

FIELD REPORT • 2026 • SMALL TO MID-MARKET MANUFACTURING

Why Manufacturing Execution *Breaks Down.*

The AI playbook for small to mid-market manufacturing — what 235 ops leaders told us about the gap between the plan and the floor.

235

SENIOR OPS LEADERS
SURVEYED

233

WORKFLOW NARRATIVES
COLLECTED

177

COST-QUANTIFIED
CASES

They bought the system. *But the gap stayed.*

A SMALL TO MID-MARKET PLANT RUNS TWO STACKS AT ONCE

THE SYSTEM STACK

ERP	86%
Production scheduling	64%
WMS	55%
MES	38%

THE
GAP

THE WORKAROUND STACK

Spreadsheets	76%
Email + chat	•
Hallway, voice notes	•
Tribal knowledge	•

WHAT THE PLAN SAYS

WHAT THE FLOOR KNOWS

% adoption among small & mid-market plants leaders surveyed (n = 235)

The ERP is right about the plan. The spreadsheet is right about the day. Nothing connects them in real time.

Small to mid-market manufacturers have invested in the systems they were told would close the gap between the production plan and what actually happens on the floor. Most of those systems are still running. The gap is still there — and it has its own infrastructure now: spreadsheets, email threads, the supervisor's voice notes, and what the second-shift lead happens to remember.

“What the system said we had didn't match what was actually available on the floor.”

PLANT MANAGER / GM
• SOUTHEAST U.S.
• \$25M–\$100M PLANT

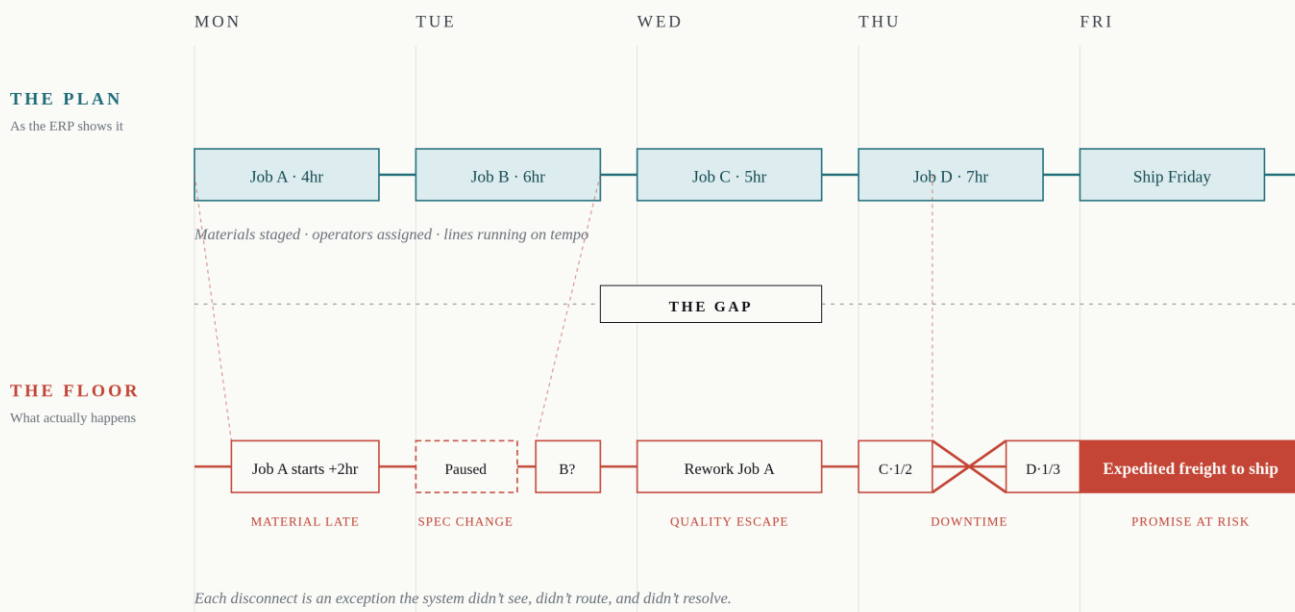
THE BOTTOM LINE

The factory is software-enabled, but execution is not execution-aware. The cost lives in that gap.

Two timelines. One is clean.

The other is what actually happens.

The plan is what the ERP shows on Monday morning: a clean week of jobs sequenced, materials staged, lines running to schedule. The floor is what the supervisor walks into at 6 AM. The gap between these two is rarely visible to anyone above the floor — until the cost lands in the P&L.



REPORTED THE BROKEN WORKFLOW COST

59%

at least \$250K per year.

REPORTED THE WORKFLOW COST

33%

more than \$1M per year.

SOURCE

Survey of 235 small mid-market ops leaders, \$25M–\$500M revenue band. Self-reported annual cost of one chronically broken workflow.

A 6:00 AM exception *and the bill at 6:00 PM Friday.*

One missing kit. One spec change emailed at 4:47 PM. One scale out of service no one logged. By the time the cost shows up, it's already been routed through four people, three handoffs, and one heroic Friday. Here's how the bill gets written — and where it cascades.



THE FRICTION TRAVELS — ONE SHIFT'S EXCEPTION, FIVE DEPARTMENTS' PROBLEM				
PRODUCTION	PLANNING	MATERIALS	QUALITY	CUSTOMER
Unstable output, downtime	Schedule churn, expedites	Shortages, stockouts	Scrap, rework	Delayed promise, margin hit

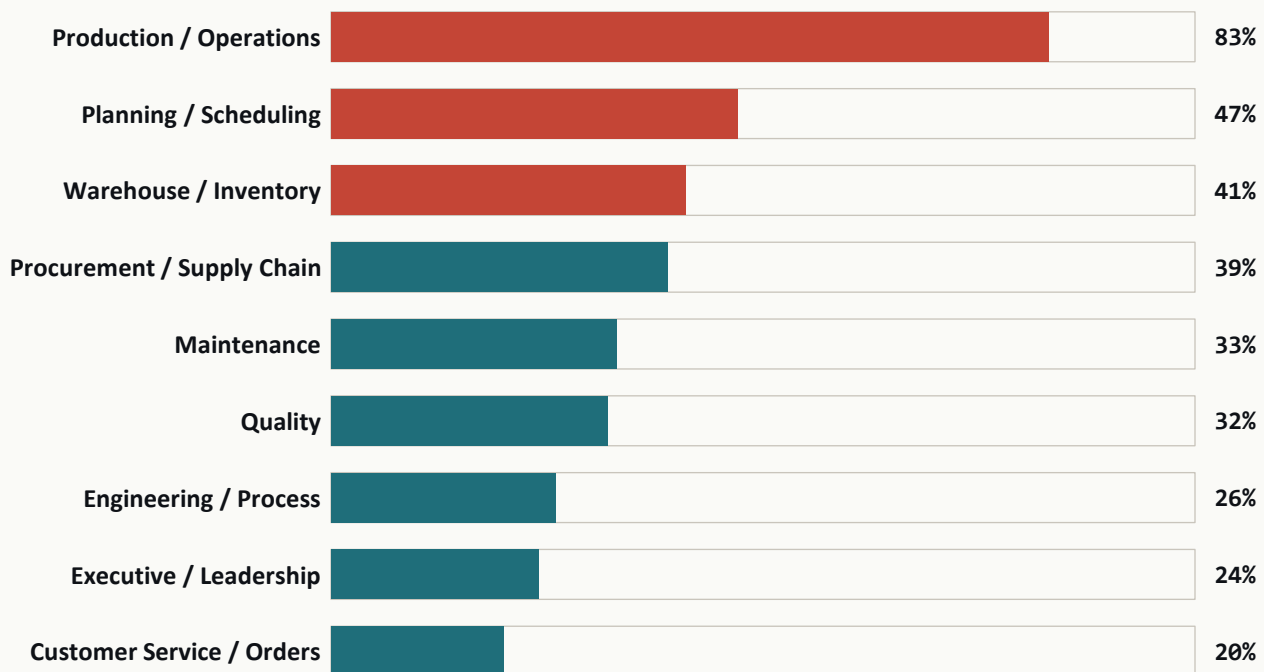
THE BOTTOM LINE

The cost compounds because no system catches the exception at Stage 01 — the place it's cheapest to fix.

Friction concentrates where *standard systems hand off to humans.*

We asked manufacturing leaders which functions they see the most operational friction in day to day. The pattern is sharp: the highest-friction zones are the handoff points where the ERP's clean data meets the floor's messy reality.

% OF MID-MARKET LEADERS FLAGGING THIS FUNCTION



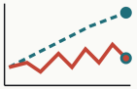
THE PATTERN

The top three friction zones are the three places where what the system says and what is physically true drift apart fastest. ERPs and MES tools were built to plan and to record — not to reconcile.

n = 235 · respondents could select up to 3 · ranked by % flagging the function

Three reasons the systems you bought *won't close the gap.*

Three structural failures appeared again and again. They aren't implementation problems — they are design assumptions baked into **systems-of-record** that were never asked to be **systems-of-action**.



01 / FORECASTS

Forecasts ignore
true constraints.

The MRP releases work orders against a clean demand signal. It doesn't know which buyers can actually deliver, which lines are running below OEE, or which customer's forecast was "optimistic." The plan assumes a frictionless world.

"Static min/max inventory settings led to frequent stockouts and ongoing reliance on costly expediting."

SUPPLY CHAIN MANAGER
• MIDWEST U.S. • \$25M-\$100M



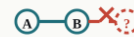
02 / EXCEPTIONS

Standard systems
break on exceptions.

ERPs handle the 70% beautifully. The 30% — rush jobs, missing kits, spec changes, equipment surprises — gets routed to email, hallway, and spreadsheet. That's where the cost lives, and that's where the system goes silent.

"The standard tools didn't fix it because they were too static. The floor was changing in real time, but the system wasn't keeping up."

PLANT MANAGER / GM
• SOUTHEAST U.S. • \$25M-\$100M



03 / HANDOFFS

Handoffs
nobody owns.

A handoff between departments is a process, not a feature. The ERP stops at the boundary. The next person picks it up — or doesn't. Multiply by every shift change, every kit, every spec. The accountability vacuum is by design.

"No one wanted to accept responsibility for one standardized system, but everyone wanted to use their preferred system."

FLOOR SUPERVISOR / TEAM LEAD
• SOUTHEAST U.S. • \$25M-\$100M

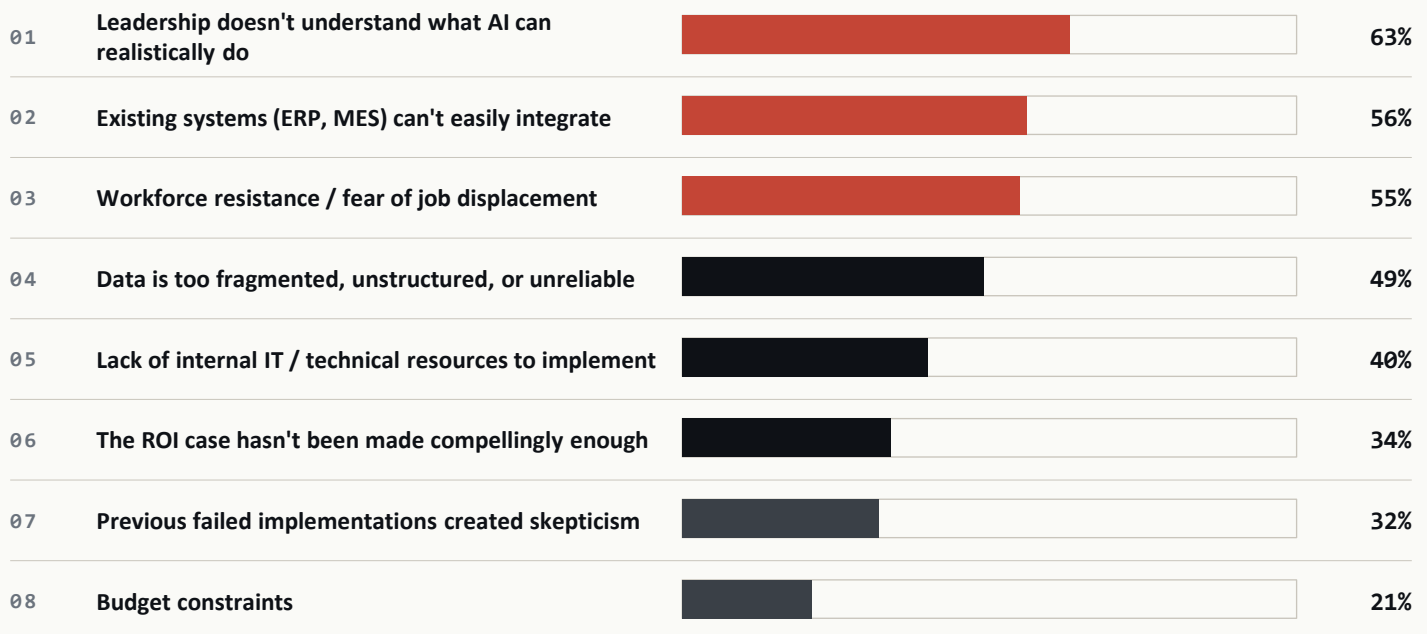
THE BOTTOM LINE

None of these are problems your next ERP module will fix. They're the natural shape of static, transactional systems running an operation that is dynamic and exception-driven by nature.

The skepticism is rational.

It's also the obstacle.

Top barriers preventing manufacturers from successfully adopting AI — describe a market that has been burned by big-bang implementations, has been pitched too many demos with too little ROI, and isn't about to bet the floor on another six-figure rip-and-replace.



THE REFRAME

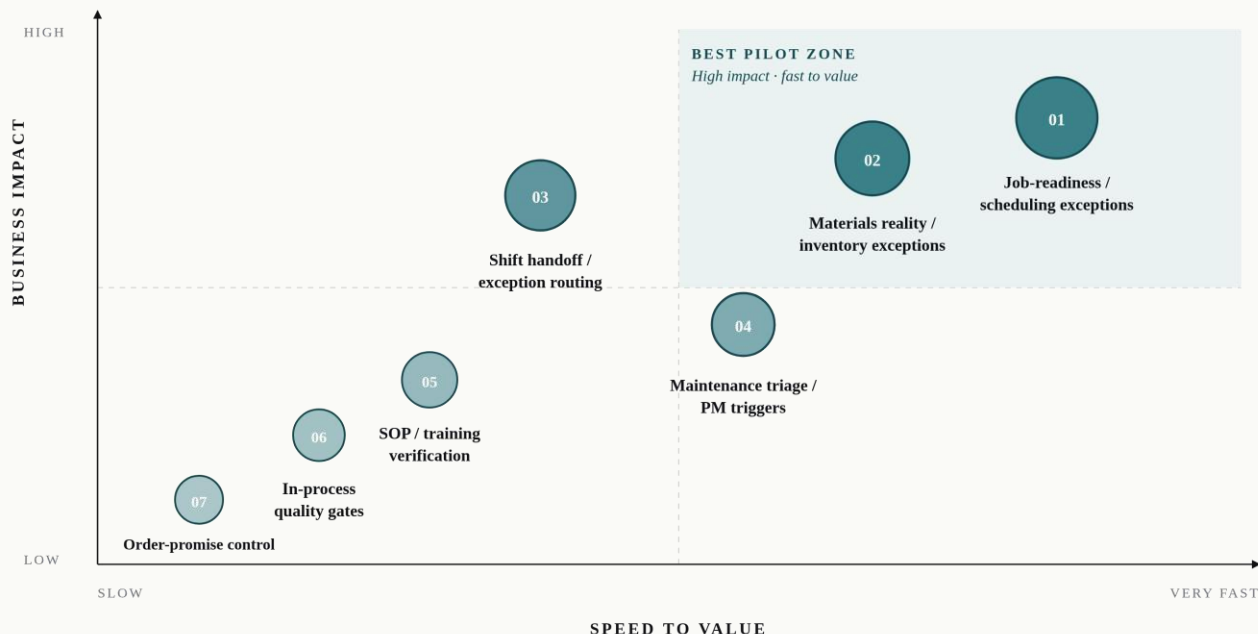
The barriers cluster around credibility, not capability. The leaders asking these questions aren't skeptics — they're the audience this report is written for.

n = 235 • respondents could select multiple • sorted by % naming the barrier

Don't boil the ocean.

Pilot one exception class.

Not every workflow is worth automating. The right first pilot is narrow, measurable, and lives where exceptions cost the most. We mapped the seven exception classes that came up most often in the survey against two axes leadership actually cares about: business impact and speed to value.



WHY THIS MATTERS

Bubble size shows roughly how often the survey surfaced this exception class. The two highest-leverage pilots are the same ones flagged most: job-readiness and materials reality — both live at the daily handoff between the plan and the floor.

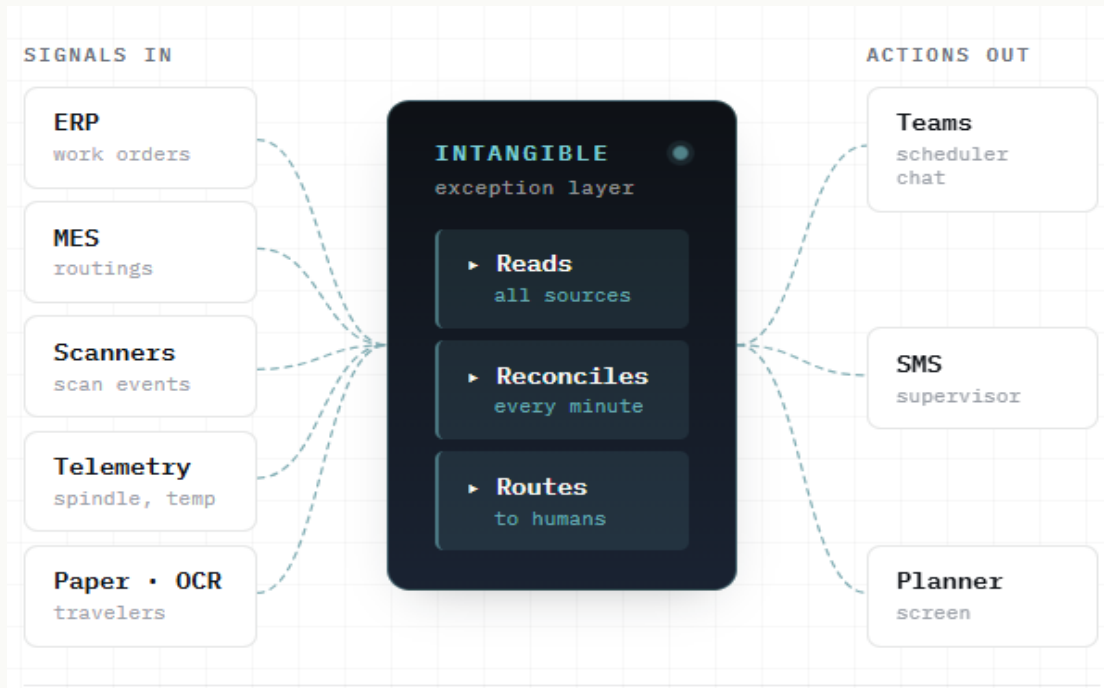
HOW TO READ THE MAP

Up-and-to-the-right wins. Narrow, measurable, fast. Avoid the bottom-left: workflows where impact is diffuse and time-to-measurable-value runs longer than the patience of the team funding it.

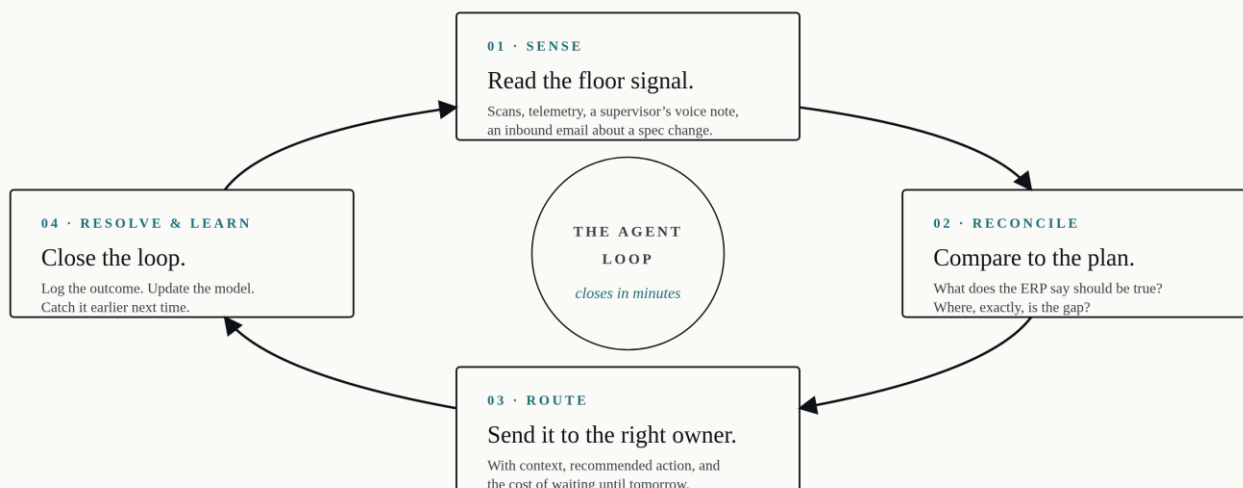
THE BEST PILOT ZONE — WHAT THESE ACTUALLY ARE

#	PILOT	WHAT IT ACTUALLY DOES
01	Job-readiness / scheduling exceptions	Watches the gap between "scheduled to start" and actually ready to start. Flags missing materials, tooling, or operator coverage before the line releases work it can't finish.
02	Materials reality / inventory exceptions	Reconciles ERP on-hand against what the floor can actually grab. Catches phantom inventory and mis-staged kits before they cascade into stockouts and expediting.
03	Shift handoff / exception routing	Picks up open exceptions at end-of-shift and routes them to the right named owner on the next shift, with context attached. Replaces verbal handoffs and email blind spots.

The agent loop: *sense, reconcile, route, resolve.*



An AI agent doesn't replace your ERP. It sits between the plan and the floor and runs a tight loop the ERP was never built to run — catching exceptions at the moment they happen, reconciling them against the plan, routing them to the right person with the right context, and learning from how they were resolved.



WHAT THIS MEANS

The ERP is one node in this loop — not the loop itself. The agent does the work the ERP was never asked to do: notice the exception, route it to a human with context, and learn from the resolution.

A forward deployed floor diagnostic.

AI implementation Audit.

We open with a conversation about your floor — one specific exception class, one specific cost. By the end you'll either have a sharp, scoped agent worth piloting, or a clearer diagnosis of where the leak actually is.

01

Map your gap.

One chronic exception — a kit shortage, a spec change, a quality escape. Where in the day does it show up? Who owns it now? What does it cost when it lands wrong?

02

Find the highest-cost loop.

We isolate the single exception class with the worst leverage — the one most worth closing first. This is rarely the one leadership thinks. Almost always, the floor knows.

03

Spec one agent.

If it's a fit, we sketch what the agent would sense, reconcile, route, and resolve — and what the next 30, 60, 90 days look like. If it's not a fit, we say so.

90 DAYS IN — WHAT GOOD LOOKS LIKE

Operational signals you should expect to see, not metrics we'd ask you to take on faith.



Fewer blocked starts.

Jobs released to the floor only when materials, tooling, and operators are actually ready — not when the system says they should be.



Faster exception triage.

When something breaks, it gets to the right owner in minutes, not at the end of shift. Context comes attached.



Less heroic Friday.

Fewer last-minute moves, fewer expedites, less air freight. Planned ship dates start beating apologized-for ones.



Owned escalations.

No more "who's on this?" Every exception has a name attached, and a logged resolution.

TAKE THE NEXT STEP

Book a *floor diagnostic.*

One call. One specific exception. One honest answer. If we can't close a real gap, we'll tell you so — and probably point you to who can.

Book the call →

OR VISIT:
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“Our operation was dependent on inaccurate customer forecast that caused us to manufacture parts that would sit in inventory instead of building to order and ship.”

DIRECTOR / VP OF OPERATIONS • U.S. • \$25M-\$100M PLANT

ABOUT

Intangible Partners.

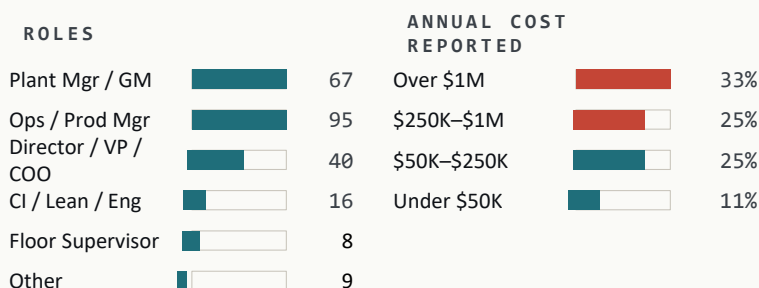
We build AI agents for small mid-market manufacturers that close the gap between the production plan and what's actually happening on the floor — so exceptions get caught, routed, and resolved before they become missed promises.

We work shoulder-to-shoulder with operations leaders. We don't replace your ERP, your MES, or your team. We make the floor visible to the system, and the system useful on the floor.

RESEARCH METHODOLOGY

About this report.

Findings draw on responses from **235 senior manufacturing operations leaders**, including **233 written workflow narratives** and **177 cost-quantified cases**.


[Book the call →](#)

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