STAYING AHEAD WHILE ENABLING INNOVATION:

INTELLIGENT OBSERVABILITY FOR MODERN TELECOM PROVIDERS

By: WanAware

The State of Telecom: Evolving at the Edge of Chaos

Telecom providers are facing a pivotal moment. Many are still operating on older network platforms—built around aging infrastructure and disconnected systems—that weren't designed for the speed, complexity, and flexibility today's telecom subscribers demand.

At the same time, customer expectations have undergone a radical shift. Businesses and consumers alike now expect high-speed connectivity that never fails, regardless of whether they are operating in a metro hub or a rural region, from a centralized data center or at the edge.

As technologies such as AI, edge computing, and fog networking gain momentum, telecoms must transform rapidly to support these emerging use cases. However, evolution becomes complex when you are still responsible for legacy systems deployed decades ago.

The reality? Most providers are trying to plan for tomorrow while still fighting the fires of yesterday.

Complicating matters further, new players, from satellite providers like Starlink to private 5G deployments, are entering the market, intensifying competitive pressure. To remain relevant, traditional carriers must offer not only reliability but also intelligence. That starts with gaining full visibility into their infrastructure and ends with the ability to act on it.

The Three Core Challenges Facing Telecom Provider

In a recent WanAware-sponsored study conducted with 180 telecom decision-makers, WanAware identified three persistent operational blind spots that continue to hinder progress.

These aren't just technical gaps; they're strategic vulnerabilities that erode performance, increase customer churn, and inflate operational costs.

Three Blind Spots Holding Telecoms Back

WanAware 2025 Telecom Benchmark Survey

1. You Don’t Know What You Have

Legacy infrastructure, siloed systems, and disconnected internal teams have made it nearly impossible for many telecoms to maintain an accurate, real-time understanding of their infrastructure.

Traditional asset management methods rely on static inventories, such as spreadsheets or outdated databases, which quickly become inaccurate.

They can’t keep up with the constant changes happening in modern telecom environments, such as new devices coming online, configuration updates, or infrastructure being moved to the cloud. Worse still, teams responsible for legacy systems rarely interface effectively with the architects of modern networks. The result is critical blind spots.

For example, if a fiber aggregation node or regional headend device fails, Telecom providers often can't accurately determine what customers or services are impacted. The interdependencies are opaque, and the implications are enormous. One missed connection can mean service disruptions not just for one customer, but for thousands.

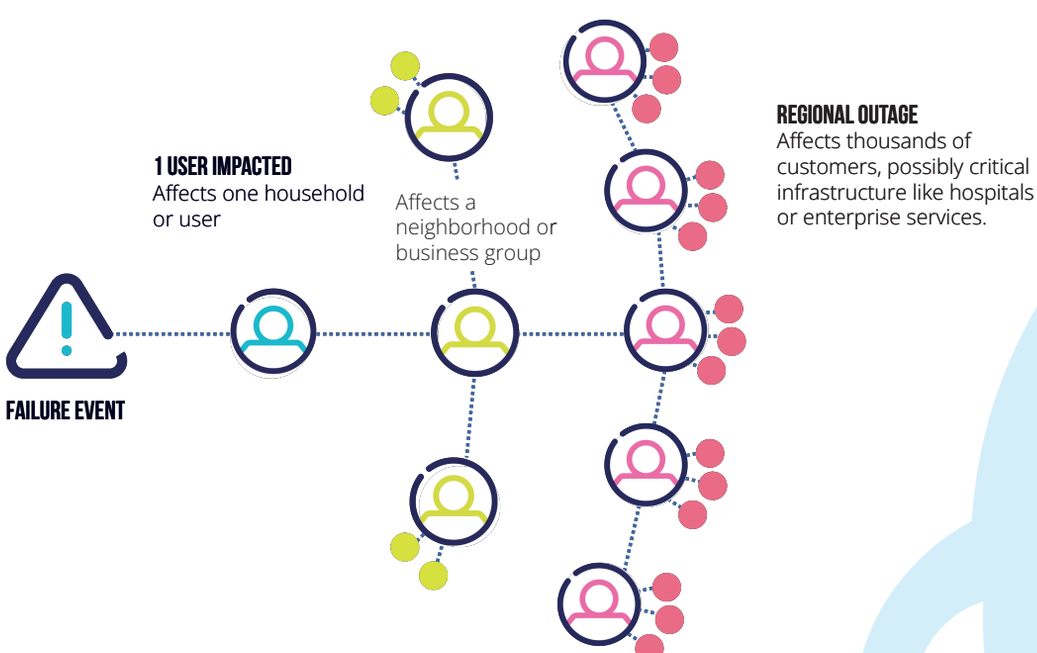
2. You Don’t Know What Matters

Modern networks generate a flood of alerts, but lack the intelligence to prioritize them effectively. Every failure looks urgent—until it's too late to catch the one that really was.

This is the problem of **blast radius**—the concept that not all outages carry the same impact. A failed modem in one home may disrupt a single household.

A failed uplink card in a regional chassis may cascade across thousands of customers and business-critical services.

Without context, operations teams are often forced to triage based on incomplete data or resort to brute-force staffing. That’s increasingly untenable in a labor-constrained market. As one provider told us, *“We used to throw bodies at alerts. Now we can’t even fill the roles.”*



Not all outages carry the same weight—understanding blast radius prevents the wrong fix at the wrong time.

3. You Don’t Know How to Resolve It—Without Breaking Something Else

Even when providers can detect and isolate an issue, they face a third challenge: executing the fix without triggering additional failures.

In an ecosystem defined by dependencies and aging infrastructure, the fix isn’t just a matter of swapping a card or rerouting traffic. It requires insight into upstream and downstream effects. For example, replacing a partially failed card might seem straightforward—until that card turns out to be an uplink connecting an entire chassis. Suddenly, what began as a fix for 48 customers knocks 10,000 offline.

Without a system-level understanding and predictive modeling, even well-intentioned actions can lead to high-impact outages.

What Needs to Change

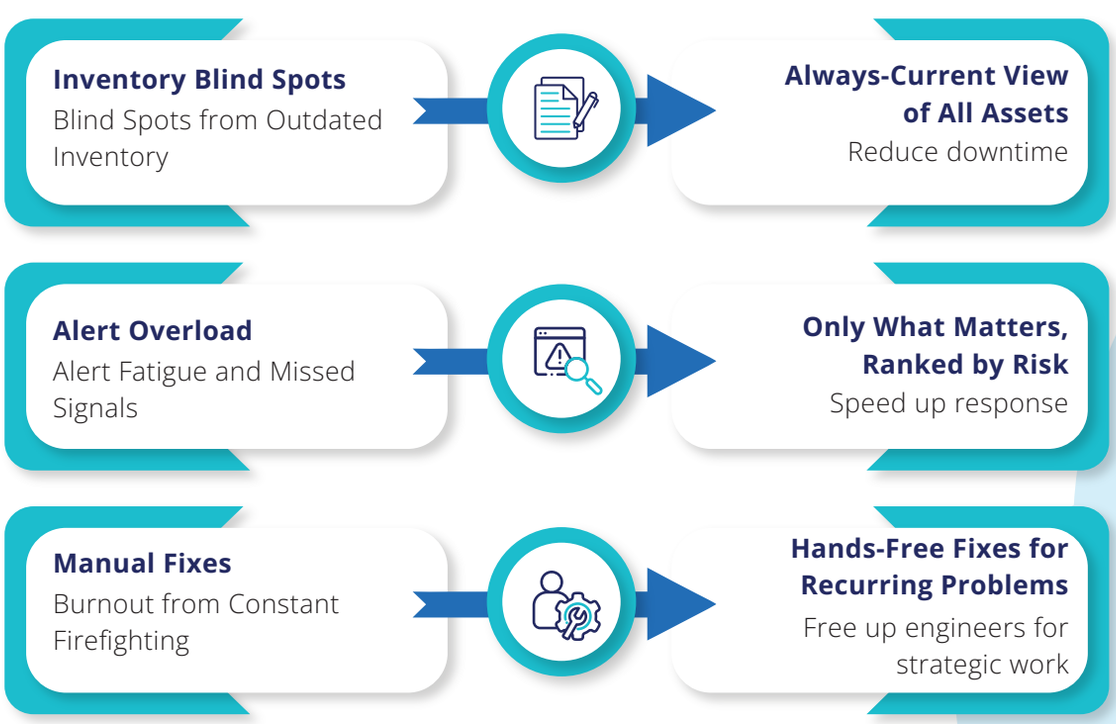
Solving these challenges requires a shift in how telecoms approach observability. It's no longer enough to monitor uptime or react to alerts. Providers need intelligent observability—a dynamic, real-time view of their infrastructure that offers context, predicts blast radius, and guides resolution.

To do that, organizations need to evolve in three core ways:

- **From static inventories to dynamic infrastructure discovery**
- **From alert volume to impact-aware prioritization**
- **From reactive troubleshooting to predictive, automated remediation**

This is where WanAware comes in.

Solving Telecom's Observability Challenges



How WanAware Helps

WanAware enables telecom providers to move from reactive firefighting to proactive intelligence. The platform is purpose-built to give operators the visibility, context, and decision-support they need; it does this by utilizing the platforms providers already depend on.

1. Discover and Understand Your Infrastructure

WanAware integrates with both modern and legacy systems to create a unified, living map of your network infrastructure.

Whether you're operating fiber, copper, wireless, or hybrid environments, WanAware's platform consolidates disparate datasets into a single, cohesive view, eliminating the silos that hide risk.

This asset discovery can happen automatically or through integration with existing systems, even in environments with limited documentation.

2. Quantify Blast Radius and Prioritize What Matters

Through our Knowledge Discovery Engine (KDE) and contextual awareness framework, WanAware identifies which infrastructure components are most critical based on their dependencies and usage. In real time, the platform calculates the blast radius of any potential or actual failure.

That means your teams aren't just notified when something breaks. They're alerted to how many customers are impacted, how severe the issue is, and what the downstream effects might be. Instead of triaging 1,000 alerts, operators can focus on the five that truly matter.

As one example: rather than dispatching support for a minor access point issue affecting a single user, your team is alerted to a failing uplink that serves an entire city block. With limited resources, this kind of prioritization is essential.

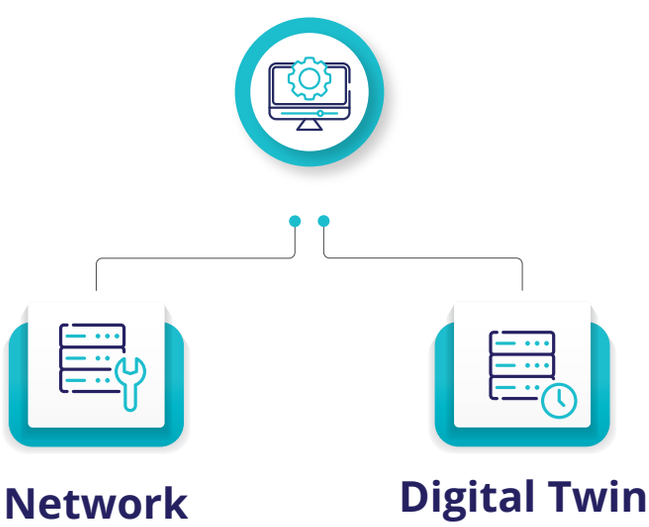
3. Resolve with Confidence—Without Causing More Problems

WanAware builds a **digital twin** of your environment, enabling **predictive modeling** and **safe testing**. Before executing a fix, operators (or the system itself) can simulate its impact. Will rebooting a switch isolate one customer—or take down a hospital? With WanAware, you'll know before you act.

This **simulation capability** ensures that fixes don't inadvertently create new outages, and gives operators the confidence to resolve issues faster.

Digital Twin

Avoid unintended outages by testing fixes before they go live.



Simulate actions and predict the impact

4. Enable Automated Remediation at Scale

With blast radius quantified and risk modeled in advance, WanAware can take the next step: **automated resolution**. When configured, the system can autonomously initiate workflows such as:

- **Dispatching a field tech**
- **Rebooting or reconfiguring devices**
- **Notifying affected customers**
- **Escalating unresolved risks**

This automation eliminates the need for human intervention in routine issues, freeing up your most skilled team members to focus on high-impact work.

5. AI That Knows When to Say "I Don't Know"

Many platforms rely solely on AI to make network decisions. That's risky. WanAware takes a different approach. Our Knowledge Discovery Engine blends AI with machine learning, rule-based logic, and human-defined thresholds.

If AI can't confidently propose a low-risk solution, our platform flags the uncertainty, rather than hallucinating a fix. Then, alternative resolution pathways are triggered.

This **checks-and-balances system** is designed to prevent over-reliance on any single decision engine, improving reliability and trust in automation.

The Payoff: Intelligent Observability in Action

With WanAware's intelligent observability, telecom providers gain:

- **End-to-end infrastructure** visibility across legacy and modern systems
- **Context-aware alerting** that distinguishes between noise and critical outages
- **Predictive modeling** that prevents cascading failures
- **Automated resolution workflows** that reduce time-to-resolution
- **A scalable platform** designed for today's workforce constraints

In short, WanAware helps telecoms do more with fewer people, greater precision, and less risk.

Conclusion: Bridging the Gap Between Transformation and Control

Telecom providers are under immense pressure to modernize, but *modernization without visibility is just risk at scale*. As customer expectations rise and infrastructure complexity deepens, providers must adopt tools that evolve with them.

Intelligent observability isn't a future state; it's a present reality. It's the only way forward.

WanAware empowers telecoms to regain control over sprawling infrastructure, reduce operational uncertainty, and accelerate transformation, without compromising service.

When you can finally see what matters, you can focus on what moves your Telecom forward.

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