U ▪
S T

AI-enabled telecom transformation

WHITEPAPER

How telcos and their partners can use AI to reduce cost without increasing risk

ust.com

Table of contents

Executive summary

Telecommunications operators face a persistent and intensifying challenge: reducing operational costs while maintaining service reliability, regulatory compliance, and customer trust. Network complexity continues to grow, margins remain under pressure, and transformation initiatives increasingly depend on software, data, and automation rather than infrastructure alone.

Artificial intelligence is widely viewed as a solution to this challenge. AI promises efficiency, predictive insight, and automation across run-state operations, operational support systems (OSS), business support systems (BSS) environments, and customer-facing processes. Yet for many telcos, AI initiatives have delivered mixed results. Instead of enabling sustainable AI-driven cost reduction, they have introduced new layers of complexity, expanded operational overhead, and, in some cases, increased operational risk.

This white paper argues that AI is not inherently a cost-reduction lever. When applied to fragmented operating environments without structural change, AI can increase cost and risk. Sustainable cost reduction requires a different approach—one rooted in structural simplification, clear ownership models, and outcome-based delivery. The approach with the greatest likelihood of immediate impact is to apply AI in network operations–particularly in assurance processes–because data availability is less of an issue and the savings can be significant.

Drawing on telecom industry experience and UST's work with global operators, this paper explores why traditional approaches fall short and how telcos and their partners can use AI to reduce cost without increasing risk.

The AI cost paradox in telecom

In theory, AI should reduce manual effort, improve predictability, and enable faster responses across networks and IT environments. In practice, many telecom operators find that AI initiatives increase the total cost of ownership. This paradox emerges when AI is layered onto fragmented telecom operating models that were never designed for real-time automation or closed-loop execution.

AI thrives on clean data, standardized processes, and clear accountability. Telecom environments, particularly across OSS/BSS and network operations—often lack all three. When AI is introduced without addressing these foundations, it amplifies inefficiency rather than eliminating it. At UST, we consistently see AI succeed only when the operating model evolves alongside the technology. Many AI initiatives have stalled simply because the data sets are not available or are not sufficiently clean.

Why adding AI to complex OSS/BSS and operations increases cost

OSS and BSS platforms form the backbone of telecom operations. Over time, these systems have evolved into sprawling ecosystems of vendor solutions, custom integrations, and legacy platforms that were never designed to support real-time, AI-driven automation.

When AI is layered onto this OSS/BSS complexity, cost increases in several predictable ways. First, data fragmentation drives integration cost. AI models require consistent, contextual data to deliver value. In fragmented OSS/BSS environments, that data must be extracted, normalized, and reconciled across systems with different data models and interfaces. This creates new pipelines, additional storage, and ongoing maintenance overhead.

Second, AI introduces new operational dependencies. Models must be trained, monitored, retrained, and governed. In complex environments, this often leads to parallel tooling and overlapping responsibilities, increasing operational burden rather than reducing it.

Third, risk management becomes more difficult. When AI insights are disconnected from execution—or when automation is layered onto unstable workflows—operators hesitate to trust AI-driven actions. Automation stalls, and AI remains confined to advisory roles that deliver limited cost benefit. The result is an environment where AI increases cost before it ever reduces it.

The piecemeal approach to efficiency

Under cost pressure, many telecom organizations pursue targeted efficiency initiatives. An AI-based fault-prediction tool is deployed in a single domain. Automation is introduced in another. Each initiative is justified on its own merits.

Individually, these efforts can deliver localized improvements. Collectively, they rarely change the underlying cost structure of the organization. The problem is structural. Efficiency gains do not compound in fragmented systems. Each initiative introduces its own tooling, governance, and operational overhead. Over time, the complexity required to manage these initiatives offsets much of the savings they were meant to deliver.

More importantly, disjointed programs fail to address the root cause of cost in telecom operations: unnecessary complexity embedded in the operating model itself.

Leading operators take a different approach. Instead of asking where AI can be applied next, they ask which complexity should not exist at all. That shift in mindset is foundational to sustainable cost reduction.

Structural simplification as the foundation for AI

Reducing cost without increasing risk requires structural clarity before technological ambition. AI must be applied after the operating model has been simplified—not as a substitute for simplification. In practice, this means making deliberate decisions about what to keep, what to offload, and what to automate.

CLARIFYING WHAT TO KEEP

Certain capabilities must remain firmly under the operator's control. These include architectural decisions, data governance, security and compliance, and customer experience strategy. These domains define long-term differentiation and brand trust.

Retaining ownership here ensures that AI initiatives align with business intent rather than driving unintended outcomes. AI should support decision-making in these areas, not obscure accountability.

DELIBERATELY OFFLOADING EXECUTION

Many operational activities are critical but not differentiating. Routine monitoring, incident triage, and standard maintenance fall into this category. These functions are execution-heavy and benefit most from scale, standardization, and continuous optimization.

Offloading such activities to trusted partners within clear governance and outcome frameworks reduces costs while preserving visibility and control. This is not traditional outsourcing; it is a structural reallocation of responsibility designed to simplify the environment in which AI operates.

AUTOMATING STABLE PROCESSES

Automation and AI deliver the greatest value when applied to stable, repeatable processes. When workflows are inconsistent or poorly understood, automation increases risk rather than reducing it.

Structural simplification, through clearer ownership, standardized processes, and application rationalization, creates the conditions for AI to reduce costs safely and effectively across run-state operations.

Application rationalization: Reducing cost at the source

One of the most significant drivers of telecom costs lies in the application landscape. Over time, operators accumulate legacy systems, redundant platforms, and heavily customized applications that are expensive to maintain and difficult to modernize.

Application rationalization is widely recognized as necessary yet often deferred due to perceived risk. The fear of disrupting critical services outweighs the visible cost of maintaining an increasingly complex estate.

Leading operators are addressing this challenge by leveraging AI and analytics to increase transparency in the application environment. By understanding application usage patterns, cost-to-serve, and dependency structures, they can make informed decisions about consolidation and modernization.

When approached as a continuous discipline rather than a one-time program, application rationalization reduces run-state cost, improves stability, and accelerates transformation by removing friction from the environment AI is meant to optimize.

Using AI to reduce risk, not just cost

These activities position AI as an enabler and accelerant in the IT stack, but embedding AI as the last step in large-scale transformation is an uphill task in many telcos. What are the short-term approaches to AI that can jump-start a longer-term transformation?

From UST's experience, one approach is to focus on network operations, particularly assurance processes. The datasets feeding AI models are more readily available and relatively clean. Cost reduction and operational resilience are deeply connected, making justification easier. When AI is embedded into execution, it improves predictability and reduces the cost of failure. AI-enabled predictive monitoring identifies issues before they escalate.

Automated root-cause analysis shortens resolution cycles. Closed-loop remediation reduces human error and variability. Together, these capabilities reduce both operational cost and risk exposure. With sufficient data, the AI models can predict network behavior–for example, a predictive approach to network equipment failure is better than the existing reactive approach when things go wrong. This is the first step towards transforming network operations.

Outcome-based delivery as a risk reduction strategy

Traditional delivery models focus on activities and outputs. In complex environments, this often leads to misaligned incentives and unclear accountability.

Outcome-based delivery shifts the focus from effort to impact. By tying AI initiatives directly to measurable operational outcomes—such as availability, incident reduction, or customer experience—operators reduce risk through transparency and accountability.

Outcome-based models also force discipline. AI initiatives that do not deliver measurable business value are quickly identified, adjusted, or retired. This reduces long-term cost and prevents experimentation from becoming permanent overhead.

UST's perspective: Applying AI with structural discipline

UST's work with global telecom operators has consistently shown that successful AI-driven cost reduction depends less on tools and more on operating model design.

UST brings deep telecom domain expertise across networks, OSS/BSS, IT, and customer experience. This experience informs a pragmatic approach to AI adoption—one that emphasizes simplification, governance, and business outcomes.

By helping operators rationalize applications, standardize run-state operations, and embed AI into operations and execution, UST enables cost reductions that strengthen rather than weaken operational confidence. This perspective underpins UST's approach to AI-enabled telecom transformation: reduce complexity first, then let AI do what it does best.

Conclusion: Designing for lower cost and lower risk

AI has the potential to reshape telecom economics—but only when applied intentionally. Adding AI to complex OSS/BSS and operational stacks without simplification increases cost and risk. Structural clarity, by contrast, creates the conditions for sustainable AI-driven cost reduction.

The future of telecom cost leadership will not be defined by how aggressively organizations cut. It will be defined by how thoughtfully they design operating models that are simpler, more resilient, and inherently less expensive to run.

Stop layering AI onto complexity. Start redesigning the system beneath it instead. Visit **ust.com** to explore how we help you simplify operating models, embed AI into run-state execution, and achieve sustainable cost reduction without increasing risk.

Together, we build for boundless impact

Since 1999, UST has partnered with the world's leading companies to create a powerful impact through transformation. Powered by technology, inspired by people, and guided by its purpose, UST collaborates with clients from design to operation. The company's digital solutions, proprietary platforms, engineering, R&D, products, and innovation ecosystem transform core challenges into disruptive, impactful solutions. With deep industry expertise and a future-ready mindset, UST infuses innovation and agility into its clients' organizations, delivering measurable value and lasting positive change for them, their customers, and communities worldwide. Together with 30,000+ employees in more than 30 countries, UST builds for boundless impact, touching billions of lives in the process.

Digital Solutions I Platforms I Engineering, R&D, and Products

ust.com

Version 0103-20260310

U ▪
S T