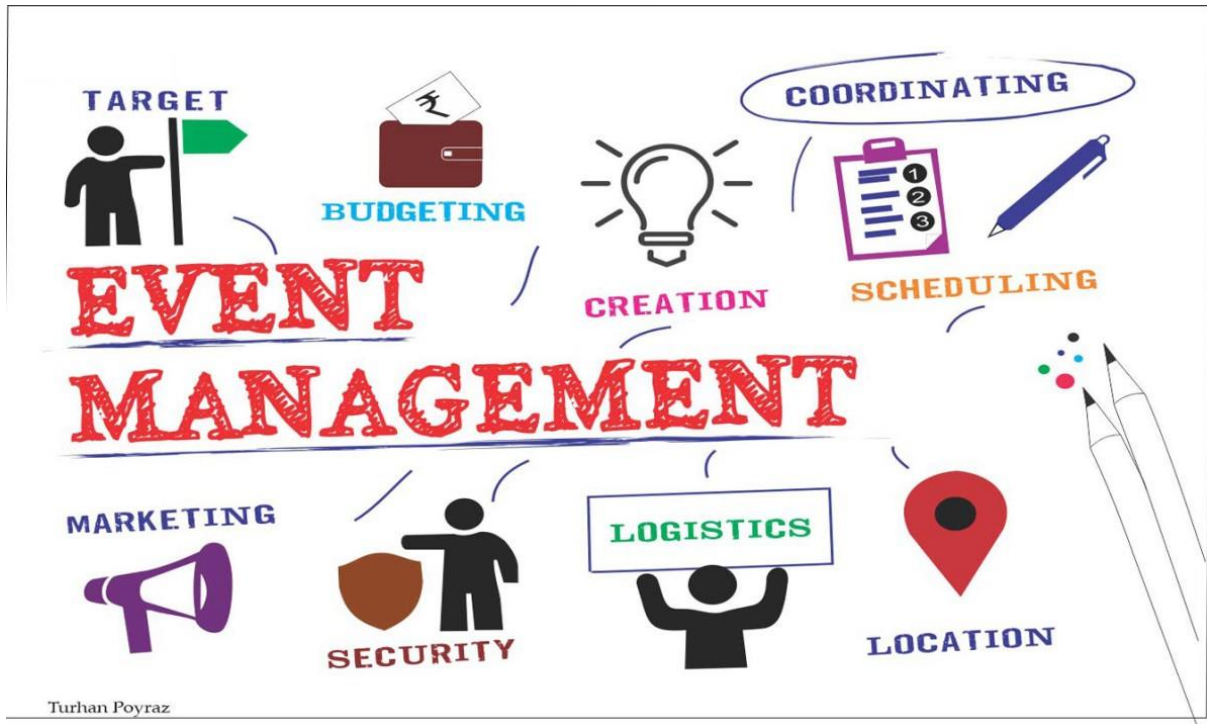


# Strategic Decision Making with PowerBI

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## PRE-REPORT OF EVENT MANAGEMENT COMPANY

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## Client Problem Statement

The client, an event management company, faces challenges in efficiently managing data related to events. These include issues with vendor selection, budget optimization, and attendee satisfaction tracking.

**Objective:** Develop a data-driven system and dashboard that addresses these issues, providing actionable insights for better decision-making and improved event outcomes.

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### 1. Problem Statement

Managing event data effectively is critical for successful operations, cost management, and attendee satisfaction. The current lack of integration and insights leads to inefficiencies and suboptimal decisions.

The goal is to create a streamlined system that organizes and visualizes data to address these challenges.

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### 2. Data Requirement

#### Event Operations Data

- Vendor performance metrics and pricing.
- Venue details (capacity, reviews, and costs).

#### Budget Data

- Detailed cost breakdown (logistics, marketing, etc.).
- Revenue sources like sponsorships and ticket sales.

#### Attendee Data

- Registrations: preferences and demographics.
- Feedback: satisfaction ratings and suggestions.

#### Marketing Data

- Campaign effectiveness (ROI, engagement rates).
- Social media analytics.

#### Sources:

- Kaggle datasets for industry benchmarking.
- ChatGPT for contextual event management insights.

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### 3. Data Collection

#### Primary Data:

- Surveys for attendee preferences and feedback.
- Past event reports for financial and operational data.

#### Secondary Data:

- Kaggle datasets for reference and benchmarking.
  - Social media platforms via APIs for campaign analytics.
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### 4. Data Validation

Validation ensures high-quality, reliable data:

1. Identify and resolve inconsistencies (e.g., mismatched vendor names).
2. Remove duplicate entries to avoid redundancy.
3. Verify key data points with domain experts.

#### Techniques:

- Profiling tools like Python's Pandas library.
  - Manual cross-checking for critical fields.
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### 5. Data Cleaning

#### Handling Missing Data:

- **Missing Value Drop:** Rows with missing values will be dropped if they are not critical to the analysis.

#### Outlier Treatment:

- **Box and Whisker Model:** Outliers will be detected using this model.
    - Values outside the whiskers ( $1.5 \times \text{IQR}$  beyond Q1 and Q3) will be flagged as outliers.
    - Outliers will be reviewed for validity and treated by capping or removal, depending on their impact on the analysis.
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## 6. Tools

### Power BI

#### Usage in This Project:

- **Data Import and Cleaning:** Import cleaned data and prepare it for visualization using Power Query.
- **Visualization Creation:** Build a dashboard with various types of graphs to analyze data effectively.

#### Graphs to Use:

##### 1. Univariate Analysis:

- **Histograms:** To understand the distribution of budget, attendee satisfaction scores, and revenue.
- **Pie Charts:** For expense breakdown by category.

##### 2. Bivariate Analysis:

- **Scatter Plots:** To identify relationships between event cost and attendee satisfaction.
- **Line Charts:** For trends in ticket sales over time.

##### 3. Multivariate Analysis:

- **Stacked Bar Charts:** Comparing vendor performance by cost and satisfaction scores.
- **Heatmaps:** Highlighting correlations among marketing spend, attendance, and revenue.

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## 7. Dashboard

### Definition:

A dashboard is a dynamic visual tool that consolidates data and presents actionable insights through graphs and charts.

### Importance:

- Centralizes event data for quick decision-making.
- Tracks KPIs like attendee satisfaction and cost-effectiveness.
- Improves communication by providing easy-to-understand visual insights.

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## **8. Storytelling**

### **What Is Storytelling?**

Data storytelling is the art of creating a narrative around insights, using visuals and context to make data actionable and relatable.

#### **Importance:**

- Makes insights accessible to all stakeholders.
- Encourages informed, impactful decisions.
- Bridges the gap between data and strategy by focusing on "why" and "what next."

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## **Conclusion**

This report outlines the steps required to address the client's event management challenges through a data-driven approach. By leveraging Power BI's visualization capabilities and a structured data process, the client will gain actionable insights to improve event planning and execution.