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11 Unique Tech Trends That Will Define 2023

*The tech trends used in this blog post come from ABI Research's **74 Technology Trends That Will—And Will Not— Shape 2023** whitepaper.*

Another year has passed, and with it, fresher insight into the various technology domains. The year 2023 will carry over the tumultuous characteristics of 2022, which can disrupt product rollout plans. To keep a steady course and remain one step ahead of your competitors, our team of global technology research analysts wants to share **eleven unique technology trends** that will define the tech industry in 2023.

1. Uncompetitive Consumer Smart Glasses Market

The first technology trend to watch in 2023 is the underwhelming performance of the consumer smart glasses market, extending to Augmented Reality (AR) and Virtual Reality (VR). The short-term future could look better for those of you hoping that there will be an increased demand for consumer Extended Reality (XR) smart glasses this year. Although some AR vendors will emerge in the consumer market before 2024, it's **Apple** and **Google** that set the pace.

Until these two companies make AR smart glasses accessible to consumers (targeting 2024), the consumer AR/VR smart glasses market will remain cold. Apple will get its feet wet in the wider XR market in late 2023—when the company is **rumored** to launch a high-end VR device. However, in terms of capability and price, Apple's XR device will be distinct from consumer smart glasses.

2. TinyML and Environmental Data

As a recent **Research Highlight** pointed out, Tiny Machine Learning (TinyML) excels in monitoring environmental data analytics. Due to the technology's small size and high computing capabilities, it's an excellent fit for environmental sensors. Regarding environmental sensors, sound sensors are the most prominent, with close to **50%** market share in 2022.

Consider any use case for sensorial data analytics from the environment. A TinyML model could be beneficial to that application. These use cases encompass people detection and counting, speech detection, object recognition, and word spotting. The TinyML model, with the support of optimized software and hardware, can turn raw data into actionable insight.

3. XaaS Models in 5G Core Networks Will Lead to New Value Creation

The next technology trend on the list is the significant uptick in Everything-as-a-Service (XaaS) 5G business models in 2023. While these consumption-based models are familiar, their prevalence will widen due to economic uncertainty and high costs.

To reduce significant capital investments, Communication Service Providers (CSPs) will put less emphasis on possession. Instead, they will be more concerned with access and seek out 5G core networks that involve variable costs over time. To accommodate the switch from "tech ownership" to "tech access," 5G core suppliers like **Nokia** are focusing on Software-as-a-Service (SaaS) offerings.

4. New Value Metrics in Manufacturing

Given the macroeconomic climate, manufacturers won't be interested in long, drawn-out Return on Investment (ROI) projects in 2023. Indeed, manufacturers will want to use advanced technologies that enable quick wins, bringing the most pressing challenges and pain points to a speedy resolution.

Instead of selling manufacturers on big ROI projects that take years to see results, technology vendors must prioritize projects that deliver fast Time-to-Value (TTV). Examples of these projects include:

- Lowering barriers to learning new technology.
- Onboarding a new task.
- Reducing reliance on in-person travel by offering cloud-based collaboration tools.

The moral of the story ... this technology trend hints at the shift to new value metrics in the industrial space, notably quick gains.

5. Widespread Adoption of Location-Enriched Mobility

ABI Research views 2023 as the year of widespread adoption of location-based mobility in the automotive industry. These features are far more advanced than the typical

automotive infotainment systems that have been used in vehicles for navigation and route guidance for years now.

Digital maps, for instance, will be a dominant trend in the automotive industry because **Electric Vehicle (EV)** powertrains will require accurate and updated map layers. These features facilitate future applications like **Intelligent Speed Assistance (ISA)** and range optimization.

Moreover, digital maps will find their way into millions more vehicles as automotive manufacturers adhere to the **European General Safety Regulation (GSR) 2** mandate and the updated **European New Car Assessment Programme (Euro NCAP) 2023** protocols. Location intelligence technologies will collect data on road conditions, weather, and elevation/curvature. Beyond that, these safety features need to know the situation beyond what the eye can see and anticipate events taking place around corners.

Besides safety regulations, location intelligence will be critical in easing range anxiety with EVs. A more accurate Estimated Time of Arrival (ETA) can be calculated by collecting various traffic and environmental data. Thus, drivers will know the EV has enough battery power to make a trip.

6. Telco-Hyperscaler Partnerships for Edge Cloud Services

Over the last few years, we've seen an upward trend in partnerships between telco operators and edge cloud computing providers. These partnerships are aimed at ascending the digital value chain. Up to this point, **Amazon Web Services (AWS) Wavelength** has been at the forefront with various **telco partnerships** worldwide (e.g., with **Vodafone** and **Verizon**).

However, ABI Research thinks 2023 will be the year when other edge cloud hyperscalers will narrow the market gap. To illustrate, Google Cloud Platform's (GCP) **acquisition of MobiledgeX in early 2022** has matured and will serve as the bedrock on which global deployments will accelerate.

It's important to note that customers are trending away from the public cloud. Telcos and cloud computing service providers will need to shift focus toward smaller, localized edge deployments that give customers significant dominion over data.

7. Mobile Robots Set to Dominate

There is no sign that mobile robot adoption growth will slow down anytime soon. In fact, mobile robots will continue to expand into historically underserved markets, such as agriculture, construction, and mining. For **outdoor** deployments, **5G connectivity will be key**.

One of the more attractive facets of mobile robots is greater autonomy in robotic applications. Advanced technologies like teleoperation and 3D Light Detection and Ranging (LiDAR)-based Simultaneous Location and Mapping (SLAM) are making robotic deployments safer and more efficient. That's not to mention the **many benefits** of process automation.

By 2024, ABI Research forecasts **1 million** annual mobile robot shipments, which translates to US$40 million in revenue. The most common application for mobile robots continues to be materials handling.

8. Metaverse Monetization

On the **consumer side**, companies will ramp up their metaverse monetization efforts in 2023. This will be the year of business model experimentation. Indeed, companies will be more aggressive in trying to generate more revenue from platform and service users.

However, because consumers still need to get used to metaverse platforms, 2023 won't be a year when significant milestones are reached. For example, platform-independent digital goods and assets ownership is still some ways off.

Instead, companies will focus their monetization strategies on selling virtual items within platforms and **advertising**. While this business model has caused friction among early adopters, some barriers should wither in 2023.

9. Sustainable Cities to Gain Momentum

The demand for **sustainable urban infrastructure** is widening tremendously. For evidence of this tech trend, look no further than the Smart Cities Expo World Congress 2022. Various green city initiatives, projects, and investment programs have gained prominence—and 2023 will only exacerbate this shift.

Sustainable cities' desired outcomes are decarbonization, net-zero emissions, urban circularity, green infrastructure, vertical farming, smart energy, and **zero emissions mobility and transportation**.

But how do these sustainability goals equate to technology?

Below are several **sustainable technologies** that will pick up momentum in 2023:

- Commercial building management software for optimizing energy efficiencies
- Battery-electric and hydrogen fuel cell vehicles and associated charging and fueling infrastructure
- Renewable energy generation and smart micro-grids
- The use of **digital twins** for modeling energy consumption
- Gray and green urban infrastructure planning
- Impact of climate change simulation
- Blockchain-enabled carbon credit marketplaces
- Ambient Internet of Things (IoT)
- Cross-vertical smart cities platforms

These technologies will be vital to reaching the ambitious net-zero pledges from cities, countries, industry associations, and other organizations worldwide.

10. Supply Chain Visibility Solutions for Regulation

Supply chain managers, particularly in the **cold chain**, are forced to comply with more and more regulations. In 2023, two notable global supply chain rules include the Food Safety Modernization Act (FSMA) Rule 204 and the Drug Supply Chain Security Act (DSCSA).

The **FSMA Rule 204 regulation** stipulates further traceability around foods like animal products, seafood, and fresh produce. To prepare for full compliance by 2025, food companies will invest significantly **in digital transformation** in 2023 and 2024—for both supply chain traceability and condition monitoring.

And **DSCA 2023**, introduced in 2013, will take effect on **November 27, 2023**. This regulation will require some prescription drugs to have interoperable electronic tracing capabilities. To ensure compliance and remain competitive, pharmaceutical companies will increasingly adopt IoT-enabled traceability and supply chain platforms.

11. Post-Quantum Cryptography Market Kicks Off

Quantum computing is the next technology trend to watch in 2023. Few technologies are trending in the cybersecurity industry as much as Post-Quantum Cryptography (PQC). The U.S. National Institute of Standards and Technology (NIST) **announcement** of four

post-quantum algorithm standards in July 2022 signaled growing momentum in the PQC space. These PQC standards will release in 2023 and 2024.

While the **PQC standardization process** has been in full swing since 2017, NIST is approaching the finish line. These standards enable industry players to begin thinking about integration/migration, transition plans, creating responsible parties, and setting money aside for projects.

In 2023, Research & Development (R&D) into PQC technology is expected to pick up. Moreover, the early birds to PQC will get more aggressive in educating industry stakeholders and developing roadmaps for the passage to PQC.

Although the shift to post-quantum is a long road ahead, 2023 will be a year of key inflection points and getting the ball rolling for post quantum computing solutions.

Additional Resources

The technology trends on this list are just a drop in the ocean of our analysts' insights for 2023. If you want to read about 63 more technology trends to define 2023, download our **74 Technology Trends That Will—And Will Not— Shape 2023** whitepaper today.

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