



iX Africa
DataCentre

IX AFRICA

Building the Big Edge in Kenya

DIGITAL REPORT 2021

IN ASSOCIATION WITH:



Future-tech



Building the Big Edge in Kenya



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Data Centre**



IXAfrica co-founders **Guy Willner** and **Clement Martineau** talk site selection, sustainability, and how to Keep it Africa as they bring the hyperscale to Nairobi

The data centre industry - prompted by soaring demand from throughout an increasingly digitalised global economy - is growing everywhere. It's in emerging markets, however, where that growth takes on a true sense of urgency.

"People talk a lot about the edge, and the idea I'm pushing a lot is what I call The Big Edge," says Guy Willner, a 20 year veteran of data centre build outs throughout Europe, Russia, and Africa. Willner is the co-founder and Chairman of both iXcellerate - which operates seven data centres across its two Moscow campuses - and IXAfrica, a Kenyan-focused project in the process of building out the first hyperscale campus in the nation's capital of Nairobi. He elaborates: "The edge is a train station in Northampton - a drop off place for Netflix or whomever; the Big Edge is Lagos, the capital of Nigeria with a population of 210mn people. It's all the cities around the world with more than a million people but without the digital infrastructure to match."

Nairobi, which has a thriving startup community, a rapidly digitalising economy, and - along with the rest of Kenya and its neighbours - lies at the heart of a latency zone that is home to approximately 300mn people, undeniably fits the bill. And IXAfrica isn't the only data centre operator looking to capitalise on what Willner calls a "tsunami of demand sweeping across emerging markets right now for hyperscale infrastructure." He adds: "Whereas a lot of the hyperscalers and internet companies have cloud regions, even in smaller European countries, and across Southeast Asia in particular, they're



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Top: Guy Willner
Bottom: Clement Martineau



only just beginning to build in South America and Sub-Saharan Africa.” IXAfrica, it would appear, is ahead of the curve.

Hyperscale in Nairobi

“The campus is tailor-made for hyperscale clients,” says Clement Martineau, the other co-founder of IXAfrica, who is currently working as its Director of Operations, overseeing the ongoing construction of the site and building up a local team. Compared to IXAfrica’s domestic competition, which Martineau explains “is typically very traditional colocation services offered through low density, small capacity data centres”, IXAfrica’s campus has the potential to be “able to deliver close to 40 MW of IT capacity” that - thanks to the favourable local climate and infrastructure, as well as some intelligent design, will “deliver a level of power usage efficiency (PUE) that is competitive with other data centres all over the world, not only with other data centres in Africa.”

The location of NRB01 is ideal. The campus, Willner explains, is situated “on one of the major routes from downtown Nairobi to the city's airport, along the Nairobi-Mombasa Road,” adding that “It's about 2km from the main telecoms hub in Kenya, so we can tap into all of the connectivity that it offers, which is really important.”

The project, Martineau explains, is nearing the completion of its first phase, a 4.5 MW data centre that will begin operating either at the end of this year or very early in 2022. “We are almost done with the shell construction and are entering the fit-out phase, bringing in all the equipment, from chillers, servers, and switch gears, to power and backup generators,” he says. “We will most-likely be one of the biggest data centres in Africa - the biggest in East Africa by far - when the project is completed.”

NRB01 - EAST AFRICA'S LARGEST CARRIER NEUTRAL DATA CENTRE CAMPUS

IXAfrica’s first campus is located on a 17,300 square metre plot beside the road that runs between Nairobi and Mombasa. The development comprises three data centre buildings: a 4,314 square metre facility with two data halls and 4.5 MW of critical IT capacity; a 6,098 square metre facility with three data halls and 9 MW of capacity; and a 5,175 square metre facility with two data halls and a capacity of 5.4 MW. Upon full buildout of the planned data centres, the facility will deliver just under 19 MW of capacity across 3,564 racks divided throughout 6,621 square metres of white space.

DID YOU KNOW...

Guy Willner



TITLE: CO-FOUNDER AND CHAIRMAN

Starting his career within the technology industry with Philips NV in Paris and Vienna working in CDROM, Smart Card and Minitel technologies

In 1998 he co-founded IXEurope, raising approximately \$100 million in venture capital as the CEO and the company's revenue grew over 600% in its first 3 years. It was listed as Europe's fastest growing company in 2002 Sunday Times Tech Track 100 and Guy received personal recognition as a semi-finalist in the UK's Entrepreneur of the Year 2003. In 2007 IXEurope was acquired by Equinix Inc for \$555 million.

After IXEurope Guy continued to support the datacentre industry with a focus on emerging markets. In Johannesburg Guy invested alongside the IFC (World Bank) in Teraco, overseeing its progress to become the main hub in South Africa with the largest peering point on the African continent, NAPAfrica. The company was sold to Permira in 2014 for \$134m and again in 2019 for \$1bn.

In 2012 Guy ventured into Russia setting up IXcellerate, foreseeing the growth of the Russian data centre market in what is Europe's largest Internet market (80 million users) with investment from the IFC, Sumitomo Corporation and Goldman Sachs, IXcellerate has attracted some of the biggest global names in the Internet, E-commerce, Gaming and Financial markets. In 2017 Guy spearheaded the launch of Eurasia Peering, the newest Peering point in Moscow, and monitors the increase of traffic regularly.

“What I call the Big Edge is all the cities around the world with more than a million people but without the digital infrastructure to match”

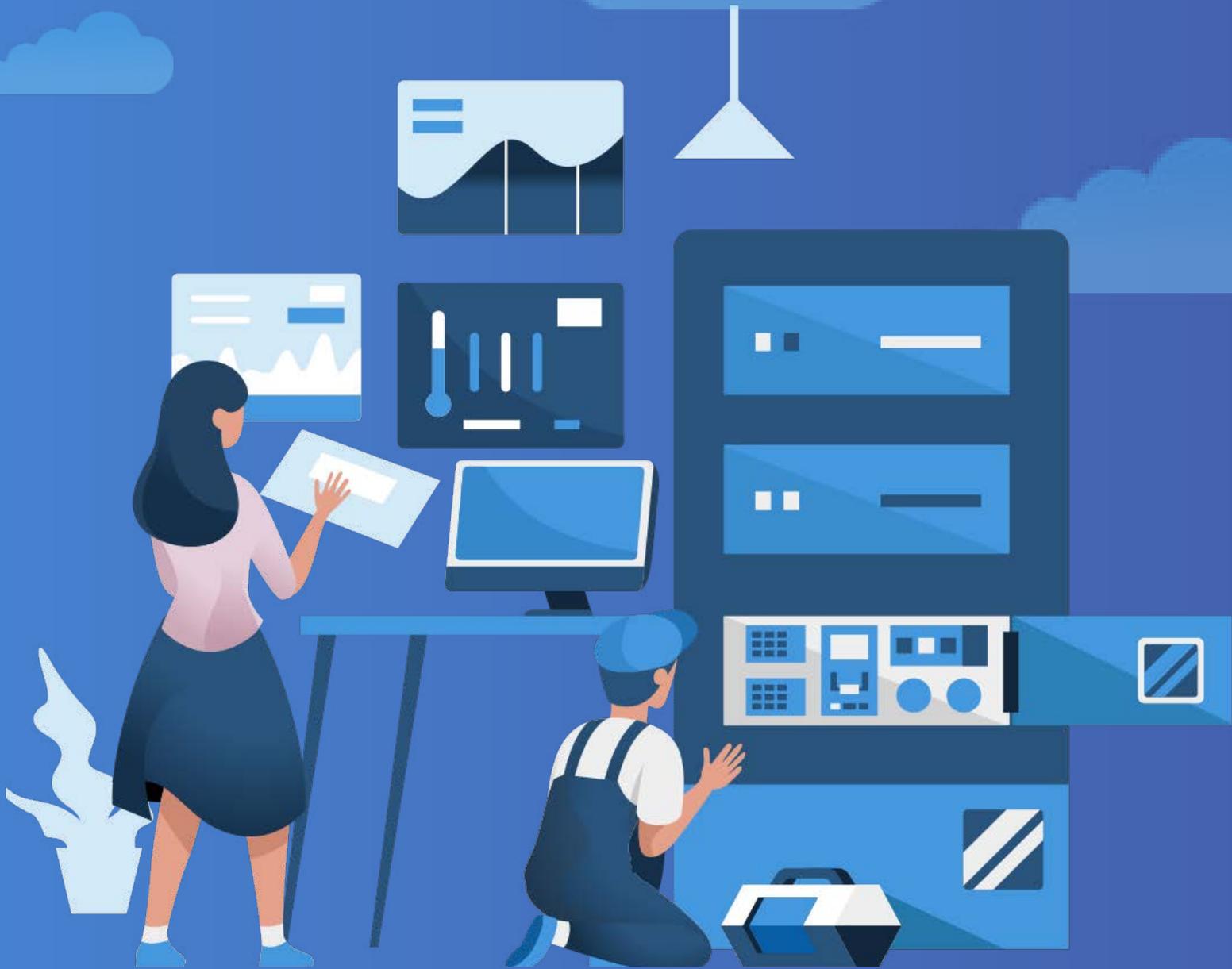
GUY WILLNER
CO-FOUNDER AND CHAIRMAN, IXAFRICA



Data Centre Design & Consultancy Specialists



Future-tech covers M&A, investment, design, project management and operations focussed services. Over the last three years, Future-tech has been engaged on more than 3GW of data centre capacity across a variety of markets and environments.





Future-tech and IXAfrica: Full Life Cycle Expertise

James Wilman, CEO of Future-tech, on working with IXAfrica on Kenya's largest hyperscale data centre project.

Future-tech is unique among data centre consultancies for a number of reasons. Not only does the Reading-based firm have high levels of expertise in markets ranging from Helsinki to Johannesburg, but Future-tech offers services across the complete life cycle of a facility.

“We are involved with projects from the initiation to completion,” explains James Wilman, Future-tech’s CEO.

While some factors, like the facility requirements for major tenants, remain the same no matter where you are, Wilman explains that “it’s the environmental conditions, construction methodologies, supply chain, and skill sets available in different locations that vary, and that makes this a very interesting industry to work in.”

Future-tech was selected by IXAfrica as the life cycle design strategic partner for its hyperscale campus project in Nairobi, Kenya. Wilman explains that, over the past year, Future-tech has been leveraging its strong local knowledge, working closely

with Kenyan architects and engineers, and collaborating with both Guy Wilner, Clement Martineau and the broader team, to help IXAfrica successfully deliver Kenya's largest hyperscale data centre.

“Future-tech worked on its first data centre project on the African continent in 2012 in Kenya. I’ve been involved in the data centre space there for some time, and known Guy for a number of years through projects and interaction in Europe,” says Wilman. “As the IXAfrica project came into being, Guy and I spoke about it as he knew that we were already quite familiar with the location and broader region. We assisted with the initial site planning and concept design, and the relationship really grew from there.”

Wilman has developed a strong collaborative relationship with Guy and Clement. “What is refreshing about working with Guy and Clement is that when we bring them options, they listen to us,” says Wilman. “We’ve had a good experience in Nairobi with IXAfrica and the other project partners, and I hope we continue to work with them on their future projects.”

[FIND OUT MORE](#)





2019

Year Founded

**Data
Centres**

Industry

6

Number of
Employees

Once completed, Willner explains, NRB01 is expected to be a key driver of growth for Kenya's digital economy, as well as the surrounding region. "Building a big data centre is like building an airport. A city without an airport isn't really on the map, internationally. Once you have an international airport, then you get all sorts of people coming in and out, doing business, doing all sorts of things that stimulate the local economy," he explains. "If you look at the data centre as the airport of the internet, what you're doing is putting the city on the map. Suddenly, all this international content, and all this international trade, starts passing through this hub." As a result, he continues, the campus will develop into a thriving ecosystem that blends together Kenyan and East African cloud specialists, integration specialists, IT specialists, networking companies, local startups,

and incubators, as well as international entities like internet giants and hyperscale cloud providers. "You end up with this big ecosystem which means that, in the medium term, someone who has a really cool idea for a tech startup in Nairobi does not have to get on a plane to San Jose anymore and set up their business there; they can set up that business in Nairobi and have direct access to the world's internet on their doorstep," Willner adds. "It's a major step forward for tech employment, intelligence retention within the country, and the creation of new communications economies within Kenya itself. Nairobi itself has direct access to a lot of undersea cables which land in Mombasa. It looks East to India and North towards the Gulf. There are all sorts of different aspects of geography, geopolitics, and business that are conspiring to put this region on the map."

Clément Martineau

TITLE: CO-FOUNDER AND OPERATIONS DIRECTOR

Clément Martineau brings to IXAfrica Real Estate, Construction and Data Centre expertise together with East Africa market knowledge. He managed the Real Estate portfolio of Orange Telkom and lead the construction projects of the third largest Telecom operator in Kenya.

Among the projects he worked on was the construction of a submarine fibre optic cable landing station (terminal "LION 2" connecting Kenya and Mayotte). Clement was also project manager of the refurbishment of some data center's in Kenya and worked on the electrical optimization of the most important technical buildings of the operator.

He was the General Manager of Lighthouse Property Company, a diversified Real Estate Development and Management firm, associated to Chase Bank (Kenya). Running the day-to-day operations, developing opportunities, leading and supervising all the projects from residential to commercial.

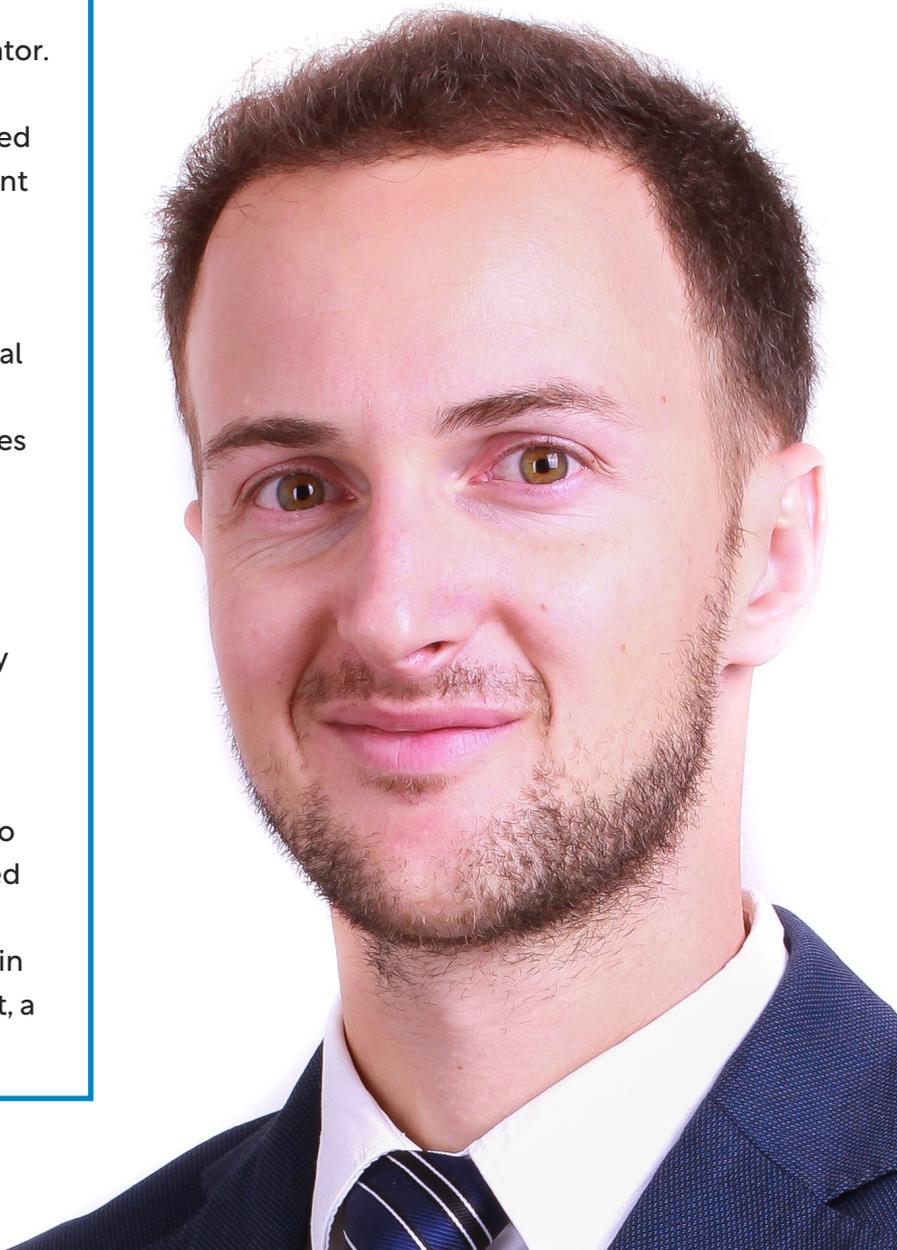
Together with other business executives who share a long-term attachment to the African economic landscape, and an entrepreneurial vision, founded Nelion Partners Ltd in March 2015, a scalable investment platform focusing on a variety of investment opportunities across sub-Saharan Africa. Nelion takes advantage of the strong macro-economic and demographic drivers of African markets to deliver superior returns to a globally based network of investors.

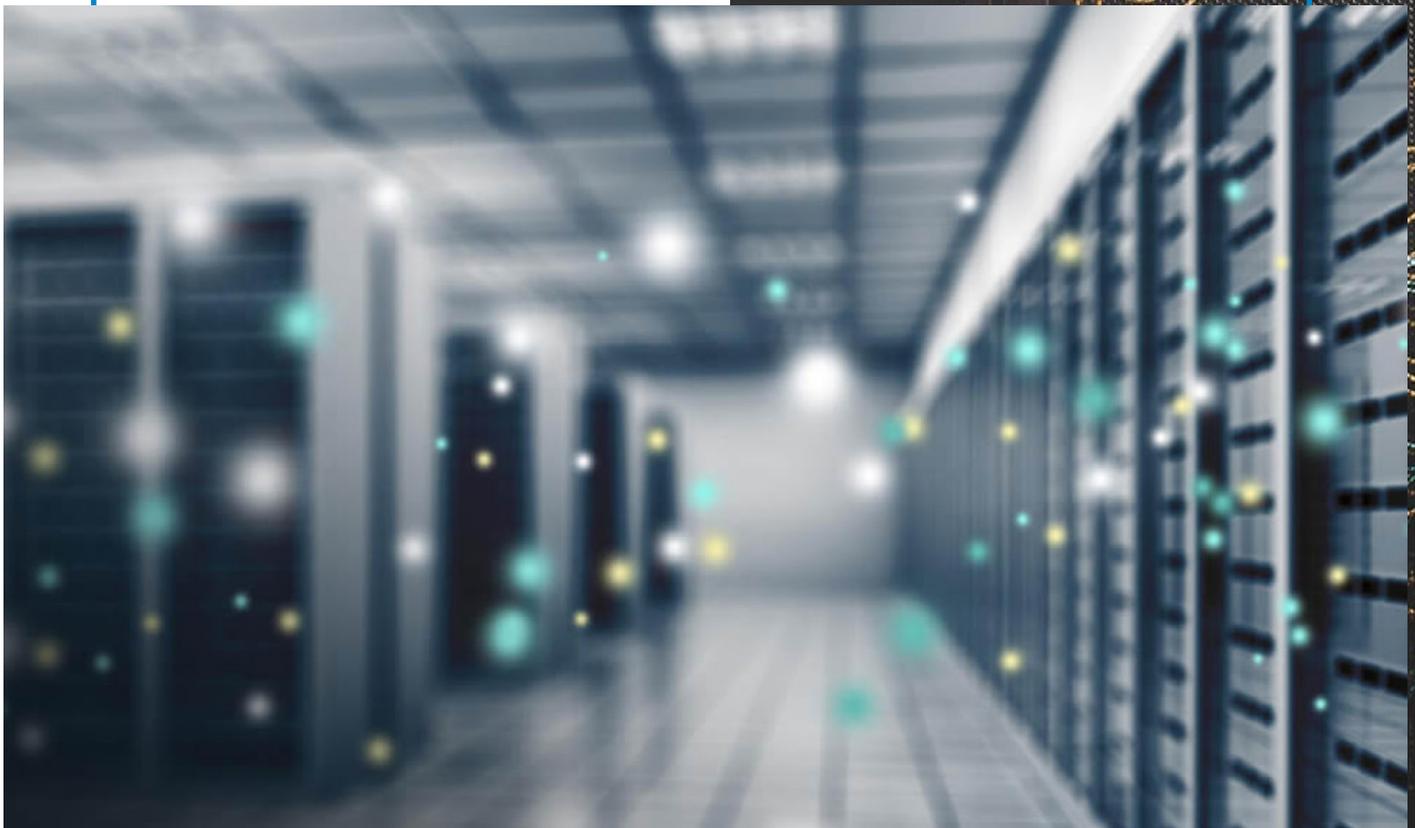
Clément holds an engineering degree in Building Economics from Paris St Lambert, a reputable French building school.

“We will be the biggest data centre in East Africa by far when the project is completed”

CLEMENT MARTINEAU
CO-FOUNDER AND OPERATIONS
DIRECTOR, IXAFRICA

EXECUTIVE BIO





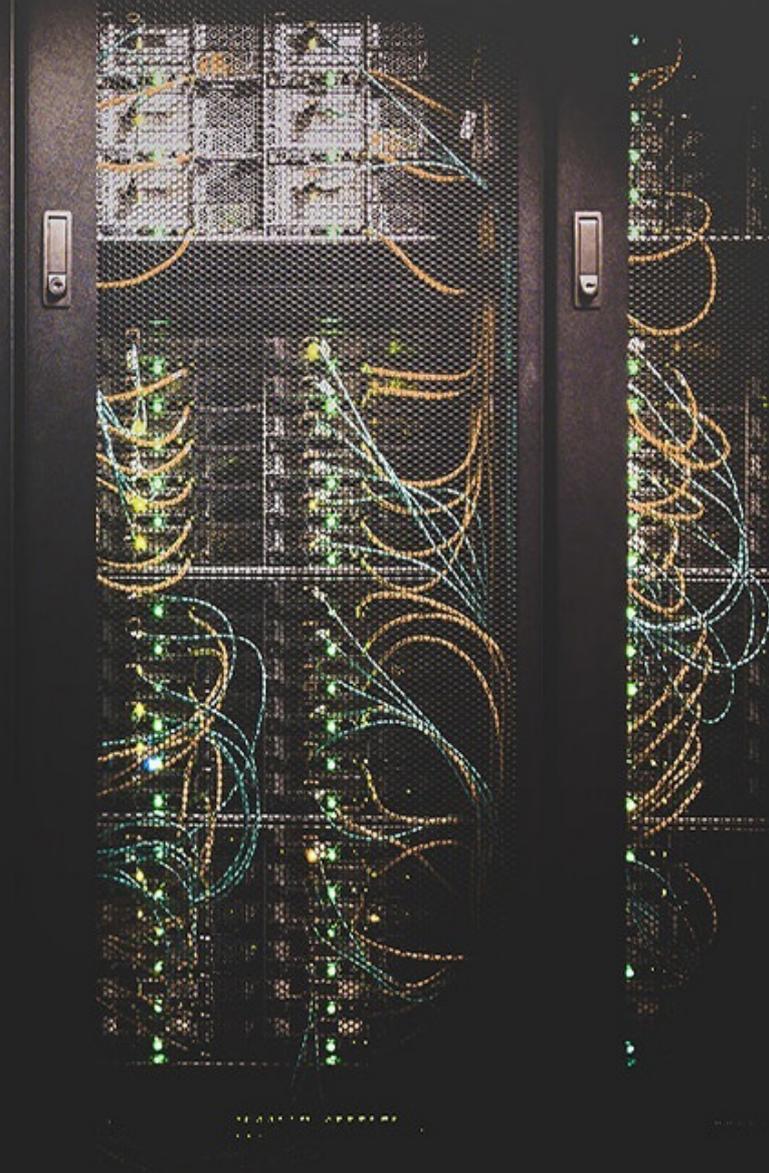
“We know this industry is governed mostly by men; IXAfrica is trying to reduce this imbalance as much as possible”

CLEMENT MARTINEAU
CO-FOUNDER AND OPERATIONS
DIRECTOR, IXAFRICA

Competitive Sustainability

There are a number of factors, Martineau explains, that make Kenya a highly competitive location for hyperscale infrastructure from a sustainability perspective. “Nairobi is an ideal location for a data centre due to the cool climate - at least during the nights,” he explains. The city is located almost 1,800 metres above sea level, with just a few days of rainfall per month outside of its two rainy seasons, and average temperature lows of around 13°C.

These favourable conditions, Martineau continues, are part of the reason why IXAfrica’s Nairobi campus is setting the standard for sustainable design and operating practice in the region. “Kenya is blessed with some amazing weather, which means that we, as data centre operators, can reduce our environmental impact



significantly,” he says. “At night, especially during the Winter months, it can get down to around 12°C at night and be between 14°C and 16°C degrees in the daytime. As soon as the external temperature gets down below 16°C, we switch off the condensers and do free cooling, which helps us save even more energy.”

The other key to NRB01’s impressive sustainability credentials is Kenya’s national grid. “The country is very advanced in terms of green power,” Martineau explains, adding that Nairobi itself already gets about 85-90% of its energy from renewables. “There’s some hydro, as well as a lot of geothermal plants serving the region. There’s a lot of volcanic activity in Kenya, so there’s a lot of superheated water under the ground, which is used to power heat pumps,” he continues. “There’s also a lot of wind power.”

To the north of Nairobi - near the Ethiopian border - Kenya is home to the biggest wind farm in Africa, which generates 350 MW of power used extensively to meet the city’s energy needs.

In addition to making use of the region’s favourable climate and green energy reserves, NRB01 is built to a high, international sustainability standard that echoes the green construction techniques used throughout other markets where green design is a high priority, like the US and Europe. “We’ve chosen to use adiabatic chilled water cooling for our campus, which allows us to achieve a very good PUE of 1.25. The adiabatic cooling systems also have the option of functioning even if there’s a shortage of water - in which case they can switch over to working as DX cooling units that chill the servers with air instead,” Martineau explains.

Keeping it Africa

From construction to team building, IXAfrica’s strategy is to leverage local talent and expertise rather than rely on importing staff and equipment from overseas. “A big pillar of this project is to Keep it Africa. Instead of importing, we look at what we can do in Kenya, and then - if not in Kenya - we look at East Africa and then to Africa as a whole. We’re trying to import as little as possible from outside the continent,” says Martineau. In addition to the obvious sustainability benefits of cutting down on foreign imports, IXAfrica is also using its emphasis on local resources to reduce costs across the business at this critical phase. “The level of construction expertise and skill in Kenya itself is very good. There are infrastructure companies here that have been building towers for the telecom industry for decades, so a lot of our building and technology needs are being met with local talent,” he adds.

IX AFRICA

In addition to the construction of the campus itself, Martineau is working with the company's startup-scale local team to build a culture that sets an example, not only to the African data centre industry, but the wider world as well. "We're trying to empower African women with this project. Today, we have a team of six in Kenya, and we have a 50/50 balance between men and women. We want to keep on pushing for that kind of equality as much as possible as we grow and expand," he says. "We know that this industry is governed and directed mostly by men, and IXAfrica is going to keep trying to reduce this imbalance as much as possible."

IXAfrica is also directing time and resources towards CSR goals throughout the local community, investing in sports and culture in Nairobi, as well as hiring local artists to paint the outside of the campus' buildings - something Martineau hopes "will bring a bit of colour to the place in a city that is largely dominated by a lot of grey concrete."

Willner adds: "There aren't many data centres that have won any architectural or design awards, and I think there's a lot we could be doing in the industry as a whole to make them look a bit more friendly to the eye."

Investment in local communities and diverse workforce aren't IXAfrica's only goals for helping Kenya grow its digital economy in a sustainable fashion. As Willner explained before, by bringing the internet direct to Nairobi's doorstep, NRB01 could have potentially impactful long-term benefits for things like talent retention and the city's own startup ecosystem. "The level of education in Kenya is so good that a lot of the talent here is actually poached away to the UK or the US," says Martineau. "Hopefully, instead of those people with a level of education that makes them



"Hyperscalers and internet companies are only just beginning to build in South America and Sub-Saharan Africa"

GUY WILLNER
CO-FOUNDER AND CHAIRMAN,
IXAFRICA

desirable overseas having to leave Kenya, we'll contribute to creating some more high-skill jobs here."

Growing with the Region

With the first phase of NRB01 slated to be up and running early next year, and further expansion phases planned beyond that, Willner and Martineau are already casting their eyes around Kenya and the regions beyond for further opportunities. With opportunity, however, comes competition.



“There's a bit of a gold rush going on right now in the African data centre industry, so in five years time, I don't know what the market will look like,” Martineau admits. “Both Guy and I are French-speaking, so we're also looking at expanding into some francophone countries. There are places like Algeria, the Democratic Republic of the Congo and Sudan, which have huge populations and huge potential for digital infrastructure growth.”

Willner, whether in Russia, Kenya, or any other emerging data centre markets where

he senses the opportunities of the Big Edge, is on a mission. “IXAfrica is the leading hyperscale data centre operator in East Africa. One would hope that, in emerging markets, we'll be seeing a significant jump in the number of data centres over the next 10 years,” he reflects. “We're on a crusade to make that happen.” 





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