

COMPONENT 3 — REFINED IDEA & SET OF DELIVERABLES

Theme: Data / Business Analytics

Project Title: *AI-Driven Customer Insight and Sales Forecasting System for Small E-Commerce Businesses*

Platform Used for Prototype Website: Dorik AI

1. Refined Idea

After progressing through multiple stages of research, experimentation, and tool exploration, the project idea has now been refined into a more structured and practical AI-driven analytics solution. The initial concept focused on supporting small e-commerce businesses by leveraging AI to analyze sales, customers, and forecasting patterns. This idea has evolved into a more comprehensive system that not only delivers analytics but also integrates visual dashboards, an AI-powered chatbot, workflow diagrams, demonstration videos, and a fully functional website.

The refined project aims to build an end-to-end AI analytics ecosystem, where small businesses can upload their data, interact with insights through a chatbot, understand visual patterns from the dashboard, explore educational content via the website, and view conceptual videos for better comprehension. The system now includes:

- An AI-generated dataset representing real e-commerce sales behaviour
- A Power BI dashboard with 10 optimized visualisations
- A Google Sheets analysis file showing raw data exploration
- A Sora AI-based conceptual demo
- A live chatbot built using Poe/Flowise
- A GitHub repository hosting all project files and prompt library
- A Dorik AI website showcasing the complete solution
- A Miro mind map demonstrating the flow of the project

- A Jupyter Lab notebook with structured data interrogation
- A prompt library documenting every step of AI usage

This refined system presents a polished, industry-ready solution instead of just a theoretical idea. It showcases how AI and analytics can be integrated across multiple practical platforms to support smarter decision-making in small retail environments.

2. Finalised Problem Statement

Small e-commerce businesses struggle to make informed decisions because they lack access to advanced data analytics tools and AI-driven insights. Due to limited technical expertise, these businesses face difficulties in understanding customer behaviour, forecasting demand, identifying profitable product segments, and planning inventory efficiently. As a result, they experience inconsistent sales performance, inefficient marketing efforts, and reduced customer retention. The absence of an accessible, AI-powered analytics system prevents these businesses from leveraging their data to strengthen operations and achieve sustainable growth.

3. Set of Deliverables

a. Google Sheets Data Analysis

- A structured dataset with approximately 50–100 rows was generated and analysed.
- Basic exploratory analysis was conducted to understand patterns in sales, customers, product categories, and locations.

b. Power BI Dashboard with 10 Visualisations

- A fully interactive Power BI dashboard was created, consisting of cards, stacked column charts, line charts, and bar charts.
- Each chart represents key metrics such as revenue, category-wise performance, customer distribution, and time trends.

c. Canva AI Infographics

- Visually appealing infographics were generated using Canva AI to represent the business problem, solution, and system workflow.
- These graphics contribute to professional presentation quality.

d. GitHub Repository with Project Files and Prompt Library

- A dedicated GitHub repository was developed to house all datasets, notebooks, dashboard files, and the prompt library.
- Links to the website, chatbot, and dashboard have been added for central access.

e. Dorik AI Website Prototype

- A clean, responsive website was created using Dorik AI to showcase the project.
- The site contains sections such as Home, About the Project, Sora AI Demo Videos, Contact, and Integrated Tools.
- This serves as the central hub for presenting the solution.

f. AI Chatbot Integration

- A functional chatbot was created using Poe that answers questions about the dataset, dashboard, and project insights.
- The chatbot reflects a “live” AI analytics assistant for small businesses.

g. Sora AI Conceptual Video Demonstration

- A short Sora AI video was generated to visually explain the core idea of applying AI for small e-commerce analytics.
- This strengthens the storytelling element of the project.

h. Jupyter Lab Notebook for Structured AI-Assisted Analysis

- A Jupyter Notebook was used to run basic data exploration steps supported by AI guidance.
- This demonstrates the use of semi-technical tools in a non-programming-heavy manner.

i. Miro Mind Map

- A comprehensive mind map was created to illustrate the workflow, problem breakdown, tool integration, and output structure.
- This enhances clarity around the system development process.

j. Prompt Library Documentation

- A detailed prompt library was created to document all prompts used across Sora, ChatGPT, Power BI insights-generation, Canva AI, and chatbot training.
- This ensures transparency and reproducibility in the project workflow.

4. Improvements Made Since Component 2

- The initial idea has been expanded into a full multi-platform solution instead of a single dashboard.
- Visual quality was improved using Canva AI and Power BI formatting adjustments.
- The website was upgraded from basic Wix pages to a cleaner, more professional Dorik AI structure.
- A functional chatbot was implemented to improve interactivity.
- A structured prompt library was added to increase academic rigor.
- Workflow diagrams and a mind map were incorporated to strengthen clarity of process.
- Sora AI videos were included to enhance the prototype demonstration.

5. Current Status of the Project

At this stage, the project has achieved a near-complete functional prototype with all expected deliverables ready. Each tool has been implemented effectively and integrated into a cohesive system. The project is now prepared for the next stage involving final prototype polishing, presentation slide creation, and reflection writing.