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April-June, Volume 1, 2024



Tele2 (Kazakhstan)
Implementing and Advancing FWA in Kazakhstan: Strategy and Challenges



Huawei
5G FWA: Defining the Future of Home Broadband

FWA

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This Quarter

A New Era of Broadband Empowerment

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stc Kuwait

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Bocar A. BA
Chief Executive Officer
& Board Member
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Council

FWA: A New Era of Broadband Empowerment

Announced at the second forum of the SAMENA Council-supported ELITE FWA Club earlier this year, we have witnessed the start of a new digital transformation era in Kuwait, led by stc's 5G home broadband solutions, which not only support 5G investment monetization efforts but shed light on how 5G Fixed Wireless Access services can catch momentum in the region and the neighboring regions, where 5G adoption is on the rise.

Currently, Fixed Wireless Access (FWA) adoption rate is about 50% for all 5G networks, which are expanding at a fast pace, giving 5G rollouts an unprecedented edge over previous generations of mobile technology rollouts. Already about two billion 5G connections are in existence, presenting a solid case for FWA deployment and leveraging this fixed high-speed broadband technology to meet requirements for both connectivity and digital-economic growth.

Across all geographies, including the SA-ME-NA and Central Asia regions, based on the observations of the ELITE FWA Club members and predictions from the Industry, 5G 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.

FWA is deployed in areas with limited optical fiber penetration, to achieve rapid connectivity and digital inclusion, hence user growth. The technology is already demonstrating how operators can fast-track investment recovery, while making remarkable contributions to digital inclusion, SME business enablement through 5G private lines, and a myriad of business and end-user services.



Accounting for what FWA can truly achieve, SAMENA Council-supported ELITE FWA Club has dedicated itself to fostering dynamic dialogue as well as experience and knowledge exchange within the FWA industry in SAMENA Council's multi-regional community. 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. Moreover, the Club is organizing its quarterly members forums to focus on particular areas of interest to FWA stakeholders, and to delve into key areas

to achieve FWA business success, advocate for FWA ecosystem sustainability and growth, and to advance FWA deployments across a wide spectrum of services.

In order to speed up progress-making on the FWA front, especially by equipping regional Telecom Operators and relevant stakeholders from across the SA-ME-NA and Central Asia regions with information, insights, and to allow for visibility and achievements of new milestones by the private sector, we invite your interest and participation in SAMENA ELITE to showcase your experience in launching FWA and creating in-demand offerings in your home market. 🌐

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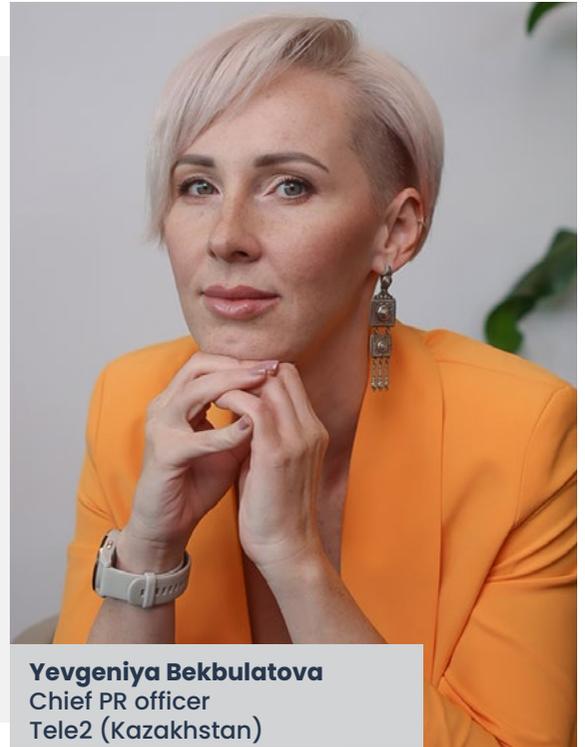
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Implementing and Advancing FWA in Kazakhstan: Strategy and Challenges



Yevgeniya Bekbulatova
Chief PR officer
Tele2 (Kazakhstan)

The 5G generation offers numerous advantages over its predecessors. However, possessing the tool is one thing; learning to profit from it is another. Currently, mobile operators face significant challenges in monetizing 5G.

One of the few rapidly developing areas that allows for business scaling and generates revenue is FWA, which stands for Fixed Wireless Access, providing broadband through cellular networks. The dynamics of development, growth in subscriber base, and revenue following the launch of FWA are highly encouraging for cellular companies. It is closely associated with the development of the 5G standard. Additionally, the rapid development of Mobile Broadband (MBB) is closely linked to social and economic growth. Thus, the Fixed-Wireless Access (FWA) technology can play a key role in expanding internet usage. In turn, telecom companies will implement innovations, develop their business, and increase profits. For the use of FWA technology, direct visibility and open spaces are important for the equipment to

transmit the radio beam from one base station to another. Therefore, a clear disadvantage is the negative impact of climatic factors and terrain features on the signal. Nonetheless, its implementation is easier than laying wired networks.

Analysts from the Speedtest Intelligence research division emphasize that Kazakhstan already has a significant customer base equipped with 5G-capable devices—more than 53% of tests conducted nationwide in the fourth quarter of 2023 were performed on devices supporting the fifth-generation network. Currently, Tele2/Altel is saturating the market not only with affordable 5G smartphones but also with routers that support the new standard.

Tele2/Altel is actively developing Fixed Wireless Access (FWA) technology, providing broadband internet through wireless networks. Given the specifics of Kazakhstan's telecom industry, FWA has always been at the core of the company's business model. With the advent of 5G and its expanding coverage, FWA

Tele2/Altel is actively developing Fixed Wireless Access (FWA) technology, providing broadband internet through wireless networks. Given the specifics of Kazakhstan's telecom industry, FWA has always been at the core of the company's business model. With the advent of 5G and its expanding coverage, FWA is emerging as a vital alternative to cable internet.

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Tele2/Altel sees significant potential in FWA, particularly in areas where broadband penetration is below 50%. Considering the urban topography, fiber-optic operators are hindered by high costs from fully expanding their networks. However, consumers are willing to invest in new technologies

that deliver high speeds and stable connections. Bolstered by 5G, FWA is becoming a key player in the market, providing an alternative to traditional DSL and FTTH connections and competing with GPON.

The bias that cable internet is more reliable is an obstacle to the widespread acceptance of FWA. Nonetheless, experience shows that FWA's stability and speed are on par with cable counterparts, evidenced by increased sales and reduced customer churn who have tried the technology. Research indicates that Kazakh users primarily consume content at home, which affects speed characteristics and mobile internet experience.



Stepan Glushkov, Converged Product Director, notes that modern FWA equipment operating on dual-band Wi-Fi frequencies—2.4 and 5 GHz—offers higher data transmission speeds and reduced device

interference, which is especially relevant for apartment buildings. A competitive edge is also seen in Tele2/Altel's existing provision of 4G home internet. As 5G is deployed, FWA routers operate in adjacent areas, offering speeds 40-60% higher than standard 4G routers, thus ensuring access even in areas with unstable signals.

FWA primarily targets the suburban/rural sector where cable laying is impractical or uneconomical. It's also convenient for rental housing and apartment buildings. The benefits are clear for traditional households, as well as those seeking mobility and the ability to quickly transfer internet services to new locations without additional cabling costs, including freelancers and small businesses. Mobile operators have the advantage of extensive network expansion experience, offering a scalable and stable connection to an increasing customer base against rising consumption volumes.

The popularization of FWA and the positive market response have shown demand surpassing expectations. Within four months of launching the FWA service, customer preference for 5G equipment accounted for two-thirds of sales, despite 5G coverage being less than 30% of households. Customer retention doubled after three months of service, indicating the potential for further quality improvements, and sales of home internet connections have doubled from the previous year.

Tele2/Altel's primary goal is to ensure the availability of the FWA service, which is easier to install and often exceeds the quality of traditional cable internet. The cost of equipment—a key barrier—is being addressed through flexible pricing strategies and discounts. For

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instance, a 50% discount campaign demonstrated economic viability by generating sales that offset the initial high cost of equipment. Innovative approaches to reducing the initial price barrier include rental, installment plans, and subsidies.

Moreover, Tele2/Altel's FWA technology integration becomes part of a broad ecosystem of services offered by the operator. Bundle deals include additional services such as SIM cards for home internet routers and smartphones, access to over 200 TV channels and multiple online cinemas, the ability to connect up to five devices simultaneously, and a single billing system, which simplifies subscription management and positions the service as a direct competitor to traditional fixed internet providers.

Kazakhstan has tremendous potential for FWA development, considering

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its vast territory and relatively sparse cable network coverage. The technology's deployment fosters economic growth by facilitating internet access, which in turn enables companies to increase revenue through sales expansion. With a strategic approach and positive market reception, FWA stands a chance of transforming the conventional architecture of home internet consumption by offering improved services, enhanced

mobility, and cost-effective solutions for a diverse consumer base. Tele2/Altel's Pioneering Role in the Advancement of 5G Technology in Kazakhstan Tele2/Altel, a prominent player in Kazakhstan's telecommunications industry, is at the forefront of deploying 5G technology across the country. This initiative is part of the company's commitment to providing cutting-edge services and enhancing digital connectivity, which is pivotal for economic growth

and technological advancement in Kazakhstan. The journey of 5G in Kazakhstan under Tele2/Altel's stewardship marks a significant leap forward from previous telecommunications standards. With 5G, Tele2/Altel aims to deliver ultra-high-speed internet and remarkably low latency, which are crucial for modern applications such as smart cities, automated industries, and advanced mobile applications. This technology is not just an upgrade in speed and efficiency but also a transformational shift that enables a wide array of new applications and services that were previously unattainable. Community engagement and customer education are also integral to Tele2/Altel's 5G deployment strategy. The company is committed to informing the public about the benefits and potentials of 5G technology. Through workshops, seminars, and media campaigns, Tele2/Altel is raising awareness about how 5G can transform everyday life and fuel economic development, thereby fostering a more receptive environment for technology adoption. As Tele2/Altel continues to expand its 5G network across Kazakhstan, the impact of this technology is becoming increasingly apparent. It is enhancing mobile connectivity and opening up new opportunities for innovation in various sectors including healthcare, education, and transportation. With a clear vision and strategic implementation, Tele2/Altel is setting the stage for a digitally empowered Kazakhstan, driving forward the nation's ambitions to become a leading digital economy in Central Asia. 🌐



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Yang Tao
Vice President of Huawei's
5G<E TDD Product Line

5G FWA: Defining the Future of Home Broadband

5G FWA is developing rapidly world-wide, which has become a mainstream service for more than half of 5G operators and has achieved rapid growth in various markets around the world. Featuring fast deployment, excellent user experience, and good ROI (Return on investment), FWA is growing faster than other home broadband mode in many countries and has become the best way for operators to rapidly expand their user base, accelerate business success, and fulfill the social responsibility of providing universal home broadband coverage. According to multiple industry predictions, in the next five years, the number of 5G FWA users will soar from 12 million to 50 million. Embracing the strong growth momentum of FWA, the 5G FWA industry has become mature. By the end of 2023, GSA announced that 261 manufacturers have launched 308 types of 5G CPEs, among which at least 209 types area available for commercial use. The price of 5G CPEs will continue decreasing to a range from USD40 to USD60 in 2024, approximating that of 4G CPEs. In addition, high-performance CPEs that support 3CC aggregation for 5.5G

have come to market. These make the FWA industry poised for faster global expansion. According to the Fixed Wireless Access CPE Vendor Survey report 2023 on the GSA official website, it is estimated that 21.6 million indoor CPEs, 3 million outdoor CPEs, and 7.4 million other types of CPEs such as MIFI will be shipped in 2024.

FWA services are diversifying home broadband services and booming in all regions around the world.

In leading FWA markets, such as the Middle East, the emergence of 8K video and cloud gaming diversifies home broadband services and raises the demand for high-speed home broadband, particularly for higher bandwidth, faster video rates, and lower gaming latency. Multi-carrier aggregation and user service experience assurance enable FWA service rate of up to 500 Mbps, which ensures a video or gaming experience as good as or even better than that with optical fibers. On the other side, Redcap technologies and CPEs have been made mature to help operators accelerating the migration of 4G WTTx users to 5G and quickly

With the rapid development of 5G technologies, fixed wireless access (FWA) is gradually defining the future of home broadband. With its advantages such as fast deployment, high-quality experience, and good ROI (Return on investment), 5G FWA has become the first choice for home broadband services around the world. This article will explore the growth of 5G FWA in different markets, its technology evolution, and the FWA end-to-end solutions which accelerate the sustainable development of FWA, revealing how 5G FWA will shape the new landscape of home broadband services.

expanding operators' market shares. In some developed markets like Europe, FWA is mainly a complementary solution to optical fibers. Initial deployment of FWA in these markets focuses on towns and villages, which require superior coverage to be provided at low costs. These markets can use a device-pipe coverage improvement solution backed by Massive MIMO technology and CPEs with high antenna gains, which significantly expand service provisioning areas. Only one site is required for covering a village with high-speed home broadband and more users will be served, shortening the ROI period. With the allocation of 5G spectrum, Asia, Latin America and Africa will become the main emerging markets of 5G FWA in 2024. In order to facilitate the monetization of these business opportunities, "one MBB network for two purposes" has become a popular trend. One is that a frequency band (the most popular is 2.3 GHz and 2.6 GHz) is used for both 4G and 5G, and the other is used for both MBB and FWA users. Under this strategy, the network spectrum efficiency and the ROI both can be maximized. At the same time, many cost-effective FWA solutions have been developed to make 5G FWA affordable for more users. While the price of 5G CPE is decreasing, CPE sharing for multiple households is still being explored to further reduce cost per line of FWA.

Easy FWA: E2E solution to support FWA sustainable development

Huawei is supporting the sustainable development of FWA in different markets by working with operators to continually improve their E2E FWA solutions so that they can provide

better user experiences and wider coverage at a lower cost.

Easy provisioning: Potential area identification and precise speed estimation are conducted. Digital tools are used to accurately identify potential users in high-value areas based on hotspot maps, high-value

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user maps, and network resource allocation maps. The careful selection of target areas represents a shift from passive sales to a much more proactive approach.

Easy Experience Management: Low costs and ultra-coverage accelerate user development. FWA's Self-Defining Experience (SDE) helps flexibly customize eMBB and FWA user experiences. MetaAAU works with high-performance CPEs to improve coverage by 10 dB, which facilitates user development and experience upgrades. In addition, Turbo uplink 2.0 can improve the network coverage by about 2 to 4 dB. 5G networks combine cutting-edge software and hardware features to deliver more advanced services and better user experiences. As home broadband services have

diversified, the FWA UE-perceived rate has increased to 300-500 Mbps in 3CC CA scenarios. Services such as 8K HD video and gaming place higher requirements on network latency. FWA Service Turbo can ensure real-time service experiences and make it easier for operators to explore new home broadband service spaces. For entry-level FWA requirements, Huawei provides the "1-to-N" solution, which means 1 CPE can be connected to N households. This helps operators reduce costs and shorten the payback period while ensuring user experiences.

The RedCap industry is mature and the technology is ready. RedCap is priced at the same level as 4G, but it offers significant advantages that mean initial investments can be recouped faster. This makes it more suitable for large-scale deployment. In addition, the user-perceived rate of RedCap FWA is much higher than that of 4G WTTx, which accelerates the migration of 4G WTTx users to 5G.

Easy O&M: How to motivate users and retain users are two key issues for operation. Experience-based O&M shifts from network level to user level, identifying potential churn users. In addition, remote maintenance improves O&M efficiency by 90%.

FWA services are diversifying home broadband services and booming in all regions around the world. The FWA industry, ecosystem, and business models all are becoming increasingly mature, driving FWA toward a new home broadband future, and to materialize new opportunities for both businesses and end-users. 🌐

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SAMENA COUNCIL'S OBSERVATIONS

stc's 5G-Powered Trailblazing Digital Journey in Kuwait

stc Kuwait has undertaken a transformative advancement in high-speed, high-reliability broadband access for both commercial and residential users with the launch of 5G RedCap Fixed Wireless Access (FWA).

Announced at the second forum of the SAMENA Council-supported ELITE FWA Club earlier this year, stc Kuwait has deployed what may be considered as one of the first in the Middle East. This commences a new era in the transformation of the digital landscape of Kuwait, setting new benchmarks in digitalization, broadband infrastructure development, digital experience, and digital inclusion.

In efforts to monetize 5G investments, 5G home broadband delivery offers an important use-case, with stc Kuwait being among the first few operators to recognize the potential of 5G early on. As early as 2018, the company began laying the groundwork for the deployment of 5G technology, foreseeing its transformative impact on the telecommunications

landscape. This forward-thinking approach culminated in the launch of the world's first nationwide 5G commercial network in 2019, solidifying stc's position as a leader in the global race towards 5G adoption.

Leading the Charge in 5G Network Evolution in Kuwait

In 2021, stc Kuwait was the first operator in the Middle East to launch commercial use 5G Mi-Fi devices, offering customers the flexibility to experience lightning-fast internet speeds on the go. This initiative not only expanded the reach of 5G connectivity but also demonstrated stc Kuwait's commitment to meeting the evolving needs of its customers in an increasingly mobile-centric world. In the same year, stc Kuwait launched the Middle East's first 5G Standalone (SA) end-to-end commercial network. This groundbreaking initiative reinforced stc Kuwait's position as a leader in 5G innovation and paved the way for a new era of connectivity in the region.

The Operator was among the first in the world to deploy a fully converged core network. This innovative

architecture, which integrated 5G, 4G, and other access technologies into a single, unified platform, enabled stc Kuwait to deliver seamless connectivity and enhanced services to its customers across multiple networks.

"Having launched first ever commercial end to end 5G SA network in MENA region and becoming first to deploy first fully converged core network which supports secured Vo5G with latest releases of secured SIM/eSIM technology shows our relentless pursuit to offer cutting edge digital services to consumers and enterprises in Kuwait. I am confident that this launch will serve as a major step towards enabling a digital Kuwait of future and towards realizing vision 2035" said, Eng. Fahad Abdul Rahman Al Ali, CTO, stc Kuwait.

By embracing this cutting-edge approach to network design, stc Kuwait had demonstrated its commitment to staying ahead of the curve and providing world-class connectivity solutions to its customers. During 2022, stc Kuwait also extended

its nationwide 5G dual-band network reach to provide higher speeds and better coverage across the country. It allowed users to access internet at higher speeds, less latency, enabled increased adoption of new smart products, higher efficiency and deeper integrations into advanced technologies. Last year, SAMENA Council recognized stc Kuwait with "Best 5G indoor Experience" LEAD award, reaffirming stc's commitment to transforming digital services for a diverse set of growing customer base. The SAMENA LEAD award also reflected on the wide range of innovative offerings introduced by stc in Kuwait, including new-to-market solutions that leverage the Company's strong and widespread 5G network. Through its strategic vision of enabling digital transformation in Kuwait, stc focused throughout the past several years on investing in developing and enhancing its 5G infrastructure, providing individual customers and corporates with the highest quality solutions through its reliable high-speed connectivity.

A New Era of Broadband Services

SAMENA Council observes that stc Kuwait's application of 5G extends beyond just commercial services. The company, as a part of the stc Group, which currently chairs the Board of Directors of SAMENA Council, has been relentless in its pursuit to fully utilize its 5G network investments by adopting latest innovations. As the first operator to deploy nationwide 5G coverage using the C-band (3.7GHz to 4.2GHz) in 2019, stc strengthened its 5G offerings. The Operator also focused on enhancing the 5G coverage and user-experience by becoming the first in the region to deploy a sub 3GHz New Radio (NR) network, further enhancing the capacity and performance of its 5G infrastructure. This strategic move allowed stc Kuwait to deliver an

unparalleled broadband experience to its customers, setting new standards for speed, reliability, and coverage in the region.

Immediately after launch of 5G based home broadband, the company introduced the Middle East's first 5G Dedicated Internet Access (DIA) service for businesses, enabling enterprises to harness the power of 5G for their digital transformation initiatives. This pioneering move underscored stc Kuwait's dedication to driving economic growth and empowering organizations with cutting-edge connectivity solutions, including through Fixed Wireless Access and IoT.

"Launching 5G RedCap FWA ushers in a groundbreaking chapter for internet connectivity in the Middle East. We take pride in being the region's pioneer, reaffirming our commitment to delivering innovative solutions that enrich our customers' lives", as stated by Amer Atoui, Chief Consumer Officer of stc Kuwait. 5G RedCap (or "reduced capability") provides added advantage for powering lower complexity LTE and 5G NR devices, thereby supporting applications that require near real-time data communication, such as industrial automation and smart grid applications. With features including improved power consumption, 5G RedCap can help accelerate IoT adoption in Kuwait and in the region and set new benchmarks in seamless connectivity and customer experience, while transitioning from 4G to 5G.

stc's 5G RedCap FWA service is now delivering robust and consistent internet speeds, catering to the digital needs of Kuwaiti citizens and businesses, with unmatched reliability, while demonstrating stc's dedication to leading innovation in the region, introducing the latest technological

breakthroughs to its customers. Beyond empowering individuals and households, stc Kuwait's 5G connectivity has also played a pivotal role in driving economic growth and fostering innovation across various industries. With its blazing-fast speeds and low latency, 5G leased lines have unlocked new possibilities for businesses, enabling them to leverage advanced technologies such as cloud and artificial intelligence to improve efficiency, productivity, and competitiveness.

From healthcare and education to banking and entertainment, organizations across Kuwait have embraced the transformative potential of 5G, leveraging stc Kuwait's robust infrastructure to fuel their digital transformation initiatives. Whether revolutionizing healthcare delivery through telemedicine or enhancing learning experiences through immersive educational content, 5G has become the cornerstone of Kuwait's digital economy, paving the way for a brighter and more prosperous future.

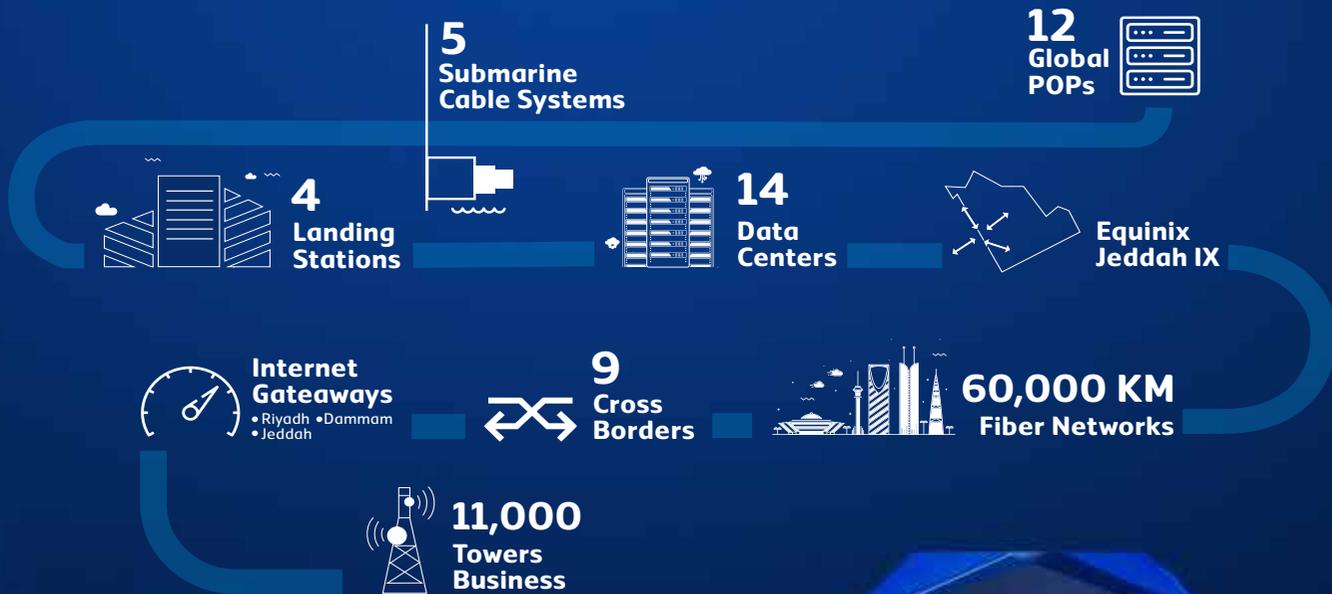
Given Kuwait's evolving and expanding ICT market, expected to exceed valuation of US\$ 28 billion by 2027, according to general industry estimation, the integral role of telecommunications and broadband infrastructure will further increase. As stc Kuwait continues to push the boundaries of innovation and excellence, the future of 5G services, including home broadband and IoT, looks more promising than ever. With ongoing investments in infrastructure expansion, network optimization, and technology evolution, the company remains committed to delivering best-in-class connectivity solutions that empower individuals, businesses, and communities alike, while making use of FWA in innovative ways 🌐

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Harnessing 5G Fixed Wireless Access (FWA) in Africa

In Africa, where traditional wired infrastructure struggles to reach remote areas, Fixed Wireless Access (FWA) technology has emerged as a game-changer. With the potential of 5G networks, FWA offers a promising solution to bridge the connectivity gap and unlock new growth opportunities. FWA, providing wireless internet access to homes or businesses without laying fiber and cables, is particularly suitable for Africa, offering so-called 'last-mile' connectivity.

FWA is emerging as a viable alternative to traditional fixed broadband, with 116 operators worldwide offering commercial 5G FWA services. In Africa, 30 operators in 17 markets have launched commercial 5G, with 14 offering 5G FWA. However, high costs for customer premises equipment (CPE) are hindering market growth. To address this, measures such as reducing taxes on terminals are recommended. According to GSMA, collaboration among stakeholders is important to facilitate the deployment and adoption of 5G FWA networks, recognizing the importance of connectivity for Africa's digital economy. According to Ericsson, FWA leverages mobile networks to provide primary broadband access through mobile network-enabled customer premises equipment. This technology is favored by operators as it allows them to utilize existing mobile infrastructure, while end users benefit from services like video streaming, entertainment, e-learning, and remote working, which may not be accessible or affordable through traditional fiber connections.

In Africa, where legacy infrastructure is limited, FWA presents a practical alternative to costly and disruptive fiber deployments. While fiber rollout is increasing, FWA offers quicker and more cost-effective deployment, providing acceptable throughput and latency for many markets.



While 4G FWA exists, the potential of 5G FWA is far greater. 5G FWA utilizes standardized architectures and mobile components to deliver ultra-high-speed broadband services. However, it may face challenges such as interference from natural elements like trees, snow, or rain, requiring smaller cell sizes and increased infrastructure costs. Additionally, backhaul, often reliant on fiber, can be problematic in areas without fiber availability, necessitating potentially expensive microwave or satellite links as alternatives.

South Africa currently stands as the primary FWA market in Africa, marked by competitive pricing driven by market competition, although still not reaching the vast potential customer base. While fiber pricing is also becoming more competitive, especially in South Africa with the introduction of prepaid pay-as-you-go services catering to low-income subscribers, the adoption of FWA in the rest of Africa holds significant promise.

Nokia predicts that FWA adoption across the Middle East and Africa (MEA) region could reach 23 million subscribers by 2027, predominantly propelled by countries in Southern Africa. Notable strides in FWA technology, such as successful trials of 4G/5G FWA network slicing in Kenya and initiatives in Senegal aimed at establishing digital education ecosystems using FWA technology, underscore the potential of FWA to bridge the digital divide in Africa. However, challenges like the pace of 5G network rollout, spectrum availability, and operator marketing and pricing strategies will influence FWA adoption across the continent, with the promise of FWA in Africa outweighing its current delivery.

Moreover, Huawei's presence in Africa's FWA landscape is notable through its collaboration with operators like Telkom South Africa in deploying innovative solutions. Since 2014, when Telkom South Africa launched Huawei's WTTx solution, the company has been instrumental in extending broadband services to

underserved areas, particularly benefiting lower-income segments. This partnership has evolved to include the rollout of 5G FWA services in various regions, showcasing Huawei's role in pioneering advanced connectivity solutions across the continent. With multiple operators across Sub-Saharan Africa launching commercial 5G FWA services, Huawei's expertise and collaboration underscore its commitment to addressing the connectivity challenges faced by both urban and rural communities. Additionally, initiatives like providing FWA connectivity to schools in Senegal highlight Huawei's broader impact in leveraging technology to enhance educational opportunities and bridge the digital divide in Africa.

In the African context, the challenge of bridging the digital divide is particularly pronounced due to lower levels of broadband penetration compared to other regions globally. The pressing question revolves around

efficiently and swiftly providing connectivity to unconnected households and businesses. Solutions for home broadband can be categorized into fixed-dedicated line solutions such as fiber or DSL, satellite-based solutions, and Fixed Wireless Access (FWA). While xDSL and cable offer relatively low investment requirements, fiber stands out for its high-speed capabilities despite facing deployment challenges. FWA, however, presents itself as a cost-effective and flexible alternative, with significantly lower deployment costs and the ability to cater to various use cases beyond home broadband, such as Mobile Broadband (MBB) and Internet of Things (IoT). Notably, the adoption of FWA in Africa is gaining momentum, especially with the emergence of 5G FWA, which can deliver fiber-like speeds and has already been introduced in markets like Angola, South Africa, Nigeria, and Zimbabwe. FWA holds promise for enabling digital inclusion beyond

home connectivity, exemplified by initiatives like the joint effort between FREE Senegal and Ericsson's Connect to Learn program, which aims to connect schools using Fixed Wireless Access technology while providing essential resources like laptops, learning content, and teacher training to support educational development.

FWA, particularly 5G FWA, emerges as a potent instrument to bridge Africa's digital divide. The convergence of 5G technology and Fixed Wireless Access represents a transformative opportunity for Africa. By leveraging the potential of 5G FWA, the region can overcome longstanding connectivity barriers, empower businesses and communities, and unlock new pathways to prosperity. With concerted efforts to address challenges and foster an enabling environment for innovation and investment, Africa is poised to harness the full potential of 5G FWA and pave the way for a digitally inclusive future. 🌐

South African Fixed Wireless Access (FWA) Connectivity for Businesses



Comsol, a South African fixed wireless access last-mile connectivity and private networks provider, is planning a national rollout of its 5G network. This will be in addition to Comsol's existing millimetre-wave fixed wireless access (FWA) network, chief commercial officer Gary Woolley told MyBroadband

The company launched its 5G FWA service in March using 60MHz of radio frequency spectrum in the 3.7GHz band. It is currently available in Gauteng's business districts, with the product tiered in three different capacities: 25Mbps, 50Mbps, and 100Mbps.

The company is aiming to target a massive market through its lower-priced FWA products. 🌐

A New FWA-based Digital Education Ecosystem in Senegal

Ericsson has signed an agreement with Free and the Pikine-Guédiawaye Academy Inspectorate of the Ministry of National Education to implement a digital education ecosystem in five schools in Pikine-Guédiawaye.

Following a Memorandum of Understanding announced in 2023 by Ericsson and Free to improve educational opportunities through technology, the inauguration of these connected classrooms demonstrates

As part of this partnership, Free Senegal will provide quality internet connectivity and both partners will provide laptops for learning. The Academy Inspectorate of Pikine-Guédiawaye will play a crucial role in strengthening the digital capacities of teachers by training them in the use of new tools and their integration into their teaching practice.

Gana SENE, Academy Inspector of the Pikine-Guédiawaye Academy

by 1.1%. This report also shows that access to a multitude of resources and new forms of learning, such as adaptive learning platforms, internet access and digital learning, play an important role in improving the quality of education globally.

Mamadou Mbengue, Managing Director at Free Senegal underlines: "At Free, we work every day to promote progress, innovation, and connectivity, thus strengthening our mission to propel Senegal into a prosperous digital era. Through the Connect to Learn program, we are determined to achieve Sustainable Development Goal #4 by ensuring equitable access to quality education and strengthening learning capacities in Senegal. In this perspective, our "Jang ak Free" program aims to sustainably improve schooling conditions in Senegal by offering present and future generations the best prospects. This strategic partnership between Free and Ericsson makes it possible to provide cutting-edge educational resources to communities, thereby contributing to the digital growth and development of all.

Majda Lahlou Kassi, Vice President and Head of Ericsson West Africa and Morocco, said: "Ericsson's Connect to Learn initiative aims to improve educational opportunities through innovative technology for young people around the world. With this in mind, we designed and launched this project to have a positive impact on an individual, community and national scale. This partnership reflects our commitment to using technologies such as Fixed Wireless Access to promote inclusive education and a brighter future. We are excited to contribute to a transformation that transcends borders, by making quality education accessible in a few schools in Senegal." 🌐

the common desire to guarantee quality education in an equitable manner, thus strengthening the autonomy of teachers and students through access to quality internet connectivity and the development of digital skills.

This project aims to connect the schools concerned to existing radio networks powered by Ericsson and operated by Free Senegal using Fixed Wireless Access (FWA) solutions that are quick to deploy and cost-effective, and will contribute to reducing the digital divide. These schools will receive devices and equipment intended to promote interactive learning in the classroom. Ericsson will provide access to its open-source, cloud-based Connect to Learn operating system and learning management system to improve lesson planning and delivery and ensure more pupil-focused teaching.

Inspectorate of the Ministry of National Education of Senegal declares: "Our partnership with Ericsson and Free marks an important step in our contribution to the deployment of the strategy of digital technology of the Ministry of National Education and the national vision of human capital development. We firmly believe that we must utilize the opportunities offered by the emergence of an information society. Through this partnership, we are demonstrating how schools, teachers and the education sector in Senegal can take a leap forward towards the school of the future."

The Economist Intelligence Unit (EIU) report quantifies how school connectivity is a key factor in improving learning outcomes and thriving economies, finding that a 10% increase in school connectivity can increase children's effective years of schooling by 0.6%, and GDP per capita



Ericsson ConsumerLab Report Reveals Households in KSA Highly Prefer 5G FWA

Ericsson has published its latest ConsumerLab Report, revealing the survey results of consumers' perceptions of 5G Fixed Wireless Access (FWA).

First of its kind globally, covering 19 countries, including the Kingdom of Saudi Arabia (KSA), and representing 370 million households, where 1.2 billion individuals live, the Ericsson ConsumerLab study findings offer a diverse and comprehensive understanding of the evolving consumer choices and perceptions related to FWA as a connectivity option.

The report provides service providers with the tools they need to capture 5G FWA growth and recommends value-based, performance-based and customization-based positioning strategies to capture different household segments and drive FWA adoption effectively.

In KSA, the survey included 1,000 household representatives, comprising 200 active FWA users, and represented a total population of 24 million residents in the surveyed households.

The findings from KSA reveal a shift in trend: 5G FWA is becoming the primary choice for connectivity to homes, with 4 in 5 households opting for FWA as a full replacement for previous connectivity used.

Additionally, 4 in 10 households believe that wired capabilities are superior to wireless, especially in terms of speed and reliability. The main driver for choosing FWA is to get higher speed, while the main barrier is the perception that wired offers greater consistency and stability.

The study also shows that households expressed higher satisfaction using 5G FWA than fiber in terms of service experience (delivery time, contract conditions, equipment quality and cost level), and satisfaction is on par with fiber for network performances (speed, indoor coverage, security and capacity).

Håkan Cervell, Vice President and Head Ericsson Saudi Arabia and Egypt at Ericsson Middle East and Africa, says: "The new Ericsson ConsumerLab Report underscores the role of Fixed Wireless Access as it enables consumers to enjoy better and more reliable connectivity. The satisfaction levels expressed by households in Saudi Arabia and their commitment to Fixed Wireless Access as well as the enhanced capabilities that it brings, support the view that Fixed Wireless Access is a booster for enhanced connectivity. Capitalizing on the network scale and innovation of 5G, Fixed Wireless Access is able to connect homes, enterprises, and communities, advancing economic growth and empowerment in the digital age. Our commitment is to work closely with our partners in the Kingdom to ensure that consumers continue to benefit from the enormous opportunities of technological advancements in telecom in line with the ambitions of Saudi Vision 2030."

Jasmeet Singh Sethi, Head of ConsumerLab says: "The KSA report explores the high potential growth of the FWA market given that 2 in 3 households have stated their interest in 5G FWA, higher than the global average and highlights that even beyond the US, households choosing 5G FWA are abandoning their previous home broadband connections."

In KSA, FWA is chosen as a complete replacement by 4 out of 5 households.



stc Kuwait Launches Pioneering 5G RedCap FWA In The Middle East

At the second forum of the ELITE FWA Club, held on the sidelines of MWC 2024, Kuwait Telecommunications Company – stc announced the Middle East’s inaugural commercial deployment of 5G RedCap Fixed Wireless Access (FWA), marking a transformative advancement in high-speed, reliable internet access for both residential and commercial clientele. The forum attracted founding members alongside an array of global telecom leaders and ecosystem stakeholders.

5G RedCap FWA heralds a new era in broadband services, offering users unparalleled, seamless connectivity. It stands out for its ability to provide stable, reliable speeds while ensuring cost-effectiveness. This innovation is achieved through optimised hardware design, which includes extended battery life, reduced power consumption, and improved spectrum efficiency on 5G CPE routers,

making high-quality 5G technology accessible at significantly lower costs. Consequently, it not only enhances customer experience but also lowers the barriers to 5G adoption, encouraging the transition from 4G to 5G.

Key features of stc’s 5G RedCap FWA service include:

- **High-Speed Connectivity:** Delivers robust and consistent internet speeds, catering to the digital needs of today’s lifestyle.
- **Unmatched Reliability:** Ensures a stable and dependable home broadband connection, providing uninterrupted access to online services.
- **Innovation Leadership:** Demonstrates stc’s dedication to leading innovation in the region, introducing the latest technological breakthroughs to its customers.

Further enhancing its service, stc has upgraded its wireless network

management to WTTx Suite 2.0. This upgrade facilitates deterministic experience rate provisioning, improved indoor experience management, and streamlined operations and maintenance, all aimed at elevating customer satisfaction.

Eng. Amer Atoui, Chief Consumer Officer of Kuwait Telecommunications Company – stc, stated, “Launching 5G RedCap FWA ushers in a groundbreaking chapter for internet connectivity in the Middle East. We take pride in being the region’s pioneer, reaffirming our commitment to delivering innovative solutions that enrich our customers’ lives.”

stc invites its customers to explore the transformative potential of 5G RedCap FWA and step into a new realm of connectivity possibilities. 🌐



AT&T Extends 'Internet Air' to Businesses

AT&T is introducing AT&T Internet Air for Business, a new fixed wireless service for small, mid-size and large businesses, powered by America's most reliable 5G network.

applications, it helps you stay connected to customers, suppliers and employees.

In just minutes, businesses can easily

AT&T Internet Air for Business solves multiple business challenges. It can help you establish a primary internet connection where fiber is not available, in remote locations, or when temporary access is needed. It can also serve as a supplemental internet connection to distribute workload or as an alternate connection if primary wired network connection is interrupted. It's available now to qualified business addresses nationwide.

Customers can choose from two plans – each at a low monthly rate.

- AT&T Internet Air for Business Standard is \$60 plus fees.
- AT&T Internet Air for Business Premium is \$100 plus fees and includes a higher level of priority for the first 250GB of data used in each billing period – a benefit when the network is busy.
- Plus, when you have an eligible AT&T Business wireless plan, you can get internet for as low as \$30/month, plus fees. 



This new, flexible solution is both easy to set up and reliable.

Whether you're expanding business locations, building network diversity, or supporting business critical

set up AT&T Internet Air for Business and be up and running. It's plug-and-play with no drilling or coordinating with building management. You don't need a technician to install it.

Nokia Breaks the Mould with mmWave for FWA

Fixed Wireless Access (FWA) is an attractive play for many operators, and Nokia believes its potential can be further enhanced with the arrival of 5G FWA solutions using higher millimeter wave (mmWave) spectrum.

5G mid-band FWA already supports a number of different deployment scenarios. Fixed broadband operators are using it to complement fiber deployments, plugging coverage gaps and quickly building out their footprint to increase market share. Mobile operators are taking advantage of its fast time-to-market and low start-up costs to compete with fixed-fiber services.

Like all technologies, FWA comes with its challenges. In a recent operator study, Nokia found that mid-band FWA deployments are leaving 19 per cent of subscribers with low signal levels, resulting in wasted network capacity. Around 29 per cent of capacity in such cases could have been restored to the operator just by having the CPE device correctly positioned, either indoors or using an outdoors device, for optimal performance. Using outdoor antennas rather than indoor CPE at the cell edge could achieve a 62 per cent gain in network capacity, says the company.

As FWA users consume around 20 times more data than mobile uses, managing capacity is a key consideration in FWA deployments, to ensure neither FWA nor mobile services are compromised, and to protect an operator's valuable investment in spectrum. Conserving radio resources from the start is far more efficient than later investments to upgrade the network or change devices to regain that lost capacity.

Employing 5G mmWave FWA at and above 24 GHz, with its resulting benefits in capacity and performance, is becoming increasingly attractive for operators, says Nokia.

mmWave has already been successful at delivering wireless capacity in hot zones and high-traffic urban environments where limited range and signal attenuation don't present a significant problem. This signal attenuation has led to a long-standing belief that mmWave is only for urban areas and it can't really be used in other scenarios.

Not so, says Nokia. By advocating the deployment of mmWave as a capacity overlay to mid-band spectrum, Nokia says it can add much needed capacity for FWA subscribers that are within mmWave range from the base station, while freeing up the mid-bands for mobile broadband and more distant FWA subscribers. The operator study mentioned earlier found that 50 per cent of suburban FWA subscribers would be able to connect to and benefit from a mmWave capacity overlay.

environment in 360 degrees, using advanced analytics to create a fingerprint of the radio environment, and directing itself to the best signal that it receives. This means it can connect to signals from any direction, whether they are direct or reflected.

So, if something comes along that blocks the signal, such as a tree growing, the antenna can find another signal path including reflections, and continue to connect. This dispels another myth, says Nokia: that mmWave FWA doesn't work in non-LoS conditions.

However, when LoS isn't an issue, mmWave has another very attractive use case. In Australia, nbn is deploying Nokia's mmWave technology in rural areas and achieving broadband speeds up to 1 Gb/s over a 7km range. Nokia has shown that its FastMile FWA technology can drive mmWave

every new subscriber. An intelligent mobile application then guides the end-user or a technician to install their FWA CPE in the best position to maximize broadband performance and optimize capacity usage of the radio network.

Nokia FWA devices also enable operators to drive new revenues beyond connectivity. The Corteca software within Nokia devices uses application container technology so that enhanced features, such as cyber security or low-latency performance for gaming, can be downloaded to the FWA CPE and sold to subscribers as add-on services that increase ARPU.

When thinking about deploying FWA to connect homes and business, the mid-bands are still going to be the first choice for operators in most scenarios, says Nokia. But as FWA deployments continue to accelerate – industry experts expect 250 million FWA subscribers by 2028 – mmWave FWA is becoming a vital tool for preserving capacity and maintaining service levels. It will also prove valuable in helping operators meet their regulatory service coverage commitments and as a tactical deployment tool where fiber can't be deployed, as nbn is demonstrating with its rural FWA service.

Nor will an mmWave FWA solution of the kind being deployed by nbn work for everyone, and it probably won't be widely repeated. The need for a long-distance rural application meant that nbn had a specific network that they built for rural connectivity using 4G, and which was upgraded to mmWave. They had that total LoS environment, and in that kind of scenario it can be economic.

So even though deployment scenarios for mmWave over FWA may be very specific, Nokia is showing that this is a much more useful tool than everybody thinks. 🌐



Nokia is busting the myths around FWA mmWave with their advances in antenna technology and device intelligence. These advances mean that mmWave FWA can be deployed in non-line-of-sight locations (NLOS) and over far greater distances, says Nokia. The company has announced a new outdoor mmWave device, the FastMile 5Gmm Receiver that does exactly this. A 27dBi gain antenna overcomes propagation loss and weak signals. It also scans the

signals out over 12km. This makes FWA a compelling choice where the economics of deploying fiber broadband don't make sense.

Ensuring a brilliant end-user experience is a key concern for Nokia. Network planning tools enable operators to look at radio capacity and cell site locations to know where to market their FWA services. The same data is then used at point of sales to validate the service levels for

Fixed Wireless Access Equipment Spend to Exceed \$40B Over the Next Five Years, According to Dell'Oro Group

According to a recently published report by Dell'Oro Group, the trusted source for market information about the telecommunications, security, networks, and data center industries, Fixed Wireless Access (FWA) has surged in recent years to support both residential and enterprise connectivity due to its ease of deployment along with the more widespread availability of 4G LTE and 5G Sub-6GHz networks, which offer increased throughput and reliability, comparable in many cases to more traditional fixed broadband technologies. Preliminary findings suggest total FWA revenues, including RAN equipment, residential CPE, and enterprise router and gateway revenue remain on track to advance 27 percent in 2023, driven largely by residential subscriber growth in North America, as well as growing branch

office connectivity more globally. "Fixed Wireless Access has proven that it can provide connectivity both in rural and underserved markets while also competing head-to-head with fixed broadband technologies in urban and suburban markets," said Jeff Heynen, Vice President and analyst with the Dell'Oro Group. "Beyond residential connectivity, enterprises are relying more heavily on FWA-enabled routers and gateways to connect branch offices, vehicles, and kiosks as part of their own private wireless initiatives," added Heynen.

Additional highlights from the Fixed Wireless Access Infrastructure and CPE Advanced Research Report:

- Global FWA revenues are projected to surpass \$9 B by 2027, reflecting

sustained investment and subscriber growth in both 3GPP- and non-3GPP-based network deployments.

- The North American market remains the most dynamic in terms of deployed FWA technology options, with CBRS and other sub-6GHz options growing alongside 5G NR and 60 GHz options.
- Long-term subscriber growth is expected to occur in emerging markets in Southeast Asia and MEA, due to upgrades to existing 3G and LTE networks and a need to connect subscribers economically.
- The Satellite Broadband market will also be a key enabler of broadband connectivity in emerging markets, thanks to LEOS-based providers including Starlink, OneWeb, and Project Kuiper. 🌐

T-Mobile US Targets 2.5GHz 5G Boost

T-Mobile US aims to deploy 2.5GHz spectrum it won in an auction in 2022, most of which it plans to deploy to boost performance of its 5G network.

The operator stated it would add the spectrum to almost 11,000 sites covering nearly 60 million customers over roughly 300,000 square miles,

with the remainder of the spectrum to be deployed as new towers are built.

T-Mobile agreed to divest some of the 2.5GHz spectrum in Hawaii as a condition for the FCC's approval. The spectrum was in limbo after the FCC lost its allocation authority in March 2023.

T-Mobile stated customers would experience an immediate boost in 5G performance. In addition to faster data rates, T-Mobile previously stated it would be able to extend the reach of its FWA service by using the new spectrum.

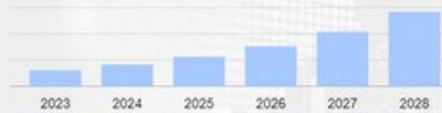
CEO Mike Sievert said the spectrum can be deployed immediately due to years of planning. 🌐



5G FWA Market Size to Grow by US\$110.76B from 2024-2028

GLOBAL 5G FIXED WIRELESS ACCESS MARKET 2024-2028

Market Size Outlook (USD Billion)



2023 : USD 30.40

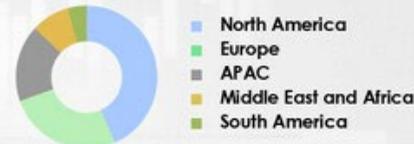
35.33%
2024 Year-over-Year

ACCELERATING
Growth Momentum

35.95%
CAGR 2023-2028

USD 110.76 Bn
Incremental growth
between 2023-2028

Geography Segment Share (%) 2024



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The global 5G fixed wireless access (FWA) market size is estimated to grow by USD 110.76 billion from 2024-2028, according to Technavio. The market is estimated to grow at a CAGR of 35.95 percent during the forecast period. Governments worldwide drive 5G FWA investments through smart city initiatives. Telecom industries, including Samsung and Nokia, collaborate. Fiber optics, broadband and telecommunication networks are prioritized. In India, a high-level forum suggests a vision for 5G India 2020, focusing on 5G FWA, mmWave spectrum and urban areas. Global demand increases with semi-urban demographics, commercial sector and mobile service providers. Pricing strategies and wired broadband alternatives are considered. Private 5G networks and technology advancements are key.

Segment Overview

This 5G FWA market report extensively covers market segmentation by Type (Services, Hardware) Application (Residential, Commercial, Industrial, Gov-

ernment) Geography (North America, Europe, APAC, Middle East and Africa, South America)

Market segmentation by Type

The 5G FWA market represents a significant growth area in global telecommunications, particularly for residential applications. This technology offers high-speed Internet connectivity without the need for traditional wired broadband infrastructure, catering to urban, suburban and rural end-users. Benefits include low latency, enabling seamless streaming of high-definition video content, online gaming and supporting multiple devices. FWA is an attractive alternative for households seeking faster Internet speeds and flexibility. In remote or underserved regions, it provides a viable solution where laying fiber-optic cables may be impractical or cost-prohibitive.

Geography Overview

The 5G FWA market in North America is experiencing robust growth, driven by enterprise adoption in developed

economies like the US and Canada. The IT sector, a major contributor in the US, is witnessing significant expansion due to the increasing implementation of IoT technology, which necessitates 5G FWA. Vendors in North America, including Qualcomm Technologies, Inc., are actively innovating and developing advanced 5G FWA technologies to cater to this growing demand.

The 5G FWA market is driven by the integration of edge computing, reducing latency and enhancing performance in industries like telecom, commercial sector and urban areas. Samsung, Verizon, T3 Broadband, Mercury Broadband and mobile service providers leverage mmWave spectrum for real-time applications, such as AR/VR, autonomous vehicles and remote healthcare. Nokia and others enable efficient data handling and quicker decision-making, fostering wired broadband alternatives for semi-urban demographics and global demand. Private 5G networks also emerge as pricing strategies for businesses.

The 5G FWA market faces challenges due to limited availability and competition for mmWave spectrum suitable for high-speed transmissions. Companies like Samsung, T3 Broadband, Mercury Broadband, Verizon, and technology providers such as Nokia navigate complex licensing processes and infrastructure deployment in urban and semi-urban demographics. Global demand for 5G FWA exceeds resources, leading to pricing strategies and regulatory hurdles. Wired broadband alternatives and private 5G networks also impact market dynamics. 🌐

T-Mobile US Expands 5G FWA Service to Puerto Rico

T-Mobile US launched its 5G fixed wireless access (FWA) home internet offering in some areas of Puerto Rico, as it looks to replicate the success of the service in the US.

The operator explained the service is available to customers with an eligible address and a qualifying voice line. It noted the service is currently offered in areas where it has “network capacity to provide a great experience to all customers”.

T-Mobile stated its network capacity in Puerto Rico “is increasing all the time, and 5G Home Internet service will continue expanding to more people”.

The service is available for \$50 a month with autopay. T-Mobile stated there are no added taxes on qualifying accounts, monthly fees or equipment costs.

Customers can pick-up gateways from retail stores and install them in around 15 minutes after downloading an app.

As further incentive, T-Mobile is letting customers test the service for free for 15 days and will pay up to \$750 to



cover any early termination fees from other internet service providers.

Jorge Martel, VP and GM of T-Mobile Puerto Rico, stated the operator is also giving subscribers a \$100 T-Mobile gift card after sign-up.

Over the past two years, the operator

has gained roughly half a million FWA subscribers every quarter. In its most recent Q4, it added 541,000 customers to bring its total to 4.8 million.

On its Q4 earnings call, T-Mobile US CEO Mike Sievert stated it was on track to meet its target of 7 million to 8 million subscribers by 2025. 📍

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5G FWA Growth on Track: ABI

ABI Research predicted fixed wireless access (FWA) subscriptions are on a path to reach almost 265 million by 2029, with 5G-based services slated to account for 45 per cent of that total.

The research firm stated the growth in subscriptions will be marked by a 14 per cent CAGR from 2023 to 2029 due to FWA services expanding globally across both densely populated and remote areas.

Larbi Belkhit, 5G, 6G, and Open RAN research analyst for ABI, noted "the performance and efficiency of FWA technology remain a key driver in bridging the connectivity divide, providing high-speed, reliable internet access in both the enterprise and consumer markets".

5G FWA subscriptions are forecast to reach 118 million by 2029 at a CAGR of 35 per cent. Belkhit highlighted technology

advancements in the 5G FWA sector that improve bandwidth utilisation and reduce network congestion on 5G CPEs as factors for increased adoption.

He noted Reliance Jio has committed to achieve 100 million 5G FWA-connected premises in India as further proof of FWA's progress. 🌐



Jio bottom-line Improves on 5G, FWA Subscriber Growth

Jio Platforms booked profit and revenue gains in its fiscal Q3 2024 (ending 31 December 2023), with 5G subscribers topping 90 million and the network carrying nearly 25 per cent of its mobile data traffic.

Mukesh Ambani, chair and MD of Jio's parent Reliance Industries, cited uptake of low-cost JioBharat handsets and fixed wireless access (FWA) service JioAirFiber as drivers of subscriber growth.

He noted the increases contributed to "the stellar growth numbers of the

digital services business".

Net profit grew 11.6 per cent year-on-year to INR54.5 billion (\$654.5 million), with revenue up 11.4 per cent to INR325.1 billion.

It added 11.1 million 5G subscribers: the figure hit 50 million in August 2023. Jio's total mobile subscriber base increased by 38 million to 470.9 million.

ARPU rose 2 per cent to INR181.70, with the company noting the rate of growth slowed due to offering unlim-

ited data allowances for new 5G users.

Jio did not offer an update on a target of deploying nearly 1 million base stations by December 2023, but Ambani said every "city, town and village...is now equipped with high-speed digital connectivity, which will usher in a new era of unparalleled digital accessibility and technology-led growth".

Its JioAirFiber service is available in 4,000 cities and towns, with nationwide coverage expected by end-June. 🌐

MWC 2024: HFCL Showcases 5G FWA Indoor CPE



HFCL Limited, a leading telecom solutions company based in India, showcased its 5G FWA (Fixed-Wireless Access) product at the Mobile World Congress (MWC) 2024. In a release, HFCL said that it has entered into a partnership with MediaTek to integrate the MediaTek T750 chip inside its 5G FWA Indoor CPE (Consumer Premises Equipment). HFCL's 5G FWA Indoor CPE is a very compact device and consumes minimal power, courtesy of the MediaTek chip inside, said HFCL. The MediaTek T750 chip on the 5G FWA solution is made on the 7nm process and is equipped with a 5G

radio and quad-core Arm CPU. This will ensure that the device will be able to support dual-band 4x4 Wi-Fi 6 support. The device has a 2.5 Gbps Ethernet interface to enable high-speed data transfer. HFCL said that its product comes equipped with mesh capabilities and an embedded eSIM, which caters to the diverse needs of telco customers.

The HFCL 5G FWA Indoor CPE is a plug-and-play device that includes an AI-integrated mobile app. It is completely 'Made-in-India' and is very user-friendly as it can be self-in-

stalled. You can upgrade the FWA device remotely, bringing zero-touch management into play, thus eliminating any need for user intervention and enhancing the overall experience for the consumer.

HFCL has said that its 5G FWA Indoor CPE can support both 5G Standalone (SA) and NSA (non-standalone), catering to telcos with diverse needs.

Mahendra Nahata, Managing Director, HFCL, said, "We are pleased to have partnered with MediaTek, a leading global fabless semiconductor company, and to leverage its state-of-the-art 7nm compact chipset in crafting the revolutionary HFCL 5G FWA Indoor CPE. The HFCL 5G FWA Indoor CPE helps telecom operators address the last-mile connectivity challenges in an ultra-compact form factor and provides a fiber-like experience to both consumers and enterprises. The HFCL 5G FWA Indoor CPE marks another major milestone for HFCL in delivering advanced 5G solutions to telecom operators globally."

Evan Su, General Manager, Wireless Communications, MediaTek, said, "HFCL's 'made-in-India' 5G FWA Indoor CPE powered by the MediaTek T750 chip will help customers experience 5G FWA connectivity globally. This partnership is another milestone in our endeavour to support the Indian government's vision of creating a sustainable telecom ecosystem by promoting local manufacturing." 🌐

Fibre and FWA are Two Fastest Growing Technologies in the OECD

OECD confirms fibre and fixed wireless are now dominating rollouts which will make the coming overbuild crunch potentially more painful for some service providers

The OECD's latest broadband numbers show that fibre and fixed wireless access (FWA) have seen the strongest growth in fixed broadband technologies in three years. Given that the organisation's numbers only cover up to the end of June 23, it reveals how quickly access technologies are changing and while some countries are busy overbuilding, others are being left behind in the rush.

Fibre subscriptions have increased by 56% between June 2020 to June 2023, and FWA subscriptions have increased by 64%. The United States (252%), Estonia (153%), Norway (139%) and Spain (118%) led this FWA growth. At the same time, DSL has declined 24%, now only representing 22% of total broadband connections. Fibre, which has been the dominant technology since 2021, amounts to 41% of total fixed broadband subscriptions in June 2023. FWA still represents a

more modest share of 3.7% of total fixed broadband subscriptions. Cable accounts for 30.5% of overall connections while satellite, which grew 11% over the last three years, still only represents 0.7% of fixed broadband subscribers.

Fibre penetration strong

Nine OECD countries have more than 70% of fibre connections over total broadband, with Korea, Japan, Iceland, Spain leading the way with the highest fibre penetration rates of 89%, 86%, 85% and 84%, respectively. The highest fibre growth rates are in Europe, with Austria and Belgium having growth rates of 75% and 73% over the last year, closely followed by Mexico with a growth in fibre of 68%. Two other Latin American countries are in the top seven: Costa Rica and Colombia with fibre growth rates of 42% and 34%, respectively.

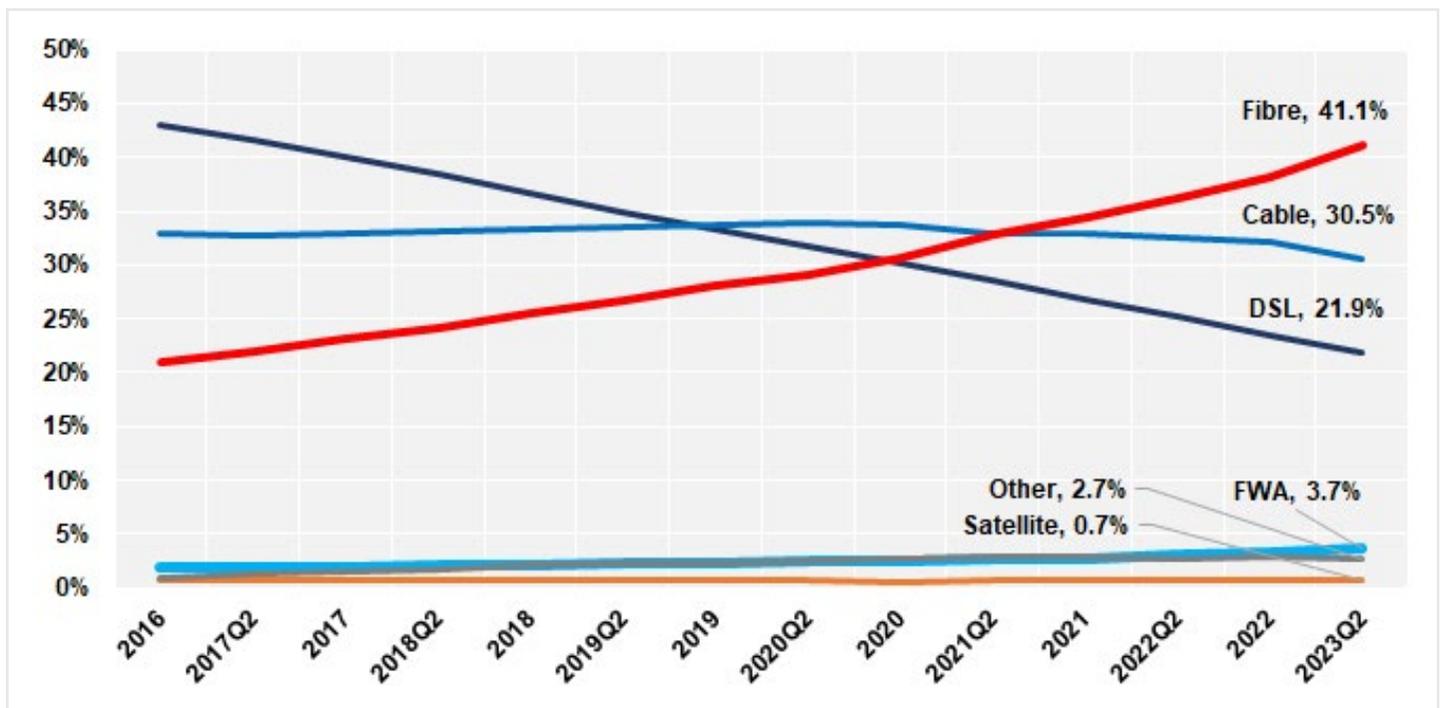
Meanwhile, mobile data usage per subscription grew substantially by 28% in one year passing from 10.GB to 13 GB per subscription per month in OECD countries. The amount of data consumed in countries vary greatly

from 6GB to 46GB, with Latvia being the OECD leader.

Mobile doing well as well

Despite an already very high mobile broadband penetration in the OECD area, overall mobile subscriptions continued to grow by 4.6% over the last year, which totalled 1.8 billion as of June 2023, up from 1.74 billion a year earlier. Mobile broadband penetration is highest in Japan, Estonia, the United States and Finland, with subscriptions per 100 inhabitants at 200%, 192%, 183% and 161%, respectively. The share of 5G in total mobile broadband subscriptions is 23% on average for the OECD countries that provided this data.

Machine-to-machine (M2M) SIM cards grew 14% increase in one year. The two leading countries are Sweden with 238 M2M SIM cards per 100 inhabitants and Iceland (203), followed by Austria (179), the Netherlands (93) and Norway (76). Both Sweden and Iceland issue M2M SIM cards for international use. 🌐



Huawei, du Sign MoU to Build out 5G-Advanced in the Middle East

Huawei has signed an MoU with du to build a 5G-advanced country project in the Middle East.

The MoU was signed at MWC Barcelona and establishes a demonstration benchmark for 5G-advanced commercial networks in the Middle East and around the world.

Fahad Al Hassawi, CEO of du, Chen Hao, Huawei's carrier sales department president, Tao Geng, CEO of Huawei UAE, and members of the management teams of both parties attended the signing ceremony.

Fahad Al Hassawi, CEO of du said: "As a leading digital telco, du is committed to cooperating with global industry leaders, such as Huawei, to remain at the forefront of digital innovation

and provide customers with the ultimate network experience.

"Huawei's leading technologies will support the realisation of du's strategic vision, play an important role in 5G Advanced service innovation and industry digitalisation, and jointly accelerate the UAE's digital transformation."

The cooperation between the companies began in 2008 and maintained close strategic "mutual trust" in the 3G, 4G and 5G eras.

Towards the new phase of 5G-advanced, the two parties will continue to discuss the end-to-end evolution of 5G-advanced networks, incubate new 5G-advanced services and build

high-quality networks.

Chen Hao, Huawei's carrier sales department president said: "As a global ICT infrastructure and smart device provider, Huawei is committed to supporting du strategic vision of digital innovation and providing customers with the ultimate network experience.

"In the past year, du has developed rapidly in FWA services and has successfully deployed a commercial 5G Advanced network and we believe that the signing of this MoU will deepen the implementation of 5G Advanced technologies, accelerate the incubation of commercial applications, and strengthen our strategic partnership with du." 🌐



du to Bolster FWA 5G Play

UAE-based operator du is looking to build on its success in fixed wireless access (FWA) by launching more specialised consumer and enterprise products, as the operator pushes for more market share.

During MWC Barcelona earlier this year, Mobile World Congress Barcelona, du chief commercial officer Karim Benkirane hailed the operator's success in the UAE, having doubled its share in the broadband market to 30% and gained 10 points of value share in the last three years due to the launch of commercial FWA 5G services.

Benkirane hailed FWA as a "huge opportunity" for growth. The executive noted that the UAE's fixed market is "highly fibred", and this presented a huge challenge for FWA to compete against established and reliable fixed services.

Through micro-segmentation analysis of the market, du found that, despite nearly 100% fibre coverage in populated areas, 20% of households were still not connected to fibre services due to high prices and long-term contract requirements.

As 4G FWA customers were migrated to 5G, "we started to really see an acceleration of our growth and more adoption of the FWA 5G which helped us really to grow and increase our market share," said Benkirane.

He highlighted du's growth and repositioning in the broadband space stemmed from enacting key strategies to promote 5G FWA. The operator made 5G FWA competitive by cutting prices and targeting SMEs.

The popularity of FWA 5G brought du the challenge of high traffic on its network, pushing the operator to find a way to segregate FWA traffic,

mobile, IoT, and M2M. Indoor coverage was also another major challenge, as mobile signal is inherently poor at penetrating walls, and FWA is a service that will be predominantly used indoors.

Pushing Ahead

Going forward, Benkirane said du will expand from being focused on its customers' basic needs of its to more sophisticated requirements and noted that this will be reflected when the UAE's digital economy doubles its contribution to the nation's GDP in 2025, as projected.

The company will first launch an FWA 5G packages aimed at gamers who demand low latency high speed connections. Next, the operator will package its internet offerings with an Android TV or set-up box.

On its enterprise side, du will develop specific use-cases. Examples Benkirane gave included connected cash machines to enable banks to deploy in remote locations, and equipping enterprises with connectivity for them to tap into reduced-capability (Red-Cap) devices, as RedCap devices are becoming more affordable.

"We believe that the strategy of building infrastructure with 5G-Advanced technology, needs to be reviewed and providers need to balance between how much they want to invest on fibre and on 5G-Advanced. We believe that 5G is going to deliver an experience that will be close to or even match the fibre experience.

"We are really excited about our journey, even though it has been a short three years (since launching FWA 5G), we believe that by moving from 5G to 5G SA, to 5G-Advanced that we are halfway to 6G," said Benkirane. 🌐



MeiG Brings 5G-Advanced into Reality with Releases of New 5G-A Module and FWA Solution

MeiG officially announced the launch of the 5G-A module SRM817WE and a new 5G-A FWA solution at the MWC 2024, including the 5G-A CPE solution SRT858M and the 5G-A MiFi solution. Solution SRT878H and 5G-A ODU solution SRT853MX are designed to further improve network performance and bring 5.5G into reality.

5G-A module SRM817WE is based on Qualcomm Snapdragon® X75 5G Modem-RF System. The solution and 10Gb Ethernet capabilities support Sub-6GHz band TDD/FDD 3CC and more carrier aggregation, with a maximum bandwidth of up to 300MHz, bringing excellent data rate performance.

In terms of antenna design, it can support up to 4 groups of millimeter wave antennas. Millimeter waves can support a maximum bandwidth of 800MHz, and the peak downstream rate can reach 10G. It supports features such as 8RX and PC 1.5 transmit power in the 5G core frequency band, effectively improving the 5G uplink and downlink transmission rates. In addition, SRM817WE module supports the OpenWRT operating system and OpenCPU, making the configuration more flexible, providing more expansion and innovation possibilities, and fully meeting the needs of FWA, eMBB and other applications.

Based on SRM817 series modules, MeiG has launched a new 5G-A FWA solution, which supports more frequency bands and more connections, helping home and business users build high-speed networks to meet the needs of



corporate office, video conferencing, naked-eye 3D, and VR High-speed business needs such as games and 8K HDR.

5G-A CPE solution SRT858M is equipped with Qualcomm Snapdragon®, the uplink rate can reach 0.9 Gbps. Supports the Easy mesh R4 function and supports dual-band concurrency. The device can communicate concurrently on the 2.4GHz and 5GHz frequency bands at the same time, thereby providing higher throughput and more stable connection performance. At the same time, it is equipped with a 2.5Gbps Ethernet interface to greatly increase the speed and meet the needs of high-speed Internet access in multi-user and high-bandwidth scenarios. Supports RJ11 telephone interface, making the application scenarios more diversified.

5G-A MiFi solution SRT878H converts 5G networks into portable Wi-Fi signals, providing fast and high-speed network access for home, office, personal travel and other application

scenarios. SRT878H relies on the Snapdragon X72 platform and is the first to support the latest Wi-Fi 7 standard. It supports SA and NSA dual networking modes and is backward compatible with 4G networks, making it easy to use in complex scenarios.

Du Guobin, CEO of MeiG, said: "At MWC 2024, a stage that attracts global attention, MeiG's 5G-A module and 5G-A FWA solution were officially rolled out. This is a breakthrough for us in the field of 5G technology. Our technical solutions have reached new heights in network speed and stability, will bring customers a better connection experience, meet the growing demand for high-bandwidth, low-latency communications, and will also bring opportunities to the digital development of the industry. Come to a broader space for development."

MeiG will also use its new 5G-A capabilities to promote industrial innovation and development, efficiently empower FWA typical applications, and achieve new experiences in the 5G-A era in future. 🌐

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