

► A STUDY OF BROADBAND OPERATIONS LEADERS

Small Teams, Big Networks: The AI Operations Divide in Broadband

Nearly every broadband service provider expects AI to run inside daily operations within two years. Fewer than one in four has gotten it out of the pilot phase. New research on what separates them.

Based on a survey of 284 operations and technology leaders at broadband service providers with 5,000–250,000 subscribers across the United States and Canada, conducted April 2026 by an independent third-party research firm.

79%

expect AI embedded in daily network and subscriber operations within 24 months

23%

have moved any AI capability into production beyond a pilot

2.7x

higher odds of production AI for teams operating on a unified data platform

► EXECUTIVE SUMMARY

Everyone believes in AI operations. Almost no one is running them.

Broadband operations leaders are not AI skeptics. Seventy-nine percent of the 284 leaders we surveyed expect AI to be embedded in their daily network and subscriber operations within 24 months — answering support calls, predicting faults, remediating Wi-Fi before the phone rings. The belief is nearly universal. The reality is not: only 23% have moved any AI capability into production beyond a pilot.

The gap isn't ambition, and it isn't budget. It's structure. The average respondent runs a network serving 11,400 subscribers per operations engineer, fields support call volumes up 18% year over year, and has had a field technician role open for more than 90 days. Small teams are running big networks, and there is no slack in the system to industrialize an AI experiment — no matter how promising the pilot looked.

The dividing line in the data is unglamorous: readiness. Only 31% of leaders describe their operational data — network telemetry, subscriber context, support history — as unified enough for AI to act on. But that minority is pulling away. Providers operating on a unified data platform are 2.7x more likely to have AI in production, and they report measurably lower truck-roll rates and support burden.

Meanwhile the cost anvil keeps landing. At an average of \$187 per truck roll — a third of which leaders admit were avoidable in hindsight — the operational status quo is quietly taxing every growth plan. For providers whose staffing, not capital, is the limiting factor (62% of our sample), AI is no longer an innovation agenda. It is the only credible headcount strategy on the table.

This report examines the divide in five findings — and what the 23% did differently.

\$187

average fully loaded cost per truck roll reported by operations leaders

62%

say staffing — not capital — is now the binding constraint on growth

31%

say their operational data is unified enough for AI to act on today

► FINDING 01

The 56-point gap between AI conviction and AI production

Asked where AI will sit in their operations by mid-2028, broadband ops leaders answered with striking consensus: 79% expect it embedded in daily workflows. But when asked what is running today, the picture inverts. A majority (61%) are experimenting or piloting; just 23% have anything in production beyond a pilot; 16% have no meaningful activity at all.

Where does AI actually stand in your operations today?

% OF OPERATIONS/TECHNOLOGY LEADERS · N=284 · SUMS TO 100%

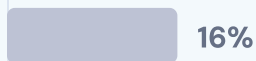
In production beyond pilot



Experimenting or piloting



No meaningful AI activity



Source: Small Teams, Big Networks, independent survey of 284 BSP operations leaders, April 2026. 79% of the same respondents expect AI embedded in daily operations within 24 months.

► WHY THIS MATTERS

A 56-point spread between expectation (79%) and production reality (23%) is not a technology gap — it's an execution queue. Every provider in the 61% believes they will industrialize their pilots. The findings that follow show the pilots most likely to die there: the ones running on fragmented data, owned by teams with no capacity to operationalize them.

“We’ve piloted three AI tools in two years. Every one of them worked in the demo and drowned in the handoff. Nobody owns making it real.”

VP OF NETWORK OPERATIONS, REGIONAL FIBER ISP, SOUTHEAST · 96,000 SUBSCRIBERS

► FINDING 02

The cost anvil: \$187 truck rolls and a support queue growing 18% a year

The economic pressure driving AI urgency is concrete. Leaders report an average fully loaded truck-roll cost of \$187 — and estimate that 34% of the rolls they dispatched last year were avoidable in hindsight: an in-home Wi-Fi issue, a reboot, a misconfigured device that remote intelligence could have caught.

The demand side is compounding. With the average connected home now running 23 devices, support call volume rose 18% year over year — while headcount stayed flat for most.

The operational squeeze, by the numbers

MEAN VALUES REPORTED BY OPERATIONS LEADERS · N=284

\$187

fully loaded cost per truck roll

34%

of truck rolls judged avoidable in hindsight

+18%

YoY growth in support call volume

23

connected devices in the average subscriber home

Source: Small Teams, Big Networks, April 2026. Self-reported operational metrics.

► WHY THIS MATTERS

For a 50,000-subscriber provider dispatching at industry-typical rates, a 34% avoidable-roll share represents six figures of annual spend that proactive, AI-driven remediation could recover — before counting the churn saved when the problem never reaches the subscriber's patience threshold. The business case for AI operations isn't speculative; it's sitting in the dispatch log.

► **FINDING 03**

The small-team squeeze: 11,400 subscribers per engineer and roles that won't fill

The median respondent's operations team supports 11,400 subscribers per engineer. Fifty-seven percent have had a field technician or NOC role open for more than 90 days; in rural footprints, several respondents described roles open for more than a year. The result: 62% now name staffing — not capital, not competition — as the binding constraint on their growth plans.

What is the binding constraint on your growth plan?

% OF OPERATIONS/TECHNOLOGY LEADERS · N=284 · SUMS TO 100%

Staffing & skills availability



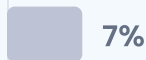
Access to capital



Competitive pressure



Other



Source: Small Teams, Big Networks, April 2026. Median subscribers per operations engineer: 11,400. 57% report ops roles unfilled 90+ days.

► **WHY THIS MATTERS**

When staffing is the constraint, AI stops being an innovation line item and becomes the only scalable form of headcount. The question leaders should be asking is not “can we afford to automate?” but “which of our unfilled roles should software absorb first?”

“I can't hire a Tier 1 support agent in my county at any wage I can pay. An AI agent that resolves half of Tier 1 isn't replacing anyone — it's filling a chair that's been empty since 2024.”

COO, MUNICIPAL FIBER PROVIDER, PACIFIC NORTHWEST · 28,000 SUBSCRIBERS

FINDING 04

The real divide is data: unified platforms are 2.7x more likely to ship AI

Only 31% of leaders say their operational data — network telemetry, subscriber context, device inventory, support history — is unified enough for an AI system to act on it. The other 69% describe a familiar landscape: a monitoring stack here, a billing system there, a support desk that can't see the network, and spreadsheets stitching it together.

That readiness gap is the strongest predictor of production AI in the entire study. Among respondents operating on a unified operations platform, 43% have AI in production. Among those on fragmented tooling, just 16% do — a 2.7x divide.

Share with AI in production, by data environment

% OF EACH SEGMENT WITH AI BEYOND PILOT · N=284

Unified operations platform (n=88)



Fragmented tooling (n=196)



Source: Small Teams, Big Networks, April 2026. "Unified" = respondents reporting network, subscriber, and support data accessible in one operational system.

WHY THIS MATTERS

AI doesn't fail in broadband operations because the models are weak. It fails because the model can see the alarm but not the subscriber, or the ticket but not the network. Data unification is unglamorous, which is why it's the moat: the 31% who did the plumbing first are now compounding while everyone else re-runs pilots.

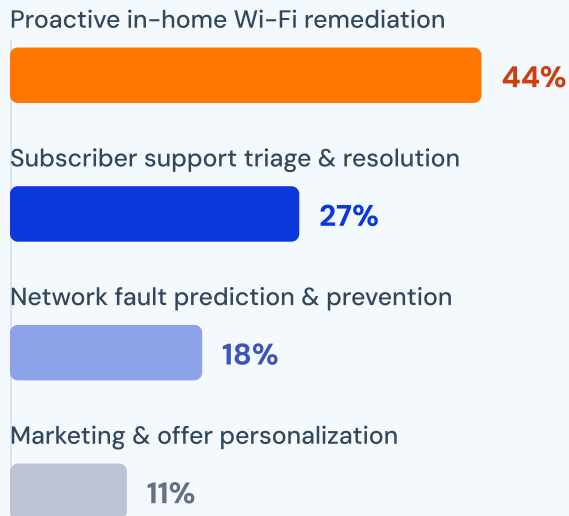
► **FINDING 05**

What leaders would hand to an AI agent first

Agentic AI — systems that act, not just alert — is where expectations are headed. Asked which operational task they would delegate to an autonomous agent first, leaders were pragmatic: fix the Wi-Fi before the subscriber calls. Proactive in-home remediation topped the list at 44%, ahead of support triage and network fault prediction.

If you could deploy one trusted AI agent tomorrow, what does it do?

% OF OPERATIONS/TECHNOLOGY LEADERS · N=284 · SUMS TO 100%



Source: Small Teams, Big Networks, April 2026. Figures sum to 100%.

► **WHY THIS MATTERS**

The wish list maps exactly onto the cost anvil from Finding 02: leaders want agents pointed at the avoidable truck roll and the growing support queue — the two places where minutes convert directly to dollars. Trust follows the same path: 71% say they'd expand agent autonomy after it proves itself on in-home remediation first.

“Start the robot on the thing that's already measurable. If it kills a thousand avoidable truck rolls, it's earned the keys to the next workflow.”

CTO, ELECTRIC COOPERATIVE BROADBAND SUBSIDIARY, UPPER MIDWEST · 54,000 SUBSCRIBERS

► WHAT THIS MEANS

Five moves for broadband operations leaders

1

Unify the data before you buy the model

The 2.7x production gap belongs to teams whose network, subscriber, and support data live in one system. If your AI roadmap starts with a vendor demo instead of a data audit, reorder it.

2

Point the first agent at the avoidable truck roll

34% of dispatches were avoidable, at \$187 each. Proactive in-home remediation is the highest-consensus, fastest-payback starting point in the study — and the one your subscribers will feel first.

3

Reframe AI as your staffing plan, not your innovation plan

With 62% staffing-constrained and roles open 90+ days, budget AI against the empty chairs. An agent that absorbs half of Tier 1 support is headcount you could not otherwise hire.

4

Kill pilots that have no path to an owner

The graveyard between pilot and production is an ownership problem. Before any new pilot starts, name the person who will run it in production and the metric that graduates it.

5

Let trust compound one workflow at a time

71% of leaders would expand agent autonomy after a measurable win. Sequence deliberately: remediation, then triage, then prediction — each success funds the organizational permission for the next.

METHODOLOGY

About this study

SAMPLE

284 completed responses from operations and technology leaders: COO, CTO, VP/Director of Network Operations, Director of NOC/Field Operations, and equivalent titles.

QUALIFICATION

Broadband service providers — regional ISPs, electric cooperatives, municipal and tribal fiber providers — serving 5,000–250,000 subscribers. Respondents required direct responsibility for network or subscriber operations.

COLLECTION

Fielded April 2026 across the United States and Canada by an independent third-party research firm. Results reported at 95% confidence, $\pm 5.8\%$ margin of error.

Key metrics analyzed

- ▶ AI deployment stage (none / experimenting / piloting / production beyond pilot) and 24-month expectations
- ▶ Fully loaded truck-roll cost, dispatch volume, and share of rolls judged avoidable in hindsight
- ▶ Support call volume growth and connected devices per subscriber home
- ▶ Subscribers per operations engineer; open-role duration for field and NOC positions
- ▶ Operational data environment (unified platform vs. fragmented tooling) and its relationship to AI production status
- ▶ First-choice tasks for autonomous AI agents and conditions for expanding agent autonomy

Respondent profile

47%

regional / independent ISPs

31%

electric cooperative broadband providers

22%

municipal & tribal fiber providers

► THE ROAD AHEAD

The divide won't stay open forever. Which side closes it matters.

Within two years, AI-run operations will be the norm the way managed Wi-Fi became the norm: quietly, and then all at once. The providers who unified their data and shipped their first agent will set the cost structure — and the subscriber expectations — everyone else has to match with fewer people and less time.

The Calix One platform was built for exactly this moment: appliances, cloud, and an AI agent workforce on one unified data foundation, so broadband teams of any size can simplify operations, cut avoidable truck rolls, and grow subscriber value without waiting on a req that won't fill.

[See the Calix One platform in action →](#)