

Project Procurement Management System (PPMS)

1. Background & Problem Statement

Currently, the client's procurement process is largely manual and dependent on physical communication and informal price verification. Material requests originate from site workers and are escalated through the Site Engineer to the Procurement Officer (PO), who conducts market surveys via calls or historical prices. Approval is based on internal thresholds, with higher-value requests escalated to Directors. Delivery confirmation and record-keeping are also manually handled.

This process presents challenges including:

- Delays due to manual hand-offs and approvals
- Limited transparency and traceability
- Difficulty auditing prices, vendors, and approvals
- Poor historical data access for reporting and planning
- Risk of errors, duplication, and miscommunication

The proposed Project Procurement Management System (PPMS) will digitize and automate this workflow to improve efficiency, accountability, transparency, and reporting.

2. Project Objectives

- Automate end-to-end procurement workflows
- Enforce approval hierarchies and limits
- Improve visibility into procurement status and costs
- Centralize vendor, project, and material data
- Provide real-time reporting and audit trails
- Ensure accountability at every stage of procurement

3. Target Users / Roles

- **Site Manager / Engineer**
- **Procurement Officer**
- **Director**
- **System Administrator**

Each role will have clearly defined permissions based on responsibility.

4. System Modules

4.1 User & Role Management

- Role-based access control (RBAC)
- Custom role creation and permission assignment
- User activation/deactivation
- Audit logs for user actions

4.2 Project Management

- Create and manage projects
- Assign Site Managers, Procurement Officers, and team members
- View project-level procurement summaries

4.3 Procurement Requests & Delivery Management

- Create and submit procurement requests
- Multi-level approval workflow
- Delivery status tracking (Not Delivered, Ongoing %, Completed)
- Quantity requested vs quantity delivered tracking

4.4 Vendor Management

- Vendor profile management
- Vendor pricing history
- Vendor assignment to procurement requests

4.5 Materials & System Configuration

- Centralized materials/items catalog
- Units of measurement and categories
- Price history per material

4.6 Reporting & Analytics

- Project-based cost reports
- Procurement cycle time reports
- Approval and audit logs

5. Workflow & Approval Process

1. Request Initiation

- Site Manager creates a procurement request for a specific project.

2. Procurement Review

- Procurement Officer receives notification.
- Adds vendor options and pricing.
- Marks request as *Ready for Approval*.

3. **Approval Stage**
 - o Director receives notification.
 - o Reviews items, vendors, and total cost.
 - o Approves or rejects request.
4. **Procurement & Delivery**
 - o Upon approval, Procurement Officer proceeds with vendor engagement.
 - o Site Manager confirms delivery and quantity received.

All actions are logged for audit purposes.

6. Role-Based Features

6.1 Site Manager / Engineer

- Create procurement requests
- Edit unprocessed requests
- View request status
- Update delivery status and received quantities

6.2 Procurement Officer

- Create and edit requests
- Add pricing and vendor details
- Submit requests for approval
- Track delivery status

6.3 Director

- Create and edit requests
- Add pricing and vendors
- Approve or reject requests
- Create and manage projects
- Assign project team members
- View reports and analytics
- User and role management
- View audit trails

6.4 System Administrator

- Create and manage users
- Define roles and permissions
- System configuration (materials, units, categories)
- View system-wide audit logs

7. Scope of Work

In Scope

- Web-based procurement management system
- Backend API development
- Frontend dashboard and user interface
- Database design and implementation
- Role-based access control
- Notifications (email)
- Reporting and analytics
- Deployment and basic training

Out of Scope (Phase 1)

- Mobile application
- Integration with external accounting/ERP systems
- Advanced AI-based price optimization

8. Technology Stack (Proposed)

- **Frontend:** Modern web framework (React JS)
- **Backend:** RESTful API (Python - Flask)
- **Database:** MySQL / PostgreSQL
- **Hosting:** Cloud-based (DigitalOcean / AWS)
- **Security:** Role-based access, audit logs, HTTPS

9. Project Timeline (6 Weeks)

Week 1 – Discovery & Design

- Requirements finalization
- UI/UX wireframes
- Database & architecture design

Week 2 – Core Backend Development

- User management
- Roles and permissions
- Project and material modules

Week 3 – Procurement & Workflow Module

- Request creation and approval workflow
- Vendor and pricing management

Week 4 – Frontend Development

- Dashboards for all roles
- Forms and workflow screens

Week 5 – Reporting, Testing & Refinement

- Reports and analytics
- System testing and bug fixes
- User acceptance testing

Week 6 – Deployment & Training

- Production deployment
- User training and documentation
- Go-live support

10. Milestones & Deliverables

Milestone	Deliverables
Project Kickoff	Requirements & design documents
Frontend Complete	User dashboards & workflows
Backend Complete	Functional APIs & database
Testing Complete	Tested and stable system
Go-Live	Deployed system & documentation

11. Cost Breakdown

SN	Item	Cost (₦)
1	UI/UX Design	150,000
2	Frontend Development	305,000
3	Backend/API Development	320,000
4	Email Subscription for Notification Alerts	135,000
5	System Architecture & Security Design	150,000
6	DevOps, CI/CD & Server Hardening	140,000
7	Hosting & Deployment (Initial)	295,000
8	Domain & DNS Management	45,000
9	Security and SSL Integration	55,000
10	Testing, Documentation & Training	185,000
	Total	1,780,000

12. Payment Structure

- 40% upfront upon project kickoff
- 30% after core system development (Week 3)
- 30% upon final delivery and deployment

13. Agreement Terms

Client Obligations

- Provide timely feedback and approvals
- Provide access to required information and stakeholders
- Make payments according to agreed schedule

Developer Obligations

- Deliver system as defined in scope
- Meet agreed timelines
- Fix identified bugs during warranty period (30 days post-delivery)

Penalties

- Delays caused by client feedback or payment delays are excluded from penalties
- Unjustified delays from developer side may attract negotiated penalties or timeline extensions

14. Acceptance

This proposal serves as a basis for agreement and project execution upon approval by both parties.



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