Maximizing Revenue For City Hotel

Revenue Optimization Strategy 2017-2018

Presented by Dooinn KIM
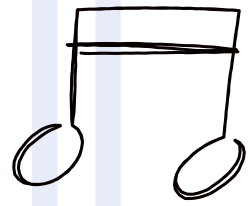
Agenda

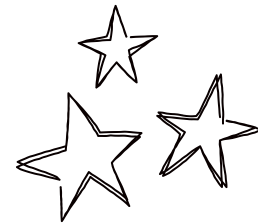"What are we going to cover?"

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1. Dataset Overview

"What are we examining?"

Dataset Overview

- **Source**: City Hotel Booking System
- **Time Frame:** July 2015 -Aug 2017
- **Columns**: 119,390 rows & 36columns capturing various facets of a booking, including guest details, stay duration, booking status, and financials.
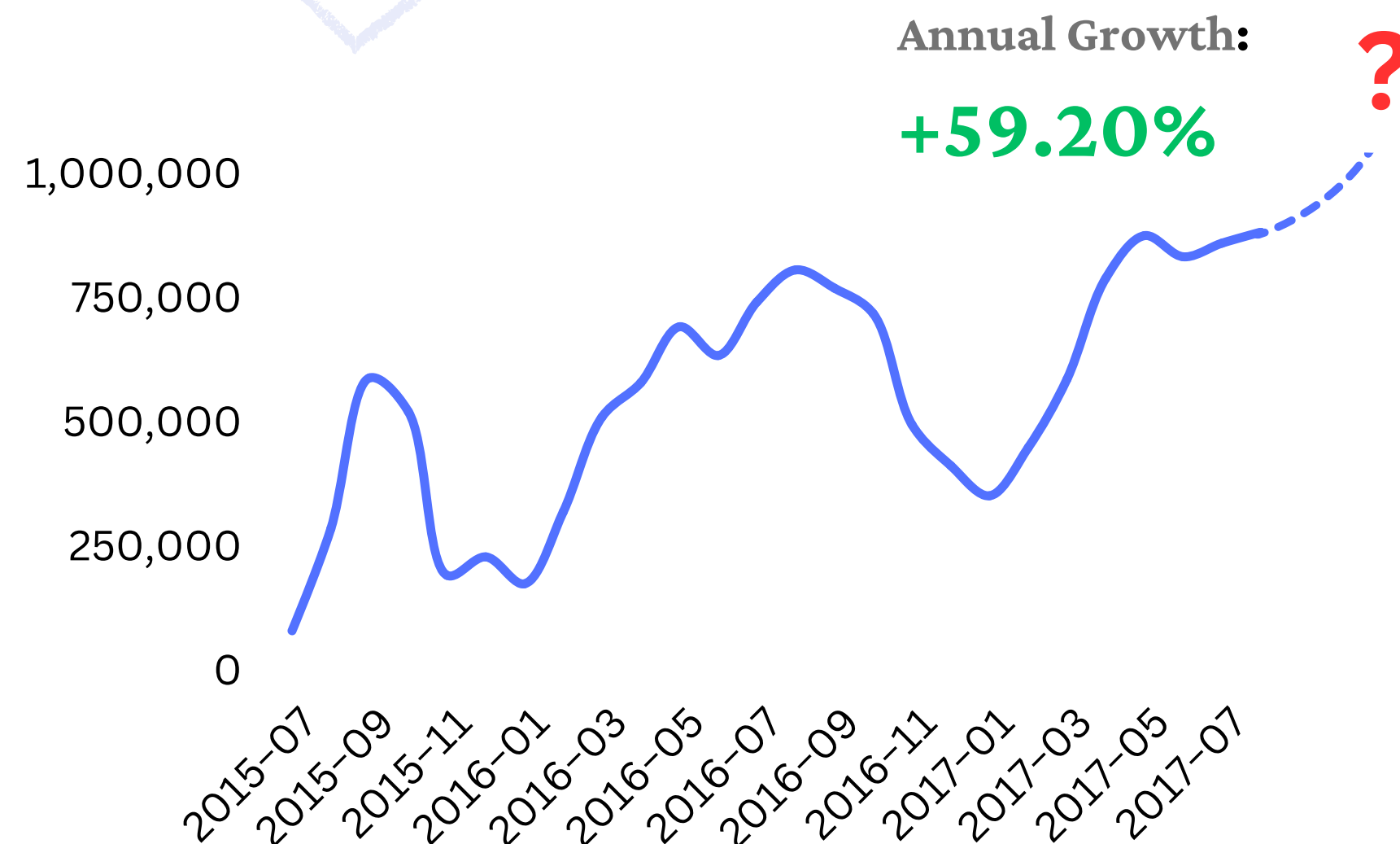
Key Features of the Dataset:

- **Booking Status ('is_canceled')**: Indicates whether a booking was canceled or not. This is critical feature, especially when analyzing how to reduce cancellations.
- **Guest Details**: Information about the guests, such as 'adults', 'children', and 'babies', allows for detailed customer segmentation.
- **Booking Details:** Columns like 'lead_time', 'arrival_date', and 'stay nights' provide insights into guest booking behaviors
- **Financials:** The 'total_rate' columns gives the revenue generated from each booking

2. Revenue Overview

"Where do we stand?"

Annual Growth:

+59.20%

?

1,000,000

750,000

500,000

250,000

0

2015-07 2015-09 2015-11 2016-01 2016-03 2016-05 2016-07 2016-09 2016-11 2017-01 2017-03 2017-05 2017-07

Key Metrics (*Year 2**)

- **Total Revenues:** $8m (**+59.20%**)
- **Total Bookings:** 23,745 (**+28.21%**)
- **Total Cancellations:** 17,810 (**+34.49%**)
- **Average Cancellation Rate:** 42.86% (**+0.17%**)

Note: While both revenues and the corresponding number of bookings have seen an uptrend, there has been a rise in cancellations as well, which aligns with typical industry patterns. Nonetheless, it's noteworthy that **the average cancellation rate has experienced a marginal uptick**

* The key metrics displayed represent aggregate figures for Year 2 (the period from August 2016 to August 2017), along with their growth rates compared to Year 1 (the previous year spanning from July 2015 to July 2016)

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3. Identifing the Business Challenge

"How can we optimize revenues for August 2018 and beyond?"

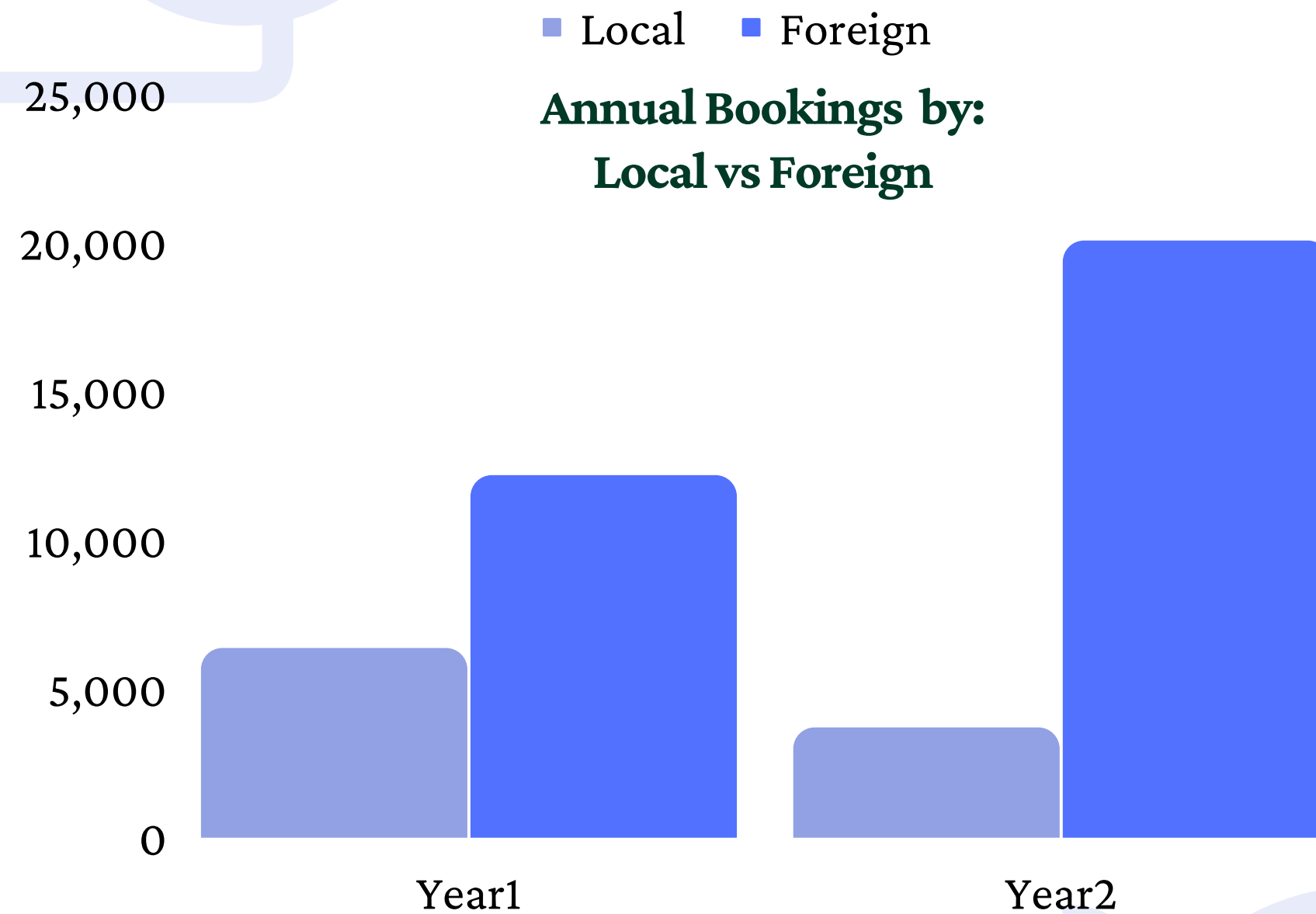**Monthly Booking Cancellation**
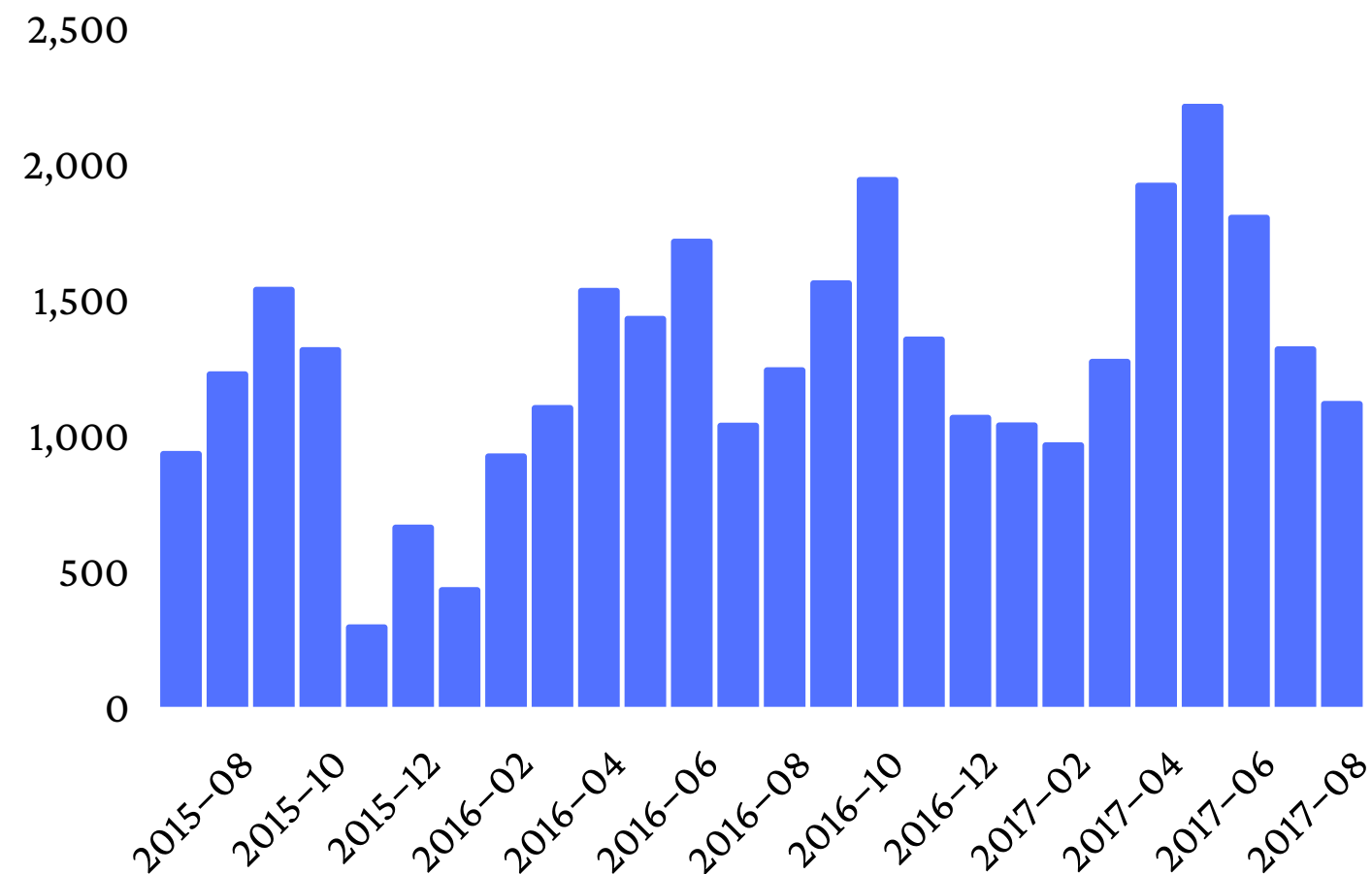
"Reduce Booking Cancellations"

The Importance of Addressing Cancellations:

- Cancellations represent potential revenue loss.
- High cancellation rates can indicate underlying issues with the booking process, customer satisfaction, or market targeting.

4. Customer Segmentaion

"Who are our customers and who tends to cancel bookings?"

■ Local   ■ Foreign

Annual Bookings by:
Local vs Foreign

25,000

20,000

15,000

10,000

5,000

0

Year1   Year2

- **Foreign Bookings**: **+64.84%**
- **Local Bookings**: **-41.81%**

📍 **Local**

64.9% Canceled

👥👥👥👥👥👥👥👥👥👥

- **Median Lead time**: 94.5 Days
- **Average Nights Stayed**: 2.5 nights
- **Average Total Spent per booking**: $204.2

🌐 **Foreign**
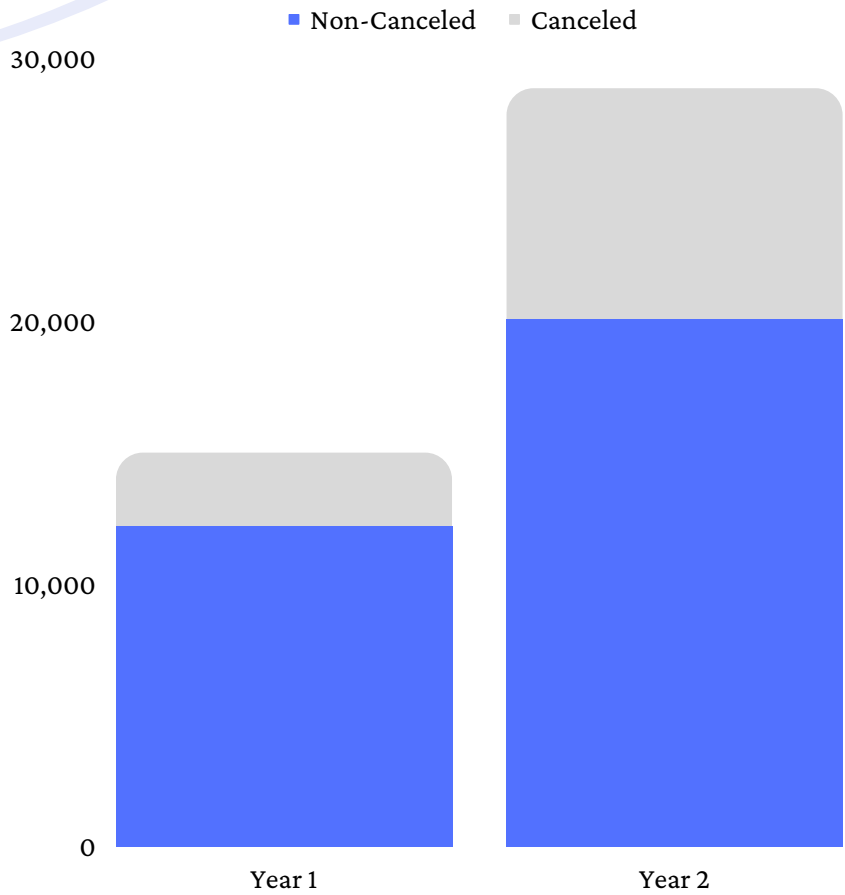
26.9% Canceled

👥👥👥👥👥👥👥👥👥👥

- **Median Lead time**: 66.0 Days
- **Average Nights Stayed:** 3.2 nights
- **Average Total Spent per booking**: $343.5

Zomming In: Foreign Guests

A deep dive into a key customer segment to target.

Foreign

Non-Canceled   Canceled

Cancellation Rates:
- **Year1:** 18.77%
- **Year2:** 30.50%

Guest Group Type

Non-Canceled   Canceled

Market Segmentation

Non-Canceled   Canceled
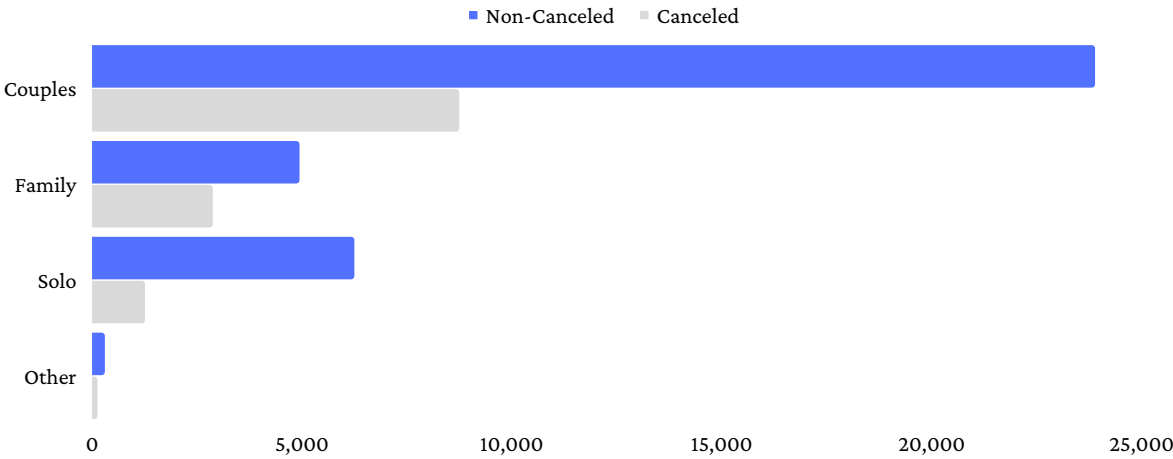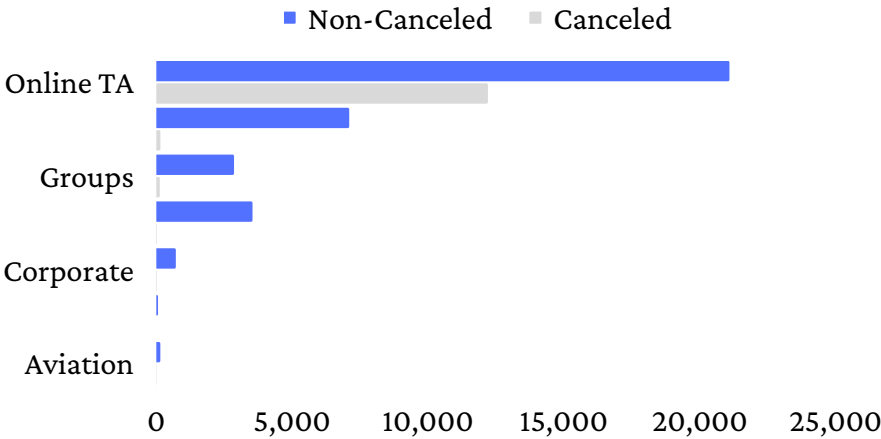
Guest Group Type = Couples

Non-Canceled   Canceled
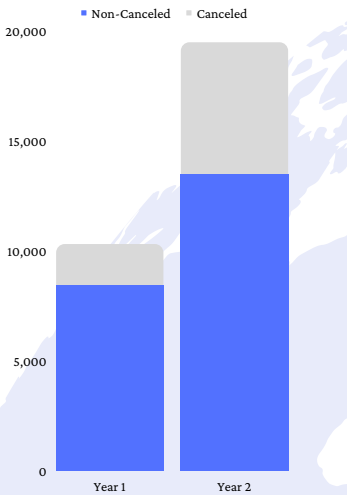
Cancellation Rates:
- **Year1:** 18.16%
- **Year2:** 30.75%

Guest Group Type = Family

Non-Canceled   Canceled
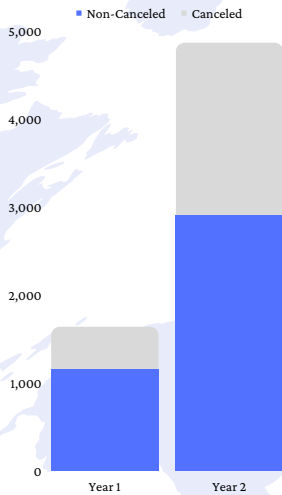
Cancellation Rates:
- **Year1:** 29.57%
- **Year2:** 40.22%

Guest Group Type = Solo

Non-Canceled   Canceled
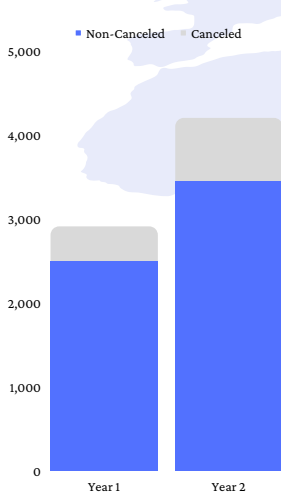
Cancellation Rates:
- **Year1:** 14.56%
- **Year2:** 17.91%

Marget Segmentation = Online TA

Non-Canceled   Canceled
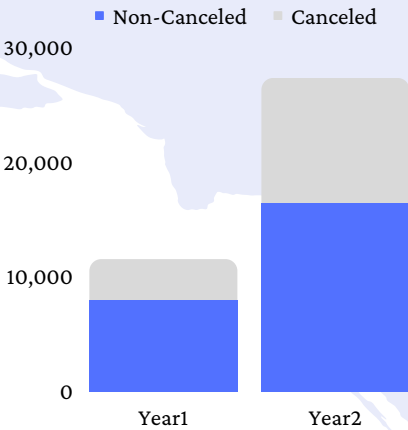
Cancellation Rates:
- **Year1:** 27.83%
- **Year2:** 39.80%

5. Predicting Cancellations

Presenting our machine learning algorithm for predicting booking cancellations.

Classification Report
(XGBoost)
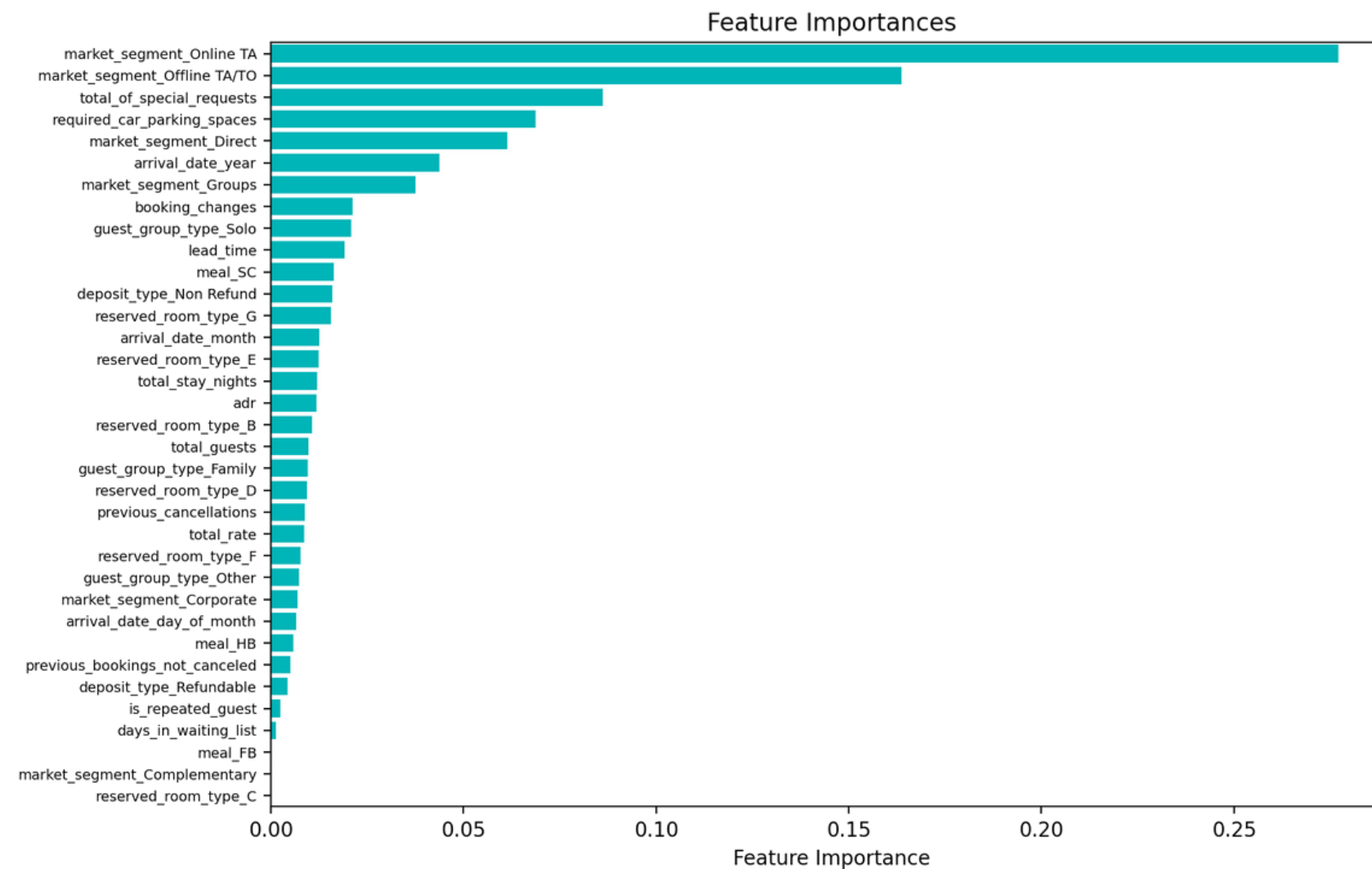
Feature Importances
(XGBoost)

Recommendations & Conlusion

"What's our takeaway?"

1. Objective

Foreign guests, especially couples and families who book via OTAs, should be our primary focus.

2. Insight Gathering
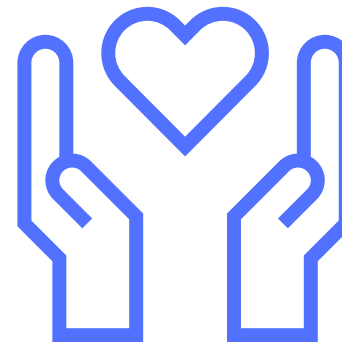
We need to investigate the services offered to these groups and determine if they have specific needs. Analyzing reviews from these guests might provide insights.

3. Implementation Plan

Consider launching promotions tailored to these guests or implementing more nuanced marketing strategies on the OTAs they use.

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Booking Dashboard

Available at: https://public.tableau.com/app/profile/dooinn/viz/HotelBookingFinal/MarketSegmentation-Country

DASHBOARD | HOTEL BOOKINGS

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CITY HOTEL

FILTERS

Year of Arrival Date
- (All)
- 2015
- 2016
- 2017

Month, Year of Arrival Date
(All)

Country
(All)

See Next Page

Total Revenue	Total Bookings	Total Cancellations	Cancellation Rate
$18.65M	16,038 booked	37,361 canceled	30.03%

Month of Arrival Date

Guest Number per Booking	Top Guest Group	Repeated Guest %	Top Guest Origin Type
Median 2.0 guests	Couples 33,680 booked	3.18% 1,697 guests	Foreign 40,190 booked

# Stayed Nights	Top Booked Room Type	Top Meal Type	Car Parking Request %
Median 3.0 nights	A 37,917 booked	BB 41,204 booked	3.55% 1,896 Requests

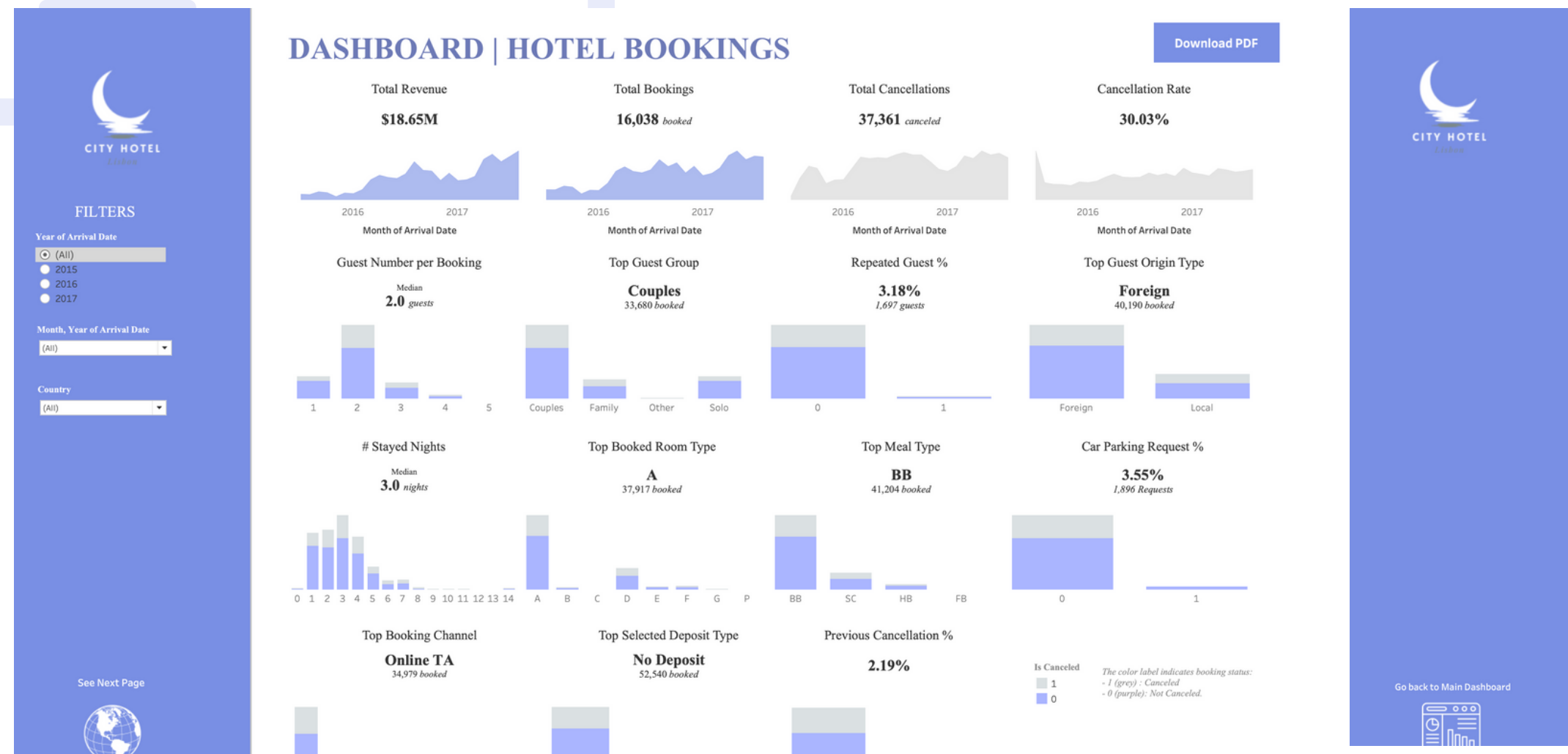| Top Booking Channel	Top Selected Deposit Type	Previous Cancellation %
Online TA 34,979 booked	No Deposit 52,540 booked	2.19%

Is Canceled
- 1
- 0

The color label indicates booking status:
- 1 (grey) : Canceled
- 0 (purple): Not Canceled.

MARKET SEGMENTAION | COUNTRY

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CITY HOTEL

Go back to Main Dashboard

Total Revenue & Bookings by Country
(Top 5 by # of Bookings)

$0.00M $0.12M
$0.01M
$0.12M $0.01M
$0.01M
$0.27M $1.13M $0.40M $0.13M $0.00M
$0.52M
$0.32M $0.23M $0.08M $0.01M
$0.01M
$0.58M $0.00M
$0.02M $0.00M
$0.87M $0.00M $0.03M $0.00M
$0.00M $0.01M

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Foreign vs Local
(Bookings & Cancellations)

Foreign | Local

Foreign vs Local
(Monthly Revenue Comparison)

Country
Month of Arrival Date

PRT FRA GBR DEU ESP ITA BEL BRA USA NLD CHN

Revenue Colored Map: The map above displays the total revenue earned by each country. The darker the shade of purple-blue, the higher the revenue earned by that country.

Insights: Based on booking numbers in comparison with other countries, Portugal (PRT) is the largest market for the business. For bookings made outside of Portugal, France (FRA) is the second largest market, followed by the UK (GBR), Germany (DEU), and Spain (ESP). These countries are geographically located close to Portugal.

Portugal	France	UK	Germany	Spain
$1.46M 4,883 booked	$0.72M 1,546 booked	$0.54M 1,299 booked	$0.41M 929 booked	$0.45M 1,117 booked

Month of Arrival Date

Hotel Booking Dashboard

Market Segmentation