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TECHNOLOGIES THAT ACCELERATE DIGITAL ECONOMY

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This Quarter

Accelerating FWA:
Moving toward Faster, Fairer Digital Future

SAMENA E.L.I.T.E

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TECHNOLOGIES THAT ACCELERATE DIGITAL ECONOMY

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Accelerating FWA: Moving toward Faster, Fairer Digital Future

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Chief Executive Officer
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Council

Globally, the conversation around broadband access is shifting. No longer framed only in terms of fiber deployment, the discussion today increasingly recognizes Fixed Wireless Access (FWA) as a critical enabler of inclusive digital growth. What was once seen as an interim or niche solution is now emerging as a practical, scalable technology that can extend high-speed connectivity quickly and efficiently, particularly in areas where traditional infrastructure remains costly or slow to build. While FWA has already shown encouraging momentum in the Middle East and surrounding regions, the opportunity to scale it further—and to do so equitably—now rests on how governments and regulators act.

One of the most immediate ways to accelerate FWA adoption is through spectrum policy that is responsive to real deployment needs. Access to mid-band frequencies, offered at affordable rates and with sufficient flexibility, remains essential. As demand rises, shared and lightly licensed spectrum models can further unlock value, especially in underserved or sparsely populated areas where commercial incentives are limited. By treating spectrum not just as a revenue-generating asset but as a public-good enabler of digital services, governments can widen the foundation on which FWA networks are built.

Deployment processes themselves must also be modernized to match the urgency of connectivity goals. Many operators still face delays due to fragmented or outdated infrastructure approval systems. Introducing streamlined permitting, predictable timelines, and harmonized rules across agencies can reduce deployment friction. A single-window approach to approvals would go a long way in helping operators build out coverage faster, especially in rural and peri-urban settings where the need is greatest.

At the same time, FWA should not be seen in isolation from other technologies. Where fibre is already in place or being expanded, FWA can complement it—offering last-mile solutions that make the most of existing investments. Regulatory frameworks that encourage infrastructure sharing, whether through passive assets like towers or through open access to backhaul, will help operators build resilient and cost-effective hybrid networks that are adaptable to local conditions. This kind of policy support enables not only technical efficiency but also competitive dynamism, particularly in markets where reaching the final user remains economically challenging.

Investment in FWA can also be catalyzed through targeted public support. In areas where market returns are limited, governments can help de-risk deployment by providing direct incentives, viability gap funding, or service commitments for anchor clients such as schools, health centers, or local administrative offices. These anchor clients improve the commercial case for broader FWA rollout, and their connectivity contributes directly to development outcomes. Additionally, public-private partnerships

designed around shared digital goals can fast-track deployments and lower costs, particularly in remote or high-need communities.

Another lever to accelerate FWA lies in promoting local participation in the value chain. Governments can facilitate domestic assembly and distribution of FWA equipment by simplifying customs and certification procedures, creating conditions for local industry involvement. Such steps can bring down the cost of devices, enhance supply chain resilience, and generate employment in adjacent sectors. In parallel, urban planning frameworks should evolve to reflect the importance of connectivity infrastructure. Making new buildings FWA-ready, providing rooftop access for antennas, and integrating FWA requirements into housing and commercial codes can make network expansion more efficient over time, especially as cities continue to grow.

Awareness and adoption are also critical components of any acceleration strategy. In many cases, FWA networks have been deployed, but uptake remains limited because potential users are unaware of their availability or benefits. Governments, in collaboration with operators and civil society, can help close this gap by running outreach programs that target low-income households, micro-enterprises, and first-time internet users. Offering low-cost starter packages, bundled service options, or community-based demonstrations can introduce more people to the practical advantages of FWA, which include simple installation, competitive pricing, and increasingly reliable performance.

Finally, for FWA to succeed in the long term, trust and

accountability must be built into the user experience. Regulators have a role to play in monitoring service quality and ensuring providers meet reasonable expectations for speed and reliability. Publishing benchmark data and enabling public reporting mechanisms can help maintain performance standards while supporting informed consumer choice. This type of regulatory transparency strengthens the market, protects users, and helps ensure that expanding connectivity does not come at the cost of quality or credibility.

With GITEX 2025 now on the horizon, the region is presented with a powerful moment to put these priorities at the forefront of digital policy conversations. As the region's flagship technology event convenes innovators, regulators, and industry leaders from across the globe, it provides the ideal platform to align around actionable policy shifts, showcase scalable FWA solutions, and commit to cross-sector collaboration. The momentum building toward GITEX must translate into real policy outcomes that remove friction and unlock speed in deployment.

FWA's potential is real, but unlocking it at scale requires a deliberate and coordinated policy and regulatory approach. It is not enough for the technology to be ready; the ecosystem around it must be ready too. The SA-ME-NA region can position FWA not as a backup plan, but as a first-line tool for achieving universal access, digital inclusion, and infrastructure resilience. In doing so, it can turn the promise of broadband for all into a reality in a faster and fairer way, and at a scale that matches the goals set forth in national transformation agendas around the region and beyond.

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The 5G-A & AI Synergy: A New Era for Telecoms Smarter Networks, Smarter Services

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5G-Advanced and AI are converging to make telecom networks smarter, faster, and more efficient. This article explores how telcos are using the synergy to automate operations, personalize services, and unlock new revenue – featuring real-world case studies from global operators.

Introduction: The Convergence That's Changing Telecom

As telecom operators transition from basic connectivity providers to digital experience enablers, two powerful forces are reshaping their journey: 5G-Advanced (5G-A) and Artificial Intelligence (AI) . While 5G-A delivers the next evolution in network performance – with higher speeds, improved uplink, slicing, integrated sensing and many other new advanced capabilities – AI provides the intelligent cognitive layer that enables intelligent automation, prediction, personalization & new business models across every telecom function.

Separately, both technologies are transformational. But together, they create a compounding effect: networks that not only move faster – but think faster, respond smarter, and

monetize better . Telcos across the globe – from South Korea to Kuwait

> **The convergence of 5G-A and AI is more than just a technology upgrade – it's a strategic enabler that delivers measurable benefits across the telco value chain. From reducing operating costs to unlocking new revenue streams, early adopters are already realizing the returns of building intelligent, AI-native 5G-A networks**

– are beginning to embed AI into the very fabric of 5G-A infrastructure, unlocking new business models, operational savings, and radically improved user experiences. This write-up tried to explore what 5G-A and AI mean in the telecom context, how their relationship is shaping the next wave of telecom

innovation, and what telcos are doing today to ride this intelligent revolution.

What is 5G-A and What is AI (in the Telco Context)?

Understanding 5G-Advanced 5G-A (Release 18 and beyond in 3GPP terminology) represents the next significant evolution in 5G networks. While early 5G deployments focused on enhanced mobile broadband and foundational connectivity, 5G-A is where the real power of 5G begins to materialize – through enhanced performance, intelligence, and adaptability.

Thus, in a sense, 5G-A moves 5G closer to 6G.

A Few Key Capabilities of 5G-A (Include, but not Limited to):

- **Uplink Boost:** Enhanced uplink throughput – essential for video-rich services like XR, user-generated streaming, and real-time sensors.
- **RedCap (Reduced Capability):** Enables cost-effective, low-power connectivity for wearables, industrial sensors, and lightweight

5G-Advanced – What is it?
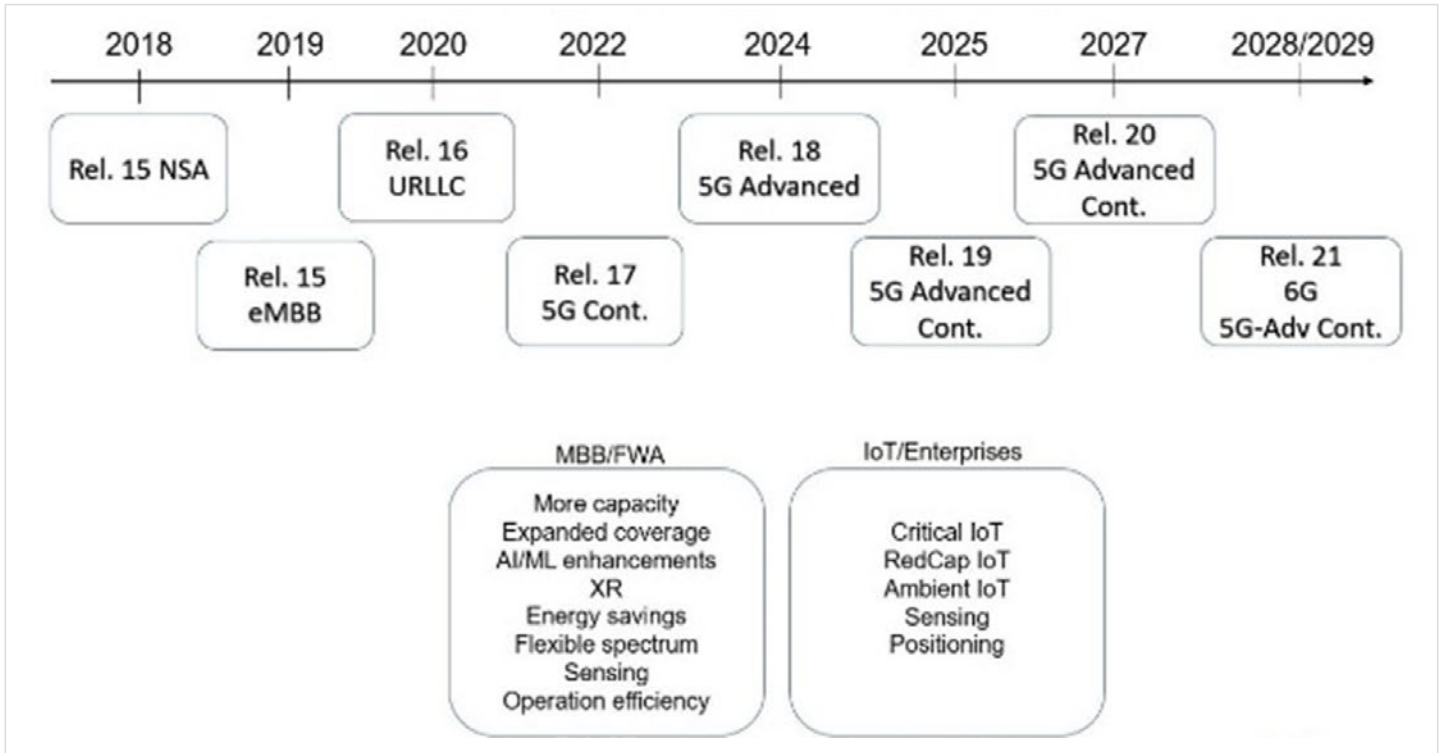
Source: 5G Technology World

IoT devices.

- **Integrated Sensing:** Turns the network into a sensor grid that can detect movement, position, and environment – paving the path for adding further intelligence in use cases such as smart cities, traffic monitoring, and public safety etc.
- **AI-Native Architecture:** For the first time, AI is embedded directly into network operations – from RAN to core – enabling real-time learning, decision-making, and optimization. In summary, 5G-A is not just "better / faster 5G" – it's a smarter, more responsive network layer, designed to handle the complex needs of both human and machine users in real time.

Understanding AI in Telcos

AI in the telecom industry refers to a broad set of technologies – machine learning (ML), deep learning, & generative AI – that are applied to automate, optimize, and personalize various aspects of network and business operations.

Key AI Applications Deployed in in Telecoms :

5G-Advanced Combines Performance Improvements with Greater Efficiency
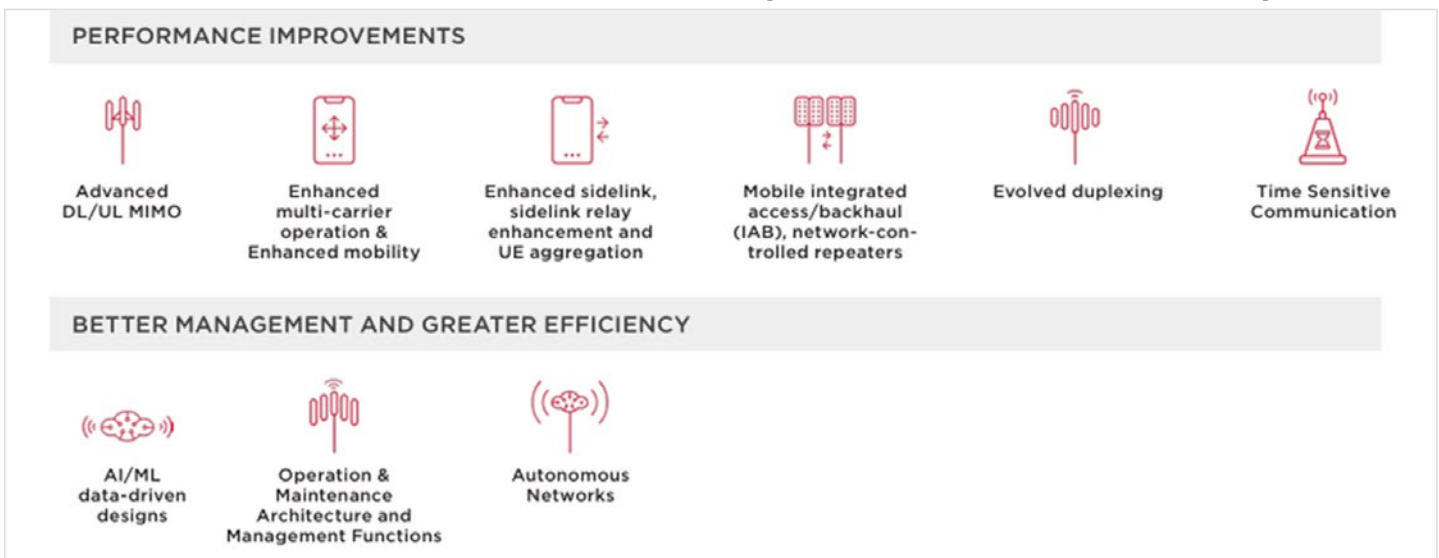
Source: GSMA - 5G-Advanced: Shaping the future of operator services

- Network Optimization with AI
  - AI helps with intelligent traffic management, dynamic spectrum allocation, energy optimization, and predictive maintenance in radio access and transport layers.
  - Reinforcement learning is used to self-optimize network performance based on real-time data.
- Customer Service Enhancement with AI
  - Natural language processing (NLP) powers AI-driven chatbots and virtual assistants.
  - Generative AI (GenAI) is now enabling intent prediction, personalized service suggestions, and real-time ticket resolution.
- Customer Experience Enhancement with AI
  - Development new services or business models (such as New Calling, Real Time Translation, SLA-based services at the app level etc.)

Top 3 AI Applications in Telcos

The most popular AI applications in the top telecom leaders

1 Customer service chat bots – Automating customer service inquiries, routing customers to the proper agent, and routing prospects with buying intent directly to sales people.

2 Speech and voice services for customers – Allowing customers to explore or purchase media content by spoken word rather than a remote control.

3 Predictive maintenance – The ability to fix problems with telecom hardware before they happen, by detecting signals that usually lead to failure.

Source: Futurism Technologies

The Relationship Between 5G-A and AI

The relationship between 5G-A and AI is not simply complementary – it's deeply interdependent . These technologies reinforce each other's value, forming a feedback loop where intelligent infrastructure enables advanced services, and AI empowers the network to evolve in real-time. Together, they form the intelligent engine of future telecom innovation.

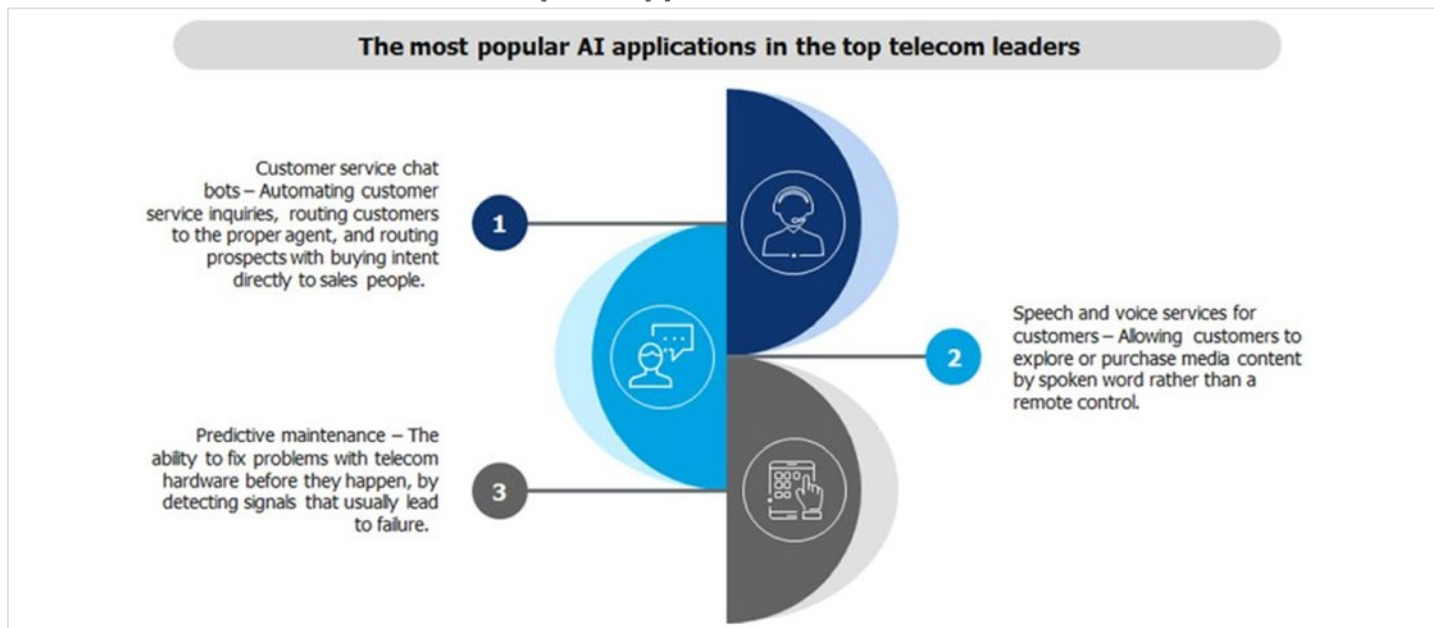### AI Makes the 5G-A Networks More Potent

Unlike previous network generations, 5G-A is designed with AI built into its core. AI algorithms are increasingly responsible for managing the complexity of modern networks, where thousands of parameters (user behavior, location, service type, service experiences etc.) change in milliseconds .

How AI Boost 5G-A[7]

- RAN Optimization: AI models improve beamforming, scheduling, and interference management in massive MIMO networks, dynamically adapting to traffic loads and user mobility patterns.
- Self-Healing Networks: Predictive maintenance tools use AI to detect anomalies before outages occur, reducing downtime and improving service quality.
- Energy Efficiency: AI enables base stations to enter low-power modes during low usage periods or reroute traffic to optimize energy use – critical for sustainability and cost control in dense 5G-A deployments.
- Network Slicing Automation: AI determines when and how to create, scale, or remove network slices based on real-time demand, QoS needs, and user profiles – especially in enterprise and industrial settings.

5G-A Enables Real Time AI

While AI empowers the network, 5G-A also empowers AI-based services and applications. Its high throughput, low latency, and edge computing capabilities allow real-time interaction and decision making .

How 5G-A Supports AI[9]

- **Edge AI Inference:** 5G-A's distributed architecture allows AI models to be deployed at the network edge – closer to the user or device – reducing latency for applications like video analytics, industrial robotics, or autonomous vehicles .
- **Support for Massive AI Workloads:** AI-driven applications, such as computer vision in smart cities or voice synthesis in virtual assistants, rely on high uplink speeds and stable latency, both of which are enhanced in 5G-A.

- **Integrated Sensing for AI Contextual Awareness:** With 5G-A's ability to sense location, movement, and environmental parameters, AI models gain richer context to drive decisions – e.g., adjusting traffic lights based on congestion or rerouting delivery drones around weather conditions.

Summary: The Advent of the AI-Native Networks as the "Networks of Tomorrow"

5G-A marks the shift from **"AI-supported"** to **"AI-native"** networks . This means:
- The network doesn't just host AI applications – it runs on AI
- AI becomes a foundational design principle, not an add-on
- Every layer – from spectrum management to customer engagement, can evolve based on data-driven intelligence.

In practice, this results in networks that think, **adapt, and improve continuously, creating not only better performance** but also new business models. For example, telcos can offer AI-as-a-Service bundled with private 5G-A and edge compute, enabling hospitals to run diagnostics in real time, or manufacturers to deploy autonomous quality checks on assembly lines.

Learnings from Five Global Telco: Use Cases & Real Deployments Where 5G-A and AI Converge
Around the globe, leading telecom operators are no longer talking about 5G-A and AI as future aspirations – they're actively deploying them in tandem to drive smarter networks, immersive services, and enterprise transformation.

Within this domain, there are a few standout examples of where telcos are operationalizing the convergence of 5G-Advanced and AI today.

1. SK Telecom (South Korea): AI-First Strategy on a 5G-A Foundation

SK Telcom (SKT) sets forth 'AI Pyramid Strategy' to accelerate innovation centered around three key areas: AI Infrastructure, AI Transformation (AIX) and AI Service .
- AI Infrastructure, which consists of data center, AI semiconductor, and multi LLM, will serve as a technology platform that forms the basis of SKT as an AI company.
- AI Transformation (AIX) of SKT's core business areas such as mobile, broadband and enterprise, as well as new business areas like mobility and healthcare will be pursued to reach a new level of productivity and customer experience.
- AI Service, SKT announces the official launch of 'A.' and plans to build a globally competitive personal AI assistant service by leveraging its telco and AI assets.
  - "A." (pronounced "A dot") is an artificial intelligence chatbot which has a character that speaks to people. SKT has integrated its various service from music streaming to e-commerce into A.
  - 'A.' users can create and customize an AI character that reflects their personalities; and communicate with the character through conversations or text messages, and ask for diverse information.
  - A. is currently only available in Korean. And company is in the early stages of exploring an international launch for the service.

SKT will strengthen its own AI capabilities and collaborate with diverse global players to expand its presence in the global AI market. By 2028, SKT will triple the proportion of its AI-related investments and become a global AI company with revenue of KRW 25 trillion.

Top 3 AI Applications in Telcos

Source: Futurism Technologies

2. China Mobile (China): Intelligent Network Operations at Massive Scale

China Mobile is applying AI to run one of the world's largest mobile networks more efficiently – and is already testing 5G-A capabilities such as integrated sensing and intelligent slicing. China Mobile is unleashing its "AI+NETWORK" innovation program to promote high-quality and sustainable development where remarkable progress has already been made in three areas .

- Leading Information Infrastructure: China Mobile has the world's largest 5G and fiber broadband networks and also fully cloud-based 4G/5G converged core networks, in addition to rapidly growing computing power. Here, leading information infrastructure underpins digital-intelligent transformation across industries.
- Innovation-enabled Information Service Systems: The company has 90,000 5G-Advanced 3CC CA cells and 450,000 RedCap sites, and is also the first operator to bring Network Data Analytics Function (NWDAF) to 5G-Advanced for

China Mobile "AI+NETWORK" Achievements Ceremony

Source: Mobile World Live

experience assurance. Its wireless AI applications are making a huge difference across its networks to enhance user experience.
- Digital-intelligent Transformation of Network O&M through Autonomous Networks: The company is working on building an end-to-end fully automated digital-intelligent operations pipeline – where automation is the foundation and AI

technology is the innovation engine. China Mobile has been making great efforts to promote the AI technology and network development of 5G-Advanced. The combination of 5G-A's real-time responsiveness with AI's decision-making allows China Mobile to scale services like smart manufacturing and reduce operating overhead in a sprawling, complex network.

3. e& (UAE): 5G-A & AI for Smart Cities and Enterprise Services

e& is in the process of deploying 5G-Advanced, which is set to revolutionize connectivity with its enhanced capabilities, offering a wide range of new service opportunities across various sectors, including consumer, IoT, and enterprise. To add

to this, e& UAE has a clear blueprint for AI strategic application in telco sector and beyond.
- e& has integrated more than 400 AI use cases and 160 machine learning (ML) models across its operations. The company has

also created a dedicated Robotic Process Automation (RPA) team and establishing a Robotics Centre of Excellence (CoE).
- Whether launching the first AI-powered telecom store in the world or deploying AI-driven recommendations, e& UAE ensures every customer enjoys a seamless and personalized experience. e& UAE is leveraging advanced GenAI technologies, to deliver real-time personalized recommendations, customized news feeds, and tailored product suggestions that enhance customer engagement and satisfaction .[15]

e& UAE Unveils Blueprint for AI Application

Source: e& UAE; e& Launches World's First AI AI-Powered Autonomous Telecom Store 'EASE'

e&'s application of AI and ML extends far beyond its telco vertical, permeating all business pillars, including its enterprise arm, which offers AI-as-a-Service solutions.

4. Telstra (Australia): Connected Future 30 Strategy Focusing on AI and Network

China Telstra's "Connected Future 30" strategy , unveiled in May 2025, is a five-year roadmap (2025-30) focused on leveraging AI and network advancements to maintain its competitive edge and drive digital transformation in Australia. Under this strategy, Telstra is building an autonomous network with self-optimizing AI capabilities across cloud and network layers, alongside internal AI tools for efficiency.

Telstra is essentially rethinking its core business by transforming its network into a smart, AI-driven platform. The telco is already working on deploying it programmable 5G Advanced network.

This strategy will help Telstra to develop and monetize a network-as-a-service (NaaS) platform, empowering enterprises and developers via network APIs and

Telstra: Building on its Core Connectivity Advantage with AI in the 5G-A Era

Source: Mobile World Live

customized SLA-based connectivity. This platform allows businesses to select and pay for pre-integrated cloud and networking services

as needed . Here, for Telstra, the AI-enabled network is itself the product.

5. Verizon (USA): Accelerating 5G-A with Enterprise AI at the Edge

Verizon is evolving its 5G-Advanced strategy by building AI-native private networks and Mobile Edge Compute (MEC) solutions to serve enterprise clients, with live deployments and

partnerships.
For example, the telco has launch a 5G Private Network + Enterprise AI platform. This combines Verizon's private MEC with NVIDIA's AI software

stack, enabling real-time inferencing for robotics, AR/VR/XR, computer vision, generative AI, and industrial automation – delivered securely and at ultra-low latency . This initiative is designed to empower enterprises by delivering real-time AI applications directly at the edge, demonstrating the transformative potential of this technology across various industries. Further, the telco has also launched Verizon AI Connect integrating edge-to-cloud network intelligence, aimed at hosting large-scale AI workloads directly on their programmable 5G-A infrastructure .

In summary, Verizon is leveraging 5G-Advanced and AI to deliver programmable, low-latency networks that power next-gen enterprise and consumer experiences – from real-time industrial AI to network slicing for video and beyond.

Verizon launches AI Connect, courts AI inferencing workloads
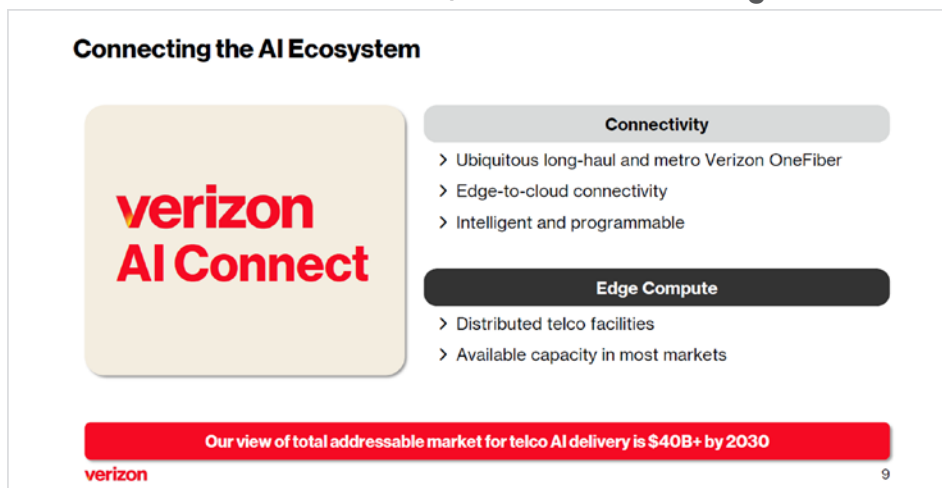
Source: Constellationr

Benefits for Telcos from this Convergence of 5G-A & AI: Operational Efficiency & Revenue Growth

The convergence of 5G-A and AI is more than just a technology upgrade – it's a strategic enabler that delivers measurable benefits across the telco value chain. From reducing operating costs to unlocking new revenue streams, early adopters are already realizing the returns of building intelligent, AI-native 5G-A networks.

Operational Benefits: Smarter, Leaner, Faster Networks

• Automation & OPEX Reduction:

AI-driven automation in 5G-A networks reduces the need for manual intervention in operations, fault management, and optimization. Vodafone's deployment of AI-based performance management (called the United Performance Management (UPM)) led to a 70% reduction in major incidents, directly impacting operational stability and cost savings .

• Energy Efficiency & Sustainability: AI models optimize energy usage by dynamically switching off unused base stations or adjusting power output in real time – critical in

massive MIMO environments. For instance, Orange has deployed an AI-powered energy management system across its European networks, achieving up to energy savings during off-peak hours by intelligently powering down network resources without impacting user experience .

• Self-Optimizing Networks (SON): AI allows 5G-A networks to adjust coverage, handovers, and capacity allocation autonomously – delivering better user experience while minimizing human error. For instance, Telefónica has deployed AI-powered SON capabilities in

Addressable GPUaaS Market Addressed by Telcos

Global demand for GPU as a service addressable by telcos is projected to range from $35 billion to $70 billion by 2030.

GPU as a service (GPUaaS) global demand estimate,[1] $ billion

~2.5× by 2030

Year	Range
2025	14–25
2026	15–28
2027	17–32
2028	20–40
2029	25–50
2030	35–70

High / Low
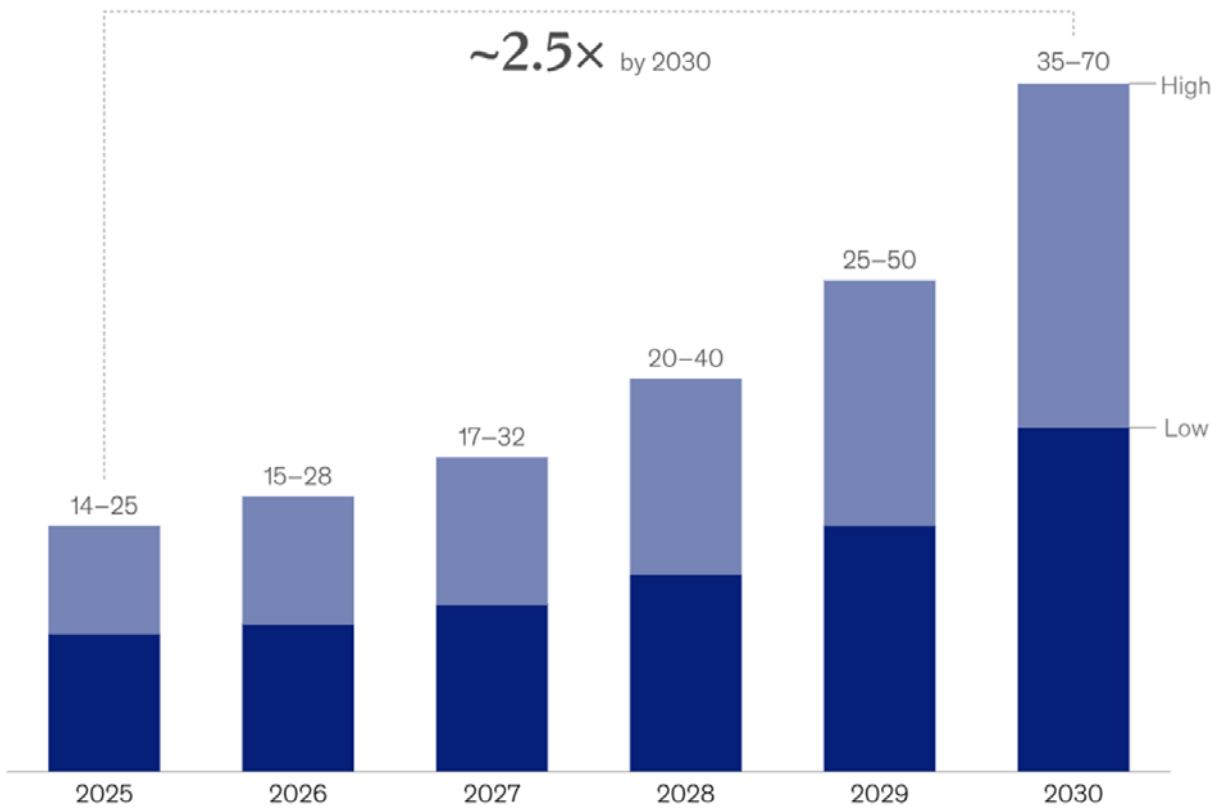
Source: McKinsey

its network, thus, helping create a network that can adapt to provide better quality of service or reduce response times .

- **Smarter Customer Service:** GenAI enables telecom operators to automate routine support queries, improve response accuracy, and reduce pressure on contact centers – ultimately enhancing customer satisfaction and lowering operational costs. For example, T-Mobile US has implemented its OpenAI-powered IntentCX platform, which handles routine customer inquiries autonomously, freeing up agents to focus on more complex interactions and shortening resolution times.

Revenue Benefits: From Connectivity to Intelligence

- **AI-as-a-Service (AIaaS):** With 5G-A's low latency and integrated edge compute, telcos can package AI capabilities (such as analytics) as a service to enterprise clients. Orange Business, for example has launched a new multi-LLM solution called 'Live Intelligence', that enables businesses to leverage the power of GenAI to improve operational efficiency and customer experience without compromising the security of their data .
- **GPU-as-a-service and AI-as-a-service** are closely related, with GPUaaS being a key component that enables many AIaaS offerings. GPUaaS provides access to powerful Graphics Processing Units (GPUs) via the cloud, which are essential for the computationally intensive tasks involved in training and running AI models. AIaaS then is a broader service that provides access to AI capabilities and tools, often leveraging GPUaaS for its underlying infrastructure . The growth forecast of GPUaaS from telcos is a great proxy of telcos providing AIaaS.
- **New Vertical Revenues via Edge + AI:** Smart manufacturing, precision agriculture, logistics, and healthcare are increasingly demanding real-time AI execution at the edge. 5G-A

provides the pipe, while AI delivers the intelligence -together creating platform-based monetization models. For example, Deutsche Telekom partnered with Volkswagen Group Logistics on the "AutoLog", where using 5G and edge compute, they implemented AI-controlled digital twins and automated vehicle marshalling systems – dramatically improving operational safety and throughput while opening the door to new logistics service revenues .

- **Enhanced ARPU Through Personalization:** Machine learning helps telcos offer the right bundle, content, or device to the right customer at the right time – driving upsells and reducing churn. For instance, Vodafone implemented a Customer Data Platform (CDP) to deliver personalized portal experiences, resulting in a 10–30% uplift in conversions, along with higher data usage .
- **Monetizing SLA-based Experiences and Slicing:** AI enables dynamic SLA-based slicing in 5G-A, allowing operators to charge premium rates for latency-sensitive or high-throughput services. For example, AIS Thailand has launched its "Living Network", delivering real time, AI-driven 5G-A experiences. AIS also uses AI to promote 5G acceleration packages tailored to users' needs, offering relevant services, improving customer acquisition, and increasing 5G adoption. The network identifies high-value users and adjusts bandwidth allocation dynamically to ensure seamless service, even during peak times .

The message is clear: 5G-A gives the telco network more speed and reach, but AI gives it brains. Operators that build this synergy into their strategy will not only optimize operations – but also become pivotal players in powering the AI economy.

Conclusion: Smarter Networks for a Smarter Future

As the telecom industry moves into a new era of intelligent infrastructure,

the fusion of 5G-A and AI stands out as the most consequential transformation in decades. No longer are telcos defined solely by towers and spectrum – they are becoming enablers of intelligent, responsive, and value-rich digital ecosystems. 5G-A provides the technological scaffolding: ultra-reliable low-latency communication, intelligent slicing, enhanced uplink, and distributed compute. AI brings the intelligence layer: automating decisions, optimizing resources, enabling personalization, and powering next-gen enterprise solutions. Together, operators that adopt an AI-native approach to 5G-A will gain far more than network efficiency . They'll unlock:

- Smarter customer interactions powered by generative AI
- Profitable enterprise services built around edge AI and slicing
- Sustainable operations through predictive, self-healing, energy-efficient networks
- And most importantly, a new role in the AI economy – as platform providers, not just connectivity players

The convergence of 5G-Advanced and AI is truly transforming telecom networks from mere connectivity providers into intelligent, adaptive platforms that drive innovation, efficiency, and new revenue streams. The telecom winners of tomorrow are already laying the groundwork today, and their networks don't just move data faster; they think, adapt, and create value in real time. By embedding AI natively into 5G-A networks, operators are optimizing performance, automating operations, and enabling real-time, personalized services that meet the evolving demands of consumers and enterprises alike. With 5G-A and AI working together, the smart network has finally arrived, positioning operators to deliver smarter experiences, unlock new business models, and lead the next wave of digital transformation. 🌐

Mushfig Aliyev
Chief Commercial Officer
Azerconnect Group, Azerbaijan

BDAM: A Global-First Subscription Model from the Heart of Telecom

In an industry where most innovation efforts are directed toward adjacent sectors like fintech or content streaming, a major breakthrough has emerged in the core of telecom operations. Born in Azerbaijan, the Bundle-Driven Access Model (BDAM) represents a fundamental shift in how customers stay connected, challenging long-held practices around subscriptions, prepaid models, and loyalty.

BDAM reimagines the prepaid paradigm: rather than relying on frequent micro top-ups to maintain 'active' status, customers must now choose a bundle of data and/ or voice services. If no bundle is selected, service goes inactive—removing confusion about balance validity or top-up timelines.

Traditional subscription models have long been the mechanism by which businesses secure customer loyalty. But in the era of digital-native consumers—particularly Gen Z—there is growing resistance to models that restrict freedom, reduce transparency, or create friction. BDAM offers an alternative that prioritizes engagement, flexibility, and behavioral consistency over obligation.

BDAM reimagines the prepaid paradigm: rather than relying on frequent micro top-ups to maintain 'active' status, customers must now choose a bundle of data and/ or voice services. If no bundle is selected, service goes inactive— removing confusion about balance validity or top-up timelines. This transforms bundle purchase into the behavioral trigger for connectivity.

BDAM blends the best of prepaid and postpaid without inheriting their flaws. It avoids meaningless micro top-ups common in prepaid systems, while sidestepping the inflexibility and commitment of postpaid contracts. Instead, customers engage on their own terms, but within a framework that fosters regularity and trust.

BDAM blends the best of prepaid and postpaid without inheriting their flaws. It avoids meaningless micro top-ups common in prepaid systems, while sidestepping the inflexibility and commitment of postpaid contracts.

Since its launch, BDAM has delivered measurable results: mid-tier bundle adoption has grown by 2x, new sales are through 100% bundle and subscriber quality has improved through the phasing out of dormant SIMs. Importantly, customer understanding of their activity status has become clearer and more transparent.

BDAM also offers a countermeasure to the erosion of telecom relevance by over-the-top (OTT) platforms like WhatsApp. By putting bundle logic— rather than passive balances—at the center of the user relationship,

telcos regain control of the customer lifecycle. This reinforces ecosystem value, encouraging frequent and meaningful interaction.

As BDAM eliminates the reward from simple top-ups, customers may need small-scale credit to purchase bundles. This opens a new fintech-like opportunity for telecom operators to introduce micro-lending capa-bilities—allowing them to stay within their domain while enabling access and increasing bundle conversions.

BDAM fits squarely into the global shift toward opt-in, platform-based ecosystems. It mirrors what platforms like YouTube and Spotify are doing by offering experiences rooted in voluntary engagement, rather than auto-renewing subscriptions. For telecom operators, this is not just a

BDAM fits squarely into the global shift toward opt-in, platform-based ecosystems. It mirrors what platforms like YouTube and Spotify are doing by offering experiences rooted in voluntary engagement, rather than auto-renewing subscriptions. For telecom operators, this is not just a pricing model—it's a redefinition of customer interaction.

pricing model—it's a redefinition of customer interaction.

The model, pioneered and executed in Azerbaijan, provides a replicable blueprint for telecom operators across prepaid-heavy markets. It proves that loyalty doesn't need to come from obligation - it can emerge from design, experience, and respect for how today's users want to stay connected. By removing top-up-based activity, some users now need just-in-time microcredit to purchase bundles, opening new fintech angle. Operators have begun providing this — not by becoming banks, but by leveraging native behavioral data to lend responsibly within their own ecosystem. It's telco-led fintech, born from infrastructure, not ambition. 🌐

DRIVING CONNECTIVITY AND INNOVATION IN AZERBAIJAN

5G FWA: Tele2's Scaling Strategy
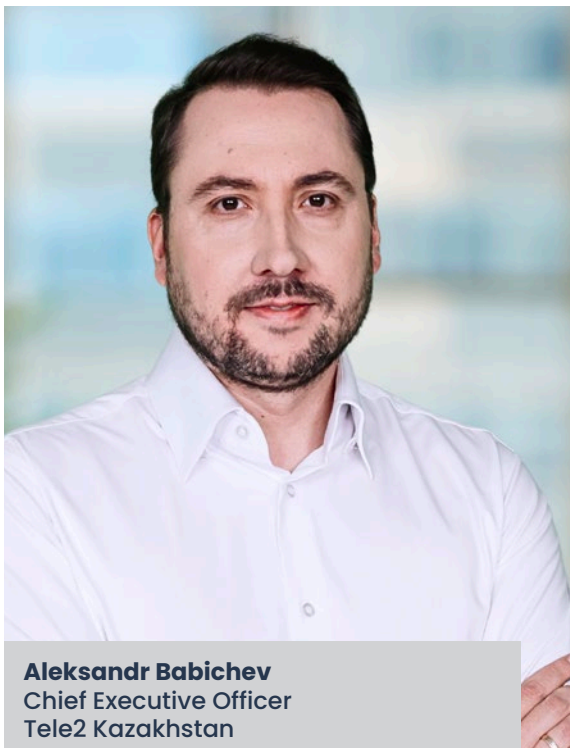
Aleksandr Babichev
Chief Executive Officer
Tele2 Kazakhstan

Kazakhstan is the ninth-largest country in the world, with a territory exceeding 2.7 million square kilometers. However, its average population density is just 7 people per square kilometer, making the deployment of traditional fixed broadband infrastructure extremely capital-intensive and inefficient. Today, 50% of households in the country lack access to fixed broadband, while 90% of digital services - from online banking to government functions are online and run on mobile internet.

Kazakhstani users demonstrate a high level of digital engagement: according to Tele2 network data, average monthly mobile data consumption reaches 35 GB per user, more than twice the global average of 16 GB (GSMA). These conditions have made FWA technology not just a solution, but a necessity.

> **Kazakhstani users demonstrate a high level of digital engagement: according to Tele2 network data, average monthly mobile data consumption reaches 35 GB per user, more than twice the global average of 16 GB (GSMA). These conditions have made FWA technology not just a solution, but a necessity.**

5G as a digital engine: How Tele2 uhered in a new internet era

According to Aleksandr Babichev, CEO of Tele2 Kazakhstan, five key factors drove the success of FWA in the country

1. High-quality customer equipment that ensures stable 5G/4G service;
2. A "Try and Buy" model allowing customers to test the technology risk-free;
3. Transparent communication and expectation management, including a real-time interactive coverage map;
4. Combined sales strategy with strong synergy between online and offline channels;
5. Lowered entry barriers through subsidies, equipment leasing, and installment plans.

Tele2 began rolling out 5G networks in 2023. By 2025, Kazakhstan ranked 45th globally for mobile internet speed, according to OOKLA. That same year, Tele2 was rated by customers as the best 5G network in the country. One of the company's most breakthrough products was the Tele2 5G FWA router: easy to install, powerful and affordable.

Since launching its FWA solution in 2023 Tele2 has achieved impressive results:

1. Market share in the FWA segment exceeds 90%;
2. 43% of the population is already within FWA coverage just one year after launch;
3. Over 100,000 customers are using the router;
4. Revenue from 5G services has grown by 28%;
5. FWA users have double the ARPU compared to other subscribers;
6. Monthly data usage among FWA users is 10 times higher than that of average users;

7. Customers show higher satisfaction and NPS.

Today, Kazakhstan has secured its position as one of the digital leaders in the region, showing how a strategic approach to technology adoption can transform infrastructure and improve the daily lives of millions. At the heart of this transformation is the rapid development of 5G and, in particular, the breakthrough FWA solution which has become a true alternative to wired internet and a cornerstone of digital inclusion.

Tele2 began rolling out 5G networks in 2023. By 2025, Kazakhstan ranked 45th globally for mobile internet speed, according to OOKLA. That same year, Tele2 was rated by customers as the best 5G network in the country. One of the company's most breakthrough products was the Tele2 5G FWA router: easy to install, powerful and affordable.

FWA: Overcoming Technical Limitations in Social Urgency

Izhar Ahmad
Director - Industry Affairs & Communication
SAMENA Telecommunications Council

Fixed Wireless Access (FWA) has quickly moved from the edge of the broadband discussion to its core. It was once treated as a niche solution, mostly for areas where no other connectivity option was available. Now, enabled by ongoing advancements in 5G networks, AI, and customer-provided equipment (CPE) design, FWA has become central to how countries and communities are approaching broadband access, especially where fast deployment, investment control, and flexible coverage are the main requirements.

In many places around the world, with the SA-ME-NA region being no exception, fiber remains years away, whereas FWA is already in the metaphorical ground, delivering service to homes, medical care facilities, schools, and the once-unconnected. However, while FWA continues to expand, its ability to deliver full, stable service is often limited by the environment it operates in.

A First-Choice Option
There's still a lingering view that FWA is something temporary or second-best, or that it may compromise long-term investment in fiber or fixed networks, given the general perception that it may be a convenience-driven technology rather than a long-term quality solution. The reality, however, is that in many parts of the world, FWA is the most practical way to connect people. It is fast to roll out, more affordable than laying cables, and is flexible enough to cover large or scattered populations. It's not just filling connectivity gaps, but is defining how access happens, and how it serves as a reliable compliment to fiber network connectivity. Its value should be recognized in those terms, not as a compromise, but as a solid, long-term option in its own right.

Where May the Issue Lie
Despite its strengths, FWA's performance may appear to hit its limits. These do not usually come from local infrastructure or installation issues. More often, the problems lie in congested traffic, spectrum constraints, interference issues, and planning gaps. For example, a home may have a connection, but when everyone logs on at the same time, the speed drops or the service stalls. These kinds of problems reduce confidence in the technology not because of technology itself, but because performance is impacted by broader network, spatial, and spectrum factors, not by the operator or home equipment.

> In the context of the SA-ME-NA region, or any other region for that matter, FWA is not a compromise on digital ambition. Rather, it is a means of delivering on that ambition more quickly, more affordably, and more inclusively.

Ongoing Pressures – It is Not Just about Being Connected
Digital demand, including of video-content, video-capture, and visual-intelligence based decision-making is growing by the day. Families are

trying to keep up with school, work, and basic services—often through a single connection. Businesses are navigating new markets. Government entities are seeking improved delivery of citizen services through new digital platforms.

With less-than-expected network performance, people aren't just inconvenienced; they're left behind. An impact on the technology network shows up in real human lives. This shows that there's a difference between having a service signal and having a usable service. FWA may technically provide access to a home or village, but if it does not support live video, downloads, or uploads, then it limits what people can actually do online. FWA has the technical ability to support all of this. But its success depends on the conditions around it, especially how spectrum is managed, how growth is planned, and whether capacity keeps pace with real-world demand.

A Growing Divide
FWA has a proven value-proposition for technology providers, infrastructure builders, regulators, citizens, and industries. If FWA isn't supported properly, we risk reinforcing an old pattern: giving basic service to some while others move ahead with faster, more capable networks. On paper, both are connected. In practice, their experience in connectivity is very different. This kind of divide is not a product of a technology's limitation. It comes from decisions; where to invest, how to license, and who gets the resources needed to build something that lasts; something that is sustainable and catalyzes various forms of sustainability.

When decisions are delayed or do not align with urgency, the result is a slow, quiet form of exclusion; a divide.

What Needs to Change
When connections work well, people use them fully. Public institutions too

function better when communication is smooth and reliable. None of this necessarily requires futuristic infrastructure. It requires steady, dependable networks; something FWA can offer. The FWA core technology is already working and is already upholding dependability in many places throughout the SA-ME-NA and Central Asia regions. Its impact is visible, measurable, and is changing lives.

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When connectivity policy is slow, disconnected from need, is deficient, or does not happen on time, people feel it; in small daily frustrations that add up to larger disadvantages. When a student is unable to stay connected to class or a health worker cannot share vital medical data just in time, it is not just a network issue. It is an issue of access, equity, responsibility, and progress.

FWA is connecting areas where nothing else is reaching; places where roads may be rough, cables slow to come, and population diversely and sporadically placed. It's doing this without long delays and without the scale of investment that other technologies require. Such value-proposition requires policies and industry support that match its pace, resources that fit its requirements, and long-term thinking that sees its role clearly.

What's needed now is practical support that matches FWA's intended role and the strong value-proposition it holds. Priorities include: access to adequate, reliable spectrum, especially in areas without wired alternatives; faster policy responses as usage grows and needs shift; flexible frameworks that let communities or smaller providers expand access where large networks do not reach; recognition that rural and underserved areas need the same quality of service as cities, and not at all a reduced version; affordability in service bundles and customer-provided equipment design; better WLAN experience; and better overall alignment between technical planning and public needs, so that FWA's capacity is maintained at defined thresholds and does not fall behind at critical moments.

Final Thought
We need to shift the mindset of separating technical infrastructure from human outcomes. They are interlinked and, with digital metamorphosis in progress around the globe, are inseparable. The FWA infrastructure is now a part of the core broadband landscape. For many communities, such as in Kenya or in the Amazon rainforest, in fact, it is the first real chance at experiencing reliable access, and may be the only one within reach for years to come.

FWA deserves recognition and so do those who have thrived in excellence in FWA service delivery. FWA also deserves support that should let it succeed without unnecessary limits. The technology is ready, and is further empowered with AI.

Our focus as industry and end-users should be to want fixed wireless access, and not harboring unfixed worries about its success. The case for FWA has already been made. It can and should become a long-term path to digital inclusion and enhanced digital experience within the SA-ME-NA region and beyond. 🌀

OBSERVATIONS BY SAMENA COUNCIL

FWA as a Pragmatic Tool for Inclusive, Accelerated Broadband Growth

As connectivity goals intensify across the SA-ME-NA region, Fixed Wireless Access (FWA) continues to solidify its role as a viable and scalable broadband access solution, particularly in markets where fibre deployment is challenged by cost, time, or terrain.

In global markets, FWA has proven itself to be far more than a temporary solution. With over 160 million active FWA connections at the end of 2024, and projections indicating more than 350 million by 2030, nearly 80 percent of them expected to be powered by 5G, FWA is rapidly becoming an established part of broadband delivery. Leading operators across the United States, India, and Asia-Pacific are reporting millions of new subscribers each year. This growth is being driven by increasing demand for fast installation, affordability, and improving service performance through continuous innovation in network infrastructure and customer equipment.

These global developments hold

These global developments hold particular relevance for the Middle East, Central Asia, and surrounding regions. In these areas, operators are deploying FWA not only to expand access but also to support broader national infrastructure goals.

particular relevance for the Middle East, Central Asia, and surrounding regions. In these areas, operators are deploying FWA not only to expand access but also to support broader national infrastructure goals. In environments where fibre-to-the-home is not yet universally feasible due to economic, geographic, or demographic constraints, FWA enables service providers to deliver reliable broadband more quickly and at a lower cost. This approach is especially effective in semi-urban, rural, and remote areas.

Regional policy frameworks are also evolving to support the role of FWA. Governments and regulators in countries such as Qatar are modernizing their telecom regulations to promote infrastructure competition, with FWA expected to benefit from these changes. In Sub-Saharan Africa and Central Asia, operators are exploring emerging technologies like 5G RedCap, which are designed to make FWA even more accessible and affordable for underserved communities.

Rather than presenting fiber and FWA as competing technologies, many operators are adopting a hybrid infrastructure strategy. FWA is being used to provide immediate access while fiber networks are extended and upgraded. In some cases, such as AT&T's approach in the United States, FWA is helping transition customers away from legacy DSL connections. The decision to offer fiber or FWA is based on specific local conditions, providing flexibility and responsiveness to market needs. This approach is especially important

Policy Recommendations

1. Adopt a Technology-Neutral Regulatory Framework
   - Policymakers should continue to support a balanced broadband strategy that treats FWA as a credible and complementary access technology. Technology neutrality encourages innovation, investment, and allows operators to choose the most effective solutions for specific deployment environments.
2. Accelerate Spectrum Availability for FWA
   - Timely and affordable access to mid-band and millimeter-wave spectrum is essential for the performance and scalability of FWA. Regulators should prioritize spectrum planning that supports fixed wireless use, including consideration of licensed, shared, and lightly licensed models.
3. Encourage Infrastructure Sharing and Hybrid Deployments
   - Regulations should promote infrastructure sharing among operators to reduce deployment costs and accelerate service delivery. Support for hybrid network models, where FWA complements fibre, will enhance overall connectivity outcomes and resource efficiency.
4. Mandate Transparent Service Performance Metrics
   - Clear labelling of advertised, minimum, and typical speeds for FWA services should be encouraged to ensure transparency and build consumer trust. Independent verification of service quality will help validate FWA's role as a dependable broadband solution.
5. Target FWA Subsidies for Underserved Areas
   - FWA should be included in universal service and subsidy programs as a cost-effective means to extend broadband to rural and low-income communities. This requires coordination between operators, regulators, and development partners to align funding with achievable deployment models.
6. Incorporate FWA into National Broadband Plans
   - Governments should explicitly recognize FWA in their national broadband strategies and reporting frameworks. This will ensure FWA deployments are included in market assessments, policy evaluations, and progress tracking against digital transformation goals.

in regions where infrastructure readiness levels vary significantly.

Performance-related concerns, such as those linked to shared spectrum use or network congestion, are being addressed through more efficient network planning, better spectrum allocation, and improved customer equipment. Globally, FWA download speeds have seen considerable improvements. For example, T-Mobile in the United States reported a 50 percent increase in FWA speeds within a single year, placing it ahead of traditional broadband providers in performance rankings. These improvements demonstrate that, with appropriate investment and planning, FWA can offer consistent and high-quality service.
FWA is also contributing to a shift in market dynamics. In many

regions, consumer satisfaction with FWA services is now surpassing that of legacy cable or DSL. This is due in part to the simplicity of installation, competitive pricing, and the increasing quality of service. In the SA-ME-NA region, these characteristics are particularly valuable to young families, small businesses, and users in rural areas, all of whom benefit from faster and more reliable connectivity.

The global regulatory discourse on broadband must continue to embrace a technology-neutral perspective. While fiber remains a critical component of long-term digital infrastructure, FWA has demonstrated its reliability and potential to support national connectivity objectives. Initiatives such as clear speed labelling,

independent assessments of service quality, and transparent performance standards are already being implemented in many markets. These efforts will further enhance consumer trust and encourage sustained investment.

In the context of the SA-ME-NA region, FWA is not a compromise on digital ambition. Rather, it is a means of delivering on that ambition more quickly, more affordably, and more inclusively. As 5G networks expand and become more efficient, the performance and reliability of FWA are expected to improve even further. Ultimately, what matters most is ensuring that broadband strategies are practical, responsive to regional needs, and focused on connecting people without delay.

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SAMENA Council Identifies Visual-Intelligence as a Key Opportunity for 5G-Advanced Networks & Fixed Wireless Access Growth

As telecom operators across the South Asia - Middle East - North Africa (SA-ME-NA) and Central Asia regions accelerate their 5G and 5G-Advanced deployments, the SAMENA Telecommunications Council is planning to unveil a new whitepaper highlighting visual-intelligence as a key opportunity area that will help unlock the full potential of next-generation networks, thus adding to the momentum in driving the growth of Fixed Wireless Access (FWA) in the region.

The whitepaper is aiming to highlight the growing significance of visual-intelligence technologies, such as AI-powered video analytics, machine-vision, edge-based vision processing, cloud technologies, and real-time data interpretation, in transforming network management, customer experiences, and service offerings, including for both private and public domains. The work-in-progress also intends to highlight how visual-intelligence can serve as a catalyst for FWA's growth ofacross the SA-ME-NA and Central Asia regions.

Visual-intelligence, when paired with the ultra-reliable, low-latency capabilities of 5G, offers telecom operators a unique opportunity to deliver a wide range of new applications, from smart-city solutions to advanced industrial automation and real-time security systems.

"We are at the forefront of a transformative era in telecommunications," said Bocar BA, CEO of the SAMENA Council. "As telecom operators continue to evolve their 5G and 5G-Advanced capabilities, and as regulatory demand for video-capture and intelligent decision-making rises, visual-intelligence is emerging as one of the most promising use-cases and can drive innovation across multiple sectors and industries. The integration of visual-intelligence over modern networks presents new revenue opportunities, enriches service offerings, and enhances network performance, making it a critical area of focus for operators today."

FWA is increasingly being adopted as a cost-effective solution for providing high-speed broadband access, particularly in areas where traditional fiber infrastructure is difficult or expensive to deploy. The SAMENA Council has already linked FWA to digital inclusion, and positioned it as a reliable complement to and pillar of regional digital infrastructure development plans. By adopting visual intelligence, operators can offer a range of new services, from AI-driven surveillance to real-time traffic management. This not only boosts the operator's bottom line but also drives broader socio-economic benefits by enhancing urban living, improving public safety, and fostering innovation in industries including retail, healthcare, and manufacturing.

"FWA has become a reliable solution for expanding broadband connectivity in underserved and remote areas," continued Bocar BA. "However, the real value of FWA lies in its ability to deliver not just connectivity, but the foundation for new, next-generation services. By combining FWA with visual intelligence, telecom operators can address regional connectivity gaps while simultaneously enabling cutting-edge use-cases in sectors like public safety, transportation, healthcare, and urban development. This integrated approach offers telecom operators the opportunity to not only meet growing demand for broadband but also establish themselves as leaders in the emerging digital economy."

The whitepaper provides actionable insights, policy recommendations, and case studies to help telecom operators navigate and accelerate the integration of visual-intelligence into their 5G strategies, ensuring they are well-positioned to capture the full potential of this transformative technology.

To access the whitepaper or for further information, please visit the SAMENA Council website.

ITU Projects $2.8 Trillion Investment Needed to Achieve Universal Internet by 2030

Achieving universal, meaningful Internet connectivity by 2030 could require an investment of USD 2.6 trillion to USD 2.8 trillion at current prices, according to the Connecting Humanity Action Blueprint released by the International Telecommunication Union (ITU) – the UN agency for digital technologies – and the Communications, Space & Technology Commission (CST) of the Kingdom of Saudi Arabia.

The report outlines the challenges, projected costs, and collaborative strategies needed to make sure everyone, everywhere, can use the Internet, including the estimated one-third of humanity currently offline.

The largest investment component — USD 1.5 trillion to USD 1.7 trillion — is required for hard infrastructure, alongside substantial funding for human and institutional capacity, mainly in developing countries.

"Digital connectivity means creating opportunities for education, jobs, and access to essential services that can transform lives and communities," said ITU Secretary-General Doreen Bogdan-Martin. "While significant resources are needed to meaningfully connect everyone, these are investments that will contribute to a prosperous digital future for all."

The challenge of connecting billions
ITU estimates that 2.6 billion people are still excluded from the digital world, with connectivity closely linked to levels of socio-economic development. In 2024, an estimated 93 per cent of the population in high-income countries was using the Internet, compared to just 27 per cent in low-income countries.

The new report on achieving universal meaningful connectivity builds

on ITU's original 2020 Connecting Humanity study, published under the direction of the G20 during the presidency of the Kingdom of Saudi Arabia, by identifying critical gaps with the anticipated costs for addressing them.

"The world needs between USD 2.6 trillion and USD 2.8 trillion to connect humanity by 2030. This figure is nearly five times higher than the last assessment conducted in 2020 in partnership with ITU during the Saudi chairmanship of the G20," said H.E. Eng. Haytham AlOhali, Acting

Governor of CST. "Such a dramatic increase underscores the urgency for international cooperation, collective investment, and the sharing of expertise if we are to achieve the vision of universal, meaningful connectivity for all."

Key costs highlighted in the report include:

1. **Digital infrastructure –** USD 1.5 trillion to USD 1.7 trillion: Expanding broadband networks to underserved populations represents the single largest cost. The report estimates the costs of deploying fibre networks in and around urban areas, 4G fixed wireless in rural regions, and satellites in the most remote locations.
2. **Affordability –** USD 983 billion: Reducing the cost of smartphones and broadband services — both fixed and mobile — is vital so that individuals and households

worldwide, particularly in lower-income regions, can afford to connect and stay online.

3. **Digital skills –** USD 152 billion: Connectivity alone is not enough — people must have the skills to use the Internet effectively. Investments to fund large-scale digital literacy initiatives can empower individuals to access online education, secure better jobs, and actively participate in a digitally-driven society.
4. **Policy and regulation –** USD 600 million: Modernizing regulations and creating predictable policy environments worldwide are essential to unlock efficiencies and promote innovation. While this represents the smallest cost component, it holds back digital transformation and sustains the other gaps. The impact of closing it would be massive.
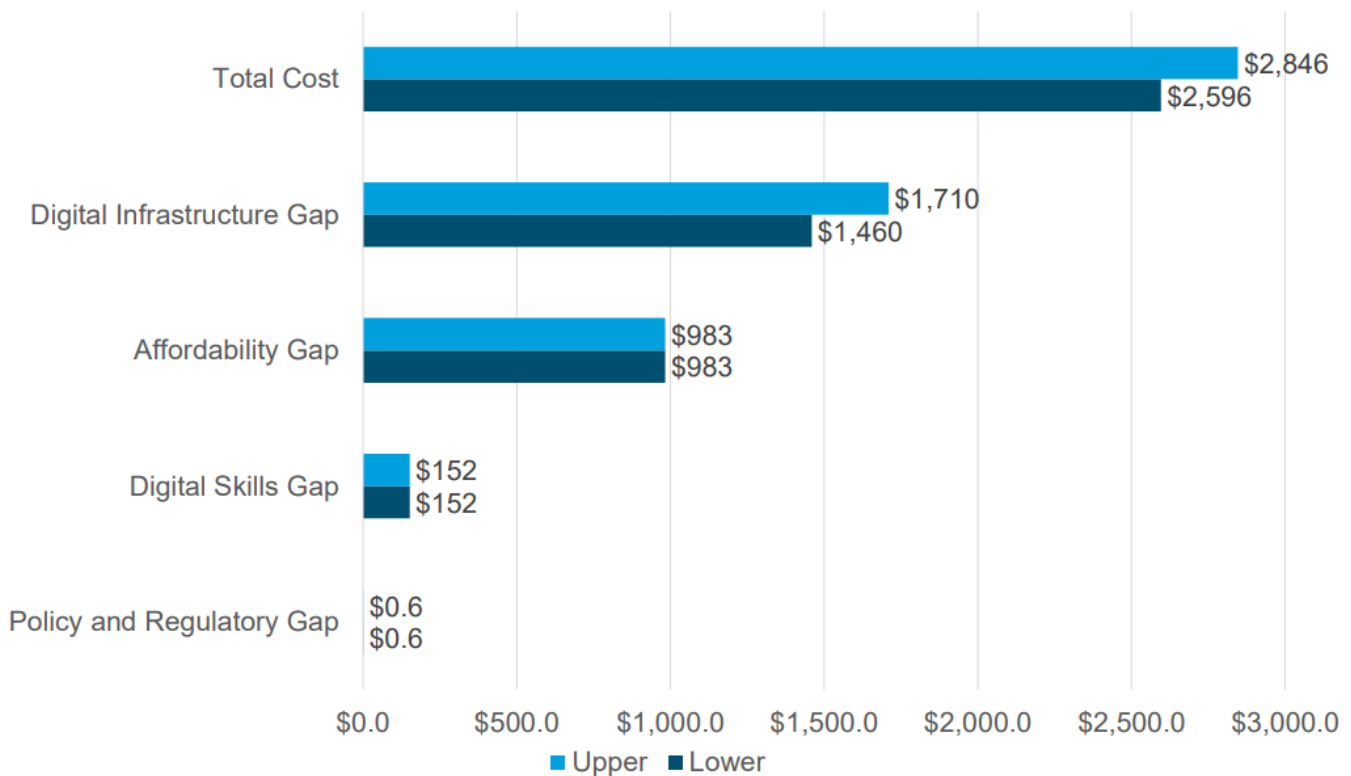
Public-private collaboration needed
As the Connecting Humanity Action

Blueprint highlights, global progress on connectivity has been uneven, with the world's 46 least-developed countries lagging significantly due to financing barriers, limited technical expertise, and unreliable infrastructure.

To address these challenges, ITU calls for innovative business approaches and renewed collaboration between governments, the tech industry, development finance institutions, and civil society, to close current divides and prevent future ones, particularly in fields like artificial intelligence (AI).

The report concludes with recommendations to accelerate digital inclusion worldwide, including using schools as gateways to Internet access, investing in energy infrastructure in Africa, and enhancing data collection at the sub-national level.

Estimated cost to achieve universal, meaningful connectivity through 2030 (USD billions)

Category	Upper	Lower
Total Cost	$2,846	$2,596
Digital Infrastructure Gap	$1,710	$1,460
Affordability Gap	$983	$983
Digital Skills Gap	$152	$152
Policy and Regulatory Gap	$0.6	$0.6

Source: ITU, based on methodology described in detail in the Appendix

GITEX GLOBAL 2025: Driving Innovation Across the Region, including on FWA

GITEX GLOBAL 2025, set to take place from October 13 to 17 in Dubai, represents more than just a technology exhibition. Now in its 45th year, GITEX has evolved into a global platform where governments, enterprises, and innovators from over 180 countries come together to shape the future of digital transformation. With more than 6,000 exhibitors expected, this year's edition reflects a decisive shift—from showcasing technology to implementing it at scale.

The theme for 2025, "Powering the Future," encapsulates the ambition of turning bold ideas into operational systems that address real-world challenges. The focus areas cover artificial intelligence, quantum technologies, advanced infrastructure, cybersecurity, biotech, and sustainability. These are no longer standalone concepts but interconnected parts of a larger effort to rethink how cities, industries, and services function.

At the heart of GITEX 2025 is artificial intelligence. While AI has been a dominant feature in recent years, this edition explores its expanded role across sectors such as mobility, manufacturing, healthcare, and education. There is an emphasis on what is called "Physical AI," where intelligence meets machines that operate in the physical world, including robotics, drones, and autonomous systems. This focus highlights a new phase where AI begins to act, rather than simply compute. Moreover, AI will also be highlighted as an important addition to the capability of Fixed Wireless Access (FWA) and how the latter is equally important for extending access to AI-powered services and solutions in both urban and remote settings. To add, AI is transforming FWA by enabling intelligent network optimization, improved customer experiences, and advanced services through AI-powered Customer Premises Equipment (CPE) and sophisticated network management.

Quantum computing and technologies are making their debut at GITEX in a dedicated pavilion. Once considered too early-stage for practical use, quantum is now being taken seriously by both governments and tech leaders. Discussions will likely center on secure communications, quantum cryptography, and future computational power. The presence of this track shows that quantum is not just a research topic but a strategic priority.

Equally critical is the infrastructure that supports digital transformation. GITEX 2025 will give considerable attention to data centers, semiconductors, and cloud infrastructure. As businesses move toward AI-driven systems, the need for secure, fast, and efficient data processing grows. The industry is also grappling with the environmental costs of this infrastructure. Sustainable cooling, renewable energy integration, and reducing the carbon footprint of digital operations are key issues, especially in regions with high energy demands.

Cybersecurity remains a core focus. As systems become smarter and more connected, vulnerabilities increase. The Cyber Valley pavilion will host discussions around zero trust architecture, next-generation threat detection, and quantum-resistant encryption. These conversations are critical not only for protecting digital assets but also for maintaining trust in technology across public and private sectors.

Healthcare and biotechnology are also taking center stage. GITEX's DigiHealth and Biotech track will explore how technologies such as AI, genomics, and telemedicine are reshaping healthcare delivery. There is growing interest in precision medicine, remote diagnostics, and predictive healthcare models. These tools offer the potential to make healthcare more personalized, accessible, and efficient, particularly in underserved regions.

Beyond the technologies, GITEX 2025 serves as a hub for investment and collaboration. Events like North Star Dubai bring together startups, venture

capital firms, and innovation agencies to support entrepreneurship in emerging markets. The show creates opportunities for founders to pitch, partner, and grow beyond borders. In parallel, major corporations and governments use the platform to announce strategies, launch initiatives, and align on shared goals.

The broader message of GITEX 2025 is clear: innovation is no longer about isolated breakthroughs. It is about ecosystems working together—governments setting smart policies, businesses scaling responsibly, and infrastructure being built with sustainability in mind. There is also a strong undercurrent of digital sovereignty, where countries and regions aim to build capabilities that reduce dependency on global supply chains, especially in semiconductors and data infrastructure.

In this context, the role of regional bodies such as the SAMENA Telecommunications Council becomes increasingly important. Representing South Asia, the Middle East, and North Africa, the SAMENA Council works to align telecommunications policy and investment across the region. Earlier this year, the Council hosted its Leaders' Summit in Dubai, focusing on sustainable digital transformation and the integration of intelligent networks. These priorities resonate strongly with the themes of GITEX. To recall, at GITEX 2024, the SAMENA Council recognized regulators and telecom operators for their leadership in digital development. Awards were presented for advancements in 5G, IPv6 adoption, and digital inclusion strategies. In 2025, the Council will use GITEX as a stage to spotlight progress and excellence in enabling growth in FWA around the regions.

As GITEX 2025 unfolds, several challenges will remain on the surface. For instance, there is growing pressure to ensure that the benefits of technology reach all segments of society. Digital divides still exist, particularly in rural and lower-income regions. Infrastructure must be both advanced and inclusive. The demand for skilled talent also continues to outpace supply in fields like cybersecurity, quantum computing, and artificial intelligence.

Another major concern remains is about balancing growth with responsibility, of which pursuit of sustainability is a key element. From data privacy to carbon emissions, technology providers are being asked to deliver not just performance, but accountability. Regulators are stepping up, but legal frameworks often lag behind technological progress. GITEX offers a space for these tough conversations to take place—among technologists, policymakers, and civil society alike.

In a region investing heavily in digital infrastructure, sustainability, and innovation, GITEX 2025 is both a mirror of current progress and a map for future direction. With organizations like the SAMENA Council helping to align industry goals with public interest, the event is set to play a critical role in shaping how the next phase of digital growth unfolds.

Cool Ideas Launches 5G Fixed Wireless Internet in South Africa

Cool Ideas, one of South Africa's top-rated fibre Internet service providers, has officially launched its 5G Fixed Wireless Access (FWA) products, bringing high-speed Internet to homes and businesses beyond the reach of fibre. Known for its award-winning service, Cool Ideas is now extending its offering to customers who need the speed of fibre but don't yet have access to fibre networks in their area.

With its new 5G FWA products, customers can expect blazing fast speeds, low latency, and a reliable wireless experience expanding on the LTE product launched in 2023.

Bridging the Connectivity Gap

"Not everyone has fibre running past their doorstep, but that doesn't mean they should be left behind," said Paul Butschi. "Our 5G Fixed Wireless products are designed to give South Africans a true fibre-like experience, even in areas where fibre is not yet available."

5G FWA leverages next-generation mobile networks to deliver fibre-equivalent Internet through a dedicated wireless router.

This allows customers to enjoy streaming, gaming, video calls, and remote work with the same reliability they've come to expect from Cool Ideas' fibre services.

Cool Ideas 5G Packages

Cool Ideas has kept its 5G plans simple, transparent and uncapped, subject to a Fair Usage Policy.

- Unlimited Speed Plan – R899 p/m
- 100Mbps Plan – R559 p/m
- 50Mbps Plan – R359 p/m
- 20Mbps Plan – R259 p/m
- 10Mbps Plan – R199 p/m
- The Cool Ideas Difference

Cool Ideas has consistently topped MyBroadband's customer satisfaction ratings for its fibre products, proudly winning four MyBroadband Awards.

The company plans to replicate this standard of service in the 5G space, ensuring fast support, transparent packages, and no hidden catches.

"South Africans deserve more choice when it comes to quality Internet. With 5G, we can finally offer fibre-like speeds in places where fibre has not yet rolled out," the spokesperson added.

Available Now

The Cool Ideas 5G Fixed Wireless products are now available to customers in select coverage areas, with rollout expanding rapidly.

Interested customers can check coverage and sign up directly on the Cool Ideas website.

Fibre and 5G Continue to Expand their Footprint, while Fixed Wireless Access Gains Ground in OECD Countries

"Future-proof" technologies, like fibre and 5G, are steadily expanding their footprint. Fibre now represents 44.6% of all fixed broadband connections across the OECD, with four countries exceeding the 80% threshold for fibre's share of total fixed broadband connections: Iceland (91%), Korea (90%), Spain (88%) and Lithuania (80%). Total 5G subscriptions grew by 48% over the last year and now account for 33% of total mobile subscriptions across the OECD (in countries where data is available). These trends highlight a continued shift toward high-quality connectivity.

According to the latest OECD data, fixed wireless access (FWA) subscriptions grew by 17% from June 2023 to June 2024. Hungary (71%), the United States (39%) and the United Kingdom (30.4%) recorded the highest growth in FWA connections over this period.

While FWA accounts for only 5.8% of all fixed broadband subscriptions in the OECD, it offers a practical and cost-effective alternative, particularly in underserved regions where access to high-quality connectivity can be challenging.

In some countries, FWA represents a larger role in the share of fixed broadband subscriptions. For example, it accounts for 39% in Czechia, 23% in the Slovak Republic, 20% in New Zealand, 18.7% in Estonia and 12% in Italy. Several of the countries above the OECD average, such as New Zealand, face geographic challenges that make fixed wireless solutions more attractive. This includes large and sparsely populated countries such as Australia (10%), Canada (7%) and the United States (6.8%).

Satellite is also gaining ground as

connectivity demands in underserved areas are increasing. Satellite subscriptions grew by 22.6% in the past year alone, with the United States accounting for 74% of total satellite subscriptions in the OECD where data are available.

Mobile broadband subscriptions continue to grow steadily. Despite already high penetration levels, subscriptions rose by another 16% between June 2021 and June 2024, reaching 1.9 billion by mid-2024—up from 1.66 billion three years prior. Japan and the United States maintain the highest penetration rates, with 206 and 197 subscriptions per 100 inhabitants, respectively. Estonia (173) and Finland (159) follow closely. This sustained growth largely reflects the continued expansion of 5G networks, now deployed in 37 of the 38 OECD countries.

Share of fixed wireless access (FWA) subscriptions in total fixed broadband in OECD countries, June 2024
% of FWA in total fixed broadband
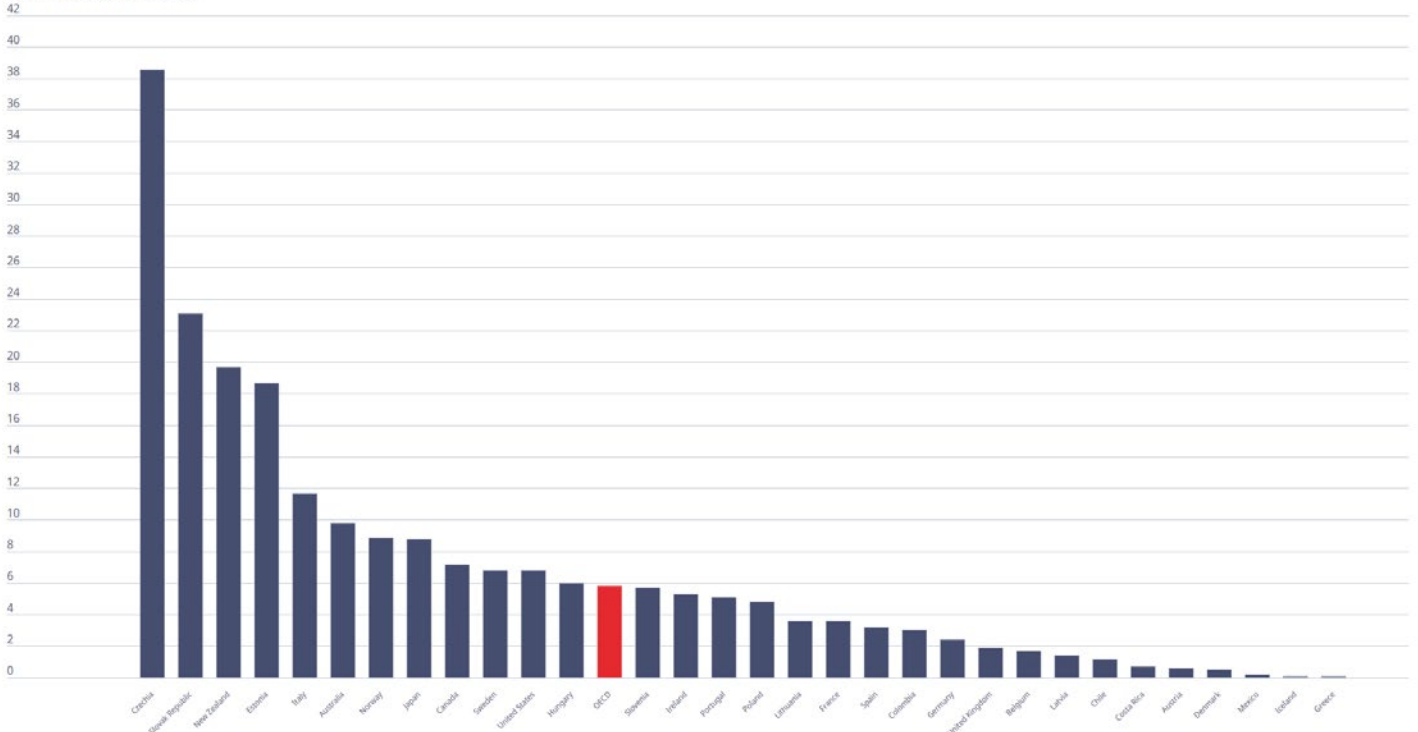
Fixed broadband subscriptions also continue to increase. Total subscriptions across OECD countries reached 504 million by June 2024, translating to an average of 36.3 subscriptions per 100 inhabitants. France leads in fixed broadband penetration with 47.5 subscriptions per 100 inhabitants, closely followed by Korea (47.3), Switzerland (46.8), and Norway (46.4).

As the demand for high-quality networks expands in OECD countries, consequently, mobile data usage continues to grow at a rapid pace. Average monthly data consumption per mobile broadband subscription in OECD countries increased by 65% in just one year and has more than doubled in two years, rising from 8 GB in June 2022 to 17 GB by June 2024. This reflects the ongoing shift toward data-intensive mobile applications and services and the increasing need for robust and scalable connectivity solutions, particularly those leveraging 5G and next-generation networks.

Machine-to-machine (M2M) connections are once again seeing very high growth rates. M2M SIM cards rose by 14% in just one year, continuing a strong upward trend. Sweden and Austria remain the frontrunners, with 267 and 233 M2M SIMs per 100 inhabitants, respectively. They are followed by Iceland (109), the Netherlands (99), and Germany (96). The particularly high figures in Sweden, Austria and Iceland are mainly due to domestic operators registering M2M SIM cards for international use.

For the first time, the OECD is publishing data for six countries currently in the accession process: Brazil, Bulgaria, Croatia, Peru, Romania and Thailand. Three of these countries, members of the European Union, have fixed broadband penetration rates close to the OECD average (i.e. 36 subscriptions per 100 inhabitants). For instance, Bulgaria has 40 subscriptions per 100 inhabitants, followed by Romania (35) and Croatia (29). In terms of mobile broadband, Croatia has 144 subscriptions per 100 inhabitants, followed by Thailand (120), Romania (112) and Bulgaria (111.5), which compares to an OECD average of 138. The trend is somewhat different for the share of fibre in total fixed broadband subscriptions, with percentages above the OECD average (i.e. 44.6%) for Brazil (75.6%), Peru (74%), and Bulgaria (60%), with Croatia being below the OECD average (27%). Finally, two accession countries exceed the OECD average for mobile data usage (17 GB), with 22 GB per month per subscription for Croatia and 19 GB per month for Peru.

Reliance Jio Set to Overtake T-Mobile as World's Largest FWA Provider

Indian telecoms major Reliance Jio is on track to become the world's largest Fixed Wireless Access (FWA) provider by subscriber base, surpassing US-based T-Mobile, according to an analyst report.

ICICI Securities, citing data from the Telecom Regulatory Authority of India (Trai), said Reliance Jio's total 5G FWA subscriber base, including unlicensed band radio (UBR), reached 6.88 million in May.

T-Mobile had 6.85 million subscribers in March.

Reliance Jio reclassified about 1 million UBR subscribers under its FTTx category in May, leaving its net FWA subscriber base at 5.9 million. The company added 0.74 million FWA customers during the month.

"RJio's FWA (including UBR) stood at 6.88 million. This, compared to T-Mobile (US player, and the largest FWA subs base globally) FWA subs base was at 6.85 mn in March 2025. We believe RJio is on a path to become the dominant player by subs for FWA globally by end-June 2025," analysts Sanjesh Jain, Mohit Mishra and Aparajita Chakraborty wrote in the report.

Overall, Reliance Jio maintained its leadership in the Indian broadband market with a 50.72% share in May, comprising both wired and wireless segments. Its total fixed wired broadband subscriber base stood at 13.51 million, while its wireless broadband subscribers reached 480.96 million.

Bharti Airtel followed with a 30.99% share in the broadband segment.

Both Reliance Jio and Bharti Airtel, at present, dominate the Indian telecom services market.

India's telecom subscriber base grew marginally to 1.207 billion in May, with Reliance Jio and Bharti Airtel accounting for over 99% of net additions. The two operators jointly added 4.35 million of the total 4.36 million new subscribers during the month.

AT&T: $23bn EchoStar Spectrum Deal to Speed up Copper Retirement Plans

AT&T has said that its $23 billion acquisition of EchoStar's wireless assets can help the carrier speed up its copper phase-out.

The carrier plans to retire its copper network by 2029 and is amid a major fiber build-out across the U.S., as it aims to deploy fiber to 60 million locations by the same year.

As such, the carrier has identified the opportunities that its EchoStar spectrum acquisition will enable for the company's legacy network retirement and migration to fiber and FWA services instead.

As part of the deal, AT&T will acquire approximately 30 MHz of nationwide 3.45 GHz mid-band spectrum and approximately 20 MHz of nationwide 600 MHz low-band spectrum.

During Citi's 2025 Global Technology, Media and Telecommunications Conference last week, AT&T noted that the mass market space will benefit quickly from the deal.

"The 3.45 GHz spectrum is spectrum that we can deploy within our network as soon as we get regulatory approval. We have set this deal up such that we can pre-lease it and deploy it with a very fast software upgrade and essentially start using it right away," said Jenifer Robertson, executive VP & general manager of mass markets, AT&T.

"It allows us to accelerate our legacy decommissioning project, that is inside of our footprint, the work that we are doing to lower our cost structure and pull our legacy infrastructure out of the network."

Earlier this year, AT&T agreed to sell a portfolio of Central Offices in an $850 million sale-leaseback deal involving more than 70 properties across the U.S. to private real estate development firm Reign Capital.

The carrier is pushing to retire its copper network in its "wireless-first areas," locations where AT&T isn't deploying residential fiber.

"Again, moving these customers on to fixed wireless gives us another converged play where we don't already have them on our wireless products," added Robertson.

A key strategy for AT&T's migration to more modern technology, such as Fixed Wireless Access (FWA). FWA is a type of broadband Internet service that use radio signals to connect to a fixed location. Unlike fiber, there are no physical cables.

Robertson said that the acquisition will help the company "lean in to fixed wireless outside of our footprint, and that allows us to compete for price-sensitive customers with fixed wireless and a plus wireless converged play."

"And so it's a bridge to future fiber, anchor the home, migrate those customers to fiber in the future, and grow the relationship to an even more valuable one in the future," she added. "So there are near-term accretive moves that we can make with this spectrum that make it very valuable to us in mass markets, and then there's a long-term play that sets us up for future workloads well into the next decade."

When asked about the progress being made with AT&T's copper migration plans, Robertson said the carrier has made a lot of progress, with the company moving more people to fiber services. Only around three percent of the carrier's customers are using copper.

"So we have worked through quite a bit of backlog, where customers have been on copper legacy products, migrate them to fiber. And at this point, as soon as we build fiber in the neighborhood, we're able to get customers off of that copper, move them over, and as soon as we can build it, we get them off the network," said Robertson.

AT&T hasn't had it all its own way with its push to move away from providing legacy services.

Last year, the state of California denied AT&T's request to be released from its duties as Carrier of Last Resort (COLR) in the state. AT&T is currently the designated COLR across much of California, meaning it's legally obligated to provide its telephone services to anyone who asks.

The COLR designation is designed to make sure telecom firms don't withdraw from areas completely, or leave citizens cut off from accessing phone networks.
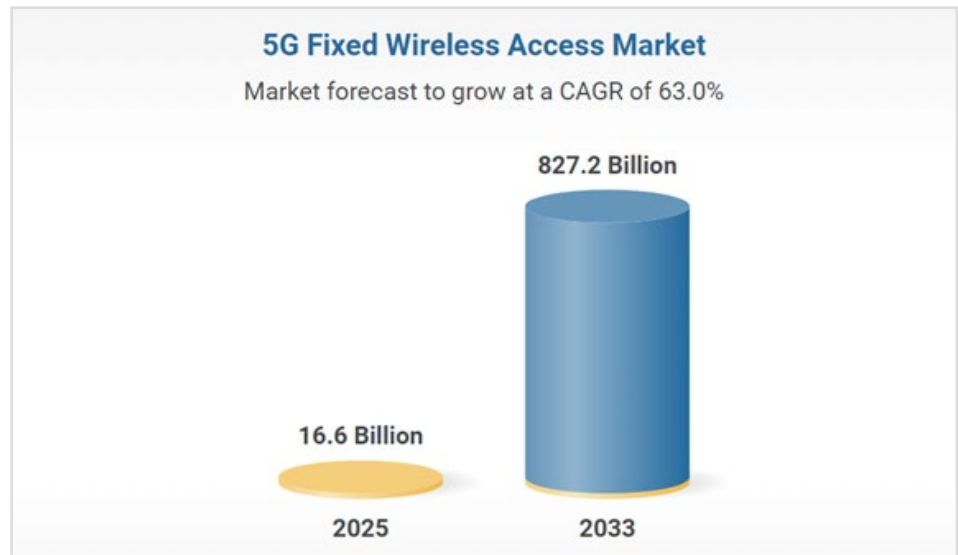
5G Fixed Wireless Access Market Outlook Report 2025-2033 | AI and Advanced Beamforming Propel Growth

The "5G Fixed Wireless Access: Market Share, and Growth Analysis by Product Type (Customer Premises Equipment, Network Equipment), Application, End User, Technology" report has been added to ResearchAndMarkets.com's offering.

The 5G Fixed Wireless Access Market size is valued at USD 16.6 billion in 2025 and is projected to reach USD 827.2 billion by 2033, registering a compound annual growth rate (CAGR) of 63% over the forecast period.

The 5G Fixed Wireless Access (FWA) market is rapidly expanding, offering a compelling alternative to traditional wired broadband connections. This market involves the deployment of 5G technology to deliver high-speed internet access to homes and businesses without the need for physical cables. 5G FWA is particularly valuable in areas with limited fiber optic or cable infrastructure, providing a faster and more cost-effective solution. The market is driven by the increasing demand for reliable and high-speed broadband connectivity, especially in rural and underserved areas.

The market is characterized by technological advancements in 5G radio access networks (RAN) and customer premises equipment (CPE). The development of advanced beamforming and mmWave technologies is enhancing the range and capacity of 5G FWA deployments. The integration of AI and machine learning is also optimizing network performance and improving service quality. Furthermore, the increasing availability of affordable 5G CPE devices is driving adoption. The market is also seeing a trend towards bundled services, combining internet access with other offerings like streaming TV and voice services.

5G Fixed Wireless Access Market
Market forecast to grow at a CAGR of 63.0%

827.2 Billion (2033)
16.6 Billion (2025)

Geographically, the 5G FWA market is expanding globally, with significant activity in both developed and developing regions. Developed regions are deploying 5G FWA to complement existing wired broadband infrastructure and offer competitive services. Developing regions are utilizing 5G FWA to bridge the digital divide and provide internet access to underserved populations. The market's future is promising, with continuous innovation and increasing adoption expected to drive growth.

Key Insights: 5G Fixed Wireless Access Market

- mmWave and Sub-6 GHz Deployment: Utilization of both mmWave and sub-6 GHz frequencies for diverse coverage and capacity needs.
- Advanced Beamforming: Use of advanced beamforming techniques to enhance signal strength and coverage.
- AI-Powered Network Optimization: Integration of AI for automated network optimization and service quality improvements.
- Bundled Services: Offering bundled services like internet, TV, and voice.
- Affordable CPE Devices: Increasing availability of affordable 5G CPE

devices.
- Demand for High-Speed Broadband: Increasing demand for high-speed internet access in homes and businesses.
- Limited Wired Infrastructure: Need for alternative broadband solutions in areas with limited fiber optic or cable infrastructure.
- Rapid Deployment: Faster and more cost-effective deployment compared to traditional wired connections.
- Rural Connectivity: Bridging the digital divide and providing internet access to rural areas.
- Competitive Services: Offering competitive broadband services to challenge existing providers.
- Coverage Limitations: Coverage limitations of mmWave frequencies in certain environments.
- Signal Interference: Potential for signal interference from obstacles and weather conditions.
- CPE Costs: The cost of 5G CPE devices can be a barrier to adoption.
- Network Capacity Management: Managing network capacity to ensure consistent service quality.
- Regulatory Issues: Regulatory issues related to spectrum allocation and deployment.

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AI For User Experience
- Wi-Fi Anti-Interference for connection
- Wi-Fi Enhancement for coverage
- Smart Antenna for best network

AI For User Security
- Anti-attack for user
- Internet Access for children

AI For New Service
- Lower latency for new service
- Higher speed for new service

Product color, shape, interface and functions are for reference only. The actual product may vary.