

Data Center Operations Intelligence Platform

**Moving beyond visibility to turn data
overload into decision advantage**

Why critical infrastructure operators everywhere, from edge to enterprise, colocation provider to hyperscaler, need to look beyond data to scale their expertise and decision-making. How EkkoSense is leading this shift with its Data Center Operations Intelligence (DCOI) Platform.



Daniel Kline
CEO, EkkoSense





A Message From Our CEO

Data center optimization has hit a wall, at precisely the moment finance teams, sustainability leaders, customers, and shareholders are demanding more of it, faster. That stall isn't down to a lack of data, a weak technology stack, or operators who lack the skill to do better. It's something else: the industry has taken current approaches about as far as they will go, and closing the gap now means taking a genuinely different leap forward - not simply repeating the last one harder.

Every operator we work with already has data. Most have several generations of BMS systems, DCIM platforms, point monitoring tools, spreadsheets and dashboards, all layered on top of one another over years of sensible investment. That isn't the problem, and it isn't anyone's fault. The technology stacks in most data centers today are a reasonable response to what has been asked of them over the years, and the people running these facilities are among the most capable operators I've met in any industry.

The problem we keep encountering is different: there is simply too much data, spread across too many disconnected systems, for any team - however good - to rely on it to consistently produce the right decisions, for the right sites, at the right time. Expertise doesn't scale at the same rate estates do, and neither does attention.

We are at a pivotal moment for our industry. The efficiency gains that used to come easily have plateaued just as the pressure to do more, faster, is building from every direction at once. Energy costs are rising, sustainability regulation is tightening, and AI-driven demand is growing quicker than most estates were ever designed for. Closing that gap will not come from yet another dashboard or data source. It will come from reframing the challenge itself.

That is why we built EkkoSense around a single idea: drawing on a broad range of IoT sensors, API and data integrations to create a single **Operational Truth** as the trusted foundation - and then build the **Decision Support, Continuous Intelligence** and **Decision Automation** you need directly around it to create an effective orchestration layer for data center operators.

I hope this paper offers a useful reframing of a challenge that stretches across the entire critical infrastructure market, and that our whole industry now needs to solve together, at pace.



Daniel Kline
CEO, EkkoSense



Executive Summary

The data center industry has spent two decades trying to solve the same three problems: cost, reliability, and sustainability. It has invested heavily in monitoring, BMS, DCIM, sensors, and dashboards. Yet efficiency has plateaued, compliance risk is rising, and AI-driven density is testing resilience harder than ever.

The uncomfortable truth is that this is not, at its core, a technology gap or a people gap. Most operators are not short of data, if anything they have too much of it, scattered across systems that were never designed to talk to each other. Inevitably this can lead to fragmentation, with important information getting lost, trapped, or siloed in all the background noise. What operators are short of is the time, the specialist expertise, and the consistent decision-making capacity needed to turn that data into action - site after site, day after day, minute after minute.

That is the real challenge facing critical infrastructure operators everywhere today, from edge to enterprise, colocation provider to hyperscaler. It shows up with particular intensity in colocation, telecommunications and financial services (three sectors this paper returns to as illustrations), but the underlying constraint is universal: there's a lack of ability to scale expert decision-making across an estate that grows more complex every year. At its heart, this is not about monitoring critical infrastructure more closely. It is about scaling operational expertise across it.

Solving this starts with establishing **Operational Truth**: a single, trusted foundation that every other capability builds on. **Decision Support**, **Continuous Intelligence** and **Decision Automation** all extend directly from this foundation, not as future milestones, but as capabilities operators can draw on today, in whatever combination their estate needs. EkkoSense exists to give operators that foundation, and everything built on it, as a **Data Center Operations Intelligence (DCOI) Platform**, not as a controls vendor. The result across every capability is the same: better decisions, made faster, at far greater scale, with stronger risk controls built in from the start.

In practice, EkkoSense provides a unified orchestration layer platform that enables better operational decision-making and helps organizations scale expertise across their teams, without adding headcount or asking already-stretched specialists to somehow do more. Once that foundation is established, customers can then realize benefits across capacity management, energy efficiency, risk identification and mitigation, and overall operational optimization, whatever kind of estate they run and however they choose to draw on it today.

✂ Every data center operator is chasing the same goal: as much compute as possible from as little resource as possible. That means pushing every room and every site to its true limit, safely, with the oversight and confidence to do it responsibly. That is exactly what EkkoSense makes possible. ✂



Enabling Operational Truth across the business

In building such a **Data Center Operations Intelligence Platform** approach, EkkoSense equips organizations with the **Operational Truth** they need to ask and answer the big infrastructure and AI questions that are being asked by senior stakeholders across the business. Questions that until now have often been difficult to answer precisely. These might include:



While legacy BMS, EpMS and DCIM systems may capture volumes of operational data, it's often hard to access quickly – and more so across larger estates where there's the added complexity of multiple incompatible systems running in parallel. EkkoSense's unified **Data Center Operations Intelligence Platform** simplifies all this, creating an effective orchestration layer that supports the operational decision-making and scaling of expertise across teams to answer precisely these types of questions in real-time.



DATA CENTER OPERATIONS INTELLIGENCE PLATFORM



TECH STACK

LAYER

1



DATA CENTER OPERATIONS INTELLIGENCE (DCOI) PLATFORM



UNLOCKING OPERATIONAL TRUTH

Maximizing compute capacity from minimal resources. This means pushing every room and site to its true, safe limit, with total visibility and the confidence to operate responsibly.

The EkkoSense orchestration platform helps operators enable decisions at scale. A light-touch, vendor-agnostic approach that's quick and easy to implement ensures that EkkoSense delivers at a fraction of the cost of legacy data center platforms.

2

BMS

SCADA

DCIM

3

Field Sensors

EpMS

Asset Management

4

Essential and Critical Infrastructure Hardware

FRAGMENTED TECH STACK

Today's fragmented tech stack scatters vast amounts of data across siloed systems. Operations teams lack the critical time, specialist expertise, and consistent decision-making ability to transform this data into immediate action, 24x7.

Amidst rapidly evolving, high stakes requirements, current systems have hit a wall and demand an integrated **Data Center Operations Intelligence Platform** layer. Only this can provide the real-time, aggregated reporting needed for fast, accurate decisions at scale across individual sites and entire data center portfolios.



1 | An Industry Under Converging Pressure

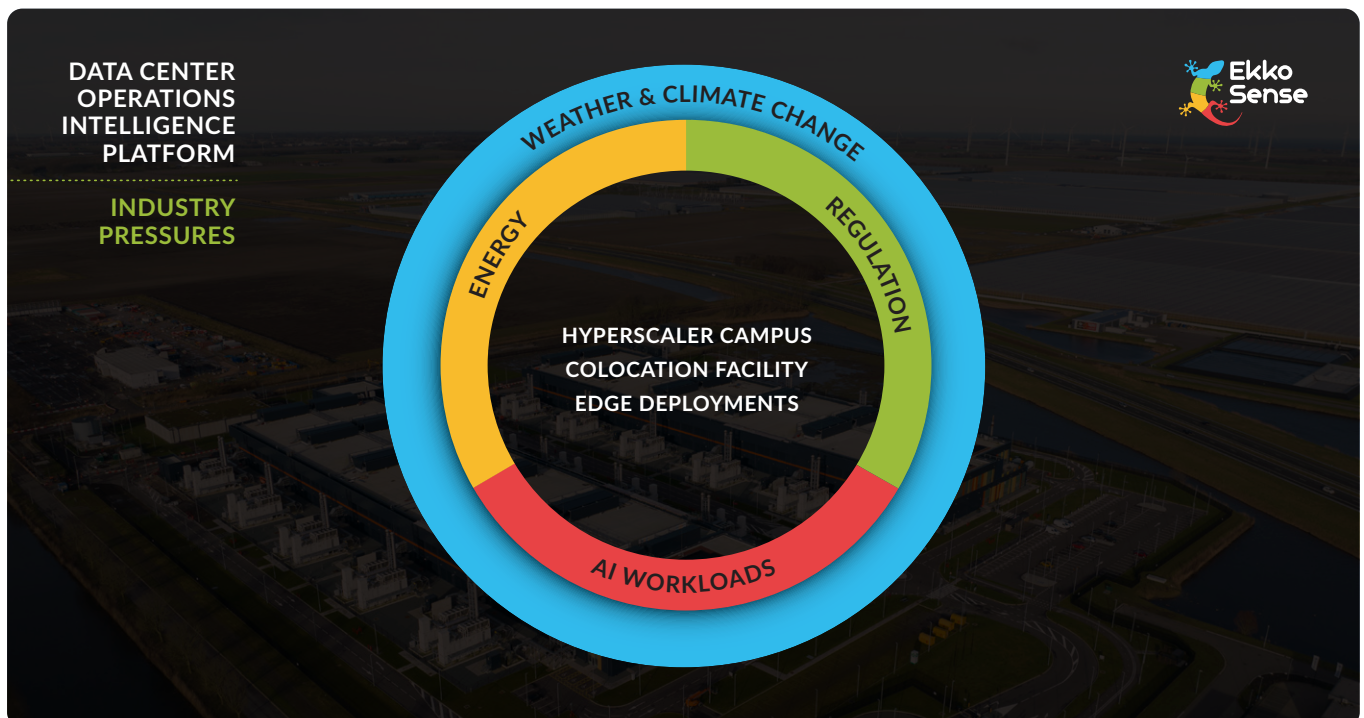
Four forces are impacting operators everywhere, regardless of region, business model or sector.

Energy has become the fastest-growing line item in data center budgets, and colocation customers and enterprise boards alike are asking for proof of efficiency, not just claims of it.

Regulation is expanding just as quickly, with mandatory PUE limits, disclosure rules and rating schemes appearing across Europe, Asia and the Middle East in the past two years, and most operators expect new obligations to impact them within five years wherever they operate. Layered on top, the **shift to high-density AI and hybrid liquid-cooled workloads** is forcing operators to re-open **capacity and cooling** questions that many assumed were settled at design stage.

None of this is a knowledge problem. Operators know what good looks like. The pressure is on their ability to keep making consistently good decisions, at speed, across every site, as the volume and complexity of operating data keeps growing faster than any team can absorb it. These pressures are not confined to any single part of the market: they are felt as acutely by a hyperscaler campus as they are by a single-site colocation facility or an edge deployment supporting a regional branch network.

There is a fourth pressure that no amount of good design can plan its way around: **weather**. Even the best-designed, best capacity-planned facility is still at the mercy of a climate that is growing more variable and more volatile. Cooling systems sized against historical weather data are increasingly being tested past their original assumptions by hotter extremes and less predictable conditions, raising the bar for both efficiency and resiliency in cooling, no matter how well a site was planned on day one.





2 Why More Data Hasn't Solved the Problem

Plenty of data, not enough decisions

Facilities engineering, IT operations, sustainability and leadership each already collect data, cooling and power telemetry, utilization figures, carbon and compliance metrics. The issue isn't that this data doesn't exist; it's that it sits in disconnected systems, in formats only specialists can interpret, arriving faster than any team has time to act on consistently.

Expertise doesn't scale with the estate

Assessment data across the industry shows that even well-understood, proactive energy management practices are consistently under-practiced, not because operators lack the knowledge, but because there are only so many expert hours in a day, and estates keep growing faster than specialist headcount can follow. The goal isn't to replace these specialists, particularly in a market where that kind of expertise is already in short supply. It's to give the engineers already on the team the evidence and confidence to make significant changes faster, and with less risk, than they could by relying on judgment and spreadsheets alone.

The highest-value opportunity needs judgment, not just numbers

IT equipment typically accounts for the majority of a data center's energy use, and improving IT utilization delivers a far bigger efficiency gain than facility-side measures alone. But capturing it means IT and facilities teams making joint, judgment-based trade-offs, repeatedly, across hundreds of assets - precisely the kind of decision that gets skipped when everyone is already thinly stretched.

A sharper version of the problem across the market

This constraint plays out everywhere, but shows up with particular clarity in a few parts of the market. Colocation providers must prove efficiency and capacity performance to increasingly demanding customers and regulators, across many sites, tenants and equipment generations without slowing down sales or provisioning. Telecom operators run some of the most distributed critical estates in existence, from exchanges to edge sites, while financial services operators face some of the toughest resilience and audit obligations anywhere, where a missed decision is a risk event, not just a cost one. The same pattern repeats at every scale, from edge cabinets supporting distributed branch or retail networks, to hyperscale campuses supporting the largest AI training clusters. Wherever the estate sits, the constraint is identical: more data than any team has the time to turn into the right call, at the right site, right now.

✍ The issue isn't that this data doesn't exist; it's that it sits in disconnected systems, in formats only specialists can interpret, arriving faster than any team has time to act on consistently. ✍



3

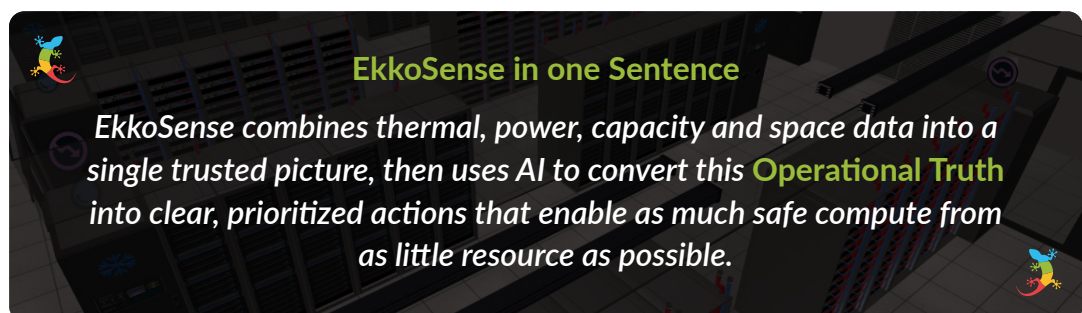
The Real Challenge: From Data to Decisions at Scale

It's tempting to describe this as a visibility problem. It isn't, visibility is a symptom, not the root cause. Most operators can already see volumes of data through their existing BMS, DCIM and monitoring tools. What they lack is the capacity to consistently convert everything those systems show them into the right decision, every time, at the pace their estate now demands.

That distinction also draws a clear line around what EkkoSense is, and what it deliberately isn't. It doesn't replace or compete with BMS, SCADA and control platforms, which remain responsible for directly operating equipment: adjusting fan speeds, valve positions and cooling setpoints. EkkoSense sits a level above that layer of control as a **Data Center Operations Intelligence Platform**, turning what those systems already show into the judgment calls that decide what should happen next, and increasingly, scaling that judgment itself across an estate, whether that estate is a single edge cabinet or a global hyperscaler portfolio.

🦎 Our job doesn't start with showing operators more data. It starts where monitoring stops, turning overwhelming, siloed data into a trusted, consistent basis for action. 🦎

This is why EkkoSense is built around a single orchestration layer platform, not as a stack of separate tools. At the center is **Operational Truth**: a unified, trusted picture that aligns Facilities, IT, Financial, Sustainability and Leadership around the same observable reality, drawn from the thermal, power, capacity and space data across an entire estate. **Decision Support**, **Continuous Intelligence** and **Decision Automation** all extend directly from that **Operational Truth** foundation, scaling the judgment of a specialist team across an entire data center portfolio, instead of asking every site to somehow find more expert hours. The result is decision-making that gets better, faster, and safer the more of the estate it covers, not less.



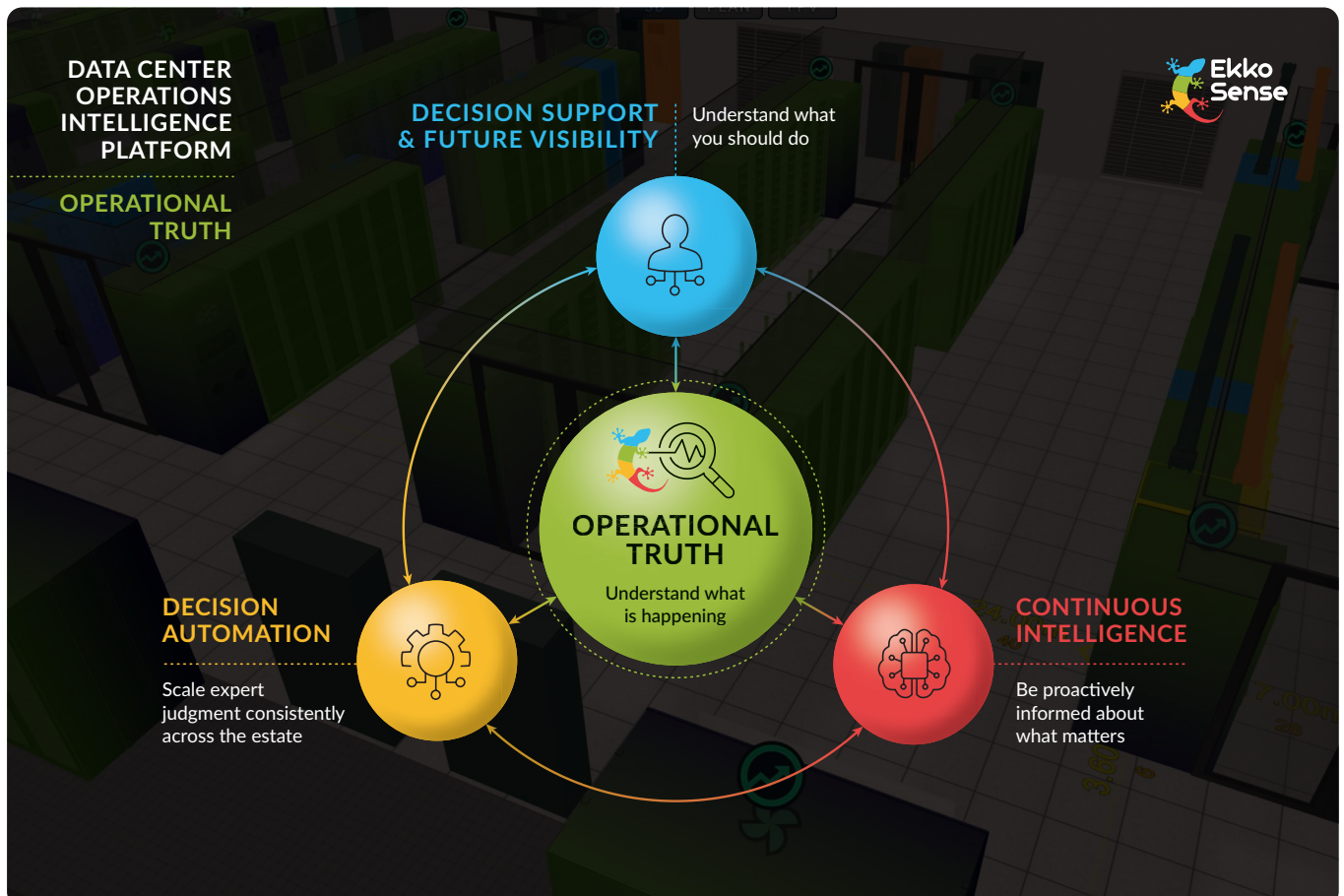
EkkoSense in one Sentence

*EkkoSense combines thermal, power, capacity and space data into a single trusted picture, then uses AI to convert this **Operational Truth** into clear, prioritized actions that enable as much safe compute from as little resource as possible.*

4 | Operational Truth: One Foundation, Three Capabilities

This is the reframe itself, not another item to add to the pile. Getting past a wall that more data, more dashboards and more tools were never going to solve starts where monitoring stops: with Operational Truth. Decision Support, Continuous Intelligence and Decision Automation all extend directly from that same foundation, they are what Operational Truth makes possible, not separate capabilities layered on top of it.

One trusted **Data Center Operations Intelligence** foundation, put to work across everything that follows, is the only way we see past the optimization plateau, and it's how every operator gets closer to the goal that actually matters: as much compute as possible from as little resource as possible - with every room and site pushed safely to its true limit, not just its original design assumption.





Operational Truth: *Understand what is happening*

EkkoSense's Data Center Operations Intelligence Platform provides a trusted operational picture, aligning Facilities, IT, Financial, Sustainability and Leadership around one common view of reality, replacing disconnected, siloed data with a single source of truth. Every other capability builds directly on this foundation.



Decision Support & Future Visibility *Understand what you should do*

Capacity Planning and Anomaly Detection draw on **Operational Truth** to show not just what is happening now, but what could happen next, and what action should be taken. That works on the power side, releasing headroom for growth, and just as importantly on the thermal side, finding capacity that is often lost in the room to inefficient airflow and cooling, capacity that matters even more as newer IT hardware pushes rack densities higher.



Continuous Intelligence *Be proactively informed about what matters*

Drawing on the same foundation, the platform proactively surfaces issues, risks, opportunities and recommendations, without operators needing to spend their lives watching dashboards for the answer. Powerful algorithms release stranded power and cooling capacity, while real-time anomaly detection identifies potential performance anomalies ahead of any equipment failure enabling more proactive maintenance.



Decision Automation *Scale expert judgment consistently across the estate*

While automatically adjusting fan speeds, valve positions and cooling setpoints remains in the domain of BMS, SCADA and control platforms, **Decision Automation** sits much higher up the value stack, drawing on **Operational Truth** not the equipment underneath it to automate key parts of the decision-making process.



This enables configuration to support critical governance guardrails, freeing operations to focus on preparing options, quantifying outcomes, assessing risks and recommending actions on key questions such as:

- Which site should receive the next AI deployment?
- Where can we find stranded capacity across the estate?
- Which hall(s) should be prioritized for liquid cooling?
- Which asset replacement would deliver the highest ROI?
- What operational risk should be addressed next?

The result? Humans stay responsible for governance and approval throughout, but spend less time searching for problems and more time validating decisions, all backed by a stronger, evidence-based operating intelligence platform safety net than manual oversight alone could ever provide.

For colocation providers specifically, this same foundation translates directly into revenue: more of it, and realized faster. Selling space, power and cooling with confidence, instead of caution, and spotting a sellable megawatt before a competitor does. Both come down to the same thing this whole paper has been building toward - decisions made faster, at scale, backed by evidence. The same questions this paper has already shown EkkoSense answering operationally are, for a colocation provider, commercial questions too, and useful proof points for the wider market since they show just how far these capabilities extend beyond operations into revenue itself:

- How can I increase revenue, and realize it faster, by turning stranded capacity into sellable capacity sooner?
- How can I accelerate sales cycle decisions with prospective customers, when stranded capacity is invisible or responses to a lead are slow and overly cautious?
- How can I differentiate my offering from competitors?
- How can better insight into power, cooling, capacity and space improve customer engagement, retention and differentiation?



EkkoSense provides a **Data Center Operations Intelligence Platform** rather than different control options. The value lies not in operating equipment but in scaling the judgment that decides how equipment, capacity, and estates should be run. That's a fundamentally different position from what the market has today, and where the market and its teams need to be to achieve their goals at scale.



5 Rethinking the Approach

The industry does not need another framework describing what good looks like, the principles of good operations are already well understood. What has been missing, though, has been a way to scale the expert judgment behind them across every site - edge, colocation hall, or a hyperscaler campus - faster than estates are growing in size and complexity.

For colocation providers

This means not only demonstrating proven efficiency, but also securing commercial benefits through accelerated time-to-market, faster customer onboarding, increased sellable capacity, improved asset utilization, and potentially deferred capital investment thanks to unlocking stranded capacity.

Leveraging the EkkoSense orchestration layer also allows for the setting of bespoke SLAs at either a room, customer or asset level, opening up potentially new operational models for colocation customers. Establishing dedicated Customer Portals in EkkoSense also lets colocation providers give their customers access to real-time continuous performance insights into how their equipment is performing without compromising security – even across multiple colocation sites or locations.

For telecommunications and financial services enterprises

This means managing resilience, compliance and cost across sprawling, high-stakes estates - all from one trusted basis for decisions, not a patchwork of dashboards and after-the-fact reports. For every operator in between, the underlying need is the same: scaling operational expertise across critical infrastructure, not simply monitoring more of it.

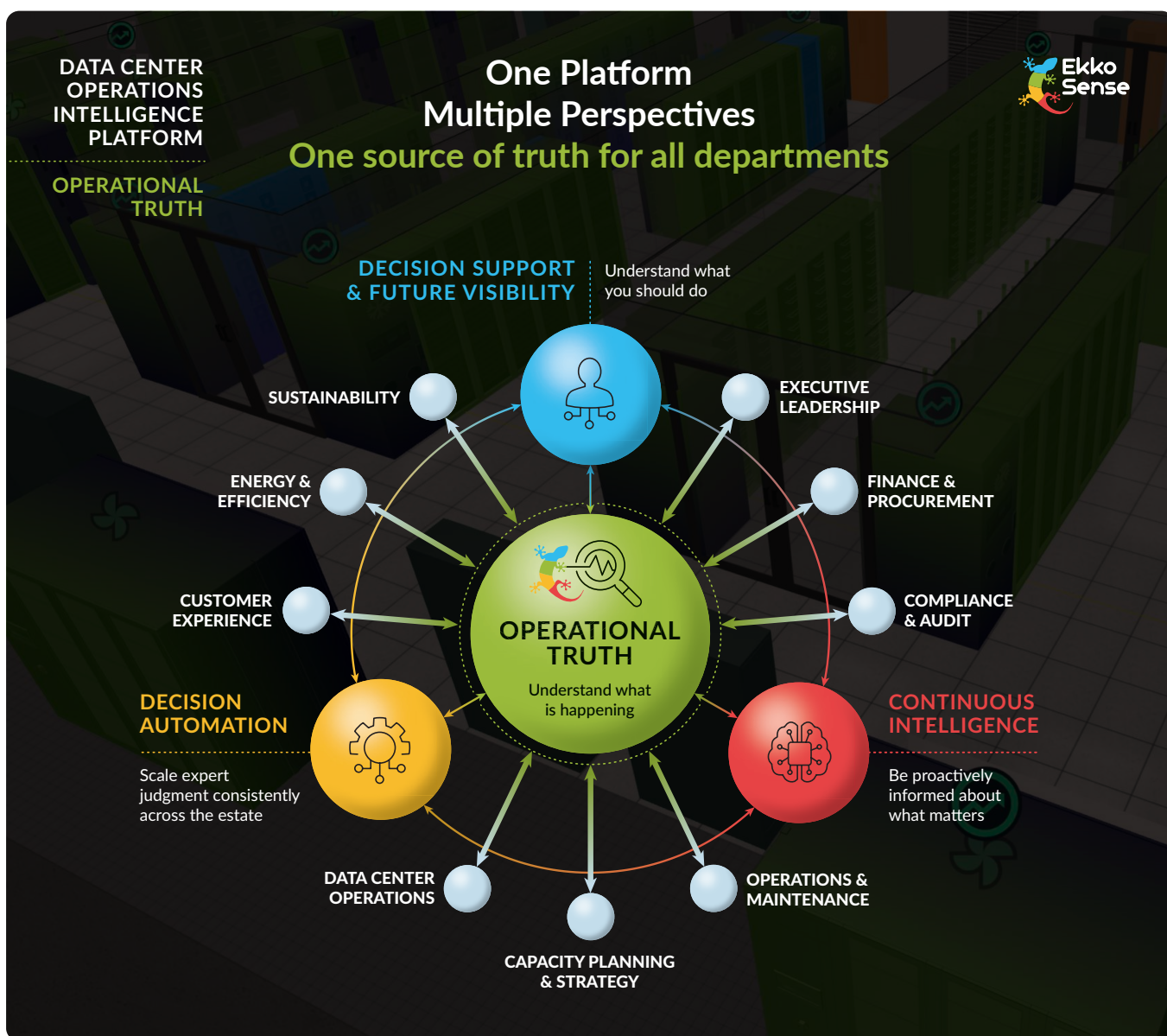
Interdepartmental functions

This means that multiple departments can draw on EkkoSense's orchestration layer and **Operational Truth** to access the same data while asking very different questions. Whether it's Executive Leadership, Customer Experience, Operations & Maintenance, Energy Efficiency & Sustainability, Capacity Planning & Strategy, or AI Integration, EkkoSense's Digital Twin visibility and ease-of-use make it a powerful resource for functions across the organization.



This is the leap the industry now needs to make: from data that describes the past, to decisions made consistently, at scale, in real time, with risk caught and managed along the way - not after the fact. That is what EkkoSense makes possible today: **Operational Truth** as the foundation, with **Decision Support**, **Continuous Intelligence** and **Decision Automation** realizable directly on top of it.

At its core, EkkoSense provides a unified **Data Center Operations Intelligence Platform** that enables better operational decision-making and helps organizations scale expertise across their teams. Once that foundation is established, customers can then realize benefits across capacity management, energy efficiency, risk identification and mitigation, and overall operational optimization, wherever their estate sits and however they choose to draw on it today. The underlying ambition doesn't change: as much compute as possible, from as little resource as possible, with every room and site running safely at its true limit.





6 EkkoSense and Data Center Operations Intelligence in Action

Reducing risk, increasing insight and cutting energy consumption for leading global bank

One of the world's leading banking groups deployed EkkoSense to reduce risk, increase operational insight, and cut energy consumption. Initial results included a total cooling energy saving of 866 kW for the bank's core data center sites, representing a 10% data center cooling energy saving in just ten weeks, an initial carbon saving of 3,111 tonnes per year – despite the fact that the bank's IT loads actually increased during the optimization project, and OPEX savings of c.\$500,000 per year achieved through reduced energy usage. Following the initial project success in North America, the bank then expanded its EkkoSense deployment to include key EMEA and Asia/Pacific data center sites.

“Our key drivers for engaging EkkoSense to optimize performance at our major North American data center sites were to reduce risk, cut energy consumption, and increase our operational insight. I'm pleased to say that we were collectively able to deliver against all those objectives, ensuring increased rack performance within ASHRAE TC9.9 compliance bands, securing quantifiable energy savings, and also uncovering potential hidden risks that simply weren't visible before this EkkoSense optimization process.”

Global Head of Critical Facilities

Driving energy efficiency for Telefónica Germany

Telefónica has taken a decisive step in its energy efficiency strategy with the implementation of an innovative management and optimization solution developed by Telefónica Germany in collaboration with EkkoSense. Initial evaluations of the program indicate an estimated 15-20% reduction in energy consumption for cooling systems. These savings have an immediate impact on energy OpEx and help improve operational efficiency.

“Digitalization makes the data center visible; automation makes it intelligent. EkkoSense's Digital Twin combines both, enabling operators to redefine energy efficiency and proactively guide their infrastructure into the future.”

Rüdiger Kunze, Head of Housing & Site Infrastructure, Telefónica Germany



Enabling real-time visibility for Telehouse

EkkoSense enables real-time visibility of energy performance at the Telehouse London Docklands data center campus. Using EkkoSense's award-winning software, Telehouse gets immediate visibility of the critical data required to optimize performance at their data center campus. Results to date include 100% total operational visibility in real-time, as well as a 15% reduction in cooling energy consumption.

“Working with EkkoSense we have already cumulatively secured 2,900 tonnes of CO₂ savings across our Telehouse Docklands campus - contributing directly to our broader corporate sustainability goals. We're currently monitoring across five buildings, with EkkoSense capturing data from some 7,500 racks and 500-plus air conditioning units. It's a lot of connected devices, producing and reporting critical data in real-time. With additional functionality such as integrating power data, EkkoSense is helping us to understand our customers and get even closer – it's all about making them more efficient and helping them deliver.”

Mark Pestridge, Executive Vice President & General Manager, Telehouse

Full real-time thermal and energy visibility for Everest Digital

Tier III data center colocation provider Everest Digital is based in Brazil and has adopted EkkoSense as a core part of its operational architecture. With EkkoSense in place the company has achieved a 28% reduction in cooling energy consumption, eliminated overcooling zones, improved capacity management, and enabled automated ESG reports for sustainability metrics.

“Today, we operate with technical excellence, thermal efficiency, and environmental responsibility – a direct result of the operational maturity we've achieved with EkkoSense. More than a tool, the platform has become a fundamental part of our operational strategy, enabling us to deliver an infrastructure aligned with today's demands and ready for the challenges ahead.”

Gisele Santos, Head of Data Center Infrastructure, Everest Digital



*At its core, EkkoSense provides a unified
Data Center Operations Intelligence Platform
that enables better operational decision-making and
helps organizations scale expertise across their teams.*



To see how EkkoSense can help
your organization make this shift,
visit www.ekkosense.com



This paper draws on publicly available data center industry research, including Uptime Institute survey and assessment data, to frame the operational challenges facing critical infrastructure operators today.



North America: 1-833-921-3335
UK Headquarters: +44 (0) 115 678 1234
APJ: +65-86086166

info@ekkosense.com www.ekkosense.com

