

# Are local networks ready for the metaverse?

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The metaverse is heralded as the next frontier of the internet, and is a persistent 3D virtual world where we can explore and interact with others as avatars, whether for work or entertainment, using virtual reality (VR) and augmented reality (AR) headsets.



Source: [Pxabay](#)

While this may seem like a futuristic concept to some, many big tech companies are taking it seriously – exemplified by Facebook's recent decision to rebrand itself as Meta. Mark Zuckerberg, CEO of the newly named Meta, estimates it could take five to 10 years before the metaverse becomes mainstream, but some aspects of it already exist.

However, if the metaverse is to become everything it promises to be, one of the major challenges we need to address is network infrastructure.

A senior executive at Intel highlighted that 'existing computation internet infrastructure needs a one-thousand-fold boost to deliver the kind of experience that metaverse dreams promise'.

One reason for this is simply the fact that most of today's networks are not capable of delivering real-time experiences with the speed and consistency that the virtual platform will require.

But what exactly does the metaverse hope to achieve, and why should we be preparing our networks for it?

## What is the metaverse?

The metaverse has the potential to change the way we interact digitally in a fundamental way, which is why Facebook is calling it the "next evolution of social connection".

Whereas the internet in its current form is largely experienced as a 2D space, the metaverse could allow us to see what the online world has to offer in an immersive 3D environment.

From gaming and social networking to live entertainment and even business meetings, virtual reality presents us with a new way of interacting. And with AR headsets, virtual content can blend seamlessly with our surrounding physical environment.

The possibilities of the metaverse are limited only by our imaginations. It won't be built by a single company but will grow as a collective global project – the true scope of which we are only beginning to grasp.



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In the same way that social media platforms transformed our society a decade ago, the metaverse could be another evolutionary step forward for the internet and give rise to new business models and ways of working. Many businesses are trying to create more meaningful experiences with their customers, and the metaverse could provide space for that.

It is also believed that the metaverse could one day support its own digital economy, built on blockchain technologies, where users can create, buy, and sell virtual goods. Multinational clothing brand Nike has even filed for trademark applications to sell virtual branded items in preparation for this.

And considering that *Bloomberg Intelligence* estimates the metaverse to have a global revenue opportunity of \$800bn by as early as 2024, the metaverse may be closer – and more lucrative – than we think.

## The need for network infrastructure

To realise the vision of a centralised and persistent virtual world, in which millions of users can participate in real-time, we will require far more robust networks with more powerful computing capabilities.

A VR headset not only generates large amounts of data from sensors that need to respond in real-time, but it also has to deliver much higher resolution video to reproduce a lower video quality.



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Streaming 4K in 360 degrees, for example, only equates to HD resolution for the viewer and would require a 400Mbps connection – 100 times more bandwidth than normal HD video streaming. VR is also extremely sensitive to latency since any stuttering can easily cause users to experience headaches or motion sickness.

If we're going to build the metaverse, its foundation will be connectivity. We will need a network infrastructure that is not only fast, consistent, and massively scalable, but also extensive at the edge to provide local users with ultra-low latency.

As it exists today, our nationwide network infrastructure isn't enough to support the metaverse's bold ambitions. 5G and fibre's high speeds may help solve some latency challenges, but 5G rollout is not yet widespread and still requires a strong fibre backbone. And because we're in uncharted territory, the other challenge is not knowing what the network requirements will be five to 10 years from now.

## **A brave new world**

If the metaverse is going to revolutionise how people socialise, do business, or more, it will need to be accessible to everyone.

The high cost of VR headsets is already a major barrier to current virtual experiences, and many people in South Africa already lack access to fast and affordable internet.

The metaverse promises unimagined opportunities for both businesses and individuals and could become the next digital frontier of the internet.

But the metaverse will not succeed if it is not inclusive, or if our networks cannot adequately support it, which is why improving network infrastructure across South Africa will be crucial. This is certainly achievable, but if we are to pave the road to an ambitious virtual future, we will need to start laying down the foundation of connectivity first.

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