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Case Study - 2025

Telco Giant Achieves 99.8% Data Reduction While Accelerating Network Intelligence from 15 Minutes to Milliseconds

How a major telecommunications operator transformed 35TB of daily network data into real-time competitive advantage with Onum.

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The Challenge: Network Intelligence Drowning in Its Own Data

A major telecommunications operator with extensive media services was facing a crisis that threatened their competitive edge. Their network infrastructure—spanning everything from 2G to 5G, supporting millions of subscribers across 250,000 cell towers —was generating over 35TB of data daily. What should have been their greatest asset for network optimization had become their biggest operational burden.

The data deluge came from everywhere: customer routers and set-top boxes, Nokia and Ericsson network elements, Huawei infrastructure, deep packet inspection systems analyzing traffic patterns, comprehensive call detail records, and video streaming quality metrics. Each source spoke a different data language, creating a tower of babel that strained analytics systems and frustrated network engineers.

The financial pressure was crushing. Volume-based analytics licensing meant that comprehensive network monitoring was becoming cost-prohibitive. Cloud infrastructure costs were spiraling as storage and compute requirements exploded. Perhaps most damaging, their traditional analytics platforms required 15-minute processing windows —an eternity in telecommunications where network issues can cascade into customer-affecting outages within seconds.

The organization faced an impossible choice: maintain comprehensive network visibility and watch costs spiral out of control, or reduce monitoring scope and risk missing critical network issues that could impact millions of customers.

02

The Solution: Real-Time Intelligence at Network Speed

Instead of accepting this trade-off, the operator implemented Onum as an intelligent data orchestration layer that could process network telemetry while it was in motion.

This wasn't just data routing—it was network intelligence acceleration.

Onum's approach fundamentally reimagined how telecommunications data should be handled. Rather than collecting everything and analyzing later, the platform could understand the operational value of different data streams and apply appropriate processing in real-time. Deep packet inspection data requiring immediate traffic analysis received different treatment than routine call detail records used for billing analytics.

The key breakthrough was processing intelligence at the source. Network performance indicators could be calculated as data flowed through the system, eliminating the need for downstream analytics platforms to crunch raw telemetry. This shift-left approach transformed data from a processing burden into immediate operational insight.

03

Four Pipelines, Transformational Results

The implementation deployed four sophisticated processing pipelines, each tailored to specific network intelligence requirements.

The Data Reduction Pipeline tackled the core volume challenge head-on. Processing 35TB daily from heterogeneous sources across multiple network generations, it applied intelligent filtering that eliminated redundancy while preserving critical network insights. Parser actions unified diverse telemetry formats into consistent schemas, while compression optimization reduced storage and transmission requirements without degrading analytical capability.
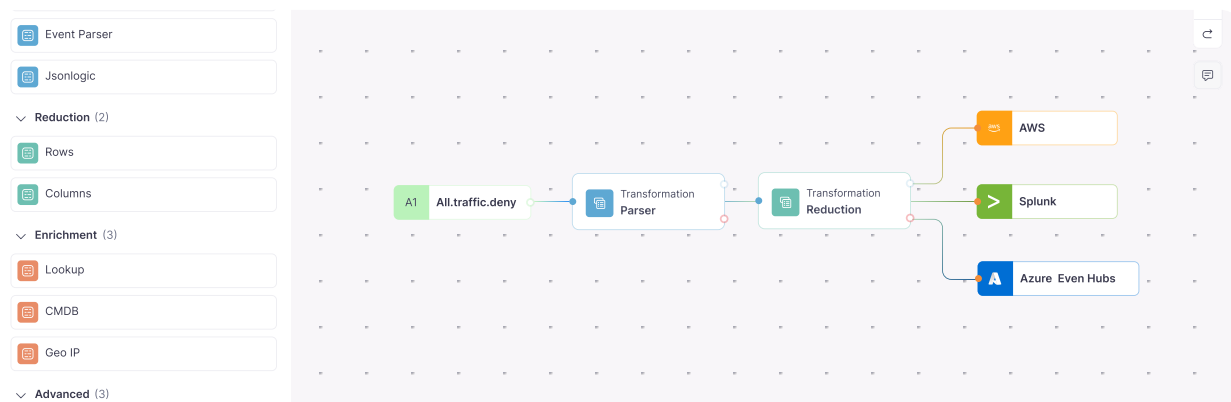
The KPI Calculation Pipeline represented a paradigm shift in network operations. Instead of waiting for analytics platforms to process raw data, Onum calculated critical performance indicators in transit. Network throughput, latency, packet loss, video streaming quality, and user experience metrics became available instantly. The platform could segment these metrics by individual users among 10 million subscribers, across 250,000 network elements, by device type, and by service category—all in real-time.

The Real-Time Alerting Pipeline moved anomaly detection upstream, analyzing data in motion to identify potential issues before service impact. Custom alert parameters matched specific network requirements, with direct integration to Nokia's National Service and Operation Centre enabling automated response without human intervention.
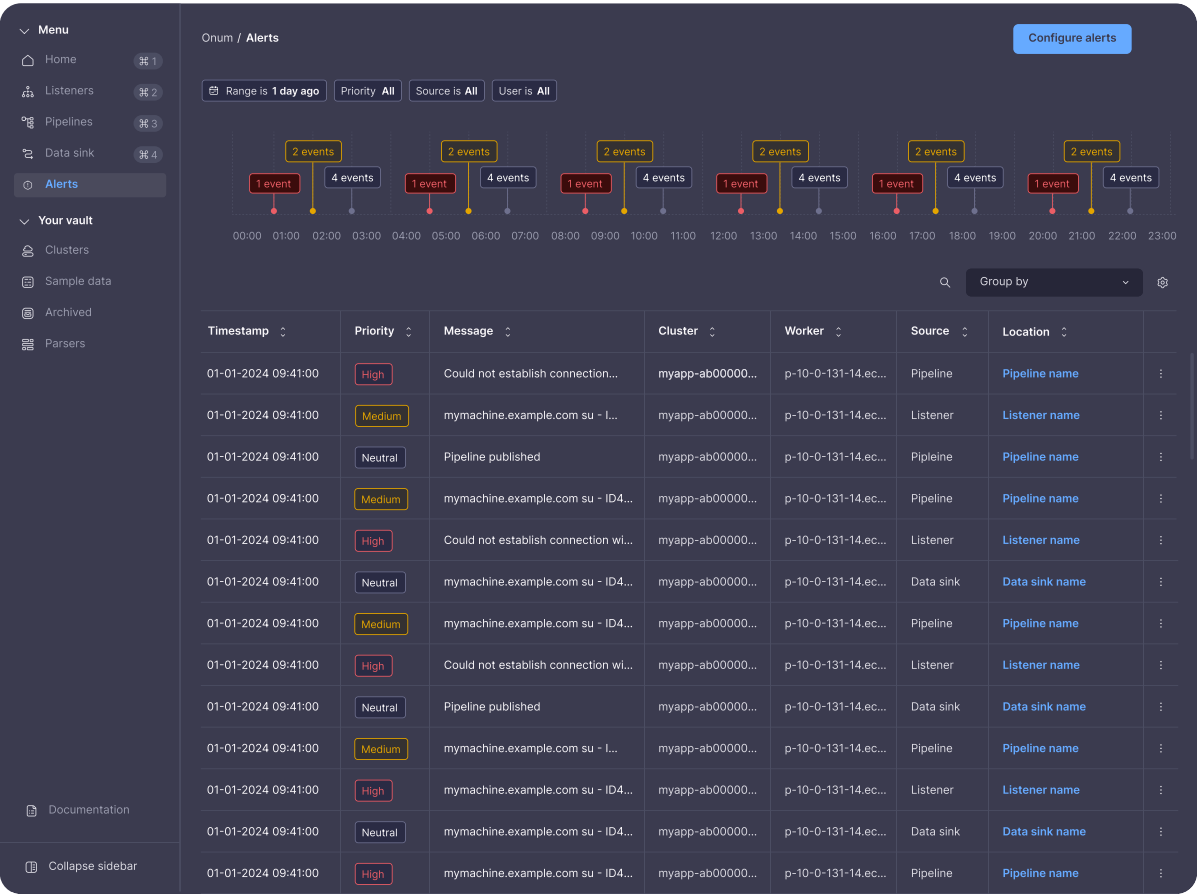
The Universal Data Collection Pipeline unified real-time sources from NGN Core Nodes and multi-generation networks with static data including network topology and customer information, optimizing destination delivery to network management systems and customer experience platforms.

04

Results That Redefine Network Operations

The transformation was nothing short of revolutionary. The KPI processing pipeline achieved a staggering 99.8% data reduction, transforming 17.43TB into just 39GB daily while maintaining complete analytical capability. Across all data streams, the platform consistently delivered 50%+ reduction rates, with peaks reaching 81%.

The infrastructure impact was immediate and substantial. Server requirements dropped by 48%, while cloud infrastructure needs decreased by 40%. This translated into a 47.6% total service cost reduction and 50% savings on analytics licensing, delivering an estim ated €2.5-4M annual ROI.

But the operational improvements were even more significant. Network reaction time improved from 15-minute processing windows to millisecond response capabilities. Critical KPIs became available within 24 hours of specification rather than weeks of development. Alert time for network issues improved from minutes to 230 milliseconds, enabling proactive problem resolution before customer impact.

81%
Data reduction (from 17 TB to 39 GB daily)

50%
Savings on licensing

2.5-4 M/€
Estimated annual ROI

05

Beyond Cost Savings: Competitive Network Intelligence

This implementation achieved something more valuable than cost reduction—it delivered competitive advantage through superior network intelligence. Real-time processing enabled immediate network optimization decisions. Enhanced visibility across user plane, access nodes, services, and core network provided unprecedented operational insight. Proactive issue detection enabled preventive maintenance that improved customer experience while reducing operational overhead.

The vendor-agnostic approach proved crucial for a telecommunications environment spanning multiple equipment vendors and network generations. As 5G deployment accelerated and IoT devices proliferated, Onum's cloud-native architecture could scale automatically without requiring infrastructure redesign.

Perhaps most importantly, the no-code operations capability meant network teams could modify data flows and KPI calculations without waiting for specialized engineering resources. This agility became a competitive differentiator in an industry where rapid response to network changes directly impacts customer satisfaction.

06

A Blueprint for Next-Generation Network Operations

This case study demonstrates how telecommunications operators can transform network data from an operational burden into a strategic asset.

The key insight is moving intelligence upstream—processing data at the source rather than after storage, calculating insights in motion rather than after the fact, and enabling real-time response rather than reactive analysis.

For telecommunications operators facing similar challenges with explosive data growth and cost pressures, this implementation provides a roadmap for achieving both operational efficiency and enhanced network intelligence. The solution's comprehensive approach—combining data reduction, real-time KPI calculation, intelligent alerting, and universal collection—proves that network operators don't have to choose between visibility and cost control.

The future of telecommunications operations lies in intelligent data processing that delivers insights at network speed. Organizations that embrace this shift-left approach to network intelligence will gain decisive advantages in customer experience, operational efficiency, and cost management while building foundations for 5G, IoT, and edge computing evolution.

Onum gives Security and Platform teams real-time control over telemetry and observability pipelines. It filters noise, enriches events, and routes only the right data to the right tools without delay or lock-in. Teams cut costs, reduce tool strain, and take action faster with cleaner, more efficient data in motion.

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About Onum

Onum empowers enterprises to act on data in-stream, helping security and IT teams move at the speed of business. With real-time data processing, Onum reduces inefficiencies, optimizes pipelines, and minimizes the impact on analytical platforms—enabling actionable responses in milliseconds, not minutes.

Learn more at

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