InSource®
SOLUTIONS GROUP

Operational Intelligence

Turn AI Investment Into Realized Value

Operational Intelligence (OI)

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Why Operational Intelligence (OI)?

Manufacturers are moving fast on AI, and most have yet to see the return that justified the spend. 89% of manufacturers plan to implement AI in production,[1] while 74% of companies have yet to show tangible value from AI.[2] Pilots launch and systems go live, but organizations struggle to realize results and value that reaches the P&L.

The technology is rarely the reason. What separates an initiative that delivers from one that stalls is the readiness of the operation around it: a problem the organization agrees is worth solving, data that can support it, a process built around how the work actually happens, and a workforce that adopts the result and owns it.

Operational Intelligence is how ISG puts those four in place and carries them from the first conversation to results at scale. You cannot have AI without OI.

What Operational Intelligence delivers

- Clarity on which problems to fund first and what each is worth
- One plan the executive team, plant leadership, and the frontline all own
- A business case finance will approve, with value tracked against a baseline
- Technology chosen to fit the problem, with the foundation it needs in place
- A partner from the first workshop through proof of value and scale

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Where value is lost on the way to results

FFour patterns account for most of the value that often never arrives. They repeat across industries, across platforms, and across organizations. Most operations encounter all four.

Technology is selected before the problem is defined and agreed upon
A technology or platform is chosen before the collective organization has agreed on the business problems it is meant to solve. What follows is a capable tool searching for a use case, similar to a hammer looking for a nail. Without a defined problem and a business case behind it, there is no basis to prioritize, no basis to select a technology, no way to measure return, and no argument for the next round of investment.

The disconnect usually runs deeper than the technology decision itself. The executive team, plant leadership, and the frontline often name three different problems as the one that matters most, and an investment made against one of those views rarely satisfies the other two. These initiatives seldom fail outright. Some lose the ability to justify themselves and quietly lose momentum. Others are cut when a finance leader sees an investment underdelivering.

Value realization starts with the problem that is truly worth solving for. That means bringing the executive team, plant leadership, and the frontline into the same conversation, surfacing the operational pain each of them sees, and reaching one prioritized set of problems the organization agrees on. Aligning strategic business priorities with the pain felt throughout the organization is what makes the investment decision defensible, the results measurable, and execution possible.

The data cannot support the ambition
Most industrial operations collect enormous volumes of data. The constraint is what it takes to use it. Systems were added to the plant one at a time over decades, each with its own owner, format, and version of the truth. Tags are named differently from line to line and site to site, and the same event is recorded differently depending on who logged it. Operational data on the floor was rarely designed to connect to business data in the enterprise, and no one has settled where it should live or who governs it.

The result is data that lacks the context to give it meaning, sits in systems few people can reach, is captured at the wrong granularity for the question being asked, or cannot be joined to the other sources a use case needs. Gartner expects organizations to abandon 60% of AI projects unsupported by AI-ready data through 2026, and 63% of organizations lack or are unsure they have the data management practices AI requires.[3] The gap is usually discovered after the investment is made, when the data needed to prove the use case turns out to be unusable in the form the use case requires.

Readiness has to be verified rather than assumed. That means establishing what data exists, how it is standardized and contextualized, who can access it and who owns it, whether its granularity fits the use case, and what has to be integrated or built before value is achievable. This data readiness is what separates a use case that can truly scale from one that stalls in proof.

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Value is never quantified or measured
Pilots are often launched without agreement on what would constitute proof. No baseline is captured before the work begins, and leading and lagging indicators are never defined, so there is no way to see progress while there is still time to act on it and no way to demonstrate value at the end. Results get debated rather than acted on, and the initiative sits in a holding pattern no one formally ends. This is where most digital programs stop.

The initiatives that do advance meet a finance leader who asks what the return will be and how it will be measured. Benefits described qualitatively do not survive that conversation.

A business case has to survive finance, and it also has to show every group being asked to change what the change is worth to them. People change how they work when they understand what is in it for them: fewer repeat failures, less time spent chasing data, and decisions they can make with confidence. Quantifying the value at stake, naming the baseline it will be measured against, and defining the leading and lagging indicators before the pilot begins turns an idea into a fundable program people want to be part of.

Adoption is assumed rather than designed
The technical work is planned in detail while the human work is left to chance. No one has asked whether operators will trust the output, whether supervisors will change a routine that has worked for years, or who owns the result once the project team leaves. AI leaders put 70% of their effort into people and processes, 20% into technology and data, and 10% into algorithms.[2] Without that investment, the system performs exactly as specified and the operation returns to what it did before.

Capability also varies across the organization, and that variation is an opportunity. A small corporate group usually carries strong analytical skills, while a much larger frontline population knows the process better than anyone. However, this group often has had less exposure to these tools. The frontline is where a pilot proves it can survive production, and it is where the largest capability gain is available. As new tools take repetitive, manual work off people's plates, the time they get back can go toward building new skills, so the people closest to the process become the ones who extend it.

Adoption is a design input. That means defining who owns the outcome, what each role is responsible for during the program and after go-live, and how accountability carries from the plant to corporate. It also means mapping who is affected and what changes in their day, setting the KPIs that justify continued investment, and putting in place the governance that sustains the change locally and at the corporate level. When ownership is clear, the people living the new way of working are the ones who sustain it.

These failures compound
An undefined problem makes the business case impossible to write. Without a business case there is no baseline, and without a baseline there is nothing to prove or to build adoption around.

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How ISG closes the gap

Manufacturers do not simply need more technology. They need an honest read on whether they are making the right technology investments in the areas that need it most, and whether they are ready for that investment and to realize a return on it.

Value is realized when four conditions line up behind a problem worth solving. Data makes the outcome measurable. Technology makes it possible. Process makes it repeatable. Organizational will makes it last. When one of the four is missing, the investment underdelivers no matter how capable the platform is. Readiness is also not a single verdict. It has to be re-established for each new line or site, and each new problem, because the data, the systems, and the people involved change every time.

InSource Solutions Group finds where value is trapped across all four and helps the organization act on it. Sometimes the next step is a use case ready to prove. Sometimes it is foundational work that has to come first. Our recommendation follows the problem.

Why InSource Solutions Group

- 30+ years and more than $1 billion in measurable impact helping industrial organizations adopt and sustain technology.
- Industrial data experts across the full OT/IT stack, from SCADA and historian through MES and data infrastructure to advanced analytics and AI.
- Embedded in ~4,600 plant customers. ISG partners with the leading industrial AI and IoT platforms in North America and knows the pain points, failure modes, and framework for success across all verticals within manufacturing and industrials.
- Led by industry operators. The Practice is led by leaders who have owned advanced analytics and AI investment decisions inside multi-site manufacturers and delivered results.
- On your floor. Our teams partner with your operators, engineers, and subject matter experts as closely as with your executives. Combining both views produces the best-informed roadmap for transformation.

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A partner from discovery to results at scale

The Operational Intelligence journey runs from discovery to sustained value, and ISG meets you at whatever stage you are in today. Each stage ends in a deliverable you keep and act on.

Stage	What happens	What you receive
1. Discover	Executives, plant leadership, engineering, IT, and the frontline frame problems in value terms and size them against effort.	A transformation strategy specific to your needs. Priorities sequenced by value and effort, where to invest first, and the foundation required to prove and scale, in a detailed findings report and an executive summary.
2. Assess	Readiness for the priority use cases is evaluated across data, technology, process, and organizational will.	A fundable use case, ready to prove. A readiness scorecard that surfaces gaps and binding constraints with an action plan to close them, a business case finance can approve, target-state requirements, and an execution playbook from proof of value through scale.
3. Select	Solution options are evaluated against the requirements the assessment defined, across ISG's partners and the broader market.	Technology investment de-risked. A vendor-agnostic recommendation matched to specific use case requirements needed for success.
4. Prove	The proof of value runs against success criteria agreed in advance, with governance and value tracking from the start.	Proof leadership can fund. Results measured against a baseline and success criteria agreed in advance, with a defined decision point to scale.
5. Scale and sustain	The proven use case extends to similar assets, lines, and sites, and the journey repeats for the next problem.	A repeatable program that pays for itself. Value extended to similar assets and sites and reported in dollars, adoption that lasts, and a proven method that builds the case for every next investment.

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InSource Solutions Group is a trusted partner at every stage:

- Advisory support. A dedicated advisor who helps track value against the business case, run governance through steering committees and quarterly reviews, coach adoption, and build the case for the next use case on proven results.
- Hands-on technical support. Technical resources who can work inside your environment on your AI platforms and data, show what enterprise AI tools can do for your operation, and transfer the skills to your team.
- Implementation and foundations. ISG delivery teams implement the foundational systems required, from SCADA and historian through MES and data platforms, and the advanced analytics and AI solutions built on top of them.
- The journey is cyclical. Every new use case, line, or site follows the same path, and each pass builds on the last.

What we ask in return

The answers are only as good as what we uncover together. We ask for:

- Partnership and participation across every stage
- Participants spanning the frontline, operations, engineering, and IT
- An executive sponsor who takes part in the working session
- Candor about what is not working today

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Client story

Challenge: Eldorado Gold Québec knew AI could create value but not where to start. Ideas came from every function, with no common way to evaluate them, choose the right technology, or know whether the data could support them. Without clarity, it risked capital spent, ROI never captured, and trust lost.

Operational Intelligence Approach: ISG led an on-site Discovery Workshop that brought nine functions together to turn 35 ideas into problem statements, scored on value, effort, and readiness and validated by the people closest to the work. The result is an outcome-driven prioritization strategy Eldorado can resource against, sequencing where to invest first and what must be in place to scale

The impact

- **Clarity on where to start:** 35 ideas prioritized into focused swimlanes
- **A roadmap the organization owns:** aligned across business functions
- **Capital protected up front:** foundation gaps identified before any spend
- **Technology matched to the problem:** chosen by the outcome required
- **A repeatable system:** a framework for approaching AI and innovation

What changed for the organization

- Decision makers move from debating technology to deciding which problem gets funded first and what it will return
- Participants from mill operations and OT, mine operations and the control room, health and safety, environment, geology, finance, procurement, human resources, and continuous improvement aligned on the same problems, which makes adoption possible
- Investment decisions carry a business case finance can approve
- Foundational needs and gaps surfaced before they became sunk cost

Sources

1. BCG and World Economic Forum, "AI-Powered Industrial Operations" (survey)
2. BCG, "Where's the Value in AI?" October 2024 (press release)
3. Gartner, "Lack of AI-Ready Data Puts AI Projects at Risk," February 26, 2025

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October 28 2026 version