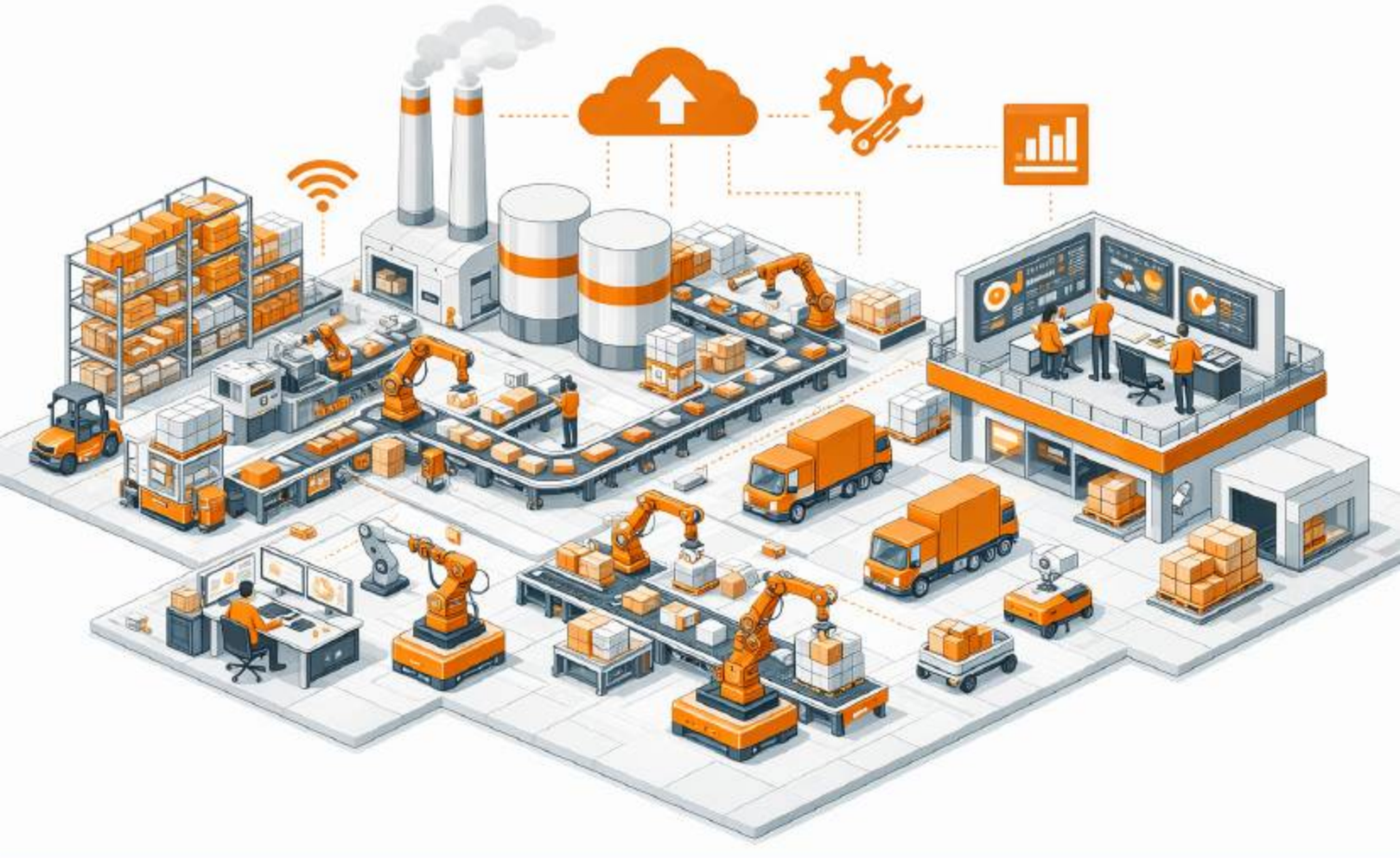
Operations Strategy

It Was Never About a Dashboard

How oee.ai transforms your factory over the next five years



The Fallacy

Data does not change a factory. Decisions do. Data just makes better ones possible.

This paper is for manufacturing leaders who are about to make a strategic decision about how to digitize their production. Its central argument is simple: do not start this journey aiming for a dashboard. Aim for a factory that decides faster, learns continuously, and improves itself.

The difference matters. When a dashboard is the goal, the project ends when the screens go live. When a data-driven organization is the goal, the screens going live is where the real work begins — and where the real value is created.

And the window for getting this right is narrowing. Supply chains are becoming more volatile. Product mix complexity is increasing. Skilled workers are retiring faster than they can be replaced. Every quarter without a data-driven operating model is a quarter in which your competitors learn faster, respond faster, and allocate capital better than you do. The factories that will lead their industries five years from now are the ones that learned how to learn — systematically, from their own data, every single day.

This paper describes what that factory looks like, what it takes to build one, and why the journey is shorter than you think.

The Vision: Your Factory in Five Years

Imagine every person in your organization knowing, at any given moment, what matters most.

Picture a factory that has fully embraced data-driven manufacturing. Not as a project, but as the way things work. Here is what a typical day looks like:

The **shift leader** starts the morning not with thirty KPIs on a screen, but with a context-sensitive briefing: the three things that matter today, ranked by impact. One machine ran below threshold overnight. A recurring loss pattern has been flagged across two lines. A maintenance intervention on line 7 moved tomorrow's planned downtime to today. All of this is visible before the first coffee is finished.

Shopfloor management meetings run on a shared, live data foundation. Daily stand-ups, escalations, and shift handovers are grounded in the same real-time numbers — not in manually compiled reports that were already outdated by the time they were printed. Operators contribute context directly: comments, touch events, and observations that enrich the raw data with human intelligence. The workforce is an active part of the improvement loop, not a passive recipient of instructions.

The **maintenance team** receives proactive alerts on emerging patterns — before unplanned downtime escalates. Instead of firefighting, they plan. Instead of reacting, they prevent.

An **AI co-pilot** supports every level of the organization. The operator asks a natural-language question about a stoppage and gets an immediate answer. The continuous-improvement lead receives an automated root-cause analysis across weeks of production data. The plant manager gets prioritized recommendations for where to invest attention and resources.

The **plant director** makes investment decisions based on real-time data, not quarterly reports compiled weeks after the fact. Capital expenditure proposals are backed by actual loss profiles, not estimates. And when those investments are made, their impact is measured — objectively, continuously, and in full view of the organization.

Continuous improvement teams no longer debate which problem to tackle next. Loss-cause Pareto charts make the answer obvious. What worked on one line is visible to every other line immediately — including what did not.

Shift handovers become data-driven briefings with clear action items, not verbal summaries that lose half their content in translation.

>> This is not science fiction. Every capability described exists. The only thing left is your organization's commitment to the path.

📌 A FMCG company revived its stalled shopfloor management process within weeks based on a data-driven approach where people saw their input finally delivering impact.

What This Triggers in Your Organization

Five dimensions in which an organization becomes fundamentally better

The factory described in the previous chapter is more than efficient — it operates on a fundamentally different logic. When real-time data flows into every decision, the organization itself changes — across five dimensions.

Speed

Decision cycles compress. Shopfloor-level decisions that once took days — waiting for reports, chasing down context, scheduling meetings to discuss the obvious — happen in minutes. The data is there. The context is there. The decision is made while the problem is still fresh enough to fix.

📌 A packaging manufacturer reduced its average response time to critical OEE losses from 4 hours to under 20 minutes.

Focus

The scarcest resource in manufacturing is not machine time. It is management attention. In most factories, leaders spend a disproportionate share of their time on problems that are loud rather than problems that are important. Context-sensitive push notifications and intelligent ANDONs redirect attention to where it creates the most value. Problems stop slipping through the cracks — not because people work harder, but because the system surfaces what matters.

Learning Ability

An organization that treats every improvement as a testable hypothesis — captured, applied, and evaluated against its own data does — something most factories never achieve: it learns from its own data. Patterns emerge. Root causes become visible. Best practices travel from one line to the next, from one shift to the next, from one plant to the next. This is not continuous improvement as a slogan — it is continuous improvement as a measurable, compounding capability.

Decision Quality

Strategic decisions — where to invest, which lines to expand, which products to prioritize — are only as good as the data behind them. When that data is real-time, granular, and trustworthy, the quality of every decision improves. Capital allocation becomes evidence-based. Capacity planning becomes precise. And the perennial debate between operations and finance shifts from opinions to facts.

Culture

This may be the most profound change, and the hardest to quantify. When data is transparent and shared, the dynamics of a manufacturing organization change. Discussions shift from blame to cause. Opinions give way to evidence. Leaders learn to see transparency not as a threat or a control mechanism, but as the foundation for genuine improvement. And frontline workers — the people closest to the process — experience that their input leads to visible change. That changes engagement in a way no motivational poster ever could.

These five dimensions do not improve in isolation. Speed enables learning. Learning improves focus. Focus sharpens decisions. Better decisions reinforce the culture. The effect is compounding — which is why the gap between data-driven factories and traditional ones widens every year.

The Strategic Implementation Roadmap

Six stages to a data-driven factory

The vision is compelling. But visions without a roadmap are just aspirations. What follows is a proven, six-stage implementation path — not a theoretical framework, but a sequence distilled from a vast number of deployments across industries and geographies.

The stages are logical, not strictly chronological. Depending on organizational maturity, plant complexity, and the number of sites, the full journey typically takes 18 to 36 months. The timeline below reflects a typical progression.

1

Create Transparency: Month 1 — 3

Deploy oee.ai across the shopfloor. Real-time OEE, loss-cause capture, and ANDONs on every line. Algorithms such as loss-time validation and performance checks refine the data foundation and reveal what gets buried in daily operations. Crucially, the initial rollout also serves the change process: when everyone — from the CEO to the line operator — sees the same data, alignment happens naturally. Commitment builds not through presentations, but through shared visibility.

→ *Everyone knows where the factory stands — and starts to pull in the same direction.*

📌 A discrete manufacturer connected 18 machines in 6 weeks and identified 550k € in hidden losses within the first month.

2

Real-Time Shopfloor Management: Month 3 — 6

Move daily meetings, shift handovers, and CI routines to the oee.ai data foundation. Retire spreadsheets and manual reports. The data becomes the single source of truth — not an additional system, but the replacement for the patchwork of tools that preceded it.

→ *Data is the single source of truth. Excel is gone.*

3

Standardize Processes and Documents: Months 6 — 9

Unify production-relevant documentation: SOPs, activity reminders, checklists. When processes are standardized digitally, they are enforceable — not just documented. This step is fast to implement and delivers immediate, tangible value in daily operations. It also creates the foundation for consistent performance across lines and sites.

→ *Consistent standards across lines and sites.*

4

Connect Systems: Months 9 — 12

Integrate ERP/planning, CMMS (maintenance), and QMS (quality) with oee.ai. Production orders, maintenance history, and quality data converge. Correlations become visible that were previously locked in departmental silos: Is there a link between maintenance intervals and scrap rates? Does product mix affect OEE on specific lines? Questions that once required weeks of analysis are answered in seconds.

→ *Cross-system correlations that were invisible before.*

For a detailed look at the technical architecture behind global, multi-system deployments, see our whitepaper "How to Scale Equipment Productivity Management Globally."

5

Data-Driven Problem Solving: Months 12 — 18

Systematic root-cause analysis on the foundation of connected data. Each countermeasure carries an owner, a deadline, and a measurable target — so the learning loop closes instead of stalling in a meeting protocol. The AI co-pilot accelerates this process: it surfaces patterns a human analyst might miss and suggests starting points for investigation. Problem solving shifts from heroic individual effort to a repeatable, organization-wide discipline.

→ *The organization learns systematically from its own data.*

📌 A food & beverage company reduced its top-5 recurring losses by 21% within 6 months of entering this stage.

6

Strategic Steering: From month 18

Investment decisions, capacity planning, and cross-site benchmarking on the basis of reliable, near-real-time data. The factory no longer just produces — it optimizes itself, continuously. Every decision is traceable, every outcome is measured, and the feedback loop between strategy and execution is closed.

→ *The factory optimizes itself — continuously.*

Each stage builds on the one before it. Trying to jump to stage five without the data foundation of stage one is like building the roof before the walls. The sequence matters — but within it, progress can be remarkably fast.

For a deeper look at the organizational building blocks behind this transformation, see our whitepaper "Is Your Manufacturing Transformation Ambition Bold Enough?"

Why oee.ai

The roadmap is clear. The harder question is: who do you trust to walk it with you?

Any manufacturer evaluating digitization partners faces the same three risks: implementations that drag on for years, technology that locks you into a single vendor, and software companies that disappear after the go-live. This is how oee.ai addresses each one.

The barrier to entry is low

oee.ai is not an MES project. There is no multi-year implementation, no complex IT infrastructure to build first, no ERP integration as a prerequisite. A current browser and an internet connection are enough to start. The platform is delivered as SaaS — continuously updated, always on the latest version, with no additional costs for new features.

On the shopfloor, oee.ai works with the machines you already have. The smartBox captures existing signals without modifying the PLC. Alternatively, OPC-UA or existing databases serve as data sources. From contract to go-live, the typical timeline is four to eight weeks — not months, not years.

The entry point is a Proof of Value: two machines, two months, real results. No concept paper, no feasibility study. You see what oee.ai does on your machines, with your data, before making a larger commitment.

Built differently than a traditional MES

oee.ai is a specialized manufacturing intelligence application — not a monolithic suite trying to do everything. It integrates via API into an ecosystem of best-of-breed tools (ERP, CMMS, QMS, planning), much like an app in a modern software stack rather than a locked-in platform.

AI is not an add-on. oee.ai was founded as an AI company. Saru, the co-pilot built into the platform, is a natural-language interface for operators, a root-cause analysis engine for CI teams, and a strategic advisor for plant management.

And the platform itself works proactively. It pushes context-sensitive information to the people who need it, when they need it — instead of waiting for someone to open a screen.

From pilot to global standard

Scaling is where many solutions fail. oee.ai was designed for it. Normalized KPIs enable cross-site benchmarking on a reliable, comparable basis. Tablets are available in 20+ languages. Site-local shift schedules, time zones, and organizational structures are supported natively. A global rollout does not require a separate customization project for each plant.

oee.ai stays for the journey. Our Customer Success team — and, if requested, Forward Deployed Engineers — accompany the rollout and the organizational change that follows: shopfloor management routines, leadership coaching, loss-cause catalogue design. The implementation support is built into the partnership.

The Next Step

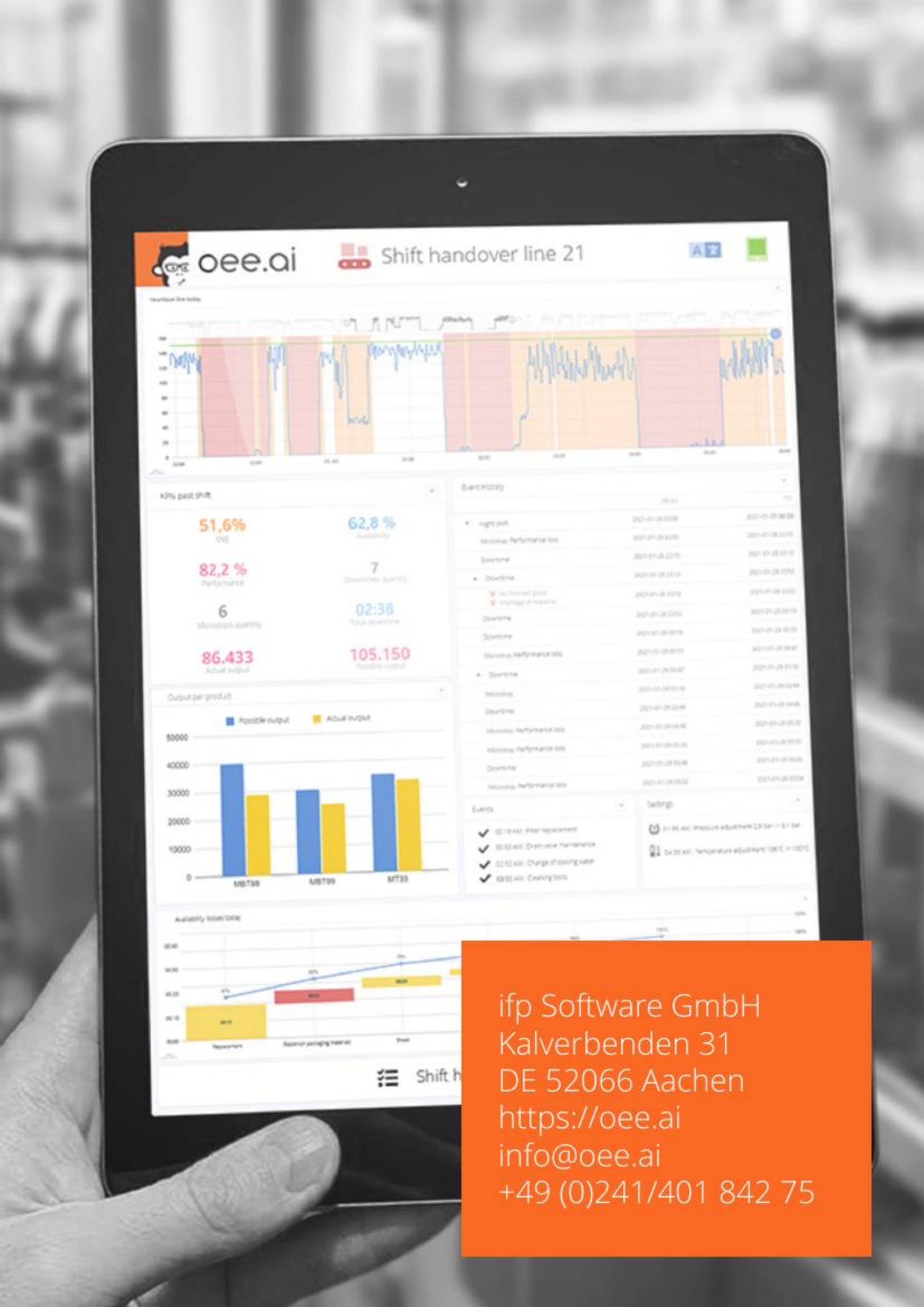
Every transformation begins with a single, concrete decision.

Start with a Proof of Value

Two machines. Two months. Real results on your production lines — not a concept paper, not a simulation. After the Proof of Value, you will know exactly what oee.ai can do for your factory. Then you decide on the full rollout.

Eighteen months from now, you will either have the data — or wish you had started today.

If you recognize your factory in the challenges described in Chapter 1 — or your ambition in the vision described in Chapter 2 — we should talk. Not about software features, but about where your organization could be in 18 months.



ifp Software GmbH
Kalverbenden 31
DE 52066 Aachen
https://oee.ai
info@oee.ai
+49 (0)241/401 842 75