Software Engineering Project – Sep 2025

Textile SaaS App

AI-Driven Operational Excellence for the Textile Industry

Meet the Team

Management & Scrum

Afsal Sha: Project Manager & Scrum Lead

Joseph Manoj Louis: Scrum Master

Hari Govind J: Scrum Master / Frontend Developer

Development & QA

Akash O.G: Frontend / Backend Developer

R Rahul Varma: Frontend Developer / Tester

Matlin Jeleshiya D: Code Reviewer / Developer

Vyshakh K V: Backend Developer

Project Purpose

Bridging the Gap with AI

The core purpose of the **Textile SaaS App** is to revolutionize the traditional textile supply chain.

By integrating **Artificial Intelligence**, we aim to streamline operations for retailers, enhance discovery for customers, and optimize logistics for distributors and manufacturers.

Our ecosystem enables real-time sales forecasting, automated marketing, and seamless inventory management.

Identifying User Segments

Primary Users

Retail Shop Managers, Owners, and End Customers. The core operational and transactional base.

Secondary Users

Distributors, Suppliers, and Marketing Agencies. The logistical and promotional connectors.

Tertiary Users

Manufacturers and Brand Representatives. The production planning and strategic forecasting layer.

Primary Users: Retailers

Retail Shop Managers

Focused on day-to-day efficiency. Their key needs involve stock monitoring, supplier coordination, and social media content management.

Shop Owners

Focused on business growth and profit optimization. They require high-level insights for supply chain efficiency and long-term planning.

Key Goals: Efficient stock management, AI-driven sales forecasting, automated supplier communication, and effortless social media marketing.

Key Retailer User Stories

- **Sales Summary:** "As a manager, I want to upload weekly sales data and get an AI summary in 2 minutes to plan restocking efficiently."
- **Logistics Savings:** "As an owner, I want reorder suggestions grouped by distributor to save at least 10% on logistics costs."
- **Demand Forecasting:** "As a manager, I need next-quarter demand forecasts to plan purchases a month in advance."
- **Instant Marketing:** "As a manager, I want ready-to-post marketing images and captions for new batches within 1 minute."

Primary Users: End Customers

- **Visual Search:** Search for matching fabrics nearby by simply uploading a photo.
- **Discovery:** Use an AI-enabled map to find shops with specific stock availability.
- **Reviews:** Rate shops and view trending patterns to make informed decisions.

Key Goals: Seamless product discovery via AI visual search, real-time access to local stock availability, informed purchasing decisions through community trends/reviews, and rapid location of desired fabrics nearby.

Secondary Users: Distributors & Marketers

Distributors / Suppliers

Goal: Efficiently respond to stock inquiries and track retailer demand.

"I want to visualize regional fabric demand on a heatmap to plan personalized promotions and replenishment."

Marketing Agencies

Goal: Leverage aggregated AI insights for targeted campaigns.

Identify trending fabrics, colors, and regional demand to find potential retail partners for collaboration.

Unified SaaS Ecosystem – Textile SaaS App

Shop Owners

Gain actionable Sales & Inventory Insights via AI while publishing and marketing stock to the public marketplace.

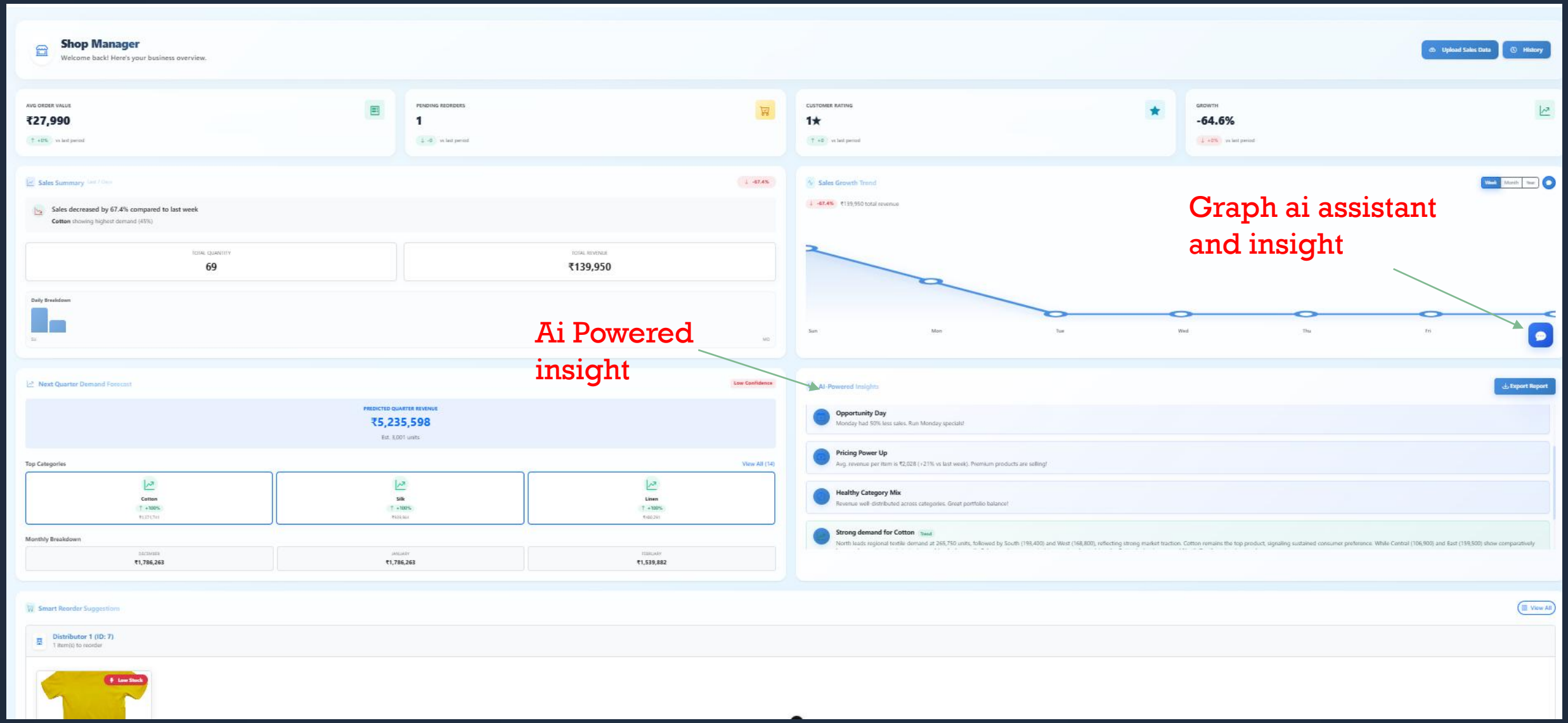
Customers

Experience real-time Product Visibility, browsing live inventory from local shops to find matching fabrics instantly.

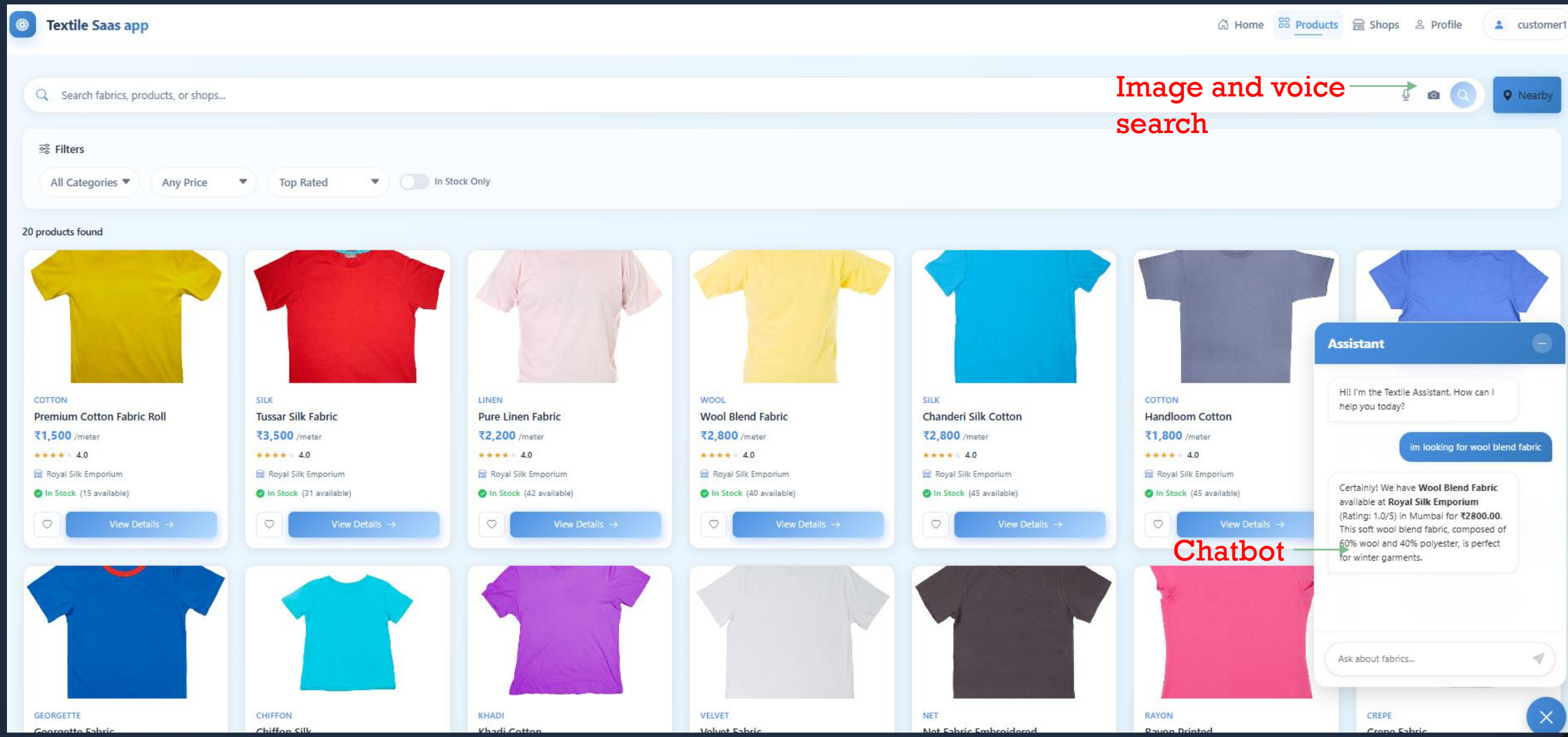
Distributors

Monitor Regional Stock Levels to proactively pitch replenishment offers to retailers before they run out.

Shop Manager Interface



Customer Interface



Distributor Interface

AI Production Planning

AI-powered insights for production optimization, stock replenishment, and targeted marketing

AI Strategic Analysis

The single shop maintains **healthy stock levels overall**, but vigilance is required for **1 low-stock product** (specific name unavailable in data). No critical shortages or high-demand risks are currently detected.

Key Findings

- **1 unnamed low-stock product** requires attention (exact stock quantity unspecified) to prevent potential shortages in the sole shop.
- **100% of

Strategic Recommendations

- Review all critical stock items
- Focus on fast-selling products to maintain stock availability
- Implement daily monitoring for fast-moving inventory

Stock Impact

Units at Risk
2 units

Restock Needed
15 units

How is this calculated?

Product wise requirement

PRODUCT	SHOP	STOCK LEVEL	UNITS SOLD	UNITS AT RISK	RESTOCK QTY	STATUS
Premium Cotton Fabric Roll Cotton	Royal Silk Emporium	75%	72	2	15	Warning
Rayon Printed Rayon	Royal Silk Emporium	204.5%	55	0	0	Healthy
Khadi Cotton Khadi	Royal Silk Emporium	280%	50	0	0	Healthy
Art Silk Silk	Royal Silk Emporium	295%	36	0	0	Healthy
Handloom Cotton Cotton	Royal Silk Emporium	250%	35	0	0	Healthy
Pure Linen Fabric Linen	Royal Silk Emporium	280%	33	0	0	Healthy
Kota Doria Cotton	Royal Silk Emporium	253.3%	27	0	0	Healthy
Chiffon Silk Chiffon	Royal Silk Emporium	320%	22	0	0	Healthy
Organza Silk Organza	Royal Silk Emporium	275%	17	0	0	Healthy
Chanderi Silk Cotton Silk	Royal Silk Emporium	375%	15	0	0	Healthy

Tech Stack

Flask

Vue.js

SQLite

Visual Studio Code

Jira

POSTMAN

Swagger

GitHub

Nvidia NIM

Q & A

Thank you for your attention.