



# Transforming telecom with end-to-end agentic AI



Capgemini



## Activating intelligent customer service and network operations in the AI era

Arthur C. Clarke famously said, ‘Any sufficiently advanced technology is indistinguishable from magic.’ Today, as telecom operators navigate a rapidly evolving landscape, **agentic AI** can be that magic that can redefine everything from customer experience to operation to business growth.

When a network goes down, call center volumes go up. Despite this clear cause-and-effect, few telecom companies connect network operations with customer service—and even fewer leverage the full potential of intelligent technologies to automate resolution across both fronts.

Network faults represent one of the largest operating expenses for telecom companies with outages costing around \$9,000 per minute in downtime and SLA breaches leading to millions in penalties and losses. Meanwhile, on the service side, each call costs an estimated \$12-15.

While manual resolution methods may have served well in the past, today’s increasingly complex and sprawling tech landscape demands a new approach—one that harnesses advanced digital tools to resolve long-standing issues in customer service and network operations.

Enter **agentic AI**—autonomous systems that can proactively execute complex tasks without human intervention. By connecting customer service and network operations in a unified, end-to-end solution, telcos can eliminate silos and resolve issues proactively, more quickly and at a far lower cost.

The industry is expecting an uptick in AI agent use, with 80% of organizations planning to integrate AI agents in the next one to three years.\* With agentic AI, telco companies have a new opportunity to overcome old challenges—in service, network operations and beyond.

\*Capgemini Research Institute, Generative AI executive survey, May–June 2024, N = 981 organizations who are at least exploring generative AI capabilities, excluding the public sector.

# Why AI-powered automation is critical for telecom

Agentic AI represents a paradigm shift in the telecom industry, enabling companies to rapidly enhance customer service experiences through intelligent automation while optimizing network operations with proactive monitoring, self-healing capabilities, and real-time decision-making.

On the customer service side, use of AI agents enhances interactions, reduces service costs, and speeds up issue resolution through intelligent self-service and support for human agents. Meanwhile, AI-driven network operations enable a fully autonomous Network Operations Center (NOC) that enables

real-time detection, diagnosis, and resolution of network issues with minimal human intervention.

By combining these capabilities and uniting them through an end-to-end AI-powered ecosystem, telecom operators create a scalable, modular solution that meets current needs and can be adapted to those of the future. Together, these solutions enable telcos to move from reactive, manual processes to a predictive, self-optimizing operational model that targets two of their biggest and most critical pain points in a single solution.

## Enhancing customer experience while reducing costs with agentic AI

The case for automation in telco customer service isn't just that it's a faster and cheaper option—it's that it's necessary. Fragmented systems, complex technology ecosystems, and overwhelming data volumes make it nearly impossible for human agents to provide the fast, seamless, and accurate service that customers now expect.

AI agents, on the other hand, can process vast amounts of information across multiple systems, recognize patterns, and make near real-time decisions to dynamically resolve problems. They can seamlessly

switch between tasks like billing, service, and order management, following predefined processes to resolve issues far faster than human agents ever could.

Another distinct advantage of agentic AI is that AI agents are self-learning. They offer opportunities for continuous improvement through a feedback loop, building intelligence from each interaction and outcome to make the next one faster, more precise, and more accurate.

## The agentic AI advantage: Telco customer service

### Traditional service systems and processes

High operational costs due to manual customer interactions

Fragmented systems that lead to slow issue resolution

Inconsistent customer experiences that impact retention

Limited opportunity for personalization due to resource constraints

### AI-enabled service solutions

Significant cost reductions due to hyper automation

Centralized knowledge system that enhances case processing and improves accuracy

Continuous feedback loop constantly enhances service quality

AI insights and automation make personalization at a scale the norm

## Optimizing network operations while maintaining reliability with agentic AI

More than 50% of network faults still involve manual investigation, slowing response times, driving up costs, and increasing operational risk. To stay ahead, telcos must shift from reactive to proactive operations.

AI-enabled tools not only accelerate response, but also anticipate and prevent outages before they occur.

With an AI-powered NOC, telcos can harness agentic AI, automation, and predictive resolution to streamline key network operations, from troubleshooting and

triage to SLA management and compliance. This zero-touch approach enhances efficiency, cuts operating expenses, and delivers faster, more reliable service.

For example, AI-driven predictive maintenance has been shown to reduce outages by 40%, representing a stunning opportunity to reduce urgent repairs and manage the cost and resource issues that come along with them.

## The agentic AI advantage: Telco network operations

### Traditional NOC

Manual triaging and troubleshooting, leading to delayed resolutions

Complex SLA management across multiple technologies (Fiber, SD-WAN, 5G, etc.)

High OPEX costs due to human-dependent operations

### AI-enabled NOC

Faster issue resolution and improved first-time-fix rate due to automation

AI-enabled SLA monitoring

Significantly reduced OPEX, including reduced SLA penalties, due to AI agents





## Enabling an end-to-end agentic AI solution with Capgemini

Capgemini is at the forefront of the agentic AI revolution, providing telecom operators with the expertise, technology, and ecosystem partnerships needed to drive this transformation. Capgemini's Agentic AI framework is designed to function autonomously across telecom operations—leveraging cognitive AI, reinforcement learning, and multi-agent collaboration. The integration of Salesforce's Agentforce and TMF Open APIs ensures seamless interoperability, making it a future-ready, scalable solution for

CSPs. This is further complemented by our Dark NOC offer, which is not just automating network management—it's about enabling AI-led, self-healing networks that operate with minimal human intervention. By leveraging AI-driven root cause analysis, proactive fault prediction, and closed-loop automation, CSPs can reduce operational costs, improve SLA adherence, and enhance network resiliency.

Our solution, offered in partnership with **Salesforce**, delivers an end-to-end AI-powered ecosystem that addresses two key telecom pain points: customer service automation—**Northbound AI**—and autonomous network operations—or **Southbound AI**.

**Northbound AI**  
Customer service automation

+

**Southbound AI**  
Dark NOC autonomous network operations

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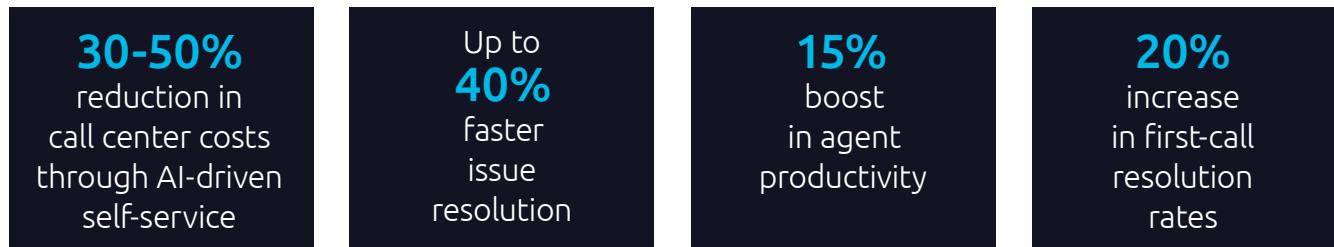
**Predictive, proactive, self-optimizing operations**

By integrating Northbound and Southbound AI, telecom operators gain a holistic and modular solution that is both scalable and adaptable to their specific needs. This combined approach eliminates silos between customer service and network operations, enabling proactive issue resolution before customers even notice a problem.

## Northbound AI: Transforming telecom customer service with Agentforce

Capgemini's Northbound AI solution leverages the Salesforce Agentforce platform to deliver AI-driven customer service automation, including integrating real-time billing, order management, and self-service workflows.

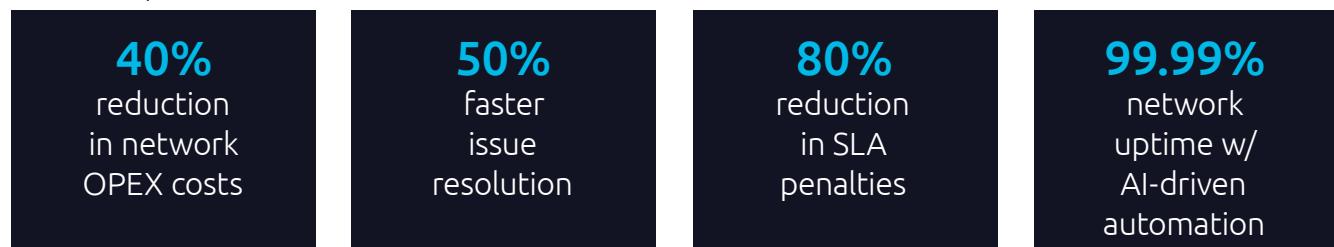
Business impact of Northbound AI for telco customer service



## Southbound AI: Enabling fully autonomous network operations with Dark NOC

Capgemini's Dark NOC—developed in partnership with EXFO and Blue Planet—enables a fully autonomous NOC. The system leverages AI to detect, diagnose, and resolve network issues in real-time, ensuring seamless service delivery with minimal human intervention.

Business impact of Southbound AI for telco customer service



## Accelerating system integration with TM Forum and MuleSoft

As the industry transitions towards autonomous operations, standardization and integration will be the key to scalability.

To address this need, Capgemini developed **Digital Telco Connect**—an integrated offering that leverages TM Forum Open APIs standards to enable rapid, repeatable, and flexible integration of diverse systems.

Built on the open source platform, this solution offers 30+ pre-built TM Forum-aligned Open APIs with API-led and microservices-based architecture frameworks to make it easier, faster, and cheaper to create, build, and operate complex, innovative services.

## Why Capgemini: An SI with a true end-to-end agentic AI solution

- 30+ years of telecom expertise across OSS/BSS, AI and automation
- Deep partnerships with Salesforce, TM Forum, EXFO and Blue Planet
- Reusable TMF API library ensuring faster, standardized integrations to ensure scalability and interoperability
- End-to-end capabilities, including design, deployment and operation, as well as supporting elements like compliance, ethics and data security
- ROI-focused strategy that maximizes value and minimizes risk
- Supporting services from Capgemini Engineering, a world leader in engineering

## Seize the power of an agentic AI future with Capgemini and Salesforce

Agentic AI offers telcos a powerful, unified solution to automate where it matters most—across both service and network operations. By bridging these long-disconnected functions, companies can dramatically reduce costs, increase resilience, and deliver a smarter, more seamless customer experience. Our collaboration on Agentic AI ensures CSPs benefit from a fully integrated, modular solution that is future-proof and aligned with evolving industry standards.

For more information about how Capgemini and Salesforce can help your organization leverage agentic AI to solve customer service or network operations—and anything in between—contact:

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