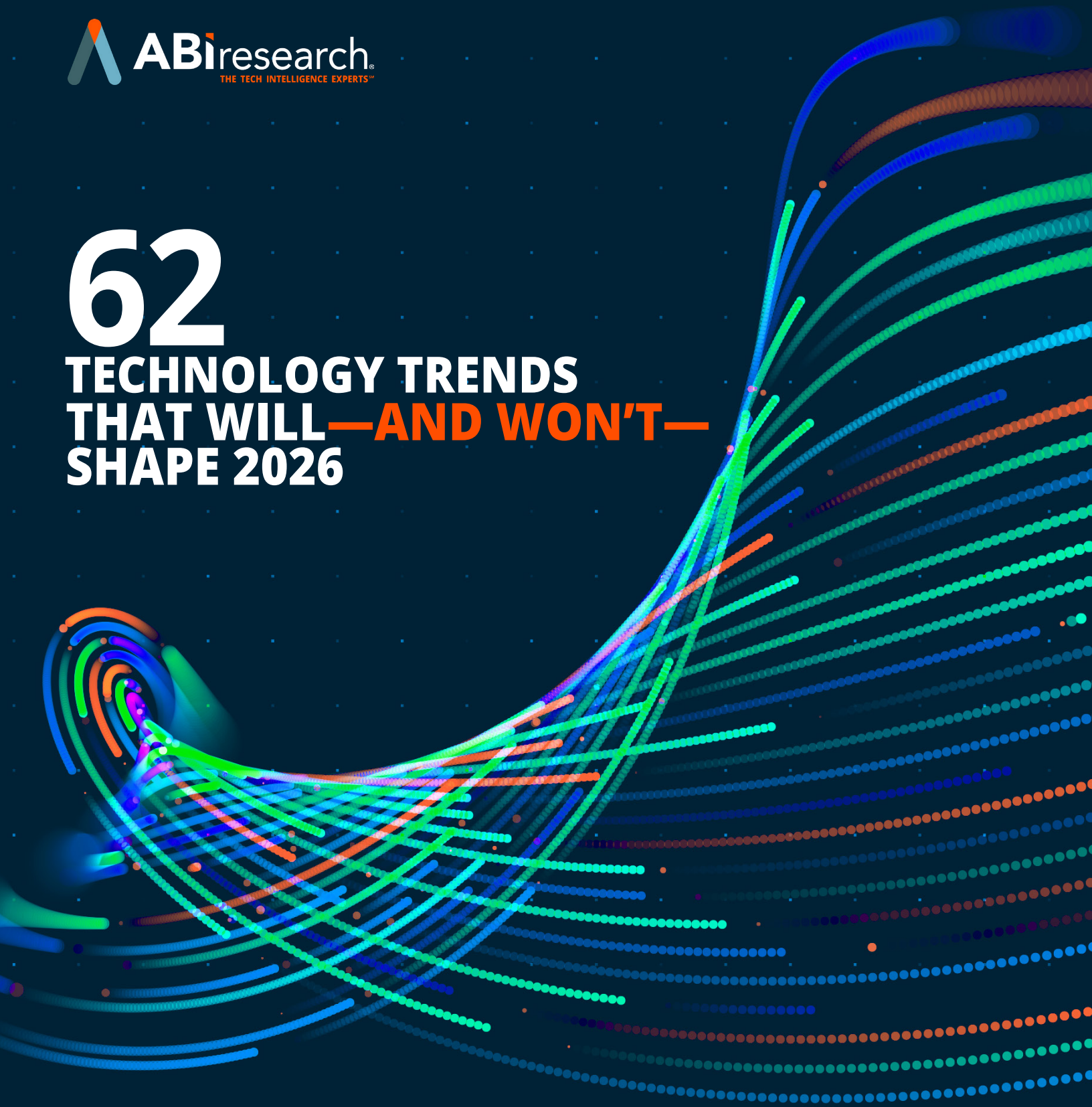
ABIresearch
THE TECH INTELLIGENCE EXPERTS℠

62 TECHNOLOGY TRENDS THAT WILL—AND WON'T—SHAPE 2026



FROM OUR CHIEF RESEARCH OFFICER

This past year has been shaped by a complex mix of macro stabilization and structural strain. Inflation has continued to ease in some regions, monetary policy is gradually normalizing, and supply chains have become more predictable.

However, geopolitical tensions still weigh heavily on the minds of technology decision makers. Conflict zones remain active and tariff policies have shaken up the status quo. At the same time, energy availability, climate pressures, and skills shortages continue to limit global economic growth. As a result, the technology sector has shifted from crisis mode to being cautiously optimistic.

Within this environment, 2026 will be defined by pragmatic transformation. Across the markets that ABI Research analyzes, a consistent pattern is emerging: organizations will invest where technology reduces risk, lowers cost, or directly boosts productivity. The appetite for sweeping visionary promises is fading. Enterprises want practical results, quick wins, and solutions that address long-standing operational challenges.

Artificial Intelligence (AI) will continue to be a key talking point in the boardroom. While Generative and Agentic tools will certainly progress, purchasing decisions will revolve around targeted workflows, automation of routine tasks, and structured orchestration. New cloud models are also materializing, which reflect enterprise demand for sovereign, full-stack solutions. Meanwhile, organizations across logistics, buildings, energy, and manufacturing increasingly prioritize solutions that enhance decision-making, not merely visibility platforms.

Taken together, 2026 will be a year of disciplined modernization. The organizations that succeed will be those that reduce complexity, deliver measurable value, and address the most immediate operational challenges. ABI Research looks forward to helping clients navigate this transformative year.

Stuart Carlaw

RESEARCH SERVICE AREAS

5G DEVICES, SMARTPHONES & WEARABLES

1 WILL HAPPEN — SMART WEARABLE SALES WILL STRENGTHEN.

The wearable devices sector represents a confluence of miniaturized technology, fashion, and personal aspirations/concerns. Originally, the lineup only included wired headphones and smartphones cases, but since then, smartwatches, smart rings, smart clothing, and even Artificial Intelligence (AI)-enabled glasses have been added to the mix.

One of the most iconic bastions of the wearables market is the smartwatch. Seiko may have introduced one of the first smart-watches, the Seiko Ruputer in 1998, but it was not until the advent of the Apple Watch in 2015 that the smartwatch market took off. The COVID-19 pandemic triggered an upswell of sales in smartwatches as end users sought out fitness, health, and well-being monitors. This led to an overhang of sales that dampened unit shipments from 2023 to 2025. However, ABI Research anticipates an upswing in sales (+6.5% in Year-over-Year (YoY) wearable device revenue) that has been led by the smartwatch market.

It is not just step counting and calories burned that are driving wearable sales, it is also enhanced health monitoring features. For example, the Apple Series 11 Watch can now watch out for hypertension, while the Samsung Watch8 can monitor antioxidants in your blood (aka carotenoid levels). Several smartwatches now support satellite emergency messaging. Google recently added the feature to its Pixel line.

Smart rings are also making their presence felt in the market. ABI Research anticipates smart ring sales to grow 9.7% in 2026 to US$3.6 billion. Oura and Samsung have been prominent exponents of the smart ring phenomenon, although RingConn, and Ultrahuman are also closing the gap. Improved battery life and sensors have made smart rings more discrete and able to take on more aesthetic features.

Smart features and functionalities are also making their way into clothing. Gesture recognition, thermo-regulation, and inobtrusive monitoring of health conditioning are just some of the functionalities being added to smart clothing. Smart clothing generated 26.6 million items in sales in 2025 and is expected to grow 15% in 2026.

2 WON'T HAPPEN — ON-DEVICE AI IN SMARTPHONES WILL NOT BE THE DRIVER OF PREMIUM SMARTPHONE ADOPTION IN 2026.

AI on-device was one of the defining topics in smartphones in 2025, with mobile vendors aggressively ramping up their launches for AI-enabled smartphones like the Google Pixel 10, the Samsung Galaxy AI-compatible devices, Apple Intelligence compatible devices, and Huawei's newest Mate 70 line of AI phones. However, while AI-capable hardware is already present in premium smartphones shipping in 2025, AI software in smartphones is yet to catch up to standards that consumers expect or find useful for integration and implementation into their lives.

Most smartphones shipped with AI features now come with some use cases, albeit almost identical to each other. Vendors cannot rely solely on features like AI-enhanced photography, AI photo editing, AI text summarization, live translation, and AI-powered voice assistants to market the revolutionary nature of AI enablement in smartphones. Sustaining and driving demand in new AI-enabled smartphones will rely primarily on establishing useful consumer experiences that can impact and simplify their daily lives and routines, not purely on hype cycles and marketing. Vendors must acknowledge that the drivers in premium smartphone adoption and shipments in 2026 will not be primarily reliant on the marketing of "AI" as game changing if its use cases do not evolve into more concrete software that changes consumers' daily interactions and experiences with their smartphones.

Currently, demand for AI on smartphones has been lackluster, as smartphone vendors have done little to convince consumers of the benefits of on-device AI, how privacy is prioritized, and how to integrate AI effectively, rather than treating it as just a "nice to have" feature. If this issue remains unresolved in 2026, vendors should not expect that on-device features in the newest premium smartphones will be the primary driver of adoption, but rather a forgettable add-on that comes with the increasing price tag of premium smartphones.

5G, 6G & OPEN RAN

3 WILL HAPPEN — 6G CAUTIOUSLY PROPOSES SERVICE INNOVATION, BUT THE INDUSTRY IS STILL IN SHOCK FROM THE 5G ENTERPRISE LETDOWN.

In 2026, discussions about 6G networks will become increasingly common across the telecoms sector. Unlike the hard selling that occurred for 5G networks, the messaging around 6G will be much more measured and realistic in tone. Vendors and service providers are aware of the credibility gap created when 5G Enterprise solutions did not produce the expected transformative Return on Investment (ROI) that many businesses expected. As a result, 6G will be marketed as an evolution toward enhanced connectivity instead of being branded as a paradigm-shifting technology.

Initial 6G offerings will focus more on creating small-scale service innovation versus large-scale disruption. The first experiments will be more about using hybrid models that combine 5G-Advanced with select elements of 6G technology, such as integrated sensing and Artificial Intelligence (AI)-driven orchestration, and targeting a specific niche market of industrial automation and immersive Extended Reality (XR) applications. These first steps for 6G will be positioned as future-ready solutions, instead of being the basis for immediate monetization opportunities.

Enterprises will still be hesitant to implement 6G pilot programs until transparent business models are available that show them how they will achieve ROI. For operators, software-defined upgrades, increased spectrum efficiency, and collaborative partnerships that minimize upfront capital investments will be top priorities. The theme will continue to focus on responsible innovation, while standards organizations will be establishing technical specifications for vendors to develop proof-of-concept demonstrations instead of offering broad-based transformation promises associated with the 5G era.

4 WON'T HAPPEN — AI-RAN WILL NOT TAKE OFF IN 2026 AS OPERATORS DEMAND PROOF OVER PROMISES.

Discussions surrounding Artificial Intelligence-Radio Access Network (AI-RAN) are becoming increasingly popular in the telecommunications sector, with it having the potential to facilitate automation, improve network performance, and reduce operating costs. Despite vendor interest gaining momentum, as evidenced by a membership growth rate of the AI-RAN Alliance from 11 initial members a year ago to over 80 today, ABI Research does not expect AI-RAN to see any meaningful commercial deployments in 2026. With operator membership stalling at 8 members, there is a clear operator reluctance to commit financially to AI-RAN before they see clear evidence of both technology performance and financial gain, especially because 5G monetization remains a significant hurdle for many of them.

Additionally, the disparity between the perceived advantages associated with AI-RAN and what has actually been documented through practical use cases is simply too great for service providers to justify committing their capital toward AI-RAN deployments at this time. Currently, there is no independent and validated benchmarking process. Although there have been some pilot programs run by SoftBank, NVIDIA, and others that provide insightful indications of potential cost reductions and better efficiencies, none of those programs have been independently evaluated or validated by a third party.

Architectural uncertainty adds to the complexity of this situation. While GPU-based solutions can provide high-performance for advanced use cases, such as massive Multiple Input, Multiple Output (mMIMO), there is concern about Graphics Processing Unit (GPU)-based solutions regarding their high-energy consumption, being proprietary, and the potential for vendor lock-in. While Central Processing Unit (CPU)-based solutions and custom silicon solutions are much more efficient for Artificial Intelligence (AI) workloads, neither can provide the level of acceleration required for executing the most complex algorithms currently used for AI. This lack of consensus will stall decision-making throughout 2026.

In 2026, ABI Research anticipates only gradual advancements toward implementing AI technologies in applications that are not time sensitive, such as traffic prediction and anomaly detection, as these technologies will provide significant benefits, while eliminating the risks of deploying AI-RAN solutions completely. In order for AI-RAN to become more than just a buzzword, the telecoms industry will need to standardize metrics, validate economic models, and demonstrate interoperability between different architectures. At best, 2026 will be a year when AI-RAN is likely to experience a continuation of conservative testing, with only modest deployments occurring.

AI & MACHINE LEARNING

5 WILL HAPPEN — OPEN STANDARDS IN AI DATA CENTERS WILL PROLIFERATE AND GROW IN INFLUENCE.

Open standards that enable interoperability between server vendors and increase the modularity of Artificial Intelligence (AI) clusters will continue to gain importance in 2026. Such standards are important for building the next generation of AI data centers because they dismantle proprietary ecosystems and foster a more competitive environment. At the hardware level, standards set by the Open Compute Project (OCP) and the Ultra Accelerator Link (UALink) enable a modular, multi-vendor approach, allowing operators to integrate best-of-breed accelerators, networking, and storage without being locked into a single vendor's designs. The remit of the leading OCP body will also expand, as seen at their annual Global Summit in November 2025, with its sphere of influence having grown beyond servers to racks, clusters, and now the layout of AI data centers.

There will also be significant activity in the interconnect space, as several new standards have emerged over 2025, alongside the maturation of existing challengers to NVIDIA's proprietary NVLink, such as UALink. This includes Broadcom's Scale-Up Ethernet (SUE), unveiled in conjunction with the Tomahawk Ultra switch Application-Specific Integrated Circuit (ASIC), which competes with InfiniBand and NVLink. OCP also announced the Ethernet for Scale-Up Networking (ESUN) workstream, which will advance Ethernet in the scale-up domain and work with other open standards such as UALink (spearheaded by AMD) and the Ultra Ethernet Consortium (UEC) for scale-out across computing notes.

6 WON'T HAPPEN — THE MINTING OF NEW AI-FIRST NEOCLOUDS IN EUROPE AND NORTH AMERICA.

With rumors about AI clusters sitting idle for lengths of time and neoclouds' laser focus on efficiency and utilization, it is highly unlikely that we will see the incorporation of new neoclouds in Europe or North America, where the market has matured significantly over the last 12 months. This comes with the risk of market exits and consolidation, although, to date, this has been less than anticipated (Northern Data Group's Taiga Cloud and rumors about the liquidation of Genesis Cloud notwithstanding). Competition is tight as it stands, which is also reflected in the falling neocloud on-demand GPU hour prices, which are distinct from hyperscaler platforms. This dynamic is also reflected by neoclouds' investments in their cloud software platforms (for inference and training workloads), which aim to retain customers by building a commercial moat around their offering.

AUTOMOTIVE

7 WILL HAPPEN — CAMERA-BASED DRIVER MONITORING SYSTEMS WILL GROW RAPIDLY IN 2026, DRIVEN BY REGULATORY REQUIREMENTS IN EUROPE.

Camera-based driver monitoring systems will experience rapid growth in 2026, driven by a binding regulatory requirement in the European market. Historically, a niche system highly correlated with the adoption of semi-autonomous driving systems, camera-based Driver Monitoring Systems (DMSs) are ideally positioned as the technology to fulfill the Advanced Driver Distraction Warning (ADDW) component of the European Union's (EU) General Safety Regulation (GSR2), directly tracking the driver's eyes to measure direction of gaze. While this requirement first came into effect in 2024, it only applied to newly introduced models, with July 2026 the key date from which all newly shipped vehicles, including those based on legacy platforms, must feature ADDW-fulfilling technology. As a result, far more vehicles will ship in 2026 featuring camera-based DMSs, with ABI Research expecting 7 million DMS-equipped models to ship in 2026, with further growth expected in 2027 as the time window expands to cover effectively all vehicles shipping in Europe that year.

This is welcome news to DMS suppliers that have long-standing relationships with European Original Equipment Manufacturers (OEMs), but which have had little choice but to wait for binding regulation to deliver significant volumes. With the growth impact of this regulation expected to be exhausted by the end of 2027, DMS suppliers must look to other markets to sustain growth, with China the next frontier, albeit with a different set of requirements slanted more toward feature richness, as well as an increasingly crowded set of domestic suppliers ready to deliver.

8 WON'T HAPPEN — THE NEW VEHICLE SALES MARKET WILL NOT BOUNCE BACK IN 2026, AS AUTOMAKERS CONTINUE TO NAVIGATE SUPPLY CHAIN CHALLENGES.

In 2025, the automotive industry faced its largest supply chain disruption since the 2021 semiconductor shortage, as a slew of tit for tat tariffs brought chaos to automotive supply chains. Even as individual automakers sought to re-optimize their manufacturing strategies, adjusting the manufacturing locations for key models to minimize the tariff impact, the market as a whole experienced a year of two halves. With many of the tariffs pre-announced ahead of time, consumers that anticipated a looming price hit rushed out to buy new cars from existing inventory, with the effect of delivering a better than expected first half, although faltering growth in the second half suggests that the impact of growing trade friction is starting to bite.

Going into 2026, automakers should not anticipate a rapid return to growth. Even as slower moving automakers make the final adjustments to their supply chain strategies, the Nexperia crisis demonstrates how exposed the automotive market is to disruptions within suppliers with circular supply chains crossing increasingly abrasive geopolitical dividing lines. As some OEMs once again find themselves having to reduce manufacturing output due to a lack of essential, mature-node components, it is clear that the industry has yet to properly absorb and respond to the lessons learned from the 2021 semiconductor shortage crisis, and serves as an important reminder that tariffs are far from the only supply chain disruptor that automakers must navigate. Overall, ABI Research expects modest growth of 1.6% for passenger vehicles in 2026.

CITIZEN DIGITAL IDENTITY

9 WILL HAPPEN — DESPITE A CLEAR TREND TOWARD DIGITIZATION, PHYSICAL SECURITY WILL REMAIN PROMINENT THROUGHOUT 2026.

Despite the clear trend toward digitization within the government ID market, physical credentials remain a cornerstone for securing both identities and transactions.

Digital-first approaches that have been implemented and scaled remain few and far between on a global level, and although the market will likely continue the transition to digital-first approaches, the government ID market will remain primarily physical first in nature, with mobile acting as a companion to the physical.

Physical credentials are, therefore, not going away anytime soon, and in a market with long document life spans and increasingly sophisticated and well-resourced counterfeiters, continued evolution in physical security features to help tackle novel subversion methods remains essential.

Whether addressing the market from a personalization and printing perspective or supplying consumables such as materials, films, and inks, enhancing and improving physical security features will remain a focal point throughout 2026.

10 WON'T HAPPEN — LAGGING STANDARDIZATION EFFORTS AND PERSISTENT TECHNICAL AND PRACTICAL OBSTACLES DELAY QUANTUM READINESS WITHIN GOVERNMENT-ISSUED AND NATIONAL ID CARDS BEYOND 2026.

The year 2025 represented a breakout year for Post-Quantum Cryptography (PQC), which is increasingly penetrating digital trust markets across verticals and regions. However, hold-ups are still expected regarding PQC penetration into the identity smart card market. There are three primary obstacles responsible for the current standstill,

1. A lack of standards from the International Civil Aviation Organization (ICAO) regarding the PQC algorithms to be integrated into passports.
2. Given the larger key size and increased computational demands of PQC, these algorithms are inherently incompatible with the memory-constrained nature of national ID cards and passports, complicating integration in a way that balances high cryptographic security with the demands for efficiency and speed of verification within the broader identity space.
3. Interoperability requirements mean that migration across the identity ecosystem must happen in sync, posing high practical obstacles to achieving quantum readiness in government-issued and national ID cards. While closed-loop environments, particularly those with high security assurance requirements such as physical access cards for government departments, are free from the same interoperability and standards constraints that limit PQC passports, the same technical constraints apply.

While the announcement of National Institute of Standards and Technology (NIST)-approved quantum algorithms has given chip vendors, semiconductor manufacturers, digital trust and Public Key Infrastructure (PKI) providers, card issuers, and manufacturers of supporting hardware (e.g., document scanners, eGates, etc.) the green light to begin integrating the quantum algorithms into smart cards, without vertical-specific mandates dictating which algorithms to integrate, quantum readiness is not expected until post-2026, despite recent developments pertaining to dedicated hardware accelerators and PQC integration. The ICAO is in the working group stage of ideating PQC standards, yet given the typically slow-moving nature of this process, real-world deployments remain a way off. Lastly, demands to implement crypto-agility place further pressure on size and computation constraints, especially given the limited capacity for Over-the-Air (OTA) updates within smart card architectures.

CLOUD

11 WILL HAPPEN — IN 2026, CLOUD SOVEREIGNTY TAKES OVER AS THE MARKET PIVOTS TO HARDWARE TRANSPARENCY AND FULL-STACK CONTROL.

Given all of its geopolitical tensions, the year 2025 underlined the importance of sovereign digital infrastructures. Shifting export controls, retaliatory sanctions, and unpredictable national security directives made it clear that global cloud dependencies are now geopolitical liabilities. The starting point for most enterprises in 2025 was a narrow focus on data residency and data accessibility controls. In 2026, this sovereignty shift will reshape the competitive landscape more profoundly, as enterprises will demand a fully sovereign cloud software stack and not be obsessed with data residency and data accessibility alone.

Enterprises will increasingly evaluate clouds on transparency, control, and supply chain clarity. This will favor providers like STACKIT or NextGen Cloud that deliver open compute, predictable economics, and contractual guarantees against unilateral platform changes. Alternative cloud service providers that are specializing in providing Graphics Processing Units (GPUs) in a cloud-like business model (so called neoclouds) will position themselves as credible alternatives to U.S.-headquartered hyperscalers.

For the big U.S.-headquartered hyperscalers, this means they must ramp up their sovereign cloud offerings to remain competitive in an increasingly fragmented market. As enterprises demand a fully sovereign cloud software stack, hyperscalers will have to work with regional players (like telco system integrators, neoclouds, and others) either through acquisitions or partnerships to be able to deliver the degree of sovereignty that enterprises are requesting.

12 WON'T HAPPEN — NEOCLOUDS WILL NOT UNLOCK ENTERPRISE AI USE CASES AT SCALE.

With the intensified hype around Artificial Intelligence (AI), 2025 saw the emergence of a new group of service providers that focus on providing GPUs in a cloud-like as-a-Service (aaS) business model. While their business model sounds appealing at first (providing GPU capabilities to enterprises, while freeing them from the massive barrier to entry called Capital Expenditure (CAPEX)), these service providers absorb all the business economic risks that come with joining the AI hype train.

Illustrating this is the exorbitantly high capital intensity of leading neocloud providers (200% to 300% in 2025), reflecting the enormous upfront investments required for GPUs, data center build-outs, power and cooling upgrades, and specialized networking infrastructure. This level of capital burden is far beyond typical cloud economics and highlights how aggressively these providers must spend simply to remain competitive in the AI infrastructure race.

With these dynamics playing out, neoclouds will be forced into a rapid and unavoidable repositioning. To monetize their heavy investments, they must move aggressively closer to enterprise verticals and position themselves as embedded partners within manufacturing floors, clinical systems, financial operations, and energy grids. Currently, ~95% of enterprise AI applications fail to advance past the Proof of Concept (PoC) stage (the "PoC trap"), highlighting how desperately they require help and guidance when it comes to which enterprise AI applications to deploy. Successfully targeting enterprises, however, requires a dense network of partners, as well as a proven track record and a set of blueprint AI use cases that enterprise owners can take and adapt to their own workflows and requirements. Neocloud providers will have to build this library of use cases (including Return on Investment (ROI) and Cost of Inaction (COI) discussions), and the necessary trust levels.

It will take years to build this reputation, realistically, so these cloud service providers will have to rely on venture capital and contracts with technology companies and Large Language Model (LLM) developers before they can monetize their platform with a diversified, healthy stream of enterprise revenue.

DIGITAL PAYMENT TECHNOLOGIES

13 WILL HAPPEN — THE YEAR 2026 WILL MARK THE FINAL HOORAY FOR THE BIOMETRIC PAYMENT CARD.

The buzz around biometric payment cards continues to fade, despite heavy investment in the technology. Barriers that include price and complex enrollment mechanisms have hindered adoption within the payment card market. Vendors have subsequently begun repositioning toward new end markets, notably for access control and crypto-cold wallets, but with new partnerships and ecosystems to set up, progress has been slow.

Zwipe became the first corporate victim, announcing its insolvency in early 2025, demonstrating the clear challenges in accelerating commercial adoption. In 2026, we will continue to see a handful of biometric payment card demos, but there will likely be a notable shift from prior messaging. Rather than being viewed as a next-generation innovative card technology for the masses, it will act as a vendor showcase, used as an example of technological capabilities and leadership..

14 WON'T HAPPEN — REDUCED VULNERABILITY TO QUANTUM THREATS WITHIN PAYMENT CARDS WILL SLOW THE TRANSITION TO PQC, PUSHING QUANTUM-RESISTANT PAYMENT CARDS OUT BEYOND 2026.

Beyond the interoperability challenges with migrating distributed infrastructure of the payments ecosystem, and the size and memory constraints posed by PQC within payment cards, it is the relatively limited vulnerability of payment card transactions to the quantum threat that is expected to play a major role in slowing the quantum migration within payment cards. Cryptographically Relevant Quantum Computers (CRQCs) pose a reduced threat to payment cards when compared to other smart card markets, for two primary reasons:

1. "Harvest now, decrypt later" attacks lack the same potency in the payments card segment due to the limited life span of encrypted payment card data. Payment card data are rendered obsolete within a short time frame, demolishing its usability to any malicious actor who manages to decrypt it using a CRQC.
2. Online transactions are relatively resilient to CRQC, with offline transactions posing much of the threat given their exclusive reliance on quantum-vulnerable asymmetric encryption, rather than a joint reliance on symmetric and asymmetric encryption as within online transactions.

While payments players wait for standards gaps to be plugged, other strategies include prioritizing exclusively online transactions, limiting dependence on its offline counterpart. The feasibility of this measure as a defense against CRQC is debatable, particularly given the heavy reliance on offline transactions within high-volume/high-speed transactions. However, this much is clear: quantum-resilient payment cards are not yet on the horizon for 2026.

ENTERPRISE CONNECTIVITY

15 WILL HAPPEN — AI AGENTS WILL BUILD THE MOST POWERFUL IN-BUILDING WIRELESS PORTFOLIO BY UNIFYING DAS, DRS, AND PRIVATE CELLULAR.

While 2025 was a slow year for enterprise connectivity, 2026 will mark the breakthrough moment when connectivity providers will lean into the capabilities of Artificial Intelligence (AI) to simplify technology complexities and combine different connectivity technologies to provide a strong in-building wireless connectivity portfolio. We have seen early signs of this convergence happening already. A few Chinese infrastructure vendors are actively working on architectures that converge a Distributed Antenna System (DAS)/Distributed Radio System (DRS) with private cellular. Meanwhile in Europe and the United States, service providers are working on making neutral host architectures (with a Multi-Operator Radio Access Network (MORAN) and/or Multi-Operator Core Network (MOCAN)) fit for enterprise connectivity.

The emergence of AI, and specifically AI agents, holds great promise in overcoming the technology complexity that has historically come with converging different connectivity technologies: the Model Context Protocol (MCP) provides a standardized way for AI agents to access tools, Application Programming Interfaces (APIs), telemetry streams, Network Functions (NFs), and contextual data, regardless of whether they come from DAS controllers, DRS platforms, private cellular cores, or third-party Radio Access Network (RAN) components. Instead of each system operating in its own silo, the MCP exposes them as interoperable "capabilities" inside a unified agent environment. This allows AI agents to make globally optimized decisions: they can compare RF conditions across systems, choose the right technology for a given space, reconfigure capacity in real time, or trigger workflows (e.g., retuning DAS, optimizing small cells, reallocating private network bandwidth) through a single orchestration layer.

The implications are far-reaching for operators, vendors, and enterprise buyers. Operators can expand enterprise penetration by offering a more streamlined, lower-Operational Expenditure (OPEX) in-building portfolio that eliminates the historical DAS–private wireless trade-off and opens the door to new performance-based business models. Vendors will need to re-architect products around open APIs, interoperable RAN components, and AI-ready management layers. For enterprises, unified in-building wireless will simplify procurement, reduce upgrade friction, and enable use case-specific optimization across Information Technology (IT), Operational Technology (OT), and tenant connectivity. Ultimately, AI-driven unification marks a competitive reset: the winners will be those who embrace automation, convergence, and ecosystem openness to deliver next-generation indoor wireless experiences.

16 WON'T HAPPEN — PRIVATE CELLULAR WILL NOT IMPLODE, BUT IT WILL CONSOLIDATE INTO A HEALTHIER, MORE PREDICTABLE MARKET.

The year 2025 has been a watershed for private cellular, marked by a series of high-visibility restructurings and strategic resets that many outsiders mistakenly read as signs of an industry in collapse. Nokia's 2025 Capital Markets Day was the clearest inflection point: the company openly acknowledged slower-than-anticipated enterprise traction, streamlined its private wireless portfolio, and shifted investment away from broad horizontal plays toward a tighter set of industrial partnerships and automation-ready platforms. Vertical-specific channel partners, industrial System Integrators (SIs), and domain-focused solution providers are now stepping in decisively, picking up the mantle and driving private cellular forward as a tightly integrated component of full-stack digital transformation offerings.

For the enterprise cellular market, this transition represents a positive development. Consolidation will bring private cellular closer to the enterprises and vertical-specific solution providers capable of embedding connectivity within comprehensive, end-to-end digital transformation offerings. These players will understand what enterprises are predominantly interested in: use cases, outcomes, and business impact. To that end, they will be able to integrate the private cellular infrastructure as the connectivity layer into their existing network of partnerships with vertical-specific application developers, and device manufacturers to create a more impactful and stronger value proposition for private cellular.

While several industry voices adopt a fatalist view and foreshadow the end of private cellular, quite the contrary will be true: through integration into vertical-specific offerings, the private cellular value proposition will be a lot stronger than before!

eSIM & SIM SOLUTIONS

17 WILL HAPPEN — SGP.32 AVAILABILITY WILL UNDERPIN A SURGE IN eSIM-ENABLED CELLULAR IoT MARKETS.

The cellular Internet of Things (IoT) market has awaited SGP.32 availability with bated breath, with the energy management, transportation, and logistics markets being particularly anticipatory. The new specification offers significant improvements over the existing SGP.02 standard, simplifying the required architecture and providing a more customizable connectivity solution for a wider array of IoT applications. Modernized Internet Protocol (IP)-based protocols and improved flexibility for constrained device management result in a far more versatile standard, raising the accessibility of embedded connectivity for more diverse end markets.

Furthermore, while SGP.02 is best suited to stable long-term connections, and has a significant degree of operator lock-in due to the rigidly defined roles in deploying subscription management components, SGP.32 is more modular, with the new logical roles of embedded Subscriber Identity Module (eSIM), IoT Remote Manager (eIM), and IoT Profile Assistant (IPA) offering the opportunity to decouple elements in the technical stack and provide more granular ownership of the connectivity solution.

The combined evolutions in technical and commercial structures present a significant step forward, and will result in highly-driven uptake, beginning in 1Q 2026 and scaling over the course of the year. Operators and IoT connectivity vendors will be under significant pressure to scale from pilot projects to larger deployments quickly in the energy management and logistics sectors. At the same time, they will have to guide new adopters through integration, and guide existing customers through the SGP.02 to SGP.32 transition. The year 2026 will be a defining one for eSIM in IoT, and the differentiation and brand identities developed in this period will have long-lasting effects.

18 WON'T HAPPEN — STANDARDIZED IN-FACTORY PROFILE PROVISIONING WILL NOT YET LAUNCH

The GSMA's SGP.42 specification for standardized In-Factory Profile Provisioning (IFPP) is in the shadow of SGP.32, with an apparent knock-on effect on the specification process resulting from delays to SGP.32 ratification, as well as a clear connectivity market focus on Remote SIM Provisioning (RSP) solutions.

The commercial advantages of a standardized approach are analogous to those resulting from SGP.32 architecture changes—no lock-in, with the option to use preferred vendors for separate elements in the stack—and the In-Factory approach allows for much simpler integration into existing manufacturing processes for many device Original Equipment Manufacturers (OEMs)/Original Design Manufacturers (ODMs), with an ease of automation and scalability compared to more complex (albeit more flexible) SGP.32 management.

Power-constrained devices will be the most impacted by SGP.42's time in the doldrums, as RSP is a prohibitively power-hungry process for devices designed to be deployed for long periods—often the life span of the device—without external power provisioning. Segments of the IoT market will, therefore, not yet achieve their full potential in embedded connectivity in 2026. While SGP.32 offers significant improvements for constrained devices, this is not enough for niche applications such as environmental monitoring sensors, industrial sensors, some smart metering endpoints, and alarms or hazard detectors.

FREIGHT TRANSPORTATION

19 WILL HAPPEN — GROWING SHIFT FROM "TRACKING TOOLS" TO AI-ENABLED DECISION ENGINES FOR FLEETS.

The next new wave of fleet innovation is not new sensors, it is automated, data-driven capital planning. Over the past years, we have seen fleet management systems evolve beyond telematics dashboards into predictive asset-strategy platforms that can dictate long-term decision-making. Insights into vehicle replacement, rotation, electrification, and refurbishment platforms can be assessed in real time and consolidated into a single pane of glass. Insights on maintenance costs, parts availability, and Original Equipment Manufacturer (OEM) backlog data can be fed into platforms that can forecast downtime and Total Cost of Ownership (TCO) on an individual level. These systems have the ability to evaluate Electric Vehicle (EV) switchovers, factoring in data points such as duty cycles, changing patterns, incentives, and reporting requirements. Procurement teams will increasingly rely on these Artificial Intelligence (AI)-backed recommendations to inform purchases, extend leases, or shift utilization across the fleet to optimize spending.

Growing adoption means that we can expect integration between telematics, fleet management software, and upstream supply chain systems, enabling closed-looped visibility from operations to investment planning. Samsara and Geotab are leading players that have been offering insights on usage, cost, idling, battery usage, etc., enabling fleets to simulate multi-year asset strategy decisions. In addition, FordPro has been integrating telematics, maintenance, and dealer service history to produce composite vehicle health scores that can be used to adjust replacement cycles and procurement timing.

20 WON'T HAPPEN — FULL AUTONOMOUS FLEET OPERATIONS WILL NOT MATERIALIZE.

No commercial fleet will move beyond limited, geofenced pilot autonomy in 2026, so we will not see Level 4/5 autonomy at scale. Regulatory approval, safety validation, insurance frameworks, and OEM readiness are bottlenecks that make broad L4/L5 adoption impossible in the near term. In addition, asset lifecycles, maintenance cadence, and retrofit complexities also mean that fleets cannot just swap to driverless technologies overnight. Some relatively established capabilities such as Advanced Driver-Assistance Systems (ADAS) and AI video are expected to remain "driver assist" for the next couple of years, not "driver-replace." In terms of capability, while we can expect incremental automation in the forms of lane guidance and collision avoidance, it is still too soon to have driverless fleets outside of a few tightly controlled test corridors in Texas and Arizona. Vendors like Aurora Innovation and Torc Robotics (which is a subsidiary of Daimler) are working on L4 autonomous trucks, targeting series production late in the decade in the U.S. market. Meanwhile, robotaxi ambitions show promise, but that is still at an early stage. Next year will be a ramp-up year for robotaxis, but we are nowhere near full maturity.

INDUSTRIAL & MANUFACTURING MARKETS

21 WILL HAPPEN — MANUFACTURERS WILL FACE AI READINESS RECKONING.

The year 2026 will be when manufacturers that have not commenced Artificial Intelligence (AI)-based projects to solve operational challenges in a meaningful way will realize they are at risk of falling behind competitors. Predictive maintenance will continue to be the critical use case where manufacturers start, but those further advanced in verticals such as the automotive and aerospace industries will be deploying projects where AI will support efforts to optimize operations, often via a digital twin.

Process manufacturers will not be too far behind with manufacturers in the chemicals, pharmaceuticals, and food & beverage industries investing in AI tools that improve their ability to control their processes and proactively alert them when operations are at risk of wavering outside prescribed parameters.

22 WON'T HAPPEN — AGENTIC AI WILL NOT BE DEPLOYED AT SCALE.

While many AI use cases will be based on analyzing and optimizing known activities, manufacturers will stop short of deploying Agentic AI at scale. Agentic AI workflows for proactively scheduling machine downtime for maintenance tasks will become increasingly common. However, Agentic AI will be used for tasks that affect worker safety, such as on the floor of a chemical plant, in environments where mistakes risk falling foul of regulations and lead to fines (e.g., aerospace), or when entire production runs need to be scrapped (e.g., pharmaceuticals or food & beverage), but the human will remain very much in and on the loop.

INDUSTRIAL & MANUFACTURING TECHNOLOGIES

23 WILL HAPPEN

INVESTMENT IN AGENTIC AI AND AI-POWERED AUTOMATION ACROSS SOFTWARE DOMAINS WILL BE A PRIORITY AS SUPPLIERS FOCUS ON MOVING BEYOND GEN AI COPILOTS.

The year 2025 saw the implementation of Artificial Intelligence (AI) copilots across manufacturing software domains to enhance knowledge sharing and help users make quicker decisions. The focus of 2026 will be on taking the next step to AI-powered automation as customers look to derive quantifiable value from AI applications through automating workflows.

Revenue from industrial Agentic AI will increase 26.8% in 2026 to US$1.16 billion, with an expected Compound Annual Growth Rate (CAGR) of 27.9% through 2035. The immense investment in and excitement around AI requires suppliers to address Return on Investment (ROI) concerns in the near term. Demand to see proven use cases has already caused marketing strategies around AI to shift focus from technology to value.

The Computer-Aided Design (CAD) market is a perfect example of suppliers targeting Agentic AI use cases that offer quick time to value. While AI has the potential to radically reshape workflows, vendors are focused mainly on using AI for automation and enhancements to existing tools. Examples already include Autodesk Fusion AutoConstrain, PTC Creo Generative Topology Optimization, and Siemens Solid Edge magnetic snap assembly. This trend will develop further in Product Lifecycle Management (PLM) and simulation software as suppliers home in on leveraging AI to automate repetitive tasks such as orchestrating simulation conditions and automating regulatory and compliance reports in PLM.

24 WON'T HAPPEN

WE WILL NOT SEE RAPID MOVEMENT TOWARD CLOUD-BASED MES SOLUTIONS.

While the usage of cloud-based Manufacturing Execution System (MES) solutions is increasing, with ABI Research forecasting over 50% of deployments to be Software-as-a-Service (SaaS)-based by 2035, the shift is slow, and on-premises solutions continue to dig in. Cybersecurity is becoming an increasingly critical concern for manufacturers, with a sharp increase in industrial-targeted attacks, notably the Jaguar Land Rover (JLR) cyberattack, costing the company around US$250 million. Incidents like this will stick in the minds of major manufacturers, so moving customers away from on-premises offerings will remain a highly challenging process, especially in highly regulated industries such as aerospace & defense and pharmaceuticals, despite the numerous benefits of SaaS MES solutions. This, in turn, will blunt the MES industries' transformation toward Manufacturing Operations Management (MOM) solutions, which is driven by a sharp increase in scope of functionality, accessed through agile SaaS platforms. The highly modular designs allow manufacturers to easily access capabilities across production, quality, and maintenance management, quickly accessing the capabilities needed to meet immediate challenges and then scaling as necessary.

INDUSTRIAL, COLLABORATIVE & COMMERCIAL ROBOTICS

25 WILL HAPPEN — PHYSICAL AI WILL CONTINUE TO GAIN INVESTMENT, R&D, AND PRODUCTIZATION TRACTION.

There is an increasing number of semiconductor vendors providing tailored silicon for edge compute tasks. ABI Research expects to see an increase in partnerships with Systems Integrators (SIs), supply chain elements, and manufacturers as emerging methodologies surrounding robotics transformer models show increased commercial viability. Key public partnerships such as Dexterity AI with SI Dematic; Amazon and KNAPP with Covariant; Fortna and Swisslog with Right Hand Robotics; and Honeywell and Fortna with Plus One Robotics provide innovators with a channel to market and integrators with the ability to demonstrate advantages. The development of cloud services for providing model training facilities will also emerge. For example, Amazon Seb Services (AWS) may partner to create a modern alternative to the recently discontinued RoboMaker. The robotics data economy will also surge in 2026 with emerging methodologies such as video imitation learning and robust synthetic data generation emerging to plug the data gap in Physical AI products. Startups bringing to market productized versions of these technologies will be prime investment and acquisition targets.

China's robotics Original Equipment Manufacturers (OEMs) will continue to win ground over incumbent vendors. Increased competition will see Fanuc, Kuka, ABB, and Yaskawa attempt to penetrate greenfield market verticals in search of renewed demand. Life science, healthcare, hospitality, and retail will become target markets.

26 WON'T HAPPEN — AUTONOMOUS HUMANOIDS WILL NOT PENETRATE COMMERCIAL MARKETS AT A SIGNIFICANT SCALE IN 2026.

Instead, we are likely to see an uptick in interest in the mobile manipulator form factor. The mobile manipulator provides stability advantages (they are generally wheeled), but issues surrounding integration (should they be treated as an Autonomous Mobile Robot (AMR) or a static picking arm?), repeatability, and safety will remain.

Government-backed drone programs will continue to build momentum with states choosing new private sector partners. The technology will not yet find a significant foothold in civilian commercial markets, however. Safety, efficiency, and legal liability concerns present the primary barriers to commercial growth.

IoT HARDWARE

27 WILL HAPPEN — LTE WILL DOMINATE THE IoT IN 2026, AND MAY THREATEN 5G PROFITABILITY.

Investment and innovation in Long Term Evolution (LTE) has now ceased. Wireless carriers have timelines to sunset and re-farm their LTE spectrum for 5G. In 2025, AT&T took the confident step to refuse to certify any new LTE modules on its network. New Internet of Things (IoT) devices that use previously certified LTE modules may still register on AT&T's network, but this is part of a planned, gradual wind down. This aims to discourage new LTE component development, device development, and network activations, in order to selectively switch off network infrastructure, keeping alive only that which is minimally necessary for the ever-diminishing pool of LTE IoT devices. Baseband modem semiconductor manufacturers Qualcomm and MediaTek have long stopped LTE development, switching all efforts to 5G. But despite this foundational shift—from the silicon all the way to the network—the IoT will only increase its dependence on LTE; and not on LTE as a fallback technology, but as the only, or highest-level technology. 5G exists in the IoT and is growing in adoption, mainly in automotive and fixed wireless terminals. And in the future Reduced Capability (RedCap) and enhanced RedCap (eRedCap) will become growth drivers for 5G in the IoT. But for the majority of IoT applications, cost, performance, and power consumption renders 5G technologies today as excessive in the first two instances, and/or inadequate in the third.

In 2026, LTE will account for 93% of all cellular modules shipped for use in IoT devices. This will equate to 525 million units, and includes both multi-mode and single-mode, as well as Low Power Wide Area (LPWA): Cat-M and Narrowband (NB)-IoT) modules—the most ever shipped annually. Even as LTE gradually diminishes in market share, as 5G picks up, its total volume shipped will continue to grow. By 2030, it is expected that a still very significant 76% of all cellular modules shipped will be LTE, equal to just under 640 million units. The continued success of LTE, and of Cat-1bis in particular raises some important questions about eRedCap. Single-mode Cat-1bis is the latest "race to the bottom" technology in Average Selling Price (ASP). As 5G RedCap is positioned to replace LTE Cat-4, and eRedCap to replace LTE Cat-1, and as buyers will only make that switch once pricing is on par, does the low price of Cat-1bis already make eRedCap worthless to semiconductor manufacturers and module vendors? Qualcomm has announced no eRedCap chipsets, and MediaTek has no desire to develop one. The year 2026 will see the launch of the first ever eRedCap baseband modems, from Sequans. Could it fall to the wireless carriers to force LTE sunsets, and to force IoT device Original Equipment Manufacturer (OEM) migration to eRedCap, even at a higher cost than LTE just to make the new technology profitable?

28 WON'T HAPPEN — THE IoT WILL NOT DRIVE 5G REDCAP ROLLOUTS IN 2026, BUT MAY BE ITS BIGGEST HOPE.

Of the three dozen cellular networks, both public and private, that have tested and trialed 5G RedCap as part of their evolution to a 5G Standalone (SA) Core Network (CN) and a 5G-Advanced Radio Access Network (RAN), only a third have commercially launched the technology. There was a glut of 5G RedCap tests in late 2023, often for the sake of publicity for those carriers and their infrastructure suppliers, that have since progressed no further. Famously, the three Chinese national carriers of China Mobile, Telecom, and Unicom all launched 5G RedCap in 2023, followed by AT&T and T-Mobile in the United States in 2024. China and the United States are renown as hyper-competitive national markets, greater in size and value than other continental markets, where every technological differentiator is leveraged for a competitive advantage. But elsewhere in the world, movement has been slow, with 2025 seeing 5G RedCap network launches from just Rogers (Canada), Deutsche Telekom (Germany), DNB (Malaysia), M1 (Singapore), and e& (United Arab Emirates (UAE)). 5G RedCap requires 5G SA, but 5G SA does not confer RedCap support, as a further RAN upgrade is required. This is a software upgrade, not a hardware upgrade, but as it is priced per base station, the cost adds up, so it is not something that can be done on a whim and there has to be a concrete business case.

Early RedCap trials and launches often referenced Fixed Wireless Access (FWA) to deliver 5G-based mobile broadband at a more affordable price. Meanwhile, more recent carrier activity has aligned with availability of the Apple Watch Ultra 3, which supports 5G RedCap. These are both consumer-centric use cases, and despite the fact that many carriers have indeed cited RedCap's potential use for smart devices, transportation, Industry 4.0, video surveillance, wearables, and industrial sensors, the IoT is unlikely to be the driving force for any 5G RedCap network rollouts. This is not necessarily a bad thing, as the IoT has always thrived on the back of technology made ubiquitous and commoditized by the consumer connected device market. But it does mean that 5G RedCap for the IoT will come secondarily, and late once other more immediately lucrative and competitive use cases have been proven. And it may also mean that while 5G SA becomes the norm, 5G RedCap overlays do not, limiting regional availability and roaming utility, in a similar way to the fragmented LTE Cat-M and NB-IoT network availability. But the IoT is a market of innovation and necessity, and it will find a use for what is available where it is available. The IoT will not drive 5G RedCap rollouts, but may yet drive long-term adoption and volume, albeit some years later than originally anticipated.

29 WILL HAPPEN — THE SHIFT FROM VISIBILITY PLATFORMS TO DECISION PLATFORMS WILL ACCELERATE.

The supply chain visibility market has largely, to date, been dominated by suppliers offering ways of capturing physical data from the supply chain and displaying it in a cloud platform alongside some basic dashboards and analytics. This has been essential to create a data foundation for enterprises, to lower the costs of the Internet of Things (IoT) and other data sources, and to increase familiarity with the technologies in question. Increasingly, the location and condition of assets and products in the supply chain are being commoditized and there is greater emphasis on using IoT and other visibility technologies within a broader automation framework.

To this end, visibility companies will continue to refocus their offerings around automating specific processes to reduce the need for manual intervention. This brings new opportunities and challenges for visibility platforms as solutions mature and specialization is required. Many IoT solution providers are increasingly opening their platforms to third-party devices and shifting toward a Software-as-a-Service (SaaS)-only approach, leaving hardware to Original Equipment Manufacturers (OEMs) and label specialists. Data orchestration and distributed intelligence across cloud platforms and edge gateways becomes increasingly important to lower decision-making latency, with suppliers building device Operating Systems (OSs) to run their software seamlessly across a heterogeneous hardware landscape. Artificial Intelligence (AI) agents will start to perform a more important role in recommending and, in limited cases, taking autonomous action. Finally, messaging will increasingly shift toward "risk management" and "decision-making" instead of visibility as enterprises demand more than data.

New business models will be important for visibility suppliers as they move beyond point solutions, as well as a broader scope of visibility that looks beyond a single technology—turning visibility platforms into critical repositories that aggregate and process data from all assets and inventory within the supply chain.

30 WON'T HAPPEN — BATTERY-FREE TAGS WILL BE PUT TO THE TEST, BUT A BROADER DEPLOYED BASE WILL NOT COME UNTIL 2027.

The year 2025 saw many important announcements around Ambient IoT battery-free smart labels. An increase in device designs using Photovoltaic (PV) and Radio Frequency (RF) harvesting techniques is creating a much broader base of suppliers, with vendors such as Molex, Minew, Energous, Paragon ID, and many others announcing new energy harvesting tags or labels. Additionally, deployments of Bluetooth®-connected battery-free tags have seen some important deployments this year, such as Wiliot's deployment with Walmart and Nexite's early wins.

However, the momentum, more broadly, is squarely behind battery-assisted label devices, which will be the first port of call for many enterprises as they wait for greater maturity in the battery-free ecosystem. While battery-free labels dominate shipped volumes, they are driven primarily by one supplier and a small number of giant Tier One customers. Battery-assisted labels, by contrast, have much broader buy-in today from Tier One to Tier Three enterprises, particularly those operating closed- or semi-closed-loop supply chains. Assisted by emerging low-power System-on-Chip (SoC) vendors and a scaling printed battery ecosystem, battery-assisted tags will see strong growth over the coming year. There is little doubt, however, that energy harvesting is starting to be seen as commercially viable in a number of applications; with engineering challenges mostly overcome, the focus will now increasingly be on commercialization.

IoT NETWORKS & PLATFORMS

31 WILL HAPPEN — TELCOS WILL BECOME IoT DIGITAL SERVICES PROVIDERS BY BUILDING AN AI/CLOUD FOUNDATION.

Telcos have always strived to move up the stack with Internet of Things (IoT) services, rather than being just connectivity services providers. However, 2026 will see more activity by telcos to offer more services to enable the customer's digitization journey, including in the IoT. This will happen in three areas.

The first area is in establishing foundational capabilities in Artificial Intelligence (AI) and the cloud. Much of the AI work in telcos is focused on customer support operations and network management/uptime. But it also extends into cybersecurity services, which customers will pay for. As the threat surface of the IoT increases, these foundational AI capabilities can be monetized. Simultaneously building their cloud capabilities is part in parcel with establishing AI expertise.

The second area is partnerships. Clearly, cloud partnerships are critical for telcos as noted for AI, but also for customers that are not one-size-fits-all for cloud services. The direction for many companies is the hybrid cloud with different workloads and applications served by different cloud providers—both public and private, and now sovereign cloud. Where this becomes especially important is with Small and Medium Business (SMB) customers for which the telco is a channel for cloud services, as well as using the cloud for their own offerings, including the IoT. The SMB needs a trusted advisor that can be the telco or more likely through an indirect channel such as a reseller or solution service provider. It is in these latter channels that telcos are developing more partnerships to serve the SMB market.

The third area is end-to-end IoT solutions. With foundational AI and cloud capabilities and the right partnerships, the next stage of telco evolution as a digital IoT services provider is in end-to-end solutions. It is said that all IoT is vertically-focused and for companies serious about serving business needs, this axiom is true. Verizon is a company that is expanding beyond horizontal offerings to end-to-end solutions that address more vertical workflows. As early as 2018, it started offering asset tracking services using Cat-M based trackers. In 2025, it launched two new IoT services. The first was Sensor Insights for automating and monitoring workflows and equipment in buildings including stadiums. The second was 5G Video Insights, a solution that uses existing video infrastructure such as video surveillance cameras applying AI to video feeds to support business operations. The latter is a perfect example of how AI and cloud services come together to enable businesses to turn video data from a security tool to an operational tool. TELUS, the Canadian mobile network operator, is also a telco that has embraced vertical market solutions. Over the last several years, it has made acquisitions to offer end-to-end solutions most notably in agriculture and healthcare.

IoT NETWORKS & PLATFORMS

32 WON'T HAPPEN — ASSET TRACKING CONNECTIONS CONTINUE TO GROW, BUT SATELLITE DOES NOT GIVE THEM A BOOST.

The asset tracking market has lots of potential when you consider worldwide commerce and all the things shipping around the world every day. There is the enterprise benefit of better visibility; for pharmaceuticals and high-cost goods, visibility is critical. Consumers are also finding value with asset tracking using Apple- or Android-based tags applied to backpacks, wallets/purses, sports equipment, and other personal items. Ultra-Wideband (UWB) technology is also adding value to consumer asset trackers for near-field tracking.

Growth in asset tracking is favoring Short-Range Wireless (SRW) technologies more than Wide Area Network (WAN) technologies such as cellular. Short-range technologies do not have the network access costs of cellular and the asset tracking community, both customers and suppliers, have shifted to architectures that use a single WAN tracker connected to multiple SRW trackers, rather than all WAN-connected trackers.

Another challenge for a key WAN technology is cellular, as it does not have the reliable, ubiquitous worldwide coverage that many applications seek. Low-power, low-cost network coverage is decreasing as 2G networks shut down and Cat-M and Narrowband (NB)-IoT networks look to remain as regional incarnations. Cat-1bis has the potential to become a 2G replacement, but eventually operators will shut down their 4G networks with some starting as early as 2030.

The 3rd Generation Partnership Project (3GPP) Non-Terrestrial Network (NTN) technologies using NB-IoT as the data carrier layer for satellite connectivity from a cellular tracker address the worldwide coverage challenge. But 2026 is not the year when the asset tracking community will embrace satellite to drive growth for WAN-centric tracking applications for three reasons.

The first is network coverage. Geostationary Earth Orbit (GEO) networks have better coverage than Low Earth Orbit (LEO) and while good work is happening with GEO networks for low-power applications, the tech development is not quite there to enable a low enough cost device for the higher volume asset tracking applications. LEO connections are another option with better link budgets and lower latency connections, but they do not have the coverage of GEO.

Second is device complexity and cost. 3GPP NTN does not necessarily mean the device gets more complex because the beauty of the standard is that it uses standard cellular modules. There could be a need for better antennas if using satellite, but the ideal form factor to fit many different applications is smart labels, a flat form factor that can accommodate a larger antenna. The issue is that WAN smart label asset trackers still have costs of US$25+ and are meant to be disposable, so they are unlikely to be used again to support spending the higher device cost. In addition, these devices will need larger batteries depending on the satellite link time and IoT use case.

Finally, connecting over cellular and satellite networks has network access costs. Satellite and cellular network operators are still in the early stages of assembling fees for 3GPP NTN devices, but initial insights into satellite fees for 3GPP NTN devices are 3X to 6X that of NB-IoT access fees. For asset tracking, higher volumes of trackers will come from lower fees—both device and network access. But device Original Equipment Manufacturers (OEMs) and network operators will not lower costs until the device and connection volumes increase.

In 2026, asset tracking OEMs and solution providers will focus on software such as cloud-based anomaly detection, on-device software to leverage Tiny Machine Learning (TinyML) and device sensor features, and device OSs to simplify device management and edge intelligence.

LOCATION TECHNOLOGIES

33 WILL HAPPEN — LEO-BASED PNT WILL GAIN MOMENTUM IN 2026.

The Global Navigation Satellite System (GNSS) is increasingly being integrated with other navigation and positioning technologies such as inertial sensors, Light Detection and Radar (LiDAR), 5G, and more, forming part of a layered, hybrid Positioning, Navigation, and Timing (PNT) ecosystem. With the growing threat of electronic warfare and cyberattacks, there is increasing interest in how commercial Low Earth Orbit (LEO) operators, such as SpaceX, Globalstar, and Iridium, can add resiliency and stimulate new commercial opportunities with PNT services. In late 2025, Iridium launched its PNT Application-Specific Integrated Circuit (ASIC) chip that will deliver authenticated, pole-to-pole PNT data and provide an alternative to traditional GNSS for consumer, industrial, and government applications.

In addition, LEO constellations are increasingly being designed to broadcast signals for PNT to complement traditional GNSS systems. LEO satellites offer advantages such as stronger signals due to lower orbit, and faster signal dynamics, which enhance positioning accuracy and improve resistance to spoofing. For instance, the European Space Agency (ESA) is launching its first 2 LEO-PNT satellites out of a planned fleet of 10 satellites (Celeste) in late 2025. This mission will test the concept of a multi-layered European navigation system that combines Galileo, EGNOS, and other GNSS systems for improved performance and resilience.

34 WON'T HAPPEN — GNSS WILL NOT BE SAFE FROM ONGOING CYBERSECURITY VULNERABILITIES.

GNSS will not be immune to interference, jamming, and spoofing, even with authentication protocols and anti-jam defenses in place. As cyberattacks grow with sophisticated technologies, attackers are developing advanced signal-manipulation tools, keeping GNSS systems vulnerable. For instance, geopolitical conflict zones such as the Ukraine-Russia war and ongoing tensions in the Middle East have experienced numerous attacks and disruptions targeting their GNSS. Beyond conflict zones, other commercial sectors such as maritime and aviation industries have been severely impacted, with disruptions affecting supply chains, operational efficiency, and real-time decision-making.

Critical sectors that rely heavily on GNSS such as aviation, maritime, autonomous vehicles, robotics, and others will require multi-layered protection through sensor fusion, terrestrial backups, LEO-based augmentation, and alternative PNT solutions. Examples of such solutions include Iridium's PNT ASIC, Galileo's Open Service Message Authentication (OSNMA), HawkEye 360's upgraded GNSS Interference Detection product suite, and Honeywell's HGuide o480 single card inertial navigation system. In 2026, resilience will not come from eliminating these threats entirely, but from building systems that can withstand spoofing and/or interference attacks effectively.

QUANTUM SAFE TECHNOLOGIES

35 WILL HAPPEN — AN INCREASE IN PLATFORMIZATION OF PKI SERVICES INTO INTEGRATED DIGITAL TRUST SOLUTIONS WILL MATERIALIZE.

As certificate lifecycles shorten, enterprise environments become increasingly complex, and the visibility demands of quantum-resilient environments concretize, platformized Public Key Infrastructure (PKI) solutions are expected to succumb next to the platformization trend. Platformization is already increasingly ubiquitous across the entire digital and cybersecurity landscape, from Operational Technology (OT) cybersecurity, led by Palo Alto Networks, to hardware solutions, championed by innovators like Utimaco and Marvell. On the PKI side of things, the Certificate Authority/Browser (CA/B) Forum's goal to shorten certificate lifecycles down to 47 days for public Certificate Authorities (CAs) is expected to leak into the enterprise PKI side of the market, especially when considered in conjunction with post-quantum anxieties around limiting certificate validity periods in the interests of certificate hygiene. As a result, teams facing pre-existing resource and staffing constraints are expected to be increasingly inundated with renewed pressures pertaining to PKI and dynamic Certificate Lifecycle Management (CLM). Disruptive new business models will be needed to counteract rising CLM costs and, with more CLM vendors and public CAs entering the enterprise PKI market, platformization is expected to be adopted across the board.

Platformization offers a cost-efficient way of addressing enhanced PKI and CLM needs within enterprise environments, consolidating PKI and CLM services into a one-stop shop digital services platform. Platformized PKI solutions are expected to also increasingly include a managed services component to further alleviate the operational burden and staffing costs associated with modern PKI and CLM. On the vendor side, integrated digital service platforms enable vendors to bundle together various services at a greater cost per customer, even if the CLM-specific costs are lower.

While the convergence between PKI and CLM has already begun, with platformized solutions in this regard already present in the market, including Entrust's CSP solution, Garantir's GaraTrust solution, and DigiCert's ONE platform, the year 2026 will witness more vendors capitalizing on the "shift left" within digital trust toward asset inventory and visibility. When it comes to platformization, more vendors will integrate cryptographic asset discovery into their solutions, following the lead of innovators like Keyfactor with its 2025 acquisition of CipherInsights and InfoSec Global. Acquisitions to fill functionality gaps in existing PKI and CLM solutions will be a mainstay of 2026, while platformized PKI solutions will begin to dominate, integrating not only CLM but cryptographic asset management, cryptographic posture, and specialized PKI offerings adjusted to specific subsegments such as the PKI-Internet of Things (IoT) market.

36 WON'T HAPPEN — QRNG WILL NOT TAKE OVER IN THE POST-QUANTUM MARKET.

Interest around Quantum Random Number Generator (QRNG) has been bubbling across the last 2 years, especially throughout 2025; heralded for its ability to harness quantum randomness to optimize the randomness of key generation, digital signature, and communications aspects of cryptography. By detaching these processes from the typically deterministic manner in which they are conducted, its proponents position QRNG as a vital component to the quantum migration process.

However, QRNG's critics point to the absence of a quantum threat to randomness in its current construction, as well as a lack of pre-existing issues with this deterministic process. In their eyes, QRNG solves a non-existent problem and lacks the same significance that migrating to PQC, effectuating crypto-agility within systems, and enhancing asset visibility and inventory processes across infrastructure have with regard to the broader quantum migratory process. Others claim QRNG's import lies within its prospects as an interim offering; allowing vendors to secure themselves in this market before QRNG is useful in real-world settings and used within quantum computers.

However QRNG's value is interpreted or represented by vendors, this segment remains nascent and highly specialized. While powerhouses like Palo Alto have pledged their engagement in QRNG, it is not expected to break the mainstream or come close to PQC in terms of overall importance within the quantum transition and will, at least throughout 2026, remain a fairly niche portion of the burgeoning quantum market.

RFID

37 WILL HAPPEN — ALWAYS-ON OVERHEAD READERS WILL START TO SCALE.

Always-on overhead Radio Frequency Identification (RFID) readers are used in logistics and retail environments to replace manual scanning with automated RFID tag reading. The past 24 months have seen significant innovation around these readers by vendors such as Keonn (Novanta), PervasID, RADAR, Acceliot, and Zebra Technologies to optimize read rates, reduce processing latency, and improve tag location accuracy. Forward-looking retailers like H&M, American Eagle, Old Navy, Groupe Dynamite, Fabletics, Suit Supply, and others have started or completed deployments of always-on readers in their stores.

ABI Research's conversations with retailers at the end of 2024 suggested that the technology was promising, but that more time was needed to assess its impact on key retail metrics such as sales uplift. By contrast, conversations with retailers at the end of 2025 showed a much more positive note, with several retailers noting that the improvement in stock replenishment speeds alone justified the investment, particularly in high-footfall stores. There is much more that can be done with always-on readers around product location tracking and consumer behavior analysis, a combination with video feeds for checkout and loss prevention, and optimizing back-end store, allocation, and assortment decisions. While few retailers are at these advanced stages yet, the positive early results of always-on readers show that these have the potential to mark a step change for RFID. More education is needed to fully demonstrate to retailers and to enterprise software partners the value of the technology, but 2026 will see an acceleration of this technology's deployment as retailers look to take more advantage of their already-tagged items.

38 WON'T HAPPEN — ADOPTERS WILL NOT GIVE UP ON BUILDING THEIR OWN RFID SOFTWARE.

Off-the-shelf RFID software systems have been growing at a rapid clip. RFID mandates, lower tagging costs, broader overhauls of Information Technology (IT) infrastructure, and pressures coming from multiple directions affecting retailers' cost bases, have all contributed to growing populations of RFID-tagged products, and software suppliers have been busy meeting this demand. These suppliers have typically started with fairly simple middleware offerings to facilitate the connection of RFID tags and readers to a cloud where the data can be used, but are increasingly expanding their platforms to offer more advanced features, such as a wide variety of analytics, sensor fusion, and operational workflows, to increase the value of the licenses they can sell to their customers. This shift has also driven a greater diversity in the types of suppliers offering RFID software, with incumbents like Nedap, ClarityRFID, Checkpoint Systems, and Sensormatic being joined by store operations software companies such as GreyOrange and Manhattan Associates.

These solutions are seeing great success, in no small part because of the visibility of their messaging around advanced new use cases and features they offer. However, there remains a vast market for retailers and other industries building their own RFID middleware platforms; or buying a middleware solution to remove RFID hardware evaluation complexity, and building their own applications and workflows. This remains an extremely low-cost way of deploying an RFID solution and will not disappear any time soon. RFID software suppliers and integrators may still find ways of working with these enterprises, in particular through offering specific RFID workflows and applications that are not worth the trouble, or are less effective, to build in-house.

SMART BUILDINGS

39 WILL HAPPEN

IN 2026, AI-ENHANCED BUILDING MANAGEMENT WILL INCREASE THROUGH USE CASE-BASED ADOPTION ENABLED BY SMARTER SENSORS AND TARGETED PREDICTIVE CAPABILITIES.

In 2026, building management Artificial Intelligence (AI) platforms will continue moving toward proactive and predictive capabilities, mostly in environments where uptime is mission critical, such as industrial facilities. From there, adoption will expand to office, government, and retail buildings to achieve increased energy savings and improved system performance. AI-based solutions will continue to roll out through targeted problem-based use cases such as optimizing Heating, Ventilation, and Air Conditioning (HVAC) or adjusting lighting. The use of passive and environmental signals, such as weather data, to preheat or precool spaces and to orchestrate how systems respond to changes both inside and outside of the building will increase.

To support this shift, sensor deployment and data management capabilities will grow significantly. Not only will the number of sensor deployments increase, but the capabilities of individual sensors to detect more passive signals will expand, meaning facilities will be able to capture richer data with fewer devices. As effective building management requires more real-time data, the ability to collect, structure, and integrate that data to produce effective predictive building management tools will be imperative.

40 WON'T HAPPEN

FULLY AUTONOMOUS BUILDINGS WILL NOT HAPPEN DUE TO LIMITED DATA INTEGRATION AND LEGACY INFRASTRUCTURE.

Although more advanced and autonomous AI solutions will enter the market, widespread adoption will remain slow as it depends on comprehensive sensor integration and data management. Many facilities still have legacy infrastructure and fragmented systems that limit the ability of AI-based solutions to make sense of operations and produce meaningful insights. As a result, more advanced Agentic AI tools will be focused on critical facilities or constrained to smaller use cases not yet enabling fully autonomous buildings.

Due to the complexity of both regulatory and operational requirements, facilities managers will remain central to ensuring optimized building performance by interpreting insights and validating AI-driven actions. The trend toward autonomous buildings will increase, but in 2026, AI will only enhance human management.

SMART ENERGY

41 WILL HAPPEN — ACCESS TO THE GRID WILL BE A HEIGHTENED CONCERN FOR INDUSTRIAL CUSTOMERS.

Utilities firms will continue to have a lot to contend with, from planning for the effects of climate change and increasingly in 2026 balancing the needs of customers, including industrial consumers, and the ever-growing energy needs of data center operators. Grids were not designed for current needs; not just the energy needs of the AI workloads undertaken inside the rapidly increasing number of data centers, but also the strain on the grid from the energy needs of large industrial users such as chemical plants.

The electricity grid is a critical component of a country's infrastructure and grid resiliency includes the ability to accommodate demand surges. In many countries and regions, this is no longer the case. Investment upgrades by utilities firms take years to be impactful and governments will put pressure on them to not simply pass on the costs to customers. The year 2026 will be characterized by electricity users being encouraged or incentivized to change behaviors, such as the time when they put load on the grid or undertake particular AI workloads. But many industrial firms and data center operators will take a different course of action and begin to make plans for self-sufficiency.

42 WON'T HAPPEN — AI WILL NOT BE LEFT IN CONTROL.

Ironically, Artificial Intelligence (AI) can be part of the solution to the challenges faced by utility firms. AI tools will be deployed to monitor the performance of the grid, proactively warn of any asset failures or outage risks, and ultimately improve grid resiliency. However, 2026 will not witness AI taking control of the grid entirely. Human oversight will be required at all times, especially with regard to load balancing. AI tools will surface insights, but will not be acting autonomously. These innovations will require governmental and regulatory approval, which will not be forthcoming in 2026.

SMART LIVING & CONSUMER TECHNOLOGIES

43 WILL HAPPEN — DRIVEN BY DEVELOPING MATTER STANDARDS, SMART HOME DEVICES WILL CONTINUE TO SEE STRONG ADOPTION AND GROWTH IN 2026.

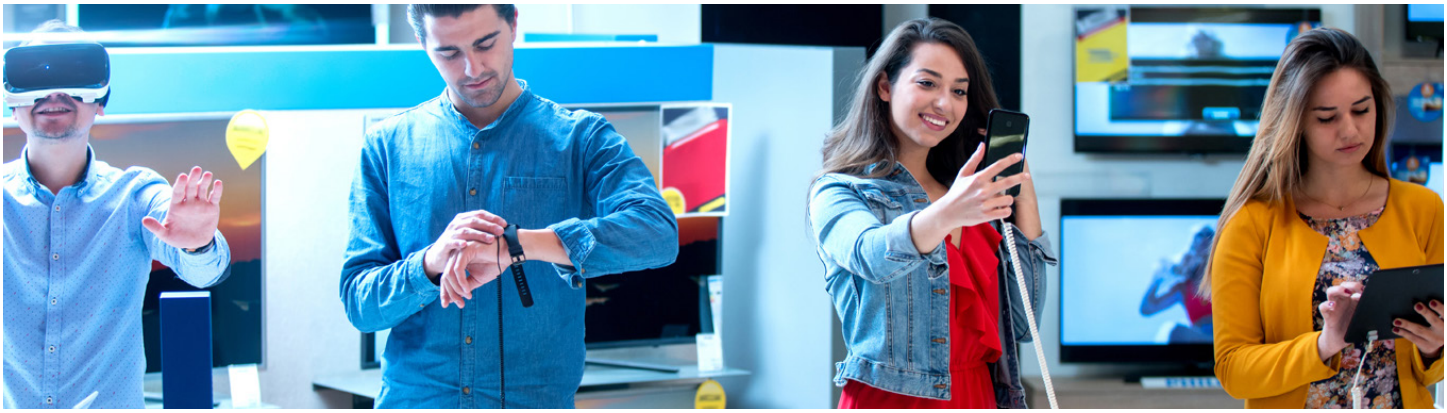
The continuing development of the Matter universal smart home automation standard will be a key driver in enabling interoperability across smart home devices and vendors, thereby facilitating accelerated adoption of smart home technologies. In 2025, the Connectivity Standards Alliance (CSA) released updated specifications for Matter 1.4.1 and 1.4.2, bringing more improvements to the setup process, security, scene support, device management, etc. From the device perspective, strong momentum is also being observed in this space, with the CSA reporting that there are more than 560 certified Matter products. One highly awaited development for upcoming Matter 1.5 specification is for the inclusion of camera support (e.g., surveillance cameras, doorbell cameras, etc.), a device category that is expected to contribute strongly to the smart home market.

From the vendor perspective, more vendors have also started to introduce Matter support for their devices. Of note, IKEA announced its plans to launch more than 20 new smart home products that are based on the Matter-over-Thread standard, from January 2026. Other vendors that have also recently launched their own Matter-compatible products include Bosch, Nanoleaf, Meross, etc. ABI Research expects to see more Matter-compatible devices being launched in 2026.

44 WON'T HAPPEN — HUMANOID HOME ROBOTS WILL NOT SEE MAINSTREAM ADOPTION YET IN 2026.

There have been many recent exciting announcements in the humanoid home robotics space. 1X, the company behind the humanoid home robot, NEO, announced that its robots will be available for preorder at the purchase price of US$20,000. XPENG has also unveiled its new IRON humanoid robot that has a human-like appearance, high levels of mobility, and advanced Artificial Intelligence (AI) features. Prices for such humanoid robots are also rapidly dropping, with China's Unitree introducing a version of its humanoid robot, R1, that is priced below US$6,000, thus making humanoid robots even more affordable for the average consumer.

Despite the above, significant operational challenges remain. Consumers who have purchased the G1 robot report that these robots are still unable to perform basic tasks autonomously, with some videos even showing the robots destroying the home and running into glass doors and furniture. The company, 1X, also acknowledged that its robots are not yet fully autonomous and may even require an expert from 1X to help it learn via supervised training and correction, thereby raising concerns among potential buyers. ABI Research expects that a longer runway will still be required to train and enhance the AI models running on these humanoid robots to enable effective home assistance. Hence, greater scale adoption of the technology is not expected until 2028.



SPACE TECHNOLOGIES & INNOVATION

45 WILL HAPPEN — A NEW ERA OF ASIAN SPACE SELF-RELIANCE WILL COME ABOUT.

Over the past few years, countries across the Asia-Pacific region have begun integrating space technologies into their national strategic plans, which is a trend that is expected to accelerate from 2026 onward. This includes areas such as Satellite Communications (SatCom), Earth Observation (EO) and remote sensing, space infrastructure, and in-space services. Below are some notable examples of these initiatives.

China has released a 5-year plan (2026 to 2030) aimed at boosting technological self-reliance, stimulating domestic demand, and advancing its ambitions as a spacefaring nation. The country has made significant breakthroughs in rocket launches, the growth of its commercial space sector, and the development of comprehensive space programs across multiple domains.

Japan has significantly doubled down on investment efforts in the space sector, allocating US$6.8 billion for its decade-long Space Strategy Fund that began in 2024. The initiative focuses on satellites, space transportation, and space exploration, with a key goal of doubling the size of Japan's domestic space market to around US$60 billion by the early 2030s. Furthermore, we can expect to see innovations in areas such as fuel technologies and reusable rocket launches. In June 2025, Honda successfully conducted a launch and landing test of its experimental reusable rocket. Additional innovations are emerging in sustainable energy and propulsion, including a regenerative fuel cell system (Honda), solid plastic fuel for small satellites (Letara), and hydrogen-burning turbines.

South Korea's Aerospace Administration (KASA) announced a 15% increase in its 2026 budget, bringing it to US$7.98 billion, primarily focused on satellite development and lunar exploration. The expanded funding for ultra-high-resolution imaging satellites, 6G-enabled Low Earth Orbit (LEO) SatCom, space exploration, and the aviation sector underscore the growing importance of space technologies within the country's national strategic agenda.

46 WON'T HAPPEN — COMMERCIAL OPERATION OF ODCS WILL NOT HAPPEN.

Momentum around Orbital Data Centers (ODCs) has captured headlines recently as the AI craze has found a new potential frontier up in Earth's orbit. Led by space and Artificial Intelligence (AI) giants like SpaceX, Amazon, Google, and NVIDIA, the space economy is broadcasting its vision of new intelligent edge infrastructure, creating a new "orbital cloud" market where satellites act as micro data centers, rather than passive communication relays. The hype is building momentum toward a commercial race to deploy radiation-hardened edge compute and gigawatt-scale facilities in orbit, driven by demand for cheaper and more abundant energy for sovereign, secure, and AI-native processing. While early test satellites have already reached orbit, commercial operations remain several years out. Software-defined, programmable edge-compute satellites are only just starting to gain traction in SatCom networks. As Software-Defined Satellite (SDS) platforms scale over the next 5 to 10 years, they could open the door to a new frontier in AI "training clusters" operating in orbit.

SUPPLY CHAIN MANAGEMENT SOFTWARE

47 WILL HAPPEN — MORE CYBERATTACKS WILL HAPPEN TARGETING THE INCREASINGLY CONNECTED SUPPLY CHAIN ECOSYSTEM.

The year 2025 has seen major cyberattacks targeting vulnerabilities within organizations' supply chains, with the total cost of individual attacks worsening Year-over-Year (YoY) as supply chain systems become increasingly connected. Data breaches that involve a third party have doubled since 2024 to 30% according to the Verizon Data Breach Investigations Report (DBIR), with attackers increasingly targeting poorly secured vendors for lateral movement into larger corporate networks. And the cost of each data breach is also increasing, due to the cascading effect of breaches across cloud providers and the enterprises that are cloud-reliant. According to the Cost of a Data Breach 2025 report, the global average cost of a data breach has now reached US$4.4 million and is even higher at US$10.2 million in the United States.

And despite the increasing number and cost of cyberattacks on the supply chain, companies intend to keep moving more of their systems into the cloud. According to a recent survey by ABI Research of supply chain professionals, 66.7% of respondents have already implemented, or are in the process of implementing public cloud infrastructure, with a further 20.4% currently evaluating their options.

The industry will continue its move to the cloud through 2026, as it should, to unlock the benefits of advanced data management and advanced AI capabilities, but it is essential that organizations are aware of the risks and adopt a proactive strategy to identifying cyber vulnerabilities. Establishing a comprehensive Software Bill of Materials (SBOM) to understand vulnerabilities; investing in both Information Technology (IT) and Operational Technology (OT) environments to ensure robust endpoint security; and developing cyber strategies alongside Third-Party Logistics (3PL) providers and suppliers are all essential to developing resilience and ensuring business continuity.

48 WON'T HAPPEN — WE WILL NOT SEE AI AGENTS FULLY AUTOMATING END-TO-END PLANNING DECISIONS ACROSS THE ENTIRE SUPPLY CHAIN.

AI agents are emerging fast, but they are currently scoped to narrow workflows like generating forecasts, filling in silos, enhancing customer experience, or summarizing events. They are nowhere near orchestrating all planning layers like demand/supply, inventory management, production, Sales and Operations Planning (S&OP), logistics, etc. Full end-to-end automation would require clean, harmonized data across disparate sources (Enterprise Resource Planning (ERP), Warehouse Management System (WMS), Transportation Management System (TMS), and sourcing systems), which enterprises do not yet have. In addition, planning includes a level of human-in-the-loop judgement for assessing intangibles like geopolitical risks, supplier/carrier reliability, production constraints, unmitigated tradeoffs, etc. While vendors like Blue Yonder, o9 Solutions, Kinaxis, SAP, ToolsGroup, and Infor have launched AI copilots/agents, they are primarily designed as decision support tools, not decision ownership systems. It is true that modern planners are moving toward AI-augmented planning, but a full leap into autonomy will be a multi-year evolution, not a 2026 event.

TELCO AI

49 WILL HAPPEN — AGENTIC AI IN RAN AUTOMATION WILL MOVE FROM CONCEPT STAGE TO EARLY TRIALS.

In 2025, discussions around the implementation of Agentic Artificial Intelligence (AI) into the telecommunications sector have been ongoing, especially as it pertains to the Radio Access Network (RAN) automation domain. There have been some announcements of partnerships to explore this concept this far, and in 2026, ABI Research expects these to shift into early lab and/or field trials. This evolution, especially among Western vendors, is expected to leverage Open RAN automation architectures (specifically Service and Management Orchestration (SMO) and Non-Real-Time RAN Intelligent Controller (Non-RT RIC)) and rApp applications to enable closed-loop automation. Chinese vendors have developed telco-specific foundation models that are leveraged across the entire network, while, thus far, Western vendors have focused on domain-specific implementations, and until 6G standardization becomes more advanced, this is expected to continue.

50 WON'T HAPPEN — TELCOS WILL NOT RAPIDLY SCALE THEIR AI COMPUTE CAPACITY

While AI and Graphics Processing Unit (GPU) demand present a clear opportunity for telcos, ABI Research does not expect a significant global trend of telcos aggressively scaling AI infrastructure in 2026. Hyperscalers and neoclouds have largely captured this space, and although some telcos have entered this market (building new AI-optimized data centers or upgrading existing data centers), these efforts remain relatively limited and pragmatic. Concerns about an "AI bubble," coupled with the high capital requirements and uncertain Return on Investment (ROI) for enterprise-focused Generative Artificial Intelligence (Gen AI) and Agentic AI, will keep telco investments conservative. Growth will occur only among early movers, but on a global scale, telco-driven AI capacity expansion will be modest, rather than transformative. The shift away from AI training toward distributed AI inference is expected to become a catalyst for telcos to begin investing significantly in this market, as they have significant edge facility portfolios and will be positioning themselves as trusted sovereign partners.

TRUSTED DEVICE SOLUTIONS

51 WILL HAPPEN — SECURITY BY DESIGN TO PUSH EMBEDDED SECURITY MARKET DEMAND INTO OVERDRIVE WITH CRA COMPLIANCE DEADLINES.

As of September 2026, manufacturers will have to start vulnerability reporting under the European Union (EU) Cyber Resilience Act (CRA), with the full set of obligations applying by the end of 2027. This will be a massive driver for the embedded security market, as manufacturers will be required to implement security by design principles, including risk assessment, threat modeling, and vulnerability management, represented by technical documentation, including Software Bills of Materials (SBOM) and conformity assessments (CE markings) to demonstrate compliance. This will boost demand for secure boot capabilities, encrypted storage, access controls, integrity verification, attestation mechanisms, and regular security updates. Non-compliant products will not be able to be sold in the EU market after these deadlines, making 2026 the incipient year for CRA conformity for embedded technology providers.

52 WON'T HAPPEN — USE OF SECURE ELEMENTS FOR AUTOMOTIVE ECUs.

Secure Elements (SEs) and Authentication Integrated Circuits (Auth ICs) are emerging hardware form factors for the automotive space. Their adoption is on the rise, notably for non-mission-critical applications that are backed by new specifications such as Electric Vehicle (EV) charging, digital car keys, and Qi wireless charging. While their use in critical functions, such as Electronic Control Units (ECUs) and domain controllers, is growing quickly, they remain the smallest market segment, to date, in terms of unit shipments. This is unlikely to break out as the main application driver until 2027 to 2028.

WAREHOUSING & FULFILLMENT

53 WILL HAPPEN — MODULAR AND MOBILE AUTOMATION SOLUTIONS WILL THRIVE AS ORGANIZATIONS SEEK FLEXIBLE AUTOMATION.

Warehouse automation investment continues to rise, and more of the middle market is increasingly deploying automated material handling systems as the technology becomes more accessible.

Robotics-as-a-Service emerged as a way for smaller firms with less available capital to adopt automation, but the model has not taken off as expected, mainly due to the fact that companies are looking to get rid of their current Operational Expenditure (OPEX) (i.e., manual labor) by taking on automation, not replace it with a new form. This has meant that Capital Expenditure (CAPEX) models are the preferred option, but has meant that upfront costs have had to come down substantially for automation to break into the middle market and expand beyond large enterprises.

Standardized, modular Automated Storage and Retrieval Systems (AS/RSs) from companies like AutoStore have seen continued success, offering a relatively low-cost system that can scale to meet changing needs. System Integrators (SIs) like KNAPP are responding to this demand with systems like the AeroBot aimed at enabling high-density storage and picking with flexibility and lower infrastructure needs. SIs are also reported to be exploring more partnerships with Autonomous Mobile Robot (AMR) providers, citing increasing demand from the market for these types of solutions.

This is reinforced by a recent survey by ABI Research, which showed that 43.9% of respondents plan to transition their manual picking to mobile robotic picking, with a further 21% currently in the process.

Through 2026, ABI Research expects more investment to be targeted at more flexible, low infrastructure requiring AS/RSs, with more SIs likely to develop systems at this level, but also more investment to flow into mobile automation from companies like Geek+, Locus Robotics, and MiR, providing fleets that can be scaled up or down very easily depending on changing needs.

54 WON'T HAPPEN — HUMANOIDS WILL NOT BE DEPLOYED AT SCALE WITHIN WAREHOUSING OPERATIONS.

Humanoids continue to receive a lot of interest from investors, with companies like Figure and Agility Robotics reaching strong valuations. Rather than the Goods-to-Person models that AS/RSs and AMR systems provide in warehouses, humanoids offer a way to handle more unstructured tasks and completely remove humans from the process.

This is great in principle, but there are three key factors that are and will continue to limit the adoption of humanoids in warehousing and fulfilment operations. The first is cost, and the completely unknown Return on Investment (ROI) that currently comes with what is still an early-stage technology. Not only do the individual units cost significantly more than other forms of automation, but developing the level of dexterity and efficiency to surpass that of a human worker requires significant data processing and advanced Artificial Intelligence (AI) integration on the edge to handle task variety, which also comes with substantial cost.

The second is the lack of technical reliability and effectiveness. Being a complex, multi-jointed robot with advanced balancing systems and sensors takes a lot of power, meaning limited runtime and more downtime. It also makes them much harder to monitor, maintain, and troubleshoot issues given the added complexity.

And third, trying to replace humans with human-like robots suggests that 4-limb systems are the fastest way to pick and handle goods. But as AS/RSs and AMR systems have shown, goods can be stored with higher density and be picked at significantly greater speeds using conveyors, wheeled robots, and dedicated picking arms. These types of systems are able to simplify the movement of goods through facilities, generating efficiencies that were not possible beforehand.

The industry will continue to explore opportunities, but 2026 will not see humanoids gain traction in warehousing. And as both AMRs and robotic arms continue to grow in effectiveness and drop in price, humanoid providers will see less and less of an addressable market to break into beyond next year.

WI-FI & WLAN TECHNOLOGIES & MARKET

55 WILL HAPPEN — WE WILL SEE VAST IMPROVEMENTS IN IN-FLIGHT WI-FI.

In-flight Wi-Fi has been plagued by severely restricted bandwidths and intermittent outages ever since its introduction 2 decades ago, with drawbacks that led to poor user experiences and a general lack of trust in the technology. These restrictions were due to the technical limitations of the backhaul connections, which relied on either terrestrial cell towers or Geostationary Earth Orbit (GEO) satellite constellations. Yet the emergence of in-flight Wi-Fi underpinned by Low Earth Orbit (LEO) satellite constellations has the potential to revolutionize in-flight Wi-Fi, enabling significantly faster speeds, lower latencies, and uninterrupted connectivity. The potential of the technology is proven by the example of Hawaiian Airlines, the first major U.S. airline to introduce a free Wi-Fi service backed by LEO satellites, and which was ranked by Ookla in 2025 as having the best Wi-Fi speed and latency metrics of any airline.

With the technology's potential proven, 2026 will see adoption of in-flight Wi-Fi solutions leveraging LEO constellations skyrocket, with most installations utilizing Starlink infrastructure. We can be confident in this prediction because numerous airlines have already declared their plans to introduce the services next year. For example, British Airways recently announced that it will start its rollout of Starlink for in-flight Wi-Fi in 2026, with the service offered free of charge to all customers.

While in the past, in-flight Wi-Fi was neglected and for many travelers simply a joke, going forward, it has the potential to develop into a key differentiator for airlines. For airlines, reliable in-flight Wi-Fi connections offer a method for increasing customer satisfaction, deepening customer loyalty, generating additional revenue, and even gaining valuable customer analytics. During the flight, passengers will now be able to keep in contact with friends and family, enjoy their own entertainment, and even be more productive if they choose to spend the journey catching up on work.

56 WON'T HAPPEN — WE WILL NOT SEE ANY MEANINGFUL ADVANCEMENTS IN THE WORLDWIDE HARMONIZATION OF UNLICENSED 6 GHZ ACCESS.

The Federal Communication Commission's (FCC) allocation of the 6 Gigahertz (GHz) spectrum for unlicensed use in 2020 was one of the most transformative events in recent Wi-Fi history, as the additional 1200 MHz (5925 – 7125 MHz) that was unlocked effectively doubled the available spectrum for Wi-Fi overnight. Yet, while a handful of nations, including Canada, Saudi Arabia, and South Korea, chose to follow the United States' lead and also assign the entire band for unlicensed use, large swathes of the world opted instead to only release the lower portion of 6 GHz (5925 – 6425 MHz) for unlicensed use. Moreover, some countries have decided to either to reserve the entire band for licensed use (notably Mainland China), or have remained undecided.

This divided state of 6 GHz access poses a major challenge to the Wi-Fi industry, resulting in vast variations in consumer Quality of Experience (QoE) between countries and a fractured Wi-Fi ecosystem. An inability to access 6 GHz effectively restricts the performance of Wi-Fi 7 as it is deprived of the necessary spectrum resources it demands to unleash its full potential. Naturally, countries like the United States that can benefit from the entire 6 GHz band are able to enjoy far superior Wi-Fi experiences than those that can only rely on the heavily congested legacy 2.4 GHz and 5 GHz bands.

Unfortunately, this state of affairs shows no sign of changing in 2026. The leading countries at each side of the debate are firmly entrenched, with the United States highly unlikely to reverse its position on unlicensed 6 GHz, and China committed to assigning the entire band for cellular. In other areas of the world, access to the 6 GHz spectrum remains hotly contested between the unlicensed and licensed camps, with fierce ongoing arguments as to how the spectrum resources should be divided up. These disputes are unlikely to be settled in 2026, and with such worldwide division on the matter, countries on the fence will remain in limbo, fearful of acting until they get better clarity on the final outcome of the debate.

WI-FI, BLUETOOTH & WIRELESS CONNECTIVITY

57 WILL HAPPEN — WI-FI 8 WILL ENTER THE STAGE.

Following the recent completion of the Wi-Fi 8 (802.11bn) Draft 1.0 specification, there have been a number of significant chipset and networking platform announcements showing that the technology is, even at this early stage, set to propel itself into the spotlight. While the focus of Wi-Fi 7 (802.11be - ultra-high throughput) was to maximize the peak performance and throughput capabilities of Wi-Fi, particularly in the 6 Gigahertz (GHz) band, the objective of Wi-Fi 8 (802.11bn (ultra-high reliability) is to offer much more reliable performance for the technology in real-world conditions by solving multiple different challenges. These include more seamless roaming capabilities, more reliable performance at the edge of the network, enhanced congestion management, better coexistence with other technologies, and optimizing the power efficiency of both the network and client devices. ABI Research expects to see many more product unveilings and potential visibility on the release of Wi-Fi 8-compliant solutions throughout the course of the year. Furthermore, the technology is likely to be positioned as an Artificial Intelligence (AI) and new service enabler across home, enterprise, industrial, and public environments. Meanwhile, significant volumes of Wi-Fi 8 are expected to begin in 2028, and ABI Research expects that nearly 700 million Wi-Fi 8 chipsets will ship in 2030.

58 WON'T HAPPEN — AURACAST BROADCAST AUDIO WILL NOT BE RESTRICTED TO PERSONAL AUDIO SHARING APPLICATIONS.

Google recently announced that compatible Pixel phones alongside existing Samsung Galaxy and Xiaomi devices will now support Auracast™ broadcast audio. One of the key promoted consumer use cases for Auracast™ broadcast audio is the ability to invite others to share in your audio experiences. For example, when sitting next to someone on the train, each user can use their own headphones to watch the same movie, and listen to the same songs or podcast. Meanwhile, by scanning a QR code, groups can listen to the same audio, creating new experiences such as silent discos. However, while these new experiences are exciting, what has been lacking until now is a strong presence in public venues for assistive listening and other use cases enabling new audio experiences. On the positive side, 2025 has seen strong development of the Auracast™ broadcast audio ecosystem for public venues, with the number of Auracast™ broadcast audio-capable solutions targeting these applications arriving on the market and accelerating significantly. Meanwhile, the first real-world public deployments of Auracast™ broadcast audio have emerged this year, bringing benefits not only to those with hearing difficulties, but also those who are visually impaired, neurodivergent, and without disabilities.

Discussions with multiple assistive listening solution providers point toward very strong interest in Auracast™ broadcast audio solutions across many different verticals. These are addressing a combination of assistive listening purposes, as well as enabling some unique hearing augmentation experiences in educational, museum, and other public environments. Meanwhile, it appears as if the benefits of Auracast™ broadcast audio are resonating strongly, with many venues looking to invest in Auracast™ broadcast audio specifically. As a result, 2026 is expected to see a strong ramp-up of Auracast™ broadcast audio solutions in public venues such as educational campuses, theaters, transportation hubs, places of worship, museums, and conference centers, among many other environments. This means Auracast™ broadcast audio will no longer be limited to personal audio sharing applications, but will enable a whole host of assistive listening and innovative audio experiences. As the number of Auracast™ broadcast audio devices, hearing aids, and headsets accelerates, this will accelerate further. ABI Research expects public venue deployments of Auracast™ broadcast audio to achieve a 156% Compound Annual Growth Rate (CAGR) between 2025 and 2030.

XR MARKETS

59 WILL HAPPEN — THE OPEN XR ECOSYSTEM IS POISED TO DRIVE XR ADOPTION AND GROWTH IN CONSUMER AND ENTERPRISE MARKETS HEADING INTO 2026.

As we move into 2026, major tech players and emerging companies are accelerating their efforts in the Extended Reality (XR) space, strengthening partnerships and expanding their ecosystems to support a new wave of device launches. Samsung's recent release of the Galaxy XR headset, which was developed in partnership with Google (Android XR Operating System (OS)) and Qualcomm highlights how cross-industry collaboration is central to building a stable and scalable XR environment.

Manufacturers and industry leaders (such as Google, Samsung, Sony, Qualcomm, XREAL, and Magic Leap) are also increasingly aligning with OS and platform providers to create a more open XR landscape, while embedding more powerful Artificial Intelligence (AI) capabilities directly into the glasses to enable practical, real-world applications. More of these XR challengers are anticipated to join the open ecosystem as use cases expand beyond traditional use cases into consumer and enterprise markets. With access to an open ecosystem and core OS, enterprises can develop headsets tailored to their specific operational needs, such as integrated language translation for education and training, built-in cameras and software for scanning products in the manufacturing sector, or navigation and hazard avoidance by delivery drivers in the supply chain sector.

Some much-anticipated consumer launches expected in 2026 include the XREAL Project Aura, Google and Samsung's Android XR glasses aimed at competing with Apple, Valve's Steam Frame VR Headset, and Amazon's Amelia delivery glasses.

60 WON'T HAPPEN — XR ECOSYSTEMS WILL REMAIN FRAGMENTED, DELAYING FULL SPATIAL COMPUTING MATURITY.

Currently, there are a few different OSs, such as AndroidXR, visionOS, Meta Horizon OS, and Windows MR, and other proprietary platforms that use their own frameworks. While the ecosystem is becoming more open, it is unlikely that we will see one standardized and consolidated XR OS due to fragmentation by dominant players in the market, specialized hardware, and a lack of industry-wide technical standards.

While 2026 will mark a major inflection point for the XR industry, advanced spatial computing will still fall short of full maturity due to infrastructure and hardware limitations (such as battery life, field of view, and waveguide brightness). Furthermore, spatial computing depends on broad consumer penetration, millions of devices, and shared spatial environments. While enterprise and XR software developers have been expanding their base of XR users, the consumer XR sector, in particular, has yet to reach a mass-market scale. As a result, the ecosystem will remain in an early growth phase, rather than achieving full-scale readiness..

XR TECHNOLOGIES

61 WILL HAPPEN — AI, BETTER XR SCREEN, AND BATTERY LIFE WILL REVITALIZE THE XR MARKET.

The Extended Reality (XR) market is starting to gain momentum after a number of years in the doldrums. Meta, Sony, and HTC VIVE has been long-standing vendors in the Virtual Reality (VR) sector, which has shown lukewarm growth, but as XR (Augmented Reality (AR), Mixed Reality (MR), and VR) hardware and software innovation cycles have accelerated, more lightweight equipment, longer battery life, and improved user interface experiences have translated into greater interest from both the enterprise and consumer markets.

It may not be too much of a surprise to find out that Artificial Intelligence (AI) has been an "accelerant" when it comes to driving interest in XR devices. AI can play a valuable role in enabling real-time environmental understanding, natural user interaction, and the dynamic generation of content for end users. Chipset vendors such as Qualcomm are working closely with infrastructure vendors, such as Ericsson, and telcos like T-Mobile, to offer seamless low latency 5G connectivity where distributed spatial compute handles the Generative Artificial Intelligence (Gen AI)/Machine Learning (ML) workloads, while helping to maximize battery life. This is particularly relevant with AR and AI glasses where the end user will be "on the move."

The arrival of Samsung's Samsung Galaxy XR, Pico's PICO 4 Ultra and Alibaba's Quark AI glasses, are just some of the latest additions to the XR line-up. Hardware specs have taken a substantial leap forward. While Meta Quest 3 has the Snapdragon XR2 Gen 2 chipset under the hood and 8 Gigabits (GB) of Random Access Memory (RAM), Samsung's Samsung Galaxy XR has Qualcomm's latest Snapdragon XR2+ Gen 2 and 16 GB of RAM. Latency has also continued to come down. For example, Pico's PICO 4 has brought down latency to 12 Milliseconds (ms).

Software development for XR platforms has also come a long way. Naturally, Apple has its own iOS-based platform, Meta has curated its own Meta Horizon OS based on the Android Open-Source Project, and Samsung has collaborated with Google and Qualcomm to roll out "Android XR" as a new XR-based OS platform.

Expectations are building around Apple's Apple Glasses that will provide a more nomadic, AR experience to sit alongside its older brother, the Vision Pro. Specifications are scant, but the form factor will need to rely heavily on AI. To that end, Apple's AI agent, Siri, will need to boost its capabilities to meet the challenge.

Certainly, a robust, reliable, and comprehensive application portfolio that does not depend on a keyboard will be essential. Snap's AR Specs emphasize a wide range of third-party plug-ins such as Super Travel (Gowaaa) provides translation and currency conversion; Drum Kit (Paradiddle) offers AR-based drum lessons; and Cookmate (Headraft) finds recipes and step-by-step guidance based on available ingredient; among other experiences.

ABI Research anticipates the XR market to experience an upswing in market fortunes. In 2024, VR and AR hardware unit sales stood at 11.5 million. By 2030, annual sales will very likely be in excess of 82 million.

62 WON'T HAPPEN — MASS MARKET XR—ESPECIALLY VR—WILL NOT HAPPEN IN 2026.

Production costs and manufacturing scaling-up limitations are current gating factors. VR glasses, and even some of the high-spec AR glasses, will "not" be mass market-ready in 2026. XR specifications are improving, and prices are heading in the right direction, but there is still a long way to go before they are ready for the mass market. The Apple Vision Pro retails for US$3,500 and the Samsung Galaxy XR is expected to retail for US$1,800. Achieving price points under US$1,000 would overcome a psychological threshold as pricing would then come into the realm of the premium smartphone range. The Meta Quest 3S does retail for US$300; however, Samsung's Galaxy XR's per-eye pixel resolution stands at 3,552 x 3,840 compared to the Meta Quest 3S's paltry 1,832 x 1,920. Furthermore, the Galaxy XR relies on Micro-Organic Light-Emitting Diode (OLED), while the Quest 3S uses older Liquid Crystal Display (LCD) technology.

WHAT DOES 2026 HAVE IN STORE FOR YOUR ORGANIZATION?

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