**Waterfall 1 Answer Sheet**

**Document 1- Business case document template**

**1. Why is this project initiated?**

This project is initiated to address the manual and inefficient inventory management processes currently used by Prilube Industries, which lead to delays, inaccuracies, and increased operational costs.

**2. What are the current problems?**

The current problems include:

* Inefficient manual processes for inventory management
* Time-consuming and error-prone inventory tracking
* Lack of real-time visibility into stock levels
* Difficulty in accessing critical documents
* High operational costs due to overstocking and under stocking
* Poor decision-making due to lack of real-time data and analytics
* Employee frustration and reduced productivity
* Risk of errors and compliance issues

**3. With this project how many problems could be solved?**

This project aims to solve at least 8 problems:

1. Automate inventory management
2. Provide real-time data access
3. Improve accuracy
4. Enhance reporting
5. Reduce operational costs
6. Improve decision-making
7. Increase employee productivity
8. Reduce risk of errors and compliance issues

**4. What are the resources required?**

**The resources required include:**

* Human resources: project manager, developers, UI/UX designer, QA testers, database administrator, trainers, and support team
* Hardware resources: servers, barcode scanners, computers/tablets, and backup systems
* Software resources: development tools, database management system, barcode scanning API, project management tools, and testing tools
* Financial resources: development costs, hardware costs, training costs, and maintenance costs

**5. How much organizational change is required to adopt this technology?**

The organizational change required is significant, as the project involves:

* Implementing a new inventory management system
* Automating manual processes
* Changing employee workflows and responsibilities
* Providing training to employees
* Ensuring data security and compliance

**6. Time frame to recover ROI?**

The time frame to recover ROI is not explicitly stated, but the project aims to achieve cost savings through:

* Reducing inventory holding costs by 10-15% in the first year
* Minimizing waste and optimizing inventory levels

**7. How to identify Stakeholders?**

Stakeholders can be identified by:

* Conducting meetings with Prilube Industries' management and employees
* Analyzing the project's impact on different departments and teams
* Considering the needs and expectations of various stakeholders, including employees, management, customers, and suppliers.

**Document 2: BA Strategy**

**Write BA Approach strategy.**

**(As a business analyst, what are the steps that you would need to follow to complete a project ~ What Elicitation Techniques to apply, how to do Stakeholder Analysis RACI/ILS, What Documents to Write, What process to follow to Sign off on the Documents, How to take Approvals from the Client, What Communication Channels to establish n implement, How to Handle Change Requests, How to update the progress of the project to the Stakeholders, How to take signoff on the UAT- Client Project Acceptance Form )**

**Ans :**

**BA Approach Strategy**

**1. Project Initiation:** Review project charter, identify stakeholders, establish communication channels.

**2. Stakeholder Analysis:** Conduct interviews, surveys, create RACI chart.

**3. Elicitation:** Gather requirements using techniques like interviews, workshops, surveys.

**4. Requirements Documentation:** Write BRDs, FRDs, use cases, user stories.

**5. Requirements Review & Sign-off:** Obtain formal sign-off from stakeholders.

**6. Solution Design:** Collaborate with designers, developers.

**7. Change Management:** Establish process, evaluate impact, obtain approval.

**8. Testing & QA:** Collaborate with testing team.

**9. UAT:** Collaborate with stakeholders.

**10. Client Project Acceptance:** Obtain formal sign-off.

**Communication & Approvals**

* Establish regular meetings, collaboration tools.
* Obtain formal sign-off on documents, changes.
* Provide regular project updates.

**Change Requests & Progress Updates**

* Evaluate impact, obtain approval.
* Provide regular project status updates.

**Document 3: BA Strategy**

|  |  |
| --- | --- |
| **Project name** | Inventory Management Application |
| **Customer name** | Prilube Industries |
| **Project Version** | 1.0 |
| **Project Sponsor** | Rahul Sharma, CEO, Prilube Industries |
| **Project Manager** | Mohit Sonar, Project Manager |
| **Project Initiation date** | 21/02/2025 |

**Functional Requirement specifications**

|  |  |  |  |
| --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Priority** |
| FR1 | Automate Inventory Tracking | The system should automatically track inventory levels for raw materials and finished products to reduce manual effort and errors. | **High** |
| FR2 | Real-Time Data Access | The application must provide real-time updates on inventory levels and availability of raw materials and finished products. | **High** |
| FR3 | Stock Alerts | The system should send automatic alerts when stock levels fall below predefined thresholds or if there is an issue with expiration dates. | **High** |
| FR4 | Detailed Reporting & Analytics | The system should generate detailed reports and analytics on inventory usage, sales trends, stock forecasts, and operational performance. | **High** |
| FR5 | Document | The system should provide easy access to safety data sheets, product specifications, and other critical documents for employees. | **Medium** |
| FR6 | User Management | The system should support role-based access control for different users (e.g., warehouse employees, managers). | **High** |
| FR7 | Barcode Scanning Integration | The system should integrate barcode scanning functionality to streamline inventory tracking and minimize errors during stock updates. | **High** |
| FR8 | Mobile Access | The system should be accessible via a mobile app (initially web-based, to later be extended to mobile) to ensure ease of use for employees on the go. | **Medium** |
| FR9 | Inventory Audit & Reconciliation | The system should allow for regular audits of inventory and reconciliation of discrepancies between recorded and actual stock levels. | **Medium** |
| FR10 | Scalability | The system should be able to scale to handle an increase in inventory volume as the business grows. | **High** |

**Document 4- Requirement Traceability Matrix**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Req ID** | **Req Name** | **Req Description** | **Design** | **D1** | **T1** | **D2** | **T2** | **UAT** |
| FR1 | Automate Inventory Tracking | The system should automatically track inventory levels for raw materials and finished products to reduce manual effort and errors. | YES | YES | YES | Pending | NO | NO |
| FR2 | Real-Time Data Access | The application must provide real-time updates on inventory levels and availability of raw materials and finished products. | YES | YES | YES | Pending | NO | NO |
| FR3 | Stock Alerts | The system should send automatic alerts when stock levels fall below predefined thresholds or if there is an issue with expiration dates. | YES | YES | YES | Pending | NO | NO |
| FR4 | Detailed Reporting & Analytics | The system should generate detailed reports and analytics on inventory usage, sales trends, stock forecasts, and operational performance. | YES | YES | Pending | Pending | NO | NO |
| FR5 | Document | The system should provide easy access to safety data sheets, product specifications, and other critical documents for employees. | YES | YES | Pending | Pending | NO | NO |
| FR6 | User Management | The system should support role-based access control for different users (e.g., warehouse employees, managers). | YES | YES | Pending | Pending | NO | NO |
| FR7 | Barcode Scanning Integration | The system should integrate barcode scanning functionality to streamline inventory tracking and minimize errors during stock updates. | YES | YES | Pending | NO | NO | NO |
| FR8 | Mobile Access | The system should be accessible via a mobile app (initially web-based, to later be extended to mobile) to ensure ease of use for employees on the go. | YES | YES | Pending | NO | NO | NO |
| FR9 | Inventory Audit & Reconciliation | The system should allow for regular audits of inventory and reconciliation of discrepancies between recorded and actual stock levels. | YES | YES | Pending | NO | NO | NO |
| FR10 | Scalability | The system should be able to scale to handle an increase in inventory volume as the business grows. | YES | YES | Pending | NO | NO | NO |

**Document 5: BRD Template**

**Project Name :** Inventory Management Application

**Project ID :** 123123

**Version :** V001

**Author :** Mohit Sonar

**1. Document Revisions**

|  |  |  |
| --- | --- | --- |
| **Date** | **Version Number** | **Document Changes** |
| 21/01/2025 | V001 | Initial draft |
| 10/02/2025 | V002 | Testing reports |
| 20/02/2025 | V003 | UAT document |
| 28/02/2025 | V004 | Design documents |

**2. Approvals**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **Name** | **Title** | **Signature** | **Date** |
| Project sponsor | AAA | Senior manager | A | 21/02/2025 |
| Business owner | BBB | Owner | B | 21/02/2025 |
| Project manager | CCC | Project Leader | C | 21/02/2025 |
| System architect | DDD | Solution architect | D | 21/02/2025 |
| Development Lead | EEE | Development Lead | E | 21/02/2025 |
| User experience Lead | FFF | UX manager | F | 21/02/2025 |
| Quality Lead | GGG | Quality assurance Lead | G | 21/02/2025 |
| Content Lead | HHH | Content Lead | H | 21/02/2025 |

**3. RACI Chart for This Document**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Task** | **Project Manager** | **Developers** | **UI/UX Designer** | **QA Testers** | **Database Admin** | **Business owner** |
| **Requirements Gathering** | A,R | C | C | I | C | I |
| **System Design** | A,R | C | R | I | C | I |
| **Implementation** | A,R | R | C | I | C | I |
| **Testing** | A,I | C | C | R | I | I |
| **Deployment** | A,R | C | I | I | R | I |
| **Maintenance** | A,I | I | I | I | R | I |
| **Training** | A,I | I | I | I | I | I |

The business owner has the signing authority for any changes to the document.

**4. Introduction**

**4.1. Business Goals**

**Organization Goals:** Prilube Industries aims to modernize its inventory management system to address inefficiencies in its manual processes, reduce costs, and enhance operational efficiency. The key goals are:

* Streamline inventory tracking through automation.
* Achieve real-time data access for better decision-making.
* Optimize inventory levels to reduce holding costs and avoid overstocking or understocking.
* Enhance reporting and forecasting capabilities to improve business planning and growth.
* Provide a scalable system that can accommodate future expansion.

**Organization Need:** Prilube Industries needs a more reliable, efficient, and scalable inventory management system to:

* Replace outdated manual tracking systems.
* Reduce errors caused by human intervention.
* Support growth by facilitating larger inventory volumes.
* Increase employee satisfaction by providing easy-to-use tools that reduce time spent on repetitive tasks.

**4.2. Business Objectives**

The business objectives of developing the Inventory Management Application are:

* **Automation**: Automate inventory tracking and reduce reliance on manual processes.
* **Real-Time Updates**: Provide real-time visibility of inventory levels to avoid issues like stockouts or excessive inventory.
* **Cost Reduction**: Achieve a reduction in holding costs by optimizing stock levels.
* **Operational Efficiency**: Streamline workflows to improve employee productivity and satisfaction.
* **Improved Decision Making**: Generate detailed reports and insights for better forecasting and planning.
* **Scalability**: Ensure that the system can handle an increase in inventory volume as the business expands.

**4.3. Business Rules**

**Organization Policies, Procedures, and Rules & Regulations:**

* **Inventory Management**: Prilube Industries must adhere to strict inventory management guidelines, ensuring that stock levels of raw materials and finished goods are maintained within specified thresholds.
* **Data Security**: All employee and customer data must be secured according to industry standards and regulatory requirements.
* **Compliance**: The system must comply with safety regulations related to product handling and inventory tracking (e.g., hazardous materials handling).
* **Barcode Scanning**: All raw materials and products must be tagged with barcodes for real-time tracking and easy identification.
* **Reporting & Forecasting**: Inventory reporting must be automated and customizable for accurate decision-making.

**4.4. Background**

Prilube Industries currently relies on manual processes for inventory management, leading to delays and inaccuracies in tracking stock levels. These inefficiencies increase operational costs, create frustration among employees, and hinder the company's ability to make timely and informed decisions.

The decision to implement an automated inventory management application arose from the need to:

* Improve accuracy and reduce human error.
* Optimize stock levels to avoid the costs of overstocking and understocking.
* Provide real-time visibility into inventory for better decision-making.
* Implement a scalable system to support future growth.

By addressing these issues, Prilube Industries expects to improve operational efficiency, reduce costs, and gain a competitive advantage in the oil and lubrication manufacturing industry.

**4.5. Project Objective**

The primary objective of the project is to design and implement an inventory management application that will:

* **Automate Inventory Tracking**: Eliminate the need for manual tracking and reduce the risk of errors.
* **Real-Time Updates**: Provide accurate and timely data on stock levels, including alerts for low stock or expiring items.
* **Improve Decision-Making**: Allow employees to generate detailed reports and analytics to support business planning and forecasting.
* **Seamless Integration**: The app will be integrated with the company's existing ERP system to ensure smooth operation across all departments.
* **Scalable System**: The system will be designed to grow with the company, supporting increased inventory volumes and additional features in the future.

**4.6. Project Scope**

**What will be developed in this project:** The project will involve the design, development, and deployment of an inventory management application that will streamline tracking, improve accuracy, and provide real-time data to support decision-making.

**4.6.1. In-Scope Functionality:**

* Automation of inventory tracking for raw materials and finished products.
* Real-time updates on inventory levels and automated alerts for low stock or expiry.
* Barcode scanning for efficient stock management.
* Generation of detailed reports and analytics to assist in decision-making.
* User-friendly interface for employees to quickly access inventory data and related documents.
* Integration with external ERP systems for seamless data exchange.
* Mobile application development (initially web-based, later mobile).

**4.6.2. Out-of-Scope Functionality:**

* Development of new ERP systems (focus will be on integrating with existing systems).
* Advanced predictive analytics or AI-based features (these may be considered in future phases).
* Development of features not directly related to inventory management, such as HR or payroll modules.

**5. Assumptions**

* The company will provide timely feedback from stakeholders to ensure requirements are accurately captured.
* Employees will be trained on the new system to minimize resistance and maximize adoption.
* Existing hardware (e.g., barcode scanners) will be compatible with the new system.
* Integration with the current ERP system will be possible without significant custom development.

**6. Constraints**

* **Budget**: The total project budget is capped at Rs. 600,000.
* **Timeline**: The project must be completed within the proposed timeline of 18 weeks (following the Waterfall methodology).
* **Technical Limitations**: The project will initially be web-based, with a mobile app to be developed in future phases.
* **Data Security**: The system must comply with Prilube Industries' data security and regulatory standards.

**7. Risks**

**Technological Risks:**

* **Risk**: Integration with existing ERP systems may encounter technical issues.

**Skills Risks:**

* **Risk**: Difficulty in hiring developers with the required expertise for barcode scanning integration.

**Political Risks:**

* **Risk**: Internal resistance to change from employees who are used to the manual system.

**Business Risks:**

* **Risk**: The project could be canceled due to budget overruns or changes in business priorities.

**Requirements Risks:**

* **Risk**: Inaccurate or incomplete capture of business requirements.

**8. Business Process Overview**

**8.1. Legacy System (AS-IS)**

The legacy system relies on manual processes for inventory management, which are time-consuming and error-prone. Employees manually track stock levels, causing delays and inaccuracies. Important documents like safety data sheets are stored separately, making them difficult to access quickly.

**8.2. Proposed Recommendations (TO-BE)**

The proposed system will automate inventory tracking, providing real-time updates and reducing the risk of errors. It will integrate barcode scanning for easy stock management and allow quick access to critical documents. Employees will be able to access real-time data via a user-friendly interface, improving efficiency and decision-making.

**9. Business Requirements**

The business requirements elicited from stakeholders should be categorized as follows:

**Functional Requirements:**

* Automate inventory tracking for raw materials and finished goods.
* Real-time inventory updates and automated alerts.
* Barcode scanning integration for stock management.
* Reporting and analytics features for better decision-making.

**Non-Functional Requirements:**

* System uptime of 99.9%.
* Response time <2 seconds for most operations.
* Scalable system to support future growth.
* Compliance with industry standards and regulations for data security.

**10. Appendices**

**10.1. List of Acronyms**

* **ERP**: Enterprise Resource Planning
* **UAT**: User Acceptance Testing

**10.2. Glossary of Terms**

* **Barcode Scanning**: A method of tracking inventory by scanning product barcodes for updates.
* **ERP Integration**: The process of linking the inventory management application with the company’s existing ERP system.

**10.3. Related Documents**

* System Design Document
* Requirements Specification Document
* Test Reports and Bug Fixes