



# Embracing the metaverse in higher education

CGI Higher Education insights

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# The metaverse: a reality or a metaphor?

The metaverse is a portmanteau of the words “meta” and “universe”, describing the convergence of physical and digital reality. It embodies a collective virtual space where users share experiences and interact in real-time.

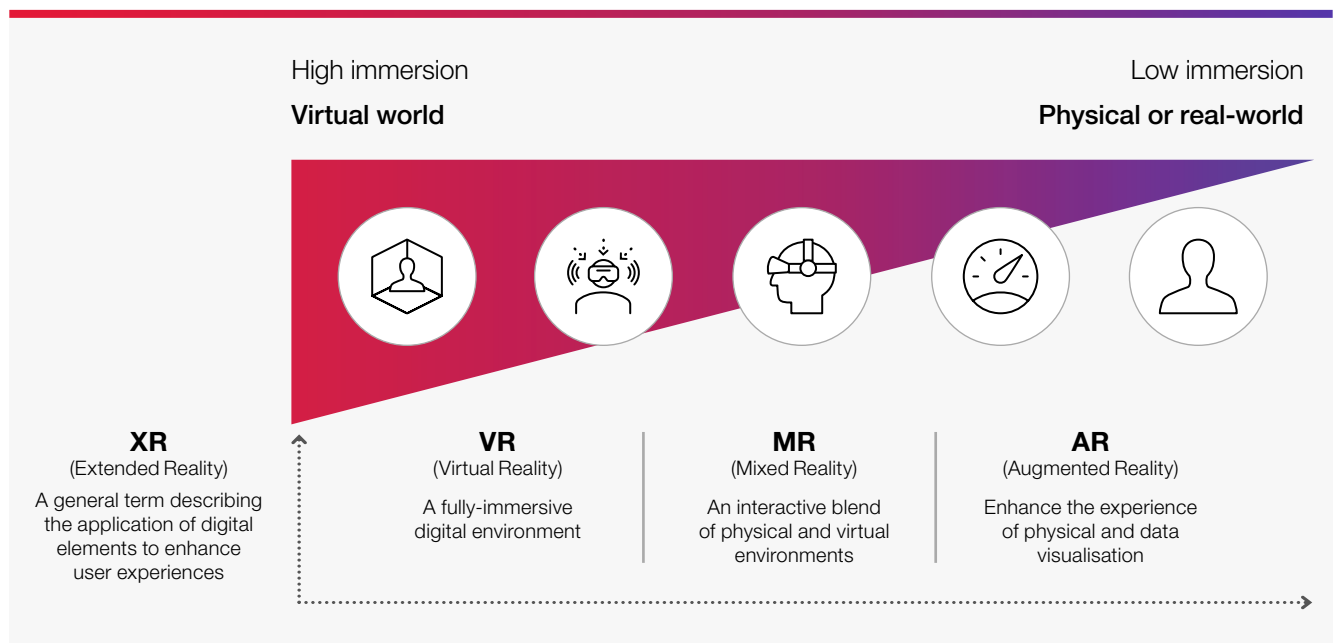
For most, the metaverse’s defining feature is one of visual immersion, with its ability to digitally enhance and reimagine the physical world with new, virtual experiences. That is however, if we can guarantee that it is built responsibly and provides a safe environment for users in the physical world.

The higher education sector is familiar with testing the application of extended reality (XR) in research; however, the application of immersive technologies to transform student experience and wellbeing, and deliver new services for societal benefit is less explored.



We partner with universities to provide leadership for the real-world application of XR. Together, we can deliver a new, digital led campus for extraordinary experiences and practical application across higher education.

## These immersive technology experiences include:



# Value creation – the future of connectivity and virtualisation

In the future, it is very likely that “the web” as we know it will be synonymous with the metaverse, as users’ “online” experiences (a phrase that will become less relevant) will increasingly incorporate immersive features.

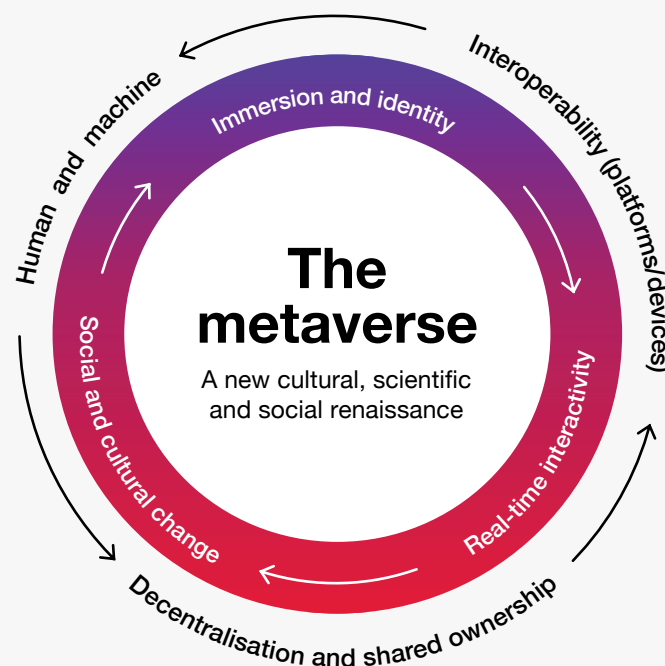
Whereas today the web is defined by the creation and consumption of content we interact with, the metaverse will seamlessly combine our digital and physical lives using immersion, enabling real-time interactivity, and offering new ways to visualise data. For users, this new normal will involve merging our physical existence with a virtual presence using avatars that are unique to our identities, thereby breaking down social barriers through digital representation.

Immersive experiences will initially be curated by humans but will increasingly become AI-generated as virtual communities aggregate and interconnect to enable new experiences that organically evolve.

We therefore believe the future strength of the metaverse relies upon de-centralised ownership, enabling a loose global network of immersive, persistent, and interactive experiences that incorporate the latest in Web 3.0 technologies including distributed ledger, blockchain and AI-driven curation.



The very nature of shared ownership will empower freedom of expression, the building of communities and sharing of ideas, with serendipity and infinite collaboration leading to a further scientific and social renaissance.





# Envisioning the future, today

From Facebook changing its name, to debates about cryptocurrency, higher education stakeholders are fully aware of change catalysts. Students in particular want to learn and grow at an institution that delivers fulfilling experiences where they can step into the future. The likes of blockchain, artificial intelligence (AI) and augmented reality (AR) are just a few that highlight the awareness and need for learned skills as students become alumni.

Now is the time to explore what the metaverse might mean for the future of higher education. Let's create a transformation roadmap that brings useful data to life with proactive, innovative university operations.

Exciting, immersive experiences have already infiltrated students' lives as part of entertainment and video games (for example, the use of virtual reality (VR) headsets, or the pre-pandemic AR phenomenon of Pokémon Go). Therefore, evidencing innovation and VR experiences to prospective students at first touch could provide your university with the edge to attract and retain.

Furthermore, the higher education sector can lead by example with metaverse solutions that deliver real, tangible benefits for people. We can deliver practical and game changing applications across areas such as health, inclusion and wellbeing, and create new possibilities for transformed learning across global, physical and virtual campus environments.



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# Advisory Services, credible thought leaders

We aim to bring the innovation of the metaverse into real-world applications, to solve real problems for real people.

For over 45 years, organisations have trusted CGI to transform their operations with innovative and reliable services and solutions. Committed to supporting our clients for every step of their digital journeys, we established our [Advisory Services](#), where our experts utilise their vast knowledge and experience of delivering world-class IT to collaborate closely with clients and help them unlock their full potential.

As trusted advisors, we were therefore keen to explore the potential of the metaverse so that we could deliver the best guidance to our clients. So, what's our conclusion?

We view the metaverse as a disruptive technology, and believe we should focus attention now on those elements of its vision and potential that can create innovative solutions for the traditional, persistent challenges we currently face in our modern world.

The consensus is that although the ultimate vision for the metaverse to build immersive and persistent virtual communities is still a few years away, we can use its innovation now to create safe, exciting and inclusive higher education environments. The aim is to empower students, staff, alumni and other stakeholders with immersive solutions that revolutionise the ways they share, collaborate, and receive care and support throughout the university experience.



# Embracing the metaverse across your university

Every organisation has its own unique ecosystem. Specifically, universities are focused on delivering advancements and ground-breaking outcomes for the benefit of society. The higher education sector is therefore the perfect place to test the metaverse, but it is essential to deeply understand the opportunities and threats of a new disruptive technology before adopting it.

We recommend universities start now to begin to understand the nature of the metaverse to inform remedial or opportunistic actions within their organisations. This may include early adjustments to lead the field, or preparation to deliver exciting IP that transforms the learning paradigm and creates new beneficial solutions.

This requires a human-centric approach, applying a people focused lens to understand the transformative impact of applying new immersive experiences. At CGI, we employ human-centred design (HCD) to understand user sentiment, empathy and emotion in the development of the metaverse, helping us to better understand student, staff and alumni journeys, and map experiences to shape potential higher education use cases.



For evolving technologies such as the metaverse, early evidence of its value is crucial to attracting investment. This is especially the case when selecting use cases that seek to solve your organisation's or higher education's challenges. We therefore recommend selecting an initial use case that will deliver easy to measure outcomes through small investments, thereby highlighting the obvious benefits delivered. This will set the right perception of the metaverse from the start and encourage excitement around future innovations.



# Engendering digital trust whilst the metaverse is still in its conceptual stage

The development of the metaverse brings clear societal hurdles, where people need sovereignty and control over their data and information. That's because those participating in the metaverse will be connected to each other and to everything else: services, brands, servers, networks and more. Therefore, when assessing your organisation's need for the metaverse, you should ask:

- What are the economic benefits and/or pitfalls?
- Does the specific solution really add value?
- Does it provide novel solutions to existing challenges, or create new problems?
- Does it deliver opportunities to be seen as a leader?

At CGI, we chose to focus on solving the common challenges perceived around supporting a remote or hybrid working model. We built an interactive virtual experience called the [Meta Hub](#), where our senior executives meet with new joiners in a virtual version of our CGI head office, providing a memorable and exciting onboarding experience.



## What's next for your organisation?

Real-life benefits are already emerging for those organisations that are early adopters of the metaverse. From digital assets to immersive experiences, here are a few examples your organisation might consider for the early adoption of the metaverse:



### Learning and knowledge acquisition

Moving from instructions to a first-person experience.



### Experience acceleration

Experience something that is hard to replicate in the real world.



### Collaboration

Creating better working and social environments.

# Immersive learning and development

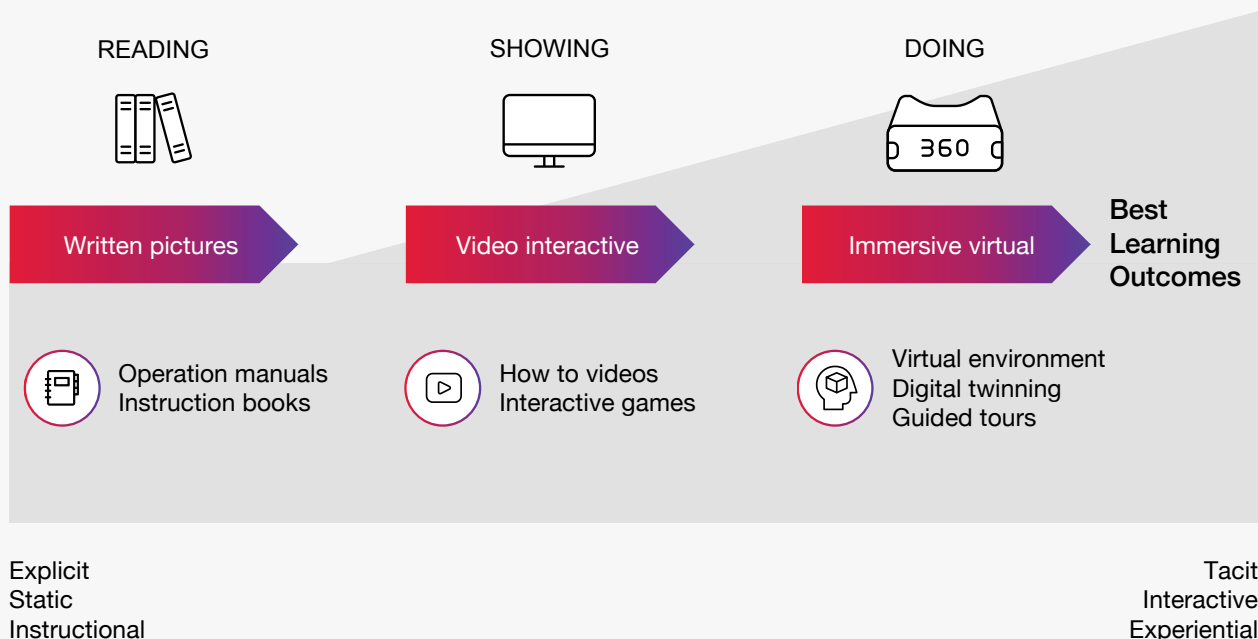
Self-study pathways traditionally rely upon the explicit knowledge gained through written or instruction-led learning, and lack the implicit knowledge gained through “doing”. However, the path from familiarisation to expertise is greatly accelerated when providing students with the opportunity to actively experience a lesson, after all, no one has ever learnt to ride a bike through reading a book!



Immersive technologies thereby provide boundless opportunities for improving learning and development. For example, the use of social media platforms and videos to convey meaning through showing has already enabled a significant step forward for self-learning.

The next step is to experience lessons in a virtual environment. A virtual immersive learning experience would provide AI instruction and gamification as well as 3D, virtual representations of complex scenarios, enabling students to experience things that are impossible in the physical reality, for example, to tour offshore wind platforms or the inside of nuclear reactors.

## Self-learning pathway →





# Infinite opportunities



## Learning and development

Use of immersive training in VR to facilitate training programmes.

- Staff training facilitation
- Virtual classrooms
- Enhanced familiarisation
- Health and safety
- Interactive games



## Marketing and messaging

Creating interest and interaction through immersive experiences.

- Facilitate public engagement
- Awareness campaigns
- Social media connections
- Outreach programmes



## Smart places and data visualisation

Use of IoT sensors to generate real-time data, cross-referenced against geospatial mapping to create rich visualisations.

- Smart cities
- Buildings management
- Sustainability and net zero
- Geospatial data visualisation
- Field team optimisation



## 3D modelling and design

Create 3D models for VR to inform complex design decisions.

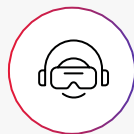
- Simulations
- Photogrammetry and 3D models
- Architecture and planning



## Digital twin/digital operations

Virtual stimulation of real-world systems with real-time data feeds.

- Virtual service operation
- Monitoring and intervention
- AI and machine learning
- Asset management
- Environmental monitoring
- Intellectual security



## Virtual events and occasions

Provision of virtual event capabilities for both internal and external meetings.

- Virtual public events
- Partnership showcases
- Digital augmentation



## Demonstrations and virtual tours

Create virtual experiences of real-world locations or products.

- Virtual tours
- Real-time product demonstrations
- Familiarisation training
- Product experience and branding



## Employee and workplace

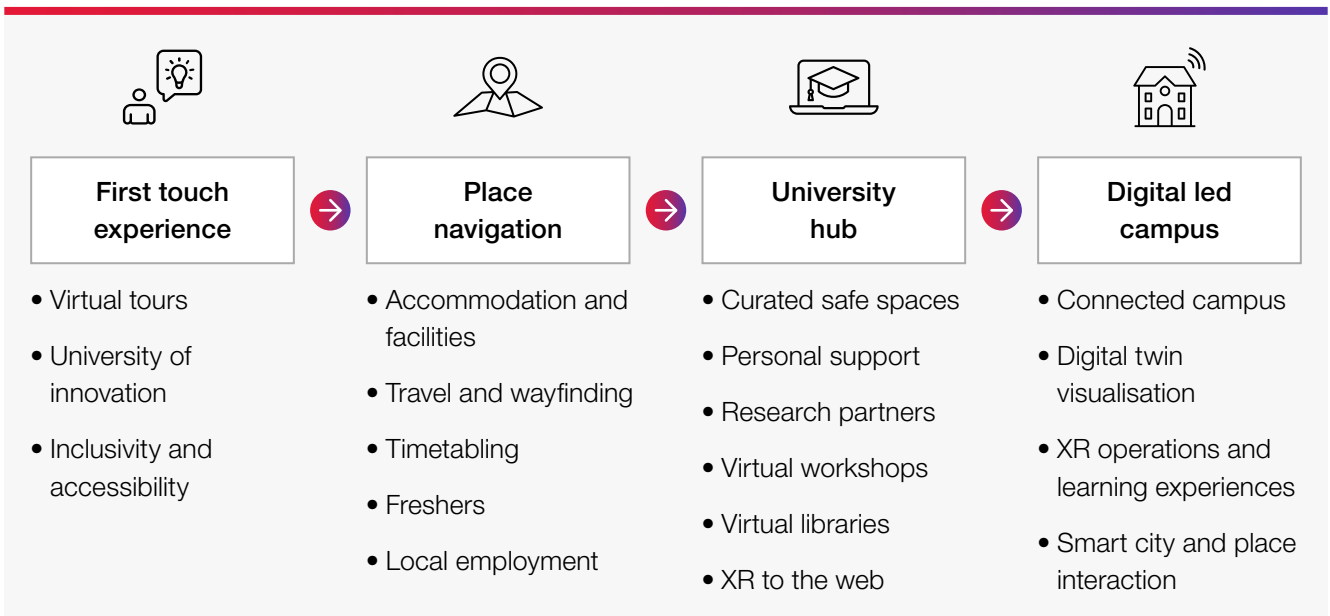
Use of immersive technology to enhance collaboration and support employee services.

- Recruitment and onboarding
- Training and familiarisation
- VR collaboration and safe spaces
- Staff wellbeing and inclusion
- Sustainability and net zero
- Immersive 3D team calls
- Co-pilot - virtual human

# The higher education metaverse journey

Together, we can bring the world of higher education to life.

With stakeholder experience, proactive operations, security, wellbeing and retention a focus throughout, the CGI metaverse journey revolves around concepts and solutions to truly transform university life.



# How we help higher education transform with the metaverse

You've likely got a lot of questions around the potentiality of the metaverse for your university. How can you begin to use the breadth of metaverse disruptive technologies to bridge the gap between the physical and virtual worlds? How can the metaverse meaningfully transform university life, experiences and learning?

You can plan now to use the metaverse to deliver your chosen specialisms and missions. But digital transformation is not simple, and the metaverse is an especially complex topic!

As trusted advisors, we are here to help you develop the right solutions which are aligned to your specific capabilities and ambitions, to securely and sustainably transform the way your university works.

## A people-centric approach

We take a people-centred approach to assess stakeholder needs, with the goal of creating fantastic experiences that drive new avenues for students. We do this through the exploitation of disruptive digital solutions such as the metaverse, to streamline end-to-end services, create human-centred design and simplify IT infrastructure.

When partnering with CGI, we will help you understand your tailored metaverse journey and the end-to-end opportunities and benefits you will achieve for your organisation, community and stakeholders. Specifically, our design experts and digital technologists will work with you to:

- Explore the potential of the metaverse, bringing skills and expertise to aid innovation
- Shape your strategic position
- Ensure you have strong ICT foundations for innovation – we call this the “Digital Backbone”
- Understand early use cases and their benefits, then identify candidates for further exploration
- Plan a roadmap to grasp the opportunity
- Develop proof of concepts, products and services, and support early adoption
- Create communities of interest to learn from each other, developing partnerships for future innovations.

**This support is encompassed in our three-step approach, designed to encourage and nurture our clients' metaverse transformations.**

1. Explore	2. Strategise	3. Scale
<ul style="list-style-type: none"> <li>• Explore the potential of the metaverse for your organisation</li> <li>• Prove the concept by immersive demonstration</li> <li>• Deliver a minimum viable product (MVP)</li> </ul>	<ul style="list-style-type: none"> <li>• Design-led tailored use case co-creation</li> <li>• Align your strategic user experience goals</li> <li>• Prioritise a roadmap to grasp the opportunity</li> </ul>	<ul style="list-style-type: none"> <li>• Iterate and optimise the MVP design</li> <li>• Scale to meet production usage</li> <li>• Adapt processes around the use case, organisational change</li> <li>• Iterate design of further products and services</li> </ul>



# Experienced partners



Backed by our robust three-step approach, we create our clients' solutions using expertise gained from practical experience and knowledge.

We have already applied the concepts of the metaverse to some traditional, real-world challenges, having developed several solutions in-house and alongside our partners:

- Creating our own [Meta Hub](#) office environment to improve the onboarding experience for new joiners
- Facilitating international virtual events such as [COP27](#) as part of our commitment to sustainability and net zero
- Using AR to enable on-site visualisations for building design
- Digital twinning to enable diagnosis and team preparation for neurosurgery
- Familiarisation training to support [managing social anxiety](#) for children on the autism spectrum.



## CGI's metaverse partnership ecosystem

**Supporting clients using our extensive domain expertise and strategic partnerships.**

From VR boutiques that specialise in digital twinning, to digital agencies for shaping virtual worlds, as well as our global partnerships with Microsoft, Amazon and Google.



## Human-centred design

**A specialist team to explore and collaborate with you, and showcase metaverse opportunities.**

A small, agile team that works directly with clients to help explore customer, colleague, employee and student experiences, then co-creation, workshop and interview processes to develop and showcase the value of the metaverse.



## CGI's Meta Hub platform

**An independent development platform to build metaverse business solutions.**

Built on traditional Indie Dev platform principles to reduce the barrier to entry and facilitate crowdsourcing contributions, particularly from the wider student and independent development community.



## CGI's sandbox journeys and solutions

**Accelerators for creating your own metaverse experiences.**

We are developing metaverse archetypes where immersive virtual experiences provide opportunities to tackle traditional challenges in novel ways. These experience templates are designed to enable rapid developments for our clients.



## About CGI

### Insights you can act on

Founded in 1976, CGI is among the largest IT and business consulting services firms in the world.

We are insights-driven and outcomes-based to help accelerate returns on your investments. Across hundreds of locations worldwide, we provide comprehensive, scalable and sustainable IT and business consulting services that are informed globally and delivered locally.

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