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Beyond Automation: Agentic AI as the Catalyst for Unlocking Telco Growth

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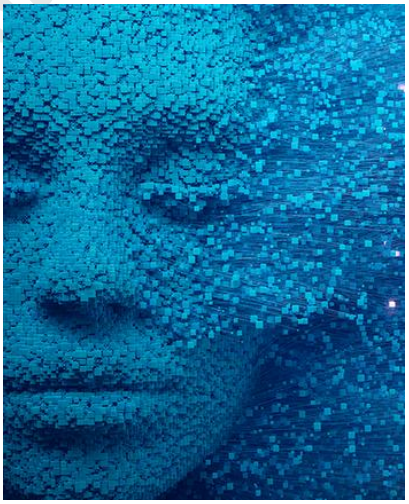

Autonomy is coming in a new way for Communications Service Providers (CSPs) with the arrival of agentic AI. Unlike previous waves of automation, this phase introduces lightweight, task-specific, and even ephemeral agents capable of collaborative action and reasoning beyond the constraints of hardwired workflows. These AI systems move the industry from 'human in the loop' to 'human in command,' where agents act independently towards goals while humans oversee and manage outcomes. The convergence of advanced compute, disruptive storage, new data innovation practices, and neuroscience-inspired architectures marks a significant leap – enabling CSPs to unlock horizontal scaling, compressed time-to-value, and richer digital transformation than ever before.

All the ingredients, but what's the recipe?

CSPs are uniquely positioned to unlock the full potential of agentic AI. They already possess the essential ingredients for success: mature infrastructure, advanced technologies, and skilled talent. As data-rich organizations by design, CSPs operate across highly distributed architectures and adhere to some of the strictest standards of regulatory compliance, sovereignty, and security – traits that are increasingly critical for deploying trusted AI at scale. Their operational track record managing complex systems enables them to pursue AI-driven transformation with confidence and credibility.

This foundation not only supports resilient and scalable AI deployments but also empowers CSPs to shift from traditional service delivery to new, revenue-generating opportunities – such as MLOps-as-a-Service, advanced security solutions, and high-value data products. In short, CSPs aren't just ready for agentic AI – they're built for it.

Yet despite having all the ingredients, we're still looking for the recipe. Despite major investment, the success rate of AI initiatives remains disappointing, with more than 50% of AI initiatives by CSPs failing to scale or reach production. Use cases often stay stuck in experimentation, and the anticipated transformation falls short. Projects struggle to transition from isolated pilots to business-critical production, and the ROI of AI, especially for productivity-oriented projects, is hard to quantify. At the same time, many deployments become siloed, compounding technical and data debt rather than solving for industry-wide growth.

Three dimensions for success

To truly capitalize on AI's potential, CSPs must overcome structural, operational, and cultural blockers that limit scale and impact. At TM Forum, we believe this challenge can be broken down into three essential dimensions – each requiring intentional action and alignment across business and technology. Success isn't just about choosing the right tools; it's about reshaping how leadership leads, how teams deliver, and how technology is adopted and governed across the organization.

1. **AI for Leadership: Bridging the business-technology divide**

   AI cannot thrive in a vacuum. Too often, promising initiatives stall because leaders lack the frameworks to articulate clear, ROI-driven business cases or to plan AI transformation in a structured way. The result is fragmented pilot projects that rarely scale or deliver strategic value. Leadership must step up – not just to sponsor AI, but to own it. This means equipping C-level and business leaders with a pragmatic language for AI that translates ambition into outcomes, and vision into measurable value. Without that executive clarity and cross-functional alignment, AI remains trapped in isolated silos instead of becoming a muscle for growth.

2. **AI for Everyone: Breaking through delivery inhibitors**

   Even with leadership support, AI delivery often hits systemic roadblocks. Programs can be difficult to set up and frequently lose momentum before producing real results. Financial justification is another hurdle – AI's productivity gains are often indirect or distributed, making ROI hard to pin down. On the technical front, many teams lack realistic ways to estimate AI's architectural impact or secure operational buy-in for new capabilities. Add to this the absence of standardized delivery accelerators – like reusable tools, templates, and proven playbooks – and it's easy to see why progress can feel painfully slow. To scale AI, CSPs need to democratize delivery with a clear path from experimentation to industrialization.

3. **AI-First Technology Adoption: Empowering sustainable transformation**

   At the heart of scalable AI-native operations lies a set of foundational capabilities that many CSPs are still developing. It starts with data: rather than attempting to wrangle vast, unstructured lakes, teams must shift to curated, task-specific datasets designedfor each agentic use case. Next, agent tools must be secured and governed – AI systems need seamless, policy-controlled access to operational interfaces via exportable APIs. Model deployment must also mature: AI models should be managed like cloud resources, with clarity around cost, access, and service level. Finally, as AI agents interact with human operators and each other, organizations need robust observability and control frameworks to ensure safety, trust, and compliance at scale. Without addressing these fundamentals, AI risks becoming a tactical tool rather than a transformational force.

The pitfall of siloed solutions

CSPs cannot afford to attack these challenges piece by piece. Leadership, delivery, and technology must be integrated as a unified transformation pathway. Siloed efforts perpetuate data and technical debt, stall progress at the experimentation phase, and block the move to true AI-native operation. Within TM Forum, we're working with our members to build an AI-native blueprint that will empower CSPs to tackle these challenges holistically by embedding AI capabilities not only into tools and systems, but into the leadership mindset, operating model, and delivery DNA of the organization.

1. **AI for Leadership: Clear language, business case, and road mapping**

    - Adopt business-driven frameworks for AI adoption that articulate clear goals: How does each initiative impact people, process, and technology?
    - Quantify and roadmap the investment strategy: Define the approach to build, buy, or partner for each use case.
    - Classify projects by maturity: Map the transition from experimentation to trial to production, giving leadership a non-technical, financial pathway to prioritize and measure AI initiatives.

2. AI for Everyone: Accelerate delivery through proven tools The industry should embrace accelerator tools as outlined in innovation playbooks:

    - Program readiness tools for effective project initiation
    - Investment prioritization and ROI calculators to justify spending
    - Solution estimation kits to support planning
    - Operational acceptance matrices to ensure smooth integration
    - Engineering decision guides for cloud, hybrid, and on-prem deployment choices

4. **AI-First Technology Adoption: Focus on the 'how' not the 'what'**

    - Prioritize pragmatic integration of agentic AI into legacy systems, rather than endlessly refactoring data platforms.
    - Shift from mass data reconciliation to *curated data products* and minimum viable datasets.
    - Develop secure and scalable mechanisms to expose tools and APIs to agentic orchestration layers (e.g., MCP servers).
    - Establish controlled model onboarding, with observability and metering to manage costs and performance.
    - Invest in continuous monitoring, security, and governance of all agent interactions – between agents, humans, and systems.

Pragmatism, integration, and continuous practice

By bringing together three critical domains – a business-first approach to AI leadership, delivery frameworks designed for scale, and technical foundations that support agentic integration across distributed environments – CSPs can move beyond siloed pilots and begin tackling foundational blockers with focus and intent.

But this isn't just about upgrading tooling or standing up more proofs of concept, it's about preparing CSPs for a new operating reality – one defined by the presence of intelligent, autonomous agents embedded throughout the telco fabric. Agentic AI changes the game: it introduces goal-seeking software collaborators that act with purpose, reason in context, and execute at scale. To unlock that potential, CSPs must treat agentic autonomy not as a future capability, but as a present architectural imperative.

By aligning leadership, delivery, and technology from the outset – and treating AI not as a bolt-on but as a foundational design principle – CSPs can stop treating AI as a series of disconnected bets. Instead, they can build a resilient, continuously evolving capability that transforms how they operate, compete, and create value in the agentic AI era.