Abstract: The hotel industry is constantly evolving, seeking innovative ways to improve profitability, enhance customer experiences, and optimize operations. Business analytics, encompassing descriptive, predictive, and prescriptive analysis, enables hotels to make data-driven decisions, helping them achieve competitive advantage in a dynamic marketplace. The study highlights the potential of business analytics to revolutionize the hotel industry, offering a data-centric approach to enhance performance, profitability, and customer-centricity. This study aims to provide stakeholders and readers with insights into the advantages and implementation challenges of business analytics in this industry, underlining its critical role in future competitiveness and success.

Keywords: Big data, Business Analytics, Business Intelligence, Descriptive analytics, Data Visualization, Predictive analytics and Prescriptive analytics

Introduction
The hospitality industry is one of the largest and most dynamic industries in the world. As the industry becomes increasingly competitive, hotel managers are looking for ways to improve their business performance and gain a competitive edge. Business analytics is emerging as a critical tool for hotel managers to achieve these goals. In this essay, we will discuss the role of business analytics in hotel management and its potential to transform the hospitality industry. Business analytics is the process of using data, statistical analysis, and predictive modeling to gain insights into business performance and identify opportunities for optimization. In the context of hotel management, business analytics involves analyzing various aspects of the business, such as customer behavior, pricing strategies, marketing campaigns, inventory management, and operational efficiency.

The hospitality industry generates a vast amount of data from various sources, including customer reviews, booking data, social media, and online platforms. Business analytics can help hotel managers to make sense of this data by analyzing it and providing insights and recommendations. In the context of hotel management, business analytics can be used to analyze various aspects of the business, such as customer behavior, pricing strategies, marketing campaigns, inventory management, and operational efficiency. By leveraging data analytics, hotel managers can gain a better understanding of their customers’ preferences and behaviors, optimize pricing strategies to maximize revenue, and improve operational efficiency by identifying areas where resources can be better allocated.

One of the primary benefits of business analytics in hotel management is the ability to gain a better understanding of customer behavior. By analyzing customer data, hotel managers can identify trends and patterns in customer behavior, such as booking habits, preferences, and complaints. This information can be used to optimize pricing strategies, marketing campaigns, and customer experiences. For example, by analyzing customer data, hotel managers can identify the most popular room types, amenities, and services. They can also identify which channels customers use to book rooms and at what times of the year. Armed with this information, hotel managers can optimize pricing strategies to maximize revenue and develop targeted marketing campaigns to attract more customers.

Business analytics can also help hotel managers to improve operational efficiency by identifying areas where resources can be better allocated. By analyzing data on staff productivity, inventory management, and energy consumption, hotel managers can identify opportunities to reduce costs and improve operational efficiency. For example, by analyzing data on energy consumption, hotel managers can identify areas where energy is being wasted and develop strategies to reduce energy consumption. By analyzing data on inventory management, hotel managers can identify which products are selling well and which products are not selling, and adjust inventory levels accordingly.

Overall, the role of business analytics in hotel management is to provide hotel managers with the information they need to make data-driven decisions that will help them optimize their business operations, improve customer satisfaction, and increase revenue.

Big data in the hotel industry refers to the vast and varied sets of information collected from various sources within and outside the hotel, which, when processed and analyzed, can provide valuable insights for decision-making and strategic planning. This data can be generated from several different touch points such as: Guest Information, Online Interactions, Social Media, Online Reviews and Ratings, Operational Data, External Data, Loyalty Program Data, IoT Devices

Big data has become prominent in analysis and provide a huge value of products and services to today’s business, especially very useful in business analytics of Hospitality Industry. Big data analytics focuses on the collection of data with unprecedented breadth, scale and depth to solve problems (Mayer-Schonberg & Cuckier, 2014). Many social media websites and travel websites produce larger data on customer posts and reviews which mounted enormous data. Researchers hope to
use this data to gain insights into research problems which have not well been understood by traditional methods (Yang, Pan & Song 2014). The analysis of this big data can lead to improved understanding of customer behavior, more effective marketing strategies, better operational efficiency, and more informed decision-making.

By leveraging the power of data analytics, hotel managers can gain insights into customer behavior, optimize pricing strategies, improve marketing campaigns, optimize inventory management, improve operational efficiency, and enhance customer satisfaction. In today's highly competitive hospitality industry, business analytics is no longer an option but a necessity for hotels looking to stay ahead of the curve.

**Review of Literature and Related studies**

Various research articles from different authors and books are reviewed and the understanding on varied concepts and analysis with different perspectives on data analytics and its representative usefulness for industry professionals and researchers are presented in this paper. A few of those research studies and literature review is presented below.

1. An untapped gold mine? Exploring the potential of market basket analysis to grow hotel revenue(2016) by Solnet, D., Boztug, Y., & Dolnicar, S: This paper argues that Market Basket Analysis could increase revenue by enabling hotels to determine the most attractive additional products and services (beyond the room type) to offer new and repeat hotel guests. The findings are that significant opportunities for hotel operators to use existing stored data to better understand purchasing decision patterns that can significantly increase revenue per transaction

2. Big Data Analytics and Firm Performance in the Hotel Sector (2023) Tiago Corniero at el: The study results indicate that organizational readiness and competitive pressure encourage the use of big data analytics with the support of top management. The findings also showed that the use of BDA can create business value by increasing the main dimensions of hotel performance: financial performance, customer retention rate, and hotel reputation.

3. Business intelligence and big data in hospitality and tourism: a systematic literature review(2018), by Marcello M. Mariani, at el: This paper aims to study the extent to which Business Intelligence and Big Data feature within academic research in hospitality and tourism published until 2016, by identifying research gaps and future developments and designing an agenda for future research. This study contributes to explore in a systematic way to find out what extent hospitality and tourism scholars are aware of and working on business intelligence and big data.

4. Business analytics: Defining the field and identifying a research agenda 2020, by Hindle, G., Kunc, M., Mortensen, M., Oztekin, A., & Vidgen: The findings, and discussions on the papers included in the special issue, suggest that business analytics is maturing as a field with significant synergies and opportunities for the operational research community.

5. Functional integration and systems implementation of customer relationship management in hotel industry: A multilevel analysis (2014) by C.S.Ku - The purpose of this article to explore operational and analytical implementation of information systems that may lead to market analysis and CRM preferences of Hotel industry. The study uses the SEM model and multilevel analysis of the research. The results shows that the role of IS transfer from transaction processing system to a strategic supporting role. The staff prepare a personalized service to the guest in advance if they had the full and proper information on hand. And the capability of leveraging analytics in operations can be a critical differentiator for hotel to stay competitive.

6. Hotel chain affiliation as an environmental performance strategy for luxury hotels (2019) by Long-fei Chen. This research presents concise and clear empirical examination of hotel chain affiliation strategy through the Malquist-Luenberger index to measure the brand competitiveness of the strategy taking carbon emission reduction into consideration. The findings showed that a group of hotel chains has significantly higher average energy efficiency and branding value than those of a group of independent operators when holistic carbon emissions reduction is considered.

7. Using big data and text analytics to understand how customer experiences posted on Yelp.com impact the Hospitality industry, 2017 by Pie-Ju Lucy Ting at el. This study combines the programming and data mining to analyze consumer reviews extracted from Yelp.com. The findings focus on customers reviews and their approach makes it possible to use big data analytics to observe different perspectives on variables which might not have been studies in hospitality literature.

**Various Methods and Techniques for business analytics of hotel management**

Business analytics is a broad field that encompasses various techniques and methods for analyzing and interpreting data. In the context of hotel management, the following methods and techniques are commonly used:

**Descriptive Analytics:**

Descriptive analytics is a method of analyzing data to describe what has happened in the past. In hotel management, descriptive analytics can be used to analyze historical data on occupancy rates, room rates, and customer behavior. By analyzing this data, hotel managers can identify trends and patterns, such as which rooms are in high demand during certain times of the year, and which amenities guests use most frequently.

**Predictive Analytics:**

Predictive analytics is a method of analyzing data to predict what will happen in the future. In hotel management, predictive analytics can be used to forecast occupancy rates, room rates, and demand for specific amenities. By using predictive analytics, hotel managers can adjust their pricing strategies, staffing levels, and inventory management to maximize revenue.

**Prescriptive Analytics:**

Prescriptive analytics is a method of analyzing data to determine what actions should be taken to achieve a specific goal. In hotel management, prescriptive analytics can be used to optimize pricing strategies, inventory management, and staffing levels. For example, prescriptive analytics might recommend reducing room rates during a slow period to increase occupancy rates and revenue.

**Machine Learning:**
Machine learning is a type of artificial intelligence that involves training algorithms to make predictions based on data. In hotel management, machine learning can be used to predict customer behavior and preferences, identify which amenities are most popular, and recommend personalized services to guests. Machine learning algorithms can also be used to optimize pricing strategies and inventory management.

**Text Analytics:**
Text analytics involves analyzing unstructured data, such as customer reviews and feedback, to identify trends and patterns. In hotel management, text analytics can be used to analyze customer feedback and identify areas where improvements can be made to enhance the guest experience. For example, text analytics might reveal that guests frequently complain about the quality of the breakfast buffet, indicating a need for improvements in the food quality or variety.

**Data Visualization:**
Data visualization involves presenting data in a visual format, such as charts, graphs, and maps, to help users understand and interpret the data. In hotel management, data visualization can be used to present data on occupancy rates, room rates, and customer behavior in an easy-to-understand format. Data visualization can also be used to identify trends and patterns that may not be apparent in raw data.

Below are some of the commonly used methods and techniques in business analytics of hotel management:

**Data mining:** Data mining is the process of identifying patterns, trends, and relationships within large data sets. In hotel management, data mining can be used to identify patterns in customer behavior, such as the types of rooms and amenities that are in high demand, and which booking channels are the most popular.

**Regression analysis:** Regression analysis is a statistical technique that is used to identify the relationship between two or more variables. In hotel management, regression analysis can be used to understand the relationship between room rates and occupancy rates, and to predict occupancy rates based on different pricing strategies.

**Predictive modeling:** Predictive modeling involves the use of statistical algorithms and machine learning techniques to make predictions based on historical data. In hotel management, predictive modeling can be used to forecast occupancy rates, customer demand, and revenue projections.

**Text mining:** Text mining involves the analysis of unstructured text data, such as customer reviews, to identify patterns and trends. In hotel management, text mining can be used to understand customer sentiment and identify areas for improvement in service delivery.

**Optimization modeling:** Optimization modeling involves the use of mathematical algorithms to identify the optimal solution to a problem. In hotel management, optimization modeling can be used to determine the optimal room rates and inventory levels that will maximize revenue.

**Cluster analysis:** Cluster analysis is a statistical technique that involves grouping similar data points into clusters. In hotel management, cluster analysis can be used to segment customers based on their preferences and behavior patterns, which can inform marketing and pricing strategies.

**Time series analysis:** Time series analysis involves analyzing data over time to identify patterns and trends. In hotel management, time series analysis can be used to forecast occupancy rates and identify seasonal trends in customer demand.

**Geospatial analysis:** Geospatial analysis involves analyzing data that has a geographic component, such as customer location data. In hotel management, geospatial analysis can be used to identify customer segments based on their location, which can inform marketing and pricing strategies.

**Role of Visuals in business analytics**
Visuals play a critical role in the business analytics of hotel management. In fact, visuals are essential in communicating insights and results from data analysis to stakeholders, including hotel managers, executives, and staff. Here are some specific roles that visuals play in business analytics of hotel management:

Below are some of the ways in which visuals can enhance business analytics in hotel management:

**Data visualization:** Data visualization is the process of presenting data in a visual format such as charts, graphs, and maps. In hotel management, data visualization can help managers to quickly identify trends and patterns in customer behavior, occupancy rates, and revenue performance. Visuals can also help managers to track the performance of different hotel departments and make data-driven decisions.

**Dashboard design:** Dashboards are interactive visual displays that provide a quick overview of key performance indicators (KPIs) and metrics. In hotel management, dashboards can help managers to monitor KPIs such as occupancy rates, room revenue, and average daily rate (ADR) in real-time, which can help them to make timely decisions and take corrective actions as necessary.

**Heat maps:** Heat maps are visual representations of data that use color coding to indicate the intensity of different variables. In hotel management, heat maps can be used to visualize customer behavior patterns such as the areas of the hotel that are most frequently visited or the times of day when customers are most active. This information can be used to optimize staffing and resources allocation.

**Geospatial maps:** Geospatial maps provide a visual representation of data on a map, such as customer locations and hotel properties. In hotel management, geospatial maps can help managers to identify customer segments based on their location, track competitors' locations, and optimize marketing strategies for different regions.

**Infographics:** Infographics are visual representations of data that use a combination of text, images, and graphics to communicate complex information in a clear and concise manner. In hotel management, infographics can be used to summarize key performance metrics, showcase the hotel's amenities and services, and communicate the hotel's brand message to potential customers.

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Line charts: Line charts are a graphical representation of data that use lines to connect data points. In hotel management, line charts can be used to show the trend in room occupancy rates over time, allowing managers to identify seasonal patterns and trends.

Scatter plots: Scatter plots are a graphical representation of data that use dots to represent data points. In hotel management, scatter plots can be used to show the relationship between room rates and occupancy rates, allowing managers to identify optimal pricing strategies.

Bar charts: Bar charts are a graphical representation of data that use bars to show values. In hotel management, bar charts can be used to show revenue per available room (RevPAR) for different room types, allowing managers to identify which room types are generating the most revenue.

Pie charts: Pie charts are a graphical representation of data that use slices of a circle to represent values. In hotel management, pie charts can be used to show the breakdown of customer satisfaction scores by different categories, such as room cleanliness, staff friendliness, and overall experience.

Geographic maps: Geographic maps are a graphical representation of data that use maps to show data points. In hotel management, geographic maps can be used to show the location of hotels, customer distribution, and regional patterns in customer demand.

In effect, visuals play a critical role in the business analytics of hotel management. By presenting data in a visual format, hotel managers can quickly identify trends, patterns, and outliers, and make informed decisions to improve performance, enhance customer satisfaction, and achieve business objectives.

Insights of Business analytics
Below are some of the roles of visuals in business analytics of hotel management:

Communicate insights: Visuals can be used to communicate insights and findings from data analysis in a more understandable and compelling way than just presenting numbers and statistics. By using charts, graphs, and other visual aids, hotel managers can communicate complex information in a way that is easily digestible and accessible to stakeholders.

Identify patterns and trends: Visuals can help hotel managers identify patterns and trends in data quickly. By visualizing data, hotel managers can identify seasonal trends in customer demand, monitor changes in room occupancy rates, and identify areas where operational efficiency can be improved.

Enhance decision-making: Visuals can help hotel managers make more informed decisions by providing a clear picture of data and information. By visualizing data, hotel managers can quickly identify areas where revenue can be maximized, identify opportunities to improve customer satisfaction, and make informed decisions about pricing and marketing strategies.

Improve communication: Visuals can improve communication between different departments and stakeholders in the hotel industry. By using visuals to present data, hotel managers can facilitate discussions and collaboration between different teams, which can lead to better decision-making and improved business outcomes.

Monitor performance: Visuals can be used to monitor and track performance metrics in real-time. By visualizing performance metrics such as room occupancy rates, revenue per available room (RevPAR), and customer satisfaction scores, hotel managers can quickly identify areas where performance is lagging and take corrective action.

Below are some of the most common models used by big hotel chains:

Demand forecasting model: The demand forecasting model uses historical data to predict future customer demand for hotel rooms. This model takes into account seasonal trends, regional events, and market conditions to forecast demand accurately. By forecasting demand, hotel chains can optimize pricing and inventory management, leading to higher occupancy rates and revenue.

Revenue management model: The revenue management model uses data analysis to optimize pricing strategies based on supply and demand. This model takes into account market conditions, customer behavior, and competitor pricing to set optimal prices for hotel rooms. By using this model, hotel chains can maximize revenue and profitability while ensuring high customer satisfaction.

Customer segmentation model: The customer segmentation model uses data analysis to group customers based on similar characteristics, such as age, gender, income, and travel patterns. By segmenting customers, hotel chains can tailor their marketing strategies, pricing, and services to specific customer segments, leading to higher customer satisfaction and loyalty.

Sentiment analysis model: The sentiment analysis model uses natural language processing (NLP) to analyze customer feedback, reviews, and social media posts to identify customer sentiment and feedback. By analyzing customer sentiment, hotel chains can identify areas for improvement in their operations, services, and amenities, leading to higher customer satisfaction and loyalty.

Operational efficiency model: The operational efficiency model uses data analysis to identify areas where operational efficiency can be improved, such as optimizing housekeeping schedules, reducing energy consumption, and improving supply chain management. By improving operational efficiency, hotel chains can reduce costs, improve sustainability, and enhance the overall customer experience.

Customer lifetime value model: The customer lifetime value model uses data analysis to predict the future value of customers to the hotel chain over their lifetime. This model takes into account customer behavior, preferences, and loyalty to predict the revenue generated by each customer over time. By understanding customer lifetime value, hotel chains can invest in retaining high-value customers and improving their customer experience.

Metrics
Business analytics metrics play a critical role in hotel management by providing insights that help hotel managers make data-driven decisions that can improve business performance and enhance the guest experience. Some of the key areas where business analytics metrics can be used in hotel management include:
Occupancy Rate: Occupancy rate is the percentage of available rooms that are occupied by guests. This metric is a key indicator of hotel performance, as higher occupancy rates lead to higher revenue and profitability.

Average Daily Rate (ADR): ADR is the average price paid per room per night. This metric is a key indicator of pricing strategy and revenue management, as optimizing ADR can lead to increased revenue and profitability. ADR is computed by dividing the total room revenue by the number of occupied rooms. ADR is also calculated for each room type which in turn presents the best yielding rooms.

Revenue per Available Room (RevPAR): RevPAR is a key performance metric in the hotel industry, calculated by total occupied room revenue divided by total number of rooms available in the property. This metric measures how effectively a hotel is using its available rooms to generate revenue. This is one of the popular metrics to know how well the property is selling its inventory. Revpar can also be calculated for each room type.

Revenue Per Occupied Room (RevPOR): RevPOR is a metric that measures the total revenue generated by each occupied hotel room. This metric can be used to estimate the potential revenue that could be generated by the hotel's room inventory based on the performance of other revenue-generating areas, such as food and beverage, spa, or retail operations.

Customer Satisfaction Score (CSS): CSS is a metric used to measure customer satisfaction with the hotel's services and amenities. This metric is typically measured through surveys and feedback forms and is a critical indicator of customer loyalty and repeat business.

Cost per Occupied Room (CPOR): CPOR is a metric used to measure the cost of running a hotel room, including maintenance, cleaning, and staffing costs. This metric is used to identify areas where operational efficiency can be improved to reduce costs and increase profitability.

Net Promoter Score (NPS): NPS is a metric used to measure customer loyalty and satisfaction by asking customers if they would recommend the hotel to others. This metric is a key indicator of customer loyalty and advocacy, as higher NPS scores indicate a higher likelihood of repeat business and positive word-of-mouth recommendations.

Average Length of Stay (ALOS): ALOS is a metric used to measure the average number of nights guests stay at the hotel. This metric is a key indicator of customer behavior and can be used to optimize pricing and inventory management strategies.

Return on Investment (ROI): ROI is a metric used to measure the financial return on investment in hotel operations, marketing, and other initiatives. By analyzing ROI, hotel managers can determine the effectiveness of their investments and adjust their strategies accordingly.

Customer Acquisition Cost (CAC): CAC is the cost incurred to acquire each new customer. This metric is used to measure the effectiveness of a hotel's marketing and customer acquisition strategies. By analyzing CAC, hotel managers can adjust their marketing strategies to optimize customer acquisition and retention.

Revenue by Channel: This metric measures the revenue generated from different booking channels, such as direct bookings, online travel agencies (OTAs), and corporate bookings. This metric helps hotel managers understand the effectiveness of their marketing and distribution strategies.

Direct Booking Ratio (DBR): The DBR measures the percentage of hotel bookings that are made directly with the hotel, rather than through third-party booking sites. This metric is used to evaluate the effectiveness of marketing strategies and to identify areas for improvement in direct booking campaigns.

Gross Operating Profit per Available Room (GOPPAR): The GOPPAR measures the gross operating profit generated by each available hotel room over a specific period. This metric takes into account all revenue streams and operating expenses, including food and beverage, spa, and other ancillary services. This metric is used to evaluate the overall profitability of the hotel.

Operating Profit Margin: The operating profit margin measures the percentage of revenue that is left over after deducting all operating expenses, including labor, marketing, and other costs. This metric is used to evaluate the effectiveness of cost management and to identify areas for improvement in revenue optimization.

Food and Beverage Spend per Guest (F&B Spend): F&B Spend measures the average amount of money spent by each guest on food and beverage during their stay. This metric can be used to estimate the potential revenue that could be generated from the hotel's room inventory based on the performance of the hotel's food and beverage operations.

Spa Revenue per Guest (Spa Revenue): Spa Revenue measures the average amount of revenue generated by each guest at the hotel's spa facilities. This metric can be used to estimate the potential revenue that could be generated from the hotel's room inventory based on the performance of the hotel's spa operations.

Retail Revenue per Guest (Retail Revenue): Retail Revenue measures the average amount of revenue generated by each guest at the hotel's retail facilities. This metric can be used to estimate the potential revenue that could be generated from the hotel's room inventory based on the performance of the hotel's retail operation.

Net Operating Income (NOI): The NOI measures the total revenue generated by the hotel, minus all operating expenses, including labor, marketing, and other costs. This metric is used to evaluate the overall financial performance of the hotel.

Operating Expense Ratio: The operating expense ratio measures the percentage of total revenue that is spent on operating expenses, such as salaries, utilities, and supplies. This metric is used to evaluate the efficiency of cost management and identify areas for improvement in expense reduction.

Room Profit Margin: The room profit margin measures the percentage of revenue generated by hotel rooms that are left over after deducting all direct expenses associated with room operations. This metric is used to evaluate the profitability of the hotel's room operations and identify areas for improvement in cost management and revenue optimization.

Food and Beverage Profit Margin: The food and beverage profit margin measures the percentage of revenue generated by the hotel's food and beverage operations that is left over after deducting all direct expenses associated with these operations. This
metric is used to evaluate the profitability of the hotel's food and beverage operations and identify areas for improvement in cost management and revenue optimization.

**Interpolation of other revenues in the hotels**

Interpolation is a statistical method that is used to estimate values between known data points. Extragulation, on the other hand, is the estimation of values beyond the range of known data points. However, it is not recommended to use extrapolation as it may lead to unreliable results.

Therefore, interpolation is a more suitable method to estimate other service area metrics to room inventory in hotel management. For example, a hotel may have data on the revenue generated by its food and beverage operations for a certain period. By using interpolation, the hotel can estimate the revenue that would be generated by a certain number of hotel rooms, based on the revenue generated by a similar number of food and beverage operations.

Similarly, extrapolation can be used to estimate the revenue that would be generated by a larger number of hotel rooms, based on the revenue generated by a smaller number of rooms. This can be useful for hotels that are planning to expand their room inventory or open new properties.

However, it is important to note that interpolation and extrapolation are not always accurate and should be used with caution. Other factors, such as market conditions, competition, and consumer behavior, can also impact revenue and profitability metrics in hotel management. Therefore, hotels should use a combination of data analysis and expert judgment to make informed decisions about room inventory and other service area metrics.

In the context of hotel management, other service area metrics refer to the performance metrics of various services provided by the hotel, such as food and beverage, spa, and events. These metrics can be used to estimate the performance of the hotel's room inventory by extrapolating the trends observed in these service areas. For example, if the hotel's food and beverage department is experiencing higher average revenue per guest (ARPG), it is likely that the hotel's room inventory will also experience higher ARPGs.

However, it is important to note that the room inventory is a unique service area that is impacted by a variety of factors that may not be present in other service areas. Therefore, it is not always appropriate to interpolate other service area metrics to room inventory in hotel management. Instead, a more reliable approach is to use a combination of both internal and external data sources to estimate the performance of the hotel's room inventory.

Internal data sources can include data collected from the hotel's property management system (PMS), revenue management system (RMS), and customer relationship management (CRM) system. External data sources can include data from market research firms, industry benchmarks, and competitor analysis. By analyzing both internal and external data sources, hotel managers can gain a more comprehensive understanding of the performance of their room inventory and make more informed decisions on revenue management and cost control.

**Business Intelligence and Business Analytics**

OTA (Online Travel Agency) and web analytics are important components of business analytics in the hotel industry. Here are some examples of how OTA and web analytics can be used in the hotel industry:

Measuring website performance: Web analytics can be used to measure the performance of a hotel's website, including metrics such as page views, bounce rates, and conversion rates. By analyzing this data, hoteliers can identify areas for improvement and make changes to their website to improve conversion rates and drive more bookings.

Tracking OTA performance: OTA analytics can be used to track the performance of a hotel's listings on OTA websites, including metrics such as click-through rates and booking conversion rates. By analyzing this data, hoteliers can identify which OTA channels are driving the most bookings and adjust their distribution strategy accordingly.

Assessing marketing campaigns: Web analytics can be used to assess the effectiveness of a hotel's digital marketing campaigns, including metrics such as click-through rates, conversion rates, and ROI. By analyzing this data, hoteliers can identify which marketing channels are driving the most bookings and adjust their marketing strategy accordingly.

Monitoring guest feedback: Web analytics can be used to monitor guest feedback on social media and review websites, including metrics such as sentiment analysis and review ratings. By analyzing this data, hoteliers can identify areas for improvement and take action to improve the guest experience.

Benchmarking against competitors: OTA and web analytics can be used to benchmark a hotel's performance against competitors, including metrics such as pricing, availability, and booking patterns. By analyzing this data, hoteliers can identify areas where they are underperforming and take action to improve their competitiveness.

Overall, OTA and web analytics are essential tools for hoteliers to measure performance, track marketing campaigns, and monitor guest feedback. By using these analytics, hoteliers can make data-driven decisions to improve their online presence and drive more bookings.

CTA analytics (Call-to-Action analytics) is a type of business analytics that is used to measure the effectiveness of various calls-to-action on a website. In the hotel industry, CTA analytics can be used to track the performance of different types of calls-to-action on a hotel's website, such as "Book Now" buttons or "Learn More" links.

Here are some ways that CTA analytics can be used in the hotel industry:

Measuring click-through rates: CTA analytics can be used to measure the click-through rates of different calls-to-action on a hotel's website. This can help the hotel to identify which calls-to-action are most effective and make adjustments to improve the performance of others.

Tracking conversion rates: CTA analytics can also be used to track the conversion rates of different calls-to-action. By measuring how many visitors to the hotel's website actually book a room or take another desired action, the hotel can identify which calls-to-action are most effective in driving conversions.
A/B testing: CTA analytics can be used to conduct A/B testing of different calls-to-action. By testing two different versions of a call-to-action and measuring their performance, the hotel can identify which version is more effective and make changes accordingly.

Improving website design: CTA analytics can also be used to identify opportunities for improving the design and layout of a hotel's website. By analyzing how visitors interact with different calls-to-action and other elements of the website, the hotel can identify areas where changes can be made to improve the user experience and drive more conversions.

Overall, CTA analytics can be a valuable tool for hotels to measure the effectiveness of their website's calls-to-action and optimize their website design to drive more bookings and revenue.

GDS (Global Distribution System) analytics is a type of business analytics used in the hotel industry to analyze the performance of hotels on various global distribution systems. GDS systems are online platforms that travel agents and other intermediaries use to search for and book hotel rooms.

Here are some ways that GDS analytics can be used in the hotel industry:

Measuring hotel performance: GDS analytics can be used to track the performance of hotels on various GDS platforms. This can include measuring the number of bookings a hotel receives, its average daily rate, and its occupancy rate on each platform.

Competitor analysis: GDS analytics can also be used to analyze the performance of competitors on different GDS platforms. By comparing a hotel's performance to that of its competitors, the hotel can identify areas where it may be underperforming and make adjustments to improve its performance.

Pricing optimization: GDS analytics can also be used to optimize hotel pricing strategies. By analyzing how competitors are pricing their rooms on different GDS platforms, a hotel can adjust its own pricing strategy to remain competitive and attract more bookings.

Sales and marketing strategy: GDS analytics can also be used to inform a hotel's sales and marketing strategy. By identifying which GDS platforms are driving the most bookings, a hotel can focus its sales and marketing efforts on those platforms to maximize its exposure and revenue.

Overall, GDS analytics can be a valuable tool for hotels to analyze their performance on various online distribution channels and optimize their pricing and sales strategies to drive more bookings and revenue.

Conclusion:

In conclusion, the methods and techniques used in business analytics of hotel management are varied and depend on the specific goals and objectives of the hotel. By leveraging the power of data analytics, hotel managers can gain insights into customer behavior, optimize pricing strategies, improve marketing campaigns, optimize inventory management, improve operational efficiency, and enhance customer satisfaction. The use of business analytics is essential for hotels looking to stay ahead of the curve in today's highly competitive hospitality industry.

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