A2 TEAM ASSIGNMENT

BUSINESS INTELLIGENCE

By Professor Federico Torreti

TEAM 3

Carla Rivero

Isabella Atuheire

Tzlil Bregman

Yash Yadav

Anshul Rana

Executive Summary

One of the constant problems encountered at our hotels has been the high cancellation rates that make forecasting very ineffective and reduce revenues. A closer examination of booking records supplemented by our hotel between July 2015 and August 2017 paints a picture of why this is the case and offers a direct route to its solution. At both our Resort (H1) and City (H2) hotels, our story is the same: bookings with long lead times, online travel agent bookings, and bookings without a financial deposit are by far the most significant category of cancellations. The following is a data-driven plan to re-tell this story, which is expected to drop cancellations and allow our revenue sources to settle down.

Data Preparation and Methodology

To ensure our story was based on solid facts, the data was carefully prepared. This involved merging date columns for accurate seasonal analysis (arrival_date), creating a unique ID for each booking (Booking_id), and making logical assumptions, such as treating bookings with 'no children' and 'N/A' as the same. Most importantly, we defined our "product" as what the guest reserved (reserved_room_type, meal_code), not what they were eventually assigned. This is because the guest's decision to cancel is based on the original offer they booked, making it the only truthful metric for this analysis.

Cancellation Drivers and Strategic Recommendations

1. The Distant Booker & The Uncommitted Guest

Visual: *The Story of Time and Risk*

As we go through the data, we can see that the longer the lead time is, the higher the rate of cancellations. The guests that secure bookings well in advance have more chances of canceling their reservations compared to the ones that check in at the last minute.

The visual illustrates the dual pattern: the **columns** reveal that the majority of bookings are made within short notice; the line shows how the rate of cancellations rises as the lead time increases. This pattern is especially noted at the **City Hotel**, where the **average lead time is 110 days**, compared to **93 days at the Resort Hotel**. These long-lead guests represent higher risk due to their lower commitment over time.

Recommendation:
To reduce cancellations from early bookers, it is recommended to implement a **dynamic deposit policy**. Reservations of over 90 days' lead time, especially those that are made through high-risk channels, should be required for a small non-refundable deposit. Updating their reservation,

firms penalize speculative reservations but still leave room for serious guests through this low financial obligation.

2. Distribution Channels: The Loyalty Gap

Visual: *Cancellation Rate by Distribution Channel*

When comparing the distribution channels, it is observable that the volume of cancellations under the category of travel agents (TA) and tour operators (TO), especially Online TA, is overwhelming compared with direct booking which is significantly more stable and reliable.

These results make a strong case for targeting **OTA channels** as a strategic risk. It also reflects a deeper issue: a **low repeat guest rate**, which indicates a gap in guest loyalty and long-term relationship-building.

Recommendation:
The hotel group should invest in a **Book Direct loyalty program** that will be designed to increase retention and reduce dependency on third-party platforms. The incentives for direct bookings could include **room upgrades, flexible cancellation terms, or even early check-in options**. Building personalized connections with guests would eliminate the risk of cancellation and create sustainable brand loyalty.

3. The "No Deposit" Loophole

Visual: *The Evidence Locker: Financial Impact of Deposit Types* (Matrix)

The most significant predictor of cancellation risk is financial commitment. The matrix visual provides an evident depiction of the connection between the policy of No Deposit and most cancellations. The percentage number of the Resort Hotel was above 95 % without a deposit, whereas the City Hotel was almost at the same percentage, 83 %.

The matrix also shows the Average Daily Rate (ADR) of each of the types of deposits and demonstrates the financial loss of cancelled reservations. On contrast, reservations made with a non-refundable deposit demonstrate almost zero cancellation rates. Such results point directly to the current deposit policy as one of the major hubs where the revenue assurance strategy of the hotel group fails.

Recommendation:
The hotel group should **revise its deposit structure**, especially for reservations through OTA/TA channels or bookings with high ADR. It is recommended to introduce **tiered deposit requirements** that are based on lead time and booking channel since they are expected to reduce the cancellation volume while still maintaining customer flexibility.

4. Seasonality & Property Behavior

Visual: *A Tale of Two Hotels: Seasonality and Cancellations*

The variation in cancellation behavior does not extend only to the attributes of booking but also the seasonal profile of properties. The visual analysis considers the volume of monthly cancellations of the two hotels. The City Hotel shows that its cancellation rates are always quite high, and the Country Hotel has more subtle peaks.

The existence of such differences makes it relevant to implement property-specific, seasonally adjusted cancellation rules instead of hotel-wide rules. Outlining the high-risk months, management can make prospective adjustments in rates, staffing, and promotional programs.

Recommendation:
Management should develop **seasonal cancellation strategies** specific to each hotel. As an example, more stringent terms of deposits or making non-refundable types of rooms more popular in the higher risk months may serve to reduce the financial cost of cancellations. These specific efforts can help to protect revenue, but also to streamline operational planning.

Conclusion

This analysis shows that the cancellation rates have significant positive relationships with long booking windows, online travel agency bookings, and poor financial commitments. The hotel operator can therefore use specific measures such as dynamic deposits, direct sales incentives, and seasonally adjusted policies to reduce these determinants. These measures will aim to reduce cancellations, strengthen revenue prediction, and increase guest retention. With these suggestions, the firm can improve its booking stability and achieve profitable growth in the long run.