**CCW331 - Business Analytics**

**Assignment 1**

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**1)Why is business analytics an important process in organizations?(CO1)(2)**

* It provides organizations with the tools and insights needed to make data-driven decisions. Thus organizations can optimize their operations, improve efficiency, and achieve their goals more effectively.
* It enables organizations to gain a competitive advantage by identifying opportunities and risks in the market, predicting customer behaviour, and optimizing their operations.
* It can help organizations better understand their customers by analyzing customer behaviour, preferences, and trends and increase customer satisfaction.
* Business analytics can help organizations identify and mitigate risks by analyzing data and predicting potential outcomes and reduce the likelihood of negative consequences.

**2) Mention the applications of Business Analytics.(CO1)(2)**

* Marketing analytics
* Sales analytics
* Financial analytics
* Operations analytics
* Human Resources (HR) analytics
* Risk analytics
* Customer analytics
* Pricing decisions

**3) List the benefits and challenges of business analytics.(CO1)(2)**

**Pros:**

1. Data-Driven Decision Making: This can lead to better outcomes and higher profitability.
2. Improved Efficiency: Business analytics can help businesses identify inefficiencies in their processes and operations.
3. Competitive Advantage: Business analytics can give companies a competitive advantage by providing insights into market trends and customer behaviour.
4. Better Risk Management: Business analytics can help businesses identify and mitigate risks
5. Real-Time Insights: By analyzing data in real time, businesses can quickly identify trends and respond to changes in the market.

**Cons:**

1. Cost: Implementing a business analytics system can be expensive.
2. Complexity: Business analytics requires specialized knowledge and expertise to manage and analyze data effectively.
3. Data Quality: Business analytics is only as good as the analyzed data. Data quality can lead to accurate insights and decisions.
4. Data Security: Business analytics requires collecting and analyzing large amounts of data, which can be a security risk.
5. Ethical Concerns: Business analytics can raise ethical concerns about privacy and data use.

**4) List some business analytics tools.(CO1)(2)**

* Excel
* Power BI
* R and Python
* QlikView

**5) Define data collection.(CO1)(2)**

* Data collection in terms of business analytics refers to the process of systematically gathering, organizing, and capturing relevant data from various internal and external sources within an organization. This data can include structured data and unstructured and it serves as the foundation for subsequent analysis and decision-making in business analytics.
* Primary and secondary methods of data collection are two approaches used to gather information for research or analysis purposes:

1. Primary data collection involves the collection of original data directly from the source or through direct interaction with the respondents.
2. Secondary data collection involves using existing data collected by someone else for a purpose different from the original intent.

**Suggest some metrics that a hotel might want to collect about their guests. How might**

**these metrics be used with business analytics to support decisions at the**

**hotel?(CO1)(15)**

**Occupancy Rate:**

* The percentage of available rooms occupied during a specific period.
* Helps to understand demand patterns, optimize pricing strategies, and forecast future revenue. By analyzing historical occupancy rates alongside external factors (e.g., seasonality, events), the hotel can make informed decisions about pricing adjustments, marketing campaigns, and staffing levels.

**Guest Satisfaction Scores:**

* Ratings or feedback provided by guests regarding their experience at the hotel.
* Guest satisfaction scores are crucial for understanding customer preferences, identifying areas for service improvement, and maintaining brand reputation.

**Repeat Guest Rate:**

* The percentage of guests who have stayed at the hotel multiple times.
* Repeat guest rate reflects customer loyalty and satisfaction. Analyzing factors that influence repeat guest behaviour, such as service quality, amenities, and loyalty programs, enables the hotel to develop personalized marketing strategies, retention programs to cultivate long-term relationships with guests.

**Length of Stay:**

* The average duration of guest stays at the hotel.
* Length of stay analysis provides insights into guest behaviour and consumption patterns. By segmenting guests based on length of stay , the hotel can tailor marketing offers, optimize room inventory management, and forecast demand more accurately.

**Cancellation Rate:**

* The percentage of bookings that are cancelled by guests.
* Analyzing cancellation rates helps the hotel understand booking trends, identify potential revenue losses, and optimize overbooking strategies. By segmenting cancellations based on factors such as booking source, lead time, and seasonality, the hotel can implement targeted measures to minimize cancellations.

**Guest Demographics and Preferences:**

* Information about guest demographics (e.g., age, gender, location) and preferences (e.g., room type, amenities).
* Analyzing guest demographics and preferences allows the hotel to create targeted marketing campaigns, personalize guest experiences, and tailor product offerings to meet specific customer needs.

**Arrival and Departure Patterns:**

* The distribution of guest arrivals and departures throughout the day or week.
* Understanding arrival and departure patterns enables the hotel to optimize staffing levels, streamline check-in/check-out processes, and allocate resources efficiently. By analyzing peak arrival times and guest preferences, the hotel can offer personalized services, expedite guest arrivals, and enhance overall guest experience.

**Average Daily Rate (ADR):**

* The average revenue earned per occupied room per day.
* ADR analysis provides insights into pricing effectiveness and revenue performance. By tracking ADR over time and comparing it with competitors or industry benchmarks, the hotel can adjust pricing strategies to maximize revenue without sacrificing occupancy rates.

**Spending Patterns**

* The percentage of guest’s spending patterns on additional services (e.g., dining, spa, activities)
* Analyzing upsell and cross-sell conversion rates helps the hotel optimize revenue opportunities and enhance guest experience. By segmenting guests based on preferences, purchase history, and demographic characteristics, the hotel can tailor upsell and cross-sell offers, refine pricing strategies, and maximize ancillary revenue streams.

**Example**

Marriott hotels, one of the biggest hotel chains in the world, are one of the leaders in the industry. Starwood hotels (one of the brands under Marriott hotels) use dynamic pricing.

It is changing based on a variety of factors such as local and global economic situation, weather, availability and reservation behavior, cancellations and many others – this tactic resulted in a 5% revenue increase per room.

They go so deep with utilizing data that they even follow if famous musicians are playing at Madison Square Garden so they could adjust their rates at their nearby hotels.

To create a better customer experience, they also started testing out facial recognition check-ins which looks like a win-win scenario – their guests don’t need to wait at the reception desk anymore, and the hotel gathers even more valuable information.

Another element they implemented to gather data is putting Amazon Echos into the rooms – this allows guests to make Alexa handle everything that was previously handled by the reception staff. Now guests can get all the information they want, while Marriott gets the knowledge of their customer’s preferences, needs and potential concerns.