A WATERSHED MOMENT FOR THE TELCO VALUE CHAIN: THE SHIFT TO A COMPUTE-CENTRIC OUTLOOK INTENSIFIES AT MWC25

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Mobile World Congress 2025 (MWC25) was best characterized by a combination of two forces. ABI Research analysts witnessed an opportunity-rich environment where the power of high-power computing can provide telcos with opportunities to improve solution performance. At the same time, this shift from communications to computing can also provide fresh revenue streams by opening new doors to improve their customers' businesses.

However, this optimistic perspective is largely being tempered with a familiar sensation of inertia. The discussions at this year's show in Barcelona were very much like the discussions in 2024. The solutions being championed, the standards being highlighted, and the market pitches being presented all revolve around the same concepts that were positioned a year ago.

It is clear that the telco community has an opportunity to be part of the computing revolution through the targeted and timely implementation of Agentic Artificial Intelligence (AI), Generative AI (Gen AI), private networks, Application Programmable Interfaces (APIs), network slicing, and an evolution to the autonomous network. Despite the opportunity in front of them, the telco community is moving far too slowly in comparison to less regulated and less standards-obsessed communities. Indeed, the telco value chain is embracing the change to a compute-centric business model more slowly than its customers.

The biggest challenges holding back telco value chain participants are the need to translate their network capabilities into real-world Return on Investment (ROI) and to realize they are not the center of the world. In many of their target markets, their solution is but a secondary consideration. They need to embrace that fact and start to act accordingly. To truly capture the value of the shift from communications to compute, the mobile ecosystem must demonstrate value, drive differentiation, communicate relevance, and speak the language of the customer.

In this whitepaper, ABI Research analysts who attended MWC25 share their thoughts on how mobile ecosystem players are responding to this demand.

—Stuart Carlaw, Chief Research Officer

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GENERAL TRENDS

MWC25 EXHIBITION FLOOR: INNOVATION SHIFTING FROM MOBILE GADGETS TO NETWORK COMPUTING.

MWC25 marked a clear departure from its traditional identity as a mobile device showcase toward a more compute-centric event. Compared to previous years, the presence of mobile gadgets, particularly smartphones, was noticeably diminished. The devices on display showed minimal differentiation, indicating that smartphone innovation has plateaued in terms of physical hardware.

Instead, Agentic Artificial Intelligence (AI) dominated discussions, with major phone manufacturers and chipset providers showcasing AI-driven capabilities, emphasizing intelligent, autonomous interactions, rather than hardware specifications. This transition was exemplified by Google's significant presence highlighting advanced AI integration into Android ecosystems, as well as Qualcomm, MediaTek, and Intel focusing heavily on AI-driven chipset advancements.

Infrastructure presentations shifted dramatically from traditional antennas and wireless components, protocols, features, and functions to comprehensive computing solutions, prominently featuring cloud computing, edge computing, cloud-native networks, and AI-powered networks. Companies such as Microsoft, SAP, SuperMicro, Databricks, and Siemens significantly expanded their presence, underscoring the convergence of AI, telecommunications, and computing infrastructure. Conversely, notable consumer electronics brands like Sony, HTC, and LG Electronics reduced their presence or ceased exhibiting entirely.

European operators Deutsche Telekom, Orange, Telefónica, and Vodafone presented smaller stands, while their Chinese counterparts China Mobile and China Telecom expanded their stands. This year, most mobile operators focused less on conventional network hardware and more on their strategic shift toward AI-driven networks and edge computing solutions. Deutsche Telekom's demonstration of AI-driven autonomous networks further reinforced this evolution. This is a new area for mobile operators and it remains to be seen whether they will succeed in this new era where AI becomes central to the value proposition of telecommunications services.

MWC25 confirmed a clear shift in industry focus—from mobile-centric hardware to integrated, AI-enhanced computing infrastructure—marking a transformative moment in the event's identity.

—Malik Saadi, VP, Strategic Technologies

CHINA'S TECHNOLOGY TRANSFORMATION AT MWC 2025.

China's telecommunications industry dominated MWC25, showcasing a dramatic shift from traditional telco operations to integrated technology companies. While Western operators like Deutsche Telekom and Vodafone presented modest stands with conceptual AI initiatives, Chinese players demonstrated mature, commercially-ready implementations.

Huawei and ZTE significantly expanded their exhibition space, featuring comprehensive AI-driven infrastructure, cloud-native networks, autonomous networks, and edge computing solutions deployed across various enterprise verticals. China Mobile, China Telecom, and China Unicom similarly exhibited fully operational autonomous network management systems that seamlessly integrated telecommunications, computing, and AI.

Ironically, U.S. restrictions appear to have accelerated China's technological advancement, rather than hindering it. Huawei, despite being blacklisted, showcased remarkable innovation stemming from increased investments in self-reliance and research. This resilience underscores China's emerging leadership in defining industry standards and shaping the future of global telecommunications.

The growing ambitions of mobile operators to transform their business from "telco" to "techo" was visible at MWC25, with Chinese companies clearly positioning themselves at the forefront of this evolution, intensifying competitive pressures and signaling a significant shift in the global technology landscape.

—Malik Saadi, VP, Strategic Technologies

Huawei's Exhibition Stand at MWC25

5G & 6G CLOUD-NATIVE SYSTEMS

THE TRANSITION TO STANDALONE AND APIS IS CREATING NEW COMPUTE OPPORTUNITIES FOR TELCOS.

The industry is now starting to deploy Standalone (SA) core networks on a large scale, but still has a long way to go before all 5G networks are SA capable. According to ABI Research analysis, ~25% to 30% of global 5G networks have SA core networks, and the upgrade to SA is ongoing. However, the networks that have deployed SA are demonstrating advanced capabilities that allow operators to sell much more than simple connectivity products. For example, T-Mobile US has created network slices for first responders, China Mobile has created consumer package add-ons for social media, stadiums, and business applications, and Singtel has created app-based slicing.

At MWC25, the industry emphasized that combining 5G SA cores with open Application Programming Interfaces (APIs), automation, and cloud agility can unlock highly differentiated services for enterprises. At the same time, the deployment of SA marks the transition to cloud-native systems that utilize both private and public cloud resources. Although the adoption of public cloud for core network functions varies according to mobile operator strategy, its flexibility, scalability, and elastic nature is something all network operators are adopting.

The advancements show that the telco-cloud boundary is blurring. Vendors are also offering their core software in flexible delivery models: for example, Nokia has launched a Core Software-as-a-Service (SaaS) offering, making its entire 5G core available as a subscription service running in the cloud.

The upgrade to SA and 5G Next Generation Core is not a simple infrastructure upgrade, as it requires new operational capabilities, new talent, and that operators shift from hardware-led planning to the cloud. However, this is also a double-edged sword: it opens exciting avenues for new enterprise revenue, including network slicing, ultra-reliable enterprise connectivity, and API monetization, but also demands new capabilities, especially in the business and commercial domain. Moreover, telco operators are designing a solution in search of a problem with APIs and are not spending enough effort to nurture APIs that expand their business footprint beyond their current capabilities. This is evident in the popularity of current network APIs: SIM Swap and authentication are the most popular APIs, but Quality on Demand (QoD) and slicing have yet to reach maturity.

Once again, the industry is presented with a credible opportunity, but needs to take bold steps and risks to combine disparate domains, in this case SA, AI for automation, and APIs. The success of these needs to be market-led, addressing enterprise needs that may not be enabled by other types of technologies.

Mobile operators need to accelerate their investment in specific high-value enterprise verticals to attract the interest of early adopters. They should focus on capabilities no other technology can offer and should put in place a strategy that evolves into more advanced Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS), or SaaS models that include Graphics Processing Unit-as-a-Service (GPUaaS) and network slicing. Public safety, defense, and logistics are suitable verticals where the wide footprint of cellular network operators, coupled with carrier-grade network capabilities, makes them trusted partners. A success with connectivity-based products in these verticals will provide a fertile ground for future telco computing businesses.

—Dimitris Mavrakis, Senior Research Director

5G, 6G, AND OPEN RAN

AI-RAN INTRODUCES NEW BUSINESS MODELS FOR TELCOS, BUT THEIR INERTIA WILL SLOW DOWN PROGRESS.

MWC has traditionally been an infrastructure and hardware-led show, where Tier One vendors previously showcased their new baseband, radio, and antenna units. Innovation in the Radio Access Network (RAN) has been driven by hardware, because physical layer processing was only possible using custom silicon in the past. But now, the capabilities and processing power of Central Processing Units (CPUs) and Graphics Processing Units (GPUs) are showing signs of commoditization and value shifting from hardware to software.

The AI-RAN Alliance is an example of this transition, heavily driven by the capabilities of NVIDIA GPUs, allowing even physical layer processing using Common-Off-the-Shelf (COTS) GPUs. RAN innovation, in this case, is driven by software and, most specifically, by NVIDIA's Aerial AI framework and CUDA. But the replacement of hardware and software innovation is not the most important aspect of this transition. Mobile Network Operators (MNOs) that replace their network elements with GPU-driven infrastructure will be able to resell unutilized resources to third parties in what is called a GPUaaS business model. This is particularly timely, as many enterprises are adopting AI and Generative Artificial Intelligence (Gen AI) and edge-deployed GPUs could well be a valuable addition to enterprise Information Technology (IT).

MNOs have a valid chance of transitioning from selling communication to compute resources, which is a strategic alignment with their business priorities to sell more to enterprises.

The technical capabilities for the GPUaaS deployment model are reaching maturity, but operational and commercial issues still need to be addressed. The telecoms industry domain is plagued by an aversion to risk, especially for new business ideas that require heavy upfront investment without a crystal clear Return on Investment (ROI). The replacement of legacy infrastructure with these new platforms is currently an expensive approach and the GPUaaS model is not yet market proven. Although some early adopters, including SoftBank, are conducting trials and Proofs of Concept (PoCs), more than 95% have yet to adopt this trend. This facet of the comms-to-compute trend can potentially help operators monetize their existing 5G infrastructure, but major cultural, commercial, and operational challenges remain.

Mobile operators and AI-RAN Alliance members should develop this comms-to-compute value proposition from an enterprise requirement perspective. This would oppose the traditional business development model of "build it and they will come" and the technical development process that has somewhat plagued 5G, which has been a solution looking for a problem.

On a practical level, the AI-RAN Alliance should focus on use cases that cannot be enabled by other ecosystems or technologies, and enterprise vertical requirements that are currently unaddressed. They should then gradually invest in seeding trials and PoCs in these vertical segments and align with the broader AI/Gen AI trend. This may mean localized GPUaaS capabilities that addresses specific enterprise, or location requirements; for example, this may be near technological parks or large enterprise headquarters that require GPU resources. This localized approach will limit risk and will allow mobile operators to gradually expand their footprint.

—Dimitris Mavrakis, Senior Research Director

5G DEVICES, SMARTPHONES, AND WEARABLES

THE MOBILE DEVICES SECTOR MAKES INCREMENTAL MOVES TO AI AND COMPUTE.

Another year, another MWC, but it seems that in those short 12 months, most announcements and progress made at the show in the mobile devices sector were incremental, rather than groundbreaking. As expected, the show was generally awash with the use of AI and its innovations in devices at its core to enhance the user experience and provide notable points of differentiation. However, there was also a new buzzword for many to hang their hat on this year, Agentic AI, which is classed as the next frontier of AI evolution and a running theme for many across the mobile value chain. This new Agentic AI era promises to become the ultimate new User Interface (UI) within smart devices.

The mobile devices industry has seen a sea change in attitudes away from connectivity toward compute and AI, and MWC25 did its best to continue to showcase embedded AI, rather than extol the benefits of faster cellular broadband connectivity. Even as the industry evolves toward 5G-Advanced (and, dare we mention, 6G), this drive has yet to shake the sector. There was little advanced cellular connect innovation on display, save for a clutch of 5G Reduced Capability (RedCap) devices from TCL plus the usual silicon upgrades from major mobile chipset suppliers Qualcomm and MediaTek.

Key briefings and launch events were name-checked by brands such as Huawei, HONOR, Xiaomi, and TCL/Alcatel, which all lined up to announce their latest devices and aspirations for the sector, with each devoting a healthy slice of airtime to AI. A standout announcement came from HONOR, which chose MWC25 to announce its HONOR ALPHA PLAN, a new corporate strategy to transform HONOR from "a smartphone maker to a global leading AI device ecosystem company." Behind this grand statement is not only a US$10 billion investment over 5 years, but a three-step plan, the first step being the development of an intelligent phone, while the company hopes to accomplish its goal through industry cooperation in an "open, value-sharing ecosystem." HONOR also announced its AI Agent, claimed to be the world's first Graphical User Interface (GUI)-based personal mobile AI agent that can seamlessly interact with third-party applications, which was best illustrated via the use of an overblown smartphone on its stand and the seamless booking of a table at a restaurant.

As is now often the case, while a raft of new smartphones, other mobile devices, wearables, and accessories were on display at MWC25, very few actually premiered at the show, with the most prominent smartphones having either been already launched or announced for extension into global markets. Within this malaise, there were a few devices of note on display on hall stands that included Samsung's latest Galaxy S25 and Galaxy A series of smartphones that are packed with AI; HONOR's flagship Magic 7 Pro smartphone and MagicBook Pro 14 notebook; and TCL's first AI-powered tablet, the TCL NXTPAPER 11 Plus. Additionally, Xiaomi chose MWC25 as a global launch for its 15 Ultra, but instead the focus was most clearly on mobile photography and video, as it emphasized the use of Leica lenses. Similarly, Huawei showcased its new innovative Mate XT "tri-fold" smartphone, but also with nary a nod to its use of AI, and ongoing theme for the company at the devices area on its stand.

Generally, the sentiment surrounding the mobile devices value chain at MWC25 was one of consolidating around the technologies that are readily available in the market, while trying to best monetize product areas that show solid signs of growth. Undoubtedly, AI and Agentic AI took center stage in the devices sector at the show, while also providing yet another false dawn for mobile products with 5G-Advanced and its features, despite the efforts of many along the value chain. However, perhaps cellular connectivity should not be spurned so readily because the use of AI in devices has yet to really trigger any genuine value and groundbreaking experiences. Indeed, it would appear that HONOR is betting big on Agentic AI, and it will be interesting to revisit its strategic statement in 12 months' time to see how far the company has managed to implement its stretching target, what the impact has been on the wider tech industry, and who among its competitors has joined with it on this journey.

—David McQueen, Research Director

5G RedCap MBB and FWA devices

HYBRID CLOUD AND 5G MARKETS

FOCUS ON PRIVATE CELLULAR APPLICATIONS PUTS COMPUTE AT CENTER STAGE, EVEN FOR ENTERPRISE CELLULAR CONNECTIVITY.

Even in the enterprise connectivity domain, this year's MWC underlined the shift from connectivity to compute. Private cellular networks are no longer just about connectivity—they are becoming enablers of compute-driven enterprise applications. AI, edge computing, and real-time analytics now define the value proposition of private cellular, marking a transition from network deployment to business outcome enablement.

Nokia, for example, launched an AI-powered on-premises sensor fusion suite (MX Context) to enhance real-time situational awareness in Industry 4.0 environments. By integrating AI-driven object detection, pose estimation, and multi-modal sensory data, this solution exemplifies the growing role of private cellular in delivering real-time analytics at the edge. It enables predictive analytics for plant safety, improving response times to incidents and optimizing operational workflows by providing actionable insights in real time.

Similarly, telco carriers like Verizon presented their partnerships with leading global System Integrators (SIs) for use case factories targeting deployments in energy generation & mining, logistics & warehousing, and manufacturing, with a focus on vertical-specific applications, including predictive maintenance to reduce equipment downtime, autonomous equipment to streamline production, and connected worker safety solutions that integrate AI-driven monitoring for hazardous environments.

To succeed in a compute-driven enterprise landscape, telcos must shift from competition to collaboration, strengthening partnerships with hyperscalers and SIs to create use case factories and position cellular networks as platforms for enterprise applications. AI and Machine Learning (ML) should be leveraged to automate network management, enhance performance, and enable predictive maintenance. Simplified network management through low-code/no-code interfaces will further empower enterprises with minimal telco expertise to configure and monitor private networks. Additionally, telcos should adopt a unified management interface that provides end-to-end visibility across connectivity, compute, and application layers, ensuring seamless oversight of network performance, security, AI-driven analytics, and cloud resources from a single dashboard. By focusing on these strategic actions, private cellular providers can drive adoption and maximize the value of their networks for enterprise customers.

—Leo Gergs, Principal Analyst

GoogleCloud had a strong presence at MWC 2025

NEXT-GENERATION HYBRID CLOUD SOLUTIONS

AS TELCOS SHIFT FOCUS TO COMPUTE, THE ROLE OF CLOUD SOLUTIONS BECOMES MORE PROMINENT.

AI's rapid rise is transforming the mobile industry into a compute-intensive ecosystem, demanding scalable cloud capabilities and a unified data strategy. AI-driven applications—spanning real-time network optimization, predictive maintenance, hyper-personalized customer experiences, and autonomous operations—require high-performance computing, low-latency processing, and seamless access to vast datasets.

While hyperscalers like Amazon Web Services (AWS), Google Cloud, and Microsoft were expected players, the growing presence of cloud platform providers like Snowflake and Cloudera, along with sovereign cloud players like Whale Cloud, underscores this shift. Data analytics firms such as Ocient further highlight the critical need for a robust data strategy in the telecoms industry.

To stay competitive, telcos must embrace a cloud-centric data framework that ensures seamless data flow, governance, and interoperability across hybrid and multi-cloud environments. Sovereign cloud adoption and federated data architectures will be key to balancing compliance, security, and monetization. This requires rethinking data ownership through open APIs, data marketplaces, and enterprise partnerships to maximize network intelligence and user-generated insights.

Cloud capabilities will define the next era for telcos, shifting operators from mere connectivity providers to compute-driven service enablers. Success will hinge on investments in data infrastructure, edge computing, and cross-cloud orchestration—ensuring scalable, compliant, and high-performance cloud environments. Strategic cloud alignment, enhanced data federation, and cloud-native architectures will be essential to powering AI, automation, and real-time analytics at scale.

—Leo Gergs, Principal Analyst

AI AND MACHINE LEARNING

MOBILE INFRASTRUCTURE SUPPLIERS RACE TOWARD AGENTIC AI FOR AUTONOMOUS NETWORKS.

The showcases at MWC25 revealed a convergent vision of Agentic AI across major telco vendors, with all pursuing fully autonomous networks capable of self-configuration, self-optimization, and self-healing with minimal human intervention. Common patterns included the transition from cloud-native to AI-native infrastructure, deployment of multi-agent systems with specialized AI agents for different tasks, and integration of foundation models for natural language interactions. Each vendor demonstrated proprietary approaches to achieving L4/L5 autonomy: Deutsche Telekom and Google's Gemini-powered system for network intelligence and anomaly detection; Ericsson's Open RAN solution with Telenor that reduced energy usage by up to 4%; Nokia's AI-powered Threat Hunt Assistant reducing threat detection time from days to minutes; ZTE's AIR DNA end-to-end network solution featuring transitions from dedicated to heterogeneous RAN and cloud-native to AI-native core; and Huawei's AI Core Network with its "agentic choreography pipeline" orchestrating resources and coordinating multiple agents—all aimed at transforming network operations.

Despite impressive demonstrations, significant challenges remain for the industry to address. The lack of standardized approaches for agent orchestration across multi-vendor networks threatens interoperability, while the energy impact of running sophisticated AI systems requires clearer assessment. Security considerations received insufficient attention from most vendors (with Nokia being a notable exception), and the industry has yet to fully develop the workforce transition strategy and business models needed to monetize these investments. Bridging the gap between technical demonstrations and widespread commercial deployment will require industry collaboration, standardization, and continued innovation in translating these capabilities into tangible value for operators and customers.

—Malik Saadi, VP, Strategic Technologies

AI AGENTS ARE THE NEXT EVOLUTION IN DEVICE UI.

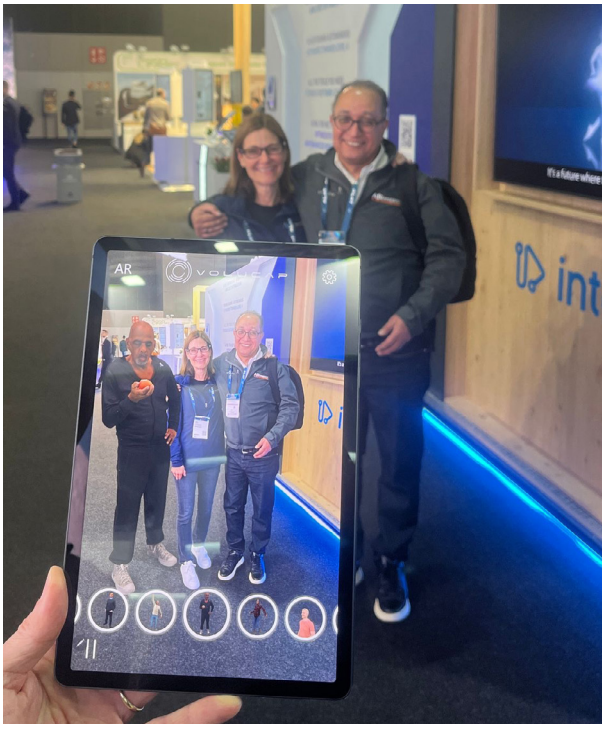
"AI agents" and "Agentic AI" were dominant buzzwords at MWC this year. They promise to become the new UI within smart devices. At the show, major device vendors, including HONOR, Samsung, Lenovo, and Xiaomi, showcased implementations of AI agents within mobile devices to offer natural interactions and personalized experiences. These specialized agents mostly leverage Google's Gemini and knowledge graph engine for contextual awareness with minimal human intervention. Most applications exhibited at the show were still relatively simplistic, focusing on siloed conversational interfaces with capabilities like mining information across various applications, planning trips, managing notifications and messaging across multiple platforms, optimizing device settings, booking restaurants, or managing music across various streaming services. While the PoCs demoed were impressive, most displayed similar use cases with little differentiation across Original Equipment Manufacturers (OEMs).

Looking forward, Agentic AI promises to be the ultimate new UI, enabling multiple agents to work together to address tasks on behalf of users with simple prompts. This will involve breaking tasks down into multiple subtasks utilizing a network of heterogeneous agents representing different applications, features, and device elements. For Agentic AI to become the ultimate device UI, several business and technical challenges need to be addressed:

- Managing and orchestrating various agents from different vendors
- Enabling secure environments in heterogeneous agentic ecosystems
- Addressing memory constraints of hosting comprehensive agent networks within devices
- Autonomous management of agents' lifecycles
- Resolving potential conflicts of interest as applications become abstracted by AI agents
- Determining ownership of AI agent networks and monetization strategies

In summary, smart devices and experiences stand at a critical juncture where the winners will not be those with the flashiest Agentic AI demos, but those who can develop agent systems that create genuine business value and monetizable frameworks in real-world applications.

—Malik Saadi, VP, Strategic Technologies



Smart devices UI demonstrated how to 'add' a person to the group.

IoT HARDWARE

REDCAP HAS A RECKONING.

It is clear now to most chipset, module, and device OEMs that RedCap is still not at a price point or of sufficient network support to drive adoption in most markets outside of China. The latter point on network support is that RedCap (and Enhanced RedCap (eRedCap)) will need SA networks to realize its full value.

However, that is not stopping the ecosystem from taking baby steps to put in place the drivers to accelerate its uptake. The first is that many OEMs, particularly gateway OEMs, are having discussions with customers on RedCap if the application is one where longevity is critical such as smart grid applications. The second baby step is the activities in China. RedCap is expected to be used in some of the low-end Chinese autos. Also, in typical Chinese fashion, there is talk of RedCap module prices sinking to below US$20 in China in 2025. Third, even outside of China, the more aggressive 5G telcos such as T-Mobile in the United States are not certifying new Cat-1bis devices to force OEMs to consider RedCap and eRedCap. eRedCap is considered a Cat-1bis replacement technology.

RedCap could be considered the technology that helps telcos transition to greater compute offerings such as network slicing. At MWC25, there was consensus that the top use cases for RedCap and eRedCap are gateways, camera tech such as body cameras, smartwatches, Point of Sale (POS) terminals, and industrial tablets. ABI Research's IoT Hardware Research Service offers a full suite of reports examining RedCap adoption and markets.

—Dan Shey, VP, Enabling Platforms

FIBOCOM—FROM CONNECTIVITY TO COMPUTE.

The best example of an IoT hardware supplier transitioning from a connectivity focus to a connectivity/compute focus was Fibocom. Fibocom launched Nebula, an AI software offering for customers using Fibocom's device Original Design Manufacturer (ODM) services. Fibocom supports Nebula with its own AI solutions stack that supports various AI models, optimization, edge deployment, and other testing and training services.

It appears that Fibocom is the first in the cellular module community to offer such AI services. In the current Wild West environment of AI finding a place in every part of the connected ecosystem, it will likely find some success with its existing customer base, potentially customers who are experimenting with using AI and unsure of the vendor ecosystem for building AI services at the edge.

The question is how will Fibocom's offering compete in a market where the silicon world is embracing AI at a rapid pace. Case-in-point is Qualcomm's acquisition of Edge Impulse, the latter company known for its edge Machine Learning Operations (MLOps) capabilities. But there are others, such as Infineon's DEEPCRAFT™ Edge AI solutions. Just recently, MediaTek launched Genio 720 and Genio 520 edge-AI IoT platforms. These silicon offerings may be complementary to Nebula, but that will depend on the SI community and the choices they make for deploying AI software at the edge. One outcome is that larger customers may pursue edge AI using silicon vendor offerings, while smaller customers or customers with smaller device deployments work with vendors such as Fibocom.

—Dan Shey, VP, Enabling Platforms

IoT NETWORKS AND PLATFORMS

THE UNDER-APPRECIATED QUIET WINNERS AT MWC—IOT PLATFORMS.

IoT as a term ebbs and flows as the hot topic in the technology world. AI was the hot topic at MWC25, but the conduit for AI is IoT. In other words, the market is waking up to the importance of connecting things to feed the data to build the foundation models that are enabling analytics applications.

Device and connectivity technologies were prominently displayed at the show. But less prominent were the suppliers of software and services that collect and deliver machine and device data. They are companies in the device-to-cloud domain, generically called IoT platforms. Longstanding suppliers in this domain are Telit (deviceWISE), ClearBlade, Litmus Automation, and Cumulocity, but there are many others.

The trend is that enterprise adoption of AI will be in both the Gen AI and established AI domains. The latter will be the domain of the IoT and the platform suppliers are those that will ease data extraction, cleansing, normalization, transformation, and orchestration. AI/ML is only as good as the data—its availability, quality, and quantity. There is never a concern about quantity of data, but its availability and quality are where IoT platforms add value.

The question is how to package and consume IoT platform services. The cloud has been the epicenter for building IoT solutions, but the edge is where the action is now. This does not mean that device vendors—from chip through device—will now lead the solution development efforts. But it does mean that the device ecosystem—with the help of IoT platforms—will play a bigger role as connectivity and compute become equally important.

—Dan Shey, VP, Enabling Platforms

WI-FI & WLAN TECHNOLOGIES AND MARKETS

MWC25 HELPS CLARIFY AI'S ROLE IN WI-FI, BUT ALSO LAYS BARE WI-FI 7'S CHALLENGES.

MWC is typically characterized by hype and bombast, but this year's MWC was a notable departure from that norm, providing the space for a grounded discussion on the realistic applications of AI for Wi-Fi, and on how existing Wi-Fi 7 technology can transform residential and enterprise wireless networks.

Beginning with AI, there were two distinct strains of AI-related innovation for Wi-Fi on display at MWC25 (ignoring the many "AI-driven" Wi-Fi features that are merely repackaged existing technologies). The first is the introduction of Neural Processing Units (NPUs) on chip for edge AI. Processing data on-device, as opposed to in the cloud, allows for both faster and lag free outputs, as well as a reduction in network traffic. Although there were no major new product announcements coinciding with the event, Qualcomm did introduce its new Dragonwing brand portfolio, with the rebranded NPro A7 Platform, a week before the show. News of the first PoC test for a Singtel gateway powered by this chip then hit on the eve of MWC25, with Qualcomm celebrating that by featuring the Smart Traffic Classifier that achieved a 50% reduction in average latency for applications. Likely to avoid being drowned out by the flurry of competing MWC25 announcements, MediaTek chose to unveil the latest editions to its edge-AI portfolio, the Genio 720 and Genio 520, the week following MWC25 (at embedded world). The focus on value add though on-device NPUs reflects a broader trend playing out at MWC25—the shift from communications to compute across the industry.

The second strain of AI for Wi-Fi networking innovation is on the network management side, with AI stepping into assist with configuring, managing, maintaining, and optimizing the network. One of the most promising developments is the emergence of Gen AI assistants that the administrator can interact with using simple conversational language, lowering the barrier to entry for network management and facilitating expedited troubleshooting and network optimization. Aside from the Marvis Virtual Network Assistant from longstanding market leader Juniper, we were also introduced to Intent AI from CommScope and AICC from Huawei. These assistants proactively monitor network performance to detect areas for improvement, but in each case, the user is always given the final say on whether or not to proceed with network adjustments. The prospect of Gen AI fully automating the network in the future was the topic of several conversations, but almost everyone agreed that businesses would forever be reluctant to sacrifice control completely.

—Andrew Spivey, Principal Analyst

5G AND 6G TAKE A BACKSEAT TO THE EMERGING WI-FI.

Perhaps because of the emphasis on compute over communications, 6G was, for the most part, absent from MWC25, although comparisons between 5G and Wi-Fi were, of course, aplenty (something of an MWC tradition at this point). Yet while these comparisons again often descended into open rivalry, the dramatic shift in the dynamic between the two technologies over the past 12 months meant that 5G often found itself without a leg to stand on. Not only is it now self-evident and broadly acknowledged that 5G has failed to live up to its promise, but given that much of that unfulfilled promise was based on the capabilities of the now fading Millimeter Wave (mmWave) (starkly highlighted by recent news that the iPhone 16e will not support mmWave), the industry is left in a haze as to what the real potential of 5G is. At the same time, Wi-Fi has seen considerable advancements over the past year, with Wi-Fi 7 and the new 6 Gigahertz (GHz) spectrum enabling new capabilities and greater reliability that empower the technology to eat into 5G's projected addressable market. This reality was evident at MWC25, with Wi-Fi 7 often front and center at the event's many enterprise connectivity booths.

The omnipresence of Wi-Fi 7 also reflects the fact that the latest standard has now progressed from being a novel technology to being in the mainstream. At the same time though, MWC25 also highlighted the growing chasm that exists between fully-fledged Wi-Fi 7, which has access to the new 6 GHz spectrum, and dual-band Wi-Fi 7, which can harness just the legacy 2.4 GHz and 5 GHz bands. The latter is seeing higher than anticipated demand not just from regions without 6 GHz access, but also from cost-sensitive consumers worldwide, notably in Europe and Asia. Recent news that India has opted to also allocate 6 GHz for International Mobile Telecommunications (IMT) usage, just as Mainland China did before it, has cemented the fracturing of the market. Yet, despite the fact that performance and quality of experience will be starkly different between the two variants of Wi-Fi 7, both were marketed simply as Wi-Fi 7 at MWC25. This is a major issue that the industry needs to address as soon as possible to avoid further damage to the technology's market potential through confusion.

—Andrew Spivey, Principal Analyst

SOUTHEAST ASIA DIGITAL TRANSFORMATION

GLOBE TELECOM, PHILIPPINES—AI-DRIVEN INSIGHTS AND CROSS-DOMAIN ANALYTICS DROVE INCREASED NETWORK MONETIZATION.

At the event, I had the opportunity to interview Dennis Abella, Vice President of Network Digitalization, Globe Telecom and gain insight into how AI-driven insights and cross-domain analytics drove increased network monetization.

Globe was experiencing several business challenges, notably:

- Traditional mobile plans have become increasingly homogeneous, making it challenging to drive differentiation and growth. As a result, Average Revenue Per User (ARPU) has remained stagnant over multiple quarters.
- While Globe Telecom had made consistent investments in network improvements, a proportion of customers were downgrading their plans or switching providers.
- The operator was experiencing increasingly diverse consumer profiles and behaviors. Some subscribers were streaming videos daily without subscribing to a data package, while others were leaving due to perceived poor network performance.

Through AI-driven insights, Globe Telecom uncovered a crucial insight: a user's willingness to pay is directly linked to their network usage habits. For example, mobile gamers demanded ultra-low latency for seamless gameplay, while binge-watchers prioritized high bandwidth for uninterrupted streaming. These insights were gained with support from Huawei's Smart Decision Solution. Globe Telecom discovered that many users were hesitant to use mobile data due to insufficient allowances, leading to an underutilization of the network.

By applying these deeper behavioral insights, Globe Telecom crafted customized data packages that better met user needs. Instead of a one-size-fits-all approach, the operator introduced flexible offers tailored to specific user behaviors, such as gaming, streaming, or everyday browsing.

Lastly, Globe Telecom then remodeled its internal Customer Experience Index framework to integrate these insights, ensuring its network experience capabilities are based on real customer needs.

ABI Research does consider Globe Telecom's utilization of AI-driven insights and cross-domain analytics to be an effective tool in the arsenal of Communication Service Providers (CSPs). It is certainly true that CSPs in the Southeast Asian region, and indeed in many emerging markets, are experiencing competition from fellow telcos, as well as the maturation of legacy telco service models. AI models and cross-domain analytics can enhance personalization, optimize pricing strategies, and drive stronger customer engagement and satisfaction. ABI Research's Southeast Asia Digital Transformation Research Service has been actively researching and delving into the use of AI and ML tools in the telco and enterprise sectors.

—Jake Saunders, VP, Asia-Pacific & Advisory Services

ABI Research's Jake Saunders presenting at Huawei Mobile AI event.

SINGTEL, SINGAPORE, LEVERAGES AI AND NETWORK SLICING TO OFFER ENHANCED PROTECTION AND SERVICES TO ITS CUSTOMERS.

Our team was particularly pleased to see Singtel win the "Best Mobile Security" prize for its "Enterprise Mobile Protect & 5G Priority" capability. The solution leverages 5G network slicing technology and Palo Alto's Next-Generation Firewall (NGFW) to offer real-time protection and advanced safeguards to its enterprise customers.

Enterprise executives and end users often have valuable corporate information and, most crucially of all, network and IT credentials on their smartphones, tablets, and laptops. And yet, these workers can be under constant attack from phishing attacks, malware, and hackers as they go about their regular lives "in country" (by accessing third-party Wi-Fi networks) and when traveling (by accessing third-party mobile networks). Singtel's 5G Security-as-a-Slice extends security to roaming users, protecting them from online attacks, surveillance risks, and unsecured networks.

Singtel is very much leaning into the AI and "compute as a service" strategy. In early 2024, Singtel's senior management set out a new vision, Singtel28, to expand the CSP's operational focus to embrace the potential opportunities of digital transformation, as well as AI. This is an "all hands on deck" strategy. Singtel's management is not only involving its communications subsidiary, but also information solutions vendor, National Computer Systems (NCS), and Nxera, its data center operation.

Singtel is actively pivoting from being a "telco" to being a "techco". The wider Southeast Asian region is also starting to take active steps to move to a greater, "techco model." Legacy telecoms industry revenue streams are being commoditized. AI and digital transformation are creating value. From ABI Research's own research into Asia-Pacific's digital transformation market opportunity, we estimate that 5G-to-Business (5GtoB) equipment spending will grow to US$13.5 billion by 2028 (see Asia-Pacific 5G-to-Business Developments and Outlook (AN-5713).

—Jake Saunders, VP, Asia-Pacific & Advisory Services

MEET OUR ANALYSTS

Stuart Carlaw, *Chief Research Officer*

As Chief Research Officer, Stuart Carlaw leads ABI Research's analyst teams covering global technology markets. Stuart's primary responsibility includes managing industry research content, technology and market focus, subject matter guidance, product portfolio mix, and custom research and consulting, as well as client engagements and strategic advisory provisioning.

Malik Saadi, *Vice President*

Malik is focused on technology innovation across various industries, including telecommunications, consumer electronics IoT, and other emerging industries. With more than 16 years of experience in the telecommunications and computing industries as a technology expert and analyst, he guides his research team toward uncovering the impact of technology innovation on different industries and markets, with the ultimate goal to provide clients with both quantitative and qualitative vision of the overall market development and how the various technologies involved will empower this development.

Dan Shey, *Vice President*

Dan Shey manages the Machine-to-Machine (M2M)/Internet of Things (IoT), digital security, and wearables research services, which cover the telco, industrial, Information Technology (IT) and Operational Technology (OT) ecosystems with a focus on devices, connectivity, platforms, applications, big data/analytics, convergence, and strategic analysis of the entire IoT value chain extending from devices through value-added services.

Dimitris Mavrakis, *Senior Research Director*

Dimitris Mavrakis, Senior Research Director, manages ABI Research's telco network coverage, including telco cloud platforms, digital transformation, and mobile network infrastructure. Research topics include AI and machine learning technologies, telco software and applications, network operating systems, SDN, NFV, LTE diversity, and 5G.

David McQueen, *Research Director*

David McQueen, Research Director, manages ABI Research's connected consumer devices and platforms market coverage, which includes data, trend, and forecast analyses on mobile handsets, smartphones, wearables, accessories, new mobile technologies, and semiconductors.

Jake Saunders, *Research Director*

Jake Saunders, Vice President, Asia-Pacific & Advisory Services, heads ABI Research's Asia-Pacific research division. Jake brings highly developed analytical skills to the company, combined with years of expertise in the technology market research business and a proven track record of operations management. He devotes particular attention to the Asia-Pacific market in relation to its mobile operator strategic positioning, infrastructure vendors, mobile device vendors, and chipset manufacturers.

Leo Gergs, *Principal Analyst*

As part of ABI Research's 5G Markets research service, Leo has a special focus on the commercialization of 5G, covering 5G use cases across several enterprise verticals and their financial impact. His area of expertise lies in identifying key enterprise vertical requirements and mapping then to 5G capabilities, and in turn identifying what the future use cases and potential new business opportunities will be for the new generation. He is in regular exchange with different enterprise verticals and associations like 5G-ACIA or 5GAA. He is also involved in calculating the economic value of 5G across different verticals and its contribution to global GDP.

Andrew Spivey, *Principal Analyst*

Andrew is a Wireless Connectivity Industry Analyst in the Strategic Technologies team at ABI Research. He is responsible for producing qualitative analysis and market forecasts in the areas of consumer and enterprise Wi-Fi and wireless infrastructure, fixed wireless access, and other trends impacting wireless networking technologies.

HOW ABI RESEARCH CAN SUPPORT YOUR BUSINESS GOALS

If you need help understanding the future of the telecoms industry or if you have critical questions that need to be answered, ABI Research can help. Whether you are a telco operator, device OEM, chipset supplier, or another industry player, ABI Research empowers you to stay one step ahead and plan for strategically sound technology rollouts.

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ABOUT ABI RESEARCH

ABI Research is a global technology intelligence firm uniquely positioned at the intersection of technology solution providers and end-market companies. We serve as the bridge that seamlessly connects these two segments by providing exclusive research and expert guidance to drive successful technology implementations and deliver strategies proven to attract and retain customers.

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