![Virtusa | NetoAI logo]

Evolution of the next-gen telco: Visualizing the future through an Agentic AI lens

The whitepaper explores how Agentic AI, Platform-of-Platforms (PoP), and a structured AI lifecycle transform telecom networks, operations, and customer experiences. As intelligence shifts toward the edge and becomes embedded across the telecom fabric, we outline how telcos can become adaptive and AI-native enterprises ready for the cognitive era. This collaborative paper by Virtusa and NetoAI captures our shared vision for the telco industry's evolution—advancing from connectivity to cognition.

Connected was yesterday; cognitive is now.

Imagine a telco where networks heal themselves and optimize on the fly, field agents operate with AI copilots, customer moments are sentiment-aware and contextually enriched, and business-to-business offerings are dynamically shaped at the edge. This is the next-gen telco, an enterprise where every layer thinks, reacts, and creates value. One truth is undeniable across boardrooms and transformation roadmaps: beyond connectivity, it is the cognitive telco that creates real differentiation.

In the past, telco success was measured by infrastructure might—fiber laid, spectrum held, subscribers amassed. That era built the foundation of telecom, but the future belongs to telcos that can sense, decide, and act intelligently in real time.

As we move forward, we will explore how Virtusa is enabling this transformation—through industry-first use cases powered by NetoAI, deep investments in Edge, Analytical, and Agentic AI, and forward-leaning thought leadership that's helping telcos rewire for a real-time, intelligence-first world.

Reimagining the telco of tomorrow: The Virtusa Consulting play

In a world flooded with AI pilots, telcos don't need more hype—they need results. What they need now is not more pilots but scalable AI strategies that deliver measurable outcomes anchored in one principle: AI must serve the ROI goals. This means embedding intelligence across sales, customer experience (CX), networks, and operations as part of a unified business capability.

The Virtusa difference: Consulting that builds, not just advises
We go beyond strategy decks, and our execution-led model delivers production-grade AI with measurable ROI:

- AI ROI blueprints: Every use case is linked to value, not vanity

- Process-first, platform-supported: CX, OSS, BSS—we optimize journeys, not just tech stacks

- Scale by design: Our playbooks don't die in sandboxes; they run in live networks

AI that performs at scale for the business
The cognitive telco is already in action, with real solutions being deployed and making a difference. Virtusa's telco consulting brings the muscle to turn AI ambition into real-world transformation. With clear KPIs, domain-driven design, and embedded governance, we ensure AI becomes your competitive edge and not a cost center. Let's stop experimenting and start executing.

Cognitive industry use cases at work

In telco's AI-first evolution, success comes from delivering scalable outcomes rather than constantly adopting new tools. At Virtusa, our consulting-led approach integrates deep domain expertise, AI strategy, and delivery rigor to move beyond proofs of concept—toward production-grade, measurable transformation. We explore new possibilities with our clients, through curiosity, experimentation, and purpose-driven innovation. Here's a glimpse at the path ahead:

Network planning: Precision at scale

Pain point: Legacy network planning often leads to wasted CAPEX or strained quality of service (QoS).

Virtusa's cognitive network planner uses AI-based traffic modeling, real-time analytics, and digital twin simulations to drive smarter, hyperlocal infrastructure investments.

The benefits include:

- Improvement in resource utilization
- Optimized CAPEX
- Boost in NPS via performance-assured, congestion-free experiences

Customer experience reimagined: Agentic, sentiment-aware support

Pain point: Disjointed customer service pushes churn even before an agent responds.

Virtusa's Agentic Support Copilot, built on telecom-tuned LLMs and real-time sentiment detection, enables fast, personalized, and context-rich service experiences.

The benefits include:

- Inquiry deflection
- Faster resolution
- Improved CSAT—support becomes a differentiator, not a cost

Agentic network operations center (NOC): Fix before failure

Pain point: Traditional NOCs struggle with overload and latency in response.

Virtusa's Agentic NOC brings predictive intelligence and autonomous healing into operations—moving from firefighting to foresight.

The benefits include:

- Faster MTTI/MTTR
- Fewer outages
- Majority of L1/L2 events resolved autonomously

B2B at the Edge: Intelligent offers and real-time monetization

Pain point: Static enterprise offerings are losing relevance

Virtusa's B2B Edge platform enables real-time offer personalization, adaptive QoS, and dynamic monetization—turning B2B2X into a competitive edge.

The benefits include:

- ARPU (Average Revenue Per User) growth
- Faster onboarding
- Real-time SLA governance and adaptive service delivery

These use cases reflect the early momentum we build with forward-looking clients. They show us what's possible today and what we can scale tomorrow. Because in this AI race, only those who execute at scale win.

Platform-of-Platforms (PoP) in motion: The engine behind cognitive telco at scale

In an AI-first telco world, ideas don't win—execution does. The true differentiator between pilots that fizzle and transformation that scales is Virtusa's Platform-of-Platforms (PoP)—a vendor-neutral, modular execution stack that turns siloed tools, fragmented data, and disconnected AI into a single, intelligent, and outcome-driven engine. PoP is the cognitive core of future telcos, built for speed, agility, and scale.

Telcos can address issues like rising churn, fragmented customer touchpoints, and siloed insights with Virtusa's genAI-powered Customer 360, built on our PoP foundation.
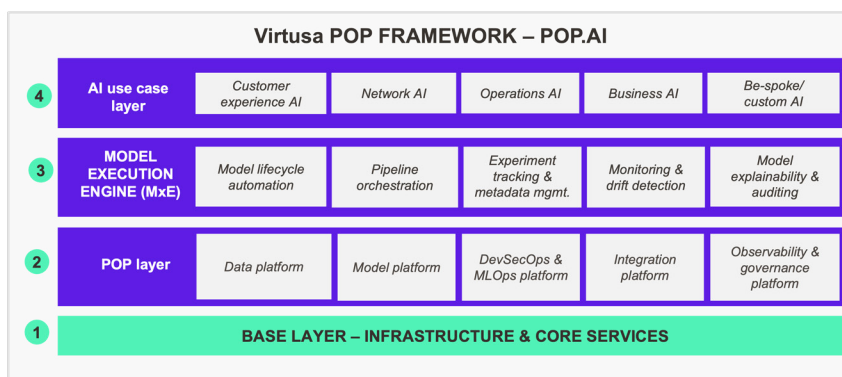
The result:

- Churn reduction
- Increase in upsell conversions
- Near-zero lag between insight and action

This will empower telcos with a real-time data fabric that unifies customer signals, AI-driven next-best actions that deliver precision at scale, low-code journey orchestration that enables agility, and embedded governance that ensures responsible AI use. The outcome represents a clear preview of what a future-ready telco can achieve when genAI is paired with disciplined execution. Layered with infrastructure, platforms, execution engine, and use cases— PoP orchestrates intelligence from data to deployment, enabling rapid, resilient, and responsible AI deployment.

Platform-of-Platforms for intelligent AI at scale, enables MLOps, a strong foundation for deploying our AI use cases at scale

Functional overview

Virtusa POP FRAMEWORK – POP.AI

4	AI use case layer	Customer experience AI	Network AI	Operations AI	Business AI	Be-spoke/custom AI
3	MODEL EXECUTION ENGINE (MxE)	Model lifecycle automation	Pipeline orchestration	Experiment tracking & metadata mgmt.	Monitoring & drift detection	Model explainability & auditing
2	POP layer	Data platform	Model platform	DevSecOps & MLOps platform	Integration platform	Observability & governance platform
1	BASE LAYER – INFRASTRUCTURE & CORE SERVICES					

Feedback loops between use case layer → MLOps → Data platform for continuous learning
Security and governance overlays across all layers

Example

How to deploy AI use case at scale using Platform-of-Platform (POP) architecture
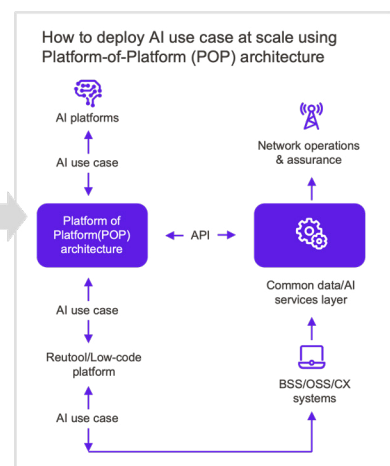
Industrialized intelligence is at the heart of next-gen telco transformation. Whether scaling Agentic NOCs, launching genAI copilots, or monetizing B2B2X, PoP is the platform that unifies platforms—delivering reusable, explainable, and production-grade AI at scale. In the age of AI, execution defines leadership and PoP provides telcos the edge.

Cognitive execution at scale: Where PoP meets NetoAI TelcoCore

As AI becomes integral to business strategy, telcos often lack the speed and structure to scale its impact. The real bottleneck isn't technology; it's turning bold AI ambitions into structured, scalable outcomes. This results in too many pilots stalling in silos. Telcos need an intelligent execution system that aligns AI with business strategy, data readiness, and operational priorities.

Integrating Virtusa's PoP with NetoAI's TelcoCore framework ensures a next-gen orchestration engine that transforms AI experimentation into industrialized impact. PoP lays the modular, composable architecture, and NetoAI TelcoCore makes the solution more powerful. It brings adaptive intelligence through a mesh of microbrains industry-first Telecom Specific Large Action Model (TSLAM), LLM coordination, and continuous learning loops. Together, they form a living, breathing, learning telco—one that doesn't just automate but thinks.

This isn't another AI platform; it's a telco's cognitive core that:

- Scores and prioritizes AI use cases with business-aligned HEAT MAPs
- Embeds domain-aware LLMs to reduce hallucinations and accelerate prototyping
- Aligns people, processes, and tech to turn chaos into coordinated motion
- Powers AI pipelines, low-code orchestration, observability, and responsible AI governance
- Enables measurable, repeatable transformation across BSS, OSS, CX, wand networks
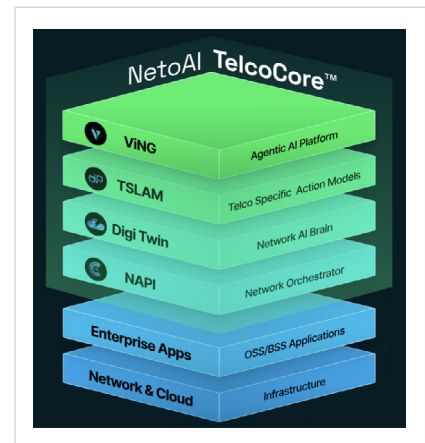
This approach uses an integrated AI stack to transform isolated experiments into operational advantages, from churn prediction and real-time CX to B2B2X monetization and NOC transformation into intelligent, scalable operations. It eliminates the latency between insight and action, replaces disconnected initiatives with cognitive execution, at machine speed.

In the race toward AI-native telco transformation, success lies in seamlessly unifying platform intelligence with domain-specialized execution. That's where Virtusa's Platform of Platforms (PoP) and NetoAI's TelcoCore converge to create a future-proof, scalable, and intelligent telco stack.

Virtusa Platform of Platforms (PoP):
The experience and execution engine acts as a horizontal integration fabric, stitching together enterprise apps, OSS/BSS, networks, and AI ecosystems. It enables genAI-powered copilots, real-time observability, data productization, and low-code service design, driving agility across customer experience, network, B2B2X, and operations through pre-integrated toolchains and AI/ML accelerators.

NetoAI TelcoCore:

The intelligence and policy heartbeat provides a cloud-native, AI-optimized telco core built for 5G/6G use cases, MEC, and programmable policy control. It enables intent-driven orchestration, dynamic network slicing, and real-time QoS/QoE adaptation, offering embedded AI to make the core autonomous, elastic, and context-aware.

PoP and NetoAI together unlock four powerful advantages:

- From static to sentient → Real-time network telemetry from NetoAI feeds into PoP's data fabric, enabling live CX personalization, SLA-aware B2B offers, and NOC intelligence.

- From silos to synergy → PoP acts as the control tower; NetoAI acts as the adaptive network brain. Together, they harmonize customer, service, and network operations.

- From pilots to production at scale → With pre-built blueprints and genAI workflows, telcos can launch new services faster, with assured governance and monetization.

- From legacy cost centers to AI-native growth engines → AI-powered automation and real-time decisioning reduce opex, optimize capex, and accelerate top-line growth across segments.

In the next-gen telcos, AI is essential, but execution is what leaps ahead. PoP and NetoAI provide the foundation to have an edge.

Conclusion: From cloud-native to edge-native, the next telco paradigm and the rise of the next-gen telco

Telcos have already benefitted from cloud-native architectures that brought agility and AI-native models that added intelligence. But, the real inflection point now lies in becoming edge-native cognition—where decisions aren't just faster, they are autonomous, contextual, and happen exactly where value is created. This shift enhances performance while redefining how telcos operate, compete, and grow in the era of cognitive networks across towers, devices, operations, and customer touchpoints.

Edge-native intelligence is rapidly becoming foundational to modern telecom operations. Capabilities such as real-time network optimization, emotionally aware support systems, and adaptive retail environments are no longer aspirational—they are being deployed currently. This shift is made possible not by surface-level AI integration but by AI that is embedded, operationalized, and agent-led. It represents a clear industry evolution: from connected infrastructure to cognitive systems, from stability-focused design to outcome-driven execution.

Virtusa is at the forefront of this transformation. In partnership with global telcos, we are developing edge-native, agentic platforms that sense, decide, and act autonomously, accelerating performance across customer experience, network operations, and enterprise processes. Realizing this vision requires co-creation: aligning strategy, domain expertise, and engineering to scale intelligence across the telecom stack. Virtusa brings the playbooks, pipelines, and platforms to make this scalable and sustainable.

Imagine a scenario where a tier-1 telco deploys an Agentic Edge AI to monitor network congestion in urban hotspots. Instead of routing alerts to a central NOC, the system locally balanced load, optimized RAN parameters, and auto-remediated spikes—within milliseconds, without human intervention. No latency, no escalation, only cognition at work. This same edge-native approach, when applied across customer experience, field ops, and B2B monetization, unlocks a new paradigm of agility and responsiveness.

Let's rewire the future together—cloud-native was the first step, AI-native raised the bar, but edge-native is where the next-gen telco truly begins.

About Virtusa

Virtusa Corporation is a global provider of digital engineering and technology services and solutions for Forbes Global 2000 companies in the financial services, healthcare, communications, media, entertainment, travel, manufacturing, and technology industries worldwide. At Virtusa, digital engineering is at the heart of everything we do. We are 27,000 builders, makers, and doers that partner with customers to reimagine enterprises and creatively build solutions to the most pressing business challenges that move them to the forefront of their industries.

Virtusa's unique Engineering First approach means never presenting an idea we can't execute. With deep industry expertise and empowered agile teams made up of world-class talent, we think about execution early in the process, because the earlier you think about execution the earlier an idea can have an impact. Solving from the inside out enables businesses to respond swiftly to changing needs with improved quality, lower costs, and lasting results.

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