KEYNOTE INTERVIEW

AI infrastructure takes centre stage

With AI expected to drive transformative change in society and every industry around the globe in the coming decades, a huge investment in infrastructure will be required for the technology to fulfil its potential, says Brookfield's Sikander Rashid

It is estimated that generative artificial intelligence will add nearly $10 trillion to global gross domestic product over the next decade, according to technology market researcher International Data Corporation, but complex and capital-intensive investments in digital infrastructure are required to reach that goal.

Energy, data centres, sophisticated computational infrastructure (or "compute") and other strategic adjacencies will build the backbone of artificial general intelligence, offering vast and exciting opportunities for the infrastructure asset class, says Sikander Rashid, head of artificial intelligence infrastructure at Brookfield.

SPONSOR
BROOKFIELD

Q What's the difference between AI and AI infrastructure?

AI is general-purpose technology designed to mimic human cognitive and decision-making abilities. At its heart is software code that learns by reading massive amounts of data and finding patterns, a process known as training. The software model then processes those patterns to make predictions based on its learning, also known as inference.

AI infrastructure is the physical backbone that allows AI models to learn and operate. Spanning a range of subsectors – including data centres, compute hardware, chips, clean energy and cooling systems – it is essential to the AI revolution. Without physical infrastructure, there will be no general or super intelligence.

Q What is your assessment of AI technology and its transformational potential?

Our view is that AI will eventually be the most impactful general-purpose technology ever – more than electricity or even the internet – due to its economic productivity improvement potential.

Right now, despite its strong impact, the AI revolution is still in an early stage. Most companies are implementing this technology incrementally and with varying levels of sophistication. In the coming years, however, AI models and applications are expected to play an outsize role in enhancing productivity, addressing labour shortages and optimising supply chains.

Over the past few years, the world has been captivated by chatbots, but that is narrow artificial intelligence confined to text. With the development of multiple high-quality foundation models, the next technology advancement will be agentic AI and physical AI – or robotics. We see the advent of those two step changes driving enormous productivity improvements and, despite additional cautious recent headlines, we continue to have strong conviction in the long-term AI trends. Therefore, we remain extremely excited about the growth prospects for AI and the associated growth of the broader infrastructure investment landscape.

Q How significant is the AI infrastructure investment opportunity?

We need the physical infrastructure to achieve the $10 trillion potential productivity gain from AI adoption. And by our reckoning, approximately $7 trillion of investment in physical infrastructure will be required to get there within the next decade alone. Infrastructure investors have a huge role to play through capital allocation into existing power and data centre platforms, as well as into emerging AI infrastructure sectors.

I would add that the way we think about AI infrastructure is consistent with how we assess traditional infrastructure investment in terms of the risk-reward profile and associated target returns on investment. We believe AI infrastructure investment, irrespective of its specific position in the broader AI value chain, should be based on highly contracted assets, strong counterparties, high margin businesses, inflation protection and the ability to secure a return on and of capital over the contractual tenure.

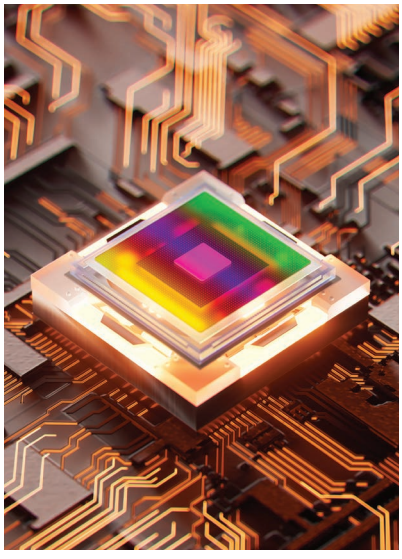
Q Which AI technological developments are the most critical?

The success of Chinese AI start-up DeepSeek earlier this year was portrayed in some headlines as a negative for AI investment, whereas it was in fact a very important and positive development. Without big advances like this in optimised data processing and reinforcement learning, you cannot have cost-effective training and improved inference performance. And without those two elements, AI adoption will remain constrained due to high costs or limited processing speed. We therefore need more of these DeepSeek-type moments to ensure training and inference continue to become faster and more economically efficient.

Agentic AI is another important development. Eventually, all enterprises and consumers will have "AI-driven digital agents" or "personal AI agents". Over the remainder of this year and next, we expect huge improvements in that particular layer of AI. Finally, AI-enhanced robotics has the potential to become the largest industry in the world within the next 10 years, which is another very exciting area we are watching closely.

Q How is the convergence of AI compute demand and the energy transition shaping the next generation of digital infrastructure assets?

The global demand for electricity is accelerating far faster than forecasted just a few years ago as AI technology



Q Why is semiconductor manufacturing vital, and how does it align with the broader nearshoring theme?

Silicon is the backbone of modern intelligence. Semiconductor chips are essential for creating graphics processing units, which in turn power AI-enabled data centres. Without these data centres, AI as we know it would not exist. However, the reality is that over 90 percent of AI-capable chips are manufactured in Taiwan, creating significant vulnerabilities in the global supply chain and undermining resilience and sovereignty. This sophisticated manufacturing capacity needs to be onshored to different parts of the world.

Security of supply chains became a major issue in the wake of covid-19, and that trend has only been exacerbated by recent tariff developments. That means there will be more onshoring of chip manufacturing around the globe, and this will drive huge infrastructure investment opportunities. Our transaction with Intel to help onshore manufacturing of high-end chips is an example of this trend. We estimate that the total investment required in this space is close to $1 trillion.

demands drive incremental power. For context, an AI supercomputer today can consume up to 50MW of power, compared with traditional cloud data centres that average between 10MW and 20MW per site for similar levels of output.

This convergence is fundamentally reshaping AI infrastructure assets. Large technology corporations need reliable, low-cost energy solutions to power their data centres and are increasingly turning to renewable energy because it's the cheapest and most abundant source of bulk power in most regions. And because demand is far outstripping supply, it is more about getting all the power they can get. Renewables will fulfil much of this demand, but other solutions like nuclear and natural gas will play an important and complementary role.

What we see on the ground is that access to power, more so than access to land or even compute capacity, has become the key bottleneck to data centre development. Grid constraints are further compounding the challenge. In our view, providers with extensive experience in not only building data centres but also powering them will have the competitive advantage as this mega-trend plays out.

Q Which regions are emerging as strategic hubs for AI infrastructure?

There are two key trends to highlight here. Firstly, most governments have realised that AI technology is a productivity-enhancing tool in the medium term, and the development of AI infrastructure is a local economy stimulator in the short term.

The two countries that were first to recognise this were the US and China. They are therefore a little further ahead of the rest of the world, which is catching up. Europe is emerging as a strong third contender, while the Middle East and select developed markets in Asia-Pacific are making rapid progress too.

The second important global trend involves clean energy. AI infrastructure consumes enormous amounts of power, and access to this power is therefore a significant bottleneck. Notwithstanding data sovereignty and national security considerations, AI-enabled infrastructure will migrate to locations that have access to ample clean power, such as France, Canada, the Nordics and Texas in the US, to name a few.

> *"AI will eventually be the most impactful general-purpose technology ever – more than electricity or even the internet"*

Q How are sovereign AI ambitions driving a shift from globalised cloud infrastructure to more fragmented, nation-backed AI ecosystems?

Again, sovereign considerations will drive enhanced demand for local compute. Brookfield's €20 billion AI partnership with France – which includes investments in data centres, data transfer, chip storage and energy generation – is a great example. France has the potential to become the foremost AI hub in the EU, as it already has 50GW of nuclear power that could be consumed locally.

Brookfield is a major investor in France with $30 billion in assets, and we own the country's largest data centre business and one of the largest renewable developers. When you combine that with our access to capital, it makes us natural partners for France, a country well-positioned to facilitate AI development for all of the EU. We also believe that the framework we are creating for France, and for Europe, could be replicated in other parts of the world.

Q As governments increasingly treat compute as a strategic resource, how might regulatory intervention impact infrastructure investors?

This is a very important topic that all infrastructure investors should be keeping front of mind because compute infrastructure has a strategic role to play due to its links to national security, economic competitiveness and technological sovereignty.

Governments are also imposing localisation requirements for AI and data processing to maintain control over sensitive data. For example, we have seen this with the CHIPS and Science Act in the US, the Data Act in the EU, and the National Security and Investment Act in the UK. These rules have implications for AI infrastructure that will continue to evolve.

In addition, investors should be aware of regulations related to energy efficiency and sustainability more broadly, especially as governments look to build out their sovereign local compute against a backdrop of emissions caps. This will lead to more investment in renewable energy and a greater focus on efficient cooling and energy storage solutions, all of which represent attractive opportunities for investors with the right operating experience.

Finally, states and governments may end up competing for capital by offering tax incentives and subsidies, and this is an area we are watching very closely. The regulatory environment will continue to evolve, but as long as we proceed thoughtfully and carefully, it could create enormous capital deployment opportunities across the entire AI value chain, not only for Brookfield but for many other investors. ■

Disclaimers: This article and the information contained herein are for educational and informational purposes only and do not constitute, and should not be construed as, an offer to sell, or a solicitation of an offer to buy, any investment advisory services, securities or related financial instruments. This commentary discusses broad market, industry or sector trends, or other general economic or market conditions. It is not intended to provide an overview of the terms applicable to any products sponsored by Brookfield Asset Management Ltd. and its affiliates (together, "Brookfield").