Detailed Report: Optimizing Customer Perks to Boost Program Sign-ups

1. Situation

TravelTide, a growing e-booking startup (founded 2021-04), has expanded rapidly by leveraging advanced data aggregation and search technology. This has given customers access to a very wide range of travel options. However, this growth has prioritized inventory and search functionality, leaving aspects of the customer experience underdeveloped, which has resulted in suboptimal customer retention.

CEO Kevin Talanick is committed to improving customer loyalty and providing increased customer value. To achieve this, Elena Tarrant, an expert in customer retention strategies and rewards programs, has joined as Head of Marketing.

Elena's core mission is to design and implement a personalized rewards program that incentivizes repeat customer engagement with the TravelTide platform. Effective personalization requires a thorough understanding of customer preferences, thus Elena relies on the Analytics team for crucial customer intelligence.

2. Approach

This analysis investigates available customer data to identify the preferences of different customer segments concerning Elena Tarrant's proposed perks. The analysis encompasses these key steps:

- **2.1 Data Exploration and Preparation:**
  - Customer data is examined, cleaned, and prepared.
  - This includes handling missing values, inconsistencies, and data transformation.
  - Data includes:
    - Demographics (age, gender, location, family status)
    - Booking histories (flights, hotels, packages)
    - Past discount/offer utilization
    - Website interaction data (clicks, searches)
    - Customer feedback/surveys (if available)

- **2.2 Customer Segmentation:**
  - The customer base is segmented to identify clusters with similar preferences and behaviors.
  - Segmentation criteria include:
    - Demographics
    - Booking patterns (frequency, destinations, trip duration, lead time)
    - Customer lifetime value
    - Responsiveness to marketing campaigns

- **2.3 Analysis of Perk Preferences:**
  - For each segment, the analysis determines the likely appeal of Elena's proposed perks:
    - Free hotel meal
    - Free checked bag
    - No cancellation fees
    - Exclusive discounts
    - 1 night free hotel with flight booking
  - Methods include:
    - Analysis of past benefit utilization
    - Correlation analysis (behavior vs. perk preferences)
    - Demographic insights
    - Discount utilization analysis
    - Cancellation behavior analysis

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- **2.4 Development of a Perk Assignment Model:**
  - A model assigns each customer to their most relevant perk.
  - Model techniques:
    - Rule-based systems
    - Decision trees
    - Machine learning algorithms
  - Goal: Maximize the likelihood of perk appeal and program enrollment.

- **2.5 Validation of Results:**
  - Analysis results are validated for accuracy and reliability.
  - Validation may involve statistical testing, cross-validation, or external data comparison.

3. Findings / Observations

The analysis of customer data has yielded the following key findings:

- **3.1 Preference for Flight Discounts (Price-Sensitive Segment):**
  - A segment with high price sensitivity and occasional bookings shows a strong affinity for flight discounts.
  - This highlights the importance of price-driven perks.
    - Example: High response to discount emails, frequent use of price filters.
    - Visualization: Bar chart (average perk utilization across segments, emphasizing flight discount use).

- **3.2 Appreciation for Hotel Benefits (Loyal Segment):**
  - Customers with high hotel booking frequency and loyalty value hotel perks (upgrades, late check-out, free meals).
  - Hotel perks strengthen loyalty.
    - Example: Participation in loyalty programs, positive reviews, higher-tier bookings.
    - Visualization: Table (top 3 perk preferences by loyalty level, emphasizing hotel perks).

- **3.3 Importance of Flexible Cancellation Policies (Families/Risk-Averse):**
  - Segments with higher cancellation risk (families, short-notice bookers) value flexible cancellation policies.
  - Flexible policies are attractive to specific customer groups.
    - Example: Families cancel due to unforeseen events, business travelers need flexibility.
    - Visualization: Scatter plot (booking flexibility vs. "no cancellation fee" preference).

- **3.4 Demographic Hints at Baggage Preferences:**
  - Demographics (family size, long-haul flights) correlate with interest in free checked baggage.
  - Demographics should inform perk personalization.
    - Example: Families/long-haul travelers have higher baggage needs/costs.

- **3.5 Potential for Combined Offers (Flight & Hotel):**
  - Customers booking flight/hotel packages respond well to combined offers (e.g., free hotel night).
  - Combined offers enhance perk appeal.
    - Example: Appeal to city break/extended vacation bookers.

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4. Conclusion / Recommendations

- **4.1 Validation of Perk Hypotheses:**
  - The analysis largely validates Elena's assumptions, but with important refinements. For example, the effectiveness of flight discounts is highly dependent on the discount type (percentage vs. fixed amount).
  - **Expansion:** It's vital to consider these nuances to optimally align perks with customer segments and allocate resources efficiently. Therefore, a detailed discussion with Elena is essential.

- **4.2 Development of a Perk Assignment Model:**
  - A perk assignment model is crucial. It can be based on rules (e.g., "frequent bookers receive hotel perks"), decision trees, or machine learning.
  - **Expansion:** The choice of model depends on data availability and resources. Regular review and adaptation of the model are essential to respond to changes in customer behavior.

- **4.3 Prioritization of Perk Highlighting:**
  - A perk assignment model is crucial. It can be based on rules (e.g., "frequent bookers receive hotel perks"), decision trees, or machine learning.
  - **Expansion:** For example, price-sensitive customers respond well to limited-time discounts, while loyal customers appreciate exclusivity. A/B testing of different email variations is highly recommended here.

- **4.4 Test and Iterate:**
  - Continuous optimization requires A/B testing of different communication and perk approaches.
  - **Expansion:** Test, for instance, subject lines, email content, perk types, and calls to action. Analyzing the results enables data-driven improvement of the program.

5. Recommendation of Next Steps

- **5.1 Detailed Analysis of Perk Performance:**
  - Post-implementation, an analysis of perk usage and impact on metrics like customer satisfaction and retention is essential.
  - **Expansion:** Key performance indicators (KPIs) include perk utilization rates, customer satisfaction scores (from surveys), customer retention rates (repeat purchases), and the program's return on investment (ROI).

- **5.2 Continuous Segmentation Optimization:**
  - Customer segmentation must be regularly reviewed and adapted to address evolving customer needs and market trends.
  - **Expansion:** New data sources (e.g., social media, website behavior) and analytical methods can refine segmentation and increase marketing effectiveness.

- **5.3 Integration of Additional Data Sources:**
  - Future analyses should incorporate more data sources to obtain a more comprehensive customer view.
  - **Expansion:** Useful sources include website usage data, social media interactions, feedback from surveys, and chat logs with customer service.

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6. Attachments

- **Link Tableau Public:**
  https://public.tableau.com/app/profile/robert.schopf/viz/MasterProject-TravelTide-RS/Story1

- **Link Notebook - googlecolab:**
  https://colab.research.google.com/drive/16pukAUnjZQ2kKL2zRD7BLIN_jfxlfwkL?usp=sharing

- **Link MasteryProject - Summary:**
  https://drive.google.com/file/d/1cRQZj7pTgZfMqmC-i-eP2DH4bzHyySpj/view?usp=drive_link

- **Link GoogleDrive - folder:**
  https://drive.google.com/drive/folders/1RrIO9VJiiNhgj34QzjcdX30JvcUJR5OB?usp=drive_link