October 2, 2025

Accounting & Inventory Management System for VM Liwanag Industries Corp.

Prepared for:

Jannel Liwanag - Jalandoni
purchasing@vmliwanag.com
+639171563674

V.M. Liwanag Industries Corp.
www.vmliwanag.com
Block 5 Lot 23, Holland St.,
San Lorenzo South Phase 1B,
Brgy. Malitlit, Santa Rosa, Laguna,
Philippines, 4026

Prepared by:

Mark Joseph Villanueva
mjyv15@gmail.com
+639953231015

1. Executive Summary

V.M. Liwanag Industries Corp. is a trusted provider of healthcare, cleaning, and facility maintenance solutions in the Philippines. With a strong track record serving industries such as aviation, food processing, hospitality, laboratories, and property management, the company has grown to become a recognized partner in ensuring hygiene, safety, and operational efficiency for its clients.

Currently, VM Liwanag uses **QuickBooks (on-premises)** as their accounting system. However, the platform has proven **limitations** for the company's operations due to:

- **Data Size Constraints** – QuickBooks' performance is being impacted by growing transaction volumes.
- Underutilized Modules **– Several features are not being used, adding unnecessary system complexity.**
- Missing Business-Critical Functions **– Key workflows such as** Delivery Receipts **and certain industry-specific compliance needs are not supported.**

Our proposed solution is a **custom Accounting & Inventory Management System**, purpose-built to align with VM Liwanag's real-world workflows. Unlike generic off-the-shelf solutions, the system will integrate **Purchasing, Sales, Inventory, Returns, and Accounting** into a **single, streamlined platform**, with the flexibility to add new features as the company grows.

Business Value for VM Liwanag:

- **Efficiency**: Automate and simplify processes across sales, purchasing, and inventory.
- **Accuracy**: Reduce manual errors and ensure data consistency across functions.
- **Scalability**: Flexible architecture designed to handle up to **50–80 concurrent users** on-premises, future-ready for cloud deployment.
- **Alignment**: Tailored to VM Liwanag's unique business processes rather than forcing the company to adapt to generic software.

2. Project Background & Objectives

Current Pain Points

Through discussions and review of VM Liwanag's operations, we understand the following challenges:

- **QuickBooks Limitations:** The current system struggles with large datasets and lacks support for critical workflows such as delivery receipts.
- **Process Gaps:** Certain industry-specific needs in inventory tracking, compliance reporting, and delivery documentation are missing.
- **Fragmented Operations:** Staff often rely on spreadsheets or manual processes outside of QuickBooks, leading to duplicate data entry and inefficiencies.
- **Scalability Constraints:** QuickBooks on-prem is not optimized for expanding user bases or complex integrations.

Business Objectives

The new system will aim to:

- **Automate key business processes:** Purchasing, Sales, Returns, and Accounting integrated seamlessly.
- **Streamline Inventory Management:** Real-time tracking of stock levels, warehouse adjustments, and supplier linkages.
- **Improve Compliance & Reporting:** Generate industry-specific reports and ensure adherence to government requirements (e.g., CWT compliance).
- **Enhance Usability:** Provide a modern, intuitive UI (React + Material UI) for faster adoption across staff.
- **Future-Proof the Platform:** Flexible deployment options (LAN or Azure Cloud) and modular design for feature expansion.

3. Scope of Work

The proposed **Accounting & Inventory Management System** will cover the following functional areas:

Epics / Modules

- **Role-Based Access Control (RBAC) + Security Logs**
  - User login, authentication, and permission levels for staff and management.
  - Audit trail for sensitive actions (add/edit/delete).
- **Product Catalog + System Administration**
  - Centralized catalog for products, categories, suppliers, and pricing.
  - Admin tools for tax rates, branches, and configuration.
- **Inventory Management**
  - Real-time stock tracking across warehouses.
  - Adjustments, transfers, and reorder alerts.
- **Purchasing Module**
  - Supplier management, Purchase Orders, supplier billing.
  - Payment scheduling, voucher preparation, bank confirmation.
- **Sales Module**
  - Customer onboarding/approval workflows.
  - Sales Orders, Delivery Receipts, invoicing, and collections.
- **Returns Module**
  - Customer return requests, approvals, documentation.
  - Stock re-entry and refund/replacement processing.
- **Accounting & Compliance**
  - Accounts Payable & Accounts Receivable.
  - General Ledger integration.
  - Expanded Withholding Tax (CWT) support for compliance.
- **Reporting & Dashboards**

    - Financial statements, transaction summaries, and operational dashboards.
    - Export capability (Excel, PDF).

Inclusions

- Development of all modules listed above.
- Modern web-based UI (React + Material UI).
- On-premise LAN deployment (default) with option for Azure hosting.
- Documentation: Admin Guide + User Guide.
- Training session for staff.

Exclusions

- Payroll or HR modules.
- 3rd party integrations (e.g., ERP, e-commerce platforms).
- Hardware (LAN server, workstations, etc.) – to be provided by client.

4. Technical Approach & Architecture

Proposed Technology Stack

- **Frontend:** React + TypeScript + Material UI (modern, responsive interface).
- **Backend:** Node.js + Fastify (scalable, lightweight framework).
- **Database:** Microsoft SQL Server (robust relational data model with strong reporting capabilities).
- **Hosting Options:**
    - On-Premise LAN Deployment (default for cost savings).
    - Azure Cloud PaaS (App Service + SQL Database + Storage) for future scalability and remote access. (Not in scope, but the application will be cloud ready)

System Architecture Overview

1. Frontend (React) communicates securely with Backend API (Fastify/Node.js).
2. Backend enforces business logic, RBAC, and integrates with SQL Server for transactions.
3. Reports generated from SQL views + backend services, exportable to Excel/PDF.
4. Deployment Models:
    - On-Prem LAN Server – All staff access system over local intranet.
    - Azure Cloud – Staff access system remotely via secure web portal. (Not in scope, but the application will be cloud ready)

Scalability & Security Considerations

- System sized for **50–80 concurrent users** (beyond current <15 staff).
- RBAC ensures role-based permissions and controlled access.
- Audit logs track all user activities for accountability.
- SQL Server indexing & partitioning for handling larger data volumes (a known issue in QuickBooks).
- Optional Azure deployment provides high availability, automatic backups, and disaster recovery.

5. Deliverables

The project will provide the following outputs:

Software Deliverables

- **Fully functional Accounting & Inventory Management System** with all agreed modules:
    - RBAC + Security Logs
    - Product Catalog + Admin Tools
    - Inventory Management
    - Purchasing Module
    - Sales Module (with Delivery Receipts)
    - Returns Module
    - Accounting & Compliance
    - Reporting & Dashboards

Documentation

- **User Guide** – step-by-step usage for staff (Purchasing, Sales, Inventory, etc.).
- **Admin Guide** – configuration, security roles, and system settings.

Training

- One (1) training session (on-site or virtual) for up to 20 staff members.
- Recording/slides provided for future staff onboarding.

Support & Warranty

- **3-month warranty** (bug fixes and stabilization included).
- Optional ongoing **maintenance contract** (monthly/annual retainer to be discussed).

6. Development Timeline & Milestones

Estimated delivery: **14 weeks total**
Effort: ~635 hours across 2 developers (Solution Architect + Junior Developer).
Approach: Agile milestones, client reviews and signs off at each stage.

Milestone	Scope Delivered	Timeline	Payment (₱)
M1 – Project Kickoff & Design	Requirements workshops, database schema, UI mockups	Weeks 1–2	20,000
M2 – RBAC + Audit Logs	User login, roles, access permissions, audit trails	Weeks 3–4	22,000
M3 – Product Catalog + Admin	Product master data, categories, suppliers, system config	Weeks 5–6	33,000
M4 – Purchasing Flow	Purchase Orders, supplier billing, vouchers, bank confirmation	Weeks 7–8	28,000
M5 – Sales Flow	Customer onboarding, Sales Orders, Delivery Receipts, invoicing	Weeks 9–10	28,000
M6 – Returns Module	Return requests, approvals, stock re-entry, refunds/replacements	Week 11	15,000
M7 – Accounting & Compliance	AP/AR, General Ledger, CWT compliance	Week 12	20,000
M8 – Reporting & Dashboards	Reports, financial statements, Excel/PDF export	Week 13	19,000
M9 – Final Testing & Training	QA, bug fixes, staff training, go-live support	Week 14	5,000
Total		**14 weeks**	**₱190,000**

7. Costing & Payment Terms

Project Cost

The total project cost is **₱190,000**, covering the design, development, testing, training, and deployment of the Accounting & Inventory Management System.

We recommend a **milestone-based payment approach**, where VM Liwanag only pays once each agreed deliverable is completed and accepted. This ensures full transparency and minimizes financial risk.

Deployment Options

- **Option A – On-Premise LAN Server**
    - Project Cost: ₱190,000 (milestone-based payments)
    - No recurring monthly fees (client provides server hardware & IT support).
- **Option B – Azure Cloud (PaaS)**
    - Project Cost: ₱190,000 (milestone-based payments)
    - Additional approximately ~₱8,000/month (App Service, SQL Database, Storage).
    - Recommended for scalability, remote access, and built-in backups.

Payment Schedule (Milestone-Based)

- **M1 – Kickoff & Design**: ₱20,000
- **M2 – RBAC + Audit Logs**: ₱22,000
- **M3 – Product Catalog + Admin**: ₱33,000
- **M4 – Purchasing Flow**: ₱28,000
- **M5 – Sales Flow**: ₱28,000
- **M6 – Returns Module**: ₱15,000
- **M7 – Accounting & Compliance**: ₱20,000
- **M8 – Reporting & Dashboards**: ₱19,000
- **M9 – Final Testing & Training**: ₱5,000

- **Total Project Cost**: ₱190,000

8. Team & Roles

The project will be delivered by a focused **two-person team**, ensuring efficiency, accountability, and direct collaboration with VM Liwanag's stakeholders.

Key Personnel

- **Mark Joseph Villanueva (Solutions Architect & Lead Developer)**
    - Role: Overall system design, backend architecture, database schema, and deployment strategy.
    - Responsibilities:
        - Requirements validation and design workshops.
        - Core backend and database development.
        - Integration of modules across purchasing, sales, accounting, and inventory.
        - Client presentations, milestone delivery oversight, and deployment setup (on-prem or cloud).
- **Jean Mikael Mariano (Junior Developer)**
    - Role: Development of both frontend and backend features under the guidance of the Solutions Architect.
    - Responsibilities:
        - Implementing user interfaces using React + Material UI.
        - Contributing to backend services (Node.js + Fastify, TypeScript).
        - Writing APIs, validations, and integration logic.
        - Supporting database queries and reports.
        - Conducting unit testing and documentation support.

9. Client Team Involvement

For successful project execution, collaboration with VM Liwanag's staff will be crucial. While several employees will provide subject-matter expertise, **Mrs. Jannel (Purchase/Finance)** will act as the **primary contact person and Product Owner** for the project. All requirements, clarifications, and approvals will be coordinated through her.

Primary Contact / Product Owner

- **Jannel – Purchase/Finance**
    - Role: **Product Owner & Contact Person**
    - Responsibilities: Consolidate requirements from different departments, validate milestones, prioritize feedback, and approve deliverables on behalf of VM Liwanag.

Supporting Staff (Process Contributors)

Function	Employee	Role in the Project
Inventory	Jasson	Provide inventory workflows, validate warehouse modules.
Invoicing/Billing	Ina	Share invoicing/billing formats, validate sales-finance flow.
Treasury/Finance	Fe	Define treasury operations, payment scheduling, bank processes.
Sales – Manila	Jesse	Validate customer onboarding, delivery receipts (Manila).
Sales – Laguna	Hanz	Provide Laguna sales workflows, regional reporting input.
Sales – Batangas/Cavite	Bella	Share Batangas/Cavite sales workflows, validate regional needs.
Sales Coordinator – Manila/Laguna	Mae	Ensure inter-branch coordination requirements are met.
Sales Coordinator – Cavite/Batangas	Lala	Validate sales coordination and reporting for Cavite/Batangas.

Additional Access Roles

- Sales, Purchase, Warehouse, and Finance “Additional Access” staff will assist in **system testing, data validation, and end-user feedback** during UAT.

10. Definition of Terms

To ensure clarity, the following terms are used throughout this proposal:

- **Product Owner** – The client-side representative responsible for consolidating requirements, prioritizing feedback, and approving deliverables. For this project, this role will be held by **Jannel (Purchase/Finance)**.
- **Epic** – A high-level functional area of the system (e.g., Inventory Management, Sales Flow, Accounting). Each epic is broken down into smaller features.
- **Feature** – A specific capability within an epic (e.g., Purchase Order creation, Delivery Receipts, Reports Export).
- **Module** – A grouping of related features delivered as part of the software (e.g., Sales Module, Finance Module).
- **Milestone** – A project phase tied to the delivery of a specific set of features or modules. Each milestone is linked to a payment schedule.
- **UAT (User Acceptance Testing)** – The stage where VM Liwanag staff will test the system against real scenarios to validate accuracy and usability before go-live.
- **On-Premise Deployment** – Hosting the system on a server within VM Liwanag’s internal network. All users must be connected to the LAN to access the system.
- **Cloud Deployment** – Hosting the system on Microsoft Azure, enabling remote access, built-in backup, and easier scalability.
- **RBAC (Role-Based Access Control)** – A security approach where users are given specific roles (e.g., Finance, Sales, Admin), each with defined permissions.
- **Audit Logs** – System records of key actions (logins, data updates, approvals) to ensure accountability and compliance.
- **Support & Warranty** – Period after go-live where bug fixes and adjustments are provided without additional cost.