

KEYNOTE INTERVIEW

Infrastructure in the age of more



*The digital infrastructure ecosystem may be well established but, as the field of AI demonstrates, many more potential new use cases remain on the horizon, says **John Apostolides** of Palistar*

The increase in demand for digital infrastructure assets is unquestionable, and emerging technologies such as artificial intelligence will only see this ramp up further. However, it remains up for debate how these technologies will be financed, as well as the relevant infrastructure required to support them.

John Apostolides, investment partner at Palistar, considers the emerging trends that investors should be cognisant of as digitalisation gathers pace around the world. He says that, while the sector may face challenges, just like any other, both the individual and corporate need for an ever-increasing

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number of digital services mean these will be greatly outpaced by the opportunities.

Q How is the digital infrastructure asset class changing?

Most conversations today regarding digital infrastructure start with the impacts of AI. Often missed during discussions on this topic is that continued progress in the field does not just depend on computing and processing,

it is also about the power and energy needed for new facilities, and it is about new architecture, whether this concerns new rack technology or distributed networks, how data is moved and where it is stored and archived. There are also cooling systems to consider.

Something else that we are seeing is the densification of wireless networks. Coverage and capacity continue to be top of mind for wireless carriers, who are spending tens of billions of dollars on capital expenditure for things like fibre backhaul, transport and spectrum purchases, as well as wireless infrastructure leases and builds.

It also goes beyond mobile devices.

Fixed wireless – or point to point – broadband, particularly where fibre is not readily available, has also become increasingly important globally.

There is also the enhancement of broadband coverage and throughput. In certain countries, there has been a “gold rush” around fibre-to-the-premise and many entities are looking to invest in related assets.

Today, the adage of food, water and shelter being the most important things in one’s life seems to have been modified to include broadband. Priorities appear to have shifted slightly considering the ubiquitous need for broadband connectivity for schooling, payments, telemedicine, work and countless other uses.

Finally, another trend concerns broadband subsidies. One good example from the US is the BEAD (broadband equity, access and deployment) programme. This provides tens of billions of dollars for the improvement of high-speed internet access. Others include data security, regulation such as that seen with GDPR in Europe, digital payments and a heightened focus on ESG.

Q As the sector changes, is it also growing?

This is the era of “more” – more data creation, more data being transported and more data stored and archived. This is resulting in the need for larger data centre facilities and increased throughput for connectivity.

This is evidenced in a number of ways. Fifteen or 20 years ago, you might have had two, four or eight fibres per fibre-optic cable. Today, you are seeing numbers in the hundreds.

You are seeing a similar increase in terms of throughput. As recently as five or 10 years ago, you would see a high end of 10 to 40 gigabit waves. Now, 400 gigabit waves are becoming the norm.

Some have estimated that AI, within the data centre colocation market, could account for \$8 billion to \$9 billion in 2024. By the end of 2028, there



Q What impact is the densification of wireless networks having on investment due to increasing amounts of data, higher band spectrums, and newer use cases?

There are some fascinating mobile data statistics that highlight the densification need. Mobile data traffic is up 30 percent year-on-year in the US and, according to Ericsson, is estimated to grow by a factor of approximately three between 2023 and 2029. Similarly, Nokia has stated that global data traffic could grow to between 30 and 37 zettabytes (10^{21} bytes) per year by 2030. This would be four to five times higher than the figure recorded in 2022.

US carriers alone have spent over \$100 billion in recent years on spectrum auctions. This is important contextually because they have increasing operating expenses, certain capital expenditure requirements, dividend obligations and interest costs that have risen in today’s macroeconomic environment.

With all that, plus the fact that much of the spectrum purchased in recent years has been in higher frequency bands which have shorter range, further investment is likely to be required. This will become more pressing as new developments around robotics, smart cities, augmented reality, autonomous vehicles and the Internet of Things gain further traction.

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are estimates that this figure could reach \$75 billion. With the number of hyperscale data centres set to grow substantially, in part to help meet the increase in AI demand, we are set to see a staggering increase in the growth of data centre leasing.

As mentioned earlier, cooling will become increasingly important, too. This touches on both the technological and ESG aspects of digital infrastructure.

AI workloads are profoundly different in terms of scale and scope from traditional, legacy workloads. They can consume up to five or six times

the typical power density of traditional deployments. What can be achieved in data centres using air cooling may not be sufficient in the AI age.

As such, we are likely to see direct-to-chip cooling, immersion cooling and more distributed computing architecture. These developments will all require new infrastructure investment.

Q Are you seeing an increase in the number of off-balance sheet and joint-venture partnerships with strategic operators?

We are seeing more off-balance sheet and joint-venture partnership opportunities globally. This is in data centres, fibre, wireless infrastructure or satellites – the entire ecosystem, in fact.

Many of the operators involved are market leaders and not necessarily under great financial stress. We have spoken about some of the pressures companies may be under; regardless of financial health, these partnerships

give companies the ability to invest in certain situations that they wouldn't normally have access to, whether it is new ventures, geographies, or non-core projects.

At Palistar, our team has been fortunate to have worked in the digital infrastructure ecosystem as investors, advisers and operators for years. We have longstanding partnerships and relationships with leading wireless, broadband and data centre entities that we have crafted over a prolonged period.

We value many things in a partner, including the company's history, the creditworthiness of an entity and the trustworthiness of the people we are working with on a daily basis. It is worth highlighting that, in many ways, this is still a people-driven business.

Q What other partnership opportunities are you seeing and how do you go about finding investment opportunities?

We are seeing more opportunities to craft partnerships for revenue augmentation on both core and non-core assets with real estate owners. Real estate entities are experiencing similar issues to other corporates around operating expenses, capital expenditure costs and interest rates.

Other challenges, like lower occupancy levels, are also being seen in many regions around the world. This creates numerous stresses for real estate owners.

The headwinds we have seen in some real estate subsectors have driven partnerships with diversified REITs, residential building owners, hotel REITs and rural landowners to help monetise communication assets. These partnerships may centre on non-core assets that we can help monetise.

We have also seen partnerships that stretch beyond traditional real estate into utilities. There are several examples globally where utilities have monetised their fibre networks or wireless

infrastructure, whether through outright sales, joint ventures or partnerships.

Overall, we think we will continue to see off-balance sheet partnerships and joint ventures. There is a matching of skill sets for certain entities that will drive this. For instance, a real estate or utilities owner may have the asset base, while someone like Palistar is able to enhance the value of those assets within the digital infrastructure ecosystem context given its history in the sector.

Q What are your expectations for the future of the digital infrastructure asset class?

The digital infrastructure ecosystem is dynamic. Despite the macroeconomic challenges that have reared their heads in recent years, we are as optimistic about the near and long-term prospects for the sector as we have ever been.

The asset class is increasingly followed and studied, and we think investors will continue to look in-depth at what makes a good investment. They will look at creditworthiness, contract lengths, technological risk and other factors. It is not a one-size-fits-all ecosystem.

Our team also thinks we will see more investment to future-proof the digital infrastructure ecosystem – fibre, towers, data centres, spectrum purchases – but the question is how will these be financed.

We think there will be continued interest in joint ventures and off-balance sheet financing. There will be more investment in cybersecurity and data privacy, as well as sustained growth in edge computing.

There is also likely to be a continued focus on ESG. Investors are focused on environmental considerations as well as social considerations, like job creation and enhanced connectivity to underserved areas. We think these will all be major developments within the digital infrastructure space in the years to come. ■

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