Assignment 1

1. BRD:

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| **Date**  | **Version Number**  |  **Document Changes**  |
| 05/02/2023 | 0.1  | Inventory and Delivery management  |
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2.) Approvals:

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| --- | --- | --- | --- | --- |
| **Role**  | **Name**  | **Title**  | **Signature**  | **Date**  |
| Project Sponsor  |  Sam Curran  |  Project sponsor |  Sam Curran |  05/02/2023 |
| Business Owner  |  Sam Curran |  Business owner |  Sam Curran |  05/02/2023 |
| Project Manager  |  Bruno John |  Project manager |  Bruno John |  07/02/2023 |
| System Architect  |  Srinivasa |  System architect |  Srinivasa |  07/02/2023 |
| Development Lead  |  Kameswara Rao  |  Development lead |  Kameswara Rao |  08/02/2023 |
| User Experience Lead  |  Praveen Kumar |  User experience lead  |  Praveen Kumar |  09/02/2023 |
| Quality Lead  |  Harsha Mehta |  Quality lead |  Harsha Mehta |  09/02/2023 |
| Content Lead  |  Rishi Kumar |  Content lead |  Rishi Kumar |  09/02/2023 |

3.) RACI Chart for This Document:

The RACI chart identifies the people who need to be contacted whenever changes are made to this document. RACI stands for responsible, accountable, consulted, and informed. These are the main codes that appear in a RACI chart, used here to describe the roles played by team members and stakeholders in the production of the BRD. They are adapted from charts used to assign roles and responsibilities during a project. ( RACI Can be made for IT side[Project stakeholder] as mentioned above, apart from that Can also Be made for Client side[Business Stakeholder]).

The following describes the full list of codes used in the table:

### Codes Used in RACI Chart

|  |  |
| --- | --- |
| \* Authorize document.  | Has ultimate signing authority for any changes to the  |
| R Responsible  | Responsible for creating this document.  |
| A Accountable  |  Accountable for accuracy of this document (for example, the project manager)  |
| S Supports document  | Provides supporting services in the production of this  |
| C Consulted  | Provides input (such as an interviewee).  |
| I Informed  | Must be informed of any changes.  |

 RACI Chart

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name**  | **Position**  | **\***  | **R**  | **A**  | **S**  | **C**  | **I**  |
|  Bruno john |  Project Manager |   |  R  |  A |   |   |   |
|  Srinivasa  |  System architect |   |   |   |   |  C  |   |
|  Kameswara Rao  |  Development Lead |   |   |   |  S  |   |  I  |
|  Praveen Kumar  |  User experience lead |   |   |   |   |   |  I  |
|  Harshad Mehta |  Quality Lead |   |   |   |   |   |  I  |

4.) Introduction:

 Business Goals:

1. Improve forecasting accuracy:
* Use data-driven approaches to predict demand and align inventory levels accordingly.
1. Increase operational efficiency:
* Streamline inventory processes through technology and automation (e.g., barcode, scanners, RFID)
* Reduce errors in stock counts and order processing.
1. Improve visibility and tracking:
* Provide real time tracking for customers and internal teams.
1. Enhance customer experience:
* Communicate proactively about delivery statuses and potential delays.

4.2) Business objectives:

1. Optimize inventory levels:

Maintain the right balance of stock to avoid overstocking (which increases costs) and understocking (which leads to lost sales).

1. Enhance customer communication:

provide real time tracking and proactive notifications about delivery status to improve the customer experience.

1. Align inventory with delivery schedules:

Synchronize inventory availability with delivery timelines to meet demand without delays.

4.3) Business rules:

1.) Organization policies:

Inventory policies:

Maintain a minimum stock level of 15% above forecasted monthly demand.

Customer service policies:

Provides customers with real-time updates on order and delivery status.

2.) Procedures:

 **Inventory Management Procedures**

* **Stock Replenishment**: Review inventory reports daily, and place replenishment orders for items below reorder levels.
* **Receiving Inventory**: Verify shipment accuracy against purchase orders upon delivery, and update inventory records immediately.

 **Delivery Management Procedures**

* **Order Fulfillment**: Pick, pack, and label orders based on a first-in, first-out (FIFO) system.
* **Delivery Routing**: Use route optimization software to assign daily routes for drivers.

3. **Legal Compliance Rules**

* Ensure all inventory is stored in compliance with local fire and safety codes.
* Maintain records of deliveries and inventory movements for at least 5 years.
1. **Regulatory compliance requirements:**

**Tax Compliance:**

* Apply correct sales taxes based on the delivery destination and update tax rules quarterly.

4.4) Background:

**Project history and Initiation:**

The inventory and delivery management software project was proposed as a solution to address critical operational and customer service challenges.

**Business Issues/Problems Identified:**

1. **Ineffective Inventory Management:**
	* Inaccurate stock tracking led to frequent overstock or stockouts, increasing operational costs and causing customer dissatisfaction.

**Expected Benefits of Implementation:**

1. **Improved Operational Efficiency:**
	* Automation of inventory tracking and management to ensure accurate stock levels and timely replenishment.
	* Optimized delivery routes and schedules to reduce costs and enhance delivery speed.

**Integrated System Capabilities:**

* Unified software providing real-time insights across inventory and delivery operations, enabling better decision-making.
* Enhanced forecasting capabilities for demand and resource planning.

4.5) Project objective:

**Inventory Management:**

* Real-time tracking and monitoring of stock levels to prevent overstocking and stockouts.

**Delivery Management:**

Real-time tracking of deliveries with updates for both internal teams and customers.

**Alignment with Business Objectives:**

1. **Improved Efficiency:**
	* Automating manual processes reduces errors and saves time, increasing overall productivity.
2. **Cost Reduction:**
	* Optimized inventory levels and delivery routes lower operational and logistical costs.

**Requirements for Interaction with Other Systems:**

1. **Data Integration:**
	* Must integrate with ERP systems to access purchase and sales data for inventory updates.
	* Sync with CRM tools to track customer orders and update delivery statuses.
2. **Interoperability:**
	* Provide APIs to facilitate real-time data exchange with logistics partners and third-party applications.

4.6) Project scope:

1. In-scope functionality:
* Real-time stock tracking and visibility.
* Low-stock alerts and notifications.
* Driver and vehicle performance tracking.
* Delivery scheduling and assignment to available resources.
* Real-time delivery tracking and status updates for customers and internal teams.
* Proof of delivery (e.g., electronic signatures or photo capture).
* Integration with existing ERP and CRM systems.
* APIs for third-party logistics and e-commerce platforms.
* Synchronization with financial systems for invoicing and billing purposes.
1. Out-scope functionalities:
* Integration with robotics or IoT-enabled devices for automated picking and packing.
* Tools for designing and simulating custom logistics networks or facilities.
* Deep CRM functionalities beyond basic integration (e.g., marketing automation).
* Advanced AI modules for autonomous decision-making beyond predictive analytics.
1. Assumptions:

**Business and Operational Assumptions**

1. The organization’s current inventory and delivery processes are well-documented and will serve as the foundation for software requirements.

**User and Access Assumptions**

1. All system users (warehouse staff, delivery drivers, and managers) have basic technical proficiency and can operate the software with minimal training.

**Technical Assumptions**

1. The organization has a stable and reliable internet connection to support real-time inventory updates and delivery tracking.

**Integration and Data Assumptions**

1. Accurate historical data from legacy systems is available for migration into the new system.

**Regulatory and Compliance Assumptions**

1. The software will comply with relevant regulatory requirements, including data privacy laws (e.g., GDPR, CCPA).
2. Constraints:

**Budget Limitations:**

* The project must stay within the allocated budget for development, deployment, and maintenance.

**Network Dependence:**

* Real-time features like inventory updates and delivery tracking depend on stable internet connectivity, which may not always be available in certain areas.

**Data Privacy Regulations:**

* The system must comply with local and international data protection laws (e.g., GDPR, CCPA).

**User Proficiency:**

* The system must be designed to accommodate users with varying levels of technical expertise, requiring a user-friendly interface.
1. **Risks:**

**Integration Complexity:**

**Risk:** Difficulty in integrating with existing ERP, CRM, and financial systems, particularly if those systems have outdated technology or limited API support.

**Mitigation:** Conduct a thorough system audit and ensure compatibility during the planning phase. Allocate buffer time for integration testing and troubleshooting.

**Disruption to Current Operations:**

* **Risk:** Implementing the new software could disrupt ongoing inventory and delivery operations, causing delays or errors.
* **Mitigation:** Plan a phased rollout or pilot program to minimize disruption. Train staff well in advance and ensure parallel running during the transition period.

**Timeline Delays:**

* **Risk:** The project could be delayed due to unforeseen technical issues, integration challenges, or resource shortages.
* **Mitigation:** Create a detailed project timeline with realistic milestones. Monitor progress regularly and allocate extra time for high-risk tasks.
1. Business process overview:

Legacy system (AS-IS):

**Inventory Management**

1. **System Functionality:**
	* Manual data entry for stock levels.
	* Limited visibility of inventory across multiple locations.
	* No real-time updates: stock information is updated periodically.
2. **Reporting & Analytics:**
* Basic reporting features; often rely on manual consolidation.
* Limited forecasting for demand or stock replenishment.

**Delivery Management**

1. **Order Tracking:**
	* Manual assignment of delivery tasks to drivers.
	* No GPS or real-time tracking for deliveries.
2. **Route Optimization:**
* Delivery routes are planned manually, often leading to inefficiencies.



Proposed Recommendation (TO-BE):

**System Functionality:**

* Real-time tracking of stock levels with IoT-based sensors or barcode scanning.
* Centralized visibility of inventory across multiple warehouses/stores.

**Reporting & Analytics:**

* Advanced analytics with AI/ML for demand forecasting and stock optimization.
* Automated dashboards with actionable insights.

**Order Tracking:**

* Automated assignment of delivery tasks based on driver availability and capacity.
* Real-time GPS tracking for delivery personnel.

**Integration:**

* Real-time synchronization with inventory management to ensure availability before dispatch.
* Integration with CRM systems for personalized customer service.



9. Business requirements:

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Priority** |
| BR0001 | Inventory management  | Real time updates to inventory management systems to reflect changes in stock levels. | 10 |
| BR0002 | Inventory movement | Record inbound and outbound stock movements(receiving, transfers) | 9 |
| BR0003 | Demand forecasting | Use analytics to predict demand trends and optimize stock levels. | 9 |
| BR0004 | Order assignment  | Automate assignment of orders to delivery personnel based on availability and proximity. | 8 |
| BR0005 | Real time tracking | Provide GPS-enabled tracking of delivery vehicles and personnel. |  8 |
| BR0006 | Delivery scheduling  | Enable scheduling of deliveries based on customer preferences. |  9 |
| BR0007 | Customer feedback collection  | Allow customers to rate delivery experiences. |  7 |

**Real-Time Inventory Tracking**:

* Monitor stock levels in real time across multiple warehouses, stores, or locations.

**Inventory Movement**:

* Record inbound and outbound stock movements (receiving, transfers, and dispatch).

**Demand Forecasting**:

* Use analytics to predict demand trends and optimize stock levels.

**Order Assignment**:

* Automate assignment of orders to delivery personnel based on availability and proximity.

**Real-Time Tracking**:

* Provide GPS-enabled tracking of delivery vehicles and personnel.

**Delivery Scheduling**:

* Enable scheduling of deliveries based on customer preferences.

**Offline Mode**: Enable limited functionality when internet connectivity is unavailable.

**Customer Feedback Collection**: Allow customers to rate delivery experiences.

Requirement traceability matrix:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Req ID**  | **Req** **Name**  | **Req description**  | **Design**  | **D1**  | **T1**  | **D2**  | **T2**  | **UAT**  |
| BR0001  | Inventory management | Real time updates to inventory management systems to reflect changes in stock levels. | completed | completed  | completed | completed | completed | completed  |
|  BR0002 | Inventory movement  | Record inbound and outbound stock movements (receiving, transfers) | completed | completed | completed | Not completed | Not completed  | Not completed |
| BR0003 | Demand forecasting  | Use analytics to predict demand trends and optimize stock levels. | completed | completed | Not completed  | Not completed | Not completed | Not completed |
| BR0004 | Order assignment  | Automate assignment of orders to delivery personnel based on availability and proximity. | completed | completed | Not completed | Not completed | Not completed | Not completed |
| BR0005 | Real- time tracking  | Provide GPS-enabled tracking of delivery vehicles and personnel. | completed | completed | completed | completed | completed | completed |
| BR0006 | Delivery scheduling  | Enable scheduling of deliveries based on customer preferences. | completed | completed | completed | completed | completed | Not completed |
| BR0007 | Customer feedback collection  | Allow customers to rate delivery experiences. | completed | Not completed | Not completed | Not completed | Not completed | Not completed |

10. Appendices:

**Acronyms:**

1. **ERP** – Enterprise Resource Planning
2. **WMS** – Warehouse Management System
3. **SKU** – Stock Keeping Unit

**Glossary of Terms:**

1. **Inventory Management**: The process of ordering, storing, using, and selling a company's inventory.
2. **Delivery Management**: The process of planning, scheduling, and controlling the delivery of goods to customers.
* **Related Documents:**
1. **Software User Manual**: Detailed documentation explaining the features and operation of the software.
2. **API Documentation**: Technical details for integrating the inventory and delivery system with other platforms.

**Related documents:**

1. Project proposal
2. Use case specification document

Development and resource plan:

Time estimates include:

* Requirement gathering: 2-4 weeks
* Design: 4-6 weeks
* Development: 12-32 weeks
* Testing: 4-8 weeks
* Deployment and training: 2-4 weeks

**People (Team Composition)**

The size and composition of the team depend on the complexity of the software. For a medium-sized project, you might need:

* **Project Manager (1)**: Coordinates the team, manages timelines, and ensures project alignment with business goals.
* **Business Analyst (1)**: Gathers requirements, defines workflows, and creates documentation.
* **UI/UX Designer (1)**: Designs user-friendly interfaces and ensures a smooth user experience.
* **Backend Developers (2-3)**: Builds the server-side architecture, database integration, and APIs.
* **Frontend Developers (1-2)**: Creates the user interface and ensures responsiveness.
* **QA Engineer (1-2)**: Tests the software for bugs and ensures quality standards.
* **DevOps Engineer (1)**: Manages deployment, infrastructure, and continuous integration/continuous delivery (CI/CD).
* **Customer Support or Training Specialist (Optional)**: Assists with onboarding users and providing support.

**Budget (Estimated Costs)**

The budget varies significantly based on the scope and region of the development team. Here's a rough estimate:

* **Small System**: $50,000 - $100,000
* **Medium System**: $100,000 - $300,000
* **Enterprise System**: $300,000+

2.) Process Flow Diagram:



 Assignment - 2

* 1. Introduction Letter:

Dear Herschelle Gibbs,

I hope this message finds you well. My name is Kishan Kukkala, and I am the Business Analyst assigned to collaborate with you and your team as we begin the process of understanding your business needs and goals for IT ticketing system. I am genuinely excited about the opportunity to work with you on this project.

My role as a Business Analyst is to serve as the bridge between your vision and the solutions that will help bring it to life. To achieve this, I will work closely with you and your team to:

1. Understand your business processes, business process model and creation of SMART goals for the ticketing system.
2. Prepare swot analysis, gap analysis to initiate the project and feasibility study for doing this project.
3. Perform stakeholder analysis to find out the key stakeholders who can take decisions, who are the influencers and prepare business case documents.

In the coming days, I would like to schedule an initial meeting to kick off the business understanding process. During this session, we can discuss:

* Software development life cycle applicable for this project and audits.
* BA approach strategy
* Three tier architecture and market analysis

I am committed to ensuring this project’s success by fostering a collaborative, transparent, and results-driven approach. Please feel free to share any preliminary thoughts, questions, or documents that could help me prepare for our discussion.

Looking forward to working with you and contributing to the success of this initiative. I will reach out shortly to propose a time for our initial meeting, but in the meantime, feel free to contact me directly at krbusinessanalyst@gmail.com or +91-7989581582.

Thank you, and I’m eager to get started!

Warm regards

Kishan Reddy Kukkala

Business Analyst

APP Stix solutions

krbusinessanalyst@gmail.com

* 1. Ticketing system:

|  |  |  |
| --- | --- | --- |
| **Date**  | **Version Number**  |  **Document Changes**  |
| 05/02/2022 | 0.1  | Ticketing System (Initial Draft)  |
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* 1. Approvals:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role**  | **Name**  | **Title**  | **Signature**  | **Date**  |
| Project Sponsor  |  Hansen  |  Project sponsor |  Sam Waltor |  05/02/2022 |
| Business Owner  |  Hansen  |  Business owner |  Sam Waltor |  05/02/2022 |
| Project Manager  |  Bruno John |  Project manager |  Bruno John |  07/02/2022 |
| System Architect  |  Srinivasa |  System architect |  Srinivasa |  07/02/2022 |
| Development Lead  |  Kameswara Rao  |  Development lead |  Kameswara Rao |  08/02/2022 |
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| Quality Lead  |  Harsha Mehta |  Quality lead |  Harsha Mehta |  09/02/2022 |
| Content Lead  |  Rishi Kumar |  Content lead |  Rishi Kumar |  09/02/2022 |

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RACI Chart

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Name**  | **Position**  | **\***  | **R**  | **A**  | **S**  | **C**  | **I**  |
| Hansen  |  Project Manager |   |  R  |  A |   |   |   |
| Srinivasa  |  System architect |   |   |   |   |  C  |   |
|  Kameswara Rao  |  Development Lead |   |   |   |  S  |   |  I  |
|  Praveen Kumar  |  User experience lead |   |   |   |   |   |  I  |
|  Harshad Mehta |  Quality Lead |   |   |   |   |   |  I  |

* 1. Introduction:

Business goals:

* Improve customer satisfaction:

Enable faster response and resolution times for customer queries or issues.

Implement real time notifications and updates for transparency.

* Enhance team productivity:

Offer analytics and reporting tools to monitor team performance and workload distribution.

* Increase operational efficiency:

Integrate with existing tools and systems (Email, chat).

Optimize resource allocation based on ticket priorities and trends.

* Support business growth:

Scale the system to accommodate increasing ticket volumes as the business expands.

Enable self-service options such as knowledge base or chatbot to handle low-complexity queries.

4.2) Business Objectives:

* Reduce ticket resolution by 20% within six months of deployment
* Provide an intuitive user interface for both customers and support agents.
* Implement self-service features, such as FAQs and knowledge bases, to reduce support dependency.
* Increase customer satisfaction (CSAT) scores by at least 10% in the first year.
* Design the platform to support new departments or services as the organization grows.
* Optimize resource allocation based on ticket demand and agent performance data.

Organization Policies:

* Define role-based access levels for agents, admins, and customers.
* Automatically revoke access for inactive or terminated employees.
* Mandate clear escalation pathways for unresolved or critical issues.
* Maintain a knowledge base with regularly updated FAQs, solutions, and troubleshooting guides.

Procedures:

* Allow customers to submit tickets via pre-defined channels such as email, web portal, or phone.
* Provide auto-generated ticket IDs for easy tracking.
* Agents must document all actions taken to resolve a ticket.
* Schedule regular system updates to address bugs, enhance functionality, and ensure security.

Rules & Regulations:

**1. Ticket Prioritization Rules**

* Critical: Immediate action (e.g., service outage).
* High: Resolved within 8 hours (e.g., major functionality issue).
* Medium: Resolved within 24 hours (e.g., minor issues affecting usability).
* Low: Resolved within 48 hours (e.g., feature requests).

**2. Communication Rules**

* Agents must acknowledge all tickets within 1 hour of submission.

#### **4.4) Background:**

The idea for the ticketing software project was proposed in response to growing challenges faced by the organization in managing customer inquiries, service requests, and internal support processes.

**Business Issues/Problems Identified**

* The need for the project was driven by several key business challenges:
* Tickets were often miscategorized, leading to delays and inefficiencies.
* Long response and resolution times frustrated customers and led to low satisfaction scores.
* Difficulty in monitoring team performance and SLA compliance.
* Existing systems couldn’t scale to meet the growing demands of the business.

**3. Expected Benefits of Implementing the Ticketing Software**

* The implementation of a modern ticketing system was expected to address the identified problems and deliver the following benefits:
* Faster response and resolution times through automated workflows.
* Centralized ticket management to streamline workflows and reduce errors.
* Real-time dashboards and reporting to monitor KPIs like SLA adherence and agent productivity.

4.5) Project scope:

In-scope Functionality:

* Allow tickets to be created through multiple channels: email, web portal, live chat, and phone.
* Support for categorization, tagging, and priority assignment.
* Automatic ticket assignment based on predefined rules (e.g., priority, agent expertise, workload).
* Tools for defining and enforcing response and resolution timeframes.
* Customer Portal: For customers to submit and track tickets, access the knowledge base, and communicate with agents.
* Real-time dashboards to monitor ticket volumes, resolution times, and agent performance.
* Define access levels for administrators, agents, and customers.

Out-scope functionalities:

* Any features not specified during the requirements-gathering phase.
* Development of highly specialized workflows unique to certain departments or clients.
* Full migration or overhaul of legacy systems unrelated to ticketing.
* Maintenance or troubleshooting of systems not integrated with the ticketing software.
* Long-term support, maintenance, or upgrades beyond the defined warranty period.
* Continuous updates for compliance regulations after project handover.

* 1. Assumptions:
* Stakeholders, including end-users and management, will provide timely, accurate, and comprehensive feedback during the requirements-gathering phase.
* Decision-makers will be available to approve or resolve ambiguities in requirements.
* The organization’s existing IT infrastructure (servers, networks, and databases) is compatible with the ticketing software.
* Adequate API documentation and access will be provided for integration with third-party tools like CRMs and communication platforms.
* Sufficient funding is available to cover development, testing, deployment, and training phases.
* Qualified personnel (developers, QA testers, trainers) will be available throughout the project lifecycle.
	1. Constraints:

 **Scalability**: Must handle a large number of concurrent users and transactions.

 **Real-time Updates**: Tickets and availability must be updated instantly to prevent overbooking.

**System Availability**: Must provide near 100% uptime with robust failover mechanisms.

**Data Storage**: Ability to store and retrieve large datasets quickly, including user profiles, transaction logs, and ticket data.

**Data Privacy**: Must comply with laws like GDPR, CCPA, or other regional privacy regulations.

**Tax Compliance**: Should support dynamic tax calculations based on jurisdictions.

7.) In this section of the BRD, you describe risks. A *risk* is something that could affect the success or failure of a project. Analyze risks regularly as the project progresses. While you may not be able to avoid every risk, you can limit each risk’s impact on the project by preparing for it beforehand. For each risk, you’ll note the likelihood of its occurrence, the cost to the project if it does occur, and the strategy for handling the risk. Strategies include the following:

* **Avoid:** Do something to eliminate the risk.
* **Mitigate:** Do something to reduce damage if the risk materializes.
* **Transfer:** Pass the risk up or out to another entity.
1. **Accept:** Do nothing about the risk. Accept the consequences.

Technological Risks:

**Scalability Issues**: System might fail to handle spikes in traffic, especially during high-demand events.

**Latency**: Slow response times can lead to poor user experience and potential transaction failures.

Skills risks:

**Insufficient Technical Expertise**: Lack of experience in required programming languages, frameworks, or platforms (e.g., React, Node.js, AWS).

**Inadequate Understanding of Scalability**: Poor design for handling high concurrency or large-scale operations.

8.) Business process overview:

8.1) Legacy system (AS-IS):

A manual IT ticketing system refers to a process where support tickets are handled without automated tools or software. Instead, tickets are created, tracked, and resolved through manual methods such as emails, spreadsheets, or paper logs. This state reflects the current operational flow, where much of the ticket management process is dependent on human intervention.



8.2) Proposed Recommendations (TO-BE):

The TO-BE state represents the desired future state of the IT ticketing system where automation, efficiency, and scalability are key. In an automated experience and system, many manual processes are replaced by technology, streamlining the ticketing process, improving user experience, and allowing IT teams to focus on resolving issues rather than managing tickets.



1. Business requirements:
* The system should allow end users to create support tickets via a self-service web portal or mobile app.
* The system should automatically categorize tickets based on predefined rules (e.g., based on keywords, problem type, or user input) to ensure the correct classification of issues.
* The system should integrate with a knowledge base or help center, allowing IT staff to access troubleshooting guides, FAQs, and past resolutions directly within the ticket interface.
* The system should automatically notify both users and IT support staff of significant events, such as ticket creation, status updates, resolutions, or escalations.
* The system should provide real-time dashboards for managers to monitor key metrics such as ticket volume, resolution times, technician workload, SLA compliance, and customer satisfaction.

Business requirements:

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Priority** |
| BR0001 | User Roles  | Full Access, including configuration, reporting and systems management. | 10 |
| BR0002 | Ticket management | Allow end users to create tickets via:Web-portalEmail Chatbot or instant messaging. | 9 |
| BR0003 | User alerts | * Email/SMS notification for ticket updates.
 | 9 |
| BR0004 | Self-service portal  | * FAQs and guides for common issues.
* Allow users to search for solutions before creating a ticket.
 | 8 |
| BR0005 | Pre-defined reports | * Ticket volume by category, team, or time period.
* User satisfaction surveys.
 |  8 |
| BR0006 | Third-party tools  | * Integration with email servers, messaging apps, or collaboration tools (e.g., Slack, Teams).
 |  9 |
| BR0007 | Feedback mechanism  | * Collect user feedback after ticket closure.
* Measure user satisfaction scores (CSAT) for continuous improvement.
 |  7 |

Requirement Traceability Matrix:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Req ID**  | **Req** **Name**  | **Req description**  | **Design**  | **D1**  | **T1**  | **D2**  | **T2**  | **UAT**  |
| BR0001  | User Roles | Full Access, including configuration, reporting and systems management. | completed | completed  | completed | completed | completed | completed  |
|  BR0002 | Ticket managment  | Allow end users to create tickets via:Web-portalEmail Chatbot or instant messaging. | completed | completed | completed | Not completed | Not completed  | Not completed |
| BR0003 | User alerts  | Email/SMS notification for ticket updates. | completed | completed | Not completed  | Not completed | Not completed | Not completed |
| BR0004 | Self-service portal  | * FAQs and guides for common issues.

Allow users to search for solutions before creating a ticket. | completed | completed | Not completed | Not completed | Not completed | Not completed |
| BR0005 | Pre-defined reports  | * Ticket volume by category, team, or time period.

User satisfaction surveys. | completed | completed | completed | completed | completed | completed |
| BR0006 | Third party tools  | Integration with email servers, messaging apps, or collaboration tools (e.g., Slack, Teams). | completed | completed | completed | completed | completed | Not completed |
| BR0007 | Feedback mechanism | * Collect user feedback after ticket closure.

Measure user satisfaction scores (CSAT) for continuous improvement. | completed | Not completed | Not completed | Not completed | Not completed | Not completed |

Use Case Specification Documentation:

[Click on this link for Use Case Specification](usecase%20description%20document.docx)

SRS:

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| REQ ID | REQ NAME | REQ DESCRIPTION | PRIORITY |
| FR001 | Ticket creation and submission  | Users can create and submit tickets through various channels (web interface, email, or mobile app). | 9 |
| FR002 | Ticket categorization and prioritization | The system should allow automatic or manual categorization of tickets based on predefined categories (e.g., hardware, software, network issues). | 8 |
| FR003 | Assignment and workflow management  | Automatically assign tickets to the appropriate team or agent based on category, priority, or workload. | 9  |
| FR004 | Status tracking and updates. | Display the current status of tickets (e.g., open, in progress, resolved, closed). | 7 |
| FR005 | Search and filter operations.  | Provide a robust search functionality to find tickets using filters like ticket ID, date range, status, category, or assigned agent. | 9 |
| FR006 | Reporting analytics | Allow exporting reports in multiple formats (e.g., CSV, PDF). | 6 |
| FR007 | Integration with other systems.  | Integrate with tools like email systems, chat platforms, IT asset management systems, and knowledge bases to streamline ticket handling and improve efficiency. | 9 |
| NFR001 | Performance and scalibility | The system should handle a minimum of 10,000 simultaneous users without performance degradation. | 9 |
| NFR002 | Availability and reliability | Ensure 99.9% system uptime to minimize downtime during business hours. | 5 |
| NFR003 | security | Implement role-based access control (RBAC) and two-factor authentication for agents and administrators. | 8 |
| NFR004 | usability | The user interface should be intuitive and require minimal training for end users and agents | 7 |
| NFR005 | Interoperability | The system should seamlessly integrate with third-party applications (e.g., email clients, asset management tools, and reporting tools). | 9 |
| NFR006 | maintainability | The system should allow for easy updates and patches without significant downtime. | 8 |
| NFR007 | Compliance  | Adhere to relevant regulations like GDPR, HIPAA (if applicable), or ISO 27001 standards for data protection and security. | 6 |

1. **List of Acronyms for Ticketing System:**
* **API**: Application Programming Interface
* **CRM**: Customer Relationship Management
* **MFA**: Multi-Factor Authentication
* **PCI-DSS**: Payment Card Industry Data Security Standard

**Related Documents**

1. **Business Requirements Document (BRD)**: Specifies the high-level requirements and goals for the ticketing system.
2. **System Requirements Specification (SRS)**: Defines detailed functional and technical requirements.

**Glossary of Terms**

1. **Admin Panel**: Backend interface used by administrators to manage the ticketing system.
2. **Event Organizer**: A person or entity responsible for creating and managing events within the system.

[Project proposal guidelines](file:///C%3A%5Cbusiness%20analyst%5CIdentify%20Live%20Projects%5Cwaterfall%5Cwaterfall%20part%20-1%5CProject%20proposal%20guidelines.docx)

[Use Case Specification Document](file:///C%3A%5Cbusiness%20analyst%5CIdentify%20Live%20Projects%5Cwaterfall%5CWaterfall%20part%20-%202%5Cusecase%20description%20document.docx)

2.) ERD for Ticketing life cycle:



1. User stories of shopping from ecommerce:

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| **User story No: 1 user registration** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** new user,**I want to** register an account, **so that** I can shop on the website. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can input email, password, and name.
2. Validation messages for invalid input.
3. Confirmation email is sent after registration.
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| **User story No: 2 user login**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** returning user, **I want to** log into my account,**so that** I can access my saved details. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can log in using email and password.
2. Option to show/hide password.
3. Error message for incorrect credentials.
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| **User story No: 3 forgot password** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** reset my password if I forget it, **So that** I can create a new password. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can request a password reset via email.
2. Password reset link expires after 24 hours.
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| **User story No: 4 profile management** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** update my profile information, **so that** my account stays up to date. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can update name, email, and password.
2. Changes reflect immediately after saving.
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| **User story No: 5 home page product display**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** see trending and recommended products on the homepage,**So that** I can look for popular products. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display of trending and recommended products.
2. Pagination for large product lists.
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| **User story No: 6 Search products**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** search for products by keywords,**so that** I can find items quickly. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Search results display relevant products.
2. Suggestions appear for partially typed queries.
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| **User story No: 7 product categories** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** browse products by category,**so that** I can explore items of interest. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Categories listed in a hierarchical structure.
2. Filters are available within categories.
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| **User story No: 8 product filters**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** filter products by price, rating, brand, and more.**So that** I can select products. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Multiple filters can be applied simultaneously.
2. Results update dynamically without reloading the page.
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| **User story No: 9 product information pages** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** view detailed product information,**so that** I can make an informed purchase. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display product images, title, description, price, and ratings.
2. Show stock availability.
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| **User story No: 10 product reviews**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** read customer reviews,**so that** I can understand product quality. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display average rating and individual reviews.
2. Option to sort reviews by relevance or date.
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| **User story No: 11 add to Wishlist**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** add products to my Wishlist,**so that** I can save them for later. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can add/remove products from the wishlist.
2. Wishlist is saved to the user's account.
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| **User story No: 12 Add to cart**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** add products to my cart, **so that** I can purchase them. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can select quantity before adding to the cart.
2. The cart reflects the updated total price.
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| **User story No: 13 view carts**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want** to view items in my cart,**so that** I can review them before purchasing. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display a list of added products, their quantities, and prices.
2. Option to update quantities or remove items.
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| **User story No: 14 Apply coupons** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** apply coupons at checkout to avail discounts.**So that I** will get a discount. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Validate coupon codes.
2. A discount reflects immediately upon successful application.
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| **User story No: 15 checkout process**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want a** seamless checkout experience,**so that I** can complete my purchase quickly. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Steps: Shipping Address > Payment Method > Review Order > Place Order.
2. An option to save shipping and payment details.
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| **User story No: 16 order confirmation**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** receive an order confirmation,**so that** I know my purchase was successful.  |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display confirmation message with order summary.
2. Email confirmation sent immediately.
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| **User story No: 17 shipping address management**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** save multiple shipping addresses,**so that** I can reuse them. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can add/edit/delete addresses.
2. Default address option available.
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| **User story No: 18 order tracking**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** track my orders,**so that** I know their delivery status. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display current order status (e.g., Processing, Shipped, Delivered).
2. Link to view detailed tracking info.
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| **User story No: 19 Estimated delivery dates**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** see estimated delivery dates for products, **so that** I know when to expect them. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Display estimated delivery date during checkout.
2. Update based on shipping method selected.
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| **User story No: 20 payment methods** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** use various payment methods,**so that** I have flexibility. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Support credit/debit cards, PayPal, and Amazon Pay.
2. Save payment details securely for future use.
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| **User story No: 21 payment confirmation** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** receive confirmation of my payment**,** **so that** I know it was successful. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Show a success message for successful payments.
2. Notify user in case of payment failure.
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| **User story No: 22 customer support chat**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** chat with customer support for quick issue resolution.**So that** I can chat with executives. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Live chat widget available on all pages.
2. Chat history saved to user account.
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| **User story No: 23 FAQ section**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** browse FAQs,**so that** I can find answers to common questions. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. FAQs categorized by topic.
2. Search functionality within FAQs.
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| **User story No: 24 request refund** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** request a refund for returned items,**So that** I can get a refund. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. A refund option available for eligible orders.
2. Email notification upon refund approval.
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| **User story No: 25 personalized recommendations** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want** personalized product recommendations based on my browsing and purchase history,**So that** I can buy it again. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Recommendations update dynamically.
2. Option to dismiss specific recommendations.
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| **User story No: 26 product comparison** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** compare multiple products,**so that** I can make an informed decision. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Select up to 4 products for comparison.
2. Display side-by-side comparison of key features.
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| **User story No: 27 gift wrapping option** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** add gift wrapping to my order,**So that** I can add gift. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Option to add gift wrap for eligible products.
2. Display additional cost for gift wrapping.
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| **User story No: 28 Email notifications** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** receive email notifications about my orders and promotions**,****So that** I will get notified. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Notifications for order confirmations, shipping updates, and special offers.
2. Option to manage email preferences.
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| **User story No: 29 product management**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As an** admin,**I want to** add, edit, and delete products,**so that the** catalog stays current. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Admin panel for product management.
2. Image and description upload supported.
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| **User story No: 30 order management**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As an** admin,**I want to** manage customer orders, **so that I** can ensure smooth operations. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. View, update, and cancel orders.
2. Notifications sent to customers for status changes.
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| **User story No: 31 customer management**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As an** admin,**I want to** manage customer accounts,**so that I** can assist them with issues. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Search and edit customer details.
2. Option to deactivate accounts.
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| **User story No: 32 sales analytics**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As an** admin,**I want to** view sales analytics,**so that** I can make data-driven decisions. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Dashboard with daily, weekly, and monthly sales data.
2. Downloadable reports.
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| **User story No: 33 mobile friendly design**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a user,** **I want a responsive website,** **so that I can shop on my phone.** |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Website adapts to various screen sizes.
2. Touch-friendly navigation.
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| **User story No: 34 two-factor authorization**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** enable two-factor authentication for extra security,**So that** I can get additional security. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. User can set up 2FA via SMS or email.
2. Prompt for 2FA during login.
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| **User story No: 35 data encryptions**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want** my personal and payment data to be secure,**So that** there is no threat. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. All sensitive data encrypted in transit and at rest.
2. Regular security audits.
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| **User story No: 36 future enhancements**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** search for products using voice commands,**So that** I can use microphone and give commands. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Voice recognition for keywords.
2. Display accurate results.
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| **User story No: 37 augmented reality**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** see how products look in real life using AR,**So that** I can feel how it fits. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. AR functionality for eligible products (e.g., furniture).
2. Works on mobile devices.
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| **User story No: 38 Subscription services** | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** subscribe to recurring product deliveries,**So that** I can get subscribed. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Option to set delivery frequency.
2. Manage subscriptions via user account.
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| **User story No: 39 loyalty programs**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a user,** **I want to earn points for purchases to redeem rewards,****So that I can see my points.** |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Points earned displayed in user account.
2. Redeem points during checkout.
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| **User story No: 40 International shipping**  | **Tasks: 2** | **Priority: High** |
| **Value statement:** **As a** user,**I want to** ship products internationally,**So that** I can receive orders from another country. |
| **BV: 70** | **CP: 8**  |
| **Acceptance criteria:**1. Country selection at checkout.
2. Shipping costs and estimated delivery updated accordingly.
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