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## **Synopsis Report**

**Topic : SALES DASHBOARD AND ANALYSIS USING POWER-BI**

Submitted By

1.Vaishnavi Yadav(01)  
SOE2022B0303442

2.Akshay Rege(21)  
SOE2022B0303397

3.Shubham Yewale(73)  
SOE2022B03033418

4. Shweta Bhosale(72)  
SOE2022B0303283

**Under the Guidance Of**

**Prof. Rita Kadam**

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## **NAME OF MINI PROJECT-I TOPIC:**

### **SALES DASHBOARD AND ANALYSIS USING POWER-BI**

#### **1.1 Introduction**

In the fast-paced world of modern business, harnessing data-driven insights is paramount to success. Sales departments play a pivotal role in driving revenue and growth, making it imperative to have robust tools for monitoring, analyzing, and optimizing sales performance. One such powerful tool is Microsoft's POWER BI, a business analytics solution that empowers organizations to visualize data and share insights across the enterprise seamlessly.

Our synopsis delves into the realm of sales dashboard and analysis using POWER BI, exploring how this innovative platform revolutionizes the way businesses understand and leverage sales data.

##### **a. Introduction to Sales Dashboard and Analysis**

Define the significance of sales analytics in today's competitive market.

Highlight the challenges faced by organizations in managing and interpreting vast sales data.

##### **b. Understanding POWER BI**

Provide an overview of Microsoft POWER BI and its capabilities in data visualization and analysis.

Discuss the advantages of using POWER BI for sales analytics, such as real-time data processing, interactive dashboards, and AI-driven insights.

**c. Designing Comprehensive Sales Dashboards**

Explore the key metrics and KPIs essential for monitoring sales performance (e.g., revenue, conversion rates, customer acquisition cost).

Showcase the process of designing intuitive and actionable sales dashboards using POWER BI's drag-and-drop interface and rich visualization options.

**d. Analyzing Sales Trends and Patterns**

Illustrate how POWER BI enables deep dive analysis into sales trends, seasonality, and customer behavior using historical and real-time data integration.

Showcase the creation of dynamic reports and visualizations for identifying opportunities, detecting anomalies, and making data-driven decisions.

**e. Empowering Sales Teams with Insights**

Discuss the role of sales dashboards in facilitating collaboration and alignment across sales teams, management, and other stakeholders.

Highlight the benefits of using actionable insights derived from POWER BI dashboards to optimize sales strategies, target high-value opportunities, and drive revenue growth.

## **AREA OF SPECIALIZATION:**

**sales dashboard and analysis using Power BI**, our area of specialization would primarily fall within the intersection of data analytics, business intelligence, and sales operations. Here are some key areas we want to focus on:

### **1. Data Analytics and Business Intelligence (BI):**

- Understanding data structures and formats suitable for sales analysis.
- Extracting, transforming, and loading (ETL) data processes to prepare sales data for analysis.
- Utilizing BI tools such as Power BI for data visualization, dashboard creation, and interactive reporting.

### **2. Sales and Marketing Operations:**

- Understanding sales and marketing KPIs (Key Performance Indicators) such as sales revenue, conversion rates, customer acquisition costs, etc.
- Analyzing sales trends, customer behavior, and market segmentation to identify opportunities and challenges.
- Integrating sales data with other business data (e.g., CRM data, marketing campaign data) for comprehensive analysis.

### **3. Power BI Expertise:**

- Creating visually appealing and insightful dashboards using Power BI tools and functionalities.
- Implementing interactive features such as drill-downs, filters, and slicers for deeper data exploration.
- Utilizing DAX (Data Analysis Expressions) language for custom calculations and measures within Power BI.

#### **4. Business Impact and Insights:**

- Evaluating the effectiveness of sales strategies, campaigns, and initiatives through data-driven insights.
- Identifying sales performance outliers, anomalies, and areas for improvement using advanced analytics techniques.
- Communicating findings and actionable recommendations to stakeholders through compelling data visualizations and reports.

Our synopsis will outline our approach to integrating these areas, highlighting our understanding of sales data analytics, proficiency in using Power BI tools, and our ability to derive meaningful insights to drive business decisions and sales performance improvements.

## **TYPE OF PROPOSED PROJECT:**

Enhancing Sales Performance Through Interactive Sales Dashboard and Analysis Using POWER BI. We have considered an product base company and finding insights from their prior sales and the revenue data. This will help the company know better about their sales as per every aspects like location, where the product is mostly purchased by which people and which age group do we counter. Various more insights like unit economics, month on month sale, average order value (AOV),ect. will be seen on the dashboard.

### **a. Objectives:**

To develop an interactive sales dashboard using POWER BI for sales monitoring. To analyze historical sales data to identify trends, patterns, and opportunities. To provide actionable insights to improve sales performance and decision-making processes.

### **b. Sales Dashboard Components:**

Key Performance Indicators (KPIs): Sales revenue, sales growth, conversion rates, customer acquisition costs, etc. Geographic Analysis: Sales distribution by region, country, or territory using maps and charts. Product Performance: Sales trends, top-selling products, profitability analysis, inventory levels, etc. Sales Funnel Analysis: Conversion rates at each stage of the sales process (leads, opportunities, closed deals). Customer Segmentation: Analysis of customer demographics, buying behavior, customer lifetime value (CLV), etc.

### **c. Data Visualization Techniques:**

Line charts, bar charts, pie charts for sales trends and comparisons. Scatter plots, heat maps for geographical analysis and market segmentation. Funnel charts, gauge charts for sales funnel monitoring and KPI visualization. Drill-down capabilities for detailed analysis at different levels of granularity.

## **BRIEF INTRODUCTION OF PROJECT:**

The Sales Dashboard and Analysis project aims to leverage the capabilities of Power BI to create a comprehensive and interactive dashboard for analyzing sales data. Power BI is a powerful business intelligence tool that allows users to transform raw data into meaningful insights through data visualization, analytics, and reporting.

This solution aims to provide a concise yet powerful tool for businesses to track and understand their sales performance effectively. By integrating data from various sources such as CRM systems, sales databases, and marketing platforms, the dashboard will offer real-time insights into key sales metrics including revenue trends, customer acquisition rates, product performance, and regional sales distribution. Utilizing Power BI's interactive visualization features, users will be able to drill down into specific data points, generate custom reports, and derive actionable insights to optimize sales strategies and improve overall business performance.

### **Key Objectives:**

- **Data Integration:** Gather and integrate sales data from various sources such as databases, spreadsheets, and online platforms into Power BI.
- **Dashboard Creation:** Design visually appealing and user-friendly dashboards to monitor key sales metrics such as revenue, sales volume, profit margins, and customer trends.
- **Data Analysis:** Utilize Power BI's analytical tools to perform deep-dive analysis, identify patterns, correlations, and outliers in sales data.
- **Interactive Visualizations:** Create interactive charts, graphs, and maps to enable users to explore data dynamically and gain actionable insights.
- **Reporting and Sharing:** Generate automated reports and schedule data refreshes to keep the dashboard up-to-date. Share insights with stakeholders through interactive reports and dashboards.

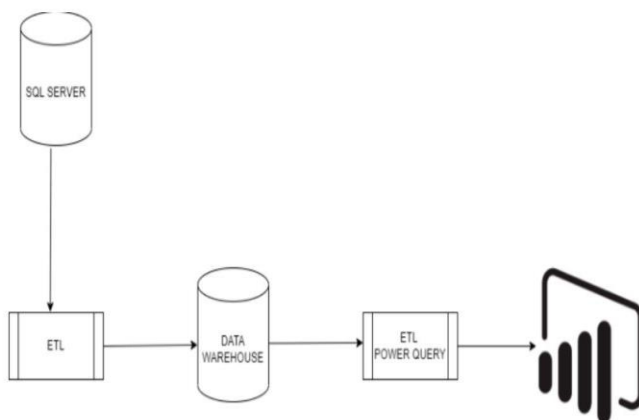
### **Benefits:**

- **Real-time Monitoring:** Keep track of sales performance metrics in real-time to make informed business decisions promptly.
- **Data-driven Insights:** Uncover trends, patterns, and opportunities hidden within sales data to optimize strategies and improve outcomes.



## Sales Dashboard and Analysis Using Power-BI

- **Enhanced Collaboration:** Foster collaboration among teams by sharing interactive dashboards and reports for collective analysis and decision-making.
- **Scalability:** Power BI offers scalability to handle large volumes of data, ensuring flexibility and adaptability as business needs evolve.
- **Cost-effective Solution:** Leverage existing data infrastructure and Power BI's capabilities to create impactful visualizations and analytics without significant additional costs.

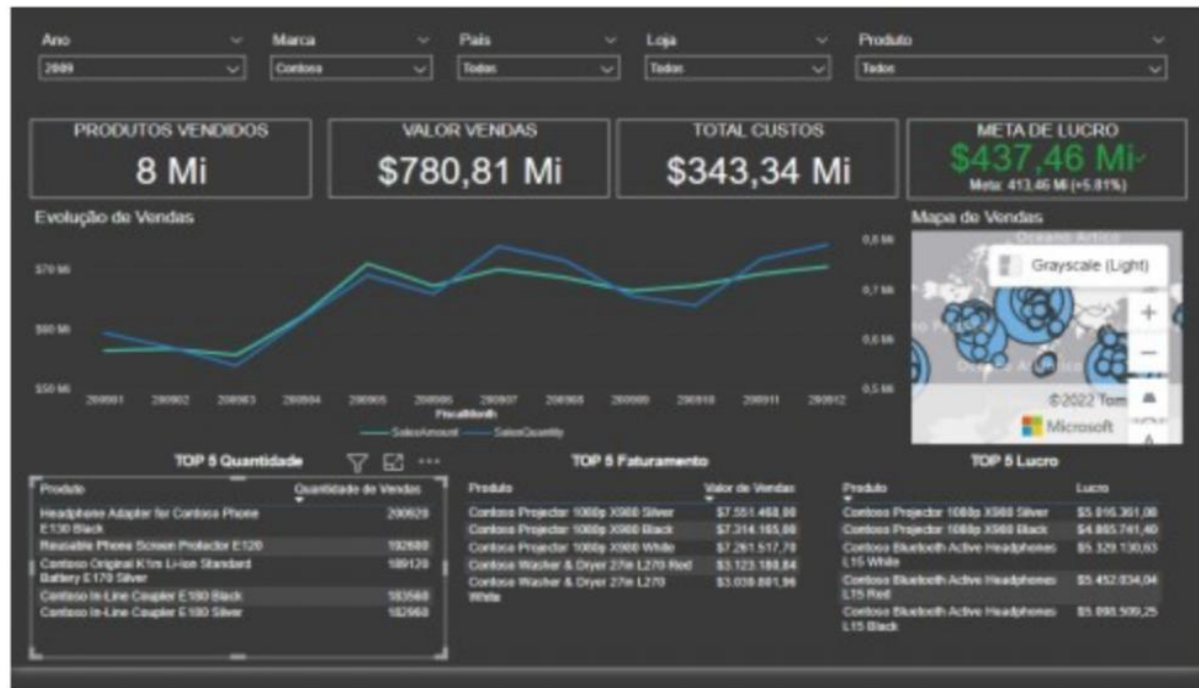


The screenshot shows a SQL Server Enterprise Manager window with a query executed in the 'SQL Query2.sql - LAP...' window. The query is as follows:

```
select SalesKey,
[DateKey],
[StoreKey],
[ProductKey],
[UnitCost],
[UnitPrice],
[SalesQuantity],
[TotalCost],
[DiscountQuantity],
[DiscountAmount],
[SalesAmount]
from [dbo].[FactSales]
where year([DateKey]) = 2006
```

The results are displayed in a table with the following columns: SalesKey, DateKey, StoreKey, ProductKey, UnitCost, UnitPrice, SalesQuantity, TotalCost, DiscountQuantity, DiscountAmount, and SalesAmount. The table contains 14 rows of data.

SalesKey	DateKey	StoreKey	ProductKey	UnitCost	UnitPrice	SalesQuantity	TotalCost	DiscountQuantity	DiscountAmount	SalesAmount
1	2007-01-02 00:00:00.000	209	956	91.05	198.00	8	728.40	1	39.60	1544.40
2	2007-02-12 00:00:00.000	308	766	10.15	19.90	4	40.60	1	0.995	78.605
3	2008-01-24 00:00:00.000	196	1175	209.03	410.00	9	1881.27	3	61.50	3628.50
4	2008-01-13 00:00:00.000	306	1429	132.90	289.00	8	1083.20	1	57.80	2254.20
5	2008-01-22 00:00:00.000	306	1133	144.52	436.20	34	3495.48	3	261.72	10207.58
6	2007-01-02 00:00:00.000	200	2395	183.94	399.99	36	6021.54	10	399.99	13999.65
7	2007-11-19 00:00:00.000	310	1016	68.06	140.00	6	408.36	2	44.40	843.80
8	2008-04-10 00:00:00.000	307	136	229.93	499.99	9	2099.37	1	99.998	4399.912
9	2008-07-14 00:00:00.000	199	1731	33.32	72.45	24	796.68	5	36.225	1702.975
10	2009-04-10 00:00:00.000	310	497	50.47	99.00	18	908.46	4	79.20	1702.80
11	2007-02-04 00:00:00.000	199	1825	16.31	32.00	4	65.24	0	0.00	128.00
12	2007-04-29 00:00:00.000	119	543	116.75	229.00	10	1167.50	0	0.00	2295.00
13	2007-07-29 00:00:00.000	171	739	78.19	236.00	12	938.28	0	0.00	2832.00
14	2008-12-18 00:00:00.000	18	1269	25.47	49.96	13	331.11	1	9.992	639.408



## **PROBLEM DEFINITION:**

### **SALES DASHBOARD AND ANALYSIS USING POWER-BI**

The project focuses on developing a sales dashboard and analysis system using POWER BI, a powerful business intelligence tool. We will use various visualisation components like Bar Chart, donut pie chart, bar graphs, histograms, Area Chart, tree map, scatter plot etc. for better storytelling of our insights through the prior sales data of the organisation. The goal is to provide a comprehensive platform that allows users to visualize and analyze sales data efficiently. This includes tracking sales performance metrics such as revenue, profit margins, average order value(AOV), unit economics, various business aspects and product performance over time. By integrating various data sources and implementing interactive visualizations, the system aims to empower decision-makers with actionable insights into sales trends, customer behavior, and market opportunities. The project's scope encompasses data preprocessing, dashboard design, interactive report generation, and user training to ensure effective utilization of the POWER BI solution for strategic business decision-making. By leveraging POWER BI's robust analytics capabilities, the dashboard will provide insights into sales trends, customer behavior, and performance metrics, empowering stakeholders to take proactive actions and drive revenue growth.

## **PROPOSED METHODOLOGY:**

for a sales dashboard and analysis using Power BI involves several key steps and considerations.

### **1. Understand Business Requirements:**

Meet with stakeholders to understand their specific requirements for the sales dashboard and analysis.

Identify key performance indicators (KPIs) such as sales revenue, profit margins, sales growth, customer acquisition rates, etc.

### **2. Data Gathering and Preparation:**

Collect relevant sales data from various sources such as CRM systems, ERP systems, Excel files, databases, etc. Cleanse and transform the data as needed (e.g., handle missing values, remove duplicates, format data types) using Power Query Editor in Power BI.

### **3. Data Modeling:**

Design a data model that aligns with the business requirements and KPIs identified earlier. Create relationships between different tables (e.g., sales transactions, products, customers) using Power BI's Data Model view.

### **4. Dashboard Design:**

Identify the layout and design elements for the dashboard (e.g., charts, graphs, tables, KPI cards). Use Power BI Desktop to create visualizations such as bar charts, line charts, pie charts, maps, etc., based on the data model.

### **5. Implement Interactivity:**

Leverage Power BI's interactive features such as slicers, filters, and drill-throughs to allow users to explore data dynamically. Use bookmarks and buttons to create a guided user experience within the dashboard.

### **6. Add Calculations and Metrics:**

Create calculated columns, measures, and DAX (Data Analysis Expressions) formulas to derive additional insights (e.g., sales growth rate, average order value, conversion rates). Use DAX functions like SUM, AVERAGE, CALCULATE, etc., as needed.

### **7. Incorporate Advanced Analytics (Optional):**

Utilize Power BI's advanced analytics capabilities such as forecasting, clustering, and regression analysis to gain deeper insights into sales trends and patterns.

### **8. Data Visualization Best Practices:**

Apply best practices for data visualization such as using appropriate chart types, labeling axes clearly, using color schemes effectively, and ensuring readability and accessibility.

### **9. Testing and Validation:**

Test the dashboard with sample data to ensure that all visualizations are working as expected and providing accurate insights. Validate the dashboard with stakeholders to gather feedback and make iterative improvements.

### **10. Documentation and Training:**

Document the data sources, data transformations, data model, calculations, and dashboard design choices for future reference. Conduct training sessions or create user guides to help stakeholders and end-users understand how to interact with and interpret the dashboard effectively.

### **11. Deployment and Maintenance:**

Publish the Power BI dashboard to the Power BI Service or on-premises Power BI Report Server for sharing with stakeholders. Establish a process for regular data refreshes to ensure that the dashboard reflects up-to-date sales data. Monitor dashboard usage and performance metrics, and make necessary updates or optimizations over time.

## REFERENCES:

1. **"Data Visualization for Business: A Handbook for Data Driven Design" by Jared L. Decker** (This book provides a comprehensive guide to creating effective data visualizations, including sales dashboards, using various tools and techniques.)
2. **"Sales Analytics: The Science of Winning" by Cesar Brea** (This book focuses on using analytics to drive sales performance and covers topics such as data collection, analysis, and visualization in a sales context.)
3. **"Dashboarding and Reporting with Power BI: How to Design and Create a Financial Dashboard with Power BI" by Ratnesh Shah** (This book specifically focuses on using Microsoft Power BI to create impactful dashboards for financial and sales analysis. )
4. **"Sales Management. Simplified.: The Straight Truth About Getting Exceptional Results from Your Sales Team" by Mike Weinberg** (While not specifically focused on data analysis or dashboards, this book offers valuable insights into sales management strategies that can complement your data-driven approach.)

**Signature of Project Guide**

**Signature of Project Co-ordinator**