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Use cases

# Agentic AI for manufacturing: uptime, energy and procurement

Move the decision earlier — to where intervention is still cheap. Catch failing equipment from its energy signature, reconcile procurement continuously, and govern the software on the line.

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**EXECUTIVE SUMMARY**

Manufacturing value is won or lost on uptime, energy cost and supply-chain accuracy — all problems where the decision arrives too late. This use-case paper maps Humael to the plant: Urja catching failing equipment and cutting energy cost through appliance-level detection, Samiksha keeping procurement and inventory reconciled with evidence attached, and Medha governing the software that runs the line — each moving the decision earlier, to where intervention is still cheap.

## The common thread: act earlier

Most manufacturing losses share a shape: by the time the problem is visible, it is expensive. A bearing fails after the line stops. A pricing mismatch surfaces after the invoice clears. A software regression appears after the shift. Agentic AI's value in the plant is moving each of these decisions earlier — to the point where intervention is still cheap.

## Uptime and energy (Humael Urja)

**Humael Urja** uses non-intrusive load monitoring to infer equipment health from its energy signature, catching a degrading motor or chiller before it costs a line stoppage — without instrumenting every device. The same system gives real-time energy visibility and forecasting, cutting one of manufacturing's largest controllable costs and shaving peak demand charges.

## Procurement and inventory accuracy (Humael Samiksha)

**Humael Samiksha** runs a continuous three-way match across contract, PO and invoice — and the same logic reconciles inventory against what was ordered and received. Discrepancies are flagged with evidence attached the moment they appear, recovering margin and keeping procurement audit-ready instead of reconciling weeks late on a sample.

## Govern the software on the line (Humael Medha)

Modern plants run on software, and ungoverned change is downtime risk. **Humael Medha** runs the software lifecycle with human-in-command governance — versioned, reproducible, with high-risk changes gated and audited — so the systems that run production change safely.

**Earlier**
fault detection from energy signatures

**Lower**
energy cost and peak demand

**Continuous**
procurement and inventory reconciliation

**Governed**
change to line-critical software

## Deployment

Plants run sensitive OT networks; every Humael product deploys on-premise alongside existing systems, so the data and control stay where they must.

## Conclusion

Uptime, energy and procurement are not three initiatives but one principle applied three ways: surface the decision while it is still cheap to make. Governed, agentic AI gives a manufacturer that earlier signal across the plant, with the auditability operations and finance both require.