IT Service Desk Analytics Dashboard using Power BI

Project Description

This project is an **end-to-end IT Service Desk Analytics solution** developed using **Power BI**. The objective is to analysed IT support ticket data and provide meaningful insights into **ticket volume, incident trends, priority distribution, SLA compliance, and service performance**.

The dashboard helps **IT managers, support leads, and stakeholders** monitor service efficiency, identify bottlenecks, and improve overall IT service quality.

Business Problem

IT Service Desk teams handle a large number of tickets daily across different categories and priority levels. Without proper analytics:

- SLA breaches are difficult to track
- High-impact incident categories are not clearly visible
- Resolution delays go unnoticed
- Management lacks a consolidated performance view

This project addresses these challenges by providing a **centralized, interactive dashboard**.

Business Objectives

- Monitor total, closed, and reopened tickets
- Analyse ticket trends over time
- Identify high-volume categories and configuration items
- Measure SLA compliance and resolution performance
- Support data-driven decision-making in IT operations

Tools & Technologies Used

Area	Tool
Data Cleaning & Transformation	Power Query
Data Modeling	Star Schema
Calculations	DAX
Visualization	Power BI

Area	Tool
File Format	PBIX, CSV

Data Preparation (Power Query)

The raw IT Service Desk data was cleaned and transformed using **Power Query**.

Key Cleaning Steps:

- Removed irrelevant and duplicate columns
- Handled missing and null values
- Standardized date and time formats
- Converted handle time from minutes to hours
- Ensured correct data types (Date, Text, Numeric)
- Created derived date fields for analysis

These steps ensure **accurate calculations and reliable visuals**.

Data Modelling

A **Star Schema** was implemented for optimal performance and clarity.

Fact Table

Fact Incidents

- Ticket ID
- Ticket Status
- Priority Level
- Handle Time
- Resolution Time
- Reassignment Count
- SLA indicators
- Ticket Opened / Resolved / Closed DateTime
- Configuration Item
- Knowledge Base ID

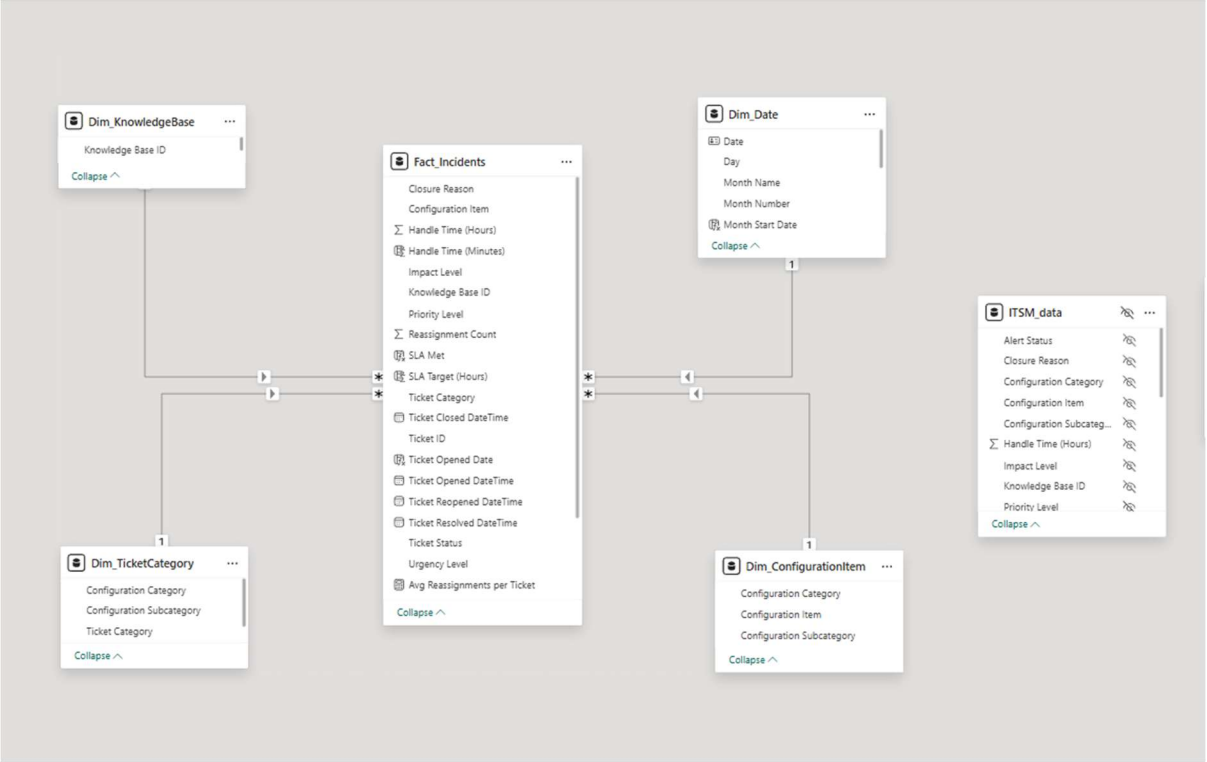
Dimension Tables

- **Dim Date** – Date, Month, Year, Time-based analysis
- **Dim Ticket Category** – Incident and request categorization

- **Dim Configuration Item** – System and asset analysis
- **Dim Knowledge Base** – Knowledge usage reference

Relationships

- One-to-many relationships from dimensions to fact table
- Single-direction filtering
- Optimized for aggregation and performance



DAX Measures

Key DAX measures created include:

- Total Tickets
- Closed Tickets
- Reopened Tickets
- Average Handle Time
- Average Resolution Time
- SLA Compliance Percentage
- SLA Breached Tickets
- Closure Rate Percentage

These measures convert raw data into **actionable KPIs**.

Dashboard Pages Overview

Page 1: Executive Overview

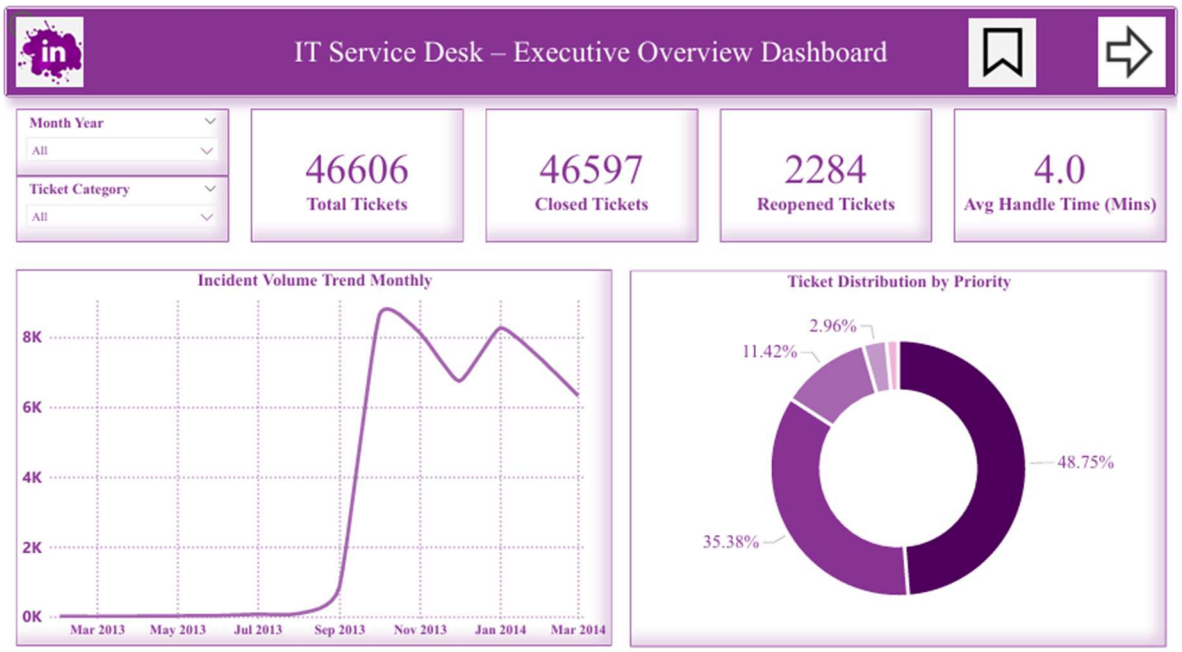
Purpose: Provide a high-level summary for management.

Includes:

- KPI cards (Total Tickets, Closed Tickets, Reopened Tickets, Avg Handle Time)
- Monthly incident volume trend
- Ticket distribution by priority

Business Value:

- Quick assessment of overall IT service health
- Supports strategic decision-making



Page 2: Incident & Category Analysis

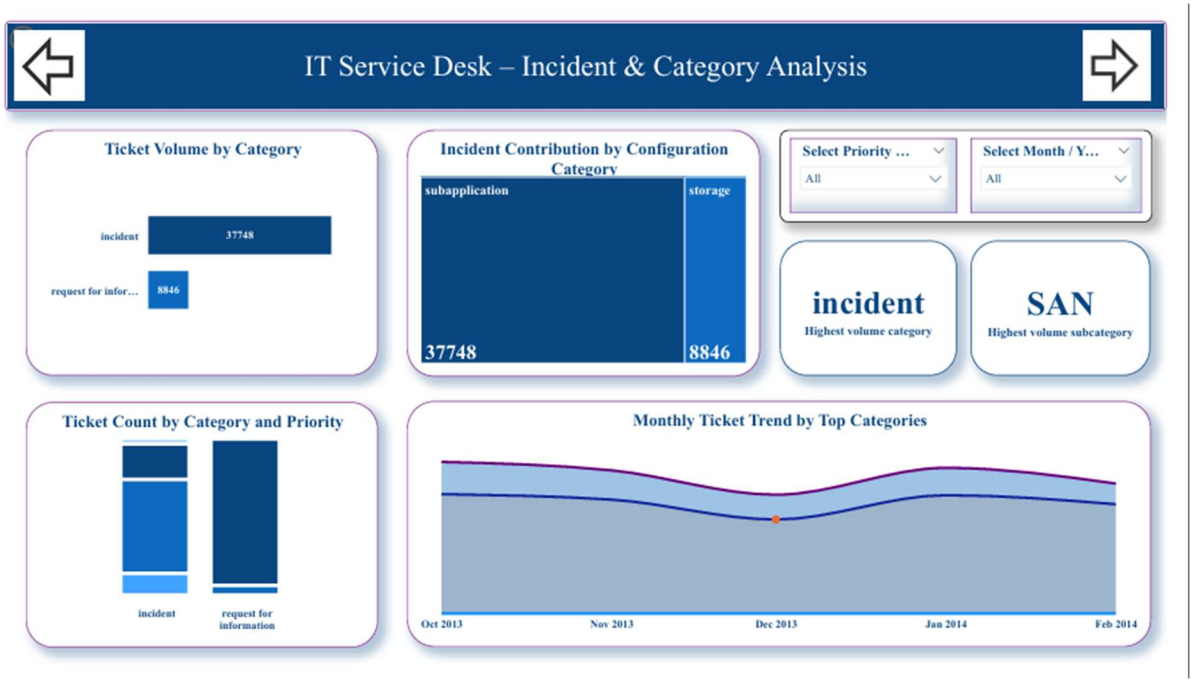
Purpose: Identify problem areas and root causes.

Includes:

- Ticket volume by category
- Incident contribution by configuration item
- Category and priority analysis
- Monthly trend by top categories
- Insight cards for highest volume categories

Business Value:

- Helps focus on high-impact systems and issues
- Supports preventive actions and resource planning



Page 3: SLA & Performance Analysis

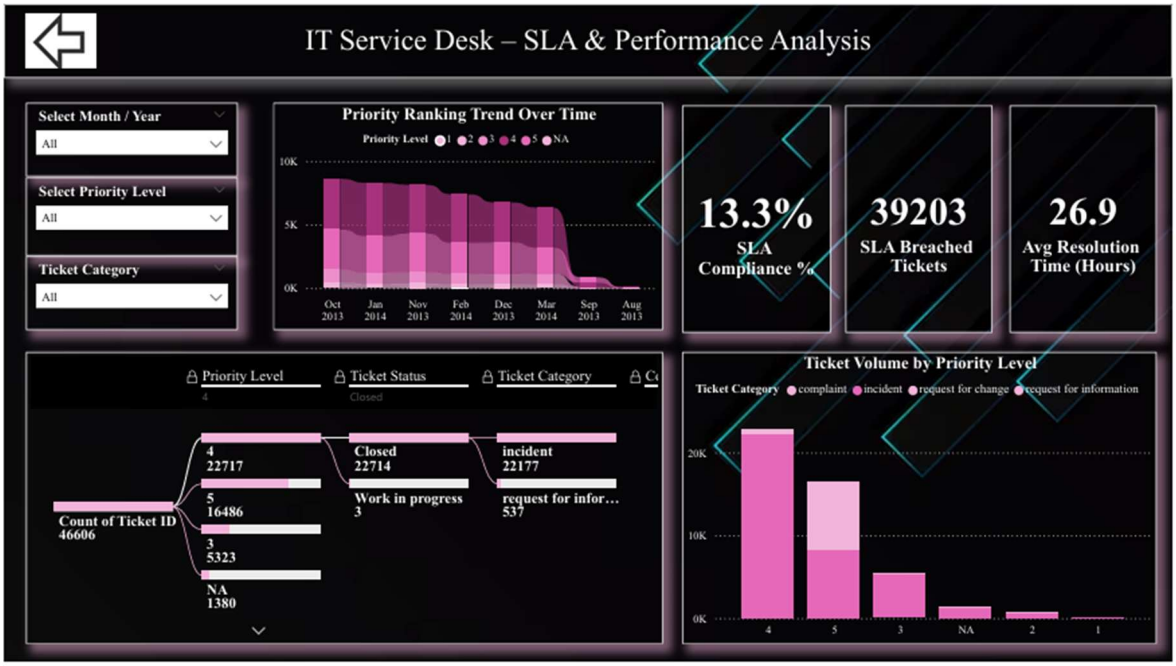
Purpose: Measure service quality and SLA adherence.

Includes:

- SLA Compliance %
- SLA Breached Tickets
- Average Resolution Time
- Priority ranking trends
- Ticket breakdown using decomposition analysis

Business Value:

- Identifies SLA risks and performance bottlenecks
- Enables continuous service improvement



Key Insights Delivered

- Majority of tickets originate from specific categories and configuration items
- High-priority tickets contribute significantly to SLA breaches
- Resolution time varies across priority levels
- Seasonal trends affect ticket volume

Project Outcomes

- Improved visibility into IT service desk performance
- Clear understanding of SLA compliance levels
- Identification of critical problem areas
- Enhanced decision-making support for IT management

Future Enhancements

- Agent-level performance analysis
- SLA target vs actual comparison
- Drill-through reports for deep analysis
- Tooltip-based contextual insights

Conclusion

This project demonstrates **end-to-end Power BI capabilities**, including data cleaning, Modeling, DAX, and dashboard storytelling.
It reflects real-world ITSM analytics and is suitable for **Data Analyst / BI Analyst portfolios**.
