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A greener metaverse

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RAENU KOLANDAISAMY
educate@thestar.com.my

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Evolving landscape: Conduct more studies to understand the benefits and risks of metaverse to sustainability. – 123rf.com

A greener metaverse

Technology can be an effective tool for sustainability

THE interplay between the metaverse and sustainability is inseparable, with the metaverse – encompassing virtual, augmented and digital realms –exerting a positive impact on the environment.

Its transformative influence extends to communication, business practices and our conceptualisation of sustainability.

Moreover, the metaverse provides a novel platform to confront global environmental challenges and pave the way for a sustainable future.

It is crucial to recognise that the metaverse can contribute to a sustainable and equitable world only when sustainability is integrated into its design and development. This entails efficient resource utilisation, waste minimisation and a reduction in environmental impact within the virtual realm.

From a positive perspective, the metaverse has the potential to reduce business and personal travel, thereby reducing pollution. Virtual programmes and conferences can replace physical travel, curbing carbon emissions associated with transportation.

Additionally, virtual reality and augmented reality have the capacity to enhance access to educational resources, diminish the reliance on physical resources, and boost efficiency in agriculture, energy production and waste management.

Despite its advantages, the metaverse poses environmental challenges because of the energy-intensive nature of virtual reality technology and data centres utilising artificial intelligence (AI) and cloud services.

For instance, a single AI model can produce an alarming 626,000 pounds of carbon dioxide, equivalent to five times the emissions of a car over its lifetime. Cloud gaming, integral to virtual reality, may escalate carbon emissions by 2030. The continual development of virtual reality technology also fuels electronic waste, posing threats to soil, groundwater and landfills.

While the metaverse has its drawbacks, it can still effectively contribute to sustainability efforts by:

> Facilitating virtual work, thus minimising physical travel tied to transportation and greenhouse gas emissions.

> Encouraging a shift towards digital consumption, thereby reducing the metaverse's carbon footprint. This involves a focus on energy-efficient technologies, optimised data centres and judicious computing resource utilisation. Technologies such as blockchain and non-fungible tokens (NFT) can play a role in building a sustainable metaverse, decreasing the carbon footprints of traditional industries and activities and fostering transparency and environmental friendliness.

> Serving as a powerful tool to raise environmental awareness, inspire sustainable behaviours and cultivate empathy towards nature.

In short, the metaverse is an ever-evolving landscape that requires further research to fully understand its benefits and risks to sustainability. While the traditional definition of sustainability emphasises the balance between economic growth, social equity and environmental protection, the virtual realm necessitates a modified concept of sustainability that incorporates the management of resources and data.

As we navigate this digital frontier, the emphasis should be on embracing sustainability and cutting-edge technologies, particularly in the realms of AI and cybersecurity.

This can pave the way for a metaverse that not only revolutionises communication and business practices but also serves as a catalyst for environmental awareness and positive change. As we venture into this digital frontier, a holistic and conscientious approach is essential to ensure that the metaverse becomes a force for good, unlocking a future where technology coexists harmoniously with sustainability.

Asst Prof Dr Raenu Kolandaisamy is the director of the Institute of Computer Science and Digital Innovation at UCSI University. He is also the affiliate dean at the varsity's Faculty of Computer Science. The views expressed here are the writer's own.