Assignment 1:

Inventory management and optimizing Delivery Logistics.

1. Organizational Change Required to Adopt This Technology

To successfully implement demand forecasting and inventory management, the organization must undergo the following changes:

- <u>**I**</u>. <u>**Technology Adoption:**</u> Implement AI-driven forecasting tools, ERP integration, and realtime data tracking.
- **<u>II.</u> <u>Process Optimization:</u>** Shift from manual inventory tracking to automated, data-driven decision-making.
- **<u>III.</u> <u>Training & Upskilling:</u>** Train employees on new forecasting software, AI analytics, and inventory optimization tools.
- <u>**IV.**</u> <u>**Cross-Department Collaboration:**</u> Align manufacturing, logistics, and sales teams to use real-time demand insights effectively.
- v. <u>Policy Updates:</u> Redefine inventory restocking and distribution strategies based on predictive insights.

2. Resources Required with Budget :-

Resource	Quantity	Estimated Cost (INR)
AI-Based Demand Forecasting Software	1 License	15,00,000
Cloud Infrastructure (AWS/Azure)	1 Setup	10,00,000
ERP & Inventory System Integration	1 Implementation	8,00,000
IoT Sensors for Real-Time Monitoring	50 Units	5,00,000
Data Scientists & Analysts	2 Professionals	12,00,000
		(Annual)
Training Programs for Employees	50 Employees	2,00,000
Hardware (Computers/Tablets)	10 Units	3,00,000
Maintenance & Support	Annual	5,00,000
Total Estimated Budget		60,00,000 INR

3. Current Problems

- **Overstocking & Understocking:** Perishable dairy products lead to wastage or stock shortages.
- <u>Inefficient Delivery Management:</u> Manual dispatch planning leads to delays and high logistics costs.
- <u>Lack of Demand Prediction</u>: No accurate forecasting leads to excess production or lost sales.
- **Customer Dissatisfaction:** Delays in deliveries and unavailability of products.

4. How This Project Solves These Problems

- AI-Based Forecasting: Accurately predicts demand to maintain optimal stock levels.
- Automated Logistics Optimization: Ensures the quickest route and warehouse selection for deliveries.
- Real-Time Inventory Tracking: IoT and cloud-based solutions provide live stock updates.
- Data-Driven Decision Making: Reduces human error and improves efficiency.
- Customer Satisfaction Improvement: Ensures product availability and fast delivery.
- Manual Data Handling: Leads to errors, inefficiencies, and slow decision-making.

5. Time Frame for ROI Recovery

Phase	Timeline
Project Planning & Vendor Selection	1 Month
Software Development & Integration	3 Months
Testing & Implementation	2 Months
Employee Training & System Adoption	1 Month
Full-Scale Deployment	1 Month
Total Time for ROI Recovery	8-12 Months

- Expected Revenue Growth: 15-20% increase due to better demand fulfillment.
- **Cost Savings:** 10-15% reduction in wastage and logistics costs.

1. Project Phases & Timeline

Phase	Tasks	Duration
Phase 1: Planning & Analysis	Requirement gathering, stakeholder discussions, feasibility study	1 Month
Phase 2: Design	System architecture, UI/UX wireframing, database design	1.5 Months
Phase 3: Development	Al demand forecasting model, inventory tracking system, integration with ERP	3 Months
Phase 4: Testing	Unit testing, integration testing, UAT (User Acceptance Testing)	1.5 Months
Phase 5: Deployment	Cloud setup, system rollout, training, initial monitoring	1 Month
Phase 6: Maintenance & Support	Ongoing monitoring, bug fixes, performance improvements	Continuous

2. Tech Stack & Tools

Component	Technology / Tool
Frontend	React.js / Angular

Backend	Python (Django) / Node.js
Al Model	Tensor Flow / Scikit-learn
Database	PostgreSQL / MySQL
Cloud Hosting	AWS / Azure
IoT Sensors	RFID, Barcode Scanners
ERP Integration	SAP / Oracle
DevOps	Docker, Kubernetes, Jenkins

3. Resource Allocation

Role	Responsibility	Resources Required
Project Manager	Oversee development, timeline management	1
Business Analyst	Requirement gathering, documentation	1
UI/UX Designer	Design system UI & dashboards	1
Frontend Developers	Build web interfaces	2
Backend Developers	API & business logic development	2
AI/ML Engineers	Develop demand forecasting algorithms	2
Database Administrator	Manage data storage & optimization	1
QA Testers Perform software tes		2
DevOps Engineer	CI/CD setup & deployment	1

4. Risk Mitigation Plan

Risk Type	Mitigation Strategy		
Data Accuracy Issues	Implement data validation and AI model training refinements		
Integration Challenges	Use standardized APIs and modular approach for ERP connectivity		
User Adoption Resistance	Conduct training sessions and provide ongoing support		
Scalability Constraints	Use cloud-based architecture with auto-scaling capabilities		
Cybersecurity Threats	Implement role-based access, encryption, and regular security audits		

6. Deployment Strategy

- Pilot Phase: Deploy system in one warehouse for testing.
- Gradual Rollout: Expand to other locations based on performance.

• Full Deployment: System goes live for all warehouses & distribution centres.

7. Post-Deployment & Support

- User Feedback Collection: Weekly reviews from warehouse teams.
- Performance Optimization: AI model adjustments for better accuracy.
- Maintenance Plan: Regular system updates, bug fixes, and feature enhancements.

Functional Requirement				
Req ID	Req Name	Req Description	Priority	
F-01	User Authentication	Users (Admin, Warehouse, Logistics, Customer) must log in securely.	10	
F-02	Al Demand Forecasting	The system must predict demand using Al and historical data.	9	
F-03	Inventory Management	Real-time stock updates and tracking across multiple warehouses.	9	
F-04	4 Order Processing Customers should be able to place, modify, and track orders.		8	
F-05	Warehouse Allocation	The system should allocate stock from the nearest available warehouse.	9	
F-06	Route Optimization	Al should optimize delivery routes for the fastest shipment.	7	
F-07	F-07 Real-Time Live tracking of orders from warehouse to customer.		8	
F-08	Report Generation	Generate reports on inventory, demand trends, and delivery performance.	10	
	Non-functi	ional requirement specification		
Req ID	Req Name	Req Description	Priority	
NF-01	System Availability	The platform must have 99.9% uptime for continuous operations.	9	
NF-02	Performance	Response time for requests should be <2 seconds.	9	
NF-03	Scalability Must handle increased demand and growing users dynamically.		8	

NF-04	Security	Implement encryption, access control, and multi-factor authentication.	9
NF-05	Data Backup	Automatic daily backups to prevent data loss.	7
NF-06	Compliance	The system should adhere to GDPR & industry regulations.	10
NF-07	User-Friendly UI	The interface should be intuitive for all user roles.	8



PROJECT NAME: - Inventory management and optimizing delivery Logistics. PROJECT ID: - P21231

VIRSION ID: 1.0.0

AUTHOR: - Mr. Govardhan Shinde

1.Document Revisions :-

Date	Author	Changes Made
3/30/2025	Business Analyst	Initial draft created
3/30/2025	Business Analyst	Added document revision table
3/31/2025	Business Analyst	Updated scope for inventory & delivery
3/31/2025	Business Analyst	Added more details on logistics

2.Approvals :-

Role	Name	Title	Signature	Date
Project Sponsor	Rajesh Mehta	Director - Operations		3/31/2025
Business Owner	Anjali Sharma	Head of Supply Chain		3/31/2025
IT Manager	Sandeep Verma	IT Infrastructure Lead		3/31/2025
Business Analyst	Neha Kapoor	Lead Business Analyst		3/31/2025
Development Lead	Arjun Rao	Software Development Head		3/31/2025
Quality Assurance	Priya Nair	QA Manager		3/31/2025
Logistics Manager	Vikram Joshi	Delivery & Distribution Head		3/31/2025
Finance Representative	Rohit Bansal	Finance Controller		3/31/2025

3. RACI Matrix :-

Task / Activity	Project Sponsor (Rajesh Mehta)	Business Owner (Anjali Sharma)	IT Manager (Sandeep Verma)	Business Analyst (Neha Kapoor)	Dev Lead (Arjun Rao)	QA Manager (Priya Nair)	Logistics Manager (Vikram Joshi)	Finance (Rohit Bansal)
Requirement Gathering	A	R	С	I	С	I	I	I
Solution Design & Architecture	С	С	R	Α	R	С	I	I
Software Development	I	I	С	С	R	I	I	I
System Integration	I	I	R	С	Α	С	I	I
Testing & Quality Assurance	I	I	С	С	С	R	I	I
Inventory Management Implementation	с	R	С	С	R	С	Α	С
Logistics & Delivery Optimization	С	Α	С	С	R	С	R	С
Budget Approval	А	С	I	I	I	I	I	R

4. Introduction

The **Quickest delivery to the customers and Inventory Management System** aims to optimize inventory levels and ensure the quickest delivery of dairy products. The system will use AI-driven analytics to predict demand accurately, reduce stock wastage, and streamline logistics.

4.1 Business Goals

- 1. Improve inventory management to minimize overstocking and understocking.
- 2. Enable faster and efficient delivery to customers.
- 3. Reduce **operational costs** by automating supply chain decisions.
- 4. Increase customer satisfaction by ensuring product availability.
- 5. Enhance data-driven decision-making using AI and analytics.

4.2 Business Objectives

- 1. Develop a **centralized inventory system** for real-time tracking.
- 2. Implement Al-based demand forecasting to optimize stock levels.
- 3. Automate order processing and dispatch planning for quick deliveries.
- 4. Integrate with existing ERP and logistics management systems.
- 5. Provide real-time insights and analytics for better supply chain decisions.

4.3 Business Rules

- 1. Inventory levels must automatically update based on sales data.
- 2. Orders should be allocated to the nearest warehouse for faster dispatch.
- 3. Products with shorter shelf life must be prioritized for delivery.
- 4. Demand forecasting should use historical sales and seasonal trends.
- 5. Alerts should be triggered for **low stock levels** and **potential stockouts**.

4.4 Background

The company manufactures dairy products, including ice cream and milk, and operates **multiple warehouses and manufacturing plants** across the country. Currently, **manual inventory tracking** and **inefficient delivery planning** cause significant wastage and delays. An Al-driven solution is required to **streamline operations** and improve customer service.

4.5 Project Objective

- 1. Develop an AI-based **inventory management system** to maintain optimal stock levels.
- 2. Implement an automated delivery planning system to minimize delays.
- 3. Reduce operational inefficiencies through data-driven supply chain decisions.
- 4. Improve overall profitability and customer satisfaction.
- 5. Integrate the system with existing ERP, sales, and logistics platforms.

4.6 Project Scope

4.6.1 In-Scope Functionality

- 1. Al-based demand forecasting to predict stock requirements.
- 2. Real-time inventory tracking with automated stock updates.
- 3. Automated order processing and warehouse allocation.
- 4. Route optimization for fastest delivery and cost reduction.
- 5. Integration with ERP, sales, and logistics systems.

4.6.2 Out-of-Scope Functionality

- 1. Manufacturing process automation (only inventory and delivery management).
- 2. Direct customer order management (handled by sales team).
- 3. Supplier management system (focus is on inventory and delivery).
- 4. Third-party courier management (only internal logistics are managed).

5. Assumptions

1. The company will provide **historical sales data** for demand forecasting.

- 2. ERP and warehouse systems can integrate with the new solution.
- 3. Employees will be **trained** to use the new system.
- 4. Cloud-based infrastructure will be **accessible** across all locations.
- 5. The company has **sufficient budget** for full system implementation.

6. Constraints

- 1. Data Accuracy: System efficiency depends on reliable historical data.
- 2. Integration Complexity: Existing ERP systems may require customization.
- 3. Budget Limitations: Implementation must stay within ₹60 lakh.
- 4. Technology Adoption: Employees may resist moving from manual tracking.
- 5. **Regulatory Compliance:** System must adhere to food safety and logistics laws.

<u>7. Risks</u>

7.1 Technological Risks

- 1. System failures or downtime could disrupt inventory tracking.
- 2. Integration issues with ERP and logistics software.
- 3. Scalability concerns if demand increases beyond initial projections.
- 4. Cybersecurity threats due to cloud-based data storage.
- 5. Al model accuracy may fluctuate based on market trends.

7.2 Skills Risks

- 1. Employees may face **difficulty adapting** to the new system.
- 2. Need for specialized AI and data analytics training.
- 3. Dependence on **external vendors** for system support.
- 4. Shortage of technical expertise for advanced AI model customization.
- 5. Lack of logistics optimization knowledge among staff.

7.3 Political Risks

- 1. Changes in **government policies** on food safety and transportation.
- 2. Import/export restrictions on dairy products affecting supply chain.
- 3. Regulatory approvals may delay system deployment.
- 4. Potential **tax structure changes** affecting cost calculations.
- 5. Public protests or **policy shifts** affecting business operations.

7.4 Business Risks

- 1. Market demand fluctuations impacting stock management.
- 2. Competitor strategies may force sudden adjustments.
- 3. High initial investment with uncertain ROI timeline.
- 4. Data inaccuracy risks leading to incorrect stock levels.
- 5. Customer behavior changes affecting order frequency.

7.5 Requirements Risks

- 1. Unclear project requirements leading to scope creep.
- 2. Incomplete stakeholder input affecting solution accuracy.
- 3. Misalignment with business goals due to evolving priorities.
- 4. **Delayed approvals** causing project timeline extensions.
- 5. Change requests increasing development costs.

7.6 Other Risks

- 1. Natural disasters or supply chain disruptions affecting inventory.
- 2. Unexpected server failures leading to downtime.
- 3. Data migration challenges from legacy systems.
- 4. Resistance from stakeholders delaying adoption.
- 5. Unforeseen vendor issues impacting software delivery.

8. Business Process Overview

The **current business process** relies on manual inventory tracking and delivery scheduling, leading to inefficiencies and increased operational costs. The **proposed system** will automate these processes using Al-based demand forecasting and real-time inventory management, ensuring optimized stock levels and faster deliveries.

8.1 Legacy System (AS-IS)

- 1. **Manual Inventory Management:** Warehouses track stock using spreadsheets and physical logs.
- 2. **Reactive Demand Planning:** Restocking decisions are based on previous orders, leading to stock imbalances.
- 3. **Inefficient Delivery Scheduling:** Orders are manually assigned to distribution centers, causing delays.
- 4. Lack of Real-Time Visibility: No automated system for tracking live inventory levels.
- 5. **High Operational Costs:** Excess stock leads to wastage, while shortages cause missed sales.

8.2 Proposed Recommendations (TO-BE)

- 1. **AI-Driven Demand Forecasting:** Predicts inventory needs based on sales trends and seasonality.
- 2. Automated Inventory Tracking: Updates stock levels in real time across all warehouses.
- 3. **Optimized Delivery Scheduling:** Al assigns orders to the nearest warehouse for fastest dispatch.
- 4. **Cloud-Based Centralized System:** Ensures seamless integration with ERP and logistics tools.
- 5. Reduced Wastage & Costs: Minimizes overstocking, understocking, and delays.

9. Business Requirements

1. **Real-Time Inventory Updates:** System must automatically reflect stock changes.

- 2. AI-Based Demand Forecasting: Historical and real-time data should predict demand.
- 3. Order Fulfillment Optimization: System should select the nearest warehouse for delivery.
- 4. Integration with ERP & Logistics: Must work seamlessly with existing enterprise systems.
- 5. User-Friendly Dashboard: Employees must easily access reports and stock status.

10. Appendices

10.1 List of Acronyms

Acronym	Definition		
AI	Artificial Intelligence		
ERP	Enterprise Resource Planning		
loT	Internet of Things		
ROI	Return on Investment		
SKU	Stock Keeping Unit		

10.2 Glossary of Terms

- 1. **Demand Forecasting:** The process of predicting future inventory needs based on data.
- 2. Real-Time Tracking: Live monitoring of stock levels across warehouses.
- 3. Warehouse Management System (WMS): Software for handling inventory and logistics.
- 4. Order Fulfillment: The process of receiving, processing, and delivering customer orders.
- 5. Stock Optimization: Maintaining ideal stock levels to prevent excess or shortage.

10.3 Related Documents

- 1. Enterprise ERP Integration Guide
- 2. Inventory Management System Functional Specification
- 3. Al Demand Forecasting Model Documentation
- 4. Warehouse Logistics & Routing Strategy Report
- 5. User Training Manual for New System

Process flow diagram



Assignment 2:

1. Letter to a client :-

From

Govardhan shinde Business Analyst TechSolutions Pvt. Ltd. Email: <u>shinde.shinde86@techsolutions.com</u> | Phone: +91 98765 43210 Date: March 30, 2025

To,

Mr. Rahul Mehta Operations Manager **FreshDairy Ltd.** 123, Green Avenue, Mumbai, Maharashtra – 400001

Subject: Introduction as Your Business Analyst for Demand Forecasting & Inventory Management Project

Dear Mr. Mehta,

I hope this email finds you well. My name is **Govardhan Shinde**, and I am a **Business Analyst** at **TechSolutions Pvt. Ltd.** I am pleased to introduce myself as your primary contact for the **Demand Forecasting & Inventory Management Project**. My role is to collaborate with you and your team to understand your business processes, analyze current challenges, and ensure that our proposed solution aligns with your company's goals.

To initiate the **business understanding process**, I will work closely with you to:

- Gather detailed requirements and expectations.
- Identify key operational challenges and areas for improvement.
- Define the project scope and success criteria.
- Ensure smooth coordination between stakeholders and technical teams.

I would love to schedule an initial discussion at your convenience to understand your specific needs. Please let me know a suitable time for a meeting.

Looking forward to working together on this project.

Best regards, **Govardhan shinde** Business Analyst TechSolutions Pvt. Ltd. Email: <u>amit.sharma@techsolutions.com</u> | Phone: +91 98765 43210

Project Name	Ticketing system
Customer name	Ticketing system
Project Version	1
Project Sponsor	Ticketing system
Project Manager	Mr. Ashish Thorat
Project Initiation date	[01-07-2021]

Functional requirement						
ID	Req Name	Req Description	Priority			
F001	User Login	The system shall allow users to log in using a username and password.	1			
F002	Role-Based Access	The system shall provide different access levels for admins, support agents, and customers.	1			
F003	Ticket Creation	Users shall be able to create new support tickets by providing issue details.	1			
F004	Ticket Tracking	Users shall be able to view the status of their submitted tickets.	2			
F005	Ticket Assignment	Admins shall assign tickets to support agents based on availability.	1			
F006	Email Notifications	The system shall send email updates on ticket status changes.	2			
F007	Ticket Prioritization	Tickets shall have priority levels (Low, Medium, High, Critical).	2			
F008	Ticket Resolution	Support agents shall update tickets with resolutions before closing them.	1			
F009	Ticket History	Users shall be able to view past tickets and their resolutions.	3			
F010	Reporting & Analytics	Admins shall generate reports on ticket resolution time, agent performance, and issue trends.	3			
	Non f	upotional requirement and sitis				
Pag ID		Rog Description	alluli Driarity			
	System Availability	The system shall have 00 0%				
		uptime availability.				

NF002	Performance	The system shall handle up to 10,000 concurrent users without performance degradation.	1
NF003	Security	All data shall be encrypted, and user authentication shall follow multi-factor authentication (MFA).	1
NF004	Scalability	The system shall support future growth and additional features without performance issues.	2
NF005	Response Time	The system shall respond to user actions within 2 seconds.	2
NF006	Compliance	The system shall comply with GDPR and other relevant data protection regulations.	1
NF007	Cross-Platform Support	The system shall be accessible via web, mobile, and desktop applications.	3
NF008	Backup & Recovery	The system shall perform automated daily backups and allow recovery within 30 minutes.	2
NF009	User Experience	The UI shall be intuitive and easy to navigate for all user roles.	3
NF010	Logging & Monitoring	The system shall maintain logs of all activities for audit and troubleshooting.	3

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1. Document Revisions :-

Version	Date	Author	Changes Made
1	3/30/2025	Business Analyst	Initial draft of the Ticketing System BRD
1.1	3/31/2025	Business Analyst	Added functional and non- functional requirements
1.2	4/1/2025	Business Analyst	Updated process flow and RACI matrix
1.3	4/2/2025	Business Analyst	Added risk assessment and mitigation strategies

2. Document Approvals

Role	Name	Title	Signature	Date
Project Sponsor	Amit Khanna	CEO, XYZ Solutions		4/2/2025
Business Owner	Priya Sharma	Head of Customer Support		4/2/2025
Business Analyst	Rahul Mehta	Lead Business Analyst		4/2/2025
Solution Architect	Neha Verma	Solution Architect		4/2/2025
Development Lead	Arjun Singh	Technical Lead		4/2/2025
QA Lead	Ritu Joshi	Quality Assurance Manager		4/2/2025
IT Security	Sandeep Reddy	Security Analyst		4/2/2025
Compliance Officer	Vikram Patel	Compliance & Risk Manager		4/2/2025

3. RASCI Chart

Task / Activity	Responsible (R)	Accountable (A)	Support (S)	Consulted (C)	Informed (I)
Requirement Gathering	Business Analyst	Project Sponsor	Development Team	Business Owner, Customer Support	Stakeholders
System Design & Architecture	Solution Architect	сто	Development Team	Business Analyst, IT Security	Project Sponsor
Development & Coding	Development Team	Technical Lead	QA Team	Business Analyst	Stakeholders
Testing & Quality Assurance	QA Team	QA Lead	Development Team	Business Analyst	Stakeholders
Security Compliance	IT Security Team	Compliance Officer	Development Team	Solution Architect	Project Sponsor
User Training & Documentation	Business Analyst	Business Owner	Support Team	End Users	Stakeholders
Deployment & Go- Live	DevOps Team	Technical Lead	Support Team	IT Security	Stakeholders

Ongoing Maintenance & Support	Support Team	Business Owner	Development Team	IT Security, Business Analyst	Stakeholders
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4. Introduction

The Ticketing System project aims to streamline issue tracking, automate ticket resolution, and enhance customer service efficiency. This document outlines the functional and non-functional requirements, scope, risks, and assumptions related to the project.

4.1 Business Goals

- Improve response time for customer queries and technical issues.
- Automate ticket assignment and tracking for efficient issue resolution.
- Reduce manual workload and improve operational efficiency.
- Enhance customer satisfaction through faster issue resolution.
- Provide data-driven insights for continuous service improvement.

4.2 Business Objectives

- Implement a centralized ticketing system for all customer requests.
- Automate ticket categorization, priority setting, and escalation.
- Ensure seamless integration with existing CRM and ITSM tools.
- Provide real-time status updates to customers and support teams.
- Enable reporting and analytics to identify trends and optimize operations.

4.3 Business Rules

- Tickets will be categorized based on predefined priority levels.
- Urgent tickets will be escalated automatically if not resolved within SLA.
- Agents must update ticket status after every interaction.
- Customers will receive automated email/SMS notifications for ticket updates.
- Tickets cannot be closed without customer acknowledgment (where applicable).

4.4 Background

The organization currently lacks a structured system for managing customer complaints and IT service requests. The manual process leads to delays, miscommunication, and unresolved issues. Implementing an automated ticketing system will address these inefficiencies.

4.5 Project Objective

To develop a robust ticketing system that automates issue tracking, enhances customer support efficiency, and ensures timely resolution of reported problems through a structured and scalable platform.

4.6 Project Scope

4.6.1 In-Scope Functionality

- User authentication and role-based access.
- Ticket creation, assignment, and escalation workflows.
- Automated notifications and SLA tracking.

- Integration with CRM and ITSM tools.
- Reporting and analytics dashboard.

4.6.2 Out-Scope Functionality

- Social media ticket integration.
- AI-powered chatbot for self-service support (future enhancement).
- Multi-language support beyond English (future consideration).

5. Assumptions

- Users will have access to the internet and required credentials.
- Integration with third-party systems will be feasible.
- Users will undergo training for smooth adoption.
- System performance will meet standard SLA requirements.

6. Constraints

- Budget limitations for additional third-party tool integrations.
- Limited support for non-web-based ticketing requests.
- Compliance with internal IT security policies and GDPR regulations.
- Dependence on external vendors for CRM/ITSM integration.

7. Risks

7.1 Technological Risks

- Integration challenges with legacy systems.
- System downtime affecting ticket resolution.

7.2 Skills Risks

- Lack of trained staff to operate the system effectively.
- Resistance to change from employees.

7.3 Political Risks

- Conflicting priorities within IT and customer support teams.
- Resistance from departments reluctant to automate processes.

7.4 Business Risks

- Increased workload during system transition phase.
- Delays in adoption affecting customer satisfaction.

7.5 Requirements Risks

- Changes in requirements after development starts.
- Incomplete understanding of user needs leading to rework.

7.6 Other Risks

- Data privacy concerns while storing sensitive customer data.
- Scalability issues if the system needs expansion.

8. Business Process Overview

8.1 Legacy System (AS-IS)

- Manual ticket logging via emails and phone calls.
- Delays in ticket resolution due to lack of automation.
- Poor tracking and reporting of resolved/unresolved tickets.

8.2 Proposed Recommendations (TO-BE)

- Automated ticket assignment and escalation.
- Centralized dashboard for real-time tracking.
- SLA-based ticket prioritization.

9. Business Requirements

The business requirements will define system capabilities, user interactions, and performance expectations.

10. Appendices

10.1 List of Acronyms

- SLA Service Level Agreement
- **CRM** Customer Relationship Management
- ITSM IT Service Management

10.2 Glossary of Terms

- **Ticket** A customer request or issue logged in the system.
- Escalation Automatic prioritization of unresolved high-priority tickets.

3.Entity relationship dieagram



4.User story of shopping from ecommerce.

User Story 1	TAS	SK 1 Priority: High				
As a Customer, I want to register on the platform, so that I can use the app to shop						
BV:1000		CP:2				
Acceptance Criteria: User must be able to input valid personal information. A confirmation email/SMS is sent upon successful registration. Registration must ensure unique user identification.						

User Story 2TASK 2Priority: HighAs a Customer, I want to log in using my registered credentials, so that I can access my account.I can access					
BV:1000 CP:2					
Acceptance Criteria: User must be able to log in using email/phone and password. Two-factor authentication should be available. Incorrect credentials should display an error message.					

User Story 3	TAS	SK 3 Priority: High			
As a Customer, I want to browse products, so that I can explore available items.					
BV:1000 CP:5					
Acceptance Criteria: Users can view product categories and search for products. Product images, descriptions, and prices must be displayed. Filters and sorting options should be available.					

User Story 5	TASK 8	Priority: High
As a Customer, I v so that I can purch transaction.	want to add pro hase multiple it	ducts to my cart, ems in one
BV:1000		CP:8
Acceptance Criter	ia:	
Users should be al	ole to add/remo	ve products from
the cart.		
The cart should di estimated delivery	splay total pric time.	e, discounts, and

Quantity selection should be available.

User Story 7	TASK 21	Priority: High
As a Customer, I address, so that I correct location.	want to enter m can receive my	y delivery order at the
BV:1000		CP:08
Acceptance Crite Users must input code. Address should b Google Maps AP address selection	ria: a valid address e saved for futur I should be integ	with a postal re use. rated for easy

User Story 4	TAS	SK 5	Priority: High
As a Customer, details, so that purchase decis	I want t I can ma ion.	to view p ake an ir	broduct nformed
BV:1000			CP:3
Acceptance Cri Clicking on a pr detailed page. Users should se specifications, "Add to Wishlis should be availa	teria: roduct s ee high- and revi at" and " able.	hould o quality i iews. Add to (pen its images, Cart" options

User Story 6	TAS	K 13	Priority: High
As a Customer, I so that I can save	want to a money o	apply d on my p	iscount coupons, urchase.
BV:1000			CP:13
Acceptance Crite Users can enter a Discount should n Expired or invali messages.	ria: nd apply ceflect in d coupon	valid c the ord as shoul	oupon codes. er total. d show error

User Story 8	TASK 34	Priority: Medium
As a Customer, I so that I can com	want to select a plete my purchas	bayment method, e securely.
BV:500		CP:05
Accentance Crite	ria:	

User Story 9	TASK 55	Priority: Medium
As a Customer, l confirmation, so	want to receive a that I can track n	nn order ny purchase.
BV:500		CP:05
Acceptance Crite A confirmation of successful order. Users should rec The estimated do	eria: email/SMS should eive a tracking ID elivery date should	be sent after a). d be displayed.

User Story 11	TASK 144	Priority: Medium
As a Customer, I is shipped, so tha decision.	want to cancel n t I can change m	ny order before it y purchase
BV:1000		CP:02
Acceptance Crite Users can cancel Refund should be Users should rece	ria: an order within e initiated if payı eive a cancellatio	a specified time. nent was made. n confirmation.

User Story 13	TASK 610	Priority: Medium
As a Customer, I history, so that I	want to review n can track my pas	ny purchase t orders.
BV:1000		CP:05
Acceptance Crite Users should be a including invoice Filter by date and Reordering option purchases.	eria: able to view orden s. d status should be on should be avail	[.] details, e available. able for previous

User Story 10	TASK 89	Priority: Medium
As a Customer, I that I know when	want to track my to expect delive	y order status, so ry.
BV:500		CP:05
Acceptance Crite Order status shou "Shipped," "Out A tracking link sh Push notifications status changes.	ria: 11d include "Proc for Delivery," an 10uld be availabl s should update t	cessing," nd "Delivered." e. he user about

User Story 12	TASI	X 233	Priority: Medium
As a Customer, I I can get a replac	want to	return a [.] refund.	product, so that
BV:1000			CP:02
Acceptance Crite Users can initiate return period. The return proce and image upload A return pickup	eria: e a return ess should d. schedule	request l include should b	within the reason selection e displayed.

User Story 14	TASK 610	Priority: Medium
As a Customer, I support, so that I	want to contact c can resolve my q	ustomer ueries.
BV:1000		CP:05
Acceptance Crite Users should acce support. A ticketing syster queries. FAQ and chatbot common issues	ria: ess chat, email, an n should log comp t support should b	d phone blaints and be available for

User Story 15	TASK 987	Priority: Medium
As a Customer, I reviews, so that I experience.	want to give pro can share my sh	duct ratings and opping
BV:1000		CP:05
Acceptance Crite Users can give sta reviews. Reviews should b Verified purchase	ria: ar ratings and wi e moderated bef e tags should be	rite detailed ore publishing. added to reviews.

User Story 21	TASK 17711	Priority: Low
As a Customer, I platform, so that	want to refer frie I can earn reward	ends to the ds.
BV:400		CP:02
Acceptance Crite Users should get Referrals should issued. Fraud detection s	ria: a unique referral be tracked and re should be in place	code. ewards should be for misuse.

User Story 23	TASK 46368	Priority: Low
As a Customer, I payment method easier.	want to manage s, so that I can m	my saved ake checkout
BV:1000		CP:05
Acceptance Crite Users can add, ec Secure encryptio A default paymer	ria: lit, and remove p n should be used 1t method can be	ayment methods. . set.

User Story 16	TASK 1597	Priority: Medium
As a Customer, I product recomm relevant product	want to receive p endations, so that s easily.	ersonalized I can find
BV:1000		CP:05
	ria	

User Story 22	TASK 28657	Priority: Low
As a Customer, I I know when I wi	want to track my Il receive my mo	y refunds, so that ney back.
BV:1000		CP:02
Acceptance Criteria: Users should see refund status in their order history. Estimated time for refunds should be displayed. Notifications should be sent when a refund is processed.		

User Story 24	TASK 75025	Priority: Low
As a Customer, I so that I can stay	want to subscri updated on nev	ibe to newsletters, v offers
BV:500		CP:05
Acceptance Crite Users can opt-in Email categories Arrivals, etc.). GDPR compliant	eria: or out of promo should be avail ce should be ens	otional emails. able (Deals, New sured.

User Story 25	TASK	121393	Priority: Low
As a Customer, l essential product	want to stats, so that	set up au I never 1	to-reorder for run out.
BV:500			CP:03
Acceptance Criteria: Users can choose reorder frequency. Auto-payment should be enabled for subscribed products. Notifications should be sent before auto- reordering.			

User Story 27	TASK 317811	Priority: Low	
As a Customer, I can gift online sh	want to buy gift opping credit.	cards, so that I	
BV:500		CP:08	
Acceptance Criteria: Users can purchase and send digital gift cards. Gift card balance should be viewable. Expiry dates and usage terms should be displayed.			

User Story 29	TASK 832040	Priority: Low
As a Customer, l can shop comfor	want to use dark tably at night.	mode, so that I
BV:1000		CP:02
Acceptance Crite Users should be UI should be opt The setting shou	eria: able to toggle dark imized for readab ld be saved across	x/light mode. ility. sessions.

User Story 26	TASK 196418	Priority: Low
As a Customer, I comparisons, so	want to view pro that I can choose t	duct the best option.
BV:500		CP:08
Acceptance Crite Users can compa Feature highligh displayed. Price and rating	eria: are up to 5 produc ts and differences comparison shoul	ts side by side. should be ld be included.

User Story 28	TASK	514229	Priority: Low	
As a Customer, I want to request an invoice, so that I can use it for tax or business purposes.				
BV:100	7:100 CP:01			
Acceptance Criteria: Users should receive a PDF invoice via email. Invoice should contain GST details if applicable. Bulk invoice download should be available.				

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User Story 30	TASK 1346269	Priority: Low
As a Customer, my account rem	I want to log out ains protected.	securely, so that
BV:1000		CP:08
Acceptance Crit Users can log ou Session timeout A confirmation logout.	eria: t from all device should be config message should b	s. urable. oe shown before