

MBAS904: Assessment 2

Part 2- Investigation Report

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Executive Summary

Big Data and Business Analytics is revolutionising every industry, the Hospitality and Tourism industry is one of the new industries adopting to this modern technology. The competitive advantage gained by using analytics to maximize revenue and profits, target marketing and customer interactions is huge.

This report will discuss some of the ways that hospitality and tourism industry is adopting big data and business analytics to capitalize on the opportunity for making informed decisions. As the revolution continues analytics is starting to be used in every part of the company from front end to backend. Hospitality industry is creating big data everyday which can be used to find insights about customer preferences and create value for the brand.

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Introduction

Like every industry, Hospitality and Tourism industry is adopting technological advancements and has started using data for decision making and increase profitability. More and more travellers today are booking holiday accommodations online. Due to swift growth in the online communication platforms and increased exchange of information about products, services in the form of online reviews, opinions, and recommendations which have become a major source of opportunities and new challenges in the hospitality and tourism industry (Ladhari & Michaud 2015, p. 36).

Modern technological advances in data infrastructure and communications help generate and gather a lot of data in the hospitality industry. With the help of prediction algorithms and other machine learning methods, the industry has found ways to extract useful information from the data and interact with consumers at every stage of their travel to make decisions and forecast sales (Wu, Wu & Song 2021, p. 1917). The purpose of this report is to examine and provide insights into how big data and analytics is helping the hospitality and tourism industry grow over the course of next several years.

Role of Big Data and Business Analytics in Hospitality

Big data analytics has been defined as – the process of extracting hidden insights regarding consumer habits from the big data and utilizing those for organisational profits (Erevelles, Fukawa & Swayne cited in Sann et al. 2022, p. 1800).

Hospitality and Tourism industry have vast amount of data from both; service providers and the consumers (Mariani & Baggio 2022, p. 231). Managers at all levels use the large volumes of data and with data analytics improve decision-making. Modern technologies have enabled hotels to take innovative approaches towards handling its business activities in order to maximize profits. Data analytics plays an important role in this situation in bringing about these changes in the hospitality industry. Here are a few areas where this technology is currently being used by hotels for better management and gaining competitive advantage–

- **Revenue Management**

Data analytics can play a key role in helping hoteliers develop strategies for managing revenue. This big data will be collected from various online resources or the hotel's personal data. They can also use this data to conduct predictive analysis for forecast the demand and prepare accordingly to capitalize on given opportunities.

Hotels use the internal data such as occupancy rate, bookings, etc. and combine it with external data about events, holidays, flights, etc. in order to forecast demand and capitalize on it (Yallop & Seraphin 2020, p. 257). In recent years hotels have started dynamic pricing which has become an industry standard. Machine learning algorithms are deployed to help hotels optimize their pricing according to market demands, room availability, customer budget, seasonal trends, and other customer needs (Bhattacharjee, Seeley & Seitzman 2017).

One of the prominent examples of an organisation successfully using big data to gain competitive advantage is Airbnb (Guttentag 2019, p. 179).

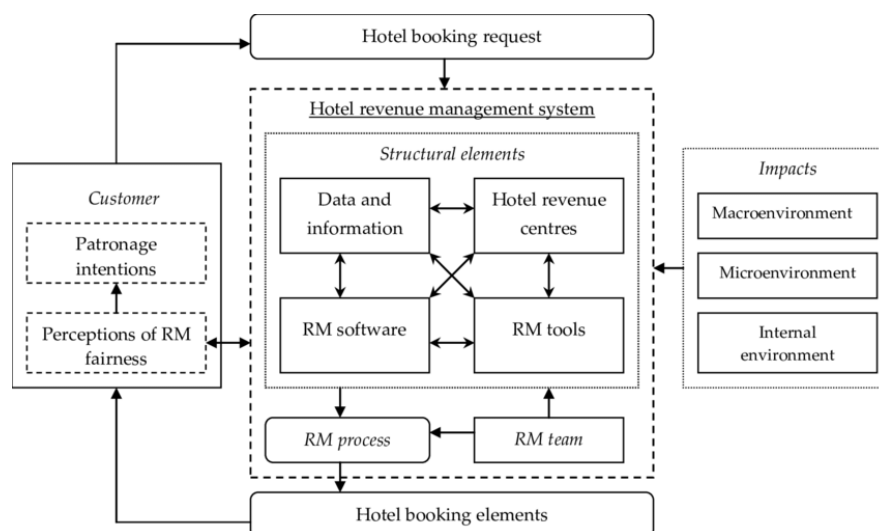


Figure 1: Revenue Management System (Source: Ivanov 2014)

As can be seen in figure 1, the revenue management system is affected by both internal and external factors and hence, the organization needs to keep track of both in order to make informed decisions.

- **Customer Experience and Reviews**

Hotels collect feedback from customers as well as feedbacks from the websites and do sentiment analysis to make sure the guests have a good experience. Another advantage of analysing feedbacks is if enough guests ask for services that are not provided by hotel the organisation can work on incorporating or collaborating to provide the services and improve the customer experience and increase revenue (Xiang et al. 2015, p. 120).

In a study conducted by Xiang et al. they document the process of collecting and analysing brand reviews left by customers on popular websites such as Expedia, TripAdvisor and Yelp and how it helps the hotels to improve customer experience (2017, p. 51). The table below depicts the size of the dataset, the number of hotels used, and the relevant reviews used by the hoteliers for their research.

Review Platform	N of Hotels	N of Reviews	N of English Reviews (percentage)	N of English Reviews per Hotel
TripAdvisor	443	438,890	438,826 (99.99%)	991
Expedia	467	480,589	351,182 (73.07%)	752
Yelp	581	30,816	30,770 (99.85%)	53

Table 1 Data set of customer reviews for analysis

Studies have shown, consumers tend to give more attention to the negative reviews rather than the positive ones when it comes to deciding hotels and interpreting their reputation. However, paying attention to complaints or “locus of causality”, is the least explored concept in the hospitality industry, but an important one as hoteliers can learn a lot from customers complaints with respect to enhancing guest satisfaction and improving service quality (Sann et al. 2022, p. 1800).

- **Target Marketing**

Hotels cater to a wide range of customers with different preferences – from businessmen, families to travellers and influencers, and all with various financial backgrounds. If used

properly data analytics can make it easier for hotels to build marketing strategies according to their customers' requirements.

The marketing team can narrow down the particular type of customers that frequent their locations and target that demographic. They can design their campaigns and advertisements around this to attract the right audience and recognize their best opportunities to improve their services according to customer preference. This way hotels target their most relevant customers reaching them through timed advertising on sites the consumers frequent. In addition, organisations can optimize plans to reduce marketing costs.

If a hotel caters to families with children, they can offer a plethora of kids' activities like parks and game zones, this way the kids can be kept occupied while the adults enjoy their holiday as well.

An example of this is the luxury brand MOXY, whose target market is mainly luxury youth hostels who cater to generation Z customers and therefore they are primarily based on Instagram to reach maximum audience (Horng et al. 2022, p. 22).

Gaining Competitive Advantage and Informed Decision-Making

As covered above, hotels can use big data to construct better strategies conducive to their marketing efforts. They can learn about customer likes and dislikes, most favourable time & season, and more for improved decision-making and provide customized services to maximize their profits. Channels like social media, brand reviews, CRM data is utilized for these efforts.

A study conducted by Horng et al. validates the effectiveness of big data analytics and strategies based off them can offer competitive advantage in the hospitality sector (2022). Incorporating big data into day-to-day business can be considered digital transformation and value generation. Pappas et al. define big data and business analytics ecosystems and present a digital transformation and sustainability (DTS) model that depicts how big data and business analytics ecosystems may help societies evolve and become more sustainable (2018, p. 479).

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Big data strategies are deployed in organisations for various important purposes which improve the analytics capabilities. The two types of data strategies are defensive and offensive strategies. Defensive strategies include improving internal process and maximising operational efficiency. This can be achieved by flattening the organisational structure to increase the response speed by shortening the decision-making process. The offensive strategies on the other hand, focuses on consumer data and market to them via different channels as mentioned earlier (Horng et al. 2022, p. 22).

Conclusion

We can infer from this report that the use of big data and business analytics is proving quite beneficial in many aspects in the hospitality and tourism industry. It can not only help them streamline day-to-day business activities but also help optimize their strategies according to customer preferences. Personalizing campaigns to customer needs guarantees better customer satisfaction, improving the organization's reputation which in turn will positively affect their profits. This will help give the organisations make informed decisions and gain competitive advantage.

Although there are many advantages to use big data in the hotel and tourism industry it is important to keep in mind that there are certain aspects of handling big data that require caution. One of the key aspects is security and privacy of the customer data which is crucial for brands to keep the consumer's trust. Any kind of security breach can lead to permanent damage to organisation's reput. Secondly, when hotels implement business analytics, they need to make sure that the employees should be well versed in to handle the digital transformation journey of the organisation. Hotels can deal with this by training their employees with new management systems and encouraging them to develop new analytical skills. Implementing ethical methods while using big data and business analytics can help in building and maintaining a sustainable business.

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