

KEYNOTE INTERVIEW

AI driving the next wave of data centre demand



Data centre platforms need to be on the front foot to capitalise on the proliferation of AI applications and the resulting demand cycle, says Stonepeak's [Andrew Thomas](#)

Excitement is growing around the potential for artificial intelligence to revolutionise the global economy. Behind the scenes, digital infrastructure operators are ramping up efforts to enable the AI rollout.

Andrew Thomas, senior managing director and head of communications, global ex-Europe at Stonepeak, says that demand for data storage will increase significantly as AI adoption proliferates.

Data centre operators, he explains, must think holistically about the opportunities around artificial intelligence if they want to get ahead of the game.

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Q What is driving demand for AI?

AI has the potential to transform essentially every sector of the economy. The world's largest technology companies all recognise that they need to be at the forefront of adopting AI and they are developing solutions accordingly.

ChatGPT, the best-known generative AI application, reached 100 million users within two months. If you look at the other major consumer technology applications that dominate the market

today, they took anywhere from 30-70 months to reach 100 million users. The rapid growth of ChatGPT shows how transformative and compelling the applications that are driven by AI can be. And generative AI from large language models is really just the beginning of this trend.

Q What role will the digital infrastructure sector play in facilitating the growth of AI?

When we think about the impact that AI has on our sector, first and foremost it is going to be a core driver of demand for a very large-scale data infrastructure build-out.



Q What are the key ESG considerations when it comes to operating digital infrastructure in the AI era?

Like in any sector, there are various sustainability considerations when it comes to AI. For digital infrastructure, one of the biggest topics is power efficiency, given that most digital infrastructure is so power intensive.

Given the increased demand for data centres, a much larger amount of electricity capacity is going to be required. Data centre facilities are going to continue to be larger and much higher power density. The average installed base of data centres in the US has about five kilowatts per rack of power. With most AI applications, the specification increases to 40-50 kilowatts per rack. In other words, for the same amount of space, you need 10 times the amount of power to be packed into a data centre.

Unless you are building a data centre in a very cool climate, that power usage also means you need to significantly increase the cooling requirements. Moving from air-based cooling solutions to liquid cooling solutions is a large part of this equation. And so, water

efficiency is also evaluated just as carefully as energy efficiency metrics.

The sheer size of these facilities means that efficiency levels need to continue to improve. The standard power usage effectiveness ratio for a hyperscale facility is now around 1.2 or below, which is much better than was common a few years ago. One driver is the increasing expectation from hyperscale customers that data centres be as green as possible, so operators are more thoughtful about how they build-out their facilities to minimise their energy consumption.

This customer demand for green data storage is also motivating operators to think creatively in using renewable energy sources from the very outset. All our data centre platforms are actively in dialogue with utilities and renewable operators to evaluate where we can partner together. Generally, from the very beginning of when we design a new greenfield data centre, we start working on a plan for how we can rely on renewable energy as much as possible.

Training and deploying AI applications generate a significant amount of data that needs to be stored and needs to be transported. This is seen first in training AI models, but then secondly in the process of AI inferencing, which needs to happen at the network edge. As AI applications are rolled out,

whether in financial services, retail, construction, manufacturing or any other sector, the end application is enabled by digital infrastructure – notably data centres and high capacity fibre networks.

The adoption of AI applications is going to have an effect similar to what

we've seen over the last 10 years from the cloud services industry. The adoption of the public cloud has driven the rapid expansion in data centre capacity, and the early indicators today point to AI catalysing an even larger wave of demand growth. By 2040, the data suggests more than 80 percent of data

centre capacity will serve demand from AI applications.

Q Is the use of AI in communications and digital infrastructure businesses becoming status quo?

We are still in the early days of AI integration across our sector, but most large businesses have started mapping out their AI strategy. The immediate impact is in our data centre platforms, which are enabling AI applications. Over the last 12 months, we've seen a meaningful increase in our pipeline from hyperscale customers, and specialised GPU cloud infrastructure companies, as they build out additional capacity for AI.

More broadly, other digital infrastructure companies such as enterprise fibre and residential broadband companies, are all looking at how they can roll out AI applications to optimise their business. Customer care is a great example of that – if you're running a residential broadband business and you have a million subscribers, being able to help customers troubleshoot in real time, more efficiently, more effectively, using AI is a significant opportunity. Companies are all thinking about the potential there.

Q Where else do you see opportunities for digital infrastructure businesses to use AI to improve their own operations?

For network-based businesses, optimising the touch points with your end customers – whether those are residential or enterprise customers – is a large opportunity. Not just allowing them to resolve issues quickly and cost-efficiently, but enabling them to utilise their own data through a full suite of AI-enabled digestible analytics.

AI will also allow for a step-change in network management and optimisation. Take congestion relief and predictive maintenance as an example. AI can help identify and predict potential

points of congestion or capacity constraints or maximise the utilisation and useful life of critical pieces of equipment across a network. AI can also be transformative in increasing efficient power usage.

Q Is power availability the main constraint for scaling up data centre capacity?

Yes, while overall growth in the data centre industry will be very robust,

power availability will likely constrain the manner in which the full extent of demand is realised. It is the limiting factor in many markets today, and will certainly continue to be.

Over the past 24 months, we have seen data centre operators unable to add the desired capacity in key regions, both in the US and internationally, due to challenges accessing power within any kind of reasonable timeframe. Northern Virginia is still the largest market in the world, in terms of installed capacity and new absorption, but it still has very long lead times for getting access to new power. The current conditions are causing hyperscalers to consider distributing their compute capacity to other locations to avoid the risk of being slowed down in the future.

We will see more and newer data centre markets pop up where there is land available and better access to cheap and renewable power. That is vital for operators to develop and construct an efficient site in a shorter time period.

Q What are the key lessons you have learned from implementing AI across your portfolio so far?

One of the biggest practical learnings is that companies need to be very forward thinking in how they evaluate the impact that AI can have on their business and then be proactive in their capacity planning. We are at an early stage but this is a once-in-a-generation moment for the digital infrastructure sector, and the pressure to scale-up is going to be rapid.

Data centre companies need to be thinking holistically about how AI can transform their business, their customers and their competitors. There needs to be board-level strategising on the impacts and on what customers will expect from infrastructure providers. The companies that are on the front foot of thinking about AI will be the ones that capitalise on the early demand. ■

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