Requirement Analysis & Negotiation Document for Agricultural Bidding Platform

Submitted to

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1. Introduction

The Agricultural Bidding Platform is an online marketplace designed to provide smallholder farmers with access to fair markets by allowing them to list their agricultural products for sale through a transparent bidding process. This platform aims to eliminate intermediaries, ensure competitive pricing, and offer both farmers and buyers a secure environment to conduct transactions. The Requirement Analysis & Negotiation Document is created to define, analyze,

and prioritize the system requirements based on the identified needs of stakeholders and system constraints.
The document will outline the core SMART objectives for the platform, categorize the requirements into functional and non-functional requirements, and describe the MoSCoW prioritization to ensure that critical functionalities are implemented first. Additionally, the document highlights the need for negotiation and conflict resolution between stakeholders to ensure the system meets expectations and constraints.

2. Examined Against SMART Objectives

The SMART objectives framework is used to ensure that the Agricultural Bidding Platform meets the following key criteria: Specific, Measurable, Achievable, Relevant, and Time-bound.

2.1 SMART Objective Breakdown

Objective	Description
Specific	The platform should enable farmers to list products, engage in real-time bidding, manage inventory, and set reserve prices. Buyers must be able to place bids and make direct purchases with transparent pricing.
Measurable	The platform's success will be measured by: - Number of active users (target: 1000 concurrent users within the first year). - Number of transactions (target: 500 successful transactions per day). - Platform uptime (target: 99.5% uptime). - User satisfaction ratings via post-transaction surveys.
Achievable	The platform will be developed using widely adopted web technologies (HTML, CSS, PHP, MySQL), integrated with the **SSLCommerz** payment gateway for secure transactions. The scope is feasible within the available resources and timeline.

Relevant	The platform directly addresses issues faced by farmers, such as market access, price transparency, and dependency on intermediaries. It is highly relevant to improving farmers' livelihoods, increasing profitability, and promoting fair pricing in agricultural markets.
Time-bound	The platform will be fully operational within **6 months**, with a phased release: initial basic features in the first 3 months, followed by mobile app compatibility and advanced analytics after 6 months.

These **SMART objectives** ensure that the platform is not only well-defined but also achievable, with measurable success criteria and a clear timeline for deployment.

3. Prioritized by MoSCoW

The MoSCoW prioritization method has been applied to classify requirements into four categories: Must Have, Should Have, Could Have, and Won't Have. This ensures that the most critical features are developed first, while other enhancements can be included in future iterations.

3.1 MoSCoW Prioritization Table

Priority	Requirements
Must Have	- **User Authentication & Roles**: Secure login for farmers, buyers, and admins with role-based access. - **Product Listing & Bidding**: Farmers can list products; buyers can place bids or purchase at fixed prices. - **Payment Integration**: Secure payments via **SSLCommerz**. - **Order Management**: Ability to track orders and deliveries.
Should Have	- **Inventory Management**: Farmers can update stock levels, expiration dates, and product details.

	- **Search & Filters**: Buyers can filter products by category, price, and location. - **Admin Dashboard**: Admins can manage users, approve products, and monitor platform activity.
Could Have	- **Mobile Application**: Android/iOS applications for better accessibility. - **Market Insights**: Reports to help farmers understand market trends, product performance, and pricing.
Won't Have	- **Blockchain Integration**: Not implemented in the initial phase. - **Logistics Management**: Shipping and delivery management will be handled by third-party services, not within the platform's scope.

The **Must Have** requirements ensure the platform's core functionality is delivered initially, while **Should Have** and **Could Have** requirements can be added in subsequent phases based on resource availability.

4. Classified into Two Categories

The system requirements are classified into two major categories: Functional Requirements and Non-Functional Requirements. This classification ensures clarity in the platform's functional capabilities and the system's quality attributes.

4.1 Functional Requirements (FR)

1. **User Authentication & Roles**:
    - **FR1**: Users (farmers, buyers, admins) should be able to create accounts, manage profiles, and log in securely.
    - **FR2**: Role-based access control should be implemented, ensuring farmers, buyers, and admins have different levels of access.
2. **Product Listing & Bidding**:

- **FR3**: Farmers should be able to list products, including descriptions, images, and prices.

- **FR4**: Buyers should be able to place bids on auctioned products or purchase products at a fixed price.

3. **Inventory Management**:

   - **FR5**: Farmers should be able to track stock levels, update product quantities, and monitor product expiration dates.

4. **Search & Filters**:

   - **FR6**: Buyers should be able to filter products by categories, price range, and location.

5. **Payment Integration**:

   - **FR7**: Secure payment processing via **SSLCommerz** should be enabled for all transactions.

6. **Order Management**:

   - **FR8**: The system should allow farmers and buyers to track orders and delivery statuses, with notifications for auction results, purchases, and deliveries.

7. **Admin Dashboard**:

   - **FR9**: Admins should have access to a dashboard to manage user roles, approve product listings, and monitor platform performance.

4.2 Non-Functional Requirements (NFR)

1. **Performance**:

   - **NFR1**: The system should support **1000 concurrent users** and maintain a **response time** of less than **3 seconds** for user interactions.

2. **Security**:

   - **NFR2**: All sensitive data (user credentials, transaction information) must be encrypted using **SSL encryption**.

    - **NFR3**: Secure authentication mechanisms should be implemented for all users to protect personal and financial data.

3. **Scalability**:

    - **NFR4**: The system should be able to scale and support up to **100,000 users** by the end of the first year.

4. **Usability**:

    - **NFR5**: The platform should be intuitive and **easy to navigate**, catering to users with varying technical backgrounds.

    - **NFR6**: The platform should be **mobile-responsive**, ensuring it works seamlessly across devices.

5. **Availability**:

    - **NFR7**: The platform should ensure **99.5% uptime** to guarantee continuous access for users.

5. Monitoring Strategy

5.1 Real-Time Monitoring

- **FR10**: The system will include an **Admin Dashboard** with real-time monitoring to track user activity, system performance, and ongoing auctions.

- **FR11**: Error logs and performance metrics will be tracked to ensure timely detection of any issues or system outages.

5.2 Reporting

- **FR12**: Monthly performance reports will be generated, summarizing platform usage, user activity, transaction volumes, and other key metrics.

- **FR13**: **User feedback** will be collected through surveys and support tickets to ensure continuous improvement.

6. Risk Management

6.1 Identified Risks

1. **Fraudulent Transactions**:
    - **Mitigation**: Implement fraud detection mechanisms and secure payment methods (e.g., **SSLCommerz**).
2. **System Downtime**:
    - **Mitigation**: Use reliable cloud hosting services with **failover capabilities** and regular backups to ensure high availability.
3. **User Adoption**:
    - **Mitigation**: Provide **training materials**, **support**, and **user guides** to encourage platform adoption among farmers.
4. **Payment Processing Issues**:
    - **Mitigation**: Ensure reliable integration with **SSLCommerz** and implement a **dispute resolution system** for payment-related issues.

7. Change Management Process

7.1 Process Overview

- **Change Requests**: Any changes to the system requirements will be logged, assessed for impact, and prioritized based on business value.
- **Impact Analysis**: Each change will be reviewed to understand its potential impact on system performance, user experience, and timeline.
- **Approval**: Changes will be reviewed and approved by key stakeholders before being implemented.

- **Implementation & Testing**: After approval, changes will be implemented and thoroughly tested to ensure that the system functions as expected.

8. Conclusion

This Requirement Analysis & Negotiation Document ensures that the Agricultural Bidding Platform will be developed with a clear understanding of its objectives, stakeholder needs, and project constraints. By examining the requirements against SMART objectives, prioritizing them using MoSCoW, and categorizing them into functional and non-functional groups, we have established a solid foundation for development. The document also addresses monitoring strategies, risk management, and change management to ensure the platform's ongoing success. The next step will involve the detailed design and implementation of the platform, followed by rigorous testing to ensure it meets the expectations outlined here.