



# AI's impact on telecom networks

How Microsoft is partnering with communication service providers to start implementing AIOps technology



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## A competitive future depends on today's AI investments

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Innovation is critical to protecting your business today and growing it in the future. Organizations that stand still while emerging technologies come to the forefront risk more than just revenue loss; they risk their relevance. For the telecom industry, the future of cloud and AI will define the next innovation frontier, and the opportunity is here today for operators not just to change the way they provide groundbreaking services, but also to redefine the environmental impact of an entire industry.

The fact is, the AI future is here now. While the potential of generative AI is capturing imaginations, the reality of AI's effect on business investments has already transformed how companies are positioning themselves for the future. Across nearly every industry, leaders share a common understanding: Businesses need to adopt innovative mindsets and invest in technology-forward operations to stay agile and secure a competitive future. Innovation is the lifeblood of enterprise, and today, innovation and AI are inextricably linked.

As leaders across industries shift investments toward AI, the pace of change continues to upend the telecom status quo. Over the past decade, the demand for data services has grown exponentially due to the proliferation of smartphones and other internet-connected devices. Since 2010, the number of internet users worldwide has more than doubled, with global network traffic [expanding 20-fold](#) in that time.

As the volume of data usage has accelerated, so have consumer and business expectations, necessitating the expansion and upgrading of network infrastructure to support the growing demand for a new breed of modern connected applications. 5G will undoubtedly transform the connectivity landscape and by 2026, [one-third](#) of all network connections worldwide — a total of 4.5 billion — are expected to be 5G. But for telecoms, upgrading their network infrastructure in the traditional way risks diminishing returns. Now, as providers seek to modernize and monetize their operations, there's an opportunity to reexamine what it means to be competitive, from the products and services offered to the operational technologies that make them possible.





## The future of cloud and the rise of AI

Where does AI for Operations (AIOps) fit in? This convergence of technology shifts is being driven by what we at Microsoft call the future of cloud.

Our perspective is that the business landscape will increasingly be defined by a cloud that's built for speed, scale, and precision, and fortified with enhanced security and trust. Many telecom providers are steadily migrating to cloud, which creates ample opportunity to go beyond data analytics, leveraging AI for advanced automation at scale to simplify network operations. This modernization and monetization strategy is also quickly becoming standard; [63.5 percent of telecom companies](#) are actively implementing AI to improve their network infrastructure.

# 63.5 percent

of telecom companies are actively implementing AI to improve their network infrastructure

For telcos, AIOps is a paradigm shift, transforming the capabilities of communication networks to fuel growth and improve products and services. As expectations for network agility continue to grow more demanding, the most successful telecom companies will be the ones to embrace innovation — and the latest AI technology that it entails. In this paper, we'll dig deeper into how AIOps can transform siloed network operations into a holistic, data-driven operation of your 5G network and empower your business to secure a competitive future.





## Our approach empowers the telco AI adoption strategy

The journey to modernization and monetization through AI isn't necessarily a linear one, and the telecom industry is particularly prone to legacy systems that are rife with operations and technology silos, inhibiting effective aggregation and use of data. The most pressing challenge telecoms face when considering AI adoption isn't usually technical in nature, but rather an aversion to perceived risk that results in the need for stakeholders to secure buy-in across the company to pursue an AI modernization strategy. Mixed messages around the efficacy or safety of AI can engender hesitation, while wariness about potential workforce ramifications or concerns about a loss of control of the network can prevent alignment.

To overcome these hurdles, it's crucial for organizations to understand the value gained by responsibly applying AI across specific use case scenarios, which can lead to improved business results and increased organizational agility. This won't look the same for every organization, which is why Microsoft's approach to partnership is based on meeting operators where they're at and working cooperatively to identify the use cases that are the right fit. Historically, most AI/ML projects don't make it to production, often getting stuck in a prototyping or training and validation phase. These phases before operationalizing a project are important for testing and validating hypotheses, but they can be time-consuming, especially without the necessary tools or training to accelerate success. Microsoft's approach is to be a trusted co-innovation partner and support operators by providing the necessary AI tools, training, and guidance to address important use cases, helping them move through the necessary AI/ML project operational gates faster. Our approach is to provide a platform that is usable across different vendors and network functions to enable our partners to unlock new insights from the existing network infrastructure they have in place. Throughout this process, empowering workers remains a key priority. As our CEO [Satya Nadella](#) has said, "We believe this next generation of AI will unlock a new wave of productivity growth, with powerful Copilots designed to remove the drudgery from our daily tasks and jobs."

**We work with providers to co-develop and tackle real use cases that address their specific network modernization goals**

At Microsoft, our experience with cloud technology and AI innovation is driving strong collaboration within the telecom industry as we work with providers to co-develop and tackle real use cases that address their specific network modernization goals. Our commitment to AI innovation runs deep: We've demonstrated our position





as an industry leader, lowering the massive barrier to entry for enterprises and government customers by giving them access to training optimization tools, supercomputing resources, and state-of-the-art, large-scale AI models. These investments will truly empower the intelligent worker of the future by ushering in the era of AI co-reasoning, which refers to how intelligent systems assist human reasoning processes to enable a combination of human and machine information processing, decision making, and problem solving.

AIOps and the emergence of the co-reasoning paradigm will have major reverberations across the entire industry. Throughout the rest of this paper, we'll explore what the co-reasoning paradigm looks like in action across telco use cases and how AIOps can help telecoms secure actionable network insights, provide better customer experiences, and streamline operations to increase revenue. The opportunity is here to create a new, AI-mediated connectivity paradigm that will enable the Network of the Future.

## Understand how AIOps is changing the industry

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There are numerous ways AIOps can fuel a telecom provider's modernization and monetization strategy. To illustrate some of the possibilities, let's examine five use cases we see as broadly applicable, each with the potential to create immediate business value.

### Use Case 1: Prevent network faults to optimize the customer's experience

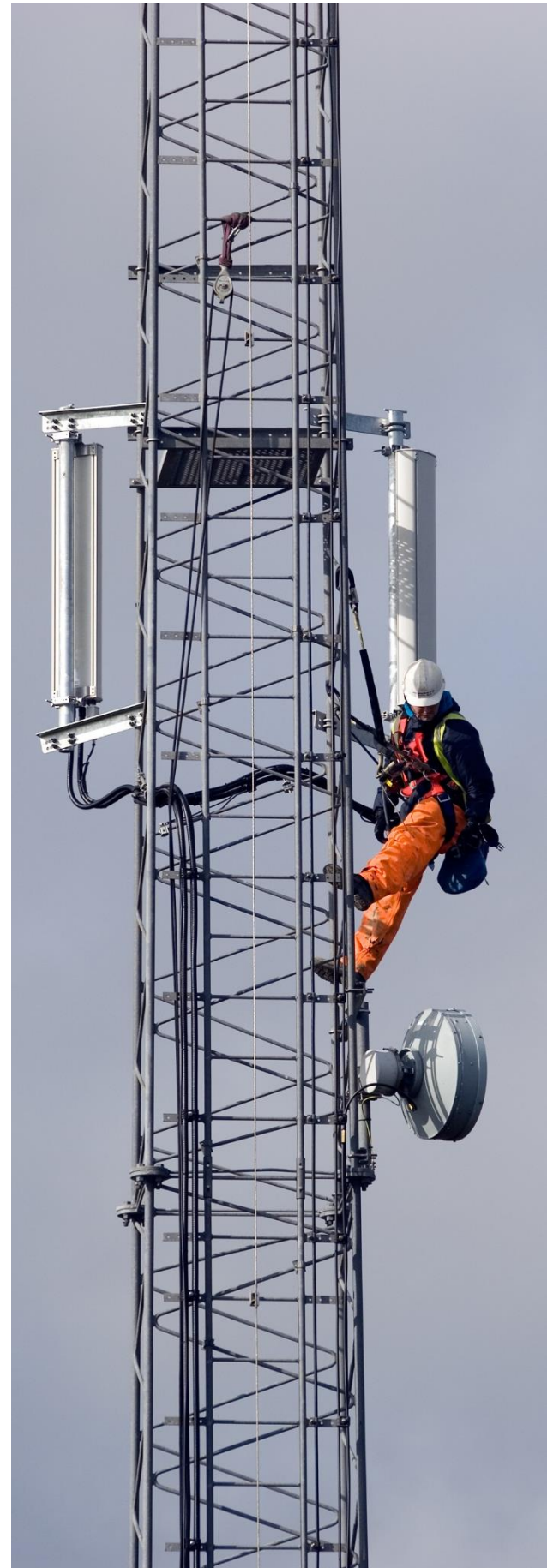
Network coverage and speed have long been key factors in customers' satisfaction with their telecom providers, and overall customer experience continues to be a primary differentiator for operators. Research shows that network experience accounts for [40 percent](#) of new users' key buying factors and churn. Maintaining a fast, reliable, and disruption-free network is a baseline expectation for providers, even as network errors remain inevitable.

But the truth is, a large percentage of these network disruptions are preventable. In our conversations with telecom leaders, many have estimated that as much as 60 percent of network errors are a result of manual mistakes made by personnel. Mitigating these manual errors, and the resulting time-intensive troubleshooting in the field, is a prime area of focus for empowering technicians with new co-reasoning capabilities. Utilizing AIOps solutions to facilitate more efficient approaches to network maintenance will lessen reliance on reactive procedures, replacing them with more predictive ones that save time and money and free up network engineers to focus on higher-value tasks.

## **Telecom leaders estimate that as much as 60 percent of network errors are a result of manual mistakes made by personnel**

In this scenario, AI co-reasoning empowers key network decision makers by aggregating and consolidating disparate data sources and formats into a central location. By transforming them into a usable format, it presents a “single pane of glass” view that visualizes the network from end to end. A network administrator is now capable of leveraging the platform for anomaly detection, which identifies potential network degradations that can negatively impact customer’s quality of experience and adversely affect service level agreements. ML models that run on the consolidated managed data platform are utilized to analyze historic and real-time network infrastructure data to provide intelligent forecasting on preventative maintenance actions. These preventative maintenance work orders can then be scheduled with technicians during non-peak network utilization windows, thereby reducing surge labor costs and preventing network outages from occurring in the first place.

One of the most exciting things about utilizing these ML models to predict network failures is that they are continuously improving their forecasting accuracy with the increased flow of network data. The benefits of using AIOps to prevent network faults are immediate, and they only grow from there, becoming more predictive and more accurate, which results in time and cost savings, better customer experiences, and improved equipment management.



What has historically been the biggest challenge for operators in rapidly accelerating data usage can now be transformed into one of their greatest assets, as increased data usage allows for faster and more accurate training of ML models. As network technicians utilize their AIOps platform to optimize the management of their networks, this will unlock true co-reasoning potential for the modern intelligent workforce.

## Customer Story: A Tier 1 communications service provider gains real-time visibility into their network health

### Challenge

A CSP was responsible for live video streaming and broadcasting of primetime sports content delivered via an OTT delivery application to a national audience in the USA. The millions of viewers accessing the content live simultaneously was generating massive amounts of data (~4TB) and stressing the network's capability to a point of negative customer experience with downstream effects like video buffering delays and distorted pixelation. The CSP's network team was unable to view their network data live to respond in real-time. Instead, they were forced to rely on their content partner to provide data logs and feedback for post-event analysis and remediation only.

### Solution

Microsoft provided the AIOps infrastructure and services for using AI/ML capabilities to efficiently monitor, identify, and troubleshoot customer-impacting network issues during the live video broadcast in a consolidated view.

### Outcomes

- Established real-time anomaly detection by processing 4TB of video traffic/day
- Drastically reduced video buffering and network outages by proactively directing network resources and operations personnel
- Informed network expansion CAPEX spend based on ML-enabled data insights
- Reduced network degradation and improved customer experience

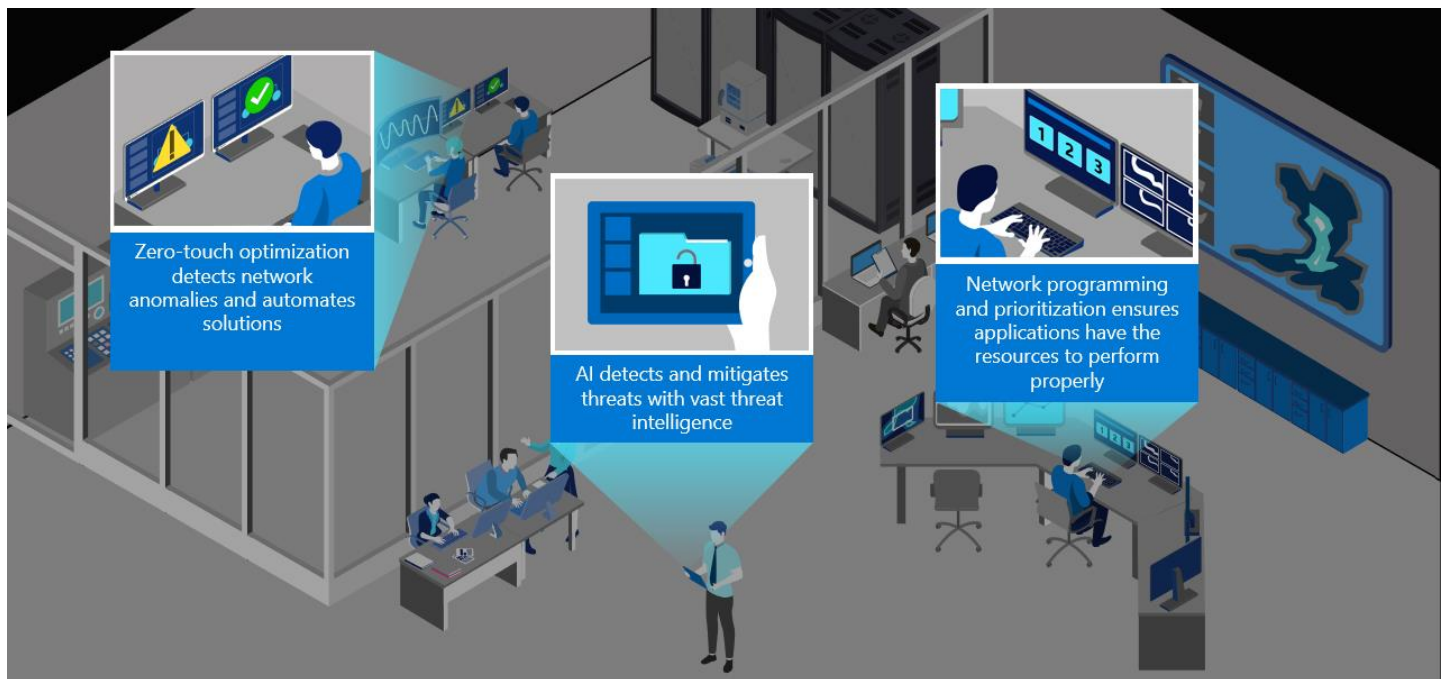


## Use Case 2: Enhance network operations centers with new capabilities

The network operations center (NOC) is an essential component of a telecom's daily operations, monitoring and responding to a vast network architecture, continuously evaluating health and performance, and serving as a critical line of defense against network disruptions and failures. Dashboards and reporting on infrastructure and equipment provide operators the information they need to drive scalability, efficiency, elimination of downtime, facilitation of rapid incident response, and network optimization.

Given how critical the NOC's capabilities are to a telco's day-to-day operations, it's an area primed for unlocking the benefits of incorporating AI-enabled solutions. We see three important ways that AIOps can transform operations in support of a telco's modernization and monetization strategy:

1. Facilitating zero-touch optimization through network automation
2. Improving network security
3. Enabling network programming and prioritization for modern connected applications



Let's first examine how a zero-touch approach can improve your operations by empowering your network to automatically configure and manage itself. This level of optimization works by using deep analytics that can detect anomalies in the network before they cause issues. Then, ML models can analyze the meaning of those changes and recommend the best course of action. Finally, automation takes over and performs the zero-touch service orchestration management that can remedy failing nodes, rebalance network load, or spin up a network redundancy capacity fix, depending on your network's needs. Zero-touch capabilities also include an option to create prompt-and-accept notices to ensure network administrators are completely involved. Admins remain in control of the automation procedures that have been configured by the service provider according to their specific guidelines.

Maintaining a healthy network isn't always in a telecom provider's control, with unforeseen events like accidental fiber cuts or natural disasters threatening operations.

Zero-touch automation is an effective countermeasure to mitigate unplanned issues across network infrastructure that is made up of highly disaggregated and distributed network functions with a diverse range of protocols.

AIOps provides a closed-loop solution that analyzes deviations to the network's baseline and reacts by orchestrating the appropriate network response

automatically in accordance with a provider's prescribed operating procedure. If utilized to its full potential, the result is a network of the future, truly capable of self-healing and self-optimizing.

When it comes to network security, a comprehensive view of threats has never been more important. With increasing activity from bad actors, turmoil among nation states in the current geopolitical climate, vulnerabilities among quickly proliferating connected devices, and fast-changing regional and national regulations, the need for an effective SecOps team is vital. The increasingly fast changes to the threat landscape make a comprehensive security strategy even more vital. Telecom leaders understand security must be a top priority in any network transformation, with more than half saying network security is "extremely important" in any transformation effort in a [recent survey](#).

**More than half of telecom leaders say network security is "extremely important" in any transformation effort**



AIOps-enhanced security measures will make it possible to detect both traditional IT threats and telecom-specific network threats in a single system, i.e., extending the SIEM (security information and event management) into the telecoms network. This consolidated IT and network visibility will help SecOps teams respond to attacks or vulnerabilities that threaten the confidentiality of customer data and service availability. AIOps applied to security use cases will help mitigate potential threats that exist in the enormous amount of data present in a telecom's network by helping cut through the noise and concentrating on the relevant data for SecOps personnel to examine. That concentrated anomaly detection can then best be applied in a regimented feedback loop that keeps security personnel engaged in the threat mitigation process while simultaneously improving SecOps ML models over time. AIOps solutions will empower SecOps teams by providing a holistic view of the security posture of their network, detecting and mitigating threats with vast threat intelligence, and investigating critical incidents to determine if network degradation is due to equipment issues or a security attack.



While these improvements to network operations are significant and necessary, the emergence of AIOps solutions isn't merely about network optimization — it's about unlocking a whole new paradigm of monetization opportunities. Having visibility of the network in the aggregate remains important, but for consumers and businesses, their end-user experience is often informed by how a specific modern connected application is performing. Even if the network as a whole remains mostly healthy, degraded performance of popular apps such as Netflix or Microsoft Teams can result in a negative user experience.

Consumers and businesses rely on and expect their provider to offer ultra-reliable connectivity in any environment for any purpose, often shifting between mobile and home environments and recreational and professional consumption. Thus, it's incumbent on network operators to have the ability to identify if a customer experience is impacted by their network infrastructure or if the end-user experience is being impacted by application performance.

AIOps-enabled network analytics services can help provide that clarity, offering consolidated network visibility and programmable network optimization based on visibility at a per subscriber and per application level. This programmability allows network operators to assign different levels of priority to different types of traffic, ensuring that applications have the necessary network resources to perform optimally, which leads to higher customer satisfaction. Similarly, network slicing allows operators to create virtual networks within their physical networks, with each slice optimized for a specific application. These capabilities are a game changer, providing a bridge between network operators and application providers, many of whom are willing to pay network operators a premium for insights and control. By offering more detailed information on application performance and the ability to interact directly with the network via standardized APIs, operators can unlock significant new revenue potential in their relationships with application and ISV providers.



## Customer Story: A European CSP unlocks new data insights on subscriber quality of experience and application performance

### Challenge

Modern communication networks are becoming too complex for traditional network tooling to provide holistic real-time data insights on both network health and subscriber experience. The operator needed a new approach to understand their network's performance on a per subscriber level and per application level.

### Solution

Microsoft's Azure Operator Insights solution helped eliminate data silos and enable real-time network analysis, allowing the operator to consolidate event detail records (EDR) into a centralized data lake to perform deep forensic analysis at the application level. This provided new data insights at the individual subscriber level and visibility into how individual subscribers' applications perform across KPIs such as: download speed, upload speed, latency, and packet loss.

### Outcomes

- Single source of truth for end-to-end visibility of subscribers' quality of experience
- Granular, drill-down visibility from: network - customer - application performance
- Network health insights based on real-time customer usage trends
- Proactive network maintenance that reduces outages & improves customer experience
- Future potential to deliver application performance insights to enterprise partners





### Use Case 3: Enable energy-efficient, resilient networks

It's not enough to minimize network faults; operators should also consider their environmental impact when preparing to transition to a new network paradigm. Environmental sustainability has become a fundamental consideration in how telecom providers are designing their networks, with energy efficiency among the top priorities for [85 percent](#) of operator network buyers. Commitments to key international sustainability benchmarks also have increased over the last year. But even as commitments to key international sustainability benchmarks have grown in the industry, telecoms still need to collectively [cut CO2 emissions](#) by 50 percent within the 10-year span from 2020 to 2030 to achieve the established goal of net-zero by 2050. Reducing energy emissions presents a real challenge for operators as they aggressively build out and densify their network infrastructure to support 5G data traffic.

**Energy efficiency is among operators' top priorities for 85 percent of network buyers**

But the network of the future prioritizes energy efficiency and resiliency by utilizing cloud infrastructure. The difference between cloud and legacy infrastructure is dramatic: A study found that Azure can be up to [93 percent](#) more energy efficient and up to [98 percent](#) more carbon efficient than traditional on-premise solutions. Simply put, the cloud enables operators to run their networks in a drastically more energy-efficient manner. AIOps solutions deployed on a cloud platform help telecoms analyze, process, and automate network function orchestration. This can significantly reduce energy consumption by resourcing the entire network intelligently, such as powering up or down resources based on consumption patterns that vary by region or time of day. The RAN is responsible for [more than half](#) of mobile network operators' power consumption, underscoring how big of an impact utilizing AIOps solutions can have on efficiency. And because AIOps helps avoid unnecessary resource use, the life of network equipment lasts longer, giving operators improved long-term ROI on network infrastructure.

While some of these capabilities are still emerging, we're already seeing ML models being deployed to analyze real-time network demand saturation, resource availability, equipment outages, and energy consumption, with automated network function orchestration working in a zero-touch way to allocate resources in the most energy-efficient manner. This reduces carbon emissions, but also has the added benefit of cutting the operating cost of running a network as energy prices continue to rise. As we look ahead to 2050's net-zero goals, there are emerging opportunities within the industry to both improve business outcomes and drive change toward widespread use of sustainable technologies. Utilizing AI to mediate energy efficiency within the network is a key component to realizing the green, sustainable network of the future.

## Use Case 4: Accelerate new revenue categories

As mobile operators consider their investments in a 5G rollout, the need to form a consolidated strategy on mobile and broadband connectivity is becoming evident, particularly in North America, where these services have been historically segmented. New revenue streams from high-broadband gaming, streaming, productivity, and eventually, AR/VR applications will help maximize 5G ROI by moving beyond strictly mobile connectivity. This shift has already begun, with T-Mobile [reporting](#) more than 2 million fixed wireless Services customers at the end of last year and Verizon also accounting for more than 1 million new subscribers. The potential to scale 5G fixed wireless subscribers can be significant, with estimates that a single provider's 5G network can support up to [40 million](#) homes and businesses with fixed wireless broadband.



The fixed wireless market is ripe for accelerated monetization, but there are caveats: Many of these opportunities are in populous cities where new broadband subscribers have the ability to strain the network, and even in more remote locations, the limitations of existing cell towers are likely to be a factor. Home-broadband customers can use up to [10 times](#) as much data as a typical smartphone user, with the average per-subscriber broadband consumption rising to nearly [600 GB per month](#) at the end of 2022.

So, as the rise of converged fixed/mobile 5G networks threatens to introduce another type of strain on telecom's networks, infusing AIOps solutions stands out as a logical approach to aid operators in their goal of unlocking greater network monetization value while minimizing capacity challenges. Real-time analytics of network utilization could help automate and orchestrate network functions to scale as needed based on event-driven utilization, essential to overcome what may be less predictable usage patterns. Or AIOps-enabled resource management could help ensure prioritized network bandwidth of segmented fixed wireless broadband plans whose variable speed and SLAs are enabled by 5G network slicing. Each of these offerings has the potential to establish new revenue streams for users willing to pay a premium for new classes of speed or SLA service that can be targeted toward use cases like AR/VR or high-performance gaming.

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**New potential revenue streams for operators include offering application-level big data insights to enterprise customers or providing more granular access and control for developers**



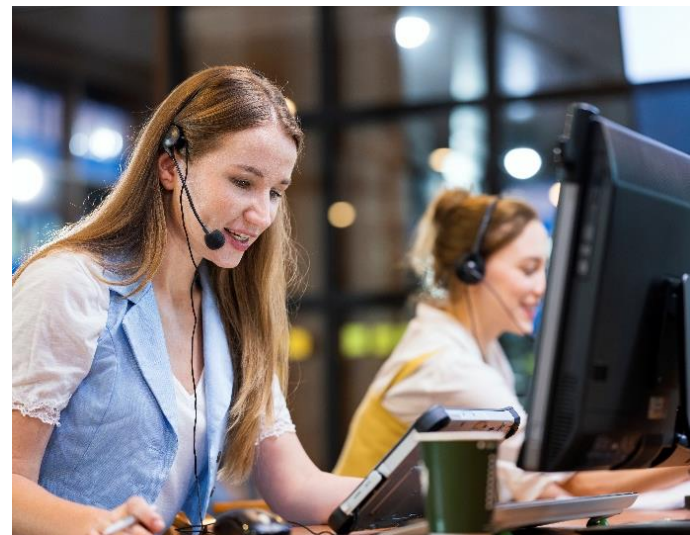
As cloud gaming capabilities continue to evolve, ubiquitous connectivity can redefine the industry, providing metaverse-type quality to the [2.7 billion](#) people playing video games globally. This cloud-powered, low-latency mobile-game streaming could untether gamers from the quality they can only achieve today in a wired setting utilizing consoles and PCs. By deploying AIOps solutions to unlock new application-level big data insights, operators can create a new valued service for gaming operators or streaming companies by providing these data insights to their enterprise customers for a fee. This service would allow operators the opportunity to support the product enhancement of enterprise customers while also unlocking a new revenue stream with significant potential for growth.

This is just one way to monetize the needs of application providers, which will become more nuanced with the proliferation of modern connected applications. In this era of rapid technology expansion, telcos have an opportunity to play a critical role in the value chain. We could see the emergence of consumers demanding premium connectivity experiences to support their applications and a willingness to pay for it. Consumers would pay more for a premium experience, and gaming companies could in turn pay more to operators to ensure they can provide the experience their customers demand.

This paradigm shift has major implications on telecoms' revenue potential. Though there's historically been a disconnect between application developers and network operators, the requirements of the new breed of modern connected apps can help bridge that divide, opening up new revenue streams as operators meet developers' and ISV's rapidly expanding needs around connectivity, access, and control.

## Use Case 5: Activate AI co-reasoning in customer contact centers

Today, if a customer calls in to speak to their provider about a service disruption or degradation, it's likely the communication care center will have little to no visibility of how the network is performing in real time, nor a historic analysis of how that customer's network quality has performed over a certain period of time. This can result in a frustrating experience for both parties, with the customer care rep relying on time-delayed messaging bulletins that only broadly explain service issues while reading notes across multiple CRM systems about other agents' interaction with that specific customer. Meanwhile, customer agitation is understandably high given the need to possibly spend hours of their day trying to get an issue resolved.



With customer retention and satisfaction continuing to grow in importance for CSPs in this highly competitive environment, a new approach to customer care is needed that is supported by a consolidated and robust set of tools, like real-time network analytics visibility. Again, it's time for a paradigm shift: AI co-reasoning will enable a new standard of customer service as operators infuse AIOps technology into their customer contact centers, and agents are able to prepare an informed diagnosis and recommended solution for the customer before they even answer the line.

## The contact center of the future will allow customer care representatives to access, and more importantly, understand relevant network data about their specific caller's quality of service

Even now, AI services are being infused into the customer care experience. They can help create personalized customer experiences, surfacing customer data and unlocking customer insights with powerful contact center analytics. They can enable routing prioritization for in-person interactions, digital assistants, or chatbots, getting customers to the right resource to solve their problem quickly. And they can proactively notify customers of outages, ETA, and service restoration, leading to more satisfactory outcomes. These capabilities can empower telecoms to effectively manage their workforce based on surge volume from both predictable surge and unplanned network events while providing a path to improve employee satisfaction/Net Promoter Scores because of a more empowering work environment.

The co-reasoning future will depend on bridging the gap between information that has previously only been available to NOCs or engineering teams with customer care representatives, which AIOps solutions can help achieve because of their foundational ability to remove data silos and consolidate insights into a managed platform that is available throughout all teams. The contact center of the future will allow customer care representatives to access, and more importantly, understand relevant network data about their specific caller's quality of service to help them make more informed decisions and recommendations. This will have a dual benefit of improving customer satisfaction by reducing troubleshooting from hours to minutes while simultaneously improving the employee's job satisfaction as they are empowered with new co-reasoning tools that allows them to perform their job better.







## AIOps forms the foundation for telco transformation

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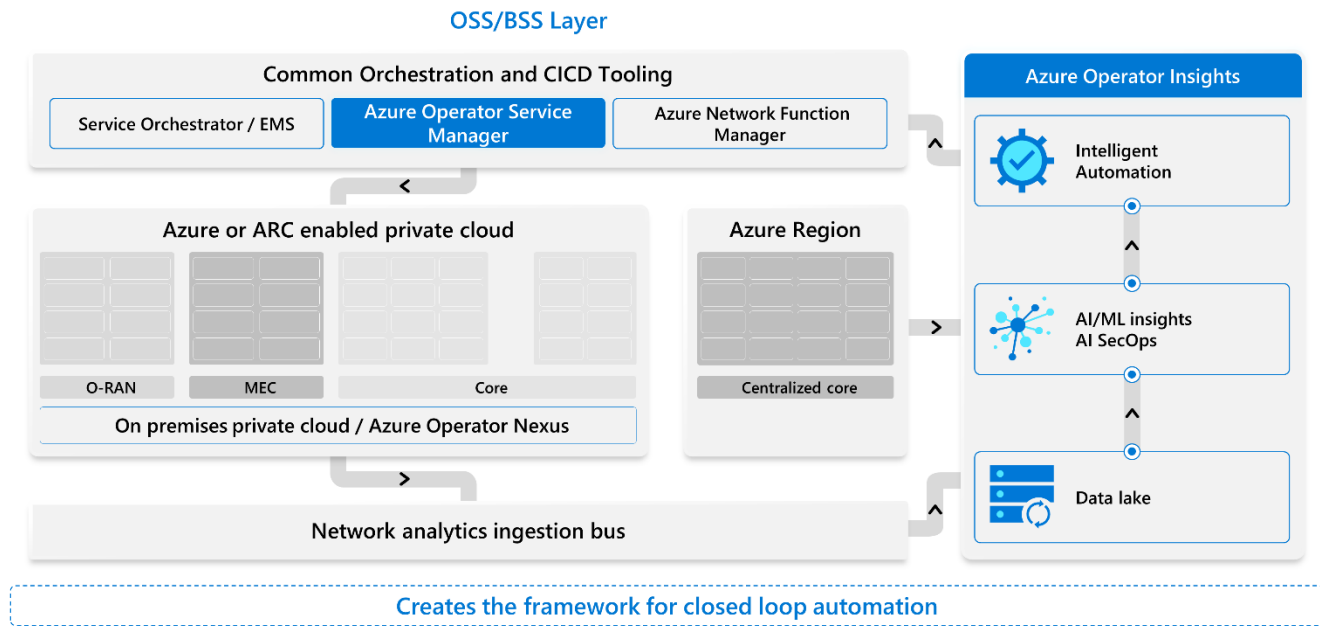
Innovation is essential for any business to thrive in this era of rapidly advancing technology, and as we enter an age that will be defined by the future of cloud computing, strategic investments in cloud and AI will help telecoms keep pace. Digital transformation is critical to stay ahead of the competition and navigate the uncertainty of global markets. But transformation can't happen overnight, and it can't happen in a vacuum.

Time and again, we've seen our telecom partners leverage digital transformation in their modernization and monetization strategy. This AI transition is the next phase of that evolution, one that will result in empowering operators to apply AIOps to their data so they can improve operational efficiency, increase quality for their end customers, strengthen security, and realize new growth opportunities.

It all starts with choosing the right partner to manage an AIOps platform that is capable of ingesting and analyzing large volumes of real-time network telemetry gathered from multiple sources in order to drive operational efficiencies and enable operators to deliver world-class customer experiences. The Azure for Operators portfolio is designed to equip telecoms with these capabilities with the necessary scale, cost, reliability, and function. Our complete offering helps providers benefit from carrier-grade hybrid cloud platform, voice core, mobile core, and multi-access edge compute.

Within this comprehensive Azure for Operators portfolio are solutions intentionally designed to support AIOps telco use cases, such as the five use case examples outlined in this paper. Microsoft's AIOps services for communication service providers include Azure Operator Insights (AOI) and Azure Operator Service Manager (AOSM).

# AIops Simplifies Managing Complex Networks



Azure Operator Insights provides unified visibility into vast quantities of disaggregated telecom data to unlock end-to-end network and business insights in near real-time. AOI works by ingesting a provider's on-premise data into Azure Data Lake, with a customizable and extensible unified data mesh. Advanced big data analytics, anomaly detection, and AI data apps can then be utilized on the AOI platform to unlock intelligent analysis, correlation, and new network insights. These end-to-end network insights can then be applied to proactively solve real telecom use case challenges such as the five examples featured in this paper. Managed services, pay-as-you-go, and data-tiering are available standard with AOI to provide a cost-effective service that doesn't require a large upfront CAPEX commitment. This is a journey of combining the right tools, the right analysis, and the right inputs to tackle challenging use cases. This takes time, but our platform is built to help bring these pieces together into a simplified and scalable solution for managing end-to-end workflows.

Azure Operator Service Manager is designed to transform the operator service management experience into a modern cloud service. Built with deep telco DNA, AOSM simplifies modeling of services, consolidates multiple interfaces, and accelerates service deployments, built on DevOps best practices. Employing common tooling based on service model definition, AOSM works with any network function on any cloud.

AOI and AOSM are standalone services that do not need to be deployed together, but they can also be easily integrated with each other and the full Azure for Operators portfolio. Together, they allow for a full end-to-end scenario that encompasses ingesting raw network traffic data in real time all the way through data visualization and network orchestration. Along the way, the AI-powered system aggregates your network data and uses machine learning techniques to discover insights, find new patterns, and discover relationships in the data. Our trained ML data apps make this intelligent automation possible, helping to predict automatic failures and mitigate them before they occur. And with the right orchestration, you can create a framework of repeatable, reliable, and predictable processes that can be harnessed to deploy and manage complex services over physical and virtual network components. By leveraging AOI and AOSM, telecoms can achieve efficient data correlation, data analysis, network automation, and proactive actions, unlocking the network of the future.



## No time like the present to get started

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At Microsoft, we're committed to a culture of co-innovation where we help you break through barriers to access the groundbreaking ideas your business needs. We understand that a digital transformation of this magnitude can be daunting, but we're here to support the journey with manageable steps. Starting small allows you to experiment with solving problems and growing at a scale that matches your comfort level and expertise, knowing that there are tools, services, and strategies your teams can embrace. That includes the ability to train and improve your AI and ML models as you scale your knowledge and technical capabilities. And because these models improve as the volume and quality of data increases, you can use time to your advantage to build stronger insights.

Similarly, the transition to cloud can cause concerns about the scale of updating infrastructure, architecture, personnel, policies, and governance. For some operators, it's understandable that a complete overhaul of legacy systems and processes isn't always feasible. That's why we work closely with SI partners who add value in many different capacities, such as moderating the process of updating the infrastructure that they installed or managed. One of the key benefits to our partnership approach is that in addition to Microsoft's AI and advanced data analysis expertise, providers can also gain the advantage of SI expertise that's specific to their infrastructure, accelerating the transition timeline and easing the workload.

At Microsoft, our mission is to empower everyone to achieve more, with products and services built with security, privacy, compliance, and transparency in mind. When you work with us, you're in charge of your data, and security is a priority at every step. We've spent decades building assurance in AI research and development, and our partner ecosystem brings industry expertise you can trust.

We're here to help you access the enormous benefits offered by the future of cloud and the emergence of the new AI co-reasoning paradigm. We offer the AIOps platform, resources, and support your organization needs to get started today on transforming the way you operate and serve your customers.

We invite you to learn more about [Azure Operator Insights](#) and [Azure Operator Service Manager](#), and [connect with a Microsoft expert](#) to explore AI-enabled operations with modern connected applications.

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