IT Help Desk Performance Analysis Report

Project #2 – Customer Support Ticketing System

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Role Targeted:
Business Analyst | Systems Analyst | IT Operations Analyst

Tools Used:
Excel • Tableau

Date Completed:
June 2024

Portfolio Repository:

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Project #2: IT Help Desk & Ticketing System Analysis Report

Project Overview

This project analyzes **IT support ticket data** to evaluate help desk performance and uncover patterns in **resolution rates**, **ticket volume**, and **support channel usage**. The goal is to highlight areas for improvement and drive better customer service through **data-driven decision-making**.

Objectives

- Analyze overall **ticket volume** and **resolution status**
- **Measure the ticket resolution rate (%) and detect operational delays**
- Review the distribution of **priority levels** (Critical, High, Medium, Low)
- Evaluate trends across **support channels** (Email, Phone, Chat, Social Media)
- Deliver **recommendations** to streamline IT help desk performance

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Tools Used

- **Excel -** Data Cleaning & Preparation
- **Tableau -** Data Visualization, Calculated Fields & Dashboard Design

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Dataset Source

This project uses the ***Customer Support Ticket Dataset*** from Kaggle. Though simulated, it closely mirrors real-world IT help desk environments. It includes essential fields such as **ticket priority**, **resolution times**, **support methods**, and **customer satisfaction**, making it ideal for analyzing operational performance.

Data Cleaning & Preparation

Performed in **Excel**, the dataset was cleaned and structured for analysis through:

- **Removed irrelevant columns** (e.g., *Customer Name*, *Customer Email*, *Ticket Description*)
- **Deduplicated rows** and **standardized field names** (e.g., *Ticket_ID*, *Customer_Age*, *Ticket_Status*)
- **Formatted date fields** (e.g., *Ticket_Creation*, *First_Response*, *Resolution_Time*)
- Created a **Data Dictionary** tab to document fields and definitions
- Creating **calculated fields** in Tableau for:
    - **Ticket Resolution Rate** (%)
    - **Pending Requests** (**Open Tickets**)
- **Exported cleaned dataset** as .xlsx, .csv for use in **Tableau** visualizations

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Key Insights & Findings

1. Total Ticket Volume & Resolution Status

- A total of **8,469 support tickets** were processed
- **49.6%** of tickets were **closed**, while **50.4%** remained **open**.
- **2,881 tickets** were still pending customer or agent follow-up.

Summary of Impact: High volume of unresolved tickets suggests a need for **improved follow-up protocols** and better **tracking systems** to reduce bottlenecks.

2. Ticket Priority Distribution

- **Medium-priority** tickets were the most frequent (**2,192 tickets**)
- **Critical tickets** were also high (**2,129 tickets**), indicating many urgent issues
- **High and Low-priority** tickets were nearly equal in count (~2,000 each)

Summary of Impact: The help desk is facing a **disproportionate number of urgent requests**, which calls for enhanced **priority management** and **escalation workflows**.

3. Support Channel Usage

- **Email** (2,143) and **Phone** (**2,132**) were the most used methods
- **Social Media** (**2,121**) and **Chat** (**2,073**) also saw high engagement

Summary of Impact: Balanced channel usage shows that support is being accessed through **multiple touchpoints**. This highlights the importance of **staffing appropriately across all channels** and investing in **real-time support tools**.

Tableau Dashboard Overview

The Tableau dashboard includes clear, **interactive visuals** that display:

- **Total support tickets** processed and their **resolution status**
- Breakdown of **ticket volume by priority level** (Critical, High, Medium, Low)
- **Ticket volume by communication channel** (Email, Phone, Chat, Social Media)
- **Dynamic Filters** by Ticket Count, Priority, and Channel
    - **Dashboard Name**: *IT Help Desk Performance Dashboard* ***(Tableau Public)***
    - **Upload Details:** *Published to* ***Tableau Public*** *and saved as* `.twbx` *file*
    - **Dashboard Preview:** *See Figure 1 below*

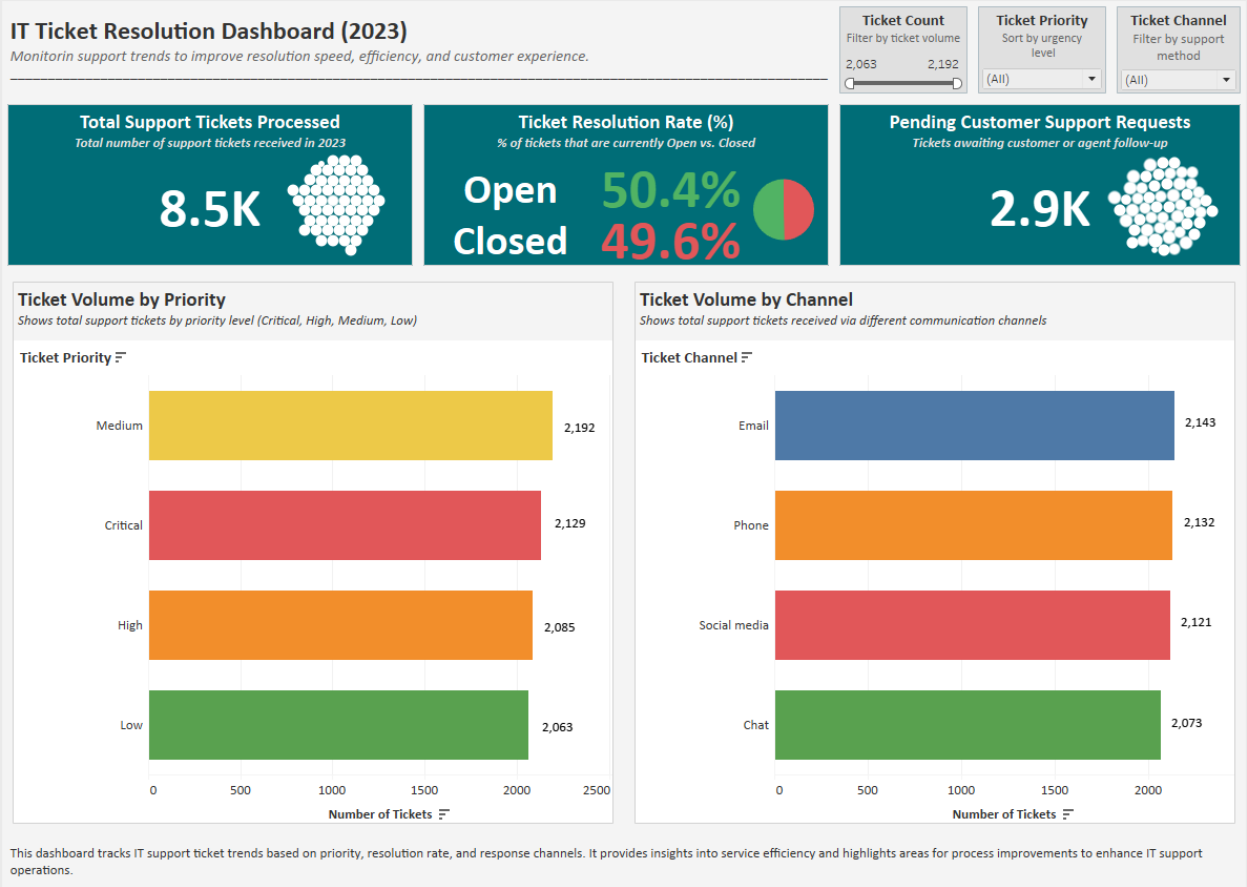

Figure 1: IT Help Desk Performance Dashboard – Tableau Visualization.

Business Impact & Recommendations

This analysis supports actionable strategies for IT teams:

1. Reduce Customer Response Delays

- Implement **automated follow-ups** for unresolved tickets
- Define **Service Level Agreements (SLAs)** to improve resolution time targets

2. Prioritize Critical & High-Priority Tickets

- Assign **dedicated agents** for urgent tickets
- Create **automated escalation rules** to fast-track resolution

3. Optimize Support Staffing

- Allocate resources across **Email, Phone, and Chat**
- Scale **chat-based support** for faster interactions

Calculated Fields & Tableau Analysis

All analysis was completed in Tableau using **calculated fields** to derive dynamic, filterable metrics including **Ticket Resolution Rate (%)** and **Pending Support Requests (Open Tickets)**. These were built directly from the cleaned dataset to uncover trends in **ticket volume, urgency, and support channel usage**. The calculations enhanced the dashboard's interactivity and allowed for real-time filtering by **ticket priority**, **channel**, and **volume**, supporting actionable insights for IT operations.

File Export & Submission

- **Cleaned dataset** exported as `.xlsx` and `.csv` for use in **Tableau**
- **Tableau Workbook** saved as `.twbx` for **portfolio use**
- **Dashboard image** exported as `.png` and `.pdf` for **professional sharing**
- Finalized documentation (**this report**) saved as `.docx` and `.pdf`
- **GitHub README** included as both `README.md` and `.pdf`
- All **project files** are organized and stored in **GitHub** and **LinkedIn portfolio** for **easy access**

Final Thoughts

This project delivers a **data-driven assessment** of **IT help desk performance** using **Excel** and **Tableau**. It identifies **operational inefficiencies**, **highlights trends** in **ticket resolution** and **support channel usage**, and provides **actionable strategies** to improve service quality—core priorities for roles such as **Business Analyst**, **Systems Analyst**, and **IT Operations Analyst**.

The interactive dashboard is published on **Tableau Public** and is part of **my professional portfolio** for **hiring managers** to explore: IT Help Desk Dashboard on Tableau Public.