

KEYNOTE INTERVIEW

The infratech opportunity



I Squared Capital's Peter Corsell explains how technology is revolutionising infrastructure investment

Amid all the change occurring in infrastructure right now, it is nearly impossible to examine the space without touching upon technology. I Squared Capital runs a dedicated infratech strategy and the firm's global infratech fund partner, Peter Corsell, shares his thoughts on the opportunities being accessed within this space.

Q How is infrastructure technology already transforming infrastructure?

This has become such a large market opportunity that we took the step of trademarking the term 'InfraTech' a few years ago. We define infratech as technology that either enhances, or threatens to disrupt, infrastructure assets and the companies that own or operate them.

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We invest across four major themes: energy transition and electrification; modernisation of supply chains; the digitalisation of infrastructure; and critical infrastructure protection.

Q To what extent does this include data centres?

Data centres represent a massive opportunity in the infrastructure sector generally, as well as in the infratech sector specifically. Power consumption is a large part of the equation. It is worth remembering that during the late 1990s there was a widely held perception that the rise of the Internet would massively increase demand on

power grids, which turned out to be incorrect. I believe that things are different this time.

Data centres are rapidly growing in both number and size. These infrastructure assets consume vast amounts of electricity, and they are here to stay. The situation we are observing today is akin to the late 1800s when aluminium smelters emerged as massive consumers of electric power, effectively coming out of nowhere.

The current data centre boom is being accelerated by AI. One statistic I often like to cite is that a search on ChatGPT consumes 10 times the amount of power as a Google search.

During the last decade, US power demand growth plateaued despite increasing population and economic activity. AI is disrupting the power and

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utilities sector, and the demand for electricity is expected to rise by roughly 2.5 percent between 2022 and 2030 – with around 1 percent of that related to data centres. These assets will likely consume 8 percent of US power by 2030, compared with 3 percent in 2022. That would be massive growth in less than a decade.

US electric utilities will need to invest around \$50 billion in new generation capacity to support data centres alone. Many data centre developments are being forced to wait years before grid power is available and some are pursuing off-grid solutions as a bridge until they can achieve grid connectivity.

The power demands of AI are already stressing the grid, and we are seeing this nationwide. In Utah, the data



Q When people talk about technology and infrastructure, they often include batteries as well. Is this something you are seeing?

The rising tide of battery energy storage deployments, both in front of the meter and behind the meter, is an excellent example of how new technology is changing traditional market dynamics in the infrastructure sector.

Within the next few years, I believe we will see an influx of high-quality, low-cost Chinese-made batteries that will rapidly increase energy storage deployments across the power grid. In recent years, there has been a battery production boom in China, however, electric vehicle sales have slowed, underperforming market expectations, so there is now a surplus of batteries that could flood the market, making batteries more cost-effective for stationary energy storage use cases.

Battery energy storage systems are especially relevant during peak demand periods when the power grid is under stress and electricity prices are high. Batteries can release stored energy at a cheaper marginal cost than conventional peaking power plants, which ultimately will lead to reduced profitability for those plants.

Additionally, as renewable energy continues to proliferate in context of the energy transition, so do the intermittency issues inherent in most sources of renewable power, so grid-scale battery energy storage solutions represent an increasingly critical piece of the puzzle. I expect we will see a boom in this industry as the price of batteries drops, exactly as we saw happen with the price of solar panels during the past decade.

centre industry says there is a moratorium for larger projects, while the Texas power grid is sold out, and electricity in Virginia is being rationed out to data centres.

What is happening in Virginia is particularly interesting because that state is arguably the hub of data centres in the US. There are currently applications pending before Virginia's public utilities commission to develop 50GW of new power generation, while the current peak capacity of the state is 28GW. So, Virginia may triple the state's generation capacity during the years ahead, which is truly remarkable.

In parallel to the US, we see similar trendlines in Europe and Asia, where I Squared built a data centre platform called BDx. In the past nine months, BDx has signed three contracts to build major data centres across Asia and has acquired 10 other sites.

Q How is technology enhancing 'traditional' infrastructure?

In multiple ways, but primarily by enabling infrastructure operators to derive more value from existing assets, by leveraging innovative technology to run them more efficiently.

For example, there are companies driving grid-level efficiency and network optimisation across the electric power system. Within our portfolio we have a company called GridPoint which has created an "intelligent energy network" of commercial buildings.

GridPoint's technology is now deployed at over 20,000 commercial buildings in the US and Canada, enabling large enterprises to capture significant energy and operational cost savings within each building, while also networking all of their buildings together to automatically adapt to demand surges and arbitrage consumption-based price signals. With GridPoint, large numbers of small commercial buildings are becoming "grid-interactive" instead of simply buying power from the grid.

Innovative technology is also improving the transmission system, where advanced conductor technology can increase capacity by 5-10x over traditional copper wire with essentially no line loss. And there are a number of new technologies that make data centres much more efficient, all the way down to the chip level. Power leakage in data centres currently ranges from 30-50 percent, so capturing these efficiency gains is a huge opportunity.

Wherever you look, there are potential applications for new technologies to play a role in the energy transition. This isn't simply about diversifying society's fuel mix, but about optimising network efficiency and minimising energy waste.

Q What is the benefit of a dedicated infratech strategy?

I Squared developed a dedicated infratech strategy because we wanted to stay ahead of the curve. We were early movers in the sector, launching the strategy in 2020.

There are significant synergies between our flagship infrastructure portfolio and our infratech strategy. We developed our thesis based on underlying fundamental research at the intersection of technology and infrastructure. The infratech team often sources new technology solutions that we introduce to our flagship fund portfolio companies and asset management teams, which then perform true customer-side due diligence on these technologies. This operational collaboration enables us to understand these opportunities more fully and informs our investment decisions.

The infratech team is both an enduring knowledge centre for infrastructure technology innovation within our firm, but also a dedicated investor that works hand-in-glove with our portfolio company management teams to identify and diligence opportunities. We have made 17 investments in infratech companies during the past

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few years and many of these demonstrate valuable synergies with our firm's broader infrastructure portfolio.

There's a tremendous amount of investor interest in infratech because most developed economies have outdated and ageing infrastructure that increasingly needs to be modernised. Over the next 10-20 years, much of what we call infratech today will simply become embedded within the infrastructure sector.

In the future, I believe that society will have very little infrastructure that is not optimised by technology. What we are witnessing is the ongoing tech-enablement of infrastructure, which means, from an investor perspective, if you want to continue generating high risk-adjusted returns in this asset class, you will need to increasingly leverage technology. ■