

The agentic era: Reshaping the future of business

Telecommunications



Introduction

The telecommunications landscape is undergoing a seismic shift, driven by the rise of intelligent agents. We're entering what can be described as the agentic era, a time where multi-modal AI-powered assistants are not just automating tasks, but fundamentally reshaping how communication service providers (CSPs) enhance customer support, personalize service offerings, optimize field and network operations, and modernize complex networks. These increasingly sophisticated agents can help understand complex network data, customer interaction histories, and service configurations, anticipate needs, and take action on your behalf—all while under your supervision. This ebook explores how CSPs can harness the power of agents to thrive in this new reality.



Innovate or fall behind: The relentless pressure in telecommunications

Fragmented technology systems have been a problem for decades.

There is a long-standing problem of fragmented technology systems within businesses. Today, you have a lot of technology that works amazingly, but achieving seamless integration to unlock its full potential is often difficult.

In the telecom industry, data silos represent a significant challenge, where valuable information across diverse areas like customer interactions, call detail records (CDRs), network performance metrics, and billing systems becomes isolated within specific departments or legacy systems. This fragmentation prevents a unified view of operations and customers, leading to several detrimental impacts. These include inefficient decision-making, compromised data quality, increased operational costs due to redundant data storage and management, and an inability to gain a holistic 360-degree view of the customer.

Consequently, telcos struggle with personalizing services, efficiently managing network resources, identifying new revenue opportunities, ensuring regulatory compliance, and fostering innovation, ultimately impacting their competitiveness and customer satisfaction.

Current trends are putting pressure on CSPs to innovate faster. Businesses are facing unprecedented pressure to adapt and innovate at overwhelming speed. It's not just about keeping up; it's about staying competitive and relevant in a rapidly evolving landscape.



A surge of cutting-edge technologies adds new complexity.

We are seeing an explosion of incredible new technologies—things like large language models (LLMs), intelligent agents, generative AI, automated workflows, and enterprise-wide search tools. Each of these holds immense promise. However, this rapid innovation, while exciting, also introduces a new wave of complexity.

Organizations are asking:

- How do we make sense of all these new tools?
- How do they fit together within our existing infrastructure?
- And most importantly, how can we actually use them effectively to solve real business problems and drive value?

The core challenge isn't merely understanding these technologies in isolation. It's about harnessing their collective power to achieve tangible outcomes.

Organizations need to be able to:

- **Access information quickly:** Getting the right information to the right person (employee or customer) at the right time is crucial. How can these new AI-driven tools sift through vast amounts of data—structured and unstructured—to surface what's relevant, instantly?
- **Connect data sources:** Most businesses have data scattered across various systems, silos, and formats. Real power comes from connecting these disparate sources. How can LLMs and agents help bridge these gaps and create a unified view of the data landscape?
- **Take action:** Insights are only valuable if they lead to action. How can organizations embed these technologies into workflows to not just analyze or predict, but to actively assist in decision-making, automate tasks, and drive outcomes?

This is where Google Cloud comes in. We understand that navigating this new, complex technological landscape can be daunting. Our goal is to abstract away much of this underlying complexity. One successful way organizations are seeing success is to apply a clear approach—a way to systematically harness AI to find critical information, understand its implications, and empower decisive action.



Unlocking the agentic era: Find, understand, act

As organizations navigate the agentic era, they need a seamless way to find, understand, and act on their data.



Find

Finding relevant, useful, and personalized information can be a huge challenge, particularly as organizations amass more data, in many different formats, and across many disparate systems. Time wasted searching for insights and information can be a huge drag on productivity. Alongside this, search behaviors are changing, incorporating multiple modalities such as text, images, audio, and video. Query understanding is becoming increasingly complex. Being able to quickly find information and take action is a key enabler for the agentic era and provides the foundation for downstream agentic tasks. Imagine a workforce empowered to instantly find exactly what they need, when it is needed, enabling action to unlock value and drive innovation.



Understand

Simply finding information is no longer enough. The real advantage comes from the ability to rapidly understand complex sources—encompassing both structured and unstructured data—and harvest key insights. Envision the ability to rapidly summarize information, transforming raw data into clear, concise insights, and enabling faster and better informed decisions.



Act

The final step is to translate insights into tangible action. In the agentic era, businesses need AI to take action, helping employees turn information into workflow-driven tasks. The business can then move forward with speed.



In the following examples, we will explore how this **find, understand, and act** approach can play out.





Agents in action: Transforming telecommunications across the value chain

Let's explore how AI agents can help transform specific functions within CSP organizations, ranging from optimizing network operation and field services and streamlining product and service bundle design to enabling more intelligent networks and deriving deeper customer insights. By seamlessly integrating into existing workflows and providing intelligent automation, agents can help empower teams across these areas to achieve new levels of efficiency, insight, and impact. These common applications are designed to inspire your thinking and illustrate how the agentic era may influence your business, while encouraging you to consider the unique opportunities within your own organization.



Modernize network and operations



Accelerate efficiency



Enhance customer experience



Revamp monetization



Telecommunications applications

01. Accelerate efficiency for field operations
02. Revamp monetization with product and service bundle design
03. Modernize network and operations with autonomous networks
04. Enhance customer experience with customer insights





Accelerate efficiency for field operations

Increasing speed and accuracy of issue resolution



Intelligent automation can assist telco field engineers and operations teams in their efforts to help increase the speed and accuracy of issue resolution with step-by-step support throughout the resolution process. By bringing together capabilities like accessing ticket backlogs, verifying inventory, generating optimized route plans, analyzing router diagnostics, and evaluating photos of equipment, AI agents can help cross-reference issues with manuals and past fixes to identify necessary diagnostic steps. Integrating intelligent automation offers potential improvements by providing step-by-step diagnostic and replacement instructions, summarizing resolution reports, triggering customer relationship management (CRM) and inventory updates, and prioritizing the next job, aiming to boost engineer productivity and improve network reliability.



Access

- Access engineer's ticket backlog, weekly completion stats, and dynamically prioritized daily tasks. Verify on-truck inventory and nearby stock locations.
- Generate an optimized route plan to the priority cellular site ticket, and access a summary of past customer interactions



Evaluate

- Analyze router videos, serial numbers, and light sequences, cross-reference with manuals and past fixes for diagnostic steps
- Evaluate uploaded photographs of suspected faulty devices and compare with diagnostic results



Provide

- Provide step-by-step diagnostic and replacement instructions via text and audio in the engineer's preferred language
- Summarize ticket resolution report, update inventory, trigger CRM notifications, and prioritize the next job



Long context window: Agents can help to improve accuracy by being able to ingest sizable historical contexts of previous incidents and technical details from ingested manuals from thousands of pieces of network inventory.



Revamp monetization with product and service bundle design

Ensuring successful launches with deep analysis



Intelligent automation can assist telco product and marketing teams in their efforts to help ensure successful marketing campaigns and product launches through deep analysis and risk-adjusted insights. Tools that support finding key themes in market research, pulling competitor data, researching buyer preferences, and evaluating price sensitivity and credit risk may help agents analyze structured and unstructured data to generate assumptions on adoption rates and identify target demographic needs. AI agents can help offer the ability to reason proactively to assist with developing pricing and profitability mixes, forecasting profitability scenarios, and leveraging research insights to recommend compelling launch bundles, aiming to optimize offerings and improve market success.



Pull

- Find key themes from existing market research reports, focusing on the target demographic connectivity and consumption patterns
- Pull in external competitor research data to compare and contrast potential bundle offerings against existing low-cost brands in the market



Conduct

- Conduct deep research on buyer preferences, analyzing structured and unstructured data on browsing habits, etc.
- Evaluate price sensitivity and credit risk of the target demographic, generating assumptions on adoption rates



Develop

- Develop pricing and profitability mix by calculating target price points and margins, generating scenarios and forecasting profitability
- Leverage research insights to recommend a compelling series of launch bundles



Reasoning: Agents can help to synthesis complex and disparate first-party and third-party data, deep research, risk profiling, and competitor analysis to generate a suite of recommended bundles based on current market conditions.



Modernize network and operations with autonomous networks

Helping engineers triage workload for strategic focus



Autonomous networks are important for networking and leveraging agentic AI becomes critical to assist network engineers in their efforts to triage their workload, enabling them to spend more time on strategic initiatives. Tools that support ingesting and correlating real-time network event data with call center and third-party data may help agents leverage network topology modeling to rank issues by customer impact and assess potential causes using historical outage and configuration data. AI agents can help offer the ability to reason proactively to assist with automatically selecting high-priority network issues/alerts and developing recommended fixes with configuration details, KPIs, and validation steps, aiming to streamline network management and improve response effectiveness.



Ingest

- Ingest real-time network event data and correlate it with insights from call center interactions to create a unified issue dataset
- Integrate third-party crowdsourced data and the weather signals to enrich the network analysis with external environmental factors



Leverage

- Leverage advanced network topology modeling to dynamically rank issues based on estimated customer impact
- Conduct assessments of potential causes by analyzing historical outage insights and configuration data



Select

- Automatically select the highest priority network issues and alerts
- Develop recommended fixes and generate configuration details, KPIs, and validation steps for engineer review or direct implementation



Multimodality: Agents can help to ingest network telemetry data, potential voice transcription data from call centers, and automatically produce structured configuration files and service tickets.



Enhance customer experience with customer insights

Improving customer NPS and increasing sales



Intelligent automation can assist customer service and sales agents in their efforts to help improve customer Net Promoter Score (NPS) and increase sales. Tools that support proactively identifying call intent, accessing customer history, acquiring live transcriptions, analyzing call context, and evaluating churn risk may help agents conduct multimodal diagnostics of device issues and perform complex calculations to estimate repair costs or trade-in values. AI agents can help offer the ability to reason proactively to assist with guiding diagnostics, providing repair costs and technician availability, proposing trade-in/upgrade options, and generating Next Best Offers (NBO) to initiate orders, aiming to enhance customer satisfaction and drive revenue opportunities.



Identify

- Proactively identify customer's likely reason for calling using intent detection from virtual handling, and access their history
- Acquire live transcription of ongoing call and cross-reference reported device damage with current insurance policy details



Analyze

- Analyze the customer's call context side-by-side with recommended responses, and evaluate the churn risk
- Conduct a multimodal diagnostic of the damaged screen, then perform complex calculations to estimate the repair cost and trade-in value



Guide

- Guide diagnostics, provide repair costs and technician availability, propose trade-in and upgrade options
- Generate NBO, recommend new device and plan with insurance, initiate order and trade-in



Streamline discovery: Unified Google quality search and content discovery helps enable search and summarization across multiple enterprise and operational systems.



Why Google Cloud for agents



Deliver more impact with AI agents by easily tailoring AI for your specific needs. Only Google Cloud offers the most open and comprehensive platform for building and adopting agents at scale.

Accelerate deployment with AI assistants, applications, and agents that are ready for use today.

To help organizations do more with AI agents, Google Cloud offers a range of options tailored to different business needs and skill sets.

These options range from integrated Gemini assistants for [Google Cloud](#) and [Google Workspace](#) to AI applications such as [Customer Engagement Suite](#), which leverages agents to deliver exceptional customer experiences at every touchpoint.

We also offer purpose-built [vertical AI agents](#) for common use cases and Vertex AI Search that has been optimized for [specific industry needs](#), with additional agents planned for the coming year.



Build and manage multi-agent systems.

Every enterprise will soon rely on multi-agent systems—multiple AI agents working together—even when built on different frameworks or providers. Our robust developer platform, [Vertex AI](#), features the broadest range of enterprise-ready tools to build AI agents and enable a multi-agent ecosystem.

Vertex AI includes [Agent Development Kit \(ADK\)](#), a new open-source framework that simplifies the process of building sophisticated multi-agent systems while maintaining precise control over agent behavior. With ADK, developers can build an AI agent in under 100 lines of intuitive code.

And to help every organization maximize the benefits of agentic AI, Google Cloud's open [Agent2Agent \(A2A\) Protocol](#) enables seamless collaboration between agents—regardless of the underlying model or framework—and is supported by over 50 leading technology partners.

Easily scale adoption of AI agents across the enterprise.

Put AI agents in the hands of every employee with [Gemini Enterprise](#). This central platform uniquely combines Google's enterprise search, conversational AI (chat), and Gemini with third-party agents. It enables your workforce to efficiently find and synthesize internal information, interact with AI agents, and take action directly within their enterprise applications.

Gemini Enterprise is built on Google's secure-by-design infrastructure, and connected to over 100 enterprise applications such as Salesforce, SharePoint, and Slack, with native support for access control.

Ready to see the agentic era unfold?

[Explore hundreds of real-world examples](#) showcasing how Google Cloud customers are putting generative AI to work for tangible business impact.

Unlock your agentic future

The agentic era promises a future of unprecedented efficiency, innovation, and customer engagement. By understanding the potential and implementing the find, understand, and act approach, your organization can position itself to thrive in this transformative landscape.

Now is the time to make transformative changes, and Google Cloud helps our customers do that every day by making siloed systems a thing of the past. With security built-in and a comprehensive portfolio of technologies and applications, we can help you unlock the unprecedented efficiency, innovation, and customer engagement that the agentic era promises.

[Connect with our team](#) to explore how we can help every employee in your organization get ahead with AI agents.