SAMENA ELITE

TECHNOLOGIES THAT ACCELERATE DIGITAL ECONOMY

Huawei:
How Carriers Can Boost Revenues with All-scenario FWA

stc Bahrain:
Unlocking FWA's Potential in the TechCo Era

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This Quarter

FWA on a Path to Growth

SAMENA E.L.I.T.E

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TECHNOLOGIES THAT ACCELERATE DIGITAL ECONOMY

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TABLE OF CONTENTS

ELITE FWA Club Activity

SAMENA Council-Led Initiative on Fixed Wireless Access (FWA) Continues Focus on Revolutionizing Connectivity...

ARTICLES

Wang Peng
Global 5G Marketing and Solution Sales, Huawei

Shen Li
5G FWA Expert, Huawei

How Carriers Can Boost Revenues with All-scenario FWA

Ahmed Alsharif
Chief Technology & Digital Officer
stc Bahrain

Unlocking FWA's Potential in the TechCo Era

stc

stc Kuwait
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Bocar A. BA
Chief Executive Officer
& Board Member
SAMENA Telecommunications
Council

FWA on a Path to Growth

The Middle East region is leading on the 5G and 5G FWA fronts, as we will observe in this edition of SAMENA ELITE, with Omantel and stc Bahrain sharing their views on FWA. This affirms a strong business case for 5G FWA, and is becoming one of the best services for operators to achieve business success in the 5G era. Industry findings show that pioneer operators are constantly driving revenue growth from early FWA investments. Since the commercial use of 5G in 2019, more than 50% of the world's 5G operators have put 5G FWA into commercial use.

5G FWA is popular around the world due to its excellent experience, fast time to market, and low initial cost. In developed countries such as those in Europe, FWA and optical fibers are developed in a coordinated manner. FWA is deployed in areas with less optical fibers to achieve rapid user growth. In emerging markets, FWA, as an affordable high-speed home broadband access solution, helps operators quickly recover investment costs. In developed FWA markets such as the Middle East, FWA helps operators increase their market share and revenue. FWA has made remarkable contributions to digital inclusion by enabling more families to enjoy digital services, at the same, FWA enabling SME easier connection with 5G private line.

Advancements such as 3 component carrier aggregation (3CC) can allow Operators to combine three different frequency bands to create a much larger overall bandwidth, significantly increasing data transfer rates, and making 5G value-proposition much stronger. Moreover, advancements in terminal devices such as 5G CPEs that support 3CC CA have been marketed,

and have been mass-produced by providers, such as Huawei, MeiG, and T&W. The launch of RedCap CPE makes the price of 5G CPE less than US$60. In general, GSA data shows that the terminal ecosystem is booming. 317 5G CPE models have been released and 218+ models have been used commercially.

This year, the SAMENA Council-supported Elite FWA Club met thrice, and has been successful in creating momentum on FWA and exploiting its potential throughout the region, by engaging multiple Operators and relevant stakeholders having the mission to enhance connectivity, digital inclusion, and monetization of advanced 5G infrastructure. The Club is striving toward enhancing the FWA service experience and driving business growth. The Club, to which SAMENA ELITE serves as a flagship knowledge-sharing and promotional platform, is also supported by

the Council's FWA-centric sub-working groups on experience management, add-on service innovation, and business development. Progress on these fronts is anticipated in 2025, as more members join the Club and as SAMENA Council Members take part in delving into key areas to achieve FWA business success, advocate for FWA ecosystem sustainability and growth, to explore innovation on the CPE front, in combination with the overall trends taking place within the digital services landscape, and to advance FWA deployments across a wide spectrum of services around the region.

Exponential growth in FWA adoption is anticipated, and we can be confident that the year 2025 appears to be a great year for FWA growth, advancements, and new broadband service trends.

SAMENA Council-Led Initiative on Fixed Wireless Access (FWA) Continues Focus on Revolutionizing Connectivity and Digital Transformation

During the third meeting of the ELITE FWA Club, held in Istanbul on October 30th, SAMENA Council CEO & Board Member, Bocar BA, who also serves as the Honorary President of the Club, shared valuable insights on the role of Fixed Wireless Access in advancing digital inclusion. He noted the successful commercial use of 5G FWA by GCC operators and highlighted the need for continued collaboration among ELITE FWA Club members.

BA emphasized that "Operators in the SA-ME-NA region and in the neighboring regions, including Central Asia, have invested heavily in 5G networks. However, satisfactorily monetizing these investments remains a critical challenge. This requires being innovative and collaboration-oriented in order to meet connectivity and digital transformation goals."

Given that there is a direct correlation between making use of 5G investments and empowering other sectors to achieve greater efficiencies through new use-cases of wireless technologies, FWA offers plausible prospects, which need to be explored. The ELITE FWA Club serves this purpose by inviting digital ecosystem partners to join the community and proactively exchange insights and deployment

experiences as well as scenarios for common benefit. The ELITE FWA Club aims to enhance efficiencies across sectors, driving innovation and accelerating digital transformation through 5G use-cases. Launched in 2023, in collaboration with SAMENA Council and members of the Council, including Huawei, the Club met for the third time during the Global Mobile Broadband Forum 2024 (MBBF 2024) in Istanbul.

The Club's 3rd successful meeting was subsequently followed by a GCC Media roundtable to discussed 5G and 5G-Advanced positioning, and how 5G evolution can play a crucial role in driving digital transformation

as well as economic growth. The executive-level meeting, which brought together leadership from SAMENA Telecommunications Council and Huawei, explored the transformative potential of 5G-Advanced and Fixed Wireless Access (FWA) technologies across the Middle East. BA advocated that 5G-Advanced will play a crucial role in driving digital transformation and fostering economic growth in the region. "By enabling the deployment of advanced technologies such as IoT, AI, cyber-security, and automation, 5G-Advanced will create new industries, jobs, and opportunities for businesses", BA stated in the media roundtable.

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POINT-OF-VIEW BY SAMENA COUNCIL

Digital Transformation with 5G FWA and 5G-Advanced

Across all geographies, including the SA-ME-NA and Central Asia regions, based on the observations of the FWA Elite Club members and predictions from the Industry, 5G Fixed Wireless Access (FWA) will continue to grow. This is so not only because of the much higher speeds afforded by 5G FWA, but due to the end-to-end experience and choice that can be offered with FWA. So, we have a technology that carries tremendous potential.

FWA can help focus the Industry's efforts on digital inclusion, and in making our goals of "connecting the unconnected" more cost-effective, and more achievable. Various SDGs demand innovation. In this regard, if we look at FWA purely as an innovation, we can see that its impact is far-reaching. At both the ITU and the UN Broadband Commission, SAMENA Council is strongly contributing to broadband development strategies and innovative ways for engaging potential contributors, especially through new approaches to funding broadband infrastructure development. FWA is a great option for expanding advanced broadband connectivity infrastructure.

Digital transformation and digitally-powered socio-economic development are two pillars on which multiple plans for the future rest – for example, economic sector diversification, increasing productivity, or fulfilling specific ambitions and national plans. Digital transformation processes require innovation, new wireless technology adoption, as well as investment and access to capital. We must accelerate digital literacy and create more jobs. I see FWA as a viable option for meeting these objectives.

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Digital transformation, however, requires predictable and sustainable investments and partnerships, fit-for-purpose collaborative policies and just-the-right regulation, and targeted demand-side approaches. With digital transformation, many SDGs can be met, directly: for example, human capacity-building and advancement through education and better healthcare; responsible production and efficient consumption; controlling and reducing carbonisation; food and livelihood from agriculture; quality and sustainability-conscious urban living; democratisation and improved participation in and benefit from digitally-inclusive government services.

With digital transformation arrives a need to revisit and revive enabling regulatory frameworks, which must be adjusted to stimulate investment while maintaining a healthy level of innovation, competition, and market resilience. There is no true digital transformation if these factors are not in play.

Advancements in 5G have a direct correlation with enhancing purposeful and sustainable connectivity, and

This article was originally published in HuaweiTech.

With digital transformation arrives a need to revisit and revive enabling regulatory frameworks, which must be adjusted to stimulate investment while maintaining a healthy level of innovation, competition, and market resilience. There is no true digital transformation if these factors are not in play.

thus digital transformation. Use-cases such as in the education sector (for example, in the shape of virtual classrooms for impoverished areas, where education infrastructure is insufficient), or in healthcare (especially to connect ambulances, conduct remote patient monitoring or surgeries, etc.) are central to fulfilling objectives of the UN Connect 2030 agenda. Moreover, 5G-A adds greater intelligence and security updates and machine learning (ML) capabilities, which support applications such as extended reality (XR), industrial IoT (IIoT), and smart cross-industry applications. Thus, all of these facets of technology deployment and technological evolution in 5G systems and infrastructure have a direct role in the fulfilment of the SDGs. Multiple types of digital divides can also be overcome through 5G-A, and I view eradication of digital divides to be among the greatest use cases that applied mobile technologies, such as FWA, can help us achieve.

The prospects of 5G-A are high. This is supported by the fact that this region has led on 5G adoption, and thus it is well-positioned to lead on 5G-Advanced fronts as

well. According to the latest GDI index issued by Huawei, whereby ICT maturity is assessed across almost the whole of the SA-ME-NA region, many leading countries of the Middle East are in the "frontrunner" category. This means, many markets are ready or are readying for 5G-A deployment.

However, for telecom operators, the benefits are obvious. 5G-A offers a significant opportunity to expand service offerings and generate new revenue streams – allowing for innovative solutions to be provided to a wide range of customers, including enterprises and industries. Moreover, from an economic perspective, 5G-A will play a crucial role in driving digital transformation and fostering economic growth in the region.

By enabling the deployment of advanced technologies such as IoT, AI, cyber-security, and automation, 5G-A will create new industries, new synergies, and opportunities for businesses and citizens alike. As I see it, 5G-A will contribute to sustainable development, in particular, in the Arab States, by enabling energy-efficient solutions, supporting environmental monitoring initiatives, and enabling circular economy models through IoT and AI, all of which can facilitate the development of smart municipalities and sustainable infrastructure.

Central to the SAMENA Council's mission is ensuring the sustainability of the telecommunications industry and the expanding 5G/5G-A digital ecosystem. This endeavor involves a concerted effort from telecommunications service providers and various stakeholders along the digital value chain to assess how rapid technological changes are impacting, or need to impact, business transformation.

Besides telecom operators and tech providers, regulatory authorities and governments are key players in this dynamic landscape, striving to recalibrate regulatory and economic frameworks to align with new technological advancements and evolving market realities. This

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recalibration involves addressing critical and very complex issues, such as cross-border data transmissions, taxation, spectrum allocations, and the deployment and use of enhanced broadband 5G and beyond for digital services, to name a few.

The disruption caused by these developments necessitates a thorough examination of how policies and regulations can be adapted to support growth and innovation while defending the interests of all stakeholders, as the digital ecosystem accelerates adoption of 5G FWA and 5G-Advanced.

This article is based on a previously published interview of Bocar BA, CEO & Board Member, SAMENA Telecommunications Council, in which he discussed how SAMENA Council's strategic initiatives align with the United Nations' Connect 2030 agenda and sustainable development objectives, and ways to foster digital inclusion for lasting impact.

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Empowering Intelligent Digital Transformation

Business Servitization

Transforming everything as a service

Service Platformization

Operation as a platform, OSS and BSS data governance

Platform Intelligentization

Embedding AI for automation and powering business growth

HUAWEI

Wang Peng
Global 5G Marketing and
Solution Sales, Huawei

How Carriers Can Boost Revenues with All-scenario FWA

Shen Li
5G FWA Expert
Huawei

As 5G is deployed at scale in more countries around the world, the potential for growth in home, enterprise, and IoT scenarios is excellent, offering higher ARPU, better pipe monetization opportunities, and a superior user experience.

FWA: Evolution from copper lines to optical fiber
Unconstrained by physical lines, wireless connections are more flexible and easier to use than wired connections. The rapid evolution of wireless technologies has boosted the capacity of FWA from satisfying basic connectivity needs to replacing copper lines with even higher speeds. FWA has great potential to compete with FTTx, with the peak rate of a 5G site at a single frequency band already comparable to wired 10G PON.

If carriers use 60% of the resources in 2.3 GHz and 3.5 GHz bands to develop FWA, the peak FWA capacity of a single site can reach 8.6 Gbit/s. TDD spectrum distribution for continuous high bandwidth is a common approach taken in many countries that enables 5G FWA capacity to be comparable to that of wired 10G PON.
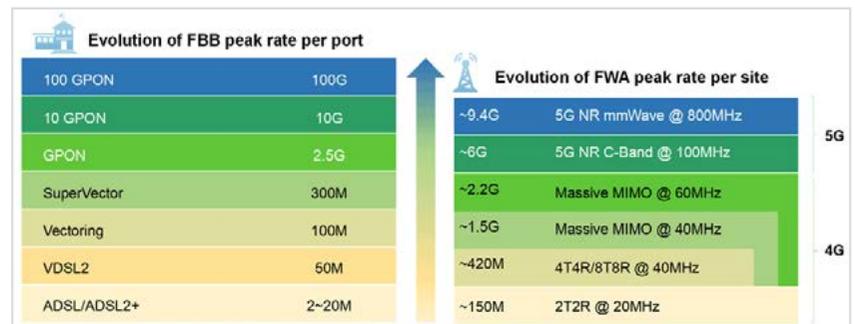

Figure 1: Peak capacity evolution of FBB and FWA cells

Service	Video Resolution	Required Rate
Video	1080p, 60 fps	4.5–9 Mbit/s
	4K, 60 fps	20–50 Mbit/s
	8K, 60 fps	100–200 Mbit/s
	AR/VR	150–200 Mbit/s
Gaming	Xbox	5–15 Mbit/s
	PlayStation	3–25 Mbit/s

Figure 2: Bandwidth requirements of services

FWA development at scale depends on what home broadband users need. In China, the 100 Mbit/s fixed network home broadband package in a tier-1 city in China provides a good example. Excluding IPTV, 8 Mbit/s is sufficient to meet home user needs, as mainstream home services are 480p and 720p OTT videos. For the next three to five years, 100 Mbit/s will be sufficient to meet the needs of most households.
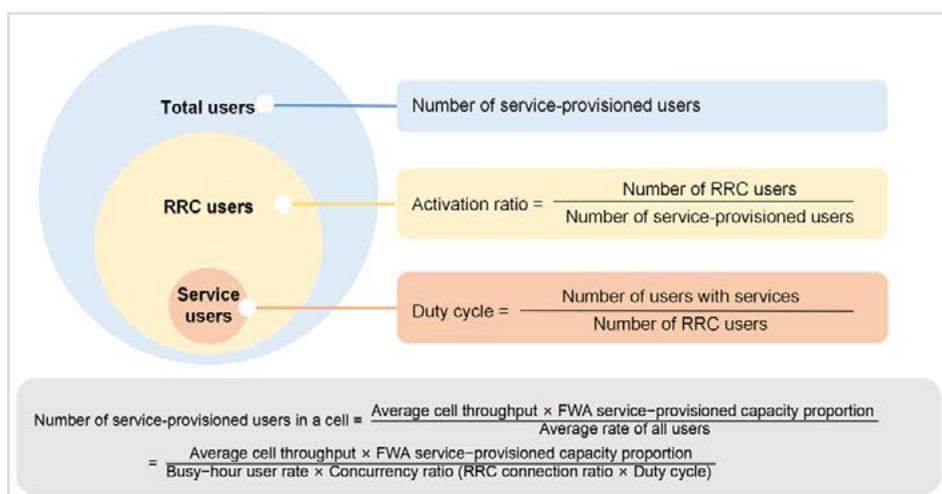

Figure 3: Model of the number of users for which wireless FWA service can be provisioned

FWA services should be provisioned and planned based on user needs and wireless service characteristics. The number of households for which FWA services can be provisioned by a single site depends on the capacity of a wireless site, FWA traffic model, and the service rates users need.

Region	Middle East	Asia Pacific	Europe	Latin America	Northern Africa	Middle East
Type	4G					5G
Activation Ratio	40%	36%	50%	35%	50%	60%
Duty Cycle	19%	30%	10.9%	19%	11.92%	30%

Figure 4: Typical FWA traffic models in different regions worldwide

According to an FWA traffic model data in different regions worldwide, assuming the rate that FWA users need is 50 Mbit/s when the FWA capacity is 8.6 Gbit/s per site, the activation ratio and duty cycle are 50% and 20%, respectively, maximum of 1,720 users can be provisioned in one site. This addresses the urban household density and home broadband rate requirements in most countries.

As 5G is deployed at scale in more countries around the world, the potential for growth in home, enterprise, and IoT scenarios is excellent, offering higher ARPU, better pipe monetization opportunities, and a superior user experience.

FWA packages are mainly speed-based or volume-based with larger-data packages, with prices per GB lower than 5GtoC packages. In the early stages of 5G development, mobile broadband (MBB) networks were generally light load due to the low penetration rate of user devices. In addition, MBB's consumption of wireless resources is unbalanced in terms of time and space, and the busy hours of eMBB and FWA do not overlap. Efficient use of MBB resources during off-peak hours to develop FWA brings more benefits with quicker ROI. FWA is clearly a more efficient means of monetizing pipes.

The Future of FWA: 20% CAGR of users and significant market share outside China
By the end of 2021, the number of 4G/5G FWA users worldwide exceeded 65 million, with 4G FWA users accounting for 95% of the total. 5G FWA users are expected to account for 27% of all users by 2025. As 5G capacity increases exponentially, FWA has become mainstream.

The FWA development experience of leading carriers worldwide shows that while 5G FWA improves perceived speeds, providing diverse bundled services is key. According to Huawei data, more than 80% of carriers that provide commercial 5G FWA offer packages that bundle Wi-Fi mesh, video, and gaming services. Huawei's recommendation for such carriers is the 1+1+X strategy, which means one high-performance air interface that improves the home broadband rate, one seamless Wi-Fi coverage solution, and a variety of home services such as 4K OTT video and cloud gaming.

Figure 5: Traffic distribution of FWA and MBB at different times

In the Middle East, more than 1 million 5G FWA home broadband users provide carriers with 30-80% higher ARPU than 4G FWA. In western Europe, 5G FWA has been applied in many scenarios, including SMEs and RVs.

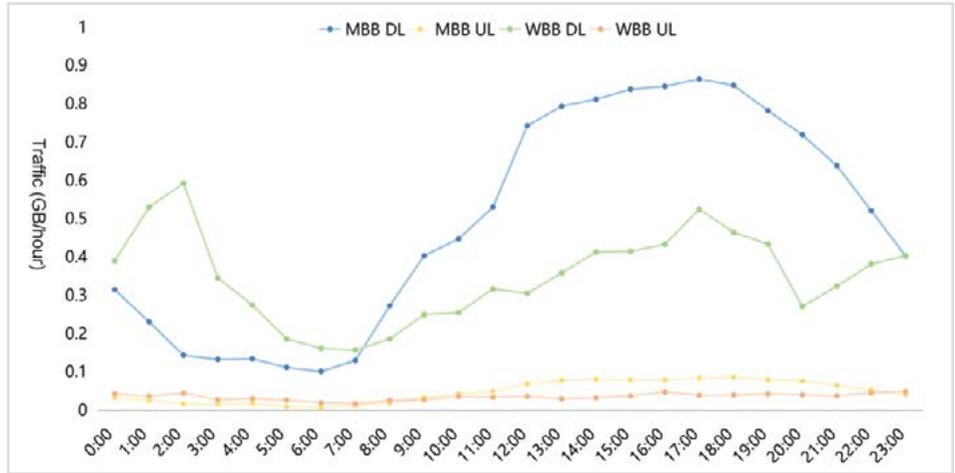The FWA development experience of leading carriers worldwide shows that while 5G FWA improves perceived speeds, providing diverse bundled services is key. According to Huawei data, more than 80% of carriers that provide commercial 5G FWA offer packages that bundle Wi-Fi mesh, video, and gaming services. Huawei's recommendation for such carriers is the 1+1+X strategy, which means one high-performance air interface that improves the home broadband rate, one seamless Wi-Fi coverage solution, and a variety of home services such as 4K OTT video and cloud gaming.

The development of FWA services at scale creates requirements for CPE prices. Developed markets are less sensitive to CPE costs, and so business model design is more important. In markets with fair credit systems, such as North America, the Middle East, and Europe, CPE costs can be dispersed through leasing or installment. In developing markets sensitive to CPE prices, 4G and 5G coordination is needed. To generate higher ARPU, carriers can develop entry-level users through 4G CPE with competitive pricing, and high-end users with 5G CPE with similar pricing to optical fiber solutions.

Understanding broadband IoT from the FWA perspective

The advent of 5G has clearly helped FWA expand from homes to enterprises. For example, work from anywhere is an FWA business scenario for SMEs that provides guaranteed connectivity, as well as work suites, including online meeting software, telephony services, and 24/7 assurance services. The core of these services is to go beyond connectivity and provide micro-integrated, differentiated capabilities. Based on its expertise gained from around the world, Huawei has summarized 12 private line use cases, including SME private line and mobile banking, which are differentiated product portfolios based on FWA connectivity. By July 2021, 27 carriers had worked with Huawei to launch 5G FWA Business services.

FWA can connect homes, enterprises, and everything. The parcel lockers and vending machines that can be found everywhere are all based
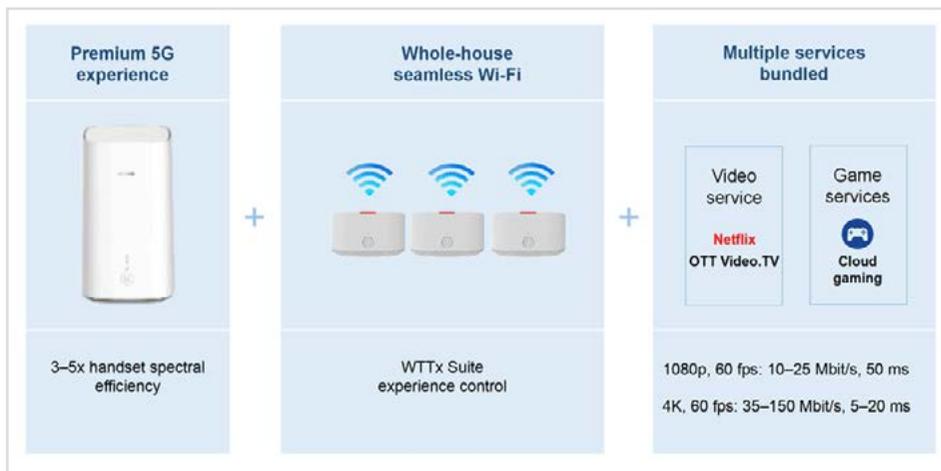

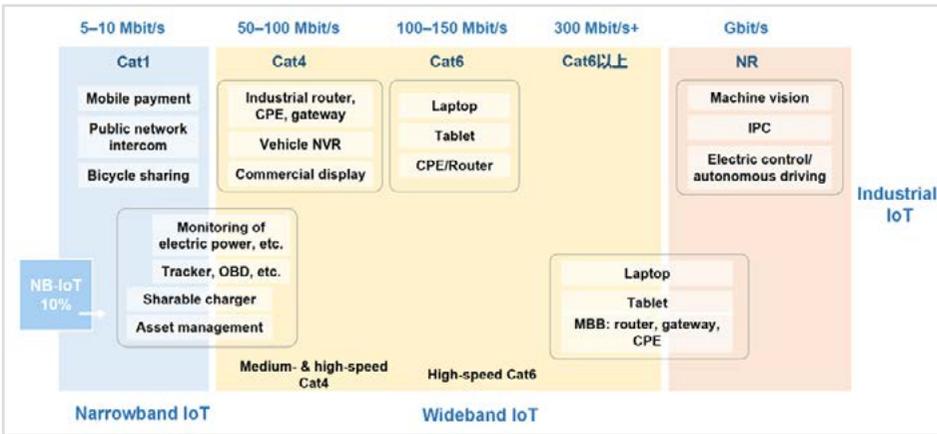Figure 6: 1+1+X wireless FWA service development strategy

Figure 7: Broadband IoT application scenarios and required rates

on Cat4 broadband connections. Broadband connectivity integrates both narrowband IoT (NB-IoT) and high-bandwidth 5G NR. In terms of IoT, the value of connectivity for NB-IoT generally accounts for less than 10% across the industry value chain. Most of the value lies in devices, platforms, and applications. This conclusion is in line with the need for FWA enterprise connectivity to move upstream by providing micro-integration. Carriers should consider developing integration capabilities that match value distribution along the industry value chain.

5G's main advantage over 4G is support for ultra-low latency and ultra-high bandwidth, which enables two types of high-value IoT toB scenarios: Critical IoT and industrial automation IoT. These scenarios require high reliability and low latency, as well as support for features such as 5G LAN and clock synchronization. Massive IoT and broadband IoT are essentially a

continuation of 4G connectivity. Regarding the connectivity scenarios and their value, the following conclusions can be drawn:

- ToC services connect people, and have a large number of users and high value.
- FWA home connectivity is a type of broadband IoT with a massive user market. Carriers must design services based on wireless characteristics, and the core of these services is to adapt busy-hour rates to users' service needs.
- The business model for most Massive IoT services, including NB-IoT and Cat1/Cat4 connectivity, is retailing SIM cards and charging by traffic, which generates low ARPU.
- As a type of broadband IoT, FWA enterprise connectivity is a high-ARPU scenario. Carriers have started to incubate this scenario at scale, but they must be able to integrate and provide differentiated services. For business model design, carriers can use

fixed private lines as a reference, but must adapt it to wireless features. Currently, enterprise services with high symmetric uplink and downlink rates (≤ 50 Mbit/s) are not recommended.

- Critical IoT and industrial IoT are both high-value scenarios. They are differentiated 5G capabilities superior to 4G and are key capabilities for application in vertical industries. They can contribute to the high-value monetization of connectivity.

Unlimited value of network slicing: WAN toB from the FWA perspective
From a geographical point of view, connectivity can be divided into WANs and LANs. WAN connectivity is based on MBB networks with nationwide coverage, whereas LAN connectivity is based on local area networks. FWA falls within the scope of WAN connectivity. While the biggest challenge facing WAN FWA is the impact of multi-service networks on the toC service experience, the biggest challenge for WAN toB services is balancing the impact of multi-service networks on the toC service experience.

Figure 8: Four types of IoT connectivity scenarios

How does FWA balance the experience of multiple services and reduce the impact on the toC service experience? The solution is to use the FWA Suite tool to perform evaluation before service provisioning by evaluating signal quality in real time where the services are provisioned, and calculating the required resources based on the spectral efficiency of the air interface. QoS resource scheduling can set the upper limit of resources usable by FWA. The toC service experience can be ensured using priority-based scheduling during congestion. Given the limited air interface capabilities, the essence of this solution is to allocate resources appropriately and achieve basic slicing of air interface resources.

The recommended method to balancing the multi-service experience on a WAN is as follows: If resources are limited, split the limited resources for toC, toH, and toB services. Then deploy and optimize wireless pipes to accommodate multiple services. If spectrum resources are sufficient and user development is expected to be positive, dedicated networks can be deployed for new services. For example, TDD spectrum can be used to deploy FWA toH/toB dedicated networks.

E2E slicing is a key capability to meet differentiated service requirements of different industries using WAN toB services such as speed acceleration, security isolation, and service assurance. The following FWA guidelines can be used as a reference for WAN slicing:
1. Absolute hard slicing should be used with caution on WANs. Before toB service provisioning, it is recommended that you use the FWA Suite tool to evaluate the resources needed by users before
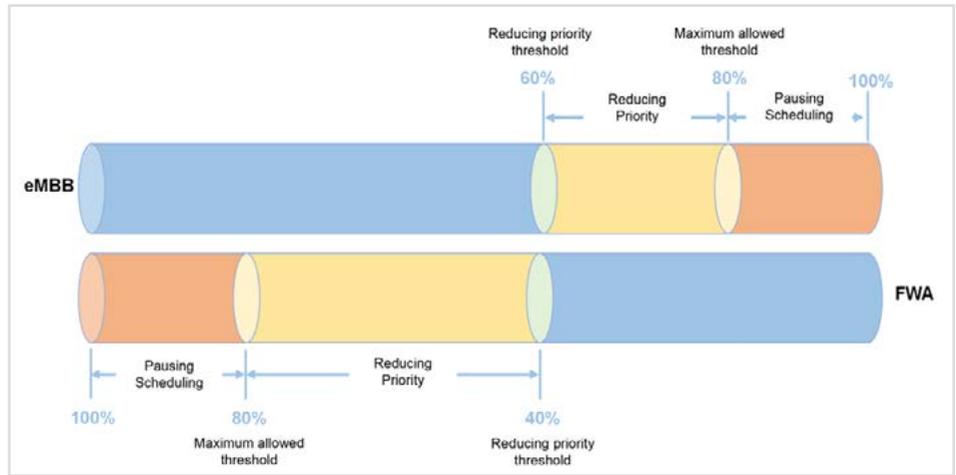
Figure 9: QoS PRB control solution for multi-service networks

toB service provisioning. Doing so can avoid resource preemption that compromises consumer service experience. Soft slicing based on QoS scheduling priorities is more secure.
2. Hard slicing applies to these scenarios: occupation of a small number of resource blocks (RBs), temporary hard slicing (released upon exhaustion), and hard slicing within a small geographic area (toC hot areas should be avoided).
3. Hard slicing on a dedicated network that is isolated from toC resources does not need to consider its impact on toC service experience. This will maximize toB service experience. 5GtoB dedicated LANs support demanding IoT and industrial IoT, and are superior to WANs in this regard.

The key to all types of connectivity carried on a wireless network is to build pipes with sufficient bandwidth. Only a road that is wide enough can accommodate a large number of vehicles through shared lanes, dedicated lanes, and tidal lanes. This type of road enables more options and a greater vision of the future.

FWA is a solution positioned somewhere between wired and

FWA is a solution positioned somewhere between wired and wireless networks, and a crossover product for both homes and enterprises. FWA can involve both narrowband and wideband IoT, and evolves from 4G to 5G. Huawei works to make FWA the ultimate last mile for home and enterprise broadband and facilitate the appropriate use of both wired and wireless technologies in IoT, enabling FWA to be applied in more scenarios.

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Unlocking FWA's Potential in the TechCo Era

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Chief Technology & Digital Officer
stc Bahrain

With nearly 50% of broadband users in the region projected to rely on it by 2030, Fixed Wireless Access (FWA) represents one of the most promising growth areas for telecom operators. However, scaling FWA comes with its own set of challenges: spectrum allocation, cost-effective deployment, and delivering seamless user experiences. Enter EVOLVE—a revolutionary framework unveiled by STC Bahrain. For the first time, the telecom industry in the Middle East has introduced a model that redefines service delivery through AI-driven deployment, predictive assurance, and hyper-personalized strategies. EVOLVE isn't just a framework; it's a game plan for unlocking the immense potential of FWA and future digital services.

EVOLVE: A Blueprint for the TechCo Era
At the heart of this transformation lies EVOLVE—a pioneering framework conceptualized by STC Bahrain to address the evolving demands

> **EVOLVE isn't just a framework; it's a game plan for unlocking the immense potential of FWA.**

of Fixed Wireless Access (FWA) services. Designed to accelerate the critical transition to TechCo, EVOLVE represents a bold new approach, structured around six strategic pillars: Excellent Experience, Value Platforms, Operational Transformation, Leading Opportunities, Value Marketing, and Effective Governance.

First implementation of EVOLVE framework on FWA, has showcased its potential to revolutionize service deployment, service provisioning and service assurance. EVOLVE is more than a framework; it's a vision for the future, where technology, customer-centricity, and operational excellence converge to redefine the telecom landscape.

Breaking Silos: Addressing FWA's Multi-Dimensional Challenges
Deploying Fixed Wireless Access (FWA) services is a complex endeavor that involves seamless coordination across all involved domains including wireless, installation, service assurance, customer care, and operations. Each team faces unique challenges: wireless departments must ensure optimal site selection, transport teams manage backhaul efficiency, target the right audience for user development, while customer care and operations work to provide consistent and reliable service. These silos often lead to inefficiencies,

> **Leveraging tools like digital twins, EVOLVE enables hyper-personalized campaigns that drive ARPU and reduce churn.**

stc signed an MoU with Huawei to serve as a key Enabler for Digital Transformation project adopting EVOLVE Framework.

delays, and misalignment of goals. Recognizing these hurdles, stc Bahrain implemented EVOLVE as an end-to-end blueprint to foster cross-domain collaboration. By integrating AI-driven insights and streamlined workflows, EVOLVE provided a unified framework that aligned all stakeholders, ensuring smooth deployment and enhanced scalability.

The framework's innovative approach addresses deployment challenges with precision. Using AI and ML, EVOLVE enables wireless teams to optimize site selection, while transport teams benefit from predictive analytics for efficient backhaul planning. Automation reduces deployment timelines, allowing operations teams to focus on service reliability. Marketing teams leverage advanced data analytics to personalize campaigns, ensuring the right customers are targeted. Together, these efforts culminate in a streamlined deployment process that not only reduces costs but also accelerates time to market, enhances customer satisfaction, and drives long-term growth.

> **By integrating AI-driven insights, EVOLVE provides a unified framework to streamline deployment and enhance scalability.**

Redefining Service Assurance with EVOLVE

Ensuring consistent quality and reliability is a cornerstone of any successful FWA service where EVOLVE demonstrates its true transformative power. Traditional approaches to service assurance often rely on reactive measures, addressing issues only after they arise. EVOLVE introduces a proactive model, leveraging AI-driven predictive maintenance to anticipate and resolve potential disruptions before they impact customers. Real-time monitoring across the network provides actionable insights to operations teams, enabling swift responses to performance anomalies. This ensures that FWA services remain robust and dependable,

even in challenging conditions. By minimizing downtime and enhancing network stability, EVOLVE not only builds customer trust but also sets a new benchmark for service reliability in the Middle East.

EVOLVE: Shaping the Future of FWA and Beyond

EVOLVE's transformative capabilities go beyond hyper-personalized campaigns; it lays the foundation for sustained growth by enhancing customer engagement and loyalty. By leveraging tools such as subscriber digital twin and advanced analytics, telecom operators can gain unparalleled insights into user behavior. These insights not only improve ARPU and reduce churn but also position operators as leaders in the TechCo transformation. As EVOLVE continues to redefine customer engagement journey, it offers a blueprint for the telecom industry in the Middle East and beyond to adapt, innovate, and thrive in the digital era. For STC Bahrain, EVOLVE is not just a framework—it is a step toward shaping the future of connectivity. 🔵

OBSERVATIONS BY SAMENA COUNCIL

Oman's Digital Transformation with 5G FWA

The Middle East region is experiencing rapid digital transformation, and as a result, the deployment and scaling of 5G FWA services are anticipated to grow. The region has a significantly growing population, driving the demand for digital services and high-speed internet connectivity. Challenges such as infrastructure limitations and human as well as physical geographies are potential deterrents to accelerating connectivity and must be carefully addressed.

Omantel's continuous investment in 5G infrastructure and technology reaffirms its dedication to providing value for its customers. It has also played a key role in enabling the company to continuously grow its 5G traffic and provide enhanced services. Omantel provides extensive network coverage, capacity optimization, and attractive 5G data plans to deliver industry-leading services for its customers. Omantel is now preparing to leverage 5G-A to enhance its offerings. As Oman's first and leading integrated telecommunications provider,

and as a founding member of the SAMENA Council, Omantel aims to usher in the 5G-A era by maximizing network capabilities and enhancing user experiences and business applications.

Omantel was the first telecom services provider in the Sultanate to introduce a 5G network, which it announced to customers in Oman in 2019. Prior to the formal launch, Omantel had introduced 5G as fixed wireless access (FWA) as an alternative to fiber home broadband connections. In view of higher customer experience requirements and the low speed of xDSL, as well as the high maintenance cost of the copper network, Omantel decided to explore the potential of using 5G FWA to provide reliable speed in areas of the Sultanate where fiber connectivity was non-existent or altogether absent.

Key challenges that Omantel aimed to overcome included fulfilling customer demand for higher internet speeds at home, reducing the time and cost of fiber service

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installation, and achieving faster scalability and business expansion throughout Oman's diversified geography. Using radio links between two fixed points to deliver ultra-high-speed broadband to homes and businesses in suburban and rural areas where fiber has not yet been laid was a natural solution. Currently, fiber remains an important elemental addition to the connectivity landscape, albeit with a slower rate of expansion.

Over the years, Omantel has emerged as a global leader in the rollout of 5G Fixed Wireless Access (FWA), achieving an impressive growth rate in 5G FWA connections. Three years after the launch, 5G represented 92 percent of all its FWA connections.

Over the years, Omantel has emerged as a global leader in the rollout of 5G Fixed Wireless Access (FWA), achieving an impressive growth rate in 5G FWA connections. Three years after the launch, 5G represented 92 percent of all its FWA connections. Since the launch, Omantel's share of the wireless home broadband (HBB) market has tripled.

From 2017, when customer demand for higher speeds first emerged, to 2019, when the operator introduced the Sultanate's first 5G mobile network, Omantel has built a thriving 5G service portfolio. It has upgraded its 5G FWA offerings and speeds, making 5G FWA the preferred choice for all new FWA connections in Oman.

Omantel's 5G FWA rollout success is among the world's leading FWA success stories. This success can be attributed to three key factors: timely decision-making and the ability to deliver on customer demand for higher speeds, efficient and quality deployment of outdoor customer premises equipment, and business offerings aligned with customer preferences. In the words of Aladdin Abdullah Bait Fadhil, Chief Commercial Officer at Omantel, and Rotating Chairman, leading the Service Innovation Working Group's activities within the main Fixed

Wireless Access (FWA) Working Group set up by SAMENA Council, "5G Fixed Wireless Access (FWA) has revolutionized the delivery of high-speed broadband across the Sultanate, particularly in underserved rural areas where traditional broadband infrastructure is both challenging and costly to implement. By offering a cost-effective and scalable solution, 5G FWA can be

rapidly deployed to bridge the digital divide, supporting emerging technologies such as IoT, Smart Cities, and environmental sustainability initiatives. This technological advancement not only promotes economic growth by enabling businesses to expand but also improves access to essential services like education and healthcare and other vital sectors which contribute to

the socio-economic development of Oman. At Omantel, we are committed to enhancing the quality of life through greater access to cutting-edge technologies. Our leadership in 5G technology, combined with the most extensive telecommunications network in Oman as well as the most innovative business solutions that we offer to our partners, position us uniquely as the unrivaled technology

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leader. We are currently exploring the potential to further enhance our FWA offering with 5G mmWave technology, aimed at elevating the customer experience for both households and businesses across Oman. By driving innovation and fostering economic development, Omantel continues to be at the forefront of digital transformation in the region."

Zain KSA and Huawei Complete Proof of Concept of the World's First End-to-end FWA Gaming Accelerator

Zain KSA, a leading Saudi digital service provider, in collaboration with Huawei, successfully conducted the first joint verification of FWA Gaming Acceleration at Zain KSA's headquarters in Riyadh. This proof of concept (POC) accurately identifies gaming services and effectively ensures user experience and perception, marking the advent of a new era of differentiated wireless home broadband experiences.

FWA (Fixed Wireless Access) is a technology that extends fixed broadband connections. It utilizes Customer Premises Equipment (CPE) to receive mobile signals from 5G base stations and convert them into Wi-Fi, providing network access for household users. Due to Saudi Arabia's unique geography and a rich variety of indoor entertainment options, FWA quickly captured a large number of household users upon its introduction to the market. It addresses the challenges of deploying traditional fixed-line fiber optic networks while offering convenient and high-speed network connections.

Statistics show that the number of gamers in Saudi Arabia has exceeded 25 million, and their demands for home gaming network quality are increasing. The Gaming Acceleration feature, Service Turbo jointly verified by Zain KSA and Huawei, is a targeted upgrade to the current FWA solution. The POC successfully demonstrated that under full network load (simulated using SpeedTest), the gaming service's high speed and low latency were effectively ensured, with a 90% reduction in jitter and a 70% reduction in latency compared to scenarios without this feature.

The Service Turbo technology, primarily implemented through the slicing or dedicated bearer. Huawei's 5G CPE Pro 5, accurately identifies gaming traffic and subsequently attach the game slicing or triggers the establishment of dedicated bearers in Huawei Core Network and RAN. This ensures the prioritized scheduling and allocation of network resources for gaming traffic. This breakthrough not only enhances and ensures the gaming experience but also rationally and accurately allocates limited network resources, helping Zain KSA offer new options to home broadband users in the market.

Zain KSA's Vice President of Engineering, Eng. Mohammed Abdulaziz AlNujaidi, said: "At Zain KSA, we strive to deliver high-quality connectivity and innovative digital solutions that cater to the tech-savvy lifestyle of Saudi youth. Introducing the FWA Service Turbo aims to enhance the gaming experience, effectively addressing challenges such as network instability and latency. This innovative service is set to deliver differentiated experiences for our users, reflecting our commitment to meeting the evolving demands of a dynamic digital landscape."

Zain KSA has consistently adhered to its FWA strategic development. With the enhancement of multidimensional network capabilities from 5G to 5G-A, Zain KSA remains at the forefront of FWA innovation, meeting users' differentiated network demands and setting a new benchmark for wireless home broadband adoption in the Saudi market and beyond.

With FWA Service Turbo, Zain KSA aims to enable players networked via wireless broadband to enjoy a flawless online gaming experience

Nokia and EOLO Deploy Europe's First 5G Standalone mmWave Network in Italy

Nokia announced it has signed a four-year deal with EOLO, a Benefit Corporation, and the first B Corp in the Italian telecommunications sector, leader in FWA (fixed wireless access) connectivity, to deploy the first 5G standalone mmWave Radio Access Network in Europe. The deal supports EOLO's ambitions to connect underserved communities, helping to bridge the digital divide and the digital speed divide in Italy.

Nokia will supply equipment from its industry-leading 5G AirScale portfolio including Nokia's next-generation, AirScale baseband solutions, Massive MIMO radios, and Remote Radio Head products. These are all powered by its energy-efficient ReefShark System-on-Chip technology and combine to provide superior coverage and capacity. Nokia will also provide its compact, Shikra mmWave radios for incredible 5G capacity, ultra-wide bandwidth, and coverage for a premium user experience. Shikra is well-suited for dense, urban environments such as shopping malls or sports stadiums and support services such as real-time multi-user ultra-high-definition video streaming or augmented reality.

The Nokia Shikra mmWave solution also delivers fixed wireless access (FWA) services to rural or underserved communities where traditional wired infrastructure may be impractical or expensive to deploy. Included in the solution is a Nokia FastMile 5G mmWave outdoor receiver to reliably connect homes to the mmWave network. The outdoor receiver allows operators to use low-cost mmWave spectrum to provide consistent, reliable, ultra-fast wireless broadband services in areas where fiber can be challenging to deploy.

Guido Garrone, CEO at EOLO commented: "This is clear evidence of our ambition to build a FWA network able to offer the best experience for our customers (retail, business and wholesale), reaching all the areas of our country not connected by FTTH technology. Together with Nokia and the other partners involved in the deal, we will be able to bring FWA connectivity up to 1 Gbps to the whole Italian market. By installing a new 5G infrastructure, we will see the further development of our FWA network that will continue to improve the experience for our customers as well as bridge digital divide and digital speed divide. I look forward to working closely and collaboratively with Nokia and our other partners on this project."

Tommi Uitto, President of Mobile Networks at Nokia, said: "We are delighted to get to work with EOLO on this important new deal that will introduce innovative connectivity experiences across Italy and help to connect underserved communities. In particular, the introduction of 5G mmWave solutions from our industry-leading AirScale and FastMile portfolio's will enable premium 5G capacity and connectivity with the highest quality of service for subscribers.".

NOKIA | eolo

Nokia and EOLO deploy Europe's first 5G standalone mmWave network in Italy

5G FWA: A Game-Changer for India's Low Broadband Penetration, Says Qualcomm Executive: Report

US-based chip company Qualcomm reportedly said the Fixed Wireless Access (FWA) service is addressing India's low fixed broadband penetration, especially in underserved urban and rural areas. The company powers nearly 80 percent of the 5G FWA connections in the country, according to Qualcomm Technologies Group General Manager - Connectivity, Broadband and Networking Business Unit, Rahul Patel, in an interaction with ET.

Globally, 5G FWA is gaining traction as a solution for regions with limited fiber networks, enabling high-speed, reliable internet for residential and enterprise users. In India, it is unlocking opportunities for IoT integration, smart manufacturing, and cloud-based applications, according to the report.

Wireless Data Growth Projected
Qualcomm predicts a surge in wireless data consumption and internet subscribers in India over the next five years, fuelled by the rapid deployment of 5G. According to Patel, technologies like the 3.5 GHz spectrum and scalable FWA solutions are making broadband access faster and more cost-effective, bringing high-speed connectivity to underserved regions.

"Qualcomm is deeply invested in enabling this transformation. Through our collaborations with Indian telecom operators and the introduction of cutting-edge technologies, we are strengthening the nation's digital ecosystem to meet the growing demand for reliable, high-performance connectivity. We are with India's ambitions for a digitally connected future, where consumers and enterprises can benefit from enhanced connectivity and new

opportunities in the digital economy," Rahul Patel reportedly said.

Advancing AI at the Edge
The company's AI gateways are enhancing real-time data processing and decision-making at the network edge, with applications in smart cities, industrial IoT, and autonomous vehicle networks. Qualcomm's edge AI technologies, including the Networking Pro A7 Elite platform, are optimising 5G networks and boosting user experiences by reducing latency and enabling personalised services.

Patel explained the company's AI gateway, describing it as "a platform that integrates advanced AI capabilities into network infrastructure, enabling real-time processing, analysis, and decision-making at the edge of the network. By enabling faster data processing and smarter automation, it enhances operational efficiency, reduces latency, and improves user experience."

"This technology has been deployed in several critical use cases, including 5G network optimisation, smart cities, advanced industrial IoT, and autonomous vehicle networks," Patel

said, according to the report.

Explaining how AI at the network edge boosts end consumer experience, Patel reportedly said, "Integrating AI at the network edge significantly enhances the end-user experience by delivering faster, more personalised, and secure interactions. By processing data directly on devices, edge AI reduces reliance on cloud services, leading to lower latency and quicker responses. On-device AI also enables personalised experiences by tailoring services to individual user preferences without compromising privacy. For instance, smartphones can adapt their functionalities based on user behaviour to offer customised recommendations and features."

Wi-Fi 7 Innovation
According to Patel, Qualcomm is also leading the next wave of connectivity with its Wi-Fi 7 roadmap, featuring advancements like 320MHz bandwidth, 4K QAM, and Multi-Link Operation (MLO). Designed for high-speed and low-latency performance, Wi-Fi 7 addresses the demands of bandwidth-intensive applications in homes and enterprises.

5G FWA: Revolutionizing Broadband Connectivity across the African Continent

The advent of 5G Fixed Wireless Access (FWA) in Africa is set to revolutionize broadband connectivity across the continent, addressing longstanding issues related to internet accessibility and quality. With the growing demand for high-speed internet, 5G FWA presents a promising solution to bridge the digital divide and foster socio-economic development. This technology is poised to transform various sectors, including education, healthcare, and business, by providing reliable and fast internet connectivity.

Africa has long struggled with inadequate internet connectivity, which has hindered its economic growth and development.

According to the International Telecommunication Union (ITU), as of 2022, only 28.2% of the African population had access to the internet. This digital divide is more pronounced in rural areas, where the lack of infrastructure and high deployment costs have left millions without reliable internet access.

Despite the promising potential of 5G FWA, several challenges need to be addressed for its successful implementation in Africa.

Adequate spectrum allocation is essential for the deployment of 5G networks. Governments and regulatory bodies need to ensure that sufficient spectrum is made available

to telecom operators for FWA services. While FWA reduces the need for extensive ground infrastructure, investments in base stations, towers, and other supporting infrastructure are still required. Public-private partnerships can play a crucial role in mobilizing the necessary resources. Ensuring that 5G FWA services are affordable for the general population is vital for widespread adoption. Telecom operators and policymakers need to work together to develop pricing models that cater to different income levels. Promoting digital literacy and skills training is essential to enable users to make the most of 5G FWA services. Education and awareness campaigns can help communities understand the benefits and applications of enhanced internet connectivity.

5G Fixed Wireless Access has the potential to revolutionize broadband connectivity in Africa, offering a cost-effective, scalable, and high-speed solution to bridge the digital divide. By addressing the challenges and fostering collaboration between stakeholders, Africa needs to harness the power of 5G FWA to drive socio-economic development and create a more connected and inclusive future for the continent's citizens.
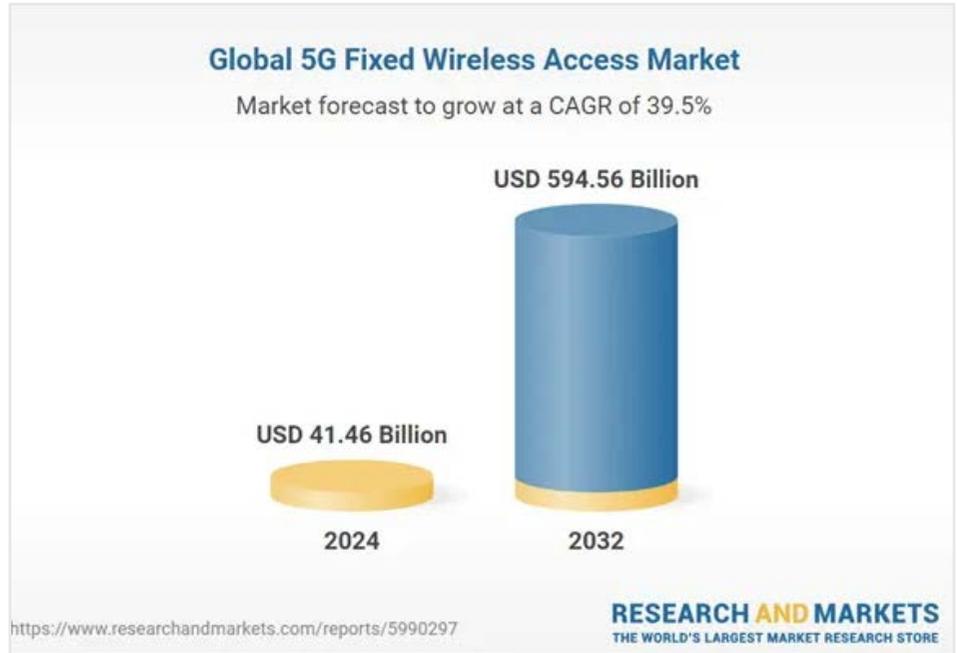
5G Fixed Wireless Access (FWA) Market Forecast Report, 2024-2032 - Governments and Telecom Giants Unite to Push 5G FWA as Affordable, High-Speed Solution for Rural and Remote Areas

The global 5G Fixed wireless access market is witnessing a significant surge, driven by technological advancements, increasing demand for high-speed internet, and strategic initiatives by key players. 5G FWA is emerging as a vital component in bridging the digital divide, offering robust, high-speed internet connectivity to areas with limited access to traditional broadband infrastructure.

One of the most critical 5G fixed wireless access market trends is the rapid deployment and adoption of 5G networks worldwide. As telecom operators roll out 5G infrastructure, FWA is becoming a practical solution for delivering high-speed internet to residential and business customers. 5G FWA leverages the high bandwidth and low latency characteristics of 5G technology to provide internet services that rival traditional fibre and cable connections. This capability is particularly beneficial in rural and underserved urban areas where laying down physical broadband infrastructure is cost-prohibitive. The accelerated pace of 5G network expansion is thus directly fuelling the market growth.

The increasing demand for high-speed and reliable internet connectivity is another significant factor propelling the global 5G fixed wireless access market growth. As more activities move online, from remote work and education to streaming and gaming, the need for robust internet connectivity has never been higher. 5G FWA offers a viable alternative to conventional broadband, providing ultra-fast speeds and stable connections. This is attracting a growing number of consumers and businesses looking for efficient internet solutions, particularly

Global 5G Fixed Wireless Access Market
Market forecast to grow at a CAGR of 39.5%

USD 594.56 Billion

USD 41.46 Billion

2024   2032

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in regions with inadequate wired broadband infrastructure. The ability to quickly deploy 5G FWA without the extensive groundwork required for fibre optics makes it an attractive option for meeting the burgeoning demand for high-speed internet.

Innovative business models and strategic partnerships are also influencing the 5G fixed wireless access market value. Telecom operators are collaborating with technology providers, equipment manufacturers, and government bodies to accelerate the deployment and adoption of 5G FWA. These collaborations are crucial in developing comprehensive solutions that address the technical and logistical challenges of rolling out 5G FWA on a large scale. Additionally, operators are exploring new business models, such as subscription-based services, bundled offers, and flexible pricing plans, to attract a diverse customer base. These strategies are helping to drive the market growth by making 5G FWA more accessible and affordable to a broader audience.

The role of government initiatives and regulatory support cannot be understated in the growth of the 5G fixed wireless access market. Many governments worldwide are recognising the potential of 5G FWA in achieving their digital inclusion goals. Policies aimed at promoting the adoption of 5G technology, coupled with financial incentives and subsidies, are encouraging telecom operators to invest in FWA infrastructure. Regulatory frameworks that facilitate the allocation of spectrum and streamline the deployment process are also playing a crucial role in accelerating the market growth. The support from public sector entities is pivotal in overcoming the initial deployment challenges and fostering a conducive environment for the widespread adoption of 5G FWA.

Technological advancements in network equipment and consumer devices are enhancing the 5G fixed wireless access market value. Improvements in antenna technology,

signal processing, and network management are enabling more efficient and reliable FWA services. On the consumer side, the availability of 5G-compatible routers and customer premises equipment (CPE) is making it easier for users to adopt 5G FWA. These advancements are not only improving the performance and reliability of 5G FWA but also reducing the cost of deployment and operation, thereby making it a more attractive option for both providers and consumers.

The COVID-19 pandemic has further underscored the importance of reliable internet connectivity, boosting the global 5G fixed wireless access market expansion. With a significant increase in remote work, online education, and digital entertainment during the pandemic, the limitations of existing broadband infrastructure have become more apparent. 5G FWA has emerged as a critical solution

to address these limitations, offering quick and efficient deployment to meet the sudden surge in demand for high-speed internet. The pandemic has thus accelerated the adoption of 5G FWA, highlighting its potential as a future-proof connectivity solution.

In terms of regional dynamics, the 5G FWA market is experiencing varied growth patterns across different geographies. North America and Europe are leading the market, driven by early adoption of 5G technology, substantial investments by telecom operators, and strong regulatory support. The Asia Pacific is emerging as a significant growth region, with countries like China, Japan, and South Korea making rapid strides in 5G deployment. The region's large population and increasing internet penetration are creating substantial opportunities for 5G FWA. Meanwhile, developing regions in Africa and Latin America are also beginning to explore

the potential of 5G FWA to overcome connectivity challenges, albeit at a slower pace due to economic and infrastructural constraints.

Competitive Landscape
The report looks into the market shares, plant turnarounds, capacities, investments, and mergers and acquisitions, among other major developments, of the leading companies operating in the global 5G fixed wireless access market. Some of the major players explored in the report are as follows:
• Samsung Electronics Co. Ltd.
• Huawei Technologies Co. Ltd.
• Telefonaktiebolaget LM Ericsson
• Nokia Corporation
• Inseego Corp.
• Qualcomm Technologies, Inc.
• Verizon Communications Inc.
• Siklu Communications, Ltd.
• CommScope, Inc.
• Cohere Technologies Inc. 🔵

For more information about this report visit https://www.researchandmarkets.com/r/lxq0mu

T-Mobile Unveils New Internet Plans with More Value and Benefits

T-Mobile — the fastest growing internet provider in the U.S. — is shaking things up again, announcing three new 5G Home Internet and Small Business Internet plans, starting at just $35 a month with AutoPay and a voice line. The plans will come with new perks, enhanced performance and Price Lock so customers' price for 5G internet won't change as long as they stay on their plan (exclusions like taxes and fees apply) — giving 5G Home Internet and 5G Small Business Internet customers more value and options than ever before. And they're all powered by the Un-carrier's leading 5G network. These plans will be available to new and existing home and small business customers. More on what's included in the new plans is shown in the table. 🔵

T-Mobile Home Internet			
Plans	**Rely**	**Amplified**	**All-In**
Monthly Price w/AutoPay	$50 $35 w/ voice line	$60 $45 w/ voice line	$70 $55 w/ voice line
Price Lock: T-Mobile won't raise your rate on internet. Exclusions like taxes and fees apply.	✓	✓	✓
Unlimited data, no annual contracts, taxes and fees included, Simple Setup, T-Mobile Tuesdays, 15-day Test Drive	✓	✓	✓
Gateway Included	✓ Fast Gateway	✓ Faster Gateway	✓ Faster Gateway
Standard Security	✓	✓	✓
Advanced Cyber Security		✓	✓
Streaming on Us			✓ Hulu (With Ads) The Paramount+ Essential Plan
Mesh Access Point Included			✓ One Included
24/7 tech support with Assurant® Personal TechPro			✓

Delivered via 5G cellular network; speeds vary due to factors affecting cellular networks including data prioritization

Rainx Launches the101 Range of 5G Fixed Wireless Access (FWA) Routers for Mobile Network Operators (MNOs)

rainx, a leader in 5G Fixed Wireless Access (FWA) solutions, has launched the101 range, an advanced ecosystem of fixed wireless 5G and Wi-Fi access products designed to meet the high standards of modern Mobile Network Operators (MNOs), Mobile Virtual Network Operators (MVNOs) and their customers.

Targeted to the demands of the modern telco
As demand for 5G-enabled FWA continues to surge, MNOs face complex challenges in scaling network capacity and quality for fixed locations, while managing the concurrent load on mobile networks. Recognising this challenge, rainx has engineered the Customer Edge approach, an integrated ecosystem of products and services designed to empower operators to manage and optimise the customer experience. This begins with the101 range of 5G smart routers, which double as network probes, feeding real-time insights to theStation, a smart managed services platform.

theStation provides operators with deep network insights, enabling accurate, proactive decisions on coverage and capacity expansion. Operators can access detailed data

on network performance in the home, including Wi-Fi clients, usage patterns, speed and latency – providing proactive support and direct customer communication through the101's touch screen. This visibility gives MNOs comprehensive control over the entire FWA ecosystem, helping to streamline network load management, anticipate capacity needs, and deliver high-speed connectivity for both residential and commercial customers. Key Products in the101 Range include:

the101 Pro 5G smart router
Built for premium, high-demand users, the101 Pro offers advanced 5G capabilities with the new MediaTek (MTK) T830 platform that delivers sub-6Ghz 5G with speeds of up to 7 Gbps, Wi-Fi 7 and 300MHz 4 carrier aggregation. Its powerful hardware ensures optimal performance for bandwidth-intensive applications, including cloud gaming.

Ripple Messaging™ offers MNOs a direct communication channel to the device's 2.1" touch screen for real-time support and service notifications.

the101 5G Smart Router
rainx's mid-range offering is powered by an MTK T750 platform with 200MHz

two carrier aggregation and AX3600 Wi-Fi 6. With a 1.8" touch screen display, it offers smart features like "Scan to Connect", direct messaging and a built-in speed test. It's available with a choice of 101 skins to suit customer tastes. the101 also offers managed services through theStation.

the101 Xtender Smart Mesh Wi-Fi
the101 Xtender broadens 5G coverage, enabling MNOs to deliver high-quality, uniform connectivity throughout larger spaces. As part of the mesh network, Xtenders integrate directly with 101 routers, allowing operators to address Wi-Fi coverage gaps and deliver a consistent, high-speed experience across homes or office spaces.

the101 Loop
A new portable 5G router designed for today's always-connected consumer. With built-in 5G, a 5.5" LCD touch screen, 25W stereo sound and a cinematic camera, the Loop lets you connect in exciting new ways. MNOs can leverage the Loop's multimedia capabilities to offer premium services, build customer loyalty and create new ARPU (Average Revenue Per User) opportunities through integrated 5G and Wi-Fi.

"Through smart hardware and services, we're partnering with MNOs and MVNOs to unlock the potential of 5G," said Brandon Leigh, Founder and Director of rainx. "Our ecosystem empowers operators to monetise latent 5G capacity, create new revenue streams, and addresses the shift from spiky mobile traffic to high, steady usage at fixed locations. Our Customer Edge approach provides operators with the deep insights they need to make informed decisions on their networks, manage the customer experience and generate ROI from 5G."

Fixed Wireless Access Users Go Past FTTH, Consume 600 GB Data a Month

Just over a year after its launch, fixed wireless access (FWA) homes — powered by 5G — are consuming data at unprecedented levels. According to telecommunications companies (telcos), who have been taken by surprise, the average data consumption per subscriber home on FWA has reached a staggering 500 to 600 gigabytes (GB) per month, far surpassing the consumption of consumer homes on fibre-to-the-home (FTTH) broadband.

Telcos report that FTTH services, which are more stable and offer higher speeds, have seen monthly consumption per subscriber home ranging from 250 to 300 GB.

FWA services were first introduced in India by Reliance Jio in September last year, initially in eight cities, and are now available in over 7,700 towns and cities across the country. In what is the fastest rollout of FWA in the world, Jio reached 2.8 million subscribers in the second quarter of 2024-25, more than doubling its subscriber count from the previous quarter. Its target is to reach 100 million homes with FWA and FTTH.

Bharti Airtel, which launched its services a few months after Jio in Delhi and Mumbai, has now rolled out FWA in around 1,300 towns and cities across India. It is also upgrading its network from a non-standalone 4G core to a standalone 5G core, which will support FWA speeds.

In FWA, the last mile to the home is wireless 5G connected to a tower, making it easier to scale up broadband rollout. In FTTH, the last-mile connection is on fibre, for which

telcos require permission for right-of-way to install the fibre underground — a time-consuming process.

FWA is already a key element in monetising 5G investments. FWA data usage is a whopping 16 times greater than that of mobile data, which is currently pegged at around 30 GB per subscriber per month. This also translates into four to five times higher average revenue per user compared to a mobile subscriber.

Ericsson estimates that 5G-powered FWA will soar in India, reaching 85-100 million homes by 2030. Within a few years, India is expected to overtake the US, which currently has 7 million customers. India has already surpassed 3 million 5G-powered FWA subscribers, and globally, the number of 5G FWA subscribers is expected to increase.
Experts suggest that the high data consumption on FWA may be due to the easy availability of broadband in homes in areas previously unconnected by FTTH, creating unsatisfied demand.

A top executive from a leading Indian telco offering the service states, "We did not expect that FWA data usage

would be far higher than FTTH. We believe this is due to unsatisfied demand for data in areas that were not connected with FTTH, which is slow to roll out. Once FWA was introduced, homes with multiple family members took advantage of the high speeds to stream movies and videos. It might stabilise after the initial phase of the launch as more subscribers and homes are added."

FWA: The data powerhouse of India
Data consumption on fixed wireless access (FWA) is 16 times higher than that of a mobile subscriber and nearly double that of fibre-to-the-home in a month
• Average revenue per user of FWA homes is four to five times higher than that of mobile subscribers per month
• Estimates suggest that between 85 and 100 million homes in India will be connected with FWA by 2030
• Reliance Jio hit its first 1 million FWA subscribers within 90 months but reached its next million in just 60 days
• Bharti Airtel is upgrading its network from non-standalone to standalone 5G to provide better quality FWA service to customers 🌐

Verizon Business, TriMet Delivering Advanced Mass Transit Capabilities to Portland Region

Verizon Business has announced the activation of more than 740 new Fixed Wireless Access (FWA) lines with the Tri-County Metropolitan Transportation District of Oregon (TriMet), a transit agency providing bus, light rail, commuter rail, and paratransit service in the Portland metro region.

FWA delivers fast, reliable, and scalable wireless network connectivity.

The ample bandwidth provided by FWA enables TriMet to leverage data-rich and mission-critical applications to meet today's demands, meeting its mission of "connecting people with valued transportation options that are safe, convenient, reliable, accessible and welcoming for all."

TriMet uses mobile data to support many key technologies, including allowing riders to pay fares using their mobile wallet or contactless payment card and providing state-of-the-art connectivity and information to transit operators. In collaboration with regional traffic agency partners, TriMet is using mobile data to pioneer cloud-based Transit Signal Priority that improves traffic flow efficiency, speeding up buses without causing delays for drivers, cyclists, or pedestrians while improving safety and reducing carbon emissions.

These are just some examples of the benefits for commuters in the Portland area thanks to Verizon Business and TriMet. Future plans by TriMet include using their enhanced mobile data to further improve system performance and security.

The activation of the new FWA lines represents a continuation of an already strong relationship between Verizon Business and TriMet. Verizon Business is the exclusive critical connectivity provider for the Portland-area agency that provides multimodal transit service across a 533-square-mile service district.

GeoLinks Hires Former AT&T Exec for Fixed Wireless Buildout

GeoLinks, a trailblazer in fixed wireless network solutions and a leading provider of enterprise-grade broadband Internet in California, Arizona, and Nevada, announced Kevin Hetrick as its new Chief Executive Officer. Effective immediately, Hetrick steps in with over 25 years of dynamic telecom and wireless industry leadership experience, poised to drive GeoLinks' ambitious growth in network delivery and service innovation with

an enhanced portfolio of services and products.

Controlling the nation's largest portfolio of Local Multipoint Distribution Services (LMDS) spectrum, GeoLinks is set to expand its footprint and fast-track its nationwide network buildout under Hetrick's expert guidance.

Hetrick brings a wealth of high-impact

experience, having served as Chief Operating Officer at Strategic Venue Partners (SVP), where he spearheaded operations for advanced wireless solutions across essential sectors. Prior to SVP, Hetrick spent more than two decades at AT&T, ascending to Vice President of Wireless Radio Access, Construction & Engineering, where he was instrumental in AT&T's 5G Network deployment and other critical AT&T infrastructure projects.

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