MSME Digital Transformation

BayaSense

How BayaSense helped an MSME with mixed-vintage equipment achieve real-time operational visibility and fast ROI—without a traditional MES.

The Context

Many MSMEs operate plants where new CNC machines coexist with legacy equipment—often from different OEMs and generations. While management understands the need for digital transformation, they face real constraints:

- Machines with limited or no digital interfaces
- No common automation standard
- Manual reporting and Excel-based tracking
- Fear of high capex, long deployments, and production disruption

This case study demonstrates how BayaSense enabled a practical, phased Industry 4.0 journey in such a brownfield environment.

Client Profile

Industry: Precision engineering / Auto components

Company Size: MSME

Shop Floor Reality:

- CNC machines + conventional machines (10–20 years old)
- Multiple OEMs, mixed controls

Digital Baseline:

- No MES
- Manual shift & energy reporting

The Business Challenge

The client wanted to improve productivity, energy efficiency, and decision-making, but lacked answers to basic operational questions:

- Which machines are actually utilized—and when?
- Where is time being lost due to idle or unplanned downtime?
- How much energy does each machine really consume?
- Which problems repeat shift after shift?

Without reliable data, decisions were reactive and experience-driven, limiting scalability and competitiveness.

The BayaSense Solution

Phase 1 Scope

- Machine status monitoring (Run / Idle / Down)
- Machine-level energy monitoring
- Shift-wise and daily operational dashboards

Architecture Highlights

- Edge devices connected to selected machines
- Sensors and signals captured without modifying machine logic
- Secure edge-to-cloud data flow
- Web dashboards for supervisors and management

No PLC reprogramming. No production stoppage. No MES replacement.

Business Impact : Within the first 90 days

- 6–8% improvement in machine utilization
- 12–15% reduction in idle energy consumption
- Faster identification of chronic downtime issues
- Improved shift discipline and accountability
- Management confidence to scale digital initiatives