



Key Trends: Telecommunications Industry

November 2022



Key Telecommunications Industry Trends [1]: 5G Network and Wi-Fi 6

5G Network



- ✓ 5G networks introduce new network functionality for communication service providers (CSPs), notably including **network slicing** that enables them to carve out and create multiple end-to-end networks on a common infrastructure platform
- ✓ Lately in June 2022, **Nokia** and **Proximus** announced enhancing the performance of 5G network slicing in demanding network conditions using **new radio software-defined networking** and **radio resource allocation**. This new RAN slicing functionality brings benefits to a wide range of use cases, such as **Industry 4.0**, **IoT**, and enterprise applications like **public safety** and **drone inspection**, as well as **VR & AR**
- ✓ The speed and reliability of 5G are also expected to create additional demand for **IoT devices** facilitating **Machine-to-Machine** interactions. For instance, wearable technology will have the speed and bandwidth, it needs to seamlessly blend in with users' lives through AR

According to Oracle, the number of IoT device demand is expected to grow exponentially, reaching **~22 billion** by 2025 from ~10 billion in 2020 owing to the full deployment of **5G**.

Cyient estimated that the number of **Machine-to-Machine (M2M)** wireless communication connections is expected to reach **~1.3 billion** by 2025 from ~205 million in 2014.

According to Deloitte's prediction more Wi-Fi 6 devices will ship in 2022 than 5G devices, at least **2.5 billion** Wi-Fi 6 devices to roughly **1.5 billion** 5G devices.

As per Wi-Fi Alliance, by **2025**, 'Wi-Fi 6' and 'Wi-Fi 6E' are expected to surpass **80%** market share and dominate the smartphone market.



Wi-Fi 6

- ✓ The benefits of Wi-Fi 6E, i.e., bringing the capabilities of Wi-Fi 6 into the 6 GHz band, have been demonstrated in deployments across several verticals including **healthcare** and **education**. The University of Michigan, e.g., installed more than 15,000 Aruba AP-635 indoor model Wi-Fi 6E access points throughout its campus
- ✓ In May 2022, **Nokia** expanded its private wireless portfolio with the **Digital Automation Cloud (DAC) Wi-Fi**. This solution makes it easy to deploy Wi-Fi 6/ 6E to meet the connectivity demands of IT and non-business-critical operational technology (OT) applications at any industrial site
- ✓ **Ignition Design Labs** is a start-up that provides multi-channel zero-wait **Dynamic Frequency Selection (DFS) technology**. This solution creates an additional **320 MHz** of operating spectrum and provides fast channel hopping by employing dynamic load balancing and traffic avoidance. Thus, providing greater wireless capacity, speed, and coverage while also lowering latency

Key Players | Qualcomm | AT&T | verizon | vodafone | NOKIA | ERICSSON

Key Players | CISCO | Meraki | aruba | NETGEAR | FORTINET | HUAWEI | Extreme networks



Key Telecommunications Trends [2]: Cloud Computing and Edge Computing

Cloud Computing



- ✓ In November 2022, **Telefónica** increased its strategic collaboration with **Amazon** for cloud development and the digital home. Under cloud development, Telefónica Tech and AWS will collaborate on joint go-to-market operations to enhance customers' adoption of cloud services, as well as enable new 5G and edge services for clients
- ✓ Recently in June 2022, **Vodafone** embraced **Oracle Cloud Infrastructure (OCI)** largely, consolidating 40 data centers that handle essential services for its entire **European operations** (13 countries) into three (3) locations (Ireland, Italy, and Germany) that run on the OCI
- ✓ **Serverless Cloud** is another concept that is gaining traction in the market from providers including **Amazon (AWS Lambda), Microsoft (Azure Functions), IBM**, etc. It means organizations are not tied into leasing servers or paying for fixed amounts of storage or bandwidth

To manage **~22 billion** IoT devices by 2025 service providers will need to take advantage of the scalability and flexibility offered by the **cloud**.

ACG predicts that by 2025, **~60%** of BSS systems will be cloud-native based taking advantage of the distributed computing offered by the **cloud** delivery model.

According to Gartner Inc., edge computing can reduce latency and should eventually result in a **75%** reduction in the requirement to send data to data centers.

As mentioned on Statista, the IT power footprint for edge infrastructure deployed by communication network operators is expected to reach **16,938 megawatts (MW)** by **2028**.



Edge Computing

- ✓ Edge computing brings a lot of benefits like network performance improvements, low latency, high bandwidth, and data offload. For instance, companies like **Verizon** and **SingTel** have leveraged edge computing to launch commercial 5G mobile networks
- ✓ **Mobile Edge Computing (MEC)** offers a way for retailers to rethink Customer Experience (CX). In December 2020, **Verizon Business** and **Deloitte** designed a new 5G and MEC-based digital platform to deliver real-time analytics, which will help retailers with seamless and cashier-less checkout workflows and better store inventory stocking
- ✓ Also, **AT&T** is using **MEC** and its **5G+** network at the University of Southern California's Lawrence J. Ellison Institute for Transformative Medicine to support cancer research, treatment, and wellness education. The school has found multiple uses for MEC including 3D tumor imaging, patient location maps, and improved data collection & analysis

Key Players | | | | | |

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Sources: [Telefónica](#), [Statista-IT Power](#), [Forbes-Gartner](#), [PwC](#), [RCR Wireless News](#), [LinkedIn-Cloud Computing](#), [Forbes-Vodafone](#), [CSGI](#), [Verizon & Deloitte](#), [AT&T](#)



Key Telecommunications Trends [3]: AI & ML and Cybersecurity

AI and ML

- ✓ AI has proven itself essential to the telecoms' digital transformation strategy, as it addresses the key challenges telecoms face today by the way of **network optimization, predictive maintenance**, etc.
- ✓ **NetOp**, a startup from Israel, created a **critical network health utility tool using ML algorithms** that automatically analyzes the network and predicts & solves network issues as those arise, helping businesses improve cybersecurity and reduce operating costs
- ✓ Nearly every telecom company uses AI and ML to improve its customer service primarily by using virtual assistants and chatbots. **Vodafone** saw a **~68%** improvement in customer satisfaction after introducing its chatbot **TOBi**
- ✓ Integrating **Robotic Process Automation (RPA)**, a form of business process automation technology based on **AI**, can help telecom companies simplify the handling of operational tasks and generate lasting revenue streams by providing fast, high-quality, and affordable services



In 2022, Juniper Research estimated that conversational virtual assistants will reduce business expenses by **~\$8 billion** annually.

In Jan 2022 according to Statistica, RPA is expected to grow up to **~\$13 billion** by 2030, achieving almost universal adoption within the next 5 years.

According to Lumen Technologies report, **~34%** of the **500 largest DDoS attacks** in Q3 of 2021 took aim at the telecommunications sector.

According to IDC Report, the average damage cost of a DNS attack on telcos is estimated to have risen from **\$997k** in 2021 to **\$1.16 million** in 2022, with some attacks costing over **\$5 million**.



Cybersecurity

- ✓ **Distributed Denial of Service (DDoS)** attacks is the most common type of direct cyberattack that impact the telecom industry often. Such attacks condense network capacity, swell traffic costs, disrupt all kinds of services, and hit internet service providers (**ISPs**)
- ✓ In May 2022, **Nokia** announced the launch of its **Advanced Security Testing and Research (ASTaR) Lab**. It is the first end-to-end 5G testing lab in the US that is focused on cybersecurity. As the lab is completely dedicated to security that will be used to develop cutting-edge tools and methodologies to analyze the security resilience of 5G networks, associated software & hardware, and applications
- ✓ **BlackDice Cyber**, a cybersecurity start-up providing **patented AI-based cybersecurity solutions** for telecom operators. Its cloud-based security platform stretches between service providers and end-users to offer device fingerprinting, device management, etc. It also provides a software development kit to develop cloud-based security applications



Sources: [Startus-Insights](#), [Forbes](#), [Medium-Vodafone/TOBi](#), [EfficientIP](#), [Fierce Telecom](#), [RCR Wireless News](#), [Nokia-ASTaR](#), [Lumen](#), [BlackDice](#)

DNS - Domain Name System

About STATXO

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Our approach driven by domain expertise + data science + AI has successfully enabled various businesses to mitigate challenges, leverage their growth potential, outperform competitors, and significantly reduce costs.

We support a range of corporate & professional services companies – from Fortune 500 to high-potential start-ups across various industry verticals, such as Energy, Telecom & Technology, Retail, Healthcare, Consumer Goods, Automotive, Professional Services, Industrial Goods, Travel, Chemicals, and others.

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Achieve Tangible Results

