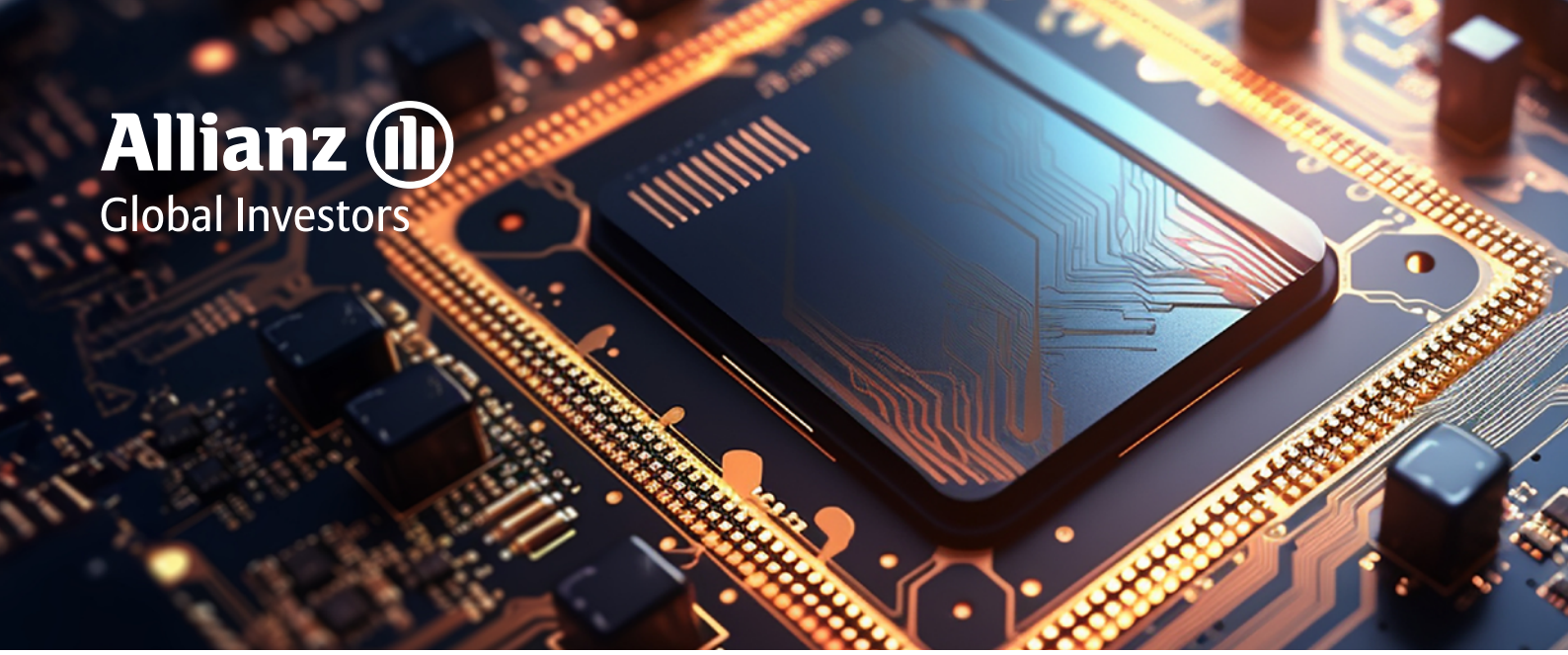

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How infrastructure is driving our digital world

Haven't you also used ChatGPT, DeepSeek, or some other artificial intelligence (AI) solution recently? As AI continues to transform significant aspects of our lives and work, and while the exact trajectory of this transformation remains uncertain, it is clear that more and more opportunities will arise as use cases become more defined.

The digital infrastructure landscape plays a critical role in supporting modern economies and societies, enabling connectivity, data transfer, and technological advancements. The immediate need for developments in the data center space is apparent, but the scope extends much further. Connectivity between computing and storage facilities, as well as the end users and their devices, must evolve in tandem with renewable power capacity and networks to support these installations. The global AI market alone was estimated at USD 196.63 billion in 2023, projected to grow at a CAGR of 36.6% from 2024 to 2030[1] showing the extent of the current digital transformation.

Computing power and storage

Recently, we have witnessed significant developments across digital infrastructure presenting various investment opportunities. This includes wireless and fixed communication network infrastructure, with particular emphasis on the data center space and its adjacent areas. The acceleration of AI and machine learning, together with cloud adoption, has been a major driver of this growth, creating vast demand for computing power and storage across diverse applications incl. both large scale core hyperscale facilities as well as latency sensitive installations on the "edge", that are closer to the customer. While the release of DeepSeek's R1 model has drawn considerable attention, most

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Transforming Infrastructure

maintain that the need for substantial AI-related investment remains. Both Microsoft and Meta have recently re-iterated their commitments to AI-related spending. In addition, if DeepSeek's model does prove to be considerably more cost-effective, it could accelerate the widespread adoption of AI applications, given new and improved business cases. This in turn would also necessitate further investments in infrastructure required to support AI inference (the processing of user requests by trained AI models).

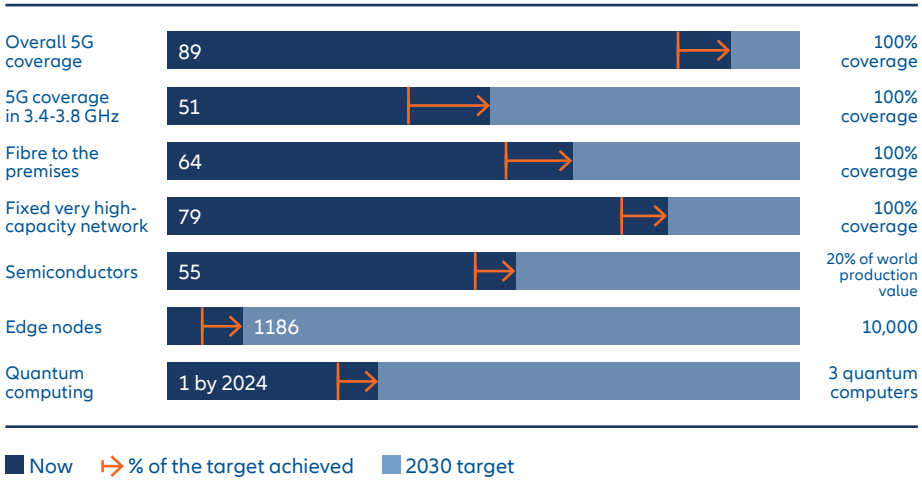
One question that also ChatGPT (or DeepSeek) cannot answer (yet) is which individual technology and application areas will ultimately prevail. Here, regional differences in the possibilities and individual willingness to adopt new technologies are also significant. While Asia but also Africa tend to be more open to new technologies some parts of Europe lag when it comes to the implementation of innovations but also put more emphasis on data privacy and protection aspects. Today, the majority of investments in digital infrastructure is made in Europe (c.30%)[2], North America (c.45%)[2], and parts of the Asia-Pacific region (c.20%)[2]. A focus was here in particular on data centers which accounted for almost 60%[2] of deal volumes in 2024. This trend is expected to continue in 2025, with ongoing investment in data centers (despite recent noise). However, opportunities are also anticipated in other subsectors. According to the European Commission's 2024 Digital Decade report, only 64%[3] of households have access to fiber and coverage of high quality 5G extends only to merely 50%[3] of the EU territory (based on main pioneer band). The investment needed to reach connectivity targets amounts up to EUR 200 billion.[3]

Digitisation and decarbonisation

Be it a video conference, working remotely or streaming in the evening – more Digitisation requires more energy. In light of these developments, there has been a notable shift towards incorporating sustainability considerations into the design and development of digital infrastructure. The issue of high energy consumption and carbon footprints remains a concern as the demand for digital services continues to grow at a rapid pace. There is a growing emphasis on transitioning to renewable energy sources and implementing climate-friendly cooling solutions for data centers. This focus on sustainability aligns with broader trends in decarbonisation and

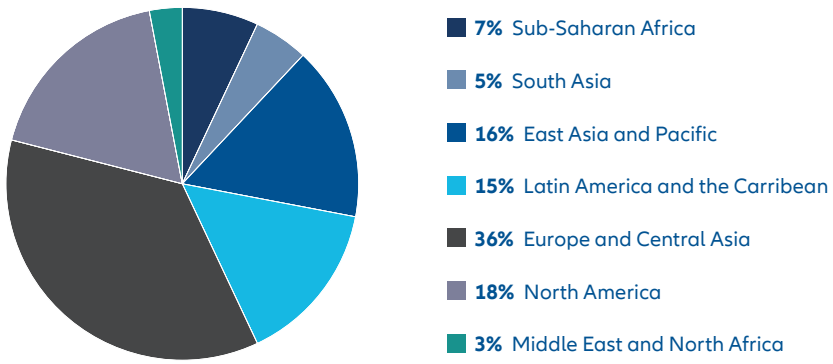
Taking stock of progress towards 2030

EU KPIs in 2024



Source: **2030 Digital Decade Report, European Commission, 2024**

Distribution of IXPs by region (2022)



IXP = An internet exchange point is a location through which internet infrastructure providers connect with each other to exchange and provide data.

Source: **Digital Progress and Trends Report 2023**, worldbank

digitalisation, highlighting the need for infrastructure investments to meet rising energy demands. As operators and customers of digital infrastructure seek environmentally friendly solutions while competing with other sectors like energy and transportation in terms of decarbonisation efforts, addressing these challenges becomes more and more important. One way to tackle this environmental challenge that companies such as Google or Amazon pursue is to have agreements with renewable energy providers to supply them with green energy. Another way is to further develop cooling and other energy efficiency measures which could lead to further investment opportunities.

Outlook for digital infrastructure

The overarching macro tailwinds for digital infrastructure remain strong, particularly as we navigate the ongoing and fast transformation driven by AI. AI will need faster, lower latency and more secure connections. Furthermore, while AI places increasing demands on digital infrastructure and its investments, it also has the potential to drive necessary changes effectively by using its innovative power. Realizing these advancements relies on having robust digital infrastructure and its interfaces in place. For 2025, we expect that areas which are most imminently needed for AI development, such as hyperscale data centers, could see more competition. As Digitisation varies between regions, we are convinced that a global and diversified approach is key for institutional investors to seize opportunities where they arise.

Factsheet Digital infrastructure

Market size and growth

The global AI market was estimated at USD 196.63 billion in 2023, projected to grow at a CAGR of 36.6% from 2024 to 2030.[1]

Investment surge

U.S. capital expenditure in data-hosting infrastructure grew 60% from 2018 to 2021, reaching $41 billion, or 20% of total information and communication technology (ICT) sector spending.[4]

Cloud provider growth

Hyperscale cloud provider investments surpassed $200 billion in 2022, averaging a 20% annual growth since 2016.[4]

Investment gaps

Low- and middle-income countries attracted nearly $50 billion in private equity for data centers in 2022 but face challenges like unstable electricity and regulatory issues.[4]

Energy-efficient solution

Fiber optics is recognised as the digital infrastructure with the lowest power consumption, making it a sustainable choice for future-proofing connectivity. Fiber optic networks (FTTH) consume up to 2.6 times less power than Fiber to the Building (FTTB).[5]

Sources

1) Artificial Intelligence Market Size, Share, **Growth Report 2030** (grandviewresearch.com)
2) Inframation, based on global deal volumes for digital infrastructure in 2024
3) **European Commission: 2030 digital decade report on the state of the digital decade 2024**
4) Digital Progress and Trends Report, World Bank Group. **Digital Progress and Trends Report 2023** (worldbank.org)
5) Study by Prof. Dr.-Ing. Kristof Obermann, Technical University of Central Hesse, commissioned by BREKO. **Glasfaser ist die digitale Infrastruktur mit dem geringsten Stromverbrauch** (brekoverband.de)

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