Suggestion for Data Analysis of Can Coll

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Abstract: This essay delves into the data analysis needs of Can Coll, a charming rural hotel nestled in the picturesque Catalan countryside. Through a combined approach of literature research and case study, it assesses the viability of launching a big data project and proposes a tailored data analysis strategy. By leveraging guest survey data and sentiment analysis, Can Coll can unlock valuable insights to personalize guest experiences, optimize resource allocation, and drive targeted marketing campaigns. The essay uses literature research and case study method for analysis and outlines key goals such as establishing a guest loyalty program, alongside recommended activities including personalized service recommendations and proactive issue resolution. This approach holds the potential to boost Can Coll's competitive edge and ensure its long-term success in a rapidly evolving landscape. Ultimately, this analysis demonstrates how embracing data-driven strategies can unlock significant growth potential for Can Coll, transforming it into a thriving rural destination.

***Keywords*:** data analysis, big data, Can Coll

1. Introduction

Can Coll, a rural hotel located in an area of Montseny, in Catalonia, has achieved a great success with increasing extensive customer portfolio. They provide good services for their clients ranging from leisure activities, spa area, and dining service for those who are not staying in the hotel. Their type of client varies, containing families with children, couples, retired people and groups of friends. Currently, they want to know in detail about their client portfolio by analysing the data collected and compiled over forty years, and offer a better and personalised service for their customers.

2. Implementation of a Big Data Project

As they need the analysis of data compiled over lots of years, it's advisable for them to carry out a big data project.

As O'Reilly stated about the definition and characteristics of big data: Big data is data that exceed the processing capacity of conventional database systems. The data are too big, move too fast, or do not fit the strictures of your database architectures. To gain value from this data, you must choose an alternative way to process it. [1]

There are three common characteristics of big data, as we call the the 3 Vs of Big Data: Volume, Velocity and Variety. The volume refers to the amount of data generated every second measured in Zettabytes. Velocity is then the speed at which new data are generated and at which data move around. Variety refers to all the structured and unstructured data that has the possibility of getting generated either by humans or by machines. [1]

For the benefits brought by the big data can be issued from its three characteristics. First from volume, massive datasets allow for incredibly detailed investigations, revealing patterns and trends invisible in smaller samples. Imagine analyzing billions of website visits instead of millions, one can pinpoint user behavior with laser precision. Large datasets provide more robust estimates and reduce the margin of error, leading to more confident decision-making.

Second is velocity. Big data's rapid processing capabilities enable near-instantaneous analysis of streaming data-- think financial market fluctuations or social media sentiment. This empowers real-time decision making and proactive responses to dynamic situations. Rapid analysis reduces the time lag between data collection and actionable insights. Velocity allows for building highly accurate predictive models based on continuously updated data.

Third, is variety. Big data encompasses diverse data types-- structured, unstructured, and semi-structured-- providing a comprehensive picture of a situation. By analyzing disparate data sets, one can uncover unforeseen relationships and dependencies.

We can now extract deeper insights, make faster decisions, and uncover hidden patterns by using big data, and that's why it's beneficial for Can Coll to use big data.

3. The Kind of Data necessary

The main goal for the owners of Can Coll is to know their current client portfolio, to be able to offer them personalised service. The kind of data necessary for them to use is both structured data and unstructured data, that is semi-structured or hybrid data. [1]

3.1 Structured data

For structured data, the types need to be analyzed include the data created directly by the company, data created indirectly from a previous action, data directed by transactions, and compiled data. They can also use experimental data which is the data generated from experiment during their analysis of data.

3.2 Unstructured data

Unstructured data is information that lacks a predefined structure or schema, making it difficult to organize, manage, and analyze using traditional database systems. Unstructured data are multimedia files, PDF or Word files, comments, interactions with users, etc. Can Coll has data not only the establishment has been collecting but the data and information that we can obtain today through social networks. The sources of unstructured data are captured data and user-generated data.

4. Possible goals to achieve

4.1 Goals for Personalized Service Based on Unstructured Data

4.1.1 Understanding customers

Analyze emails, social media comments, and reviews to understand how customers feel about the brand, products, and services. This can reveal areas for improvement, opportunities for upselling, and potential brand crises. Analyze feedback to understand what customers like and dislike about offerings. This can helps personalize product recommendations, tailor marketing campaigns, and develop features that align with customer expectations. Based on data analysis, group customers with similar characteristics and behaviors. This enables targeted communication, product development, and promotions tailored to specific segments.

4.1.2 Enhancing customer experience

Monitor social media and emails for mentions of potential issues and proactively reach out to affected customers. This reduces negative sentiment, demonstrates care, and fosters brand loyalty. Use customer data to personalize email marketing, website recommendations, and social media interactions. This creates a more engaging experience for individual.

4.1.3 Improving Products and Services

Analyze customer feedback to uncover areas where offerings fall short. This can guide product development, feature enhancements, and service improvements. Monitor social media and customer reviews to understand how new products and features are being received. This feedback can inform future iterations and marketing strategies. Analyze what topics resonate with audience and create content that addresses their specific needs and interests.

4.2 Goals for Personalized Service Based on Structured Data

Based on the structured data for example age, sex, lodging additional requirements, and payment methods, a series of goals to achieve personalized service can be set.

4.2.1 Targeted Recommendations

Use age, sex, and lodging preferences to suggest suitable activities, tours, restaurants, or amenities. For example, recommend family-friendly activities for younger guests or exclusive experiences for couples. Utilize lodging preferences and previous travel patterns to propose personalized room upgrades or package deals based on their interests.

4.2.2 Enhanced Experience

Pre-fill forms and preferences based on stored data, reducing check-in wait times and offering a smoother arrival experience. Based on booking data and guest history, anticipate potential needs and provide proactive assistance. For example, offer restaurant reservations for birthdays or arrange transportation upon arrival.

5. Suggested Database

5.1 Column-oriented database

Column-oriented Database (CODB) are database systems that store data by columns rather than rows. [2] This means that all values within a column are stored contiguously, making them highly efficient for queries that involve only a subset of columns or for aggregating large amounts of data.

The column-oriented database can result in faster aggregations and analytics, enhanced compression (reducing storage costs and improving query performance, especially for large datasets), optimized query performance, effective data warehousing. [2]

5.2 Graph database

Graph database (GBD) are a type of NoSQL database that excels at representing and analyzing interconnected data. The graph database can give a precise amount about the age and sex of each individual customer. Benefits include Guest Relationship Mapping, Personalized Recommendations, Fraud Detection, Supply Chain Optimization, Customer Service and so on.

6. Changes or Activities recommended

The changes and activities are based on a marketing and business vision, after knowing the clients by analysing, personalised service should be carried out.

6.1 Personalized communication

Address clients by name, reference their past interactions, and tailor communication style to their preferences. This can include personalized emails, phone calls, or social media messages.

6.2 VIP Programs

Create exclusive programs for loyal customers with additional benefits like early access to sales, personalized consultations, or special event invitations.

6.3 Community building

Foster a sense of community among clients by hosting online forums, organizing events, or creating social media groups where they can interact with each other.

6.4 Dynamic website content

Use the information gathered about individual clients to personalize website content, like displaying different product recommendations, showcasing relevant blog posts, or offering targeted discounts.

6.5 Segmentation

Analyze customer data (demographics, purchase history, website behavior) to segment them into different groups based on shared characteristics and needs. This allows to tailor your marketing messages, product recommendations, and service offerings to each segment.

7. Conclusion

This paper mainly provides recommendations tailored for the data analysis work from Can Coll. Some help and advice are given for the improved personalized service of Can Coll ranging from pros and cons of big data utilization, typology of the data, possible goals, databases recommended, and changes and activities for improvement after getting to know the client from analysis of large amounts of certain data. Solutions and possibilities are all listed for the launch of a big data project for Can Coll to offer a more personalized service and obtain more customers.

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