

# KEYNOTE INTERVIEW

## Driving digital connectivity in Africa



*The challenges may be significant but so are the opportunities, say Africa Infrastructure Investment Managers' **Ed Stumpf** and **Moritz Thompson***

Building the fibre, tower and data centre infrastructure necessary to fully digitise the African economy presents myriad difficulties, ranging from affordability to cross-border jurisdictional challenges and currency devaluations.

However, Ed Stumpf and Moritz Thompson, investment directors at African Infrastructure Investment Managers (AIIM), explain how the ability to replicate open access models more widely could help bring down costs significantly. Both Thompson and Stumpf agree that the huge roll out of infrastructure that will be required to facilitate the continent's transition from 3G

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to 4G – and ultimately 5G – makes this an enormous investment opportunity.

**Q What is the current state of digital infrastructure in Africa and what are the key trends driving its development?**

**Ed Stumpf:** While 10 years ago lack of coverage for internet users across the continent was a key issue, today coverage has improved substantially

and the principal issue is that the usage gap – those unable to take advantage of access to digital services despite being covered by mobile broadband networks – has remained high. Most internet usage on the continent is mobile. If you look at mobile internet penetration, however, while only 15 percent of the population is not covered by mobile networks, a further almost 60 percent of the population is covered but not using the internet in any case.

The issue now is not whether the infrastructure is there to enable usage, but rather why that infrastructure is not being used. One of the key reasons, we believe, is that the cost of connectivity

and devices remain beyond the reach of some consumers, although regional variation is significant. We have seen a massive roll-out of fibre in countries such as South Africa, but that has not been matched in many other markets.

**Moritz Thompson:** The point around affordability is very important. Average African incomes are lower than those in developed markets, so products and services need to be cost effective to be affordable. In contrast, we are now operating in a particularly high-cost environment, and that is a challenge that needs to be addressed for connectivity to be accessible for more people. According to the Alliance for Affordable Internet, 1GB of mobile internet in Africa costs 5.8 percent of average monthly income, more than double the global average of 2.6 percent of average monthly income and three times the target of 2 percent.

### Q What are some of the other challenges associated with digital infrastructure in Africa, and how can these be overcome?

**ES:** Something that is going to prove essential for connectivity on the continent is for infrastructure sharing models that are already well-established in the towerco sector to translate into fibre markets. For us, establishing open access business models in these industries is a key priority.

In South Africa, there are more than 70 separate fibre network operators, almost all of which are operating open access business models, but we are not seeing that being replicated elsewhere. There are a multitude of reasons for this, including right-of-way permitting, regulatory, licence restrictions and the jurisdictional complexities of building out fibre networks which vary dramatically from market-to-market. The challenges are extremely localised.

I think we need to see national and regional governments promoting open access architecture. This is already

### Q To what extent does the cross-border nature of ensuring connectivity across Africa create problems?

**Ed Stumpf:** We invest in the energy transition, mobility and logistics and digital infrastructure. In all three cases, one of the main issues that the continent faces, relates to the plumbing or pipes of the network which carry electrons, cargo or data within the region.

You have robust demand but the transmission network for electricity; the terrestrial networks for logistics and the fibre for connectivity are the trickiest parts to solve because of right-of-way, cross-border and jurisdictional risk. These assets are naturally monopolistic and present high barriers to entry, and therefore require clear regulatory frameworks to promote and develop them.

That is a real challenge. We have mastered how to procure rights of way and build out fibre networks in South Africa, but it is far from an easy exercise in certain other markets.



happening is selective pockets, such as Lagos, Nigeria, where the government is pushing open access for fibre ducts, but that is just one small example. We need to see this happening on a more far-reaching basis. A lot of network operators are currently building their own fibre, but as they are forced to turn their attention to investing capital in bandwidth intensive technologies such as 4G and 5G, they will need to free up capital from passive layers of infrastructure such as fibre ducts and towers, which may be the stimulus that is required to transition to an open access model.

**MT:** I would add that we are seeing a lot of international subsea connectivity land, or about to land, on the continent.

But there is still an infrastructure gap when it comes to taking that connectivity inland – the terrestrial fibre infrastructure and then the additional towers and data centres that are required.

The big challenge there is that costs for that last piece of connectivity within Africa are still high in comparison to international capacity. Those costs need to come down. Infrastructure sharing is one way to reduce those costs by avoiding redundant investment and duplication, meaning that costs are amortised across a larger user base.

### Q Do currency fluctuations represent another challenge for digital roll-out in Africa?

**MT:** Currency devaluation is certainly

a real challenge. We have seen significant devaluations in some key markets on the continent and while a lot of the digital infrastructure connectivity is paid for in dollars, ultimately the end customer will be paying in local currency, making it extremely expensive. We have seen those trends play out in Kenya, Ghana, Nigeria and Egypt, for example. It is a common theme.

**ES:** One of the primary reasons why South Africa has managed to invest so much more in its terrestrial fibre than other countries, is that it has a much larger domestic capital market. South African pension fund capital under management stands at around \$500 billion. As revealed at the 2022 Africa Financial Industry Summit, the second and third biggest players are Nigeria and Kenya at \$33 billion and \$13 billion, respectively.

There is not enough domestic saving in Africa, so it often comes down to whether dollar investors have sufficient confidence in local currencies to deploy capital in those regions. That is a challenge as this is a domestically consumed service. Currency volatility is increasingly a hindrance to investment. Further development of domestic capital markets with a capacity to invest in digital infrastructure would help manage that risk.

### **Q Bearing all of this in mind, are there certain countries or subsectors that are producing particularly interesting opportunities?**

**MT:** Generally, we focus on countries with large populations, strong economies and high population density – that means countries such as South Africa, Morocco, Kenya and Nigeria.

These also happen to be coastal countries, which are much better placed from a connectivity perspective, because of the international cable access.

**ES:** South Africa remains very

*“Competition is growing as demand for connectivity and digital services grow”*

**MORITZ THOMPSON**

attractive for us. There are around 18 million households in South Africa and only around four million are connected by fibre. Those four million are primarily high disposable income households. As networks densify, however, it will become possible to bring lower cost products to the next tier of affordability which represents a massive opportunity, not only in terms of building out more networks, but also in terms of consolidating and creating greater efficiency in a fragmented landscape.

Meanwhile, on the towers side, we see interesting opportunities in markets such as the Democratic Republic of Congo, which is a dollarised market, so there is less currency exposure. It also has balanced downstream competition between network operators and is a digitally nascent market, not just in terms of building towers for densification, but also in terms of coverage.

It is hard to comprehend how much fibre and radio access network infrastructure will be required as urban hubs move from 3G to 5G. Currently, 4G

and 5G represent around 20 percent of connections across sub-Saharan Africa. By 2030, that is expected to increase to two thirds. Theoretically the shift from 3G to 4G could require an almost 25-fold increase in cells/sites, while the shift from 3G to 5G could eventually drive up to a 400-fold increase. The more site infrastructure you have, the more high-speed fibre linkages you need given 5G is essentially a fibre enabled solution.

### **Q How competitive is this market from an investment perspective and what does it take to succeed in this space?**

**MT:** Competition is growing as demand for connectivity and digital services grow. Success, meanwhile, requires a deep understanding of market dynamics on both a local and international level. It also requires long-term capital; these are investments that will take time to mature.

**ES:** I would say that we have certainly seen competition increase when it comes to M&A in the data centre space and tower sectors. There are a lot of international strategies playing in those sectors. We focus on buy and build strategies, however, and still find the economics of building towers to be compelling. Like the solar industry, the cost of constructing towers has fallen by around 50 percent over the past seven years, so there is a lot of room to create value through a build programme in that space.

Data centres offer a combination of M&A and build-out opportunities, but it is fibre that remains the trickiest because of that jurisdictional risk and FX risk that can exist in certain markets. We do, however, see potential to partner directly with strategic players on a joint venture basis, financing a portion of their infrastructure networks, to free up capital so that they can roll-out additional bandwidth intensive 4G and 5G technology over time. ■