

Unlocking the Hidden Factory

Multimodal Edge Intelligence for Industrial Process Optimization

Spazio IT

The Modern Manufacturing Baseline



Hard Automation

Millions invested in state-of-the-art machinery and manufacturing transformations.



Autonomous Logistics

Deployment of mobile robots and automated material handling.



IT & Digital Foundation

Internal infrastructure pushes toward digitalization and foundational ERP/MES systems.

The physical and digital foundations are fully established.

The Automation Paradox

PROBLEM STATEMENT

Despite significant capital investments, efficiency gains are plateauing. Why?

INDUSTRY MONITOR

900



Because **standard digital systems only measure what machines do.**

They remain completely blind to the **human ingenuity, undocumented workarounds, and implicit workflows** that actually keep the line running.

The Hidden Factory



The Blueprint:

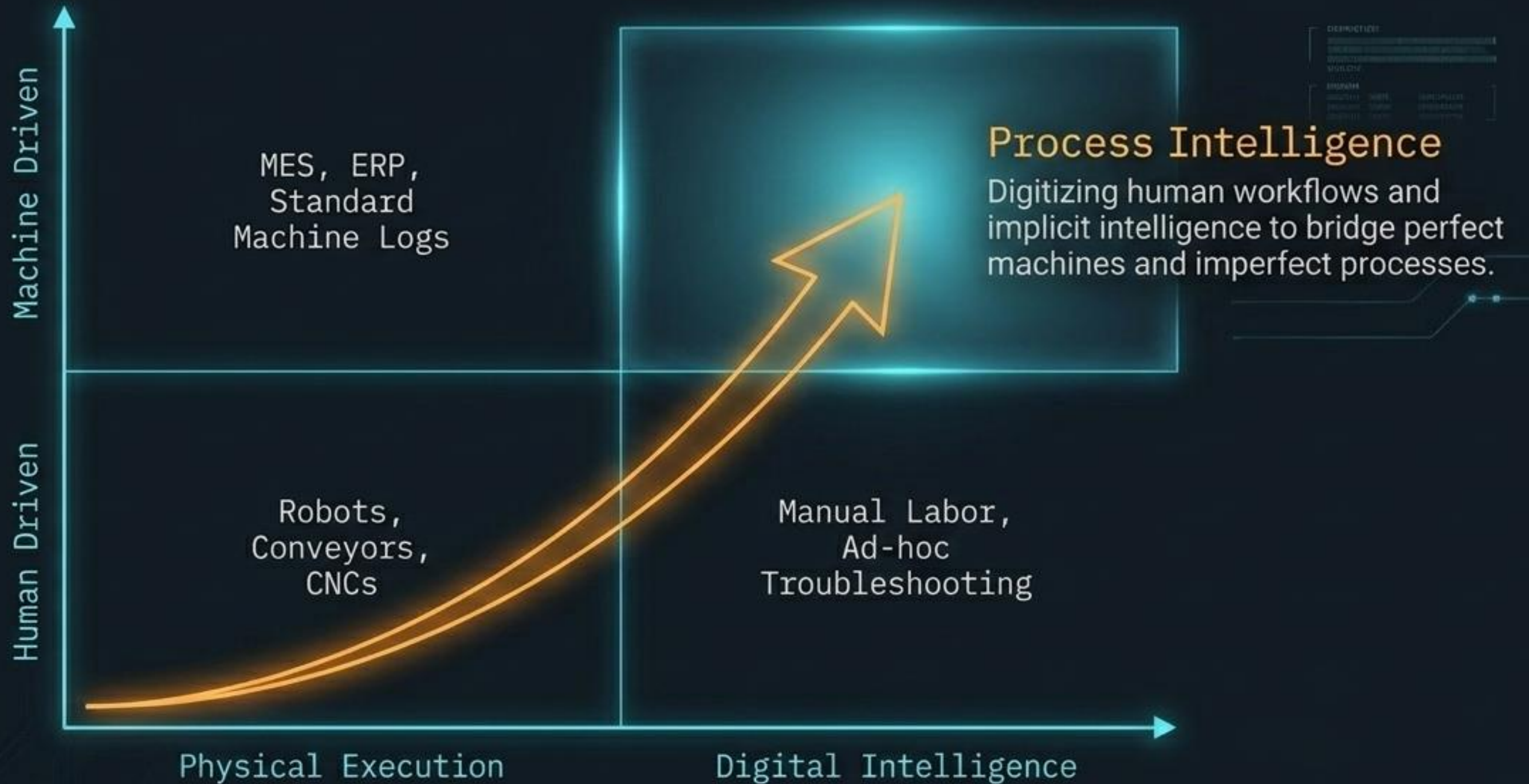
Scheduled machine cycles, theoretical throughput, ERP routing, formal SOPs.



The Reality:

- Undocumented human workflows and manual overrides
- Implicit know-how and tribal maintenance shortcuts
- Micro-inefficiencies and unrecorded waiting times
- Verbal handovers and lost operational knowledge

The Missing Layer of Automation



Bridging the Divide Without Disruption



IT Infrastructure
(ERP, MES, Data Lakes)

The Hidden Factory
(Human movement trails,
verbal exchanges)

Hard Automation
(Physical machines, AGVs,
assembly lines)

Process Intelligence deploys directly to the floor. It observes the gap between your physical machines and your IT layer—complementing existing automation, modifying nothing.

The Multimodal Edge Engine

Eyes: SI-Watcher –
Video analysis recognizing
activities, downtime, and
operational sequences.

Ears: SI-Listener –
Audio transcription
isolating floor
conversations in noisy
environments.

**Nervous System:
Machine Logs** –
Direct integration with
MES/ERP and
factory machinery.

**Multimodal Fusion
Engine & Local RAG**
(Semantically indexing SOPs)



100% ON-PREMISE. ZERO CLOUD.
Sensitive data never leaves the plant.

Fusing Fragmented Data into Truth

14:02:33

Operator says: "Machine 4 is jammed again."



Human intervention detected.



MES logs temporary fault.



AI SYNTHESIS: Unplanned downtime due to recurring micro-jam. Resolved via manual workaround. Status: Not documented in standard logs.

From Chaos to Clarity

Map: Visualizing real operational flows across production, logistics, or assembly.

Identify: Pinpointing hidden inefficiencies, redundancies, and micro-waiting times.

Recover: Documenting implicit operational shortcuts before know-how is lost to turnover.

Deliver: Outputting an executive roadmap with intervention priorities.

Map: Visualizing real operational flows across production, logistics, or assembly.

Identify: Pinpointing hidden inefficiencies, redundancies, and micro-waiting times.

Recover: Documenting implicit operational shortcuts before know-how is lost to turnover.

Deliver: Outputting an executive roadmap with intervention priorities.

Quantified bottlenecks and verified economic impact.

The True Cost of Inaction



The annual cost of remaining blind to the Hidden Factory dwarfs the cost of illumination.

Recovering the Hidden Value

Metric	Target Improvement	Impact
Changeover / Cycle Time	-15% to -30%	Value Created: ~€50,000
Unplanned Downtime	-20% to -40%	Value Created: ~€40,000
New Operator Onboarding	-30% to -50%	Value Created: ~€20,000
SOP Compliance	+15% to +30%	Value Created: Risk reduction / Audit readiness

Impact derived from real-world multimodal process capture per line/year.

Why the Pilot Exists: Eliminating the Guesswork

Traditional Consulting		The Spazio IT Pilot
Premise:	Assumes savings based on industry benchmarks.	Measures actual savings based on your floor data.
Methodology:	Subjective human observation (interviews, clipboards).	Objective, continuous Multimodal AI data capture.
Impact on Operations:	Disruptive to daily workflows and operator focus.	Zero production interruption. 100% observational.
Output:	Static slide decks and theoretical recommendations.	Quantified bottlenecks, verified economic impact, localized RAG database.
Timeline:	Months of discovery.	12-14 days of field collection.

The Phased Deployment Roadmap



Complete Package:
Each phase is independent with transparent invoicing.

The Compound Effect of Edge AI

The initial assessment is not a one-off report; it activates a permanent asset. Rolling out to subsequent departments drops to €7.8k each, generating a documented, compound ROI of 1,500% to 2,400%.

Node 1: Department 2
Assessment (+€7,800).

Node 2: Department 3
Assessment (+€7,800).

Node 3: Department 4
Assessment (+€7,800).

Foundation: Initial ~€45k investment establishes the permanent on-premise AI platform.

Zero Risk. Immediate Start.



Risk Mitigation

- **Production interruption?**
→ Non-intrusive setup. Observation only.
- **Data security?**
→ 100% on-premise. Zero cloud.
- **Low adoption?**
→ Operator involvement from initial interviews.

Next Steps

1. Identify a pilot department.
2. Authorize observational access.
3. Free initial site visit (half day, within 1 week).



Timeline to Pilot Setup: 1 Week.

“The objective of the pilot is not to prove our technology works. The objective is to quantify how much hidden value exists in your factory.”

Spazio IT – Process Intelligence.

Maurizio Martignano | maurizio.martignano@spazioit.com | +39 349 7284927