Project Charter

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Project Title: Production Management Optimization System (PMOS) for SMEs

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Role: Business Analyst

Project Purpose

Many small and medium-sized manufacturing enterprises (SMEs) in Vietnam rely on **manual production tracking, Excel-based planning, and paper-based reports**.

This results in **low data accuracy, poor communication between HR and production departments, delayed decision-making, and frequent production downtime**.

The purpose of this project is to **digitalize and optimize the production management workflow** by introducing a lightweight, cost-effective system that integrates:

- Production scheduling and performance monitoring,
- HR attendance and workforce allocation,
- Real-time reporting and KPI tracking (OEE, productivity, defect rate).

The project aims to **reduce manual work, improve efficiency, and enable data-driven decision-making** — without requiring heavy ERP infrastructure.

Problem Statement

SME factories are facing **inefficiency in managing production operations** due to disconnected systems and manual processes.

Supervisors use Excel to plan production, operators record results on paper, HR tracks attendance separately, and reports reach management with delays of 1–2 days.

This fragmented workflow leads to:

- Unclear visibility into machine and operator performance,
- Inaccurate shift planning and payroll misalignment,
- Delayed responses to downtime or bottlenecks.

Improving this process is critical to **reduce idle time, improve data accuracy, and enhance coordination across departments.**

Project Goals / Objectives

1. **Automate Production Data Tracking:**

   Implement a Production Management System (PMS) that captures machine output, downtime, and defects in real time within 60 days.

2. **Integrate HR Attendance and Production Scheduling:**

   Link HR attendance data directly with production shifts to ensure accurate workforce allocation.

3. **Reduce Manual Reporting Effort:**

   Automate daily and weekly reports to save at least 2 hours of manual work per day for supervisors.

4. **Increase Data Accuracy:**

   Improve data consistency across HR, Production, and QC departments by at least 25%.

5. **Enhance Decision-Making with KPI Dashboards:**

   Provide real-time dashboards tracking productivity, downtime, and defect rate using Power BI or Google Data Studio.

6. **Support Cost Efficiency:**

   Implement the solution using existing factory hardware and open-source or low-cost software tools.

In Scope

1. **Digital Production Data Collection**
    - Replace paper-based tracking with digital input (tablets or mobile forms).
    - Record production output, downtime, and reasons automatically in PMS.
2. **Integration with HR Attendance**
    - Sync daily attendance from HR to assign shifts automatically.
    - Auto-link attendance records with operator performance.
3. **Automated Reporting and Dashboards**
    - Generate daily performance reports and OEE dashboards in real time.
    - Use BI tools for visualization and trend tracking.
4. **KPI Definition and Monitoring**
    - Define key production KPIs: OEE, downtime ratio, defect ratio, on-time completion rate.
    - Track and analyze performance over time.
5. **Training and Adoption Support**
    - Train key users (supervisors, production managers) to ensure proper usage.
    - Provide short user manuals for local teams.

Out of Scope

1. Replacing existing ERP or payroll systems.
2. Purchasing new production machinery or IoT sensors (only existing equipment used).
3. Implementing predictive maintenance or AI features (future phase).
4. Integrating external supplier systems.
5. Conducting full-company digital transformation (limited to pilot factory).

Key Stakeholders

Role	Responsibility
Factory Manager	Oversees project outcomes, ensures alignment with business goals.
Production Supervisor	Provides process input, tests digital reporting tools.
HR Officer	Manages attendance integration and shift data accuracy.
Quality Control (QC)	Validates production data and ensures consistency in reports.
IT Department / Vendor	Develops PMS integration and dashboard setup.
CEO / SME Owner	Approves project budget and validates ROI.

Timeline

Phase	Start Date	End Date	Deliverables
Requirement Gathering & Analysis	Jul 1, 2025	Jul 15, 2025	BRD, Process Diagrams, Stakeholder Interviews
System Design & Setup	Jul 16, 2025	Aug 15, 2025	PMS prototype, HR integration setup
Pilot Implementation	Aug 16, 2025	Sep 15, 2025	Live testing on one production line
Training & Feedback	Sep 16, 2025	Sep 30, 2025	User manuals, training reports
Full Rollout	Oct 1, 2025	Oct 31, 2025	Dashboard launch, monitoring

Budget Estimate – Practical for Vietnamese SMEs (2025)

Item	Detailed Description	Estimated Cost (VND)
1. Core Production Management System	Configure modules for shift management, work stages, downtime,	15 – 25 Million

Item	Detailed Description	Estimated Cost (VND)
(PMS) Setup	and output using Google AppSheet or Odoo Community.	
2. HR Attendance & Data Connection	Synchronization of HR attendance Excel / Google Sheet files with the shift schedule table in the PMS. Uses AppScript / basic APIs.	5 – 10 Million
3. KPI Dashboard & Reporting (Power BI / Data Studio)	Creation of KPI dashboards: output, OEE, downtime, defect, productivity. Uses free tools (Google Data Studio) or Power BI (free).	5 – 7 Million
4. User Training (2–3 Sessions)	Usage instruction for managers, shift leaders, and data entry staff. Includes internal documentation and training videos.	3 – 5 Million
5. Data Input Support Devices (Optional)	Purchase 1–2 affordable Android phones or tablets (Redmi, Realme, Samsung A) for data entry on the shop floor.	4 – 6 Million
6. Maintenance & Technical Support (First 3 Months)	Support for bug fixing, dashboard fine-tuning, and ensuring system stability.	3 – 5 Million
TOTAL ESTIMATE (Pilot 1 Factory / 1 Shop Floor)	—	≈ 35 – 55 Million VND (~1,400 – 2,200 USD)

Success Criteria

- ✅ 70% reduction in manual reporting time.
- ✅ 25% improvement in production data accuracy.
- ✅ Real-time performance dashboards visible to management.
- ✅ Reduction in downtime response time by 30%.
- ✅ Improved cross-department collaboration and data transparency.