

eBook

# Generative AI agent use cases for telecommunications contact centers



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In customer service for telecommunications, service reliability and quick resolution are paramount. When customers have questions or encounter issues like outages, billing concerns, or device issues, timely resolution, clear communication, and efficient support are critical. At the same time, the contact center must manage some of the highest customer service volumes in the enterprise world while controlling costs and delivering consistent service.

Traditional automation and standard AI chatbots have helped streamline basic tasks, but they often fall short when handling the complexity and personalization customers expect.

**65%** of telecom inquiries are repetitive and ripe for automation<sup>1</sup>

Generative AI agents are rapidly filling the gap between inflexible bots and the long waits for human help. Unlike rule-based bots, these agents can understand context, adapt based on conversational context, and take action to help customers with billing inquiries, outage reporting, device troubleshooting, and plan upgrades. They're capable of guiding customers through service options and offering personalized recommendations.

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1. Accenture. (2025, April 24). AI Transformation for U.S. Telcos: Insights

## Generative AI agents create new opportunities for telecommunications organizations to:

- ✓ Resolve guest and traveler inquiries faster, with personalized service that's truly appreciated
- ✓ Offer consistent support tailored to each traveler's preferences and circumstances
- ✓ Reduce operational costs while improving guest satisfaction and loyalty

Put simply, generative AI agents make it possible to scale customer support with the efficiency, speed, and attention to detail that customers demand.

This guide highlights impactful use cases for AI agents in telecommunications customer support. It is designed to help you choose the ones that will deliver measurable improvements in customer satisfaction, operational agility, and business performance.

## What is a generative AI agent?

A generative AI agent is a multi-layered solution that leverages the language and reasoning capabilities of generative AI to serve customers directly over voice or chat. It integrates with other tools and systems and uses APIs to retrieve data and perform tasks necessary to resolve the customer's issue. It works autonomously and is capable of complex problem-solving.

## GenerativeAgent<sup>®</sup> and the ASAPP CXP

ASAPP's **GenerativeAgent** is a generative AI agent built from the ground up for enterprise contact centers. Designed to manage complex, multi-turn interactions over voice and chat and autonomously resolve customer issues, GenerativeAgent eliminates the need to manually script conversation flows.

It dynamically adapts to conversational context, knows when to involve human agents, and supports concurrent interactions with human/AI collaboration. Through its industry-first HILA<sup>™</sup> (Human-in-the-Loop Agent) workflow, GenerativeAgent can consult with a human agent in real time for guidance, task completion, or approvals—without transferring the customer.

But GenerativeAgent is more than just a customer-facing AI agent. It's also the core of the **ASAPP CXP (Customer Experience Platform)**. The CXP brings every interaction, workflow, and customer signal into one intelligent system that resolves issues, enforces policies, and acts across enterprise systems. Unlike CCaaS or conversational AI tools that stop at simple deflection or routing, the CXP handles complex, multi-step workflows with accuracy, safety, and control while tailoring every step to the individual customer's context.

Leading enterprises use the ASAPP CXP to cut operating costs, accelerate resolution, modernize their CX stack, and build the foundation for an agentic enterprise where each member or patient has their own personalized AI agent.

# The shifting legal and regulatory landscape

As you consider generative AI agents, you'll need to be mindful of legal and regulatory compliance issues. Data security and privacy are just the start. In some jurisdictions, the agent must disclose that it's AI and specifically ask for the customer's consent to continue. In some countries, all customer data must reside in that country and cannot be transferred elsewhere.

These regulations are still evolving. So, any AI agent solution you choose must enable you to adapt and maintain compliance as regulations evolve.

## Our methodology

With each use case, we've included an estimated deployment time, value drivers, and relevant metrics.

### Deployment time

The deployment times here are estimates based on our experience deploying the GenerativeAgent platform and other AI solutions in enterprise contact centers. They represent typical durations from scoping to live production, derived from ASAPP benchmarks and industry studies. You'll want to keep in mind that your specific deployment time could vary depending on your CX technology infrastructure, the availability of your IT and development resources, the AI agent vendor you choose, whether you work with a system integrator or other strategic partner, and other factors.

With that in mind, the deployment time estimates should be viewed only as a guide to the relative ease and speed of implementing each use case.

- 2–4 weeks (Quick win)
- 1–2 months (Structured)
- 2+ months (Complex)

## Value drivers

A successful AI agent deployment can drive value in a number of ways, affecting costs, revenue, operational efficiency, and customer satisfaction. The mix of value drivers will vary from one use case to the next.

For each use case included here, we've listed the value drivers that will impact your customer service operations:

- **Efficiency Gain:** Reduces average handle time (AHT), manual work, or after-call effort.
- **CSAT improvement:** Increases customer satisfaction through faster, clearer, and more consistent, personalized interactions.
- **Revenue gain:** Drives incremental sales via better cross-sell/upsell or conversion support.
- **Cost reduction:** Lowers operational expenses by automating high-volume or low-value interactions.
- **Quality assurance:** Improves compliance and consistency at scale, and reduces risk.

## Relevant metrics

Real success with a generative AI agent depends on outcomes that have a positive and measurable impact on your business. So, your goals for any use case deployment should go far beyond the mere containment you might expect with legacy automation. The relevant metrics listed for each use case provide a starting point for measuring genuine business value.

# Telecommunications use cases

Prioritizing high-value use cases ensures that your organization gets the best return from automation investments. Each of the following use cases delivers significant value. The list is not exhaustive, but should serve as a strong starting point for identifying your first use cases for a generative AI agent.

## Outage troubleshooting

When customers suspect an internet or phone outage, they typically flood the call center. A generative AI agent for voice can handle these calls by checking the customer's line status and known outage information by address. If there's a known outage, it informs the customer and provides an ETA for the fix. If not, it guides the customer through basic troubleshooting steps. The generative AI agent rapidly addresses customer concerns and decreases frustration during outages, all without waiting for a human.

- **Deployment time:** 4–6 weeks
- **Value drivers:** CSAT improvement, cost reduction
- **Relevant metrics:** High containment for outage inquiries, improved CSAT in outage scenarios

## New service signup

A prospective customer calls to set up new service for internet, TV, or mobile. The generative AI agent checks service availability at the customer's address, recommends optimal plans based on the customer's needs, and calculates any bundle discounts. The AI also checks to see if the new customer is eligible for any promotions, and if so, applies them, then confirms monthly payment, billing cycle, and the shipping address for any new device. This leads to faster, more accurate sign-ups.

- **Deployment time:** 1–2 months
- **Value drivers:** Efficiency gain, revenue gain
- **Relevant metrics:** Order processing time reduced, fewer errors in service orders, sales conversion rate improved due to immediate plan recommendations

## Billing explainer and invoice

Telecom bills can be confusing. A generative AI agent can take a customer's query ("Why is my bill higher this month?") and explain the charges in simple language ("Your data usage exceeded your plan by 2GB, resulting in \$15 extra charges.") It can email or text a summary. By handling these explanations and even emailing a simplified bill, the generative AI agent reduces call escalations and improves customer satisfaction.

- **Deployment time:** 4–6 weeks
- **Value drivers:** CSAT improvement, cost reduction
- **Relevant metrics:** Reduction in billing-related escalations, fewer repeat calls about the same billing, faster resolution for billing questions, CSAT regarding billing transparency improved

## Churn risk retention agent

When a customer calls to cancel their service, a generative AI agent analyzes their account and suggests a tailored retention offer based on the account's tenure, usage, previous complaints, and company policy. The generative AI agent ensures consistency in retention efforts and maximizes the likelihood of keeping valuable customers.

- **Deployment time:** 1–2 months
- **Value drivers:** Revenue retention
- **Relevant metrics:** Save rate on cancellation calls increased, reduction in churn among high-value segments, retention offer cost efficiency improved with precise targeting

## Plan upgrade suggestion

If a customer calls frequently about overage fees or additional services, the generative AI agent recognizes this pattern and suggests a more suitable plan. For example: "I see you've incurred overage fees three times in the past six months. It might be more cost-effective to upgrade to our premium plan and avoid the additional charges." This can generate more revenue, and more importantly, helps customers move to plans that better fit their usage, which will improve CSAT long-term.

- **Deployment time:** 4–6 weeks
- **Value drivers:** Revenue gain
- **Relevant metrics:** Conversion rate on plan upgrades increased, reduction in future overage complaint calls from those customers, incremental ARPU (average revenue per user) lift identified

## Device troubleshooting virtual tech

Customers often call with device issues. A generative AI agent can walk them through troubleshooting steps conversationally. It asks questions about indicator lights, instructs the user to reboot or check cables, and dynamically adapts the dialogue based on responses. Many issues, such as Wi-Fi not working, can be resolved without a technician or human agent. This lowers support costs and resolves problems more quickly.

- **Deployment time:** 1–2 months
- **Value drivers:** Cost reduction
- **Relevant metrics:** First-call resolution improved, fewer truck rolls as minor issues are fixed on the call, support cost per subscriber reduced

## Visual-assisted troubleshooting and guided repair

During a voice or text conversation, the customer can upload photos or stream video. The generative AI agent uses visual AI to detect issues and provides step-by-step voice or text guidance. For example, the AI tech support agent asks the customer to point their camera at a router. The AI identifies loose cables and provides visual overlays in an app showing where to plug them in.

- **Deployment time:** 3–4 months
- **Value drivers:** Cost reduction
- **Relevant metrics:** Truck roll avoidance for field services due to the ability to resolve issues remotely

## Proactive outage alert system

Instead of waiting for customers to call in about outages, the generative AI agent automatically calls or texts customers in affected areas to inform them of the issue and an estimated time to fix. It allows customers to say if they're also experiencing issues (feeding back into detection systems) or ask questions, which the AI can answer. By proactively communicating, the service provider reduces incoming call volume and keeps customers informed, which improves trust.

- **Deployment time:** 4–6 weeks
- **Value drivers:** CSAT improvement, cost reduction
- **Relevant metrics:** Reduction in incoming calls during outage events, improvement in CSAT scores during outages vs. past events

## New customer onboarding

After a customer signs up for a new service, a generative AI agent can reach out via call, chat, text or email to welcome them, verify they received equipment, and help with setup. It can answer common first-week questions (Wi-Fi name/password changes, initial bill expectations) and ensure the service is working properly. While mostly autonomous, it can loop in a human agent if it detects issues that it cannot resolve. This proactive onboarding reduces early frustration and returns/cancellations.

- **Deployment time:** 1–2 months
- **Value drivers:** Efficiency gain, CSAT improvement
- **Relevant metrics:** New customer call-ins about setup issues reduced, improved 90-day retention with smoother onboarding, higher initial satisfaction ratings

## Payment arrangement

When customers cannot pay their full bill, they often need to call to arrange a payment plan or extension. A generative AI agent can handle this discreetly by verifying account identity, offering eligible payment plan options based on company policy, and setting up payment arrangements automatically. This reduces bad debt by making it easier for customers to commit to a plan, and it frees human agents from lengthy, sensitive calls.

- **Deployment time:** 4–6 weeks
- **Value drivers:** Cost reduction
- **Relevant metrics:** High percentage of payment extension requests contained, decrease in involuntary churn or late disconnects, improved handle time for payment arrangement calls that do go to agents

## Field technician dispatch

If an issue can't be solved remotely, scheduling a technician is next. The generative AI agent assists by automatically checking the customer's address, matching it with technician availability and skill, and confirming an appointment slot. It also lists likely tools or equipment needed based on the troubleshooting information gathered for inclusion on the service order. This reduces the back-and-forth scheduling effort and increases first-visit resolution rates because the technician arrives informed and equipped.

- **Deployment time:** 4–6 weeks
- **Value drivers:** Efficiency gain, reduced cost
- **Relevant metrics:** Faster scheduling, first-time fix rate for dispatched jobs improved, customer downtime reduced by scheduling at call time instead of later follow-up

## Voice biometric authentication

The generative AI agent uses the customer's unique voiceprint to authenticate their identity within seconds of speaking, instead of asking security questions or PINs. On a support call, as the customer describes their issue, the generative AI agent matches their voice to the stored print on file. Once verified, the AI proceeds with account-specific actions. This reduces handle time and improves account security.

- **Deployment time:** 1–2 months
- **Value drivers:** Efficiency gain, quality assurance
- **Relevant metrics:** Average verification time reduced from ~30–60 seconds of Q&A to ~5 seconds, call drop-offs during tedious ID verification reduced, more fraud attempts caught due to voice mismatches

## Coverage map and service availability

Customers commonly ask if a particular service is available at their house. A generative AI agent can answer these questions by checking coverage maps and service eligibility based on address or zip code. It can also inform the customer which technologies or speeds are available and even suggest upsell or promotional offers to eligible customers.

- **Deployment time:** 2–4 weeks
- **Value drivers:** Cost reduction, revenue gain
- **Relevant metrics:** High containment for coverage queries, increased lead capture for areas with upcoming service as the AI collects information and makes an offer instead of missing an opportunity

## Data usage and upgrades

A mobile carrier's generative AI agent can handle questions like, "How much data have I used this month?" or "Why is my data slow now?" by accessing the customer's usage and plan details. It can explain any throttling policies if they exceed limits and, if appropriate, offer an upgrade to a higher data plan on the spot. This real-time personalized service addresses customer concerns about data overages or slowdowns and presents a solution proactively.

- **Deployment time:** 4–6 weeks
- **Value drivers:** Cost reduction, revenue gain
- **Relevant metrics:** High containment for data usage inquiries, improved upsell conversion of heavy users, fewer complaints about unknown data slowdowns as AI transparently communicates policy triggers

# Automate customer service without compromising satisfaction

Each of the use cases listed here demonstrates how a generative AI agent can automate customer interactions in telecommunications contact centers, delivering benefits ranging from cost savings and efficiency gains to improved customer satisfaction, quality assurance, and new revenue opportunities. By selecting the right initial use cases and gradually expanding AI automation, telecommunications providers can modernize their customer service while tracking metrics to ensure each deployment delivers real value.

For more information on the ASAPP process for identifying the best use cases for your business, check out this guide:

[Finding the right AI agent use cases for customer services](#)

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## About ASAPP

ASAPP is an artificial intelligence solution provider committed to solving the toughest problems in customer service. Its AI-native Customer Experience Platform, powered by GenerativeAgent® integrates with existing systems and uses generative, personalized interaction to bring radical efficiency to every customer workflow. Because we automate what was previously impossible to automate, our AI-native solutions deliver more than efficiency gains. They redefine the role of AI in the contact center and lay the groundwork for businesses to reimagine their customer experience delivery for the agentic enterprise. ASAPP delivers personalized, context-aware interactions by giving every customer their own AI agent powered by their interaction history and enterprise data. Leading enterprises rely on ASAPP's generative and agentic AI solutions to dramatically expand contact center capacity and transform their contact centers from cost centers into value drivers. To learn more about ASAPP, visit [www.asapp.com](http://www.asapp.com).