PIMCO

Powering the Future: The Strategic Role of Data Centres in the AI Evolution in Europe

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Data centre demand is surging, driven primarily by the rapid evolution of AI technologies. In PIMCO's view, this represents a significant opportunity for investors in European data centres.

Generative artificial intelligence-driven workloads are rapidly accelerating data centre demand, which is likely to boost Tier 2 and 3 markets across Europe over the next five years. This complements increases in content generation and migration to the cloud in driving secular demand for localised data centre capacity globally and, in Europe, making data centres an increasingly attractive investment opportunity in our view.

In their first-quarter earnings reports for 2024, the largest technology companies – including Microsoft, Amazon, and Alphabet – highlighted AI as a primary growth driver, both as a standalone product and as an additional source of demand for cloud services, which have seen double-digit growth rates.

Achieving their AI ambitions requires significant investment, which is projected to increase by around 44% year-on-year in 2024[1]. Data centres are central to this AI push, serving as the critical infrastructure that powers and enables the expansion of AI technologies.

We have already seen a transformational increase in data centre demand over the last 12 months, with Q1 2024 leasing volumes exceeding 1,800 MW (megawatts) globally[2] – just three years ago average quarterly leasing volumes stood at 200-300 MW. Moreover, forward-looking demand signals are not showing any signs of stabilisation in the near term, as tenants are moving from contracting individual buildings to (in some cases) entire campuses.

1 Source: Morgan Stanley
2 Source: datacenterHawk

THE ROLE OF AI TRAINING AND INFERENCE IN SHAPING DATA CENTRE TRENDS

There are two primary demands for AI-driven data centre capacity: AI training and AI inference, with the latter expected to significantly exceed the former in capacity requirements.

AI training facilities are used to train generative AI models on large datasets, which have grown increasingly complex over the past five years. For example, OpenAI GPT-2 had around two billion parameters while OpenAI GPT-4 is estimated to have approximately 1.7 trillion.

As these models become more complex, the demand for data centre capacity rises. Typically, AI training is carried out in highly dense data centres that are less latency sensitive, allowing them to be situated in areas with ample land and access to low-cost power.

AI inference facilities are designed to deliver AI capabilities to consumers, enterprises, and governments, and are therefore very latency sensitive and are often located in similar places as cloud data centres.

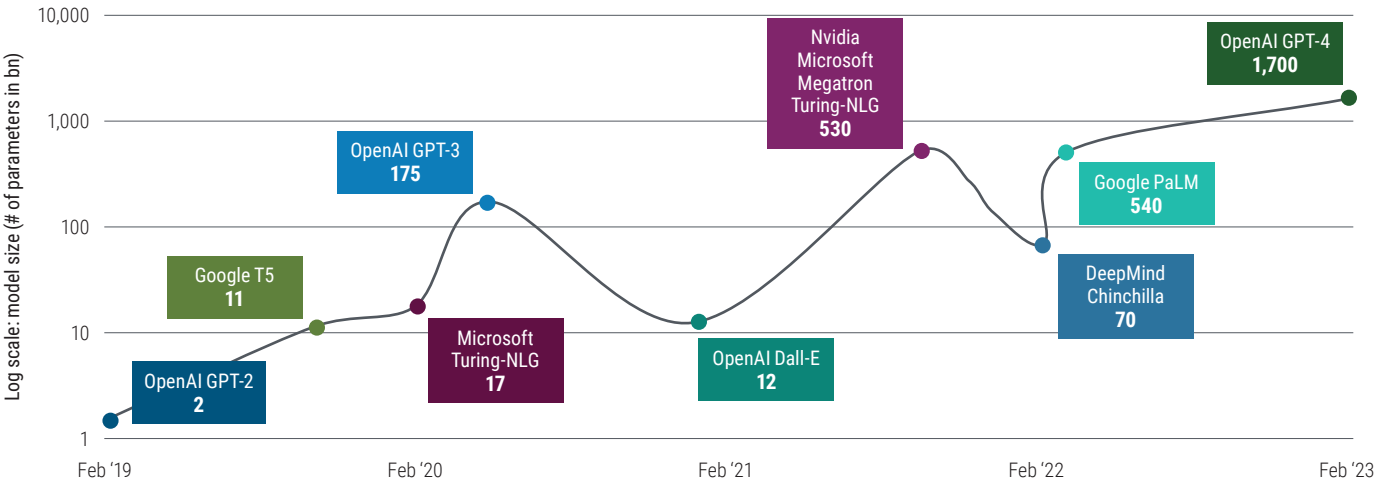
Whilst the majority of contracting to date has been focused on AI training facilities, we expect that the following 18-24 months will see the build-out of hyperscalers' AI inference capabilities.

In essence, just as the logistics sector maintains a dual need for both expansive big box warehouses to store vast quantities of goods and agile "last mile" logistics to deliver these goods efficiently to consumers, the AI sector similarly requires robust training facilities to develop powerful models and extensive low latency inference capabilities to deploy these models effectively in real-world applications.

In the context of AI deployments, digital sovereignty is starting to play an increasingly important role. To date, digital sovereignty has focused primarily on where data is stored and processed, and with over 70% of European data still being stored abroad (primarily in the U.S.)[3], digital sovereignty is expected to drive a "near-shoring" of data and be a strong requirement for more data centre development in Europe.

With generative AI, it is no longer about the location of data storage and processing but also the type of data that is used to train the models: many governments and companies believe that it is important that the models are trained on their local norms, customs, and nuances instead of having one generalised global model. We believe this is likely to be an additional catalyst for more localised data centre capacity development over the coming years.

Figure 1: Exponential growth in parameters associated with AI models



As of: February 2020 Source: https://www.microsoft.com/en-us/research/blog/turing-nlg-a-17-billion-parameter-language-model-by-microsoft/

3 Source: Morgan Stanley

THE STRATEGIC MIGRATION TO NEW EUROPEAN DATA CENTRE HUBS

This new growth demand driver for generative AI-driven data centre workloads underscores our continued enthusiasm for the development of data centres in Europe. Yet power transmission limitations are increasingly restricting the ability to expand capacity in the Tier 1 data centre markets (often referred to as FLAPD – Frankfurt, London, Amsterdam, Paris, and Dublin) in the near term. These constraints are already leading to some hyperscalers strategically shifting workloads out of Tier 1 markets and into Tier 2 and Tier 3 markets (such as Madrid, Milan, and Berlin) that may be less power constrained and often have good access to renewable power.

These markets also offer the added benefits of reducing latency and addressing digital sovereignty considerations of their end-customers, and therefore are expected to outperform Tier 1 markets over the secular horizon. Furthermore, and in part driven by the recent push from the European Union as part of the digital decade strategy, we are seeing strong support from local governments and municipalities in bringing data centres to Tier 2 and Tier 3 markets as they see the importance of supporting critical digital infrastructure, the value of the local investment as well as the long-term positive social and economic impacts data centres may provide.

CAPITALIZING ON AI DEMAND: INVESTMENT OPPORTUNITIES IN EUROPEAN DATA CENTRES

The AI theme is likely to play an important role in investor portfolios over the coming years. Data centres support this theme without depending on specific winners in the AI race and enable investors to gain exposure to AI growth without taking idiosyncratic risks. Within the European data centre sector, we favour Tier 2 and Tier 3 markets that have the potential to benefit from growth in capacity requirements driven by AI and digital sovereignty as well as a continued growth in cloud-based demand. The emphasis here is to focus on locations with lower latency and scalable campus developments that can accommodate increasing AI workloads.

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