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# Virtual reality and the metaverse

When Mark Zuckerberg rebranded Facebook as Meta in 2021, he was embracing the next step in the evolution of the internet. The metaverse refers to digital worlds in which people can work, play and gather together. The metaverse provides an expanding market for gaming, shopping, digital art and currency, and even for virtual real estate and leisure. You may recall from Section 5.8.4 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/innovation-incremental-and-disruptive-id-39506) that disruptive innovation involves the creation of new industries or markets. This is certainly the case with the metaverse.

The metaverse can be accessed through virtual reality (VR). Virtual reality is the use of computer technologies to create a simulated 3D experience. Users can interact with the simulations using specifically designed hardware and software, such as the headsets in **Figure 1.** VR can be used to recreate or distort real world environments, processes or events. VR is not a new concept, but demand for VR-related technologies is increasing.

**Figure 1.** Demand for virtual reality experiences is increasing.

Credit: FG Trade, Getty Images

There are many businesses and even countries moving into the metaverse. The Barbadian ministry of foreign affairs is planning to declare virtual real estate a part of its sovereign territory. HSBC and PWC are investing in digital real estate via The Sandbox. And in the African metaverse, MTN has bought virtual land in Ubuntuland. Even rapper Snoop Dogg has invested in the development of a real estate company within The Sandbox metaverse.

# Uses of virtual reality in business

## Marketing

In their marketing function, businesses are developing creative, innovative products and processes in and for the metaverse, which are designed to engage their target markets, extend the product life cycle of existing products and open up new markets. Customers at IKEA can use VR to virtually place products in their homes. Toms Shoes takes customers on VR trips to the communities where they make their shoe donations. Some retailers use VR to let customers try clothes, make-up and other products before they buy them. **Video 1** shows that even restaurants can use VR to enhance the dining experience.


**Video 1.** An immersive dining experience created using virtual reality.

## Operations management

In operations management, VR enables new product and process innovations (Section 5.8.4 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/innovation-incremental-and-disruptive-id-39506)). For example, design engineers are able to model prototypes using simulations with VR software. This helps to minimise errors at the earliest stages of product development and also helps development teams to adapt designs and test products in a virtual world.

In Thailand, smart factories are using VR and 5G technology for factory tours, allowing investors, business owners, customers, employees and engineers to explore factories safely and securely without risks.

**Figure 2.** Virtual reality can be used in architecture and product design.

Credit: Georgijevic, Getty Images

## Human resource management

In human resource management, businesses are using VR to train employees more effectively. By immersing trainees in a virtual world, a more realistic training experience can be provided. Trainees can also make mistakes without harming others or the business. **Video 2** shows how VR is helping surgeons learn surgical processes without putting patients at risk.


**Video 2.** Using virtual reality to help train surgeons.

### Concept

Creativity involves generating new ideas and considering existing ideas from new perspectives. Creativity may be evident in the use of inputs, business processes and product outputs and other solutions. The creation of ideas and solutions involves a process of synthesising and evaluating in response to surrounding changes.

Virtual reality (VR) offers businesses creative ways to engage customers, train employees and produce their products. The availability of new hardware and software technologies stimulates new thinking about how to carry out the human resources, marketing and operations management functions.

# Limitations of virtual reality

Virtual reality has a number of limitations. Firstly, depending on how they are used, VR technologies can be expensive for businesses to use. Businesses that develop products related to the metaverse need to consider the cost to the consumer of hardware needed to access the products. However, the costs of the technologies are coming down over time. Secondly, there is an issue with the clunkiness of the VR headsets used to access many virtual reality applications. While these have reduced in size and weight over

time, they are still awkward for consumers to use. Related to this is the lack of accuracy and reality in some applications; the promise of truly immersive and realistic experiences has not yet been fully realised.

A third set of limitations concerns ethical issues, security-related issues and legal issues associated with VR and the metaverse. As you learned in Section 4.1.2 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/market-product-orientation-id-37437), there are ethical concerns that people may lose their ability to interact with the physical world if they spend too much time in the metaverse. In addition, as people interact in the digital world and data is collected about what they do there, there are the same concerns mentioned in Section 5.9.1 (/study/app/y12-business-management-a-hl-may-2024/sid-351-cid-174702/book/critical-infrastructures-id-39509) about data/privacy protection and data security, and about meeting legal obligations across real and metaverse country borders.

Non-profit social enterprises and for-profit social enterprises may deal with the limitations of VR differently from for-profit commercial enterprises. Social enterprises are likely to give more weight to ethical concerns and are less likely to use VR to exploit consumers for commercial gain. They are also more likely to use VR to meet a genuine human need or solve a real problem, whereas for-profit commercial enterprises may use the technology purely for their own profit objectives regardless of its contribution to society.

## Case study

Conservation International is a non-profit social enterprise. The organisation aims to empower societies to care for nature.

The company has developed a new innovation that it hopes will stimulate interest in its nature conservation work. In partnership with VR production company Vision3, Conservation International has developed a new virtual reality experience (https://www.conservation.org/stories/virtual-reality/my-africa)whereby participants can explore a photorealistic environment, interacting with and caring for baby elephants. The strategy aims to educate the audience, improve awareness and increase donations for the local communities undertaking conservation work.

Many social enterprises are developing creative methods to engage their stakeholders to improve social and environmental sustainability. In this case, this is being done through community-based conservation measures.

**Questions**

1. Define virtual reality (VR). [2 marks]
2. Explain **two** uses of VR for Conservation International. [4 marks]

## Exam tip

Remember that HL includes a third paper (Paper 3) based upon a social enterprise. Therefore, it is important that you understand the role of these organisations in supporting communities.

It is also important to understand the role technology and innovation can play in supporting social enterprise projects and engaging key stakeholders. Technology provides creative ways to engage with stakeholders, scale operations and secure the necessary finance to support non-profit and/or for-profit social enterprises.