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AMDARI Work Experience (Data Analytics)

Optimizing Order Fulfillment: A Data-Driven Approach to Eliminate Backlogs with an Excel Interactive Dashboard

Data Analytics Project (Intermediate Level)

Specialization: Supply Chain Analytics	**Business Focus: Logistics and Supply Chain**	**Tool: Excel**

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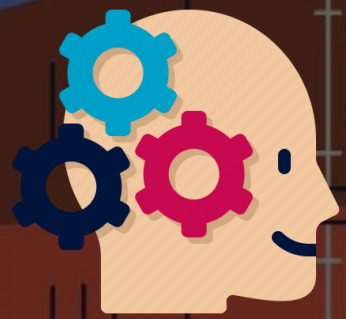
Project Learning Opportunities

Master the art of utilizing **Microsoft Excel** to streamline and perfect order fulfilment within your **supply chain operations**. Through this hands-on experience, you'll harness the capabilities of Excel, delving into the creation of dynamic and interactive dashboards, all while leveraging intermediate and advanced Excel functions to achieve unparalleled optimization.

Learning Skills

- Microsoft Proficiency
- Data Analytics
- Dashboarding
- Order Fulfilment
- Supply Chain Analysis/Optimization
- Reporting and Automation
- Business Recommendation



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Business Introduction

Streamline Logistics Solutions is a distinguished and long-standing player in the supply chain and logistics industry, with a rich history dating back over two decades.

We have built our reputation on a commitment to delivering exceptional service, characterized by the swift and dependable delivery of a wide array of products to customers nationwide.

Our company stands as a pillar of reliability, ensuring that businesses and consumers alike can count on us to transport their goods efficiently and with care.

However, even as we continue to flourish, we find ourselves facing a pressing operational challenge that demands innovative solutions to uphold our unwavering commitment to service excellence.

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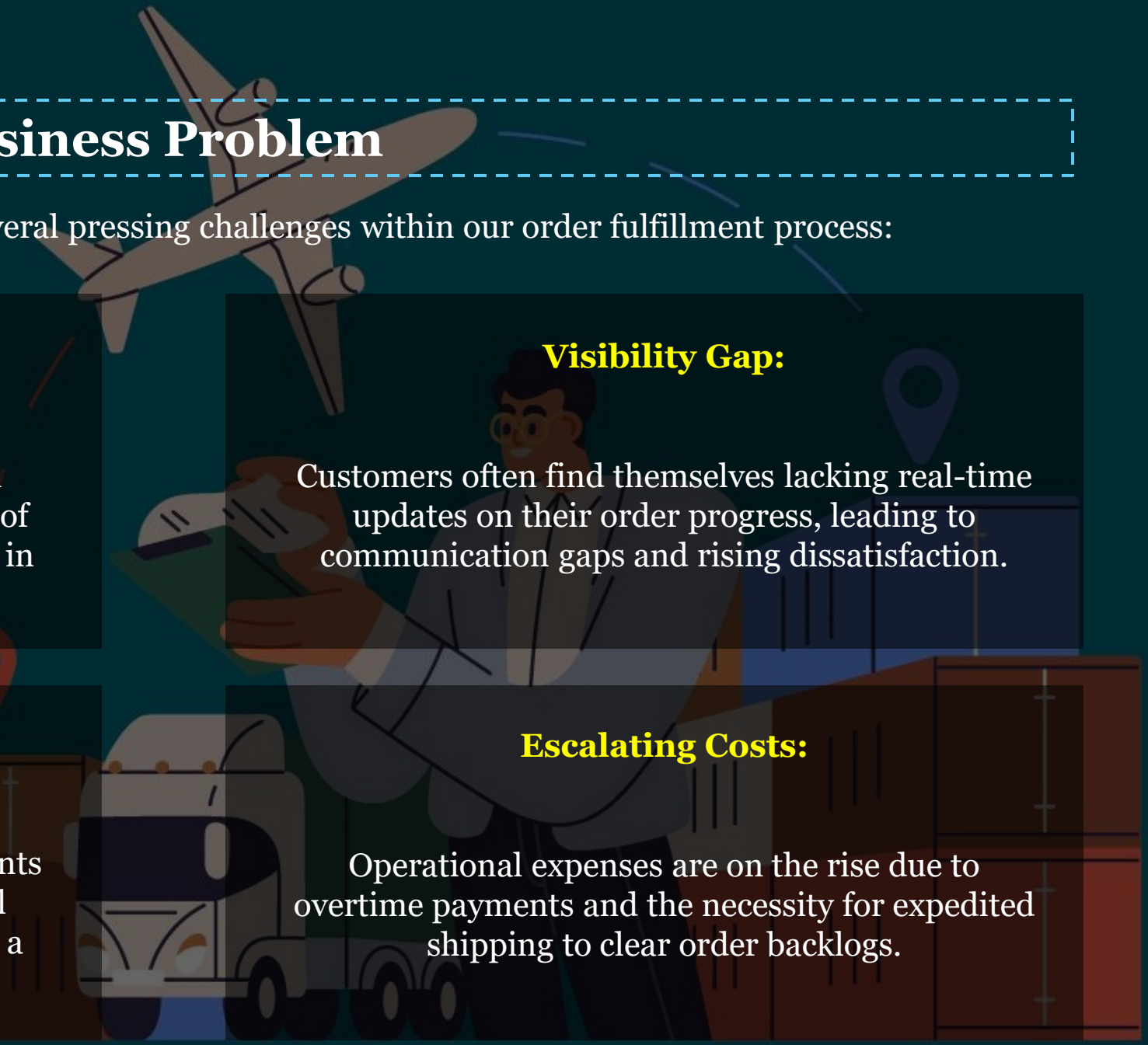
Business Problem

At Streamline Logistics Solutions, we encounter several pressing challenges within our order fulfillment process:



Mounting Order Backlogs:

Our current routing and resource allocation processes have resulted in a growing backlog of orders, compromising delivery timelines and, in turn, customer satisfaction.

Visibility Gap:

Customers often find themselves lacking real-time updates on their order progress, leading to communication gaps and rising dissatisfaction.

Customer Frustration:

The increasing frequency of customer complaints regarding delayed deliveries and suboptimal communication channels is beginning to cast a shadow on our reputation for reliability.

Escalating Costs:

Operational expenses are on the rise due to overtime payments and the necessity for expedited shipping to clear order backlogs.

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Rationale for the Project

Order Fulfillment is the process of receiving, processing, and delivering customer orders. It involves activities such as inventory management, order processing, picking and packing products, and shipping them to customers. While Backlogs in the context of order fulfillment refer to a situation where there is a delay or accumulation of unprocessed orders.

Backlogs can result from various factors, including high demand, operational inefficiencies, or unforeseen disruptions, and they can negatively impact customer satisfaction, as customers may experience delays in receiving their orders. Eliminating backlogs is crucial to ensuring timely and reliable order fulfillment.

Order fulfillment is the linchpin of our operations in the Logistics and Supply Chain industry, where efficiency is not merely a goal but a necessity. Let's delve into why this project is absolutely vital for Streamline Logistics Solutions:

- **Customer Satisfaction:** Enhancing our order fulfillment processes directly translates into heightened customer satisfaction, thereby nurturing loyalty and long-term relationships.
- **Operational Efficiency:** Improved efficiency leads to cost savings and heightened profitability, bolstering our competitive position within the industry.
- **Data-Driven Insights:** Harnessing data-driven insights empowers us to optimize resource allocation and routing, ensuring timely deliveries and improved resource management.
- **Reputation Management:** Addressing these operational challenges is paramount to preserving Streamline Logistics Solutions' sterling reputation for delivering excellence consistently.

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Aim of Project

This project's primary objectives are **to develop an Excel interactive dashboard** that provides unparalleled visibility into our order fulfilment processes. Through this, we aim to:

- Efficiently allocate delivery resources based on order volume and location.
- Monitor order progress and proactively identify potential delays.
- Enhance customer communication with timely delivery status updates.
- Reduce order backlogs and operational costs.
- Elevate overall customer satisfaction and safeguard our reputation as an industry leader.

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Data Description

This case study contains a single dataset and it comprises of;

- Order ID: A unique identifier for each customer order.
- Delivery Address: The address to which the order is to be delivered.
- Order Timestamp: The date and time when the order was placed (e.g., "2023-09-01 08:00").
- Order Status: The current status of the order (e.g., "In Progress" or "Completed").
- Driver ID: A unique identifier for each driver assigned to deliver orders.
- Vehicle Info: Information about the delivery vehicle used for the order.
- Current Location: The current location of the delivery driver during order delivery.
- Delivery Time: The total time taken for delivery, measured in minutes (e.g., "120 min").
- Delays: Any delays that occurred during the delivery, measured in minutes (e.g., "15 min").

Dataset Continued

- Customer Feedback: Feedback from the customer regarding the delivery experience (e.g., "Positive" or "Negative").
- Route: The specific route taken by the delivery driver for the order.
- Delivery Zone: The geographic zone or area where the delivery is made.
- Allocation Rules: Rules used to allocate resources for the delivery (e.g., "Standard Rules" or "Expedited Rules").
- Timestamp for Tracking: The date and time of tracking data points (e.g., "2023-09-01 08:15").

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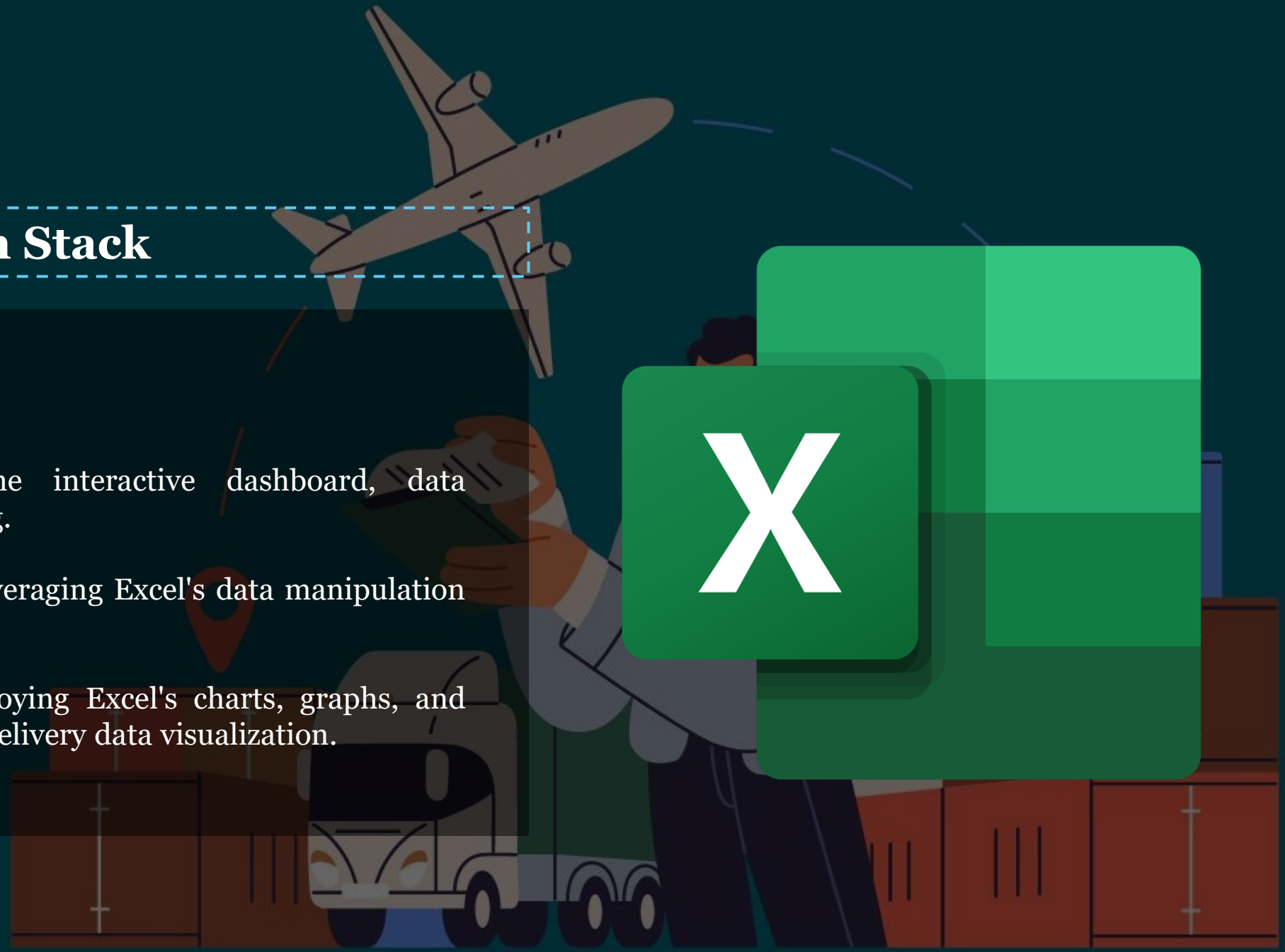
Tech Stack

Tool– Microsoft Excel

USE;

- Utilized for creating the interactive dashboard, data visualization, and reporting.
- Data Processing Tools: Leveraging Excel's data manipulation and analysis functions.
- Visualization Tools: Employing Excel's charts, graphs, and pivot tables for order and delivery data visualization.



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Project Enhancement

To enhance the project deliverable, you are required to automate KPI generation and the creation of an Ad-hoc report using Office Scripts in Microsoft Excel:

1. Define KPIs for Automation

Given the project's focus, here are **some potential KPIs** that could be automated:

- Order Completion Rate: Percentage of orders delivered on time.
- Average Delivery Time: Average time taken per delivery.
- Delay Impact: Average delay time per order and the percentage of delayed orders.
- Customer Satisfaction Score: Percentage of positive feedback.
- Backlog Rate: Number of backlogged orders as a percentage of total orders.
- Resource Allocation Efficiency: Analysis of delivery zones and driver allocation.

2. Automate KPI Calculation

Using Office Scripts, you can script Excel to automatically calculate these KPIs.

3. Generate Ad-Hoc Report with Office Script

To create an ad-hoc report, you can design an Office Script to pull the KPI metrics into a formatted summary sheet with KPIs in Card view alongside visualizations:

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Resources

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Data Analytics Project Scope