



Non Functional Requirement

Non-Functional Requirements Document (NFRD)

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Role: Business Analyst

(How the System Should Perform and Behave)

The Non-Functional Requirements (NFRs) describe the **quality attributes** and **operational expectations** of the PMOS.

They define **how the system should perform, behave, and be maintained** to ensure reliability, usability, and scalability in a **small-to-medium manufacturing environment** in Vietnam.

Category: Performance

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|--|--|--|
| The system shall load dashboards, reports, and data entry forms within 3 seconds under normal operations. | To ensure quick decision-making and prevent delays in production monitoring. | Response time shall not exceed 3 seconds for at least 95% of user interactions during working hours. |

Category: Usability

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|---|------------------------------------|--|
| The system shall have a simple, intuitive interface suitable for users | To reduce training time and ensure | New users shall be able to perform key tasks (data entry, report viewing) within 15 |

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|---|---|--|
| with minimal digital experience (factory staff, HR officers, QC staff). | smooth adoption by non-technical users. | minutes of hands-on training, and complete daily input in <5 minutes per shift. |

Category: Security

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|--|---|--|
| The system shall require secure login authentication and role-based access control . | To prevent unauthorized access to HR, production, or QC data. | All users must log in with unique credentials; access rights limited by role. |
| The system shall encrypt all stored data and ensure secure communication (HTTPS). | To maintain confidentiality and data integrity. | Sensitive data (e.g., payroll or HR attendance) must be encrypted both in transit and at rest. |

Category: Reliability

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|--|--|---|
| The system shall maintain at least 99% uptime during factory operating hours (Mon–Sat, 7:00–18:00). | To ensure continuous data tracking and prevent loss of production records. | System uptime ≥ 99% monthly . |
| The system shall auto-save every 2 minutes during data input. | To prevent data loss due to unexpected disconnection or power failure. | System logs show last auto-save <2 minutes prior to interruption. |

Category: Scalability

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|---|---|---|
| The system shall support a doubling of concurrent users and data volume without significant performance degradation. | To allow for factory expansion (more lines, more operators) without changing system architecture. | System shall handle 2× current data load while keeping response time \leq 3 seconds. |
| The system shall allow integration with new production lines or additional HR data sources. | To ensure long-term usability as the business grows. | New line integration shall take <3 hours with no downtime. |

Category: Maintainability

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|--|---|--|
| The system shall be easy to update or configure without disrupting production. | To minimize downtime and cost during software changes. | Minor updates or configuration changes shall take <30 minutes and require no full system shutdown . |
| The system shall log all configuration and update activities. | To track maintenance history and ensure accountability. | All changes are automatically recorded in a system log accessible to IT support. |

Category: Compliance

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|---|--|--|
| The system shall comply with Vietnamese data protection regulations (Decree 13/2023/NĐ-CP) and labor data confidentiality rules. | To ensure compliance and protect personal employee data. | Verified by internal audit or IT vendor checklist. |
| The system shall follow ISO 9001:2015 quality management principles for traceability and reporting accuracy. | To align with local manufacturing audit and reporting standards. | Internal QC audit demonstrates compliance once per year. |

Category: Portability & Environment**

| Requirement | Why It Matters (Business Reason) | Measurable Criteria |
|---|---|--|
| The system shall be deployable both on local server (LAN) and cloud environment . | To accommodate different infrastructure capacities of SMEs. | Deployment can be switched between on-premise and cloud within 1 business day . |
| The system shall run on common devices: Windows PC, Android tablet, or low-cost mobile. | To ensure affordability and accessibility for all users. | No additional hardware investment required beyond current setup. |

Assumptions

1. Users will have access to **stable internet or LAN connection** to support real-time data synchronization.
2. Staff members will complete **basic training sessions (2–3 hours)** to use the PMOS effectively.
3. The hosting service (Google Cloud, Odoo server, or equivalent) will maintain the required uptime and security levels.
4. Departments will **consistently use the digital system** for production tracking instead of reverting to manual Excel or paper records.
5. Tablets or mobile devices used for data entry will be maintained and functional.
6. The **role-based access control policy** will be enforced to maintain data integrity and privacy.
7. The system will be **scalable** for at least two years without requiring major infrastructure changes.
8. Regular **system maintenance and updates** will be scheduled (monthly or quarterly) to sustain performance.
9. Compliance with Vietnamese labor, data, and quality standards will be **reviewed annually**.