

The Big Book

Security, Observability, and Customer
Experience in Communications and Media



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INTRODUCTION

Building the foundation to power AI and autonomous networks in communications and media

Communications and media organizations are navigating fundamental changes in the industry. AI, both generative and agentic, is shifting the way teams operate, make decisions, and innovate. Customer expectations are higher than ever: They want immediate, 24/7 service that solves their issues quickly. At the same time, communications and media organizations face increased regulatory scrutiny while AI capabilities create new cybersecurity threats. These forces are raising demands for speed, reliability, and accountability — while leaving little room for error.

Resilient organizations must see more, understand more, and act faster across increasingly complex environments. Many communications service providers rely on Splunk as a critical advantage. With real-time data analytics from the Splunk platform, they gain unified visibility, accelerate incident response, and optimize customer experience.

This book brings together the most relevant Splunk research, guidance, and real-world examples for communications and media teams facing the challenges and opportunities of delivering secure, reliable, and innovative services. It serves as a practical guide to digital resilience, focused on three disciplines: security, observability, and customer experience. Use it to see where you are today, learn how others are responding, and plan your next move.



Boost digital resiliency with modernized security operations

Uptime, customer experience, and resilience are now inseparable. Customers are quickly frustrated with unplanned outages and downtime. Service going offline for even a short period means revenue loss. And with cybersecurity threats and attacks evolving quickly in the AI era, communications service providers must also evolve how they detect, respond to, and resolve security issues.

Yet today's security teams often struggle to keep up due to a lack of appropriate budget and staffing. They're under pressure from every direction: more data, more tools, more fraud vectors, and fewer people to manage it. While AI can be used to supercharge threats, it's also a critical tool in shoring up defense and risk mitigation.

AI-enabled security changes the focus from chasing alerts to protecting continuity. With unified security, IT, and business context, AI can help humans understand impact faster, reduce noise, and act with precision.

Leading service providers are better at keeping services available, transactions flowing, and trust intact because, when disruption hits, they benefit from shared visibility and faster decision-making. Many of these leaders turn to Splunk for its unified security and observability platform that helps teams see impact early, prioritize the most consequential issues, and act before disruption spreads.

68%

of telcos cite fragmented data across networks and IT as a key barrier to achieving real-time observability and automation.

Source: IDC, "Closing the Observability Gap for Autonomous Networks and Agentic AI Services," December 2025

[Download the IDC spotlight](#)



Build the SOC of the future for communications and media

Understand the trends and challenges: The State of Security

The waves of change are nonstop for communications and media service providers, and efficiency remains elusive. Over half of organizations say tool maintenance is a major hurdle, and teams are battling alert overload. But AI solutions are showing promise in bringing efficiency to the SOC. In the *2025 State of Security in Communications and Media*, Splunk spotlights how AI is shaping the next evolution of threat detection and response.

[Download the guide](#)

How to modernize SecOps for communications and media

Communications and media organizations face significant security threats: 87% of the largest distributed denial-of-service (DDoS) attacks targeted communications and media. Losses in efficiency and productivity due to these attacks put organizations at risk of being out-innovated. The industry brief *Protect the digital landscape with modernized security operations for Communications and Media* details why resilient SOC of the future will need broader views of network activity and the customer journey to spot threats and stop them in their tracks.

[Learn more](#)

The path to greater digital resilience

Splunk empowers the entire security journey. Digital resilience is a journey. But the path is far from linear. Splunk created a model to help security teams expand into new and complementary use cases to advance security operations for safer and more resilient digital infrastructures.



Transform security operations with AI and machine learning

What was once a pipe dream is now the next step for forward-looking communications and media security teams. To make zero-touch automated security a real possibility, organizations need unified visibility and resilient systems, exactly what Splunk is built to provide. Read how Splunk helps set the stage for using AI and machine learning (ML) to make zero touch a reality in our *How zero-touch operations went from pipe dream to real possibility and what's next* industry brief.

[Read more](#)

Stop more threats by understanding how attacks happen

Know your enemy and you'll know your defense. Part of risk mitigation is deeply understanding how cybersecurity attacks happen so you can prevent them from happening in the first place. The *Top 10 Cybersecurity Threats in Communications and Media* e-book explores what you need to know, from ransomware to SIM hijacking.

[Download the e-book](#)

Secure infrastructure for the 5G future

Communications and media companies provide the digital infrastructure that underpins our world, making them an unfortunate target of malicious attacks. One industry survey found that three-quarters of 5G service providers faced up to six cyberattacks or breaches in a single year. In *How communications providers can secure critical infrastructure — and their future*, you'll learn approaches to strengthening infrastructure and explore why 5G is a global call to action for improved security.

[Get the brief](#)

Protect your networks — and your customers

Today's sophisticated security attacks put both organizations and customers at risk. It's critical to identify and stop breaches before customer data is compromised. Download *Protect Your Networks and Customers: Comprehensive Security for a Connected World* to learn how Splunk is helping communications and media organizations prevent theft of personally identifiable information (PII) and proprietary business data.

[Read the brief](#)

AI-powered observability for better business decisions

Network and service assurance is critical in communications and media, and observability provides the unified insight to support it. Communications service providers know the power of observability and see strong business value from their investments in this area. Two thirds of communications and media companies say they **see \$1 million or more in business value** from their observability investments annually.

But more data visibility only translates to more ROI if teams can act on it. The real challenge is turning signals into decisions fast enough to keep the network and services running smoothly. AI-enabled observability helps teams identify unusual behavior, connect issues across systems, understand business impact, and make fixes faster.

With this approach, observability proactively drives business decisions. Splunk provides unified insight and AI-assisted responses for powering major decisions that mitigate risk and increase efficiency. The result is more stable services and better control across hybrid architectures as service providers strive to meet customer demand and protect key infrastructure.

25%

IDC forecasts that telcos will increase spending on service assurance and observability by 25% from 2024 to 2029.

Source: IDC, "Closing the Observability Gap for Autonomous Networks and Agentic AI Services," December 2025

[Read the IDC spotlight](#)



Power business decisions across your entire network

Observability as a business catalyst

Communications and media leaders are turning observability into an engine for growth. In *The State of Observability in Communications and Media: The Rise of a Business Catalyst*, Splunk reports 71% of communications and media companies see ROI that exceeds expectations, and 92% plan to increase their spend. From AIOps to OpenTelemetry, communications and media organizations are seeing that better visibility drives better business.

Get the report

Advancing observability to keep the world connected

Communications and media are the glue that keeps us connected. In today’s world, these organizations need to balance always-on operations with innovation to meet demand and keep customers happy. In the *Power a new era in communications and media by advancing observability and digital resilience* brief, you’ll learn why observability is the foundation for communications and media’s next era.

Read the brief

The path to greater digital resilience

Splunk empowers the entire observability journey. Digital resilience is a journey. But the path is far from linear — and it can vary greatly. Splunk has created a model to help ITOps and engineering teams progress from visibility to being more prioritized and proactive, integrating workflows between teams for safer and more resilient digital infrastructures.

Observability
ITOps, Engineering

Foundational Visibility

See across
environments

Troubleshoot mission-critical
apps and infrastructure

Guided Insights

Detect threats and
issues with context

Prioritize issues based
on business impact

Proactive Response

Get ahead
of issues

Ensure reliability of critical
apps and prevent outages

Unified Workflows

Collaborate
seamlessly

Standardize observability
practices across teams

Accelerated by Splunk AI



The future of autonomous networking is unfolding step by step. As automation and intelligence take hold, each advance makes networks more efficient, more reliable, and more attuned to customer needs — moving providers closer to truly self-managing systems and a new era of leadership.”

Source: Splunk, “From Sci-Fi Dream to Self-Managed Reality: Entering the Era of Autonomous Networking,” 2025

[Get the Autonomous Networking brief](#)

Data: the problem and solution in observability

Legacy systems and connectivity weren’t developed for the vast amounts of data we have today. The complexity of networks and volume of data challenge communications service providers to become truly data-centric and consider how their usage impacts the environment and customers alike. In the TM Forum report *A Numbers Game: Exploiting Data to Drive Future Strategies*, learn how AI, ML, and automation tie into this important conversation. And in the *Communications and Media Data Management Action Guide*, we take a look at where service providers stand today and how they can become data management leaders.

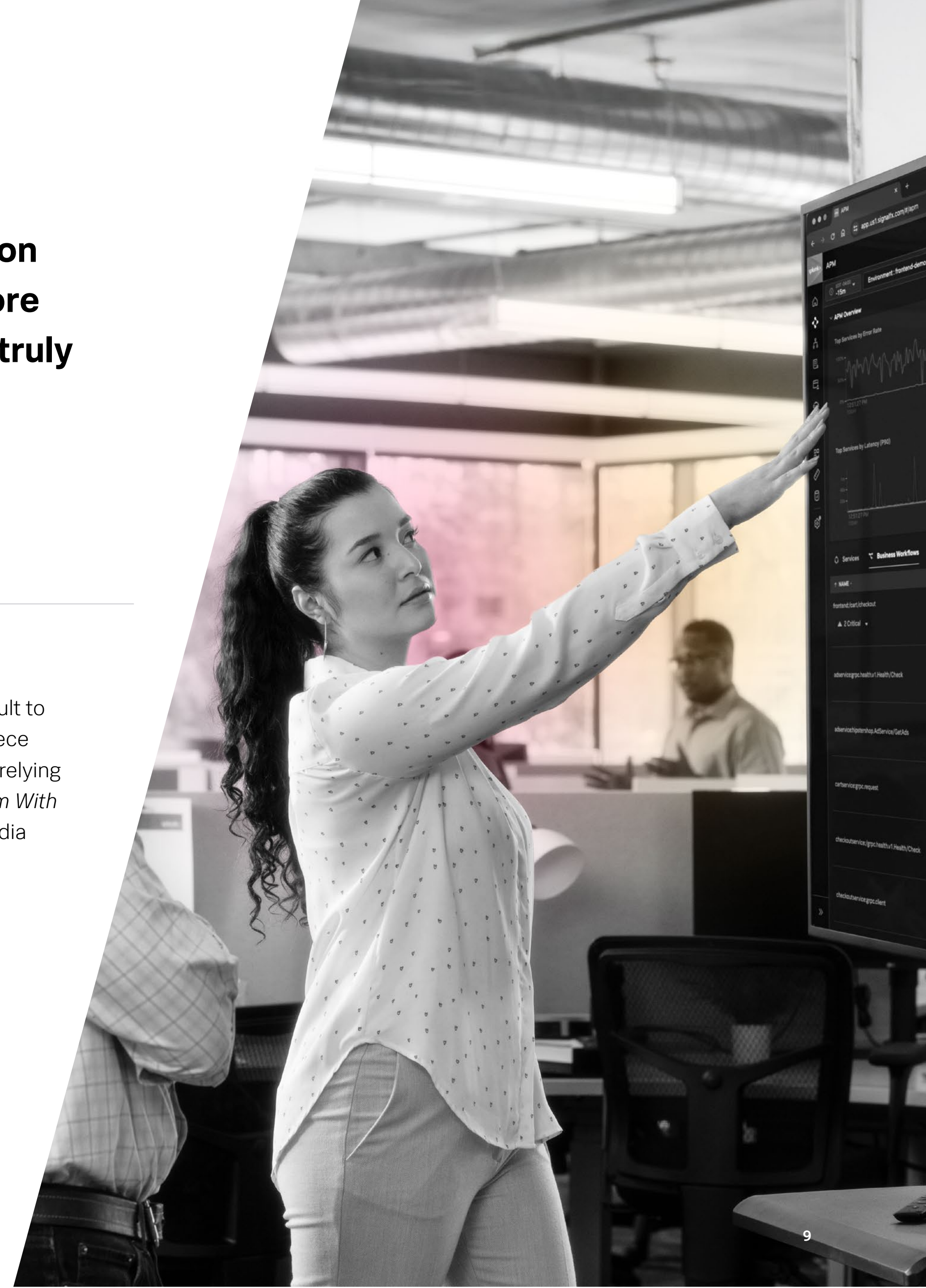
[Dive deeper in the report](#)

[Download the action guide](#)

Create meaningful visibility with agentic AI

Downtime is often caused by human error, which is difficult to trace and address. Sorting through mounds of data to piece together what happened is next to impossible for teams relying on manual analysis. In *Solving Manual Mayhem in Telecom With Agentic AI*, you’ll learn what the communications and media industry is doing to lay the groundwork for agentic AI.

[Learn more](#)



Deliver high-end customer experience and reliability

Service reliability can make or break a telecommunication provider's reputation. On top of the high customer expectations, service providers must navigate an increasingly complex set of regulations and compliance requirements. As AI grows, so too does the regulatory burden.

AI plays a dual role in customer experience. On the one hand, it helps automate certain customer journey points by continuously collecting data, managing initial issue response, and even resolving incidents in some cases. Autonomous networking is helping to build infrastructures that are self-healing and self-optimizing.

On the other hand, AI can introduce concerns around transparency, compliance, accountability, and various risks.

Leading communications and media companies are addressing both. They're using AI to reduce audit effort and improve accuracy while putting guardrails in place to ensure AI itself is observable, explainable, and compliant. With AI-enabled tools from Splunk, organizations gain continuous visibility into systems, users, and activities, making it easier to prevent downtime, address customer needs efficiently, and personalize user experiences.

74%

of organizations are investing in new tools to improve customer experience to support digital transformation goals.

Source: IDC, "Closing the Observability Gap for Autonomous Networks and Agentic AI Services," December 2025

[Read the IDC spotlight](#)



Exceed customer expectations with innovative approaches

Resilient contact centers for complex customer journeys

Contact centers have had to rapidly evolve as customer journeys become more complex. Customers want a seamless omnichannel experience, and contact centers are the linchpin between the various interactions and experiences. As autonomous, zero-touch network approaches become more prevalent, contact centers will become a key human touchpoint for complex customer issues. In *Analytics That Work: 3 Approaches for the Future of Contact Centers*, you'll learn how to break down silos and unify intelligence in your contact center to meet customer needs every time.

[Read the brief](#)

Service providers as innovators: standalone 5G

Communications and media teams have long been innovators, and 5G might finally offer a chance to get some credit for it. In *Telecoms power global innovation. Standalone 5G is their chance to finally get credit for it*, explore how the telecoms industry is using 5G to rethink infrastructure, networks, and the IoT to raise the bar on simple, speedy, and personalized customer service.

[Learn more](#)



Gain real time visibility in the era of connectivity

Communications and media networks impact the flow and security for all communities, businesses, and people while customer experience remains top of mind for communications and media leaders. *End-to-End Visibility: The Foundation for Network Resilience* explores how Splunk helps providers pull together disparate data sources to provide a contextual view of the end-to-end user journey.

[Get the brief](#)

Unite data across systems for a big picture customer journey view

A single-view customer journey has been difficult to achieve for communications and media organizations, but it's not impossible. With Splunk, you can connect systems, unify data, and stay ahead of competitors. The *Meeting Customer Demands in a Connected World with Digital Resilience* brief shows how data informs and transforms the customer experience.

[Learn more](#)

Fortify your network for tomorrow's challenges

Don't let network complexity keep your team from innovating and looking ahead. Autonomous networking requires strong foundations to benefit your organization. See *Across Every System to Maximize Network Resilience* explores how building resiliency across every system ultimately improves network assurance, keeping you ahead of emerging challenges — and keeping customers happy.

[Download the e-book](#)

Where you go next matters

Communications and media organizations rely on Splunk to see what's happening across their environments and act quickly. From threat detection to service stability to customer experience, Splunk helps teams separate signals from noise, respond faster, and keep critical systems running.

What you explore next depends on your priorities. Use the resources in this book to go deeper on specific topics, compare approaches, and plan for resilience.

Still have questions? Check out these additional resources:

- [IDC: digital resilience is vital to communications service providers](#)
- [Observability buyer's guide for communications and media](#)
- [Splunk for network monitoring solution guide](#)
- [Splunk for communications and media](#)



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