Feasibility and Requirement Analysis

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1. Feasibility Assessment Document

Feature / Solution	Budget Feasibility	Technology Feasibility	Timeline Feasibility (May – Sept)	Notes / Tools Available in Vietnam
Real-time Production Tracking	✅ Affordable; tablets and mobile data input apps cost **8–12 million VND** per line.	✅ Supported by low-code tools like **Google AppSheet**, **Odoo**, or **Zoho Creator**.	✅ Feasible within 3 months (pilot setup & training).	*Tools:* AppSheet, Odoo Manufacturing. *Hardware:* Samsung Tab A, Lenovo M10.
HR Attendance Synchronization	✅ Low-cost integration between HR Excel and PMOS system.	✅ HR tools and biometric data exports compatible with PMOS.	✅ Feasible within 6 weeks (testing and synchronization).	*Compatible with:*Ronald Jack, Wise Eye, Face ID HR systems.
Automated Alerts for Low Output / Downtime	✅ Uses **Zalo API / Email Alerts**, negligible cost.	✅ APIs and triggers supported in AppSheet, Google Script, or Odoo.	✅ Feasible within 4–6 weeks.	*Providers:* Zalo Cloud API, Twilio (SMS), Gmail Script.
KPI Dashboard (OEE, Productivity, Defect Ratio)	✅ Free via **Power BI** or **Google Data Studio**integration.	✅ Supports data link from PMOS to cloud dashboard.	✅ Feasible; dashboard design and testing by September.	*Tools:* Power BI, Google Data Studio, Metabase.
Downtime & Defect Logging via Mobile App	✅ Tablets available locally under **10 million VND/unit**.	✅ Fully supported by low-code tools with offline mode.	✅ Feasible within 2 weeks after setup.	*Tools:* AppSheet, Glide App, Odoo Mobile App.
Centralized Data Access	✅ Affordable cloud hosting	✅ Cloud or LAN-based database	✅ Feasible within 8 weeks including pilot.	*Cloud:* Google Cloud, Mắt Bão, AWS Vietnam.

Feature / Solution	Budget Feasibility	Technology Feasibility	Timeline Feasibility (May – Sept)	Notes / Tools Available in Vietnam
(HR–Production–QC)	under **2–3 million VND/month**.	(Google Cloud, Viettel Cloud).		
Automated Daily Report Generation	✅ Free via AppSheet or Odoo scripting.	✅ No-code automation supported (Google Script / Odoo).	✅ Feasible within 1 month of pilot start.	*Methods:* Power BI auto-refresh, Google AppScript scheduler.
Role-based Access Control	✅ Built-in with AppSheet, Odoo, and Google Workspace.	✅ Mature access control and permission settings available.	✅ Immediate setup.	*Tools:* Google Workspace roles, Odoo user management.

2. Critical Requirements and Trade-Offs / Risks

Requirement	Critical (Must-Have)?	Reason / Value
Real-time Production Tracking	✅ Yes	Essential for accuracy and real-time control of production lines.
HR Attendance Synchronization	✅ Yes	Ensures correct workforce allocation and reduces idle time.
Automated Alerts (Low Output / Downtime)	✅ Yes	Enables proactive action to prevent productivity loss.
Downtime & Defect Logging (Mobile Input)	✅ Yes	Reduces paper usage and error, allows instant root-cause tracking.
KPI Dashboard (OEE, Productivity, Defect Ratio)	🟡 Should Have	Provides insights for data-driven decisions and continuous improvement.
Centralized Data Access (HR–Production–QC)	✅ Yes	Promotes cross-department collaboration and unified data integrity.
Automated Daily Reports	🟡 Should Have	Saves time, eliminates manual reporting delay.

Trade-offs / Risks

Risk / Trade-off	Impact	Mitigation Strategy
Staff need time to adapt to digital tools.	Temporary slow adoption.	Conduct short (2-hour) training sessions by department.
Internet connectivity issues may affect real-time data sync.	Possible minor data delays.	Enable offline mode and auto-sync on reconnection.
KPI formulas and dashboards may require maintenance.	Possible data inconsistency.	Schedule monthly data audits and validation by IT.

Risk / Trade-off	Impact	Mitigation Strategy
Tablet/machine hardware failure.	Input delay.	Keep 1 backup tablet per production area.
Incorrect KPI setup or thresholds.	False alerts or misleading trends.	Calibrate KPI metrics quarterly.

3. Review & Prioritize Requirements (MoSCoW Method)

Category	Description / Features	Priority
M – Must Have	• Real-time Production Tracking • HR Attendance Integration • Downtime & Defect Logging (Mobile) • Automated Alerts (Low Output / Downtime) • Centralized Data Platform	🟢 **Essential for system operation**
S – Should Have	• KPI Dashboard (OEE, Productivity, Defect Ratio) • Automated Report Generation	🟡 **Enhances performance & decision-making**
C – Could Have	• Predictive Maintenance via IoT sensors • Advanced Analytics or AI-based Scheduling	🔵 **Future upgrades for optimization**
W – Won't Have (Phase 1)	• Integration with external ERP or supplier systems	⚪ **Deferred for later implementation**

Implementation Roadmap

1. **Phase 1 (May–June):** Pilot deployment on 1 production line – enable data input, HR sync, and downtime tracking.
2. **Phase 2 (July–August):** Add KPI dashboards and automatic reporting.
3. **Phase 3 (September):** Full rollout with staff training and performance evaluation.

4. Summary Feasibility Rating

Feasibility Type	Status	Assessment Summary
Budget Feasibility	✅ **Feasible**	Affordable for SMEs; full system under **100 million VND**.
Technical Feasibility	✅ **Feasible**	Tools available locally; low-code & cloud-ready.
Timeline Feasibility (May–Sept)	✅ **Feasible**	Implementation and pilot fit within 4 months.
Operational Feasibility	✅ **Feasible**	Staff capable after brief training; compatible with factory workflows.
Maintenance Feasibility	✅ **Feasible**	Minimal upkeep via cloud automation and role-based admin.

5. Recommendation

➡️ **Deploy PMOS using low-code and locally available tools (AppSheet / Odoo / Power BI)**.

➡️ **Start small (pilot 1 production line)**, measure improvement, then scale gradually.

➡️ Focus first on **Must-Have** requirements to ensure operational success.

➡️ Introduce **KPI dashboards and reporting automation** in Phase 2 for added value.

➡️ Conduct **short digital literacy training** to ensure smooth adoption across teams.

💡 Conclusion

The **PMOS implementation is fully feasible** in terms of budget, technology, and timeline for Vietnamese SMEs.

It delivers **digital transformation benefits**—real-time production visibility, accurate data, and faster decisions—without the heavy cost or complexity of ERP systems.

This analysis confirms that **PMOS can be deployed and sustained** using existing factory infrastructure, supported by affordable digital tools available locally.