

Module: Data Handling and Business Intelligence

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Introduction

Business Intelligence is a pivotal tool which is a catalyst in transforming the healthcare landscape. It provides enhanced personalisation which assists end-to-end personalisation on guest behaviour, preference lists and historical data. It also offers fiscal management, which looks after the cash flow of the organisation. It determines the amount of liabilities and assets a firm possesses. Revenue management is offered by the system which helps in determining dynamic prices. Real-time decision-making can be done by the management withholding continued data flow, rapid response to the latest trends, and market changes happening across the UK hospitality industry (Mariani and Baggio, 2022). In the UK, the tourism and hospitality system are overly complex, and it is highly data driven. Business intelligence will help in driving innovation and providing operational outcomes. The UK-based hospitality sector is depending increasingly on Business Intelligence (BI) solutions to manage enormous volumes of data effectively as the environment of data collection and utilisation has changed significantly (Xudayarov and Akhror, 2022). The integration of Agile approaches in business intelligence (BI) has revolutionised the way organisations manage and utilise data, making quick analytics and data science essential components of contemporary BI (Klaver, 2020). The rise of big data, which is defined by its size, variation, and velocity, has had a major effect on the development of business intelligence, according to Larson and Chang (2016). This is because big data has applied agile, adaptable tools that inspire decisions and client experience that influence routine activities in industries involving hospitality.

Discussion

Analysis of current trends in Business Intelligence in UK hospitality sector

Business Intelligence is rapidly changing and diversifying in the hospitality industry of the UK. The change is caused due to certain features of Machine Learning (ML), Artificial intelligence (AI) and Cloud Computing (CC) (Olszak *et al.* 2021). Focusing on the latest trends in AI analytics holds a strong quality and governance in this field. Hospitality industries such as Rate Quantum, Hello Hosty and JW Marriott are using AI tools efficiently to run their business smoothly (Olszak *et al.* 2021). Business intelligence assists in conversational analytics where

conversational activities are getting increased which aids in asking questions and getting appropriate answers. This will help the business houses to get into decisions rapidly. It also helps in determining complex questions and answers in a fleeting period. Hospitality industries in the UK are fond of data privacy and protection.

Hence, certain regulations such as GDPR, HIPAA and CCPA are resources which enhance the ability to take care of personal data efficiently (Puklavec *et al.* 2018). For example, JW Marriott in the UK uses advanced data analytics to play a huge and significant role in improving the hotel industry. Managing big data through AI benefits enhanced decision-making, it generates better Return on Investment (ROI), and significant strategies can be made with the help of AI (Busulwa, 2020). According to the study of Sandhu (2021), the ROI of JW Marriott has increased to 56% in the last 5 years in comparison to 38% in 2019. Hence, it shows how much change can be brought into business by using AI-based tools. Tools of AI have been useful in providing insights through algorithms and have been a catalyst in making better strategies for the UK-based hospitality segment. For example, after the Covid-19 pandemic, financial recovery in hospital industries in the UK has been done through AI. This tool has been a catalyst for this recovery. AI technology helped in navigating the new regime of this industry by creating a safer environment and providing personalised experiences to consumers.

Classification of big data types relevant to the hospitality industry of the UK and how they are benefiting in daily operations.

Big data can be classified into structured, unstructured, predictive, semi-structured, real-time, and geospatial types. Both structured and unstructured big data gathered from customer profile and reviews help to determine the effect of new entrants in the market, their product quality, and how they are made. Structured data determines their services on long-term business and verifies whether there is an immediate effect or not. This tool emphasises the training programmers and provides incentives to the new joiners. This boosts the employees to generate the best outcome. Predictive big data gathered from consumer booking trends and occupancy rates helps to understand future trends and remunerations which attract different segments of consumers to respond to their best. Strategic initiatives optimise spending on the bigger capital markets projects which are tailored in terms of best-performing components instead of correct market routes and locations. Real-time big data gathered from guest check-ins evaluates the increasing

level of campaigning on social platforms (Busulwa *et al.* 2021). One of their major tasks is to find out the loyalty headroom of each market (Xudayarov and Akhror, 2022). Geospatial big data from consumer location data and local events helps in determining demographical, behavioural, preference and sentimental data which is sourced from guest profiles, booking systems and social media. Tailoring different marketing campaigns, and amenities based on the experience helps the hospital industries to provide personalised services (Eidizadeh *et al.* 2017). Semi-structured big data identified from XML files, hotel management logs or JSON information from APIs helps improve the guest experience by computing activity suggestions and dining recommendations.

Tools and platforms employed by the organisations for handling big data.

The UK hospitality segment uses various advanced tools and platforms to analyse and manage the customer experience and decision-making process of the organisations. For example, Hilton Hotels uses Tableau which helps to visualise larger datasets and enable interactive dashboards for operational metrics and consumer feedback (Globaldata, 2024). Accor Hotels also uses the Microsoft Power BI tool which generates insightful reports and identifies trends for optimising pricing strategies while ensuring overall operational efficiency. IBM Cognos Analytics can identify management capacities and reporting of KPIs (Olszak *et al.* 2021). For example, Marriot International and Hilton Hotels both use IBM Cognos Analytics to facilitate resource allocation based on their KPIs and align strategic planning (Globaldata, 2024). IDEaS Revenue Solutions provides predictive big data analytics which ensures competitive positioning for maximising revenue in the hospitality industry. For example, Best Western hotel in the UK uses IDEaS Revenue Solutions for managing their revenue analysed using big data. Raddison Hotels uses Salesforce to integrate their consumer data from different touchpoints to maximise inventory management and ensure competitive positioning in the dynamic UK-based hospitality market (Klaver, 2020).

Reflect on the prospects of big data in the UK hospitality Industry.

Big data will play a significant role in driving better experience through personalisation. It will also assist in providing the best support to operations and logistics. Revenue management will hugely depend on big data because it is enhanced through advanced analytics (Klaver, 2020). Agile business intelligence theory (Agile BI) places a focus on adaptability, speed of repetition,

and response to modifications in data contexts. It enables businesses to quickly adjust to fresh insights and use real-time data to make prompt decisions. This approach helps UK-based businesses use big data systems and technology so they can respond to client requests and market conditions more quickly (Naeem *et al.* 2022). However, it is challenging to directly ascribe an ROI because of the enabling function because information consumption grows increasingly regularly. Organisations still find it difficult to measure the value of Agile business intelligence (Agile BI), mostly because it is difficult to link BI investments to financial returns. Agile BI serves as an enabler, allowing the organisation to use knowledge to grow wiser, work more intelligently, and arrive at more educated choices (Stylos *et al.* 2021). For example, UK-based hospitality organisations like Raddison Hotels, JW Marriot or Hilton group can use Agile BI to prosper their big data analysis techniques to ensure prompt decision-making and visualise the real-time feedback from their customers (Reltio, 2024). This can improve their guest satisfaction and resource allocation during peak time or any events while keeping them focussed on address operational challenges.

Conclusion

Based on the above discussion, it can be concluded that a leading travelling analytic solution is enabling firms to stay ahead in the market competition. Big data gathered from booking information, transaction records reviews and feedback optimise the impact of big capital investments, pricing models and programme training with utter significance. To drive a smarter approach across all travel initiatives, UK-based hospitality firms are much more capable of venturing their customers' demand increment. Big data, for example, travel patterns, seasonal rates of occupancy and XML files helps to retain consumers. The target set of promotions in computing the taste of those customers helps the hotel in increasing return visits. The practicality and analysing capacity of big data targets efficiency in customer retention and evidence-based strategy determination. It also generates waste reduction and cost efficiency. Guest comfort is the one-stop solution which is offered by AI to allocate rooms automatically based on the guest preferences, it also increases the satisfaction of the guests. UK-based hospitality firms need to be data-driven and flexible to respond to changing customer demands and economic conditions, especially as trends like instantaneous analysis and forecasting keep influencing the industry.

Businesses may guarantee consistent growth and an unfair advantage in the dynamic industrial context by integrating BI with agile techniques.

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