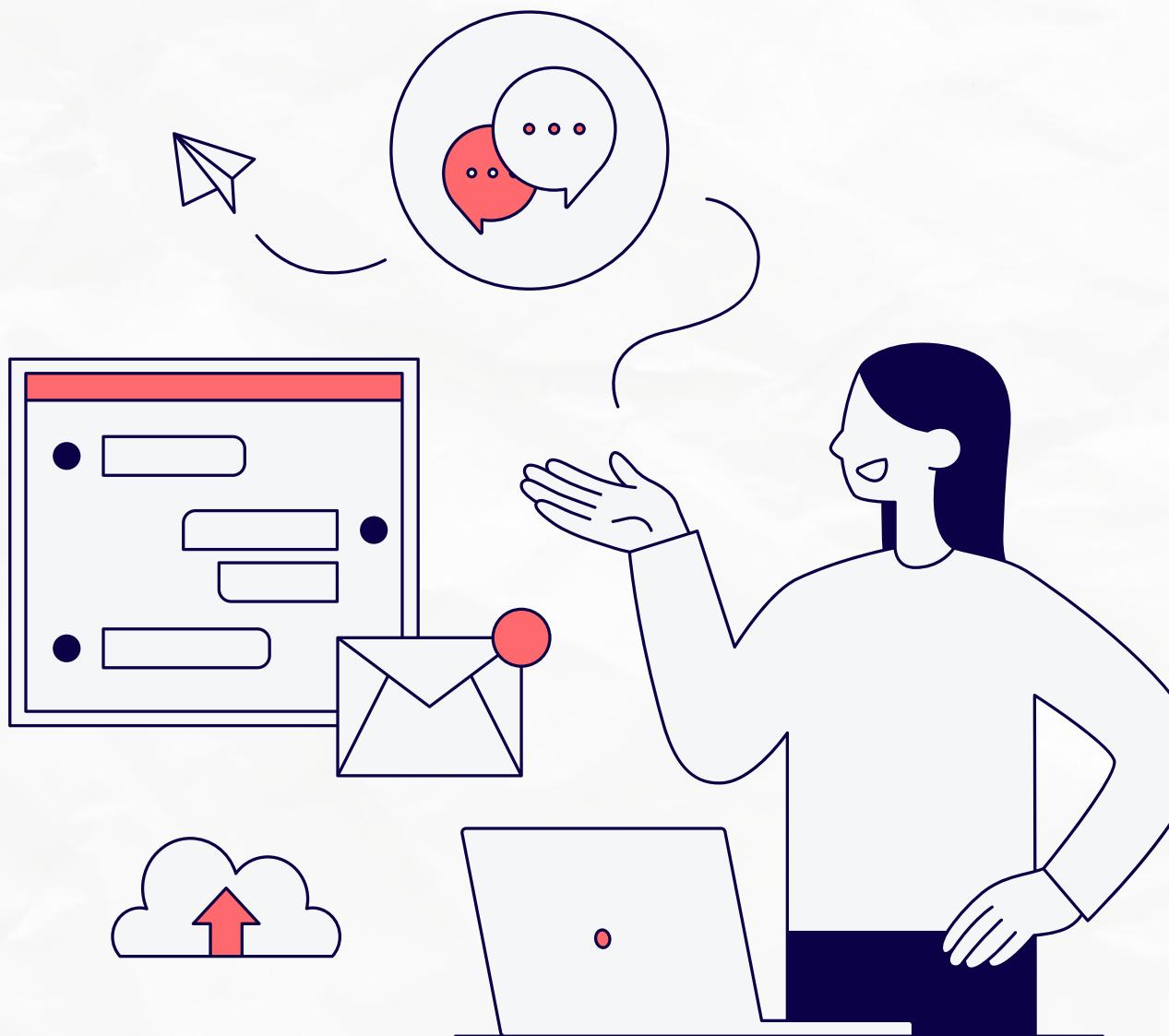
Repeat Guest Rate, Top Countries/Agents by Revenue.



Benefits for Hotels

- 1 30% improvement in forecasting accuracy (with AI models).
- 2 Optimized RevPAR & Occupancy.
- 3 Reduced revenue leakage via cancellation insights.
- 4 Clear visibility into top channels & markets.
- 5 Actionable dashboards → better strategy & daily operations.

Power BI Solution Features

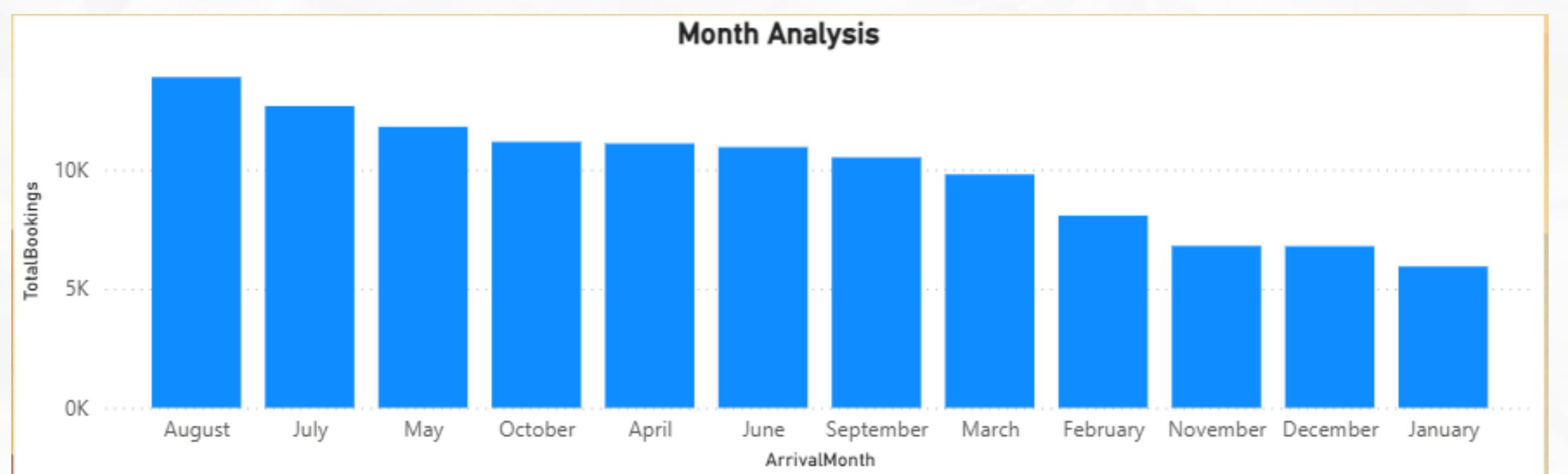
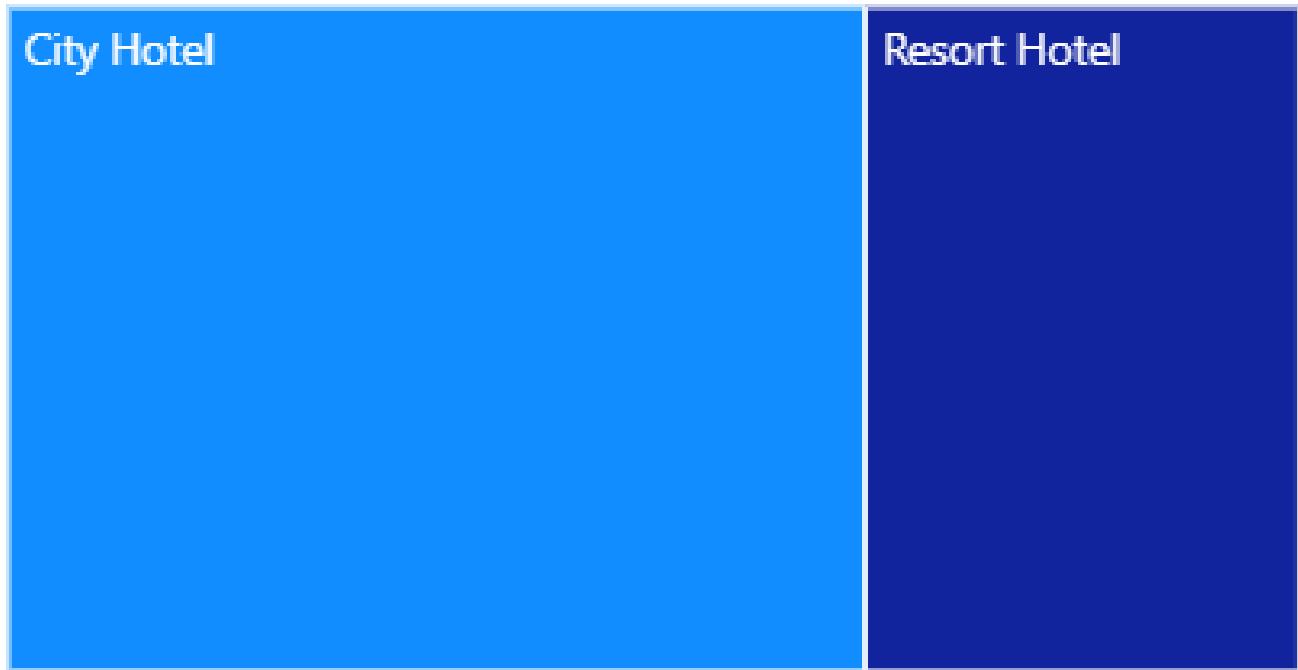


- **Power Query** → cleaning & transformations.
- **DAX Measures** → KPIs & advanced calculations.
- **Interactive Dashboards** → drilldowns by hotel, market, channel.
- **Custom Visuals** → maps, heatmaps, treemaps for deeper insights.
- **Real-Time Monitoring** → publish & share via Power BI Service.

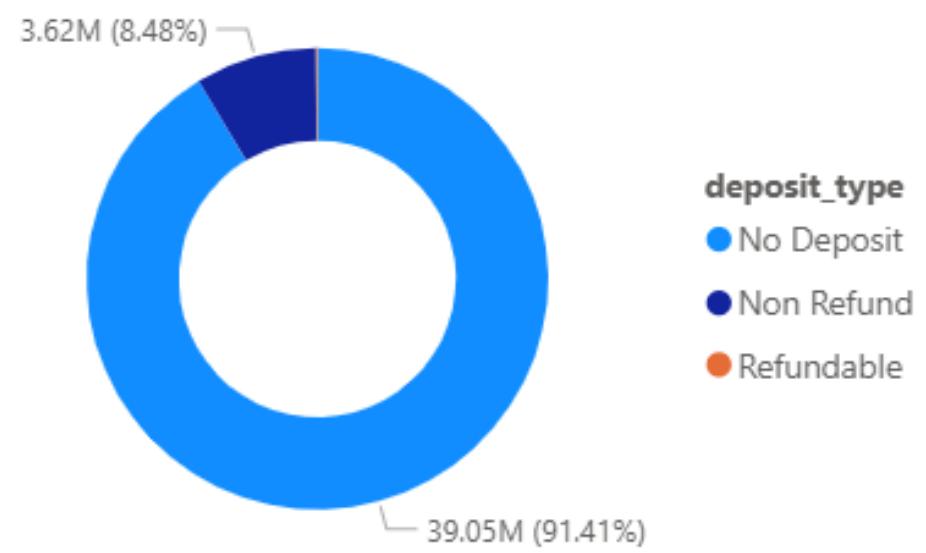
Visual Analytics in Power BI



Total Bookings by Hotel



Deposit Type Vs Cancellations



Conclusion

- HotelRevAI in Power BI = smarter, data-driven revenue decisions.
- Turns raw bookings into interactive dashboards & KPIs.
- Helps managers optimize pricing, demand, and occupancy.

Thank You

