

The lights-out enterprise

The path to a self-steering and intelligent operations

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For years we talked about *automation, AI, efficiency*. But what happens when an operation stops waiting for instructions – and begins to

run, manage and improve itself?

When leaders don't ask for reports in the morning – the operation tells them what they need to know. When work doesn't pause overnight – because digital agents, decision engines and an integrated management system keeps everything moving in one continuous rhythm.

And when people finally shift from *doing work* to designing

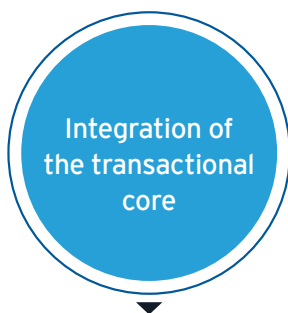
how work should happen next.

That moment is closer than many think.

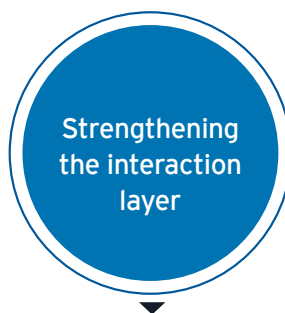
This shift is what we refer to as Intelligent Operations – a fundamentally different way of running, managing and improving the enterprise.

Digitization has transformed service operations – but a deeper structural shift still lies ahead

Over the past two decades, organizations have made significant investments in technology. They have modernized their transactional backbone, streamlined processes and connected fragmented landscapes. This progress unfolded through three major waves:



Enterprises consolidated finance, HR, procurement and supply chain into integrated ERP platforms such as SAP S/4HANA, Oracle and Workday – reducing system sprawl and enabling end-to-end process visibility.



Front-end platforms like Salesforce and Microsoft Dynamics 365 CRM professionalized how organizations manage demand, engage customers, citizens and partners – creating structured pipelines, case management and data-driven engagement.



Process orchestration and automation platforms such as ServiceNow, Pegasystems, UiPath and Automation Anywhere introduced workflow management, robotic automation and cross-system coordination – accelerating execution and reducing manual effort.

These waves created real value: lower cost-to-serve, greater transparency, faster cycle times and improved user experience. Many organizations mistake this technical consolidation for transformation. It improves execution – but does not change how the enterprise is steered.

The shift toward autonomy

Integration connects systems, automation accelerates execution and digitization converts activity into data. Transformation reshapes how an enterprise operates and improves. The distinction matters. Over the past decade, many organizations have built impressive digital foundations. Yet most operations still depend on structured human intervention to interpret performance, adjust priorities and resolve friction between strategy and execution. The technology stack has modernized; the steering logic often has not. As a result, operations still depend on coordination to function – rather than being able to continuously interpret and respond as a system.

Recent advances in AI introduce a fundamentally different operating capability. Not merely the automation of tasks, but the ability for operational environments to sense, interpret and respond within defined boundaries.

A useful comparison is found in advanced “lights-out” warehouses. In these environments, goods are received, sorted, moved and dispatched with minimal human intervention. Sensors, robotics and control

systems continuously coordinate movement and flow. What once required constant supervision now runs through integrated control logic.

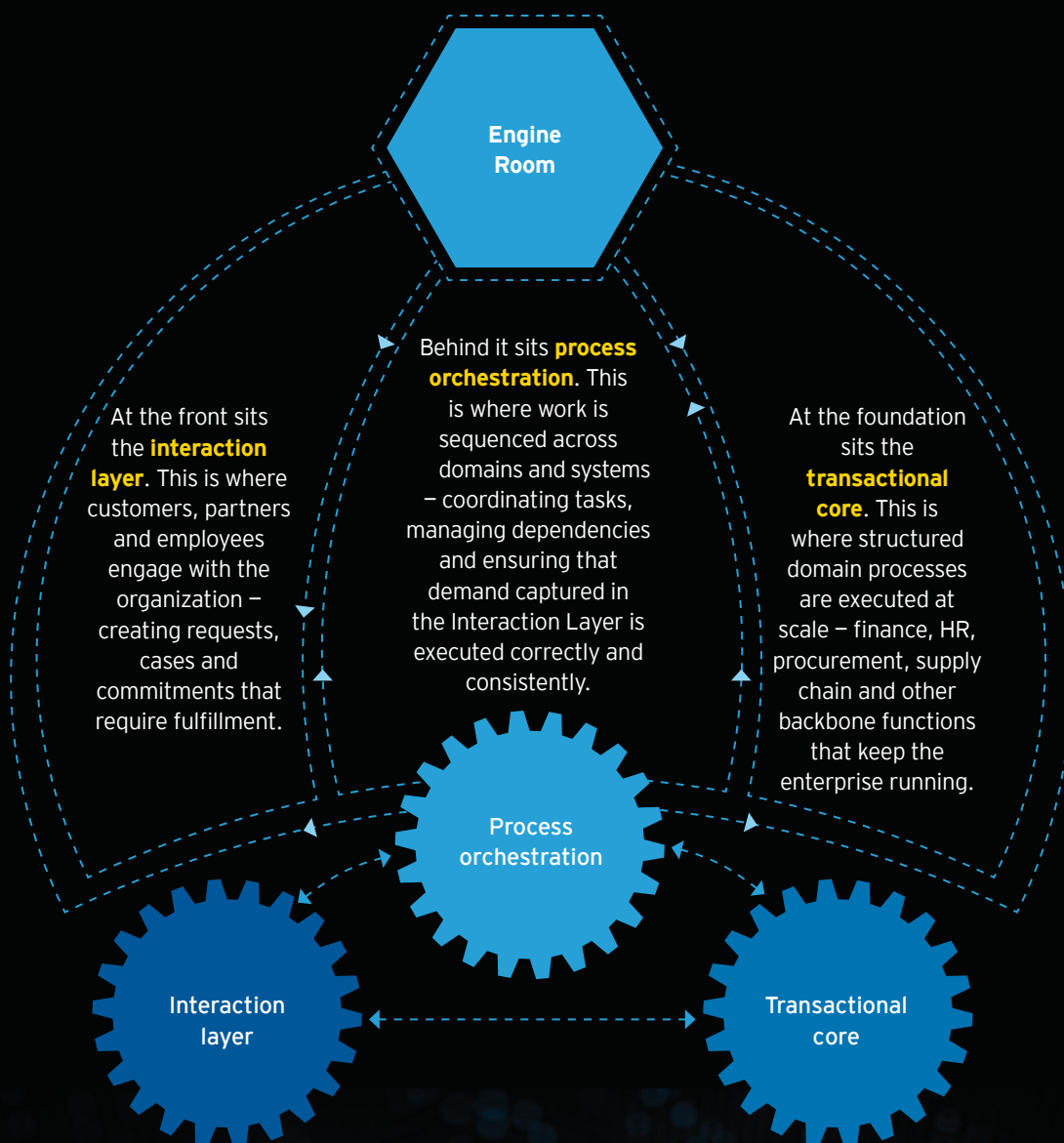
Service organizations now face a comparable inflection point – whether that means routing customer cases, coordinating claims processing or dynamically allocating service capacity. The technical components required for higher degrees of autonomy increasingly exist across the enterprise landscape. The open question is no longer whether isolated processes can be automated, but whether operations as a whole can evolve beyond assisted execution toward structured autonomy. The challenge is no longer capability – it is how the enterprise brings these capabilities together to operate as one system. At this stage, there are no fundamental technical limitations preventing operations from not only running, but also autonomously managing and improving themselves – continuously and at scale.

The ultimate vision is therefore not incremental efficiency. It is a self-steering operation – a truly intelligent enterprise. A lights-out enterprise.



The operating structure and the missing capability to steer It

Even a lights-out enterprise does not run on technology alone. It runs through an operating structure: the way demand is captured, work is coordinated and transactions are executed across the enterprise.



Together, these elements form the operating structure of the enterprise. This structure defines how work is executed. Intelligent Operations defines how that work is interpreted, directed and continuously improved.

Over the past decade, most organizations have invested heavily in strengthening this structure. They have modernized their transactional core, professionalized their interaction layer and introduced orchestration platforms to connect work across systems.

In a typical service organization, a customer request enters through a digital channel, triggers workflows across multiple systems, and ultimately results in transactions executed across finance, operations or customer support.

Yet a common assumption follows: that once these elements are integrated, intelligence will naturally emerge from the system. In practice, it rarely does. Integration connects systems. Automation accelerates activity. Neither guarantees direction. As operations become more digital and interconnected, the absence of an explicit steering logic becomes more visible. Without it, fragmentation scales faster than performance.

While this structure explains how work flows through the enterprise, it does not explain how the enterprise steers that work. That missing capability – the ability to interpret signals, make decisions and steer execution as one system – is what we refer to as the **engine room**. Within Intelligent Operations, the engine room is the integrated management logic that connects strategy with execution, ensuring that the enterprise remains aligned, adaptive and improving.

It does not replace the operating structure; it governs how that structure performs:

- Where the Interaction Layer captures demand, the engine room determines how demand is prioritized and balanced against capacity.
- Where the transactional core processes transactions, the engine room defines outcomes and constraints.
- Where process orchestration sequences work across systems, the engine room sets the rules by which that flow is optimized and adjusted.

This is not a dashboard or a reporting layer. It is the logic through which the enterprise interprets its performance and directs its actions in real time. It translates strategic ambition into operational direction. It determines what “good” performance means – and how it is reviewed. It governs how priorities shift when demand changes. It decides how exceptions are resolved. And it embeds continuous improvement into the daily rhythm of execution.

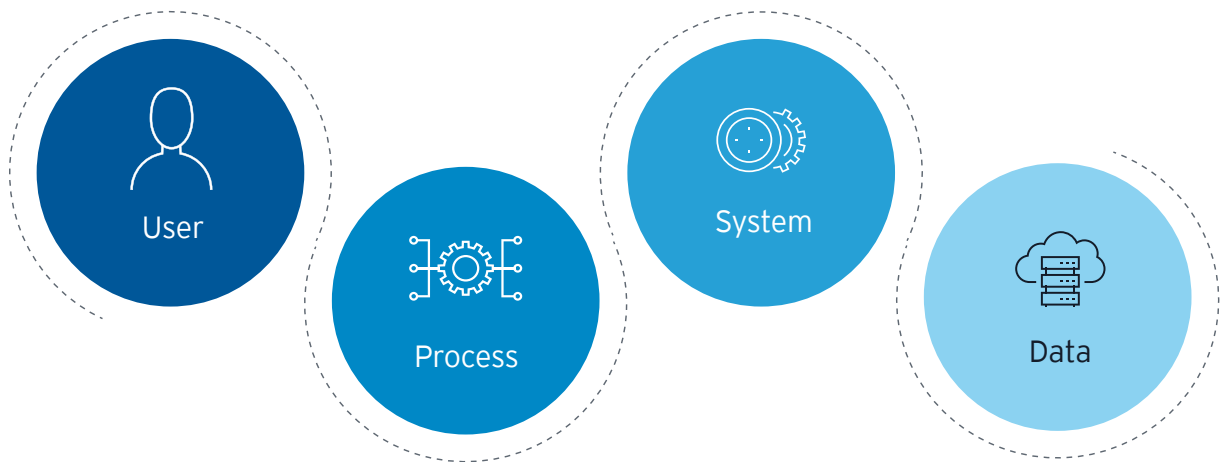
Without this layer, orchestration executes what is asked – but no one ensures that what is asked remains aligned with purpose. The more digital and interconnected the enterprise becomes, the more important this Engine Room becomes. When this capability is embedded, the enterprise can continuously interpret, decide and act – this is what enables it to become self-steering.

A lights-out enterprise is therefore not defined only by the sophistication of its systems, but by whether Intelligent Operations are in place – with an engine room that can interpret signals, steer execution and continuously improve how the enterprise runs.



Viewing enterprise operations through four lenses

The operating structure of the enterprise can be understood through four complementary lenses: user, process, system and data:



The **user lens** reflects how employees, customers and partners interact with the enterprise – initiating requests, responding to signals and experiencing how work is performed.

The **process lens** shows how work flows from request to outcome, defining how tasks are sequenced and decisions are made.

The **system lens** reveals the digital platforms through which these processes run across the interaction layer, process orchestration and the transactional core.

The **data lens** exposes what these interactions and activities generate: a continuous stream of operational signals about demand, performance and variation.

In Intelligent Operations, these signals are interpreted and translated into coordinated action as part of how the operation runs – enabled by the engine room. The next step is understanding how these signals are structured across the enterprise.

Unlocking the value of operational data

These operational signals are structured across several layers of enterprise data. Requests captured in the interaction layer, activities coordinated through process orchestration, and transactions executed in the transactional core all generate signals about demand, performance and variation.

While the four lenses provide a way to interpret signals in context, their real value emerges when they are connected through the enterprise data hierarchy. Signals are not isolated observations. They are embedded across layers of data – from reference and master data, to conditional rules, to transactional events, and ultimately to reporting outcomes. What is typically missing is the ability to relate these layers.



In many organizations these layers remain disconnected. Reporting highlights symptoms, but the operational signals and the underlying design parameters that shape them are rarely interpreted together – such as when a growing backlog appears in dashboards but its root cause lies in workflow rules or service definitions embedded in the system.

In Intelligent Operations, these layers are interpreted in context. By relating enterprise data to the workflows, policies and definitions that govern how work is executed, organizations can move beyond surface indicators and understand where performance deviations actually originate.

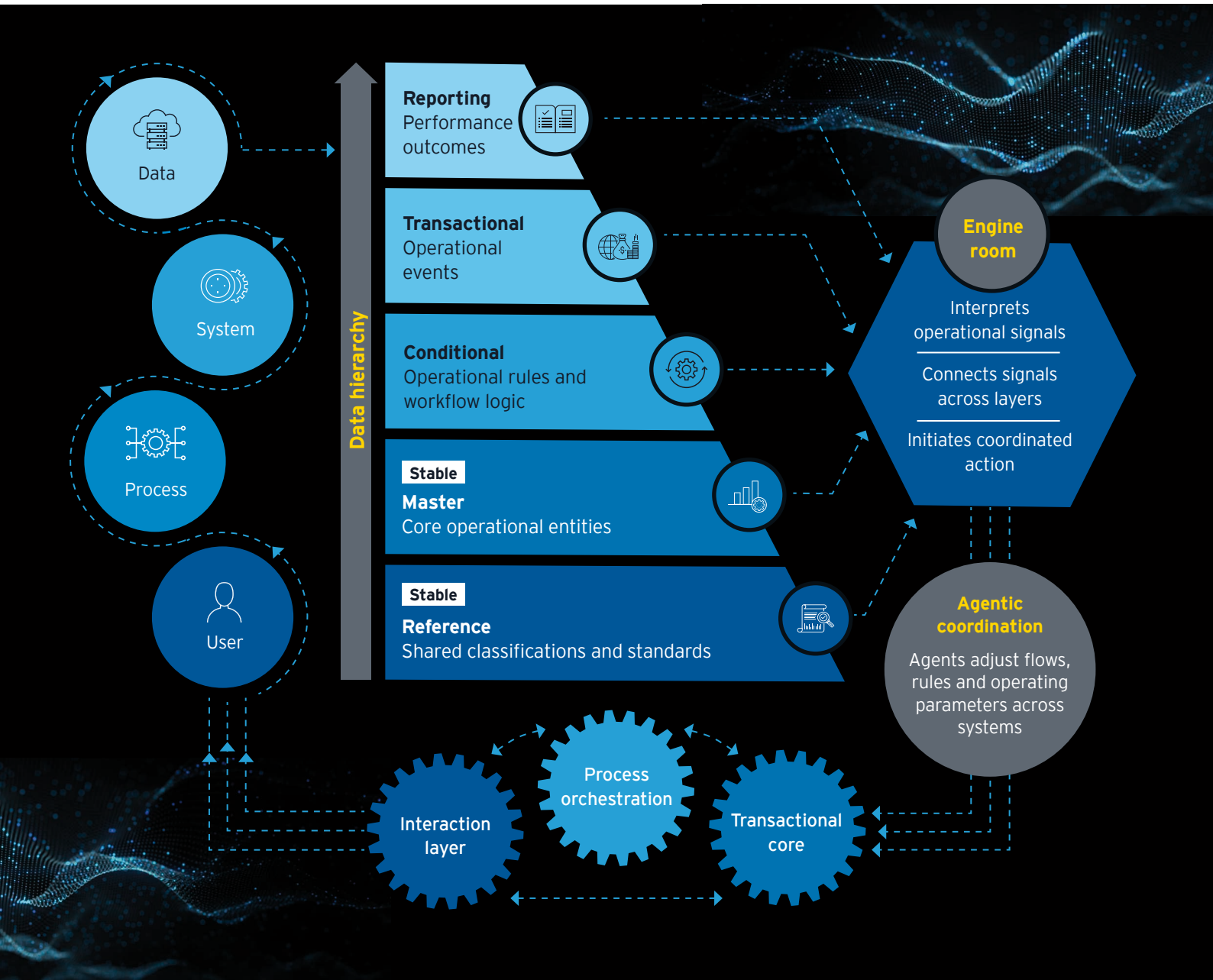
This capability does more than improve visibility. It is embedded into how the operation functions, rather than applied as a separate layer of analysis. Once the relationships between operational signals and the underlying design of processes and data structures are understood, the enterprise can begin to act on them. It can adjust priorities, refine workflows, update parameters and coordinate changes across systems.

Operational data therefore becomes more than a record of past activity. It becomes the basis for understanding how the enterprise operates – and how it can continuously adapt.

How the enterprise becomes self-steering

When these layers of enterprise information are interpreted together and translated into action, enterprise operations begin to behave differently. This is the foundation of Intelligent Operations. This is where the data hierarchy and the four lenses come together. Customer requests captured in the Interaction Layer, activities coordinated through

process orchestration, and transactions executed in the transactional core continuously generate information about demand, performance and variation. On their own, these signals simply describe what is happening. Their real value emerges when they are interpreted together.

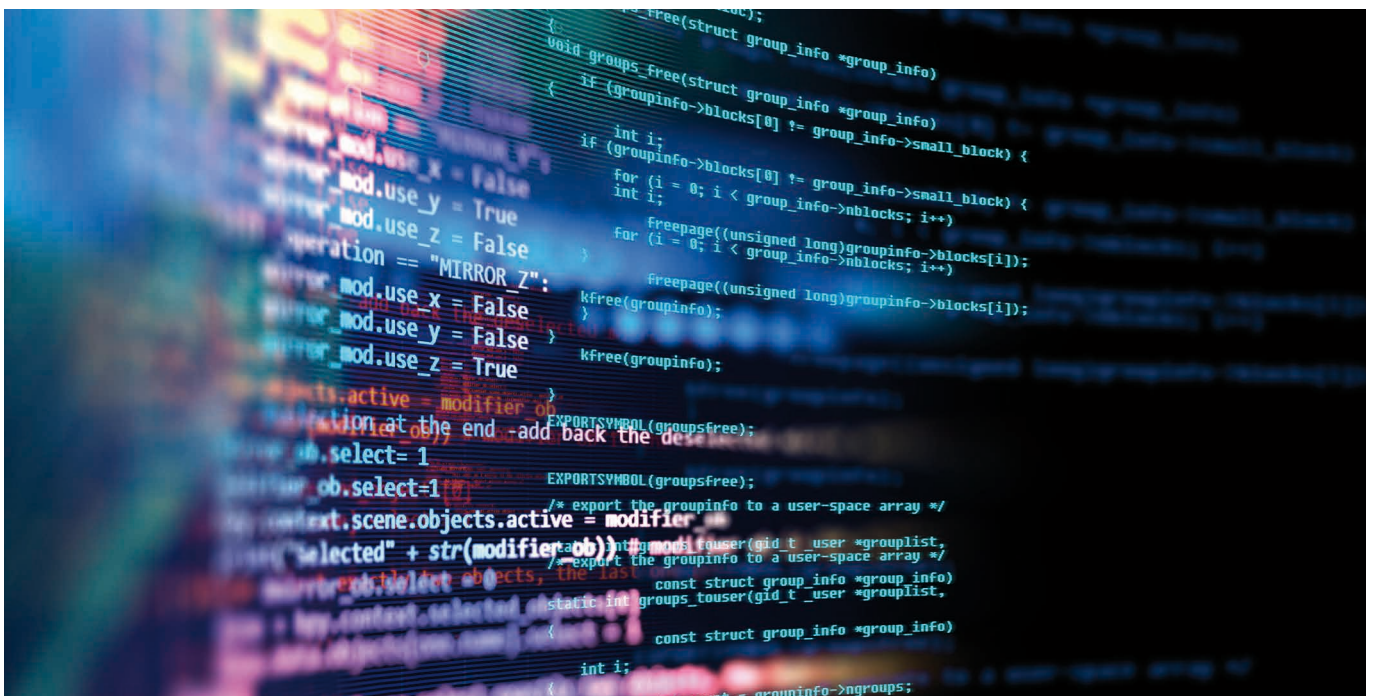


A performance issue may first appear in the reporting layer as a missed service level or a growing backlog. Transactional data shows what actually happened in execution. Conditional data reveals the rules, thresholds and workflow logic that shaped that execution. Master and reference data provide the underlying definitions that determine how the system is set up. Viewed through the user, process, system and data lenses, the enterprise can move beyond symptoms and understand where the issue originates, how it affects operations, and what part of the system is driving it. These four lenses ensure that operational signals are not interpreted in isolation, but understood in the context of how people interact, how work flows, how systems execute and how data structures shape behavior. For example, when a delayed service request must be understood simultaneously as a customer experience issue, a workflow bottleneck, a system constraint and a data definition problem.

This interpretation is translated into decision intelligence – identifying where performance deviates

and how workflows, priorities or capacity allocations should be adjusted. Unlike a traditional control tower that merely displays performance, it produces actionable insight – clarifying where deviations originate, what responses are possible, and how those responses affect the operation.

That is where intelligent operations become self-steering. Through agentic coordination, Intelligent Operations can activate changes across the operating structure itself – adjusting flows in process orchestration, refining rules and parameters, or triggering actions in the Interaction Layer and the transactional core. The result is a continuous loop: The operation generates signals, the system interprets them, decision intelligence is produced, and coordinated action is taken across the system. In that way, the enterprise does not simply process work. It continuously learns from how work is performed and adapts how it should be performed next. While this logic may still appear abstract, in practice it becomes immediately tangible.



Case in point: a self-steering operation in practice

On a Monday morning, just after nine, something subtle starts to change in the mortgage processing operation of a retail bank.

Nothing dramatic. No alarms. No outages.

But in the core system, the **validation step** – the part where incoming applications are checked for completeness – begins to slow down. What normally takes around **eight minutes** starts creeping up to **14**. At the same time, the number of cases that need **rework increases**. Not massively, but noticeably – from around **six percent to 11**.

Individually, none of this would trigger immediate concern. In a traditional setup, this would likely show up in a **dashboard later that day**, or perhaps be discussed in a **daily operations meeting the next morning**.

But here, **the system doesn't wait – because the operation is continuously steered as a system**.

Because it continuously interprets what is happening across the operation, it immediately **connects these signals**. It sees that the increase in validation time and rework is not random variation. It identifies that a growing share of incoming applications is **missing income documentation** – something that normally doesn't happen at this scale.

It then **traces that back upstream – linking signals across the operating structure**.

Over the weekend, a small change was made in the **online application form**. A validation rule was relaxed to improve conversion. Customers can now submit applications **without completing a specific income field**.

That change sits in the front-end.

The impact shows up in the core.

And the system **connects the two – this is the engine room at work, relating signals across layers and data**.

Within minutes, it can also **project what will happen next**. If this continues, the backlog in validation will grow, processing times will increase, and within roughly

48 hours the bank will start **missing its service levels**. Customers will wait longer, **conversion will drop**, and additional capacity will be required just to keep up.

At that scale – roughly **5,000 applications per week** – this translates quickly into real impact: hundreds of additional rework cases, a growing backlog, and potentially hundreds of lost applications. In financial terms, that means roughly **half a million to over a million dollars of impact within a single week**, driven by lost conversions and increased operational effort.

At that point, in most organizations, the process would begin: someone flags the issue, a meeting is scheduled, data is pulled together, hypotheses are discussed, actions are agreed, and then gradually implemented.

Here, that doesn't happen.

Because the system doesn't just understand what is happening – **it translates that understanding directly into action across the operation**.

The intake rule in the front-end is adjusted so that the **missing income field becomes mandatory again** for that specific segment. At the same time, incoming incomplete applications are automatically **routed to a specialized team**, so they don't block the main flow. In the core system, validation logic is slightly **adjusted to reduce rework** for borderline cases.

All of this happens within the same day – as part of how the operation runs.

By the next morning, validation times are back close to normal. **Rework drops**. The backlog stabilizes. The projected **service level breach never materializes**.

And the **financial impact never materializes either**.

Nothing escalated.

No cross-functional meetings.

No manual coordination.

The operation corrected itself **before the customer ever noticed there was an issue – because it continuously understands and adjusts itself**.

The path to Intelligent Operations and a self-steering enterprise

In every enterprise, activities already exist that perform many of the functions required to steer the operation – reviewing performance, setting priorities and coordinating action.

In many organizations, however, these activities remain fragmented. Signals about performance surface in dashboards and reports. Issues are discussed in meetings. Improvement initiatives are launched through projects or transformation programs. Leadership teams review results and coordinate responses across functions and systems.

Taken together, these routines form a steering mechanism for the enterprise – but one that operates largely through human interpretation and coordination. Where these activities remain scattered, operational signals rarely translate directly into action. Performance issues appear in reports, teams investigate them, and corrective measures are implemented through periodic interventions. Progress occurs, but it depends heavily on attention, coordination and sustained effort.

For this reason, many organizations begin by formalizing these activities into a structured management system: a defined set of routines, decision forums and improvement mechanisms that connect strategy, performance and execution. This creates the first coherent version of how the enterprise is steered – making how signals are interpreted and how actions are coordinated more systematic.

But reaching a lights-out enterprise requires more than formalizing management routines. It requires embedding this steering capability into how operation itself runs – what we refer to as the engine room. The path forward is not a simple technology upgrade. It is the gradual evolution of the engine room itself – from fragmented coordination, to structured management routines, to digitally embedded intelligence capable of continuously steering how the enterprise operates. This evolution unfolds through distinct stages. Each stage removes a structural constraint in how the enterprise is steered.





Many enterprises have not yet fully institutionalized the first stage. Management routines exist, but they are fragmented – distributed across meetings, dashboards, transformation programs and individual leadership practices.

The first structural shift is therefore not digital. It is how the enterprise is structured to steer itself. It requires making the engine room explicit – defining how strategy is translated into operational direction, how performance is reviewed and how improvement is executed as a system rather than as isolated activity.

The second shift embeds that system digitally. Insight is no longer confined to reporting cycles. Signals are surfaced continuously. AI augments interpretation and prioritization. Corrective actions can be initiated directly and automatically through structured workflows. The distance between detection and response shortens materially. Decision quality improves because analysis is systematic rather than anecdotal. Cost efficiency increases as automation is guided by contextual intelligence instead of static rules.

The third shift moves intelligence beyond the management system into execution itself. Agentic coordination operates across the transactional core, interaction layer and process orchestration. Adjustments to sequencing, policies and operational parameters occur within defined guardrails. Improvement ceases to be programmatic; it becomes embedded in how the system behaves.

This is the inflection point.

An enterprise can be disciplined without being intelligent.

It can be intelligent without being autonomous.

It becomes lights-out only when insight activates coordinated action across the entire operational system.

That is how Intelligent Operations evolve – and how the enterprise becomes self-steering.



Where people create value

As Intelligent Operations reshape how work is executed and improved, it also redefines where and how people create value.

In coordination-driven operations, a significant share of time is spent on activities that keep the system running – collecting information, aligning across teams, following up on actions and managing exceptions. These activities are necessary, but they do not fundamentally improve how the operation performs, nor do they scale as the organization grows.

In Intelligent Operations, much of this coordination effort is removed. Signals are interpreted within the system, decisions are embedded into workflows and actions are triggered and aligned without continuous manual intervention. As a result, the role of people shifts.

Value is no longer created by connecting the dots across the operation, but by improving how the system itself works. This includes defining how work should be structured and executed, setting priorities and managing trade-offs and continuously improving processes, rules and decision logic. In this model, performance management and improvement are no longer separate activities, but part of how the operation runs.

As the operation becomes increasingly self-steering, the role of people moves further upstream – from coordinating execution to shaping, improving and governing the system. This is also what enables higher levels of autonomy. As decision-making and execution become embedded, people focus less on managing activities and more on ensuring that the system performs as intended, operates within defined guardrails, and continues to improve over time.

This shift is critical. Intelligent Operations do not remove the need for people. They increase the importance of human judgment – but at a different level. The focus moves from managing work to designing and improving the system that performs it.

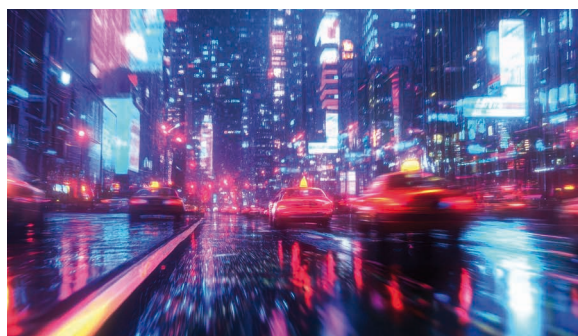


Intelligent Operations fundamentally change the value curve of the enterprise

The value of Intelligent Operations is not incremental – it increases exponentially.

Most organizations still improve operations linearly: better processes, lower cost and faster execution. Intelligent Operations change that trajectory. As they become embedded, performance is no longer optimized step by step – it is structurally redefined. Decisions move closer to execution. Signals are interpreted across the operation. Coordination effort reduces. The immediate effect is tangible: double-digit productivity improvements and structurally lower cost-to-serve.

But the real shift lies in how performance is understood and improved. In coordination-driven operations, root cause analysis is slow and reactive. Issues are identified after they occur, analysed through meetings and reports, and resolved with delay. In Intelligent Operations, signals are continuously interpreted in context. Root causes are identified faster and more accurately – often before issues fully materialize. As maturity increases, this becomes predictive: deviations are anticipated, actions are taken before impact occurs and improvement opportunities are continuously surfaced and captured. This is where value becomes exponential.



Across the enterprise, this translates into structural gains:

- **Cost** – less coordination, more productive capacity
- **Service** – consistent decisions, predictable outcomes
- **Scalability** – growth without proportional resource increase
- **Agility** – faster, more reliable response to change

Value is no longer created through isolated improvements, but through a system that continuously improves its own performance.

More importantly, Intelligent Operations are a pre-requisite for enterprise-wide autonomy. A lights-out enterprise cannot be achieved through automation alone. It requires a system that continuously interprets signals, makes decisions in context, monitors controls and safeguards, and coordinates action across the enterprise.

Without this, autonomy remains fragmented and difficult to scale. With it, autonomy becomes structural. Digital workers, multi-system agents and human judgment operate within one system that continuously learns, adapts and improves.

The implication is clear: Organizations that remain in coordination-driven models will see diminishing returns from further optimization. Organizations that embed Intelligent Operations will not just improve faster – they will operate on a fundamentally different performance curve, enabling both structural productivity gains and the transition toward increasingly autonomous, lights-out operations.

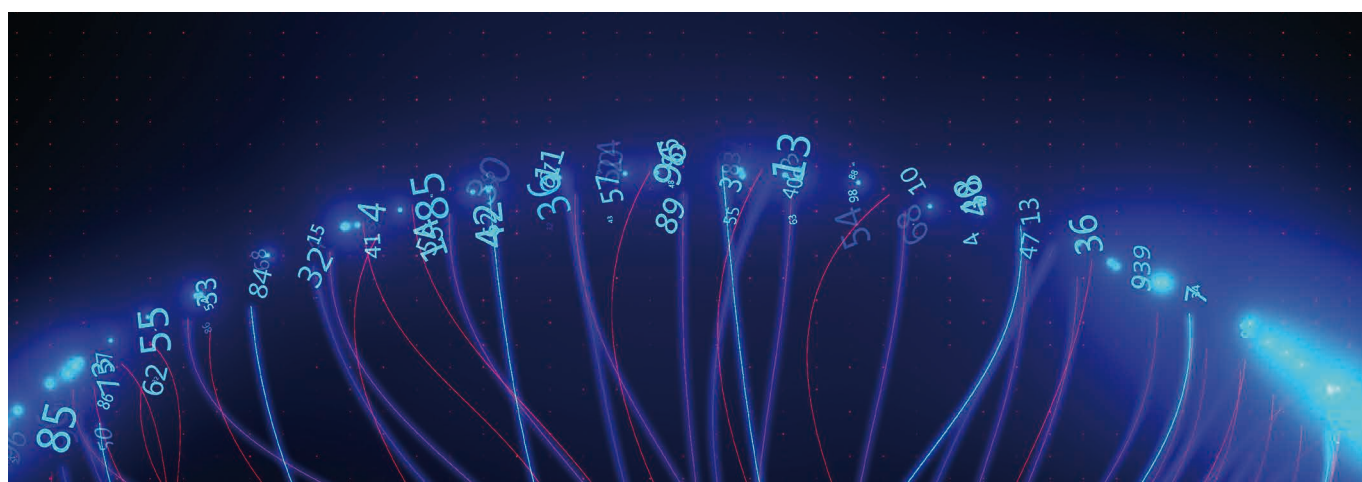
The strategic friction ahead in the transition to Intelligent Operations

The structural shift is already underway. Yet many decisions made today are still anchored in incremental logic.

Technology platforms are selected based on current requirements rather than future operating models. Infrastructure choices are made for short-term integration convenience. Automation initiatives focus on task efficiency without clarifying the long-term design of the engine room. Organizational structures

are adjusted without reconsidering where intelligence should reside.

These decisions accumulate. Over time, they either enable or constrain the evolution toward Intelligent and self-steering operations. What appears tactical today often becomes strategic over time – and the friction is not technological feasibility, but design intent.



A different form of urgency

The urgency facing service organizations is often framed as speed – how quickly to automate, how rapidly to deploy AI, how aggressively to reduce cost. The more consequential urgency is different: defining, with clarity, what the enterprise should look like a decade from now – where intelligence resides, how decisions are made and how execution is structured.

Only from that future state can coherent steps be for the present be determined. Some capabilities must be strengthened immediately, others incubated and some require breakthrough redesign.

Without a clear future design, short-term acceleration risks locking the organization into structural constraints that are difficult to reverse.

Designing the path to intelligent operations

For leadership teams, the next step is translating that future perspective into a deliberate path. It begins when leadership teams recognize that the operating model itself has become part of the *executive agenda*.

In many organizations the signals are already visible: operational complexity continues to grow, data volumes expand rapidly and people spend increasing amounts of time coordinating work across systems rather than improving outcomes. At the same time, AI has moved to the top of the C-suite agenda. Leadership teams are exploring how it might transform productivity, decision-making and customer experience.

Yet these conversations often remain separate. AI discussions focus on individual use cases and technological capabilities, while operational challenges are addressed through incremental improvements. The opportunity lies in bringing these agendas together: using the momentum around AI to rethink how the enterprise itself operates. The opportunity is to bring these conversations together and approach the transition toward intelligent operations through three leadership moves:

1 Define the future enterprise:

Leadership teams should articulate what a self-steering intelligent operation would look like in their context: how the enterprise should be structured, how work should flow through it and how human judgment and system intelligence should interact. The result is a clear picture of the future enterprise.

2 Understand today's operating reality:

With that future state in mind, leadership teams can examine how the enterprise actually operates today: how decisions are made, how work is coordinated and which elements of the current operating model constrain the organization's ability to adapt and improve.

3 Design the path using future-back thinking:

Rather than starting from today's constraints and building forward incrementally, leadership teams should work backward from the future enterprise they want to create. This perspective clarifies which structural capabilities must exist over the coming decade and which decisions must be taken today to move the organization toward that future state.

Taken together, these steps transform the idea of a lights-out enterprise from a distant vision into a deliberate trajectory.

The shift toward Intelligent Operations is not a distant technological possibility. It is a structural transformation of how service enterprises are designed and led. The organizations that succeed will not simply adopt new technologies; they will deliberately shape the operating model through which intelligence, people and systems work together. For leadership teams, the question is no longer whether this transformation will happen – but how intentionally they will design the enterprise that emerges from it.



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