AI Made Practical: Practical use cases for efficiency and growth.

Explore practical AI strategies for broadband leadership, addressing common assumptions and embracing industry trends, while fostering subscriber experiences and business growth.



David Allen Calix
Director Channel NA/CALA



Carl Russo
Founder & Chairman of the Board, Calix



If you're not going into every meeting willing to have your mind changed, why are you there?

Carl Russo
Founder & Chairman of the Board, Calix

Reframing Common AI Assumptions

Assumption #1: AI will replace humans



Assumption #2: AI is hard & expensive

Reframe: AI is increasingly "built-in," not "built-from-scratch."

AI is more accessible than most teams think because it's already embedded in platforms you use (Microsoft 365, Calix Platform, CRM). You don't need a PhD—you need clear use cases, good prompts/inputs, and a simple adoption plan.

Assumption #3: I'll wait until it settles

Assumption #1: AI will replace humans

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Reframe: AI will replace some tasks (and some roles), and it will also redefine the roles that remain.

AI will automate parts of work—and in some cases reduce headcount—especially where processes are broken or repetitive. The winners will redeploy people into higher-value work: relationship-building, trust, local community presence, and service design. In other words, AI replaces bad processes and routine tasks; people move up the value chain.

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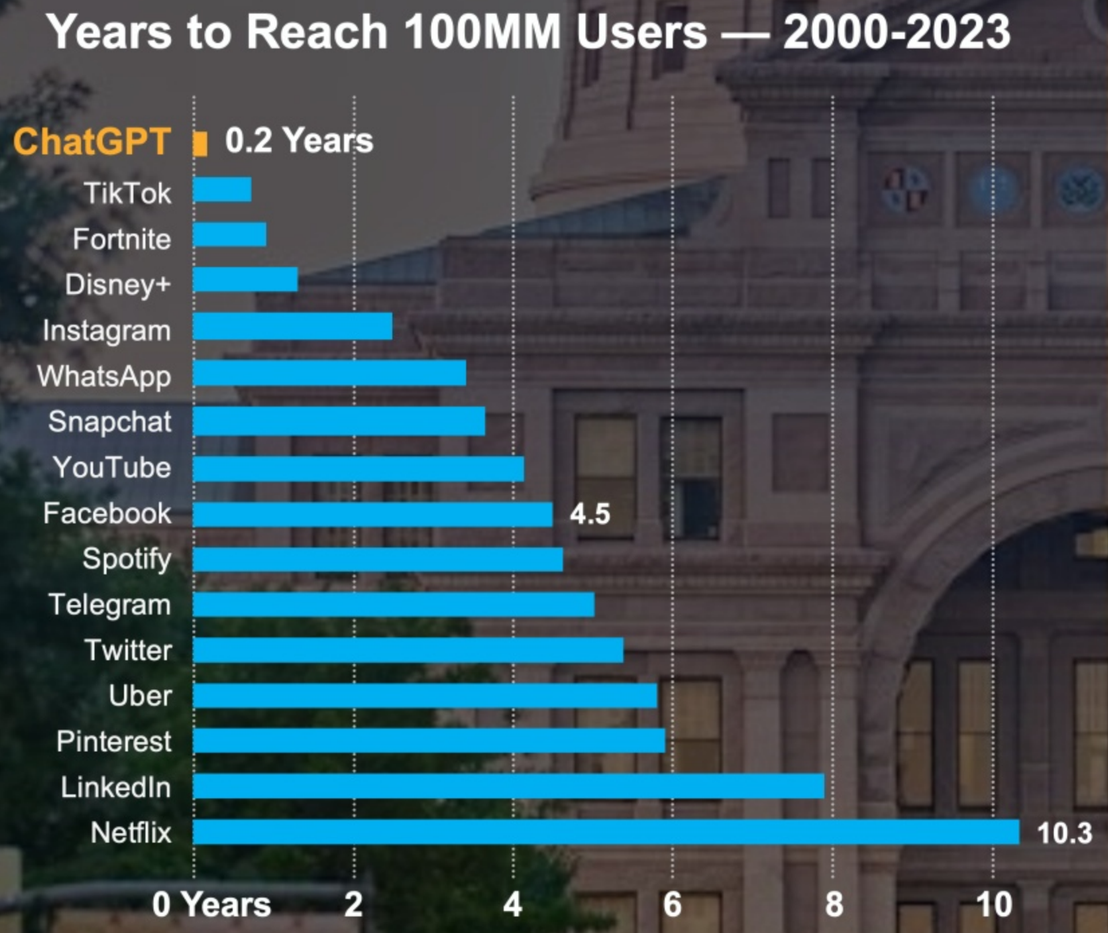
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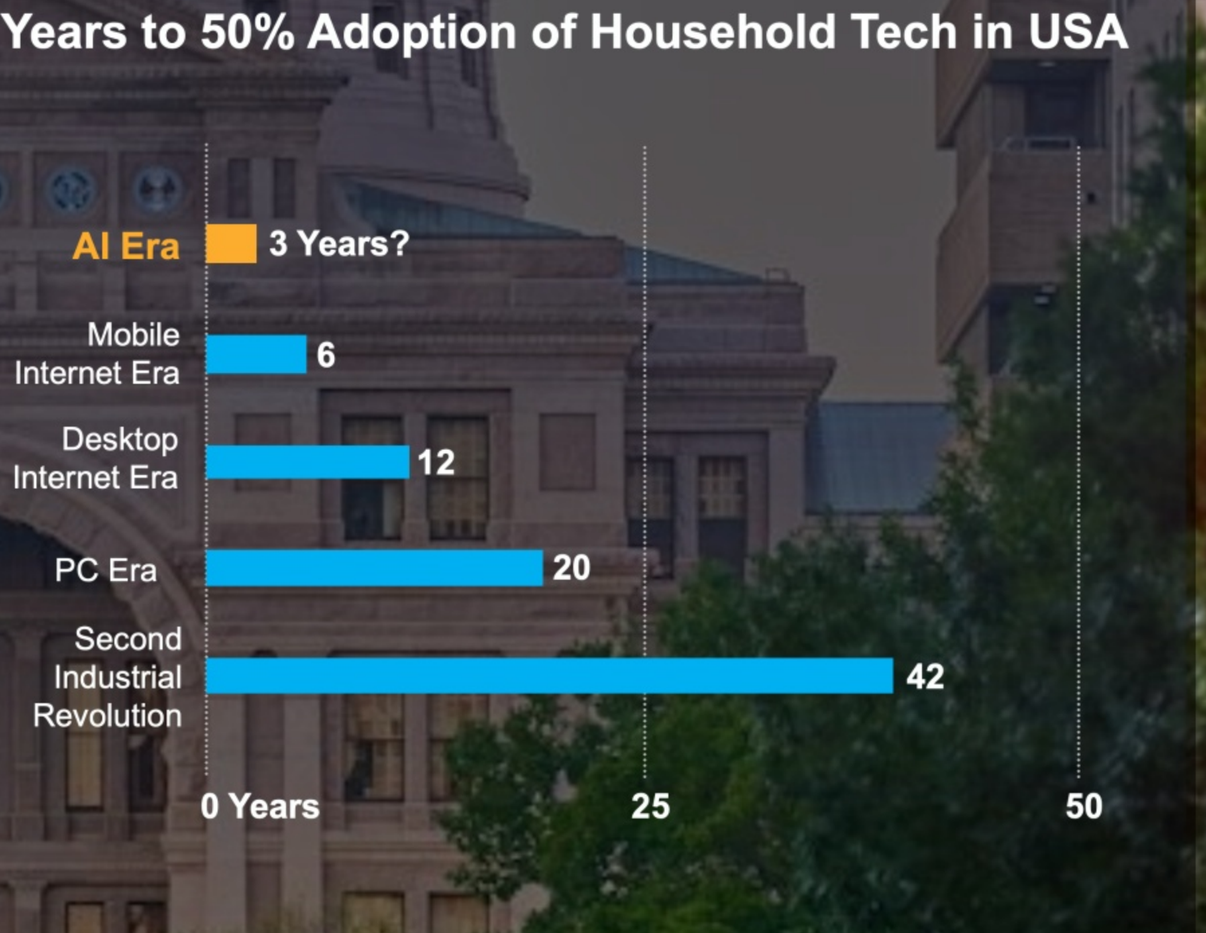
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Reframe: AI adoption is compounding—early movers build capability faster.

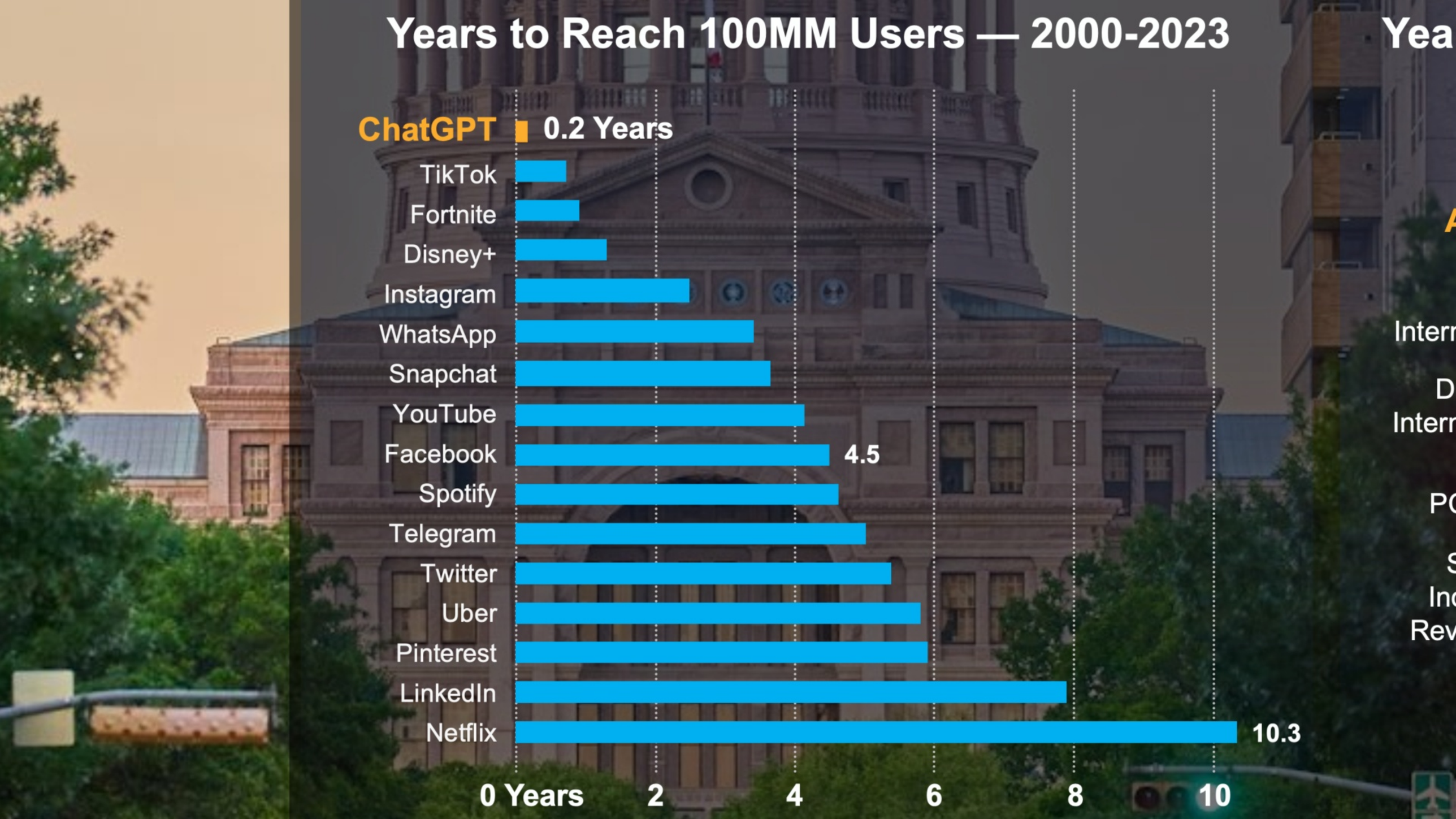
AI is evolving quickly, and adoption compounds: teams that start small now build skills, data habits, and playbooks that accelerate every quarter. Waiting doesn't reduce risk—it shifts you into catch-up mode while others lock in productivity gains.

The Pace of Change is MINDBOGGLING

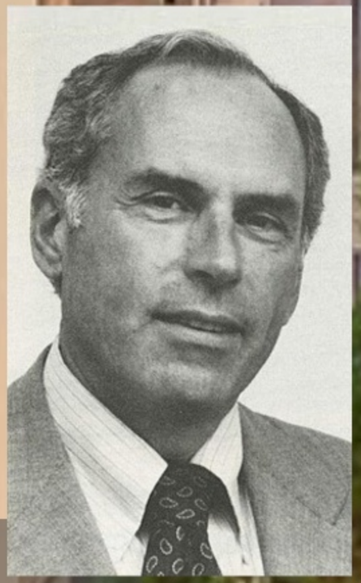




Note: 3 years for AI Era implies that the time to 50% USA Household Adoption is similarly cut in half from the previous cycle.
Source: Morgan Stanley, 'Google and Meta: AI vs. Fundamental 2H Debates' (7/23). Our World in Data, other web sources per MS


Years to Reach 100MM Users — 2000-2023
ChatGPT
0.2 Years
TikTok
Fortnite
Disney+
Instagram
WhatsApp
Snapchat
YouTube
Facebook
4.5
Spotify
Telegram
Twitter
Uber
Pinterest
LinkedIn
Netflix
10.3
0 Years
2
4
6
8
10

Amara's Law



We tend to overestimate the effect of a technology in the short run and underestimate the effect in the long run.

Roy Charles Amara
1925 - 2007
American researcher, scientist, futurist and president of the Institute for the Future

Trends in the recent past that shaped the industry

Massive Fiber Builds



The broadband industry is witnessing unprecedented growth in fiber infrastructure, with extensive fiber deployments to meet increasing demand for high-speed internet access across urban and rural areas. This is commoditizing broadband at an alarming pace.

Focus on 'Subscribers Served' Over 'Homes Passed'



The industry focus is shifting from the number of homes passed by service providers to the actual take rate of subscribers. This change emphasizes the importance of not just reaching potential customers but effectively converting them into paying subscribers, the fastest path to high returns on a network investment that's already a sunk cost.

Fierce Competition for Subscribers



With the broadband landscape becoming increasingly competitive, providers must differentiate themselves through innovative services, improved subscriber experiences, and effective marketing strategies. The ability to stand out in a crowded market is crucial for sustained growth.

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Subscriber Experience (NPS): AI Allows Proactive Service

With AI, companies can shift from a reactive approach to a proactive one in managing subscriber experiences. This means identifying potential issues before they arise, leading to higher customer satisfaction and improved Net Promoter Scores (NPS).

Consistency: Exceptional Experience for Every Subscriber

AI ensures that all subscribers receive a consistent and exceptional experience, regardless of which representative they interact with. This uniformity builds trust and loyalty among customers, enhancing brand reputation.

Productivity: AI Lets Your Teams Buy Back Time

By leveraging AI, teams can automate repetitive tasks, allowing employees to focus on higher-value work that drives business growth. This not only increases operational efficiency but also enhances overall team morale and productivity.



Understanding the Pressures Driving Change



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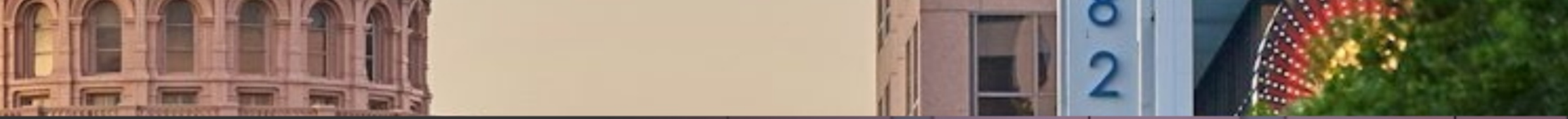
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Call to Action: Do Something!

In an era where AI is reshaping industries, inaction puts your business at a disadvantage. Embrace this opportunity to innovate and enhance your operations. Start small, choose one problem to solve with AI, and make it a priority to take actionable steps today. Engage your team, leverage the platforms you already have, and set the foundation for a transformative journey.





The ISP AI Action Plan: Next 30 Days

- Choose ONE Business Problem
- Use the Platform Where Your Data Already Lives
- Name 2–3 People as Your AI Leadership Team




Business
Workforce
Technology
What business challenges do you want AI to help solve?
LEFT TURN
YIELD
ON GREEN

12 KPIs: Your Economic Scoreboard

These KPIs define whether the business is winning or losing.

They represent the **economic levers** of a broadband business

They connect **experience, growth, cost, and workforce efficiency**

They are the metrics executives **ultimately optimize** — explicitly or implicitly

If insight doesn't move one of these, **it doesn't change the business**

- ☒ Increase acquisition rate
- ☒ Grow ARPU
- ☒ Expand into new markets
- ☒ Reduce churn
- ☒ Increase first call resolution
- ☒ Reduce unnecessary truck rolls
- ☒ Decrease cost of acquisition
- ☒ Shorten time to value
- ☒ Improve NPS
- ☒ Increase operational efficiency
- ☒ Reduce OPEX
- ☒ Improve network reliability

From automation to agentic execution

Agentic AI extends beyond prediction or content generation by pursuing a defined goal and acting within guardrails.

TRADITIONAL AUTOMATION

Follows preset rules

- Repeatable, predictable tasks
- Limited when conditions change

GENERATIVE AI

Creates and summarizes

- Assists human decisions
- Typically waits for a prompt

AGENTIC AI

Interprets intent and context

- Coordinates decisions and actions
- Adapts toward a defined goal



What is an AI Agent?

An agent is AI software that has been taught to use tools and make decisions that are TRUSTED

What an agent is:



Memory
Remembering across tasks and changing states



Reasoning
Decomposing a problem and planning actions



Systems
Accessing external systems on your behalf

What an agent does:



Observes
Collect and process data from environment



Plans
Evaluate possible actions and prioritize toward a goal



Acts
Execute by leveraging internal or external tools/systems


Why is churn increasing?

LLM AI vs. Agentic AI

LLM-
Reason 1, Reason 2, Reason 3.



Agentic-Here are the reasons and here is what will happen-
Detect churn risk → identify impacted subscribers → build retention segment → recommend offer → launch campaign → measure results



Trusted, scalable AI infrastructure are a force mutliplier allowing service providers to compete and win



TRUST & SECURITY



Trust and security

Facilitates data privacy and access control to ensure AI systems are reliable, safe, ethical, and compliant.

Core function: answer questions such as “Who can do what, where and when?” and governs agent behavior and decision-making authority

Defines agentic autonomy and business logic enforcement

Data retrieval security, audit trails, and human-in-the-loop supervision

ORCHESTRATION



Orchestration
Coordination of multiple AI agents, with distinct skills, to work together toward a shared, complex goal.

Breaks down complexity into workflows of several steps
Limits knowledge required for each incremental task
Drives cross-domain outcomes

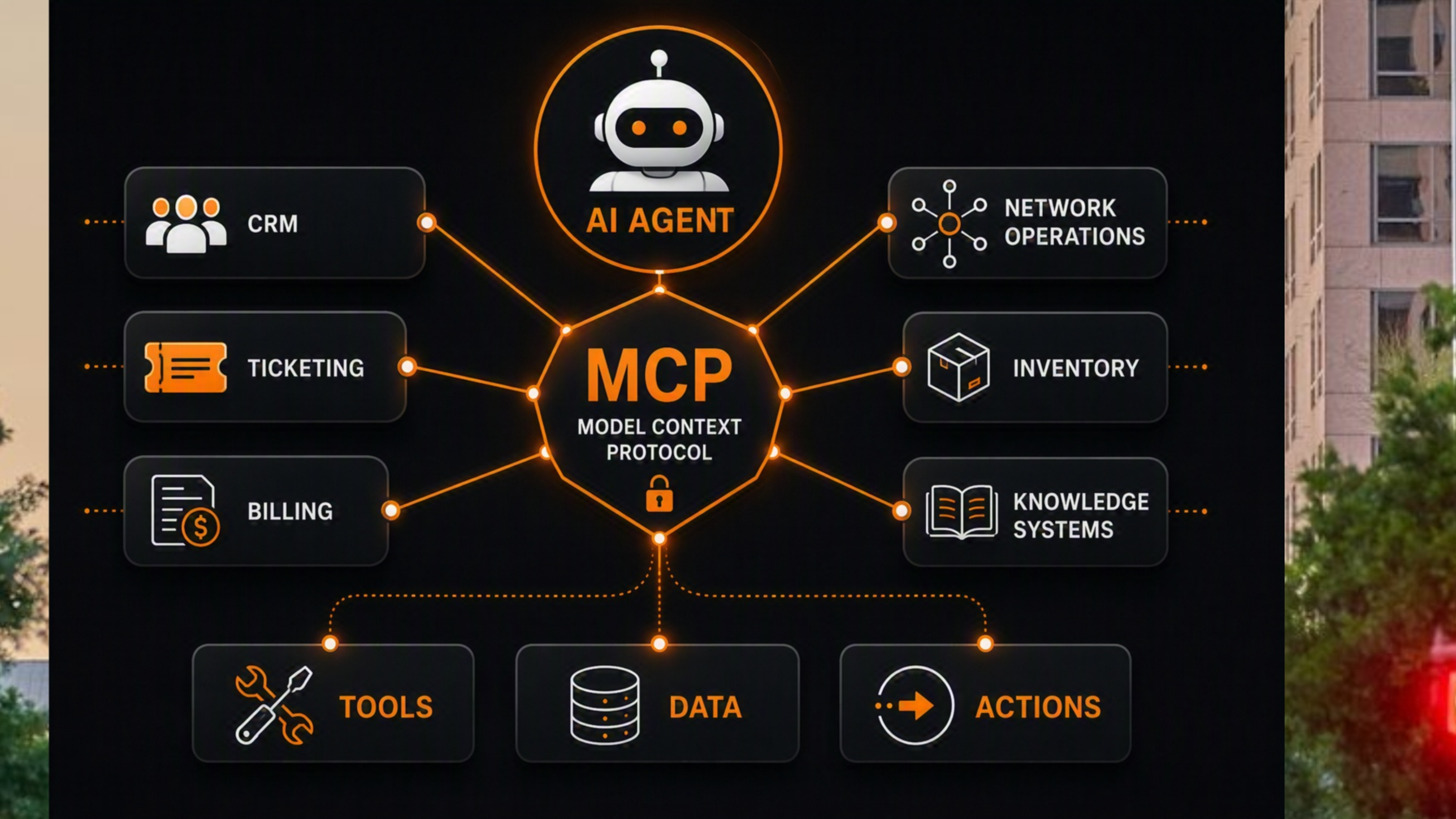
KNOWLEDGE



Knowledge
Structured information and learned patterns enable Agents to reason, plan, and make decisions.

Knowledge graphs, machine learning models, and embeddings
A RAG-based (Retrieval-Augmented Generation) architecture ensures that Large Language Models (LLMs) understand context and produce accurate outputs.
MCP (Model Context Protocol) servers enable real-time contextualization and correlation of business data sources like campaign management, trouble ticketing and workforce management systems into the knowledge layer.


RAG
RETRIEVAL-AUGMENTED GENERATION
QUESTION
RETRIEVE
TRUSTED DATA
GROUNDED ANSWER
What's causing this subscriber's Wi-Fi issues?
AI AGENT
RETRIEVE • REASON • RESPOND
KNOWLEDGE BASE
CRM RECORDS
SUPPORT TICKETS
NETWORK TELEMETRY
DOCUMENTATION
The subscriber's Wi-Fi issues are due to interference on channel 6 and a weak signal from the ONT. Recommended action: move to channel 11 and reboot the ONT.


AI AGENT
MCP
MODEL CONTEXT PROTOCOL
CRM
TICKETING
BILLING
NETWORK OPERATIONS
INVENTORY
KNOWLEDGE SYSTEMS
TOOLS
DATA
ACTIONS

KNOWLEDGE



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DATA



Data

Aggregation of subscriber, premises and network data as the foundation for knowledge.

It acts as a single, governed source of truth Calix, CSP, OSS/BSS and trusted partner data

Foundational Topic- Is your data ready for AI?

The AI Adoption Journey

ANSWER
Knowledge Assist

ANALYZE AND ACT
Task Automation and Real-Time Analysis

26.3 · WE ARE HERE

ORCHESTRATE
Collaborative Workflows

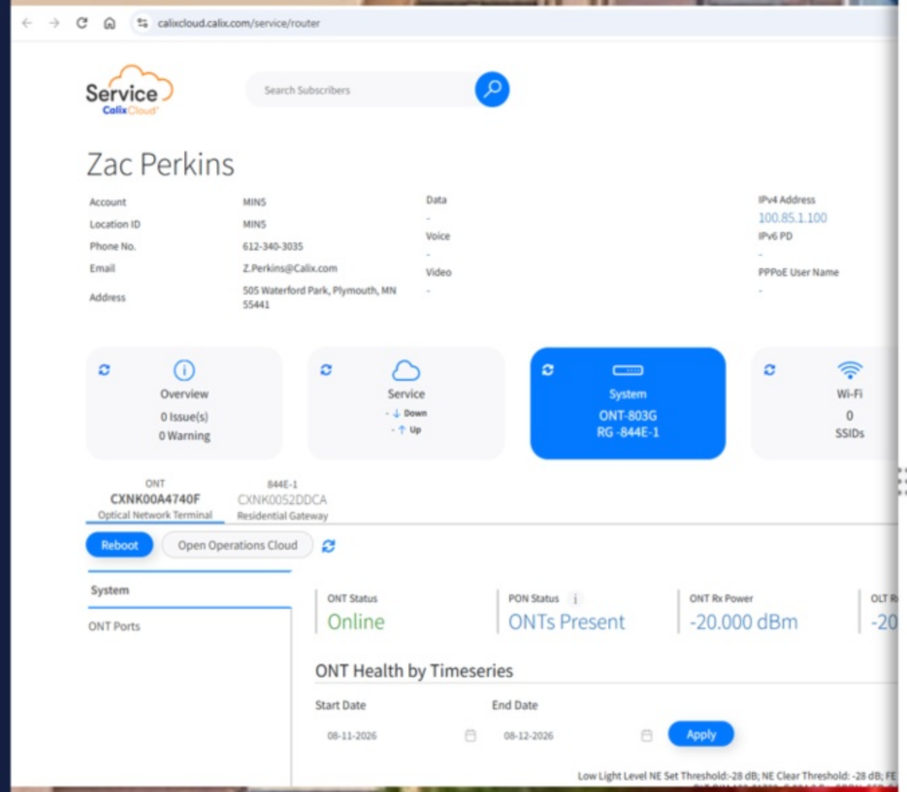


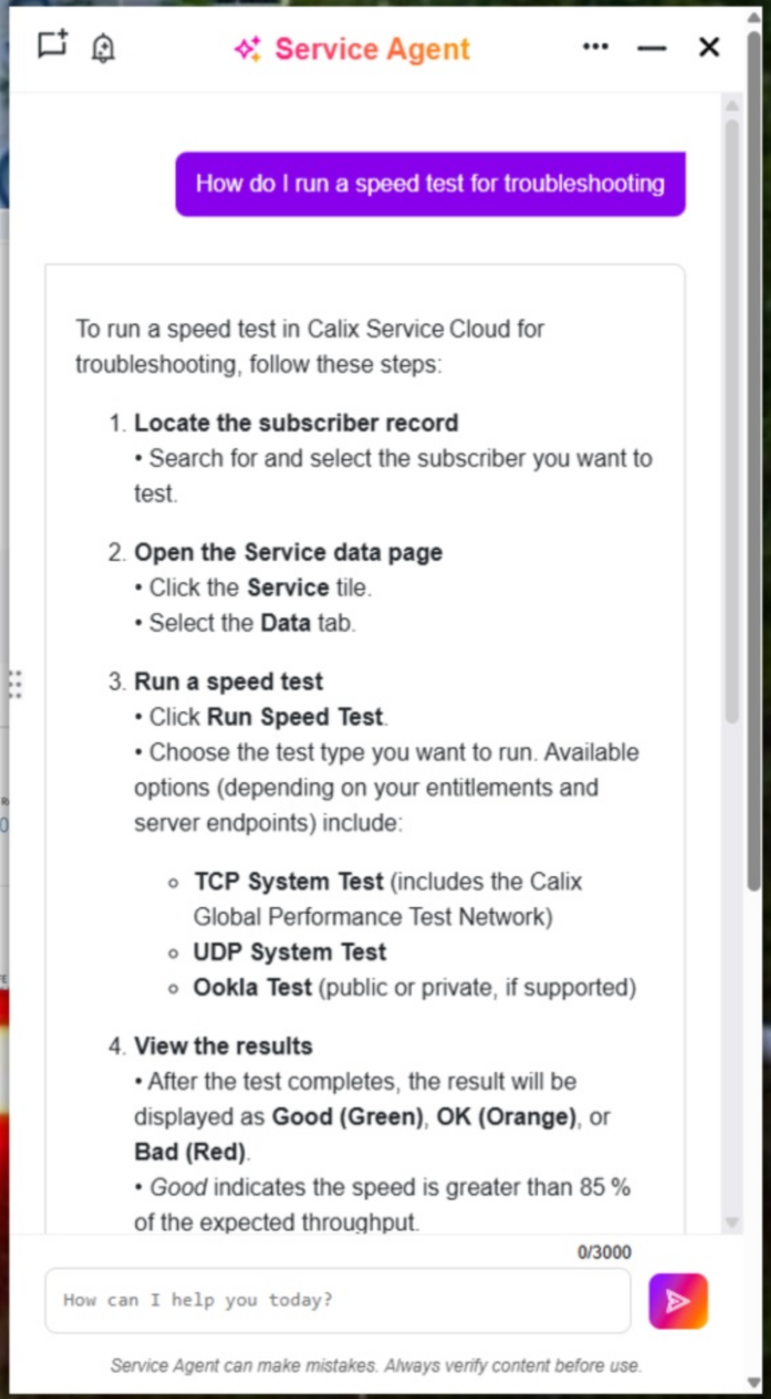
BUILD LOYALTY

Knowledge Assist & Speed Testing

Increase subscriber satisfaction

Knowledge assist gives CSR's precise, expert-level answers to support questions in the flow of work, and speed confirms line performance on the spot, so teams resolve issues fast and lift subscriber loyalty.



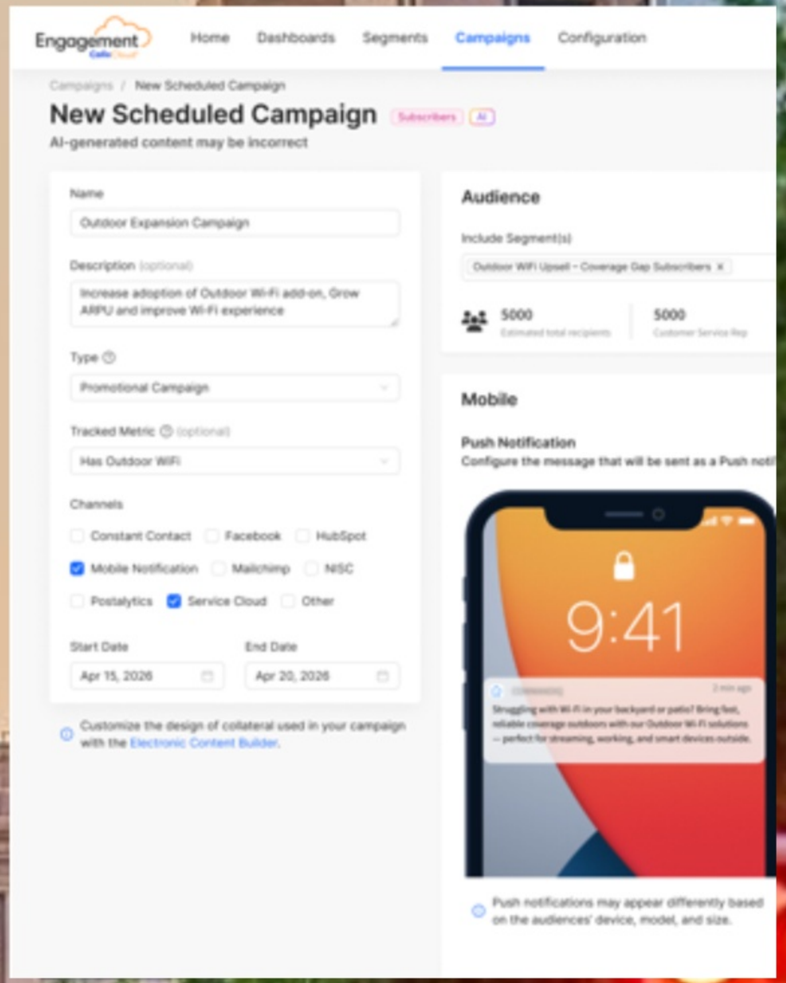


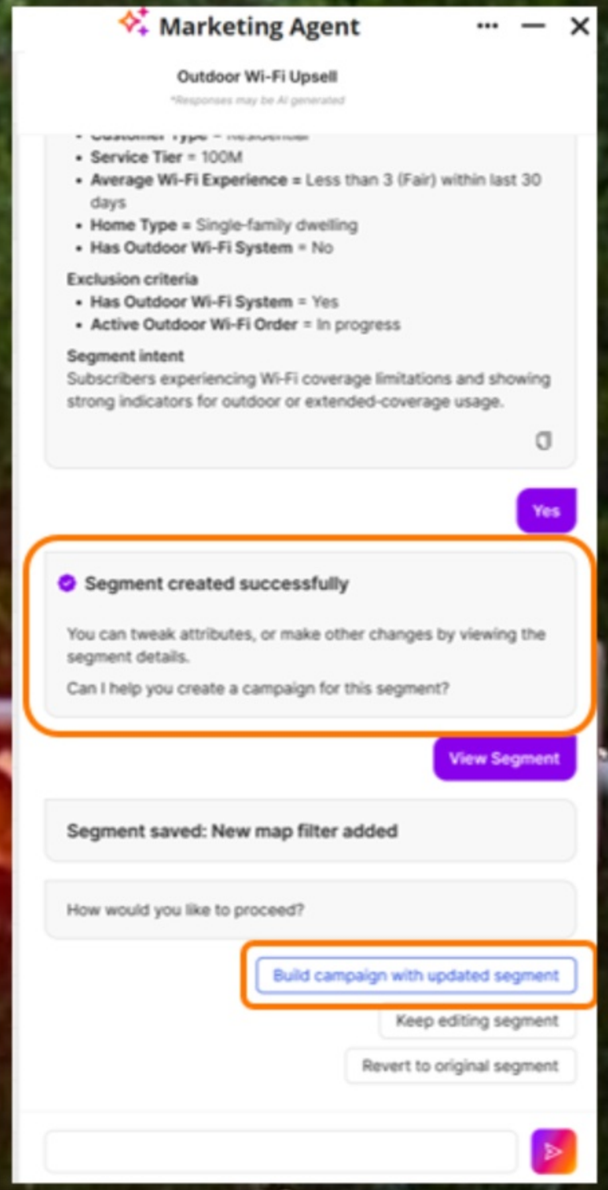
PROVIDE PERSONALIZED EXPERIENCE

Cross/Up-Sell Segmentation and Campaigns

Grow revenue

Identify subscribers ready to buy, then task automation surfaces upsell segments and creates targeted campaigns that appear in Engagement Cloud.



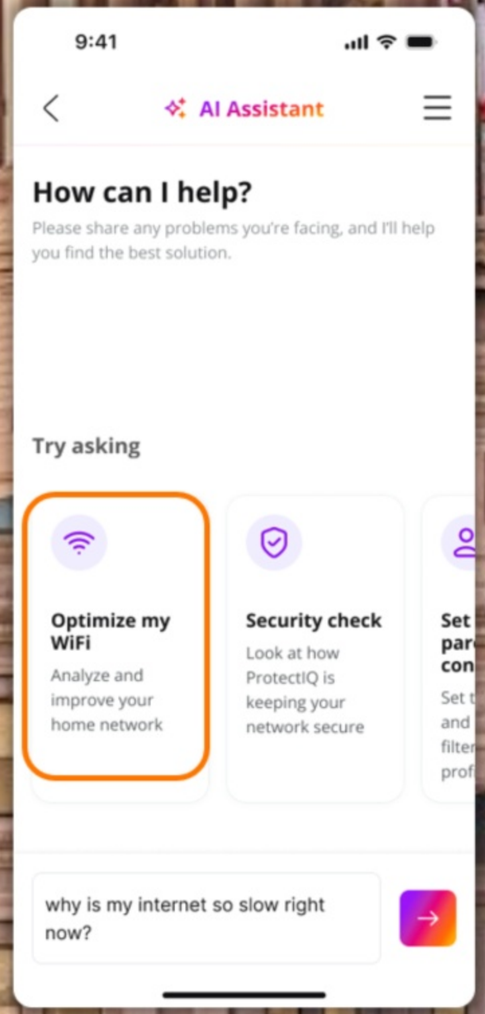


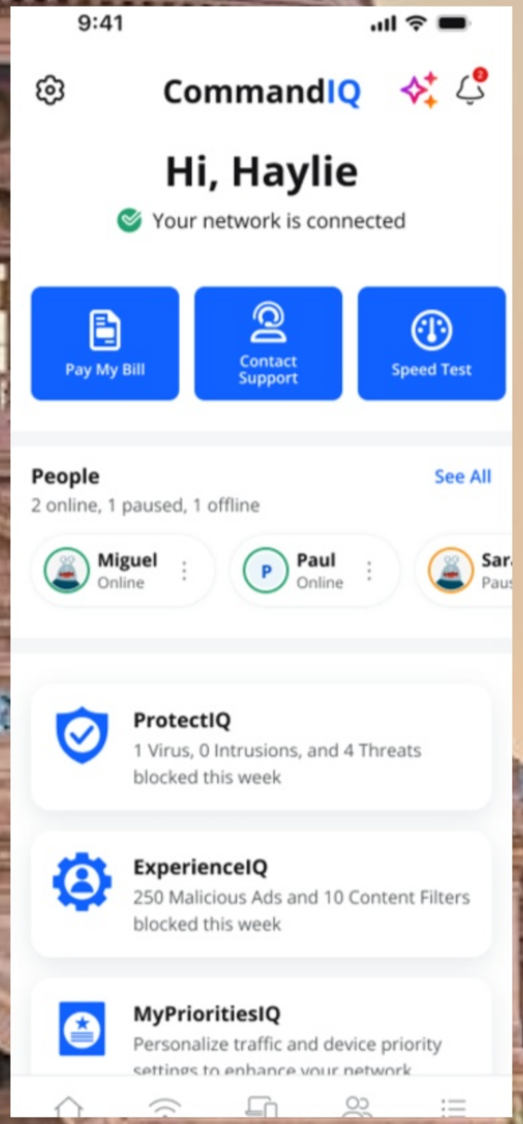
BUILD LOYALTY

Home Network Optimization

Increase loyalty & efficiency

Turns “my Wi-Fi is slow” into a simple self-serve fix. Home Network Optimization in CommandIQ gives subscribers the insights to resolve in-home Wi-Fi issues right from the mobile app.



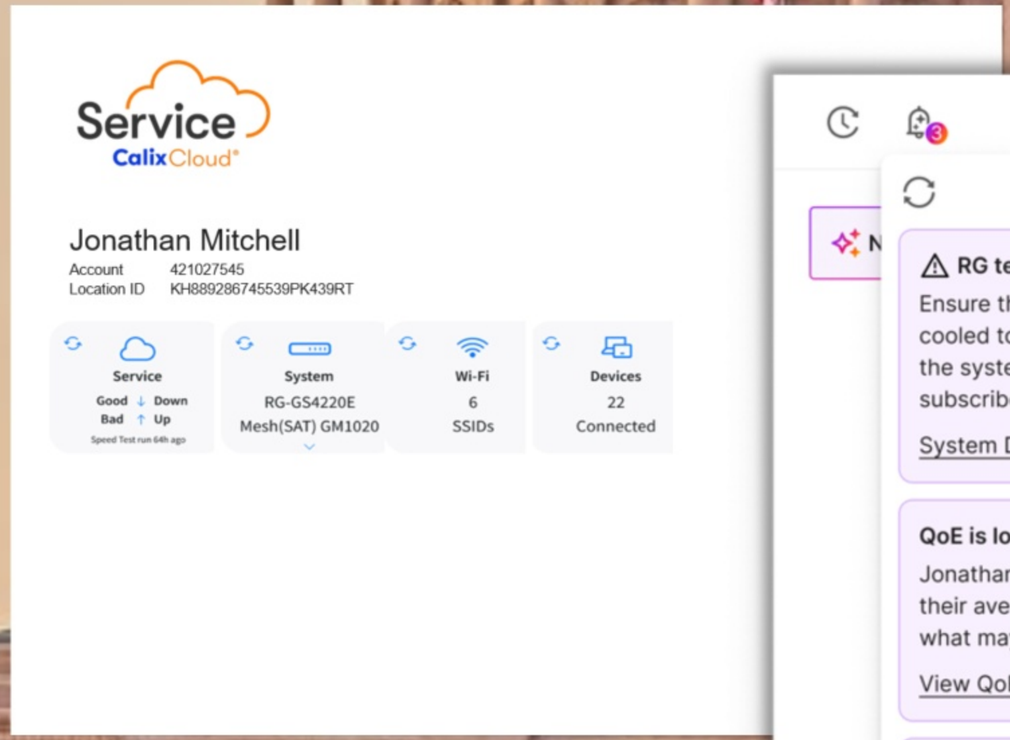


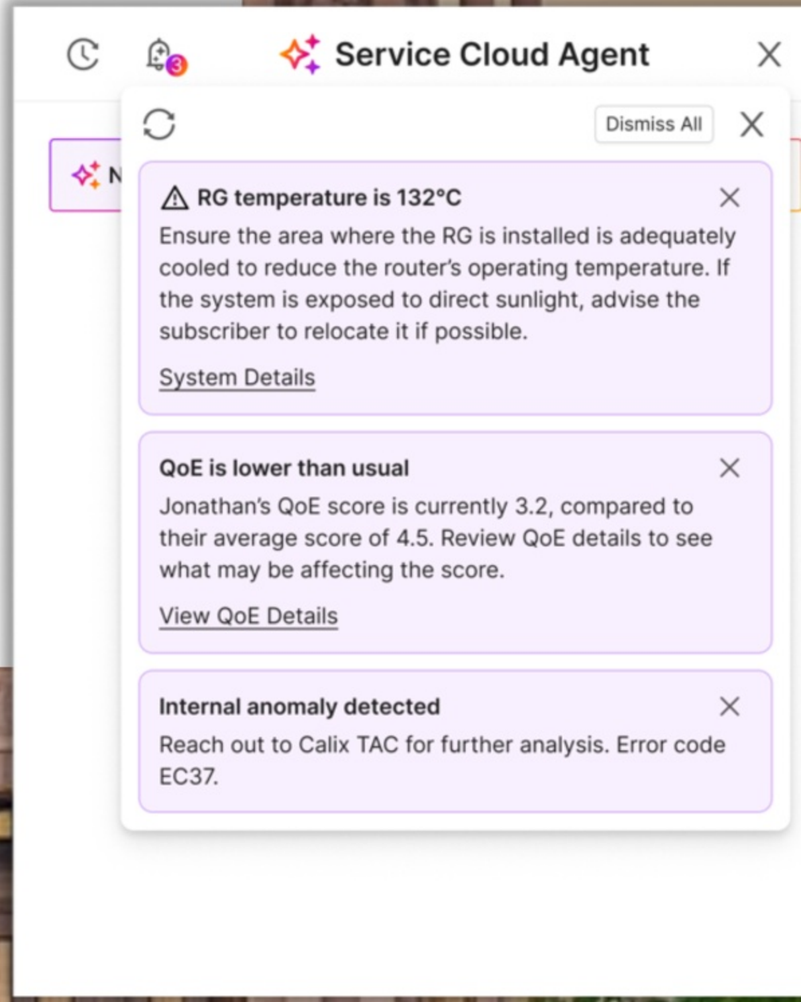
BUSINESS EFFICIENCY

Appliance Health and Anomaly Detection

Increase efficiency & satisfaction

Background appliance (RG) checks give CSRs real-time intelligence for troubleshooting, accelerating resolution without disrupting the subscriber.



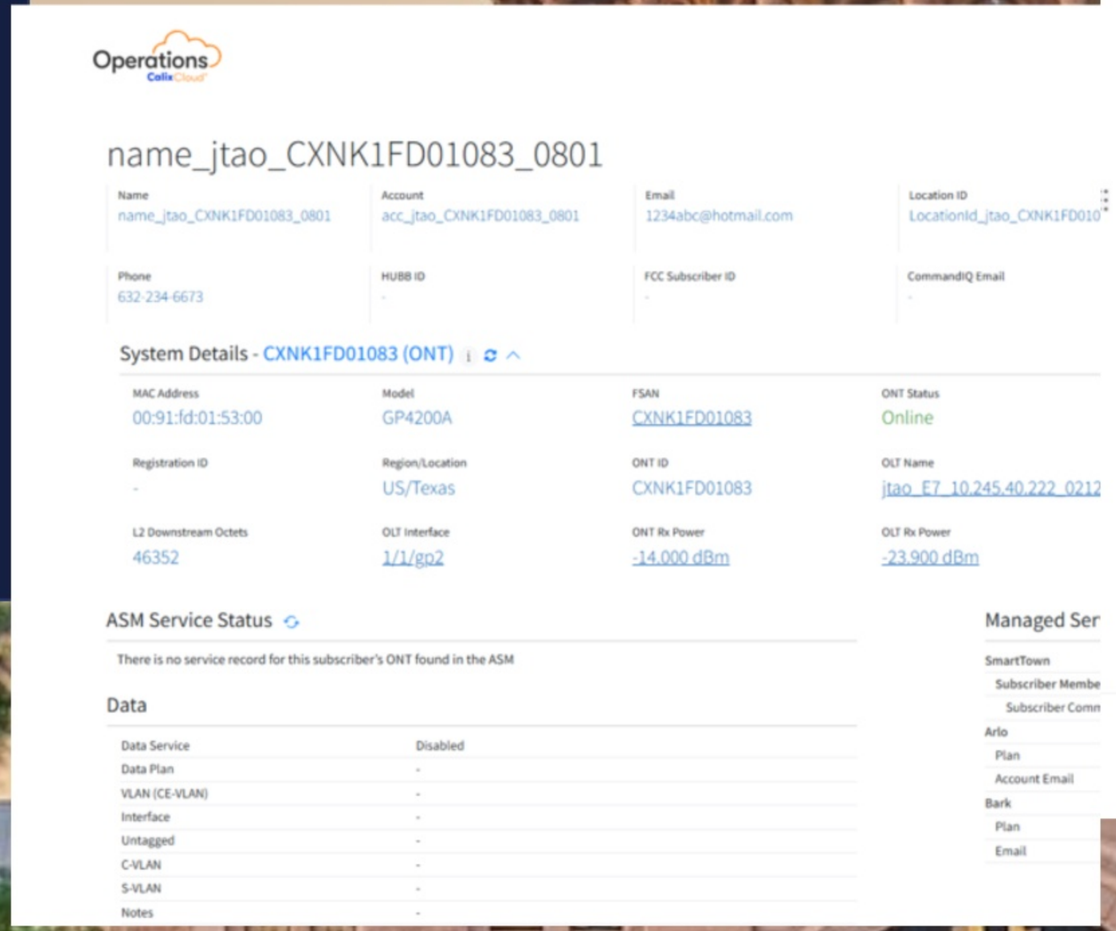


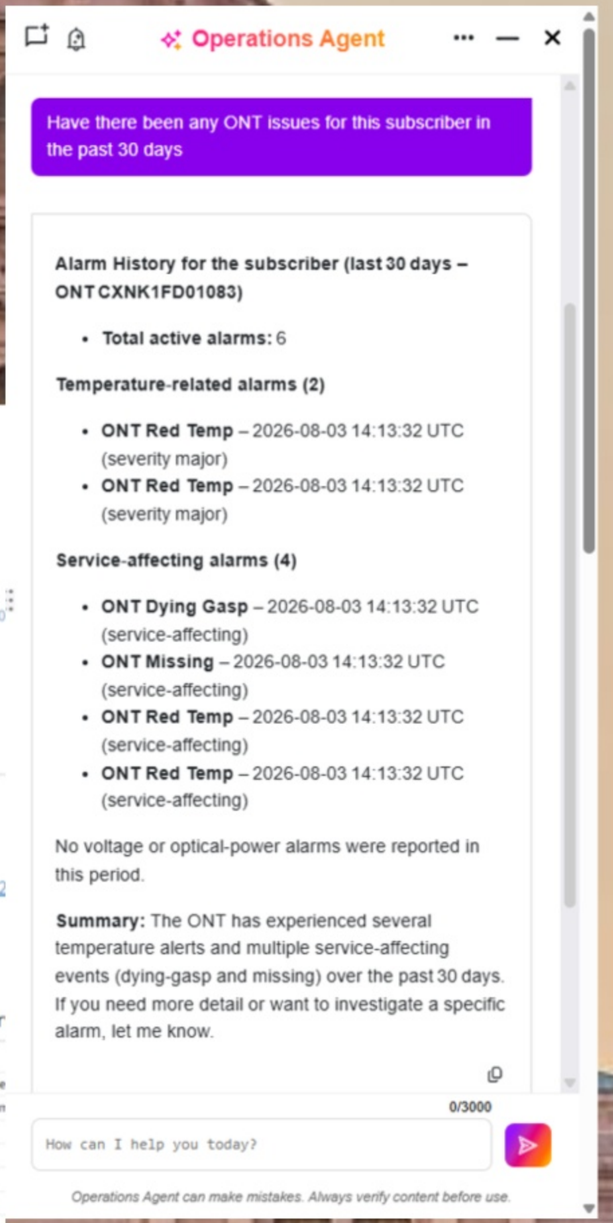
BUSINESS EFFICIENCY

Subscriber Context

Reduce OPEX

Gain instant access to key insights for accelerating troubleshooting and optimizing the subscriber experience; e.g., in Operations Agent, engineers gain instant visibility into ONT Offline, Low Light Levels, High PON Errors, and High Temperature.

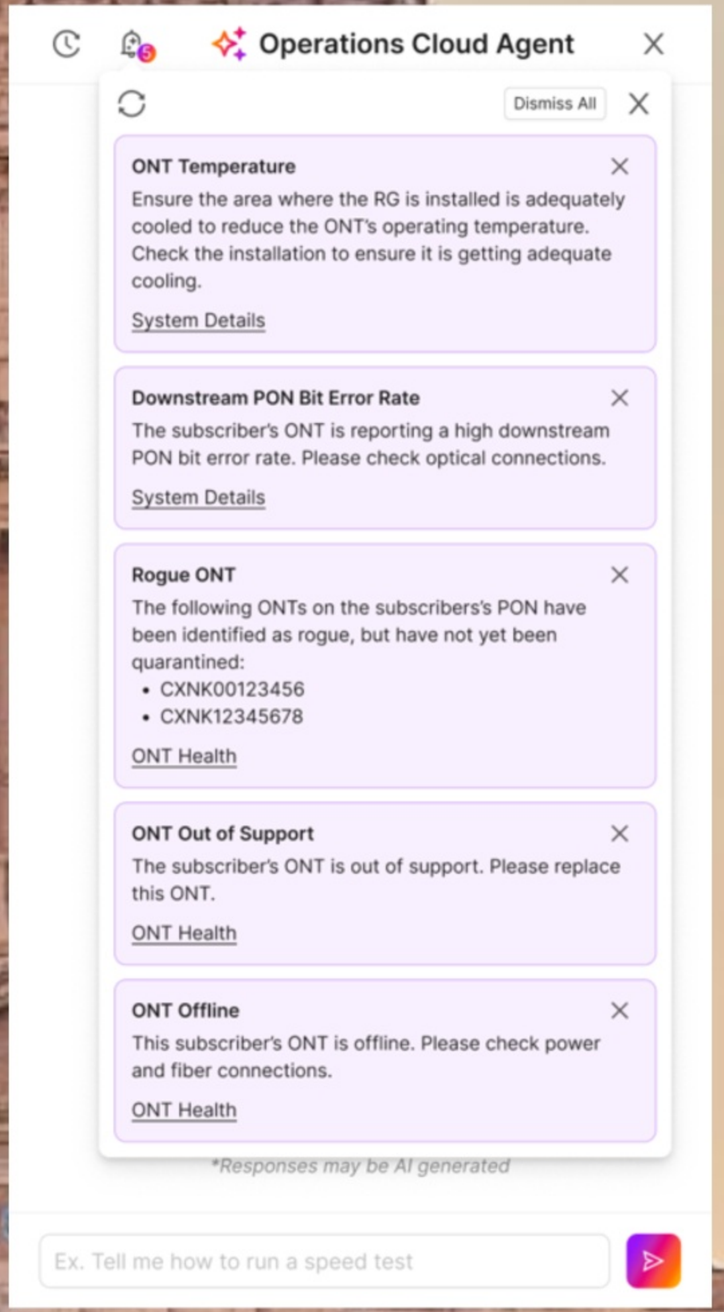




Subscriber Awareness is crucial for quick and accurate investigation of subscriber-level issues by CSRs and Network Operations engineers

What? The agent aggregates real-time and historical data from systems and alarms to reveal current health and potential service-affecting issues.

- ONT Offline
- Low Light Levels
- High PON Errors
- High Temperature
- Rogue ONT
- ONT End of Support



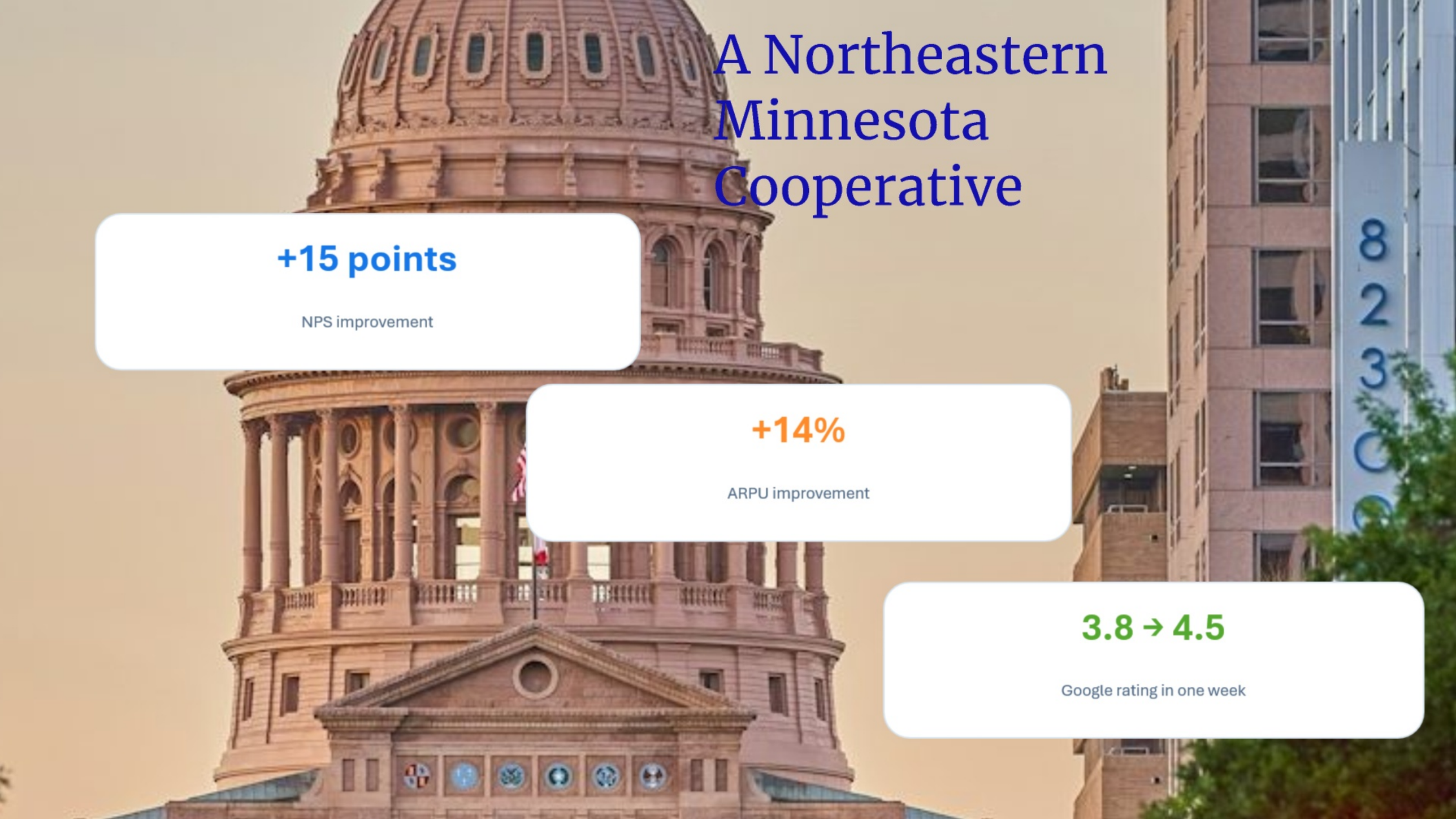
Agent Workforce Journey Roadmap

Soon-
Churn prediction
Network health & diagnostics
Access network context
Anomaly detection
BSS/OSS Integration

A Bit Later On-
Expanded Agent Workflows
Automated network efficiency
Generate personalized offers

Down the Road
Agentic Workflow Builder
A2A interconnected 3rd party platforms
Build your own workflows
Add your own agents





A Northeastern Minnesota Cooperative

+15 points

NPS improvement

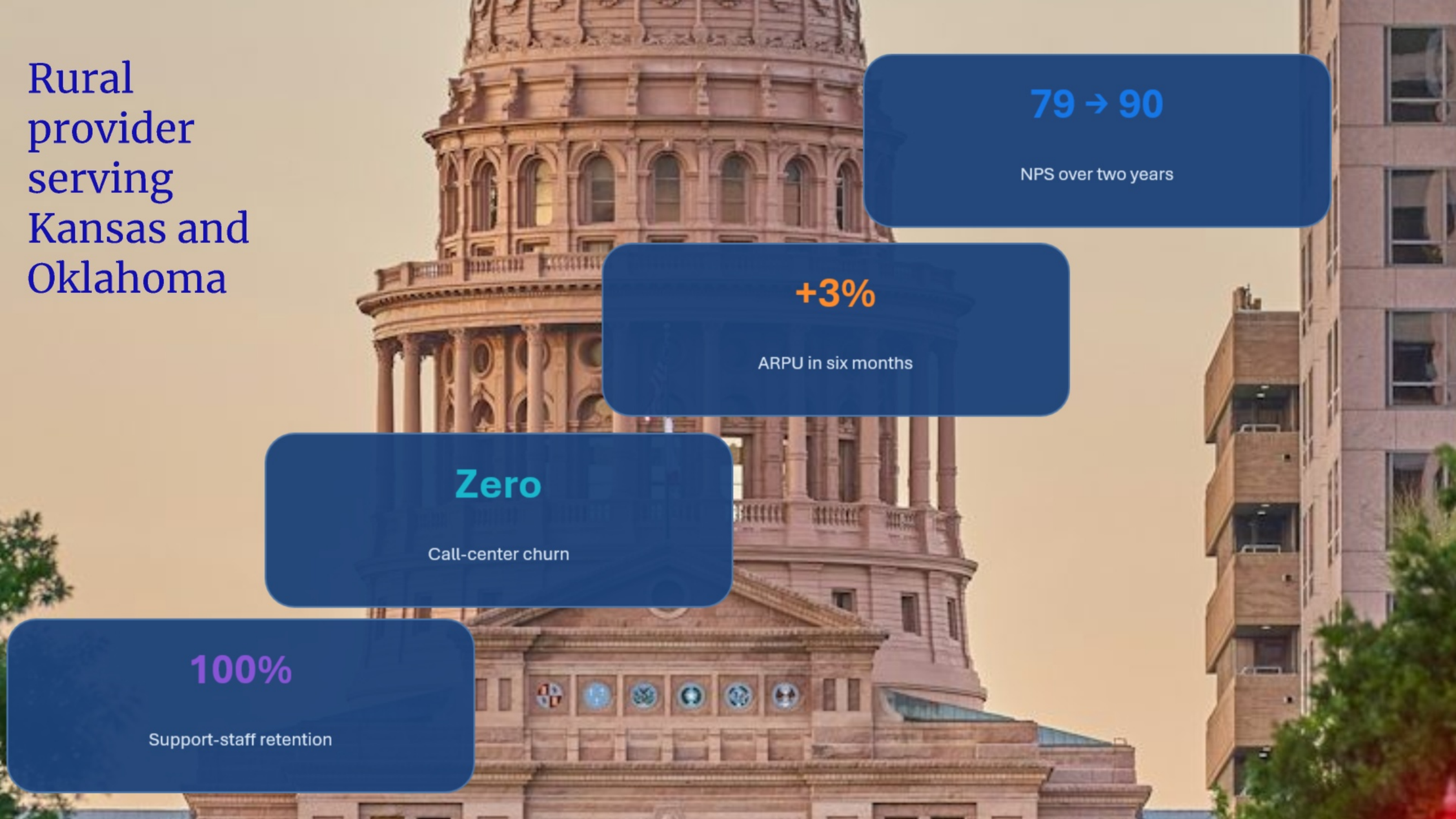
+14%

ARPU improvement

3.8 → 4.5

Google rating in one week

Rural provider serving Kansas and Oklahoma



79 → 90

NPS over two years

+3%

ARPU in six months

Zero

Call-center churn

100%

Support-staff retention

Turning silent signals into saved relationships

Turning silent signals into saved relationships

44,000

High-risk households identified

Turning silent signals into saved relationships

44,000

High-risk households identified

2–3×

Higher churn in high-risk homes

Turning silent signals into saved relationships

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Higher churn in high-risk homes

65%

Churn categorized as controllable

Turning silent signals into saved relationships

44,000

High-risk households identified

2–3×

Higher churn in high-risk homes

42%

Outreach confirmed real Wi-Fi issues

65%

Churn categorized as controllable

Turning silent signals into saved relationships

44,000

High-risk households identified

2–3×

Higher churn in high-risk homes

42%

Outreach confirmed real Wi-Fi issues

65%

Churn categorized as controllable

60%

Confirmed issues resolved on first outreach

Turning silent signals into saved relationships

44,000

High-risk households identified

2–3×

Higher churn in high-risk homes

42%

Outreach confirmed real Wi-Fi issues

65%

Churn categorized as controllable

60%

Confirmed issues resolved on first outreach

Proactive outreach turned weak signals into relevant help and measurable resolution.

Connect experience improvements to financial value

CHURN VALUE

Prevented disconnects × monthly ARPU × expected remaining months

ARPU LIFT

Active subscribers × baseline ARPU × measured lift

SUPPORT SAVINGS

Avoided calls × cost per call + avoided truck rolls × cost per truck roll

ACQUISITION VALUE

Incremental connects × contribution margin − campaign and install costs

ACQUISITION VALUE

Incremental connects × contribution margin – campaign and install costs

SUPPORT SAVINGS

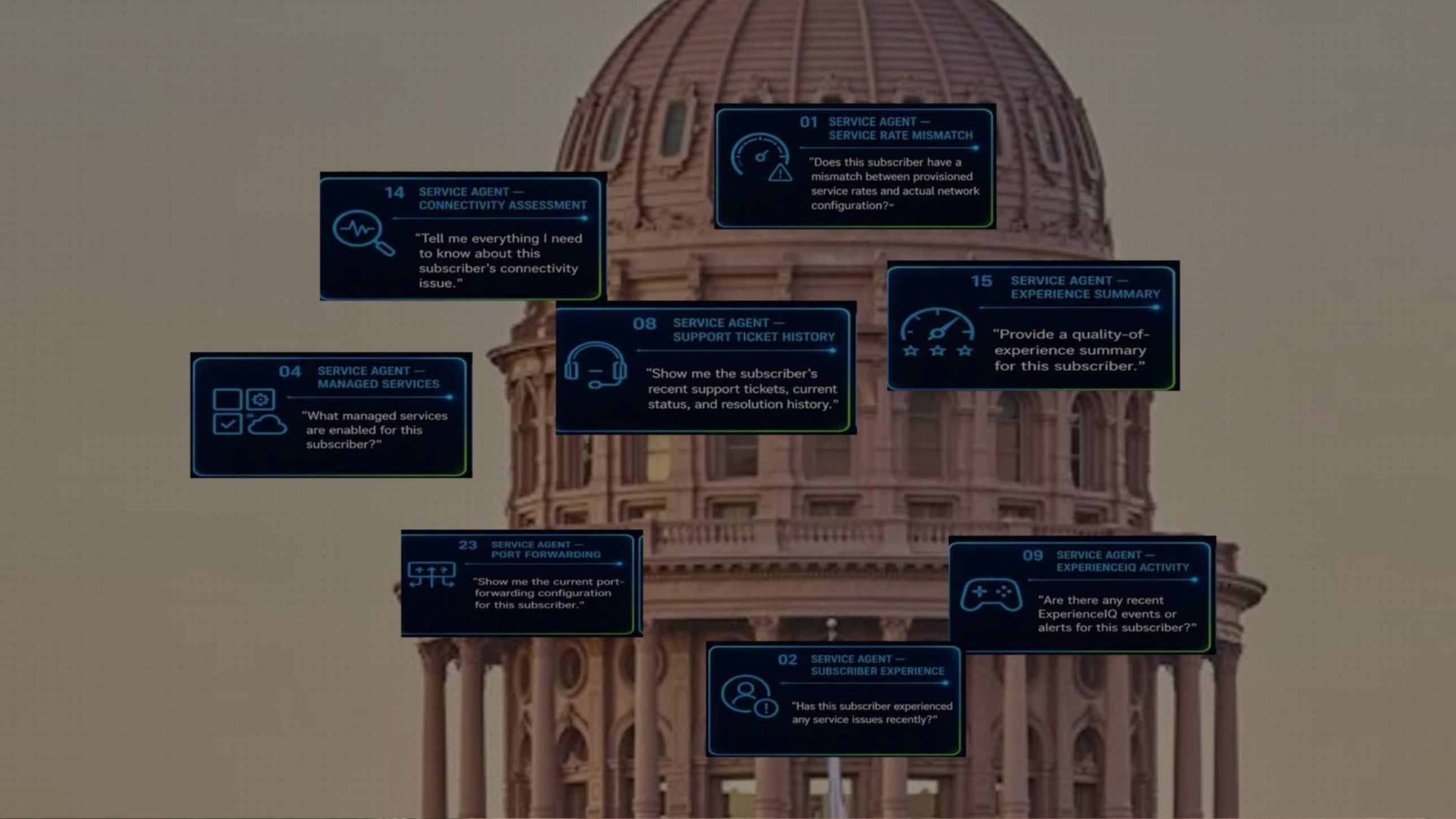
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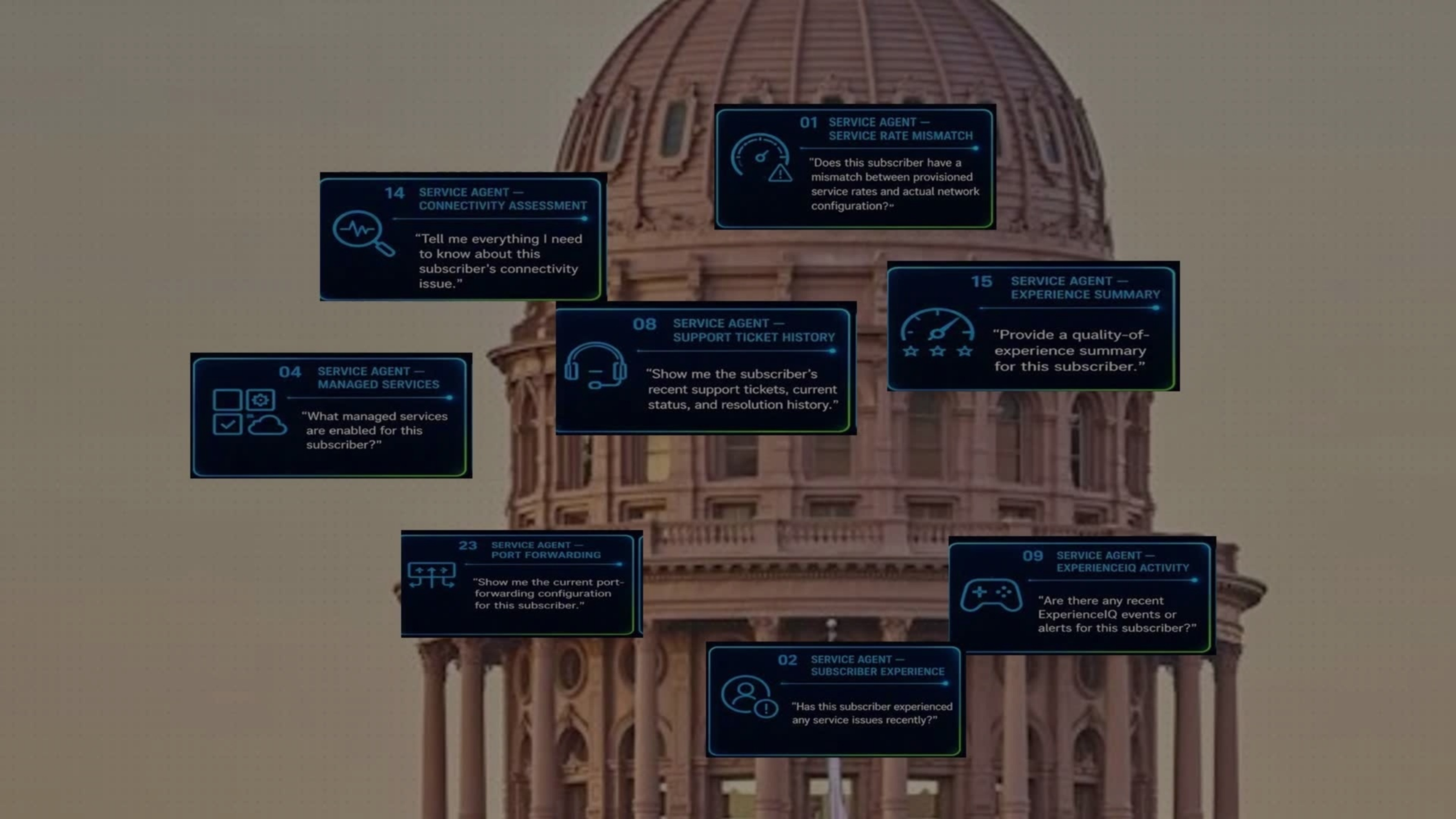
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"Does this subscriber have a mismatch between provisioned service rates and actual network configuration?"
14 SERVICE AGENT — CONNECTIVITY ASSESSMENT
"Tell me everything I need to know about this subscriber's connectivity issue."
15 SERVICE AGENT — EXPERIENCE SUMMARY
"Provide a quality-of-experience summary for this subscriber."
08 SERVICE AGENT — SUPPORT TICKET HISTORY
"Show me the subscriber's recent support tickets, current status, and resolution history."
04 SERVICE AGENT — MANAGED SERVICES
"What managed services are enabled for this subscriber?"
23 SERVICE AGENT — PORT FORWARDING
"Show me the current port-forwarding configuration for this subscriber."
09 SERVICE AGENT — EXPERIENCEIQ ACTIVITY
"Are there any recent ExperienceIQ events or alerts for this subscriber?"
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"Has this subscriber experienced any service issues recently?"


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