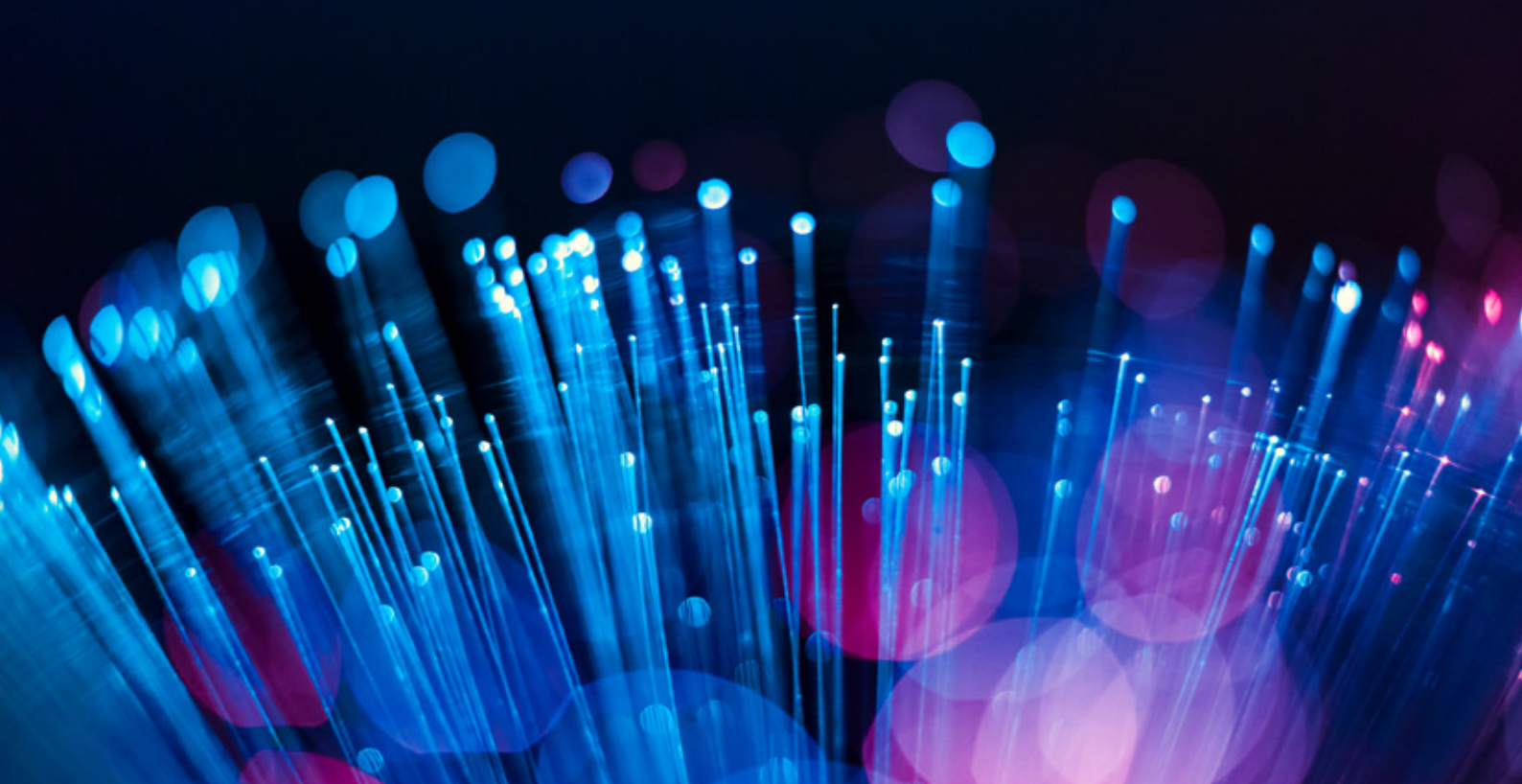Imagination, *meet* impact.

The Agentic Telco

Reimagining telecom growth with data and AI

Capgemini | **Microsoft**

Leveraging agentic AI as a catalyst for growth

Telecoms is a critical and resilient sector, stable in good times and bad. However, with annual revenue growth globally forecast at only 1%, there is increasing pressure from shareholders for returns on the recent huge investments in 5G and full fiber.

Telecom leaders also face rising operational and capital costs, along with growing competition from emerging connectivity providers like satellite companies. Meanwhile, consumer and business customer expectations are rising, with only 35% of consumers feeling satisfied with their current customer service, according to a recent Capgemini study.

But behind these pressures lies a powerful opportunity. Agentic AI—advanced systems that can autonomously analyze, decide, and act with minimal human input—offers telecom leaders a way to drive meaningful transformation, enabling them to reduce costs, increase operational efficiency, and automate network operations at scale.

Whether the goal is to become the most efficient data carrier or to launch differentiated, value-added services, the opportunity is clear: Telecoms must re-architect around intelligence, efficiency, and adaptability. Those who take bold action will unlock significant gains across both the top and bottom line and create a lasting advantage in a hyper-connected world.

Agentic AI: Technology that solves the complexity problem

To seize the opportunity of agentic AI, it is important to consider the core challenge of the industry: Complexity.

Global networks span land, air, and space—generating ever-growing volumes of telemetry data driven by rising demand from users and connected devices. Managing complex networks, extended product portfolios, and the comprehensive IT infrastructure that supports them—while defending against cyberattack and evolving regulations—is a herculean challenge.

In this context, AI agents—when built by partners who understand the particular data, technical and regulatory complexity of telecoms—represent a valuable resource. When properly designed, AI agents process, understand, and respond to vast amounts of data in dynamic environments—performing millions of tasks based on real business goals.

AI agents can process information across multiple systems, recognize patterns, and make near real-time decisions to dynamically improve speed and accuracy. They can seamlessly switch between tasks, following predefined processes to resolve issues far faster than human agents ever could. And they thrive in self-learning, data-rich environments—rapidly improving by resolving tasks, learning from outcomes, and refining future actions through continuous feedback loops.

Telecom's scale and complexity have traditionally slowed growth and response times. Now, AI turns that scale into an advantage—accelerating learning and amplifying impact.

Transformation of this depth demands trusted partners and clear roadmaps. This monumental task is all but impossible for a single operator to achieve alone. It requires partners who not only possess demonstrable hands-on industry experience, but also embody a pragmatic, responsible, and human-centered attitude.

Under the hood of agentic AI

How can AI agents transform telecom operations? Let's take a closer look at their core characteristics and key attributes.

Characteristics

- **Autonomous:** Capable of making decisions and taking actions without human intervention
- **Goal-oriented:** Designed to achieve specific outcomes, not just execute fixed tasks
- **Adaptive:** Use machine learning or past experiences to improve over time
- **Context-aware:** Use relevant internal and external data to guide decisioning and action
- **Proactive and reactive:** Respond to specific requests while anticipating future needs
- **Language-aware:** Leverage Gen AI LLMs for reasoning, language understanding, and generation

Attributes

Four key attributes when building AI agents:

- **Role:** The topics covered and instructions given to realize an action
- **Data:** The knowledge that agents can access
- **Actions:** The set of capabilities they can execute
- **Guardrails:** The parameters of safe, secure and suitable use

Principles

We believe telecoms companies must evolve their operating models to enable seamless collaboration between humans and AI agents. Success lies in integrating AI under human oversight, with flexible models tailored to the right level of control.

Enhancing the future with agentic AI

Developed correctly, AI agents put greater control in human hands

According to recent research from Capgemini, most organizations agree that advanced AI technologies will enable more complex automation and serve as a valuable productivity driver. At the same time, our most recent study reveals that telecom is the least advanced sector in adopting agentic AI, with just 5% of organizations having implemented AI agents or multi-agent systems. This may be because many organizations are concerned by challenges such as agent integration, accountability, governance, and ethical use.

Effective data use is crucial for the entire agentic architecture, as fragmented data prevents AI agents from working properly. By mastering the wealth of data in their possession, telecom organizations can take an important step towards enhancing data visibility and control, ultimately unlocking new insights and monetization opportunities.

As organizations move toward agentic systems, process experts work alongside AI specialists to document and refine workflows and business processes. This collaboration helps create a digital architecture that mirrors real-world operations. Once tasks are clearly defined, they can be assigned incrementally to AI agents, with oversight remaining firmly in human hands.

Communications are approached in a similar way. Organizations should visualize interactions between internal and external parties and analyze the underlying intent, much like in traditional business process modelling. Done correctly, interactions accurately represent the entire value network, as opposed to just the value chain.

What sets a multi-agent system apart from a non-agentic Gen AI system is its ability to assign specialized roles, enable distributed decision-making, and support autonomous coordination and collaboration. This is what enables agentic AI to deliver unprecedented levels of business value.

However, its greater complexity necessitates specific governance strategies. In a multi-agent system, agents are "trusted" to act independently while monitored by humans. Experienced partners like Capgemini and Microsoft ensure AI agents are given clearly defined governance frameworks that specify when human authorization is necessary and what form that human support should take.

The result is a new kind of workforce, where planning and operations teams are augmented and liberated by the agentic AI 'colleagues' who work alongside them.

Unlocking agentic AI use cases to accelerate growth

Agentic AI can be applied in many ways. But for the telecoms industry, there are key, intertwined areas of transformation that will prove critical in the quest for growth:

1. Streamlining network operations

Autonomous networks are the defining element in every reinvention journey. Multi-cloud environments, 5G and 6G slicing, along with the rise of non-terrestrial networks and the proliferation of IoT and edge networks has made network management more complex than ever. This requires orchestration across public, private, and edge environments, each with different protocols, performance demands, and security layers.

AI agents can help telcos address the challenge by moving from reactive to proactive network monitoring, anticipating and resolving issues before services are impacted. Dynamically optimizing traffic, resolving faults, and predicting maintenance delivers self-healing, low-touch networks with improved resilience, agility, and cost-efficiency on a massive scale.

A report by Telecom Review indicates that AI-driven automation is projected to reduce operational expenditures by up to 40% and increase return on investment (ROI) by 10-15%. Change is rapid, with 60% of CSPs expecting to deploy AI in Service Assurance by 2026, and, according to TM Forum, leading CSPs expect to automate over 40% of their network assurance processes.

2. Transforming customer experience

Customer service was once seen as the human face of a business, but it is one where huge improvements can be realized with AI.

Recent Capgemini telecoms industry research revealed 65% of executives say their organizations face low operational efficiencies in this function, perhaps partly because only 16% of agents report satisfaction with their roles. This all contributes to only 35% of consumers feeling satisfied with their current telecom customer service.

These challenges create a huge opportunity to differentiate by enhancing customer interactions at scale. AI's ability to understand customer issues and provide fast, accurate answers and even personalized proactive advice can relieve the burden of customer support from hard-pressed customer service teams.

Research from Stanford University shows an 85% improvement in AI models' ability to interpret and respond to human intent over the past two years. This goes far beyond deflecting calls, and results in faster problem resolution, solution cross-selling and ultimately far higher satisfaction for customers and support teams.

35% of consumers feel satisfied with their current telecom customer service.

3. The cybersecurity imperative

Telecom networks are prime targets for cyberattacks due to their infrastructure complexity and critical role in digital connectivity. With the global cybersecurity workforce facing a shortage of nearly 4 million professionals, many telecom providers are woefully short-staffed in the fight against digital adversaries.

Agentic AI offers advanced real-time threat detection and autonomous response capabilities—precisely what telecoms need to plug this skills gap and enhance resilience. By implementing agentic AI in telecom SOCs, companies can automate threat triage, refine anomaly detection, and enable autonomous incident response—transforming cybersecurity posture from reactive to proactive, scalable, and cost-effective across vast, complex network environments.

Gartner forecasts that AI will increase the efficiency of Security Operations Centers (SOCs) by 40% by 2026, highlighting a significant opportunity for the telecom sector to both accelerate response times even in the midst of a skills shortage.

Delivering an unassailable advantage

Agentic AI is not just another product or SaaS platform—it's the next transformative force in telecom, with the advantage belonging to those who act swiftly, strategically, and responsibly.

Why now is the time

Because the implementation of agentic AI will use data that is unique to each business and its operating models, it can help companies build a clear competitive advantage. The time to start, therefore, is now. Early adoption means defining the new operation and management paradigms which can inspire significant improvements in efficiency, customer satisfaction, and market share.

A successful strategy must start with data mastery. This is a particular challenge for telecoms leaders, who are simultaneously struggling to modernize infrastructure and decrease operating costs. Capgemini research shows that while telecoms was the most "data mature" industry in 2020, by 2024, it had slipped to eighth place.

Once data is consolidated and made available, processes can be mapped and agents developed. Because agentic AI is continuously learning , it will intelligently measure and optimize effectiveness, constantly making better decisions to more effectively reach specified goals.

The adaptive and learning nature of AI agents makes the adoption of agentic AI different than many other recent telecoms technology advances. Companies with a six-month head start don't just reap the benefits of advanced automation during that period— the investment will continue to pay dividends as those agents learn and evolve over time, becoming more accurate and effective.

In a world of slender advantages, six months can translate into a monumental, lasting advantage.

Charting the path forward: Changing gears with confidence

The question now is not if change is needed but how to move forward with clarity and confidence.
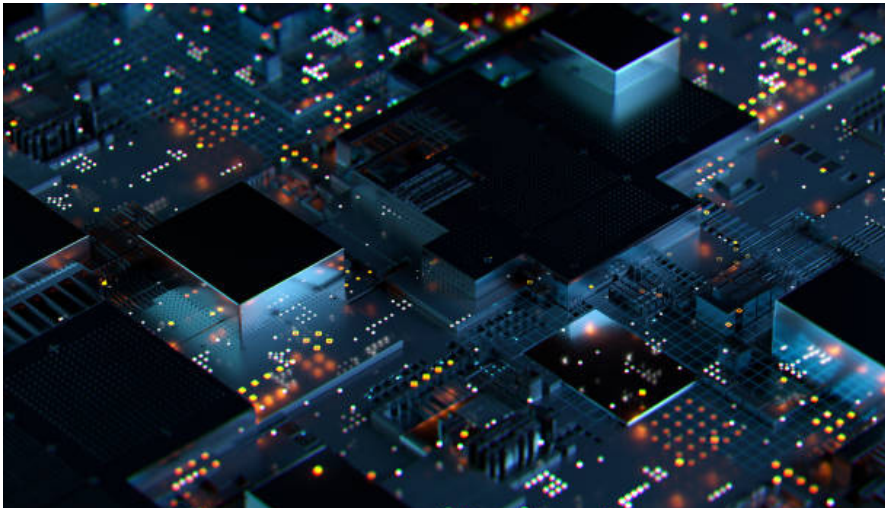
As we have described, the telecoms sector stands at a crossroads. Years of capital-intensive investment have created a heavy financial burden, while emerging competitors continue to disrupt the market with agile, low-cost offerings. Margins are tightening, customer expectations are shifting, and the broader geopolitical and economic landscape remains uncertain.

Yet herein lies a powerful opportunity. The emergence of AI agents offers telcos a timely and transformative lever—one that can streamline operations, unlock new efficiencies, improve security and reimagine customer engagement. Far from being a risk, this is a moment of reinvention.

To ensure your organization can maximize the potential of agentic AI, Capgemini and Microsoft offer a clear, phased approach:

1. Enforce strategic alignment and prioritize use cases

Begin by aligning AI initiatives with strategic goals. Identify high-impact use cases where generative AI capabilities can deliver measurable value, and ensure technical feasibility is assessed early.

2. Adapt business models and IT architecture

Transition toward a modular, flexible enterprise architecture that can fully leverage agentic AI. This includes rethinking business models to support AI-driven services and innovation.

3. Build a scalable, real-time AI platform

Ensure your platform can support real-time, compliant, and scalable AI operations. This foundation is critical for delivering consistent performance and meeting regulatory requirements.

4. Establish governance, guardrails and risk management

Implement robust governance frameworks and risk controls. Elevate AI oversight to the board level to ensure accountability, transparency, and ethical deployment.

5. Validate and scale agentic AI in production

Pilot AI agents in real-world environments, measure performance, and refine based on outcomes. Once validated, scale across the enterprise to maximize impact and ROI.

Measuring the benefits

Strengths

Accelerate business growth

Self-learning agents complement the human workforce, transforming productivity by handling high volumes of complex tasks that lead to better network performance, superior customer experiences, and greater protection against cybersecurity threats.

Weaknesses

True agentic AI expertise is rare

As with any new technology, not all strategic partners are equal. Validated case studies are infrequent, and companies need to choose partners who have both the fundamental technology capabilities and practical application experience.

SWOT

Threats

Danger of a biased data approach

The skewed global tech and business landscape risks a US-dominated approach, neglecting local and regional differences. As a living, breathing extension to your organization, agentic AI must be considered alongside the political and cultural environment. Agents need to be embedded into the way the company works in each geography as opposed to conforming to a rigid global template.

Opportunities

Long-term competitive advantage

Embracing agentic AI now isn't just a strategic move—it's essential for staying relevant and leading in the industry. By acting promptly, companies can position themselves to reap the maximum benefits of agentic AI, creating partnerships in new digital ecosystems to ensure sustained competitive advantage.

Accelerate the intelligent telco journey: Unlock a new breed of TechCo with Capgemini and Microsoft

Adopting AI agents is a mindset shift—one that unlocks major opportunities but requires careful execution and the right partners.

Embracing AI agents is more than a technological upgrade – it's a strategic shift that opens up vast new possibilities.

In times of transformation, trusted partnerships matter

Embracing AI agents is more than a technological upgrade – it's a strategic shift that opens up vast new possibilities. With Microsoft's advanced AI capabilities and Capgemini's deep industry expertise, organizations can accelerate their journey toward becoming an Intelligent Telco.

Microsoft offers a robust AI and cloud ecosystem, including Azure, Copilot, and advanced analytics tools, all designed to scale securely and efficiently across global networks. These capabilities empower telecoms companies to modernize infrastructure, enhance operational agility, and deliver seamless customer experiences.

Capgemini complements this with decades of experience in the telecoms sector, a deep understanding of regional markets, and a proven track record in delivering complex transformation programs. Our cross functional team of industry experts, data and AI specialists, and digital business transformation strategists work closely with you to identify where agentic AI can be deployed responsibly and effectively, ensuring maximum impact and sustainable growth while also managing risk.

Together, our decades long partnership offers a clear, actionable roadmap for adopting agentic AI – one that balances ambition with practicality.

An ecosystem and partnership built around AI

1. Data-driven agentic AI for autonomous operations where agentic AI systems leverage real-time data and machine learning to make autonomous decisions, enabling:

- Optimization of Radio Access Network (RAN) capacity and energy efficiency.
- Self-healing and self-optimizing networks that reduce operational overhead.
- Continuous learning from network data to improve performance and resilience.

2. AI-powered customer experience (CX) with AI-enhanced customer engagement and service delivery through:

- Conversational AI in contact centers for faster, more natural interactions.
- Avatar-based video assistants for guided support.
- Automated FAQ generation and agent co-pilots to boost service efficiency.

3. Cloud-native, secure, and compliant infrastructure with Microsoft Azure provides the trusted foundation for Telco AI transformation:

- Scalable AI and data workloads across hybrid and multi-cloud environments.
- Built-in security, compliance, and governance aligned with global and local regulations.
- Integration with Microsoft Fabric for unified, real-time data analytics and orchestration.

4. Capgemini's Telco expertise and AI integration services, enabling seamless deployment of AI solutions by offering:

- Deep telecoms industry knowledge and operational insight.

- End-to-end system integration and orchestration of AI platforms.
- Custom AI solutions tailored to network operations and customer journeys.

5. Sovereign AI and data localization in the partnership supports sovereign cloud strategies to:

- Ensure data residency, privacy, and compliance with local laws.
- Build trust and transparency in AI systems.
- Position telcos as AI service providers within their regions.

6. Cross-industry collaboration and monetization models with the ecosystem fosters innovation and new revenue streams through:

- AI-enabled monetization beyond connectivity (e.g., smart cities, IoT).
- Strategic partnerships with tech leaders like Nokia and Amdocs.
- Expansion into connected industries and edge AI ecosystems.

7. Responsible AI, security, and governance where Microsoft and Capgemini prioritize ethical and secure AI by embedding:

- Responsible AI frameworks for fairness, transparency, and accountability.
- Security-first design with continuous compliance monitoring.
- Tools for AI lifecycle governance, risk management, and auditability.

The pace is quickening – with telecoms and leaders globally seeing real-world impact

All around the world organizations are transforming operations and customer experience. Here are four leading examples:

1. In Japan, NTT Docomo has integrated AI at the core of its network management strategy by employing AI-driven predictive analytics to enhance network performance, minimize latency and improve spectrum efficiency. Its agents dynamically adjust network parameters to pursue optimal connectivity for its subscribers by constantly analyzing data from millions of connected devices.

2. In the U.S., Ask AT&T, an internal AI-powered natural language chatbot is used by nearly two-thirds of its 150,000 employees — extending into many areas such as customer support, financial analysis, supply chain management and retail foot traffic analysis. Ask AT&T has allowed its developers to reduce coding time by up to **30%**, as well as save customer service agents significant time on each inbound call.

3. In Korea, SK Telecom announced a subscriber beta registration for its AI-driven personal agent Aster. Aster allows users to employ a single app that leverages agentic AI to answer complex questions. It is designed to understand 'intent' to complete complex tasks. It's one of the first examples of agentic AI by a mobile service provider that enables use cases that extend beyond telecom customer support into lifestyle and personal tasks.

4. In Australia, Telstra developed two generative AI tools – *Ask Telstra* and *One Sentence Summary* – using Microsoft Azure OpenAI Service to meet rising service complexity and customer expectations. Early results show strong impact:

- **90%** of employees using *One Sentence Summary* report time savings and improved effectiveness.

- **84%** of agents say *Ask Telstra* enhances customer interactions.

So, where do you go from here?

Your next step is a big decision. But the potential rewards are even bigger.

The growth opportunity of agentic AI is clear and we're here to help you seize it. This is not just a technology journey – it's a business transformation. With Capgemini and Microsoft as your partners, telecom companies can accelerate with confidence, knowing you have the strategy, tools, and expertise to lead in the next era of telecommunications.

Your next step? Contact one of our experts to talk through the breadth and depth of experience we have in agentic AI in telecoms, and most importantly, how we can help you make the most of its potential.

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About Capgemini

Capgemini is a global business and technology transformation partner, helping organizations to accelerate their dual transition to a digital and sustainable world, while creating tangible impact for enterprises and society. It is a responsible and diverse group of 340,000 team members in more than 50 countries. With its strong over 55-year heritage, Capgemini is trusted by its clients to unlock the value of technology to address the entire breadth of their business needs. It delivers end-to-end services and solutions leveraging strengths from strategy and design to engineering, all fueled by its market leading capabilities in AI, generative AI, cloud and data, combined with its deep industry expertise and partner ecosystem. The Group reported 2024 global revenues of €22.1 billion.

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