



Business



The buyer's guide to operational efficiency

**Improving visibility, uptime,
and service outcomes in
connected operations**

Executive summary

Business Efficiency in the Age of Connected Operations

Operational efficiency has entered a new era. As global organizations across industries rely on distributed, connected assets to deliver essential services, efficiency is no longer defined solely by internal cost control or process optimization. It is now measured by an organization's ability to maintain continuous operations, deliver consistent service outcomes, and respond rapidly to change.

Modern operations depend on always-on connectivity, remote and autonomous systems, and real-time data from devices operating far beyond traditional IT environments. At the same time, operations leaders face growing pressure from increasing scale and complexity, higher uptime expectations, tighter regulatory scrutiny, and customer demand for reliable services. Improving operational efficiency is no longer optional—it is foundational to long-term performance and trust.

Operational Visibility in Practice: How Aeris IoT Watchtower™ Helps

Aeris IoT Watchtower provides continuous operational visibility into cellular IoT devices no matter where they are around the world. Natively integrated into the Aeris IoT Platform, Watchtower helps organizations understand how connected devices behave in real-world conditions—supporting more informed operational decisions without disrupting existing workflows.



Why Operational Efficiency Matters Now

Several forces are converging to make operational efficiency a top priority:

- Connected environments are expanding faster than operations teams can manage manually. The number of active IoT devices is expected to surpass 29 billion by 2030¹. The sheer volume and geographic distribution of devices make traditional oversight impossible.
- Downtime and service disruptions have direct financial, safety, and reputational consequences. For industrial manufacturing, unplanned downtime can cost an estimated \$50 billion annually².
- Reactive operations do not scale in highly distributed environments. A “break-fix” model creates a cycle of costly, high-effort responses that drain resources and erode stability.
- Regulatory and operational scrutiny is increasing across industries, requiring organizations to demonstrate control and provide auditable data for their connected assets.
- Customers and stakeholders expect consistency, not just connectivity. They judge performance on reliability, uptime, and predictable service delivery.

Organizations that modernize how they operate connected assets are better positioned to maintain service levels, adapt to change, and operate with confidence.

Key Questions This Guide Aims to Answer

This buyer’s guide is designed to help operations, IT, and infrastructure leaders answer the following questions:

- What does operational efficiency mean in large-scale, connected environments?
- Why do visibility gaps create inefficiencies, downtime, and operational risk?
- How can organizations move from reactive issue response to proactive operations?
- What capabilities are required to manage distributed assets at scale?
- How can operational efficiency improvements reduce cost, risk, and complexity?
- What does a practical roadmap to operational efficiency look like?

1: Source: Statista

2: Source: Deloitte

Redefining operational efficiency for connected environments

From Process Efficiency to Operational Intelligence

Historically, operational efficiency focused on optimizing internal processes, reducing labor costs, and automating routine tasks. While these remain important, they address only part of the modern operational challenge. Today, the most significant inefficiencies often arise not from flawed processes, but from a lack of awareness—specifically, a lack of insight into how assets behave once deployed.

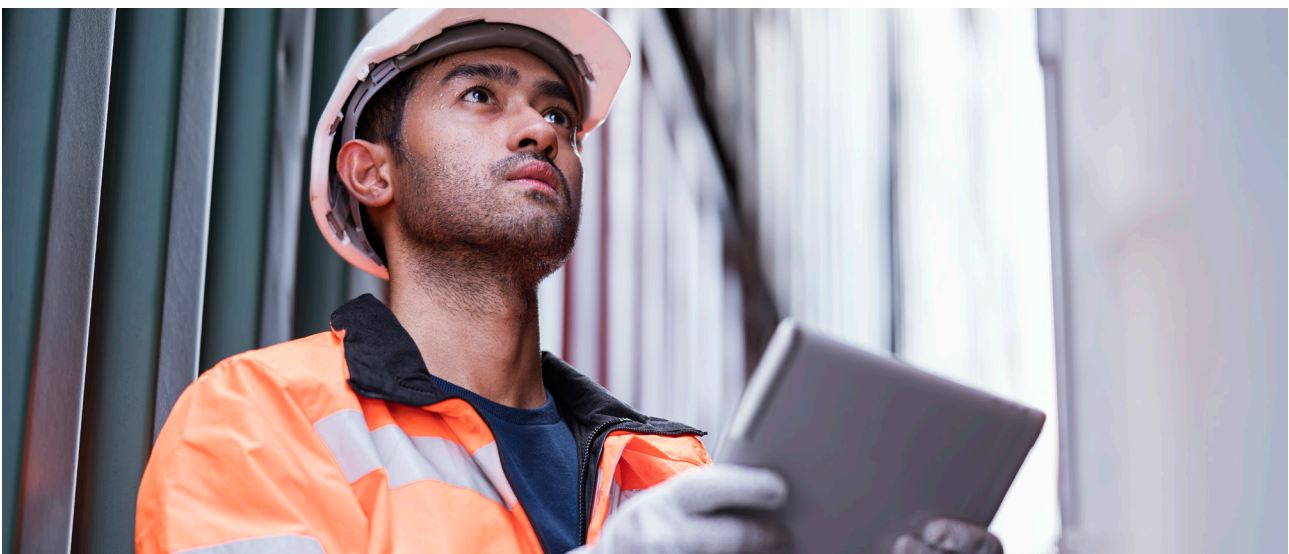
Modern operational efficiency, or operational intelligence, shifts the focus from internal actions to external awareness. It prioritizes continuous insight, data-driven decision-making, and predictable service outcomes.

The Rise of Distributed, Connected Assets

Across industries, organizations now operate vast fleets of connected assets that are geographically distributed, expected to operate autonomously for years, and essential for core service delivery.

These include:

- Industrial sensors and controllers in manufacturing plants
- Smart meters and grid devices in utility networks
- Remote patient monitoring devices and medical equipment in healthcare
- HVAC, security, and energy systems in smart buildings
- Mobile assets and telematics devices in transportation and logistics
- These assets form the backbone of modern operations, making their consistent and reliable performance a critical business capability.



Connectivity as an Enabler—and an Operational Challenge

Cellular connectivity is a powerful enabler, allowing for remote monitoring, control, and management of assets anywhere in the world. However, this same connectivity introduces new dependencies and operational blind spots. Simply knowing a device is “connected” is not enough.

True operational efficiency requires understanding how that device is behaving. The first part of this is anomaly detection: Is its communication pattern normal? Is it connecting to unexpected destinations? Has its data usage suddenly changed? Identifying these deviations is the critical first step.

However, detection alone is insufficient. The second part is enabling a rapid and effective response. This can range from an automated response that brings a device back into its expected state, to providing teams with the deep insight needed for immediate remote troubleshooting. Without answers to behavioral questions and a way to act on them, operations teams are effectively flying blind. The ability to move from detection to quick action is what resolves issues faster, reduces costs by minimizing downtime and truck rolls, and transforms operational data into tangible outcomes.

Understanding Device Behavior at Scale: How Aeris IoT Watchtower Helps

Aeris IoT Watchtower provides insight into how cellular IoT devices communicate and behave over time. This helps operations teams understand connectivity patterns and identify changes that may affect operational performance.

Common barriers to operational efficiency

Limited Visibility Across Distributed Operations

The most common barrier to operational efficiency is a lack of unified visibility. Many organizations struggle with fragmented tools and siloed data, where network teams, operations teams, and application teams each have only a partial view of the environment. This leads to delayed issue detection, disconnected troubleshooting efforts, and a longer mean time to resolution (MTTR).delivering a robust, scalable security solution.

Closing the Visibility Gap: How Aeris IoT Watchtower Helps

Aeris IoT Watchtower delivers per-device operational visibility across large cellular IoT fleets, helping reduce blind spots and providing a centralized view that supports faster collaboration and troubleshooting.

Reactive operations and manual intervention

When visibility is limited, operations default to a reactive, “break-fix” model. Problems are only discovered after they cause a service disruption, forcing teams into a high-stress, firefighting mode. This approach is not only inefficient and costly but also leads to operational fatigue and prevents teams from focusing on strategic improvements.

Supporting proactive operations: How Aeris IoT watchtower helps

By continuously observing device behavior, Aeris IoT Watchtower helps teams identify conditions that may lead to operational issues—supporting earlier investigation and reducing reliance on manual intervention.

Complexity at scale

As an IoT deployment grows from hundreds to thousands or millions of devices, its complexity increases exponentially. Manual processes for monitoring, diagnosing, and managing devices become unsustainable. Without tools designed for scale, organizations find that their operational costs and headcount grow in direct proportion to their device count, negating much of the ROI of their connected solution.

Reducing operational risk without slowing operations

Operational risk extends far beyond security incidents or compliance failures. It includes any factor that threatens service uptime, consistency, and reliability. Visibility gaps are a significant source of this risk, creating uncertainty about device health and behavior. Improving operational efficiency by closing these gaps is a direct and effective way to reduce operational risk without impeding innovation or service delivery.

Operational confidence through visibility: how aeris iot watchtower helps

Aeris IoT Watchtower supports operational confidence by providing consistent insight into device behavior over time, helping teams manage risk while maintaining service delivery.

Operational efficiency across key verticals

While the principles of operational efficiency are universal, their application and impact are best understood through the lens of specific industries.



Manufacturing & industrial operations: Efficiency is measured in uptime and production continuity. Visibility into cellular-connected equipment on the factory floor or in the field helps diagnose issues remotely and prevent costly disruptions that can halt production lines.



Light industrial: Efficiency is driven by maximizing asset productivity and minimizing downtime, often in environments with limited on-site technical staff. Operational visibility allows for centralized monitoring of distributed machinery and equipment, enabling remote diagnostics and proactive maintenance to ensure production continuity.



Utilities & critical infrastructure: The focus is on service delivery and consistency. Operational insight into distributed field assets like smart meters and grid sensors is essential for maintaining reliability across a long-lived, large-scale network and ensuring public safety.



Fleet & telematics: Efficiency is measured by asset utilization, route adherence, and service predictability. Visibility into vehicle health, location, and the connectivity of the telematics devices themselves ensures that fleets operate on schedule, prevents data gaps, and maximizes the productivity of every mobile asset. A critical component of this is OTA (Over-the-Air) Assurance, which allows operations teams to remotely confirm which groups of vehicles were successfully updated, instantly identify those that weren't, and diagnose why the updates failed—all without requiring physical access to the vehicle.



Auto aftermarket: Focus is on service reliability and customer trust. For high-value services like stolen vehicle recovery (SVR) or remote diagnostics, operational visibility ensures that aftermarket devices are healthy, connected, and ready to perform when needed, preventing service failures and protecting recurring revenue.



Retail & QSR: Efficiency centers on store uptime and a consistent customer experience across all locations. Visibility into the connectivity of critical in-store assets—like point-of-sale (POS) systems, digital signage, and environmental sensors for refrigeration—helps prevent lost sales and ensures operational consistency from site to site.



Smart buildings & smart cities: Success requires orchestrating complex, multi-vendor environments. Centralized operational oversight across disparate systems for energy management, security, and public services is key to delivering efficient, reliable, and safe outcomes for occupants and citizens.



Healthcare & medical device operations: Reliability is paramount, as patient outcomes are on the line. Operational confidence in connected care depends on knowing that remote patient monitoring devices and other connected medical equipment are available, connected, and performing as expected.

One operational approach across verticals: How Aeris IoT Watchtower™ helps

Aeris IoT Watchtower provides a consistent operational view across industries, allowing organizations to apply the same operational principles while supporting the unique requirements of manufacturing, fleet, retail, healthcare, and more.

The operational efficiency maturity model

Organizations typically progress through four stages of operational maturity:

- **Stage 1: Reactive Operations:** Issues are discovered after failure. Operations are characterized by manual troubleshooting, high downtime, and unpredictable costs.
- **Stage 2: Basic Monitoring:** Threshold-based alerts provide some level of awareness, but context is limited and response is still largely manual and reactive.
- **Stage 3: Proactive Operations:** Continuous monitoring enables faster identification of anomalies and deviations. Teams can often intervene before service is impacted, reducing downtime.
- **Stage 4: Operational Intelligence:** Operations are driven by a unified, data-rich view of the entire environment. Performance is predictable, scalable, and continuously optimized.

Advancing operational maturity: How Aeris IoT Watchtower helps

Aeris IoT Watchtower supports the transition from reactive to proactive operations by delivering continuous visibility and centralized insight across large device fleets.

Capabilities that enable operational efficiency

To advance their operational maturity, organizations should prioritize four key capabilities:

- **End-to-End Operational Visibility:** A unified view of device health, behavior, and communication patterns across the entire fleet.
- **Continuous Monitoring at Scale:** An always-on, automated approach to observing device behavior that does not require manual effort.
- **Simplified Operations and Management:** Centralized tools for remote diagnostics, policy management, and reporting that reduce complexity.
- **Built-In Risk and Compliance Awareness:** The ability to easily access operational data to support audits and demonstrate control.

Designed for scale, not complexity: How Aeris IoT Watchtower helps

Natively integrated into the Aeris IoT Platform, Watchtower provides operational insight without requiring separate tools, agents, or complex integrations.

Measuring the ROI of operational efficiency

The benefits of improved operational efficiency are tangible and directly impact the bottom line. Research shows that top-performing companies have 90% shorter downtime incidents and resolve them twice as fast as their peers, largely due to better visibility and proactive monitoring.¹

Direct cost savings

- **Reduced Downtime:** Preventing even a single major outage can save significant revenue and recovery costs.
- **Fewer On-Site Interventions:** Remote visibility and diagnostics reduce the need for costly “truck rolls.” The average cost of a single truck roll can range from \$200 to over \$1,000, making any reduction a significant source of savings.²
- **Lower Operational Overhead:** Automation and centralized management reduce the manual effort required to oversee large deployments.

Performance and reliability gains

- **Improved Uptime:** Proactive issue identification leads to more reliable services and higher availability.
- **Faster Issue Resolution:** With better visibility, teams can diagnose and fix problems in a fraction of the time.
- **Consistent Service Delivery:** Reliable operations build customer trust and strengthen brand reputation.

Reducing time to operational value

A critical but often overlooked benefit is the speed at which teams can gain insight. Solutions that are easy to deploy and require minimal integration allow organizations to see benefits in days, not months. This accelerates the learning curve, helps teams demonstrate early wins, and builds momentum for broader operational improvements.

1: Source: Aberdeen Research

2: Source: ServicePower

Faster time to insight: How Aeris IoT Watchtower helps

Because Watchtower is part of the Aeris IoT Platform, organizations can gain operational visibility without re-architecting existing environments—helping teams realize value sooner.

Building an operational efficiency roadmap

A practical journey toward operational intelligence involves four key steps:

Direct cost savings

1. Assess the current state:

Identify your biggest visibility gaps and operational bottlenecks. Where do inefficiencies cause the most pain?

2. Define clear operational objectives:

Determine what success looks like. Is it reducing downtime by a certain percentage? Cutting operational costs? Improving MTTR?

3. Prioritize high-impact use cases:

Start with the assets or services that are most critical to your business. A focused pilot can demonstrate value quickly and build support for expansion.

4. Scale without adding complexity:

As you expand, choose tools and processes that simplify, rather than complicate, operations. Ensure your approach is sustainable at scale.

Operational efficiency in action: Real-world outcomes

Organizations that successfully improve their operational efficiency consistently report:

- Significant reductions in unplanned service disruptions.
- Faster and more accurate root cause analysis of operational issues.
- Lower operational costs associated with manual monitoring and field service.
- Greater consistency in service delivery and improved customer satisfaction.
- Stronger alignment and collaboration between IT, OT, and operations teams.

Operational efficiency as a strategic advantage

In the era of connected operations, efficiency is no longer a tactical, cost-saving initiative. It is a strategic advantage that underpins reliability, scalability, and customer trust. Organizations that invest in improved visibility and automation, are better equipped to move from a reactive to a proactive operational posture, strengthening their position in a complex, always-on world. By improving visibility, reducing operational risk, and accelerating time to value, organizations can move from managing issues to managing outcomes.

Operating with confidence at scale: How Aeris IoT Watchtower helps

Aeris IoT Watchtower helps organizations operate connected environments with greater confidence by providing consistent, reliable visibility into cellular IoT behavior.

Evaluate your operational efficiency maturity. Identify where limited visibility impacts performance. Explore how enhanced operational visibility can help your organization manage outcomes — not just incidents.

POWERED BY  **aeris**

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