WELCOME TO THE METAVERSE

What it is now, what it will become and how you can be a part of it

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THE METAVERSE IS EVERYWHERE

Satya Nadella, CEO of Microsoft, tweeted, “the metaverse is here, and it’s not only transforming how we see the world but how we participate in it – from the factory floor to the meeting room.”[1] Mark Zuckerberg even changed the name of his entire company to be about this thing called the metaverse.[2]

The global public is becoming increasingly aware of the metaverse; about half of adults across 29 countries, especially younger generations, say they are familiar with the metaverse (52%) and widely expect that these new experiences will profoundly impact our entertainment, learning and work lives over the next decade.[3]

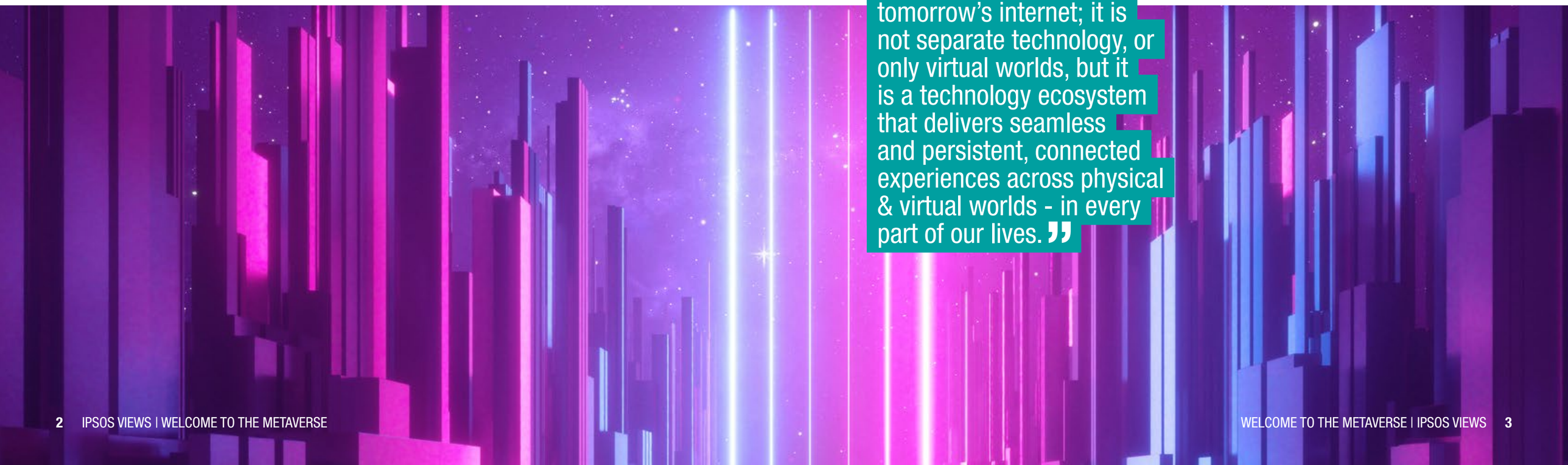
But what is it? What will it become? And how can your organization be a part of it? In this paper, the first in a series on this topic, we’ll explain what the metaverse is now, how it could mature into a seamlessly blended physical-digital experience, and the pioneering ways that you can shape this future virtual world.

TODAY’S METAVERSE IS JUST THE BEGINNING OF OUR DIGITAL-PHYSICAL FUTURE

The concept of the metaverse has been around since the 1980s, envisioned by science-fiction writers[4] and invented by academics and R&D departments.[5] However, it is only recently that the main technologies involved – virtual reality (VR) and augmented reality (AR) – have advanced to a point where they are more than just prototypes in a lab, available for the mass market to use and organizations to consider integrating into their product experiences. Today we can play fitness games on a VR headset, try-out virtual furniture via AR on our tablets, find geo-located Pokemon around the city using our mobile phones, or go to a virtual fashion show with actual catwalk models.

But these virtually augmented experiences are only the beginning of the larger technological transformation that is occurring. Considering today’s metaverse is like thinking about Netscape or AOL internet browsers of the early 90s: just the beginning of a massive technological change that will create social, work, and everyday living paradigm-shifts that we can’t fully imagine yet. If the first version of the internet – Web1.0 – enabled exchanging information computer to computer, and Web2.0 created centralized platforms to share content between each other, often over mobile phones, the latest version of the internet emerging today – something often called the ‘spatial web’[6] – will combine the decentralized interactions of Web3.0 with the virtual worlds of the metaverse to create a more immersive experience that seamlessly connects our physical and digital worlds while giving us more ownership of our own data.

> The metaverse will be tomorrow’s internet; it is not separate technology, or only virtual worlds, but it is a technology ecosystem that delivers seamless and persistent, connected experiences across physical & virtual worlds - in every part of our lives.”



IMAGINING THE FUTURE OF THE METAVERSE

We already live in a digitally connected world. As the spatial web matures, this will evolve into a 'hyper-reality' where real and virtual experiences are deeply interconnected and remote interactions with others feel almost as real as being together in person. Over the next decade, we will see a culmination of many existing and maturing digital technologies such as AR, VR, blockchain-based cryptocurrencies (like Bitcoin) and edge computing (including 5G), transform into a connected ecosystem that will enable more advanced, immersive and seamless digital-physical experiences.

Below we'll break down how each of these components will play a role in this more immersive digital future, but first here's a scenario describing what this future immersive experience could actually be like…

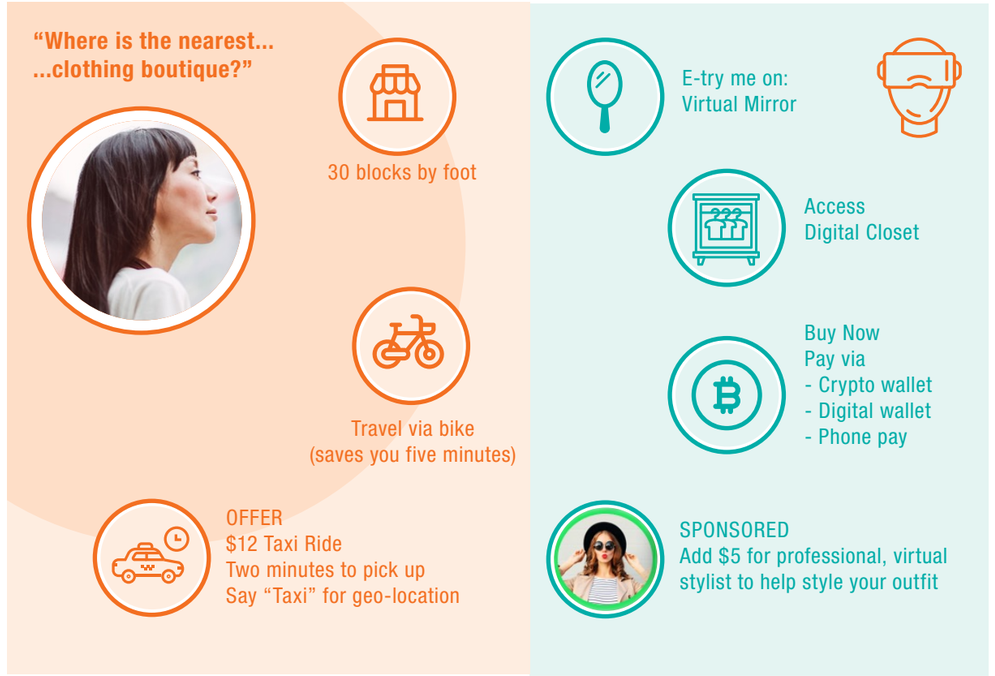
It's 2030 and you are wearing your new AR smart glasses. You are traveling in a new city, and want to buy a new sweater, so you ask your virtual assistant where you can find a clothing boutique that has sweaters available in your usual budget – which she already knows. The busy street in front of you slightly goes out of focus, as your virtual assistant pulls up the nearest store options for you. You select a store that is 30 blocks away, by foot. Your virtual assistant offers you different route options, and, while doing so, you notice your preferred taxi-app is offering a deal today. You say "TAXI" and it sends a driver automatically to you.

You arrive at the store, and select a sweater you like – as you pick it up, your mixed reality (XR) contacts sync with a virtual menu which offers you different store options to choose from. You can:

- Try on the sweater using a virtual mirror
- Access your digitized closet to compare the sweater against what you already own
- Purchase the sweater right there, using virtual currency – like your crypto wallet or phone pay

Your virtual assistant also notifies you of a deal the store is offering, you can pay for a virtual stylist to help you style the sweater with the clothes you already own, or help you build an outfit to purchase.

Figure 1 An example of our future metaverse experiences



Source: Ipsos

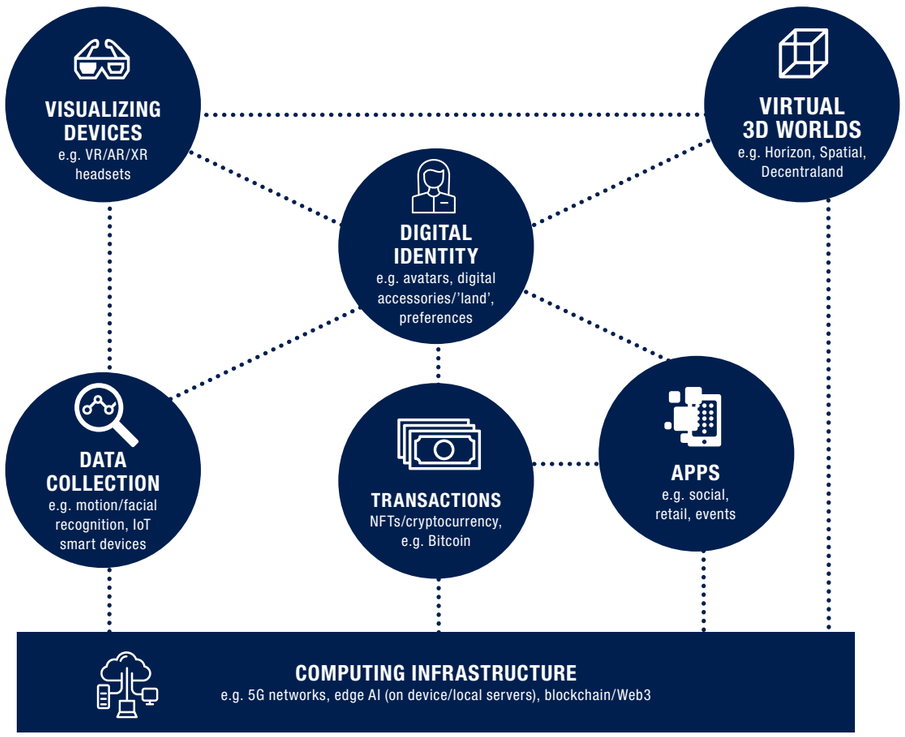
> We already live in a digitally connected world. As the spatial web and the metaverse matures, this will evolve into a 'hyper-reality' where real and virtual experiences are deeply interconnected and remote interactions with others feel almost as real as being together in person."

THE TECHNOLOGICAL ECOSYSTEM OF THE SPATIAL WEB

There are three core technologies that will contribute to the spatial web and enable the intelligent, seamless digital-physical experience we just described:

- The hardware to see more immersive experiences such as AR, VR and XR
- The economy to buy things in the metaverse including blockchain-based cryptocurrencies like Bitcoin and NFTs (non-fungible tokens)
- The computing infrastructure to deliver 'metaversical' experiences including cloud computing, 5G networks and edge AI

Figure 2 The technological ecosystem of the Spatial Web



Source: Ipsos

THE HARDWARE TO SEE VIRTUAL, 'METAVERSICAL' EXPERIENCES

VR and AR – also called extended or mixed reality (XR) – headsets are some of the tools we can use to immerse ourselves in the interactive 3D experiences that are most commonly associated with the metaverse:

- **Virtual reality (VR):** Provides the most immersive experiences and is what most people are aware of (72% of teens and adults aged 13-55 across the US).[7] Using a Meta Quest 2 or Vive headset and controllers, you can be completely surrounded in fully digital spaces that are realistic, e.g. top of Mount Everest or the International Space Station, or fantastical, such as videogame-like experiences like the popular fitness game Beat Saber. With VR technologies, we can have much more embodied remote social experiences, allowing us to do similar things that you would do with friends like play ping pong in virtual worlds such as Meta's Horizons or even the popular kids game Roblox – only in these virtual worlds you'll represent yourself with an avatar.
- **Augmented (AR) and mixed reality (XR):** In comparison to the totally digital worlds which we inhabit in VR, AR or XR overlays digital images, animations, text, audio or other information onto your real-world environment. Despite AR experiences like 'trying on' a pair of sunglasses, using Snapchat face filters, or playing games such as Pokemon Go! being available on smartphones or tablets, this technology is less widely known – only 54% of US 13-55 year olds are aware of AR.[7] This will increase as these types of XR experiences become more prevalent in the future when 'smart glasses' technologies mature; headsets like Hololens, Magic Leap, Snap's Spectacles and eventually XR contact lenses can add virtual overlays to our real environment to create seamlessly blended digital-physical experiences like we described in the scenario on page four.

Figure 3 The levels of immersion in the metaverse

Source: Ipsos

In order to deliver all of these blended digital-physical experiences, we need a lot of computing power.”

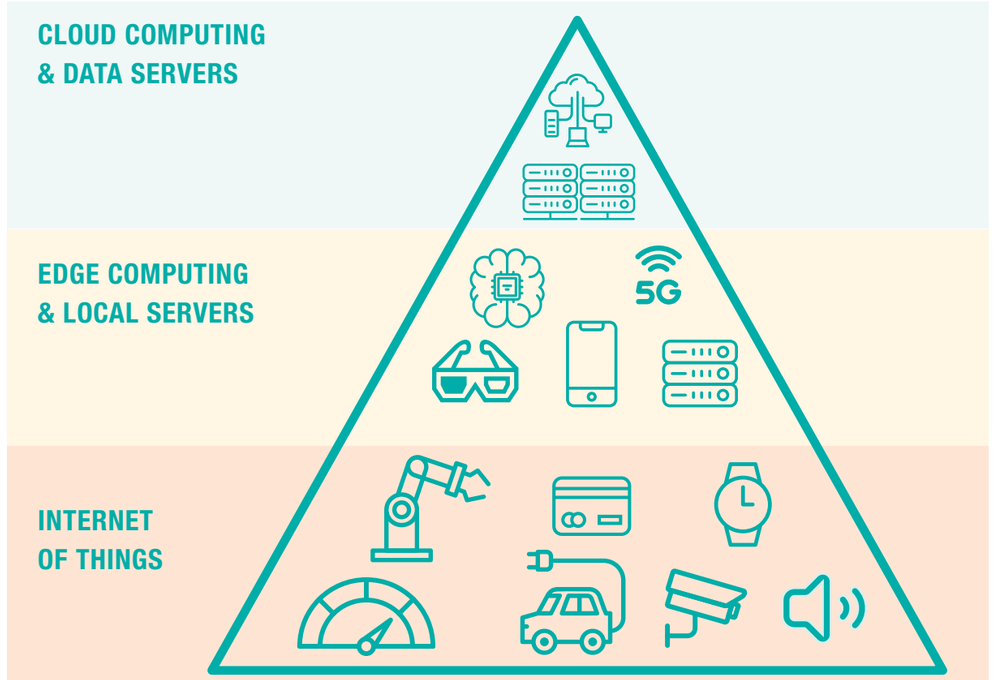
Ownership in the metaverse

The vision of the spatial web is a more decentralized model for how our data is collected and used. In comparison to today's cloud-based platforms like Meta and Google who can collect and sell our information when we use their services, technologies like blockchain will allow us to take ownership of this data and possibly make money from it. The economy of Web3.0 will be based on digital transactions, including but not exclusive to cryptocurrencies such as Bitcoin and Ethereum, i.e. digital assets that can be transferred via peer-to-peer networks and used to buy NFTs (or non-fungible tokens), clothing for our avatars, digital artworks, or even real-estate in virtual worlds.

The computing infrastructure to deliver seamlessly immersive experiences

In order to deliver all of these blended digital-physical experiences, we need a lot of computing power. Today, VR headsets are heavy and have a short battery life due to the computing required to render the pixel-heavy digital worlds and transfer heavy loads of data between the device and cloud servers. Companies like Magic Leap, Apple and Snap are working to minimize the size of headsets to something more akin to regular spectacles, developing new AI-enabled chips that process data on the device itself, much like our smartphones. Combined with 5G servers distributed around our cities, this localized network of processors can give users improved virtual experiences on smaller devices, while also enabling greater protection for their personal data by controlling what they send to 'the cloud'.

Figure 5 The networked computing infrastructure to process metaverse experiences

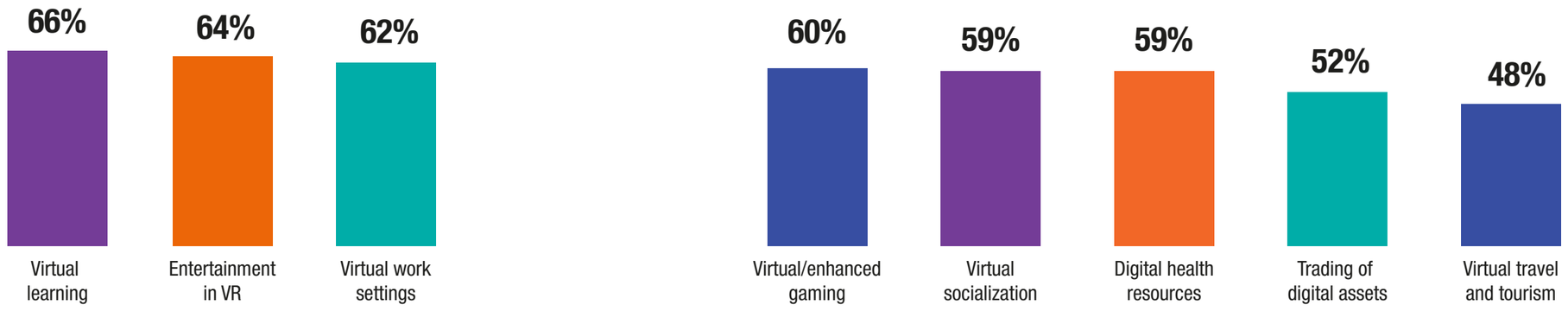


Source: Ipsos

Figure 4 How metaverse applications will impact people's lives

Q. How much do you agree or disagree that, over the next ten years, the development of the following metaverse applications using XR will significantly change the way people live?

% strongly/somewhat agree



Source: Ipsos Global Advisor, How the world sees the metaverse and extended reality.
Base: 21,005 online adults under the age of 75 across 29 countries, interviewed April 22-May 6, 2022

HOW TO THINK ABOUT YOUR ORGANIZATION'S APPROACH TO THE METAVERSE

Considering the complex interplay of the technologies required to create these seamlessly connected and immersive experiences, there is no one simple solution for how to develop a product for this increasingly virtual future. At Ipsos, we approach this creative challenge by exploring potential opportunities in each part of the spatial web ecosystem and consider your organization's needs to identify the most fitting tech and ecosystem solution(s) for your brand or product. Here are a few thought starters to help you reframe how your organization is thinking about this more immersive future:

How do we socialize in the metaverse?

In our global study for the World Economic Forum, we heard that digital entertainment, gaming and socializing are three of the areas that most people think will be impacted by the metaverse and Web3 (64%, 60% and 59% respectively).[3] Today, we have clients asking us how they can recreate real-life environments into VR, so people will socialize with one another. However, not too far into the future, we will have more VR and AR technologies that blend more seamlessly into our everyday interactions. The question that we think about is: how can we create more natural, human communication between physical people and their digital, XR avatars so that remote socializing feels almost like we're interacting with other people just like in real life? Learn more in our webinar on this.

How do we define our identity in this more immersive future?

Today, we have clients asking us how they can offer the proper range of digital assets to users so they may build and customize diverse avatars. We're already seeing the evolution of avatars moving to a more AI-driven approach which trains our avatars to map our actual facial expressions to their virtual representations. How can we extend that even further to deliver more authentic representations of our emotions? Can physical clothing and accessories have 'digital twins' so our avatars can match what we wear in real-life, like our favorite fashion brand or sport's team's shirt? Do we even want our virtual identities to be accurate or would we prefer them to be more fantastical? Ipsos' Immersive3E on-going study further explores attitudes to these questions, amongst other spatial web topics.

And what does marketing in virtual or AR look like?

Today, we see AR filters used to create engagement with consumers through short games or product story experiences. We imagine that marketing of the future will merge physical and virtual spaces by creating sponsored pop-up events where you and your friends can attend a virtual bar to watch the SuperBowl - and upon sign-up have a six-pack delivered to your physical door!

What about transactions in the spatial web?

For better or worse–or more aptly, boom or bust – we are seeing increasing adoption of cryptocurrencies as Web3 technologies and metaverse experiences mature.[8] Over half of adults globally (52%) think that trading of digital assets such as cryptocurrency and NFTs (non-fungible tokens popular in digital art and collectibles) will grow even more in the next decade.[3] Whether digital currencies like these open up a huge opportunity in our Web3 and metaverse future remains to be seen, but when we think about the transactions of the future, we could see shopping less about VR stores that replicate the real-world experience, and more about how can we seamlessly connect physical shopping or banking to online features. This could include personalized recommendations when a customer scans a shirt they like, or how they might opt to pay via their Chase/CitiBank/Bank of America digital wallet using cryptocurrency like Bitcoin instead of credit.

How will productivity in the metaverse look different from today?

The last two years have accelerated our adoption of hybrid working and learning experiences, and this trend will likely continue: two-thirds of adults globally thought that virtually attending school or taking courses, and virtual work settings and networking will continue to grow in the next decade (66% and 62% respectively).[3] Today we replicate virtual conference rooms and meeting rooms for our virtual meetings. In the future, perhaps XR will help us blend in-person and remote, so that we can all look at the same diagrams and presentations in a standup style huddle or how can we use legacy devices and XR-vision to see inside walls to locate issues in a mechanical system?

What about healthcare in this virtual future?

Access to digital health resources such as virtual consultations and remote surgeries has grown dramatically over the last few years and is expected by many (59%) to further expand in the next decade.[3] In the future, healthcare will continue to leverage AR and VR and AI to assist and train medical students on body anatomy and guide doctors through complex procedures - or even to create a custom, physical therapy experience that is personalized to our patient's injury.

And what about privacy; what does that look like in an ever-connected ecosystem?

We have clients asking us how to obtain informed consent from users to collect, store and share their data. In the future, how can we instead examine ways to process personal data locally on their personal devices or local servers, rather than through the cloud, to increase digital performance and also protect user privacy.

STRATEGIZING FOR THE METAVERSE OF TOMORROW

As we've seen, the metaverse will be tomorrow's internet; it is not separate technology, or only virtual worlds, but it is a technology ecosystem that delivers seamless and persistent, connected experiences across physical and virtual worlds - in every part of our lives. At Ipsos, we're thinking about how this more decentralised and immersive 'Spatial Web' future will emerge over the coming years, so that we can help your organization participate today and make paradigm-shifting impacts tomorrow and beyond.

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