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How the Metaverse Could Change Work

by Mark Purdy April 05, 2022

Summary.

The workplace of the 2020s already looks vastly different from what we could have imagined just a couple of years ago. Now, the metaverse promises to bring new levels of social connectedness, mobility, and collaboration to a world of virtual work. The metaverse is poised to reshape the world of work in at least four major ways: new immersive forms of team collaboration; the emergence of new digital, AI-enabled colleagues; the acceleration of learning and skills acquisition through virtualization and gamified technologies; and the eventual rise of a metaverse economy with completely new enterprises and work roles. The metaverse also opens up new possibilities to rethink the office and work environment, introducing elements of adventure, spontaneity, and surprise. A virtual office doesn't have to be a drab, uniform corporate environment downtown: why not a beach location, an ocean cruise, or even another world? Our work colleagues in the metaverse will not be limited to the avatars of our real-world colleagues. Increasingly, we will be joined by an array of digital colleagues — highly realistic, AI-powered, human-like bots. The metaverse could also revolutionize training and skills development, drastically compressing the time needed to develop and acquire new skills. While still in its early stages, the emergent metaverse provides an opportunity for enterprises to reset the balance in hybrid and remote work, to recapture the spontaneity, interactivity, and fun of team-based working and learning, while maintaining the flexibility, productivity, and convenience of working from home.

Imagine a world where you could have a beachside conversation with your colleagues, take meeting notes while floating around a space station, or teleport from your office in London to New York, all without taking a step outside your front door. Feeling under pressure with too many meetings scheduled today? Then why not send your AI-enabled digital twin instead to take the load off your shoulders? These examples offer but a glimpse into the future vision of work promised by “the metaverse,” a term originally coined by author Neal Stephenson in 1992 to describe a future world of virtual reality. While defying precise definition, the metaverse is generally regarded as a network of 3-D virtual worlds where people can interact, do business, and forge social connections through their virtual “avatars.” Think about it as a virtual reality version of today's internet.

While still nascent in many respects, the metaverse has suddenly become big business, with technology titans and gaming giants such as Meta (previously Facebook), Microsoft, Epic Games, Roblox, and others all creating their own

virtual worlds or metaverses. The metaverse draws on a vast ensemble of different technologies, including virtual reality platforms, gaming, machine learning, blockchain, 3-D graphics, digital currencies, sensors, and (in some cases) VR-enabled headsets.

How do you get to the metaverse? Many current workplace metaverse solutions require no more than a computer, mouse, and keyboard keys, but for the full 3-D surround experience you usually have to don a VR-enabled headset. However, rapid progress is also taking place in computer-generated holography that dispenses with the need for headsets, either by using virtual viewing windows that create holographic displays from computer images, or by deploying specially designed holographic pods to project people and images into actual space at events or meetings). Companies such as Meta are also pioneering haptic (touch) gloves that enable users to interact with 3-D virtual objects and experience sensations such as movement, texture, and pressure.

Within the metaverse, you can make friends, rear virtual pets, design virtual fashion items, buy virtual real estate, attend events, create and sell digital art — and earn money to boot. But, until recently, the implications of the emerging metaverse for the world of work have received little attention.

That is now changing. The effects of the pandemic — especially limitations on physical meetings and travel — are spurring a search by enterprises for more authentic, cohesive, and interactive remote and hybrid work experiences. The metaverse seems set to reshape the world of work in at least four major ways: new immersive forms of team collaboration; the emergence of new digital, AI-enabled colleagues; the acceleration of learning and skills acquisition through virtualization and gamified technologies; and the eventual rise of a metaverse economy with completely new enterprises and work roles.

Like Being There: Teamwork and Collaboration in the Metaverse

The metaverse promises to bring new levels of social connection, mobility, and collaboration to a world of virtual work. NextMeet, based in India, is an avatar-based immersive reality platform focused on interactive working, collaboration, and learning solutions. Its mission is to remove the isolation and workforce disconnectedness that can result from remote and hybrid work. I interviewed Pushpak Kypuram, Founder-Director of NextMeet, who explained the inspiration behind their virtual workplace solution: “With the shift to remote working from the pandemic, keeping employees engaged has become a top challenge for many companies. You can’t keep 20 people engaged in the flat 2-D environment of a video call; some people don’t like appearing on camera; you’re not simulating a real-life scenario. That is why companies are turning to metaverse-based platforms.”

With NextMeet's immersive platform, employee digital avatars can pop in and out of virtual offices and meeting rooms in real-time, walk up to a virtual help desk, give a live presentation from the dais, relax with colleagues in a networking lounge, or roam a conference center or exhibition using a customizable avatar. Participants access the virtual environment via their desktop computer or mobile device, pick or design their avatar, and then use keyboard buttons to navigate the space: arrow keys to move around, double click to sit on a chair, and so forth. Kypuram gives the example of employee onboarding: "If you're onboarding 10 new colleagues and show or give them a PDF document to introduce the company, they will lose concentration after 10 minutes. What we do instead is have them walk along a 3-D hall or gallery, with 20 interactive stands, where they can explore the company. You make them want to walk the virtual hall, not read a document."

Other metaverse companies are emphasizing workplace solutions that help counter video meeting fatigue and the social disconnectedness of remote work. PixelMax, a UK-based start-up, helps organizations create immersive workplaces designed to enhance team cohesion, employee wellness, and collaboration. Their virtual workplaces, which are entered via a web-based system on your computer and don't require headsets, include features such as:

- **"Bump into" experiences:** PixelMax's immersive technology allows you to see your colleagues' avatars in real-time, making it easier to stop them for a chat when you bump into them in the virtual workplace. In a recent interview, Shay O'Carroll, co-founder of PixelMax, explained that: "Informal and spontaneous conversations account for a huge amount of business communications — research suggests up to 90% in areas such as R&D — and during the pandemic we lost a lot of this vital communication.
- **Well-being spaces:** These are dedicated areas for users of the world to take a break and experience something different. As Shay O'Carroll explained: "We have created well-being areas designed as forests, or aquariums. They could even be on the moon. These areas can contain on-demand content such as guided meditations and/or exercise classes."
- **Delivery to your physical space:** Clients can add features such as the ability to order take-out food or books and other merchandise within the virtual environment and have these delivered to your physical location (e.g., home).
- **Live status tracking:** Just as in the physical workplace, you can walk around and get that panoramic sweep of the office floor, see where colleagues are located and who's free, drop in for a quick chat, etc.

The ultimate vision, according to Andy Sands, co-founder of PixelMax, is being able to connect different virtual workplaces. It is currently building a virtual

workplace for a group of 40 leading manufacturers in interior design that are co-located in Manchester, England. “It’s about community building, conversations and interactions. We want to enable worker avatars to move between a manufacturing world and an interior design world, or equally take that avatar and go and watch a concert in Roblox and Fortnite.”

Remote work can be stressful. Research by Nuffield Health in the UK found that almost one third of UK remote workers were experiencing difficulties in separating home and work life, with more than one quarter finding it hard to switch off when the work day finishes. Virtual workplaces can provide a better demarcation between home and work life, creating the sensation of walking into the workplace each day and then leaving and saying goodbye to colleagues when your work is done. In the virtual workplace, your avatar provides a means of communicating your status — in a meeting, gone for your lunch break, and so on — making it easier to stay connected to colleagues without feeling chained to the computer or cellphone, a frequent source of stress in traditional remote work situations.

Better teamwork and communication will certainly be key drivers of the virtual workplace, but why stop there? The metaverse opens up new possibilities to rethink the office and work environment, introducing elements of adventure, spontaneity, and surprise. A virtual office doesn’t have to be a drab, uniform corporate environment downtown: why not a beach location, an ocean cruise, or even another world? This vision provides the inspiration for Gather, an international virtual reality platform that allows employees and organizations to “build their own office.” These dream offices can vary from “The Space-Station Office” with views of planet Earth to “The Pirate Office,” complete with ocean views, a Captain’s Cabin, and a Forecastle Lounge for socializing. For the less adventurous, you can choose from options like the virtual Rooftop Party or meeting in the Zen Gardens.

Introducing Your Digital Colleague

Our work colleagues in the metaverse will not be limited to the avatars of our real-world colleagues. Increasingly, we will be joined by an array of digital colleagues — highly realistic, AI-powered, human-like bots. These AI agents will act as advisors and assistants, doing much of the heavy lifting of work in the metaverse and, in theory, freeing up human workers for more productive, value-added tasks.

Recent years have seen tremendous progress in conversational AI systems — algorithms that can understand text and voice conversations and converse in natural language. Such algorithms are now morphing into digital humans that can sense and interpret context, show emotions, make human-like gestures, and make decisions. One example is UneeQ, an international technology

platform that focuses on creating “digital humans” that can work across a wide variety of fields and different roles. Uneeq’s digital workers include Nola, a digital shopping assistant or concierge for the Noel Leeming stores in New Zealand; Rachel, an always-on mortgage adviser; and Daniel, a digital double of the UBS Chief Economist, who can meet multiple clients at once to provide personalized wealth management advice.

Emotions are the next frontier in the metaverse. SoulMachines, a New-Zealand-based technology start-up, is bringing together advances in AI (such as machine learning and computer vision) and in autonomous animation (such as expression rendering, gaze direction, and real-time gesturing) to create lifelike, emotionally-responsive digital humans. Its digital humans are taking on roles as diverse as skincare consultants, a covid health adviser, real-estate agents, and educational coaches for college applicants.

Digital human technology opens up a vast realm of possibilities for workers and organizations. Digital humans are highly scalable — they don’t take coffee breaks — and can be deployed in multiple locations at once. They can be deployed to more repetitive, dull, or dangerous work in the metaverse. Human workers will increasingly have the option to design and create their own digital colleagues, personalized and tailored to work alongside them. But digital humans will also bring risks, such as increased automation and displacement of human work for lower-skilled workers who generally have fewer opportunities to move to alternative roles, or possible erosion of cultural and behavioral norms if humans become more disinhibited in their interactions with digital humans, behavior that could then carry over to their real-world interactions.

Faster Learning in the Metaverse

The metaverse could revolutionize training and skills development, drastically compressing the time needed to develop and acquire new skills. AI-enabled digital coaches could be on-hand to assist in employee training and with career advice. In the metaverse, every object — a training manual, machine, or product, for example — could be made to be interactive, providing 3-D displays and step-by-step “how to” guides. Virtual reality role-play exercises and simulations will become common, enabling worker avatars to learn in highly realistic, “game play” scenarios, such as “the high-pressure sales presentation,” “the difficult client,” or “a challenging employee conversation.”

Virtual-reality technologies are already being used in many sectors to accelerate skills development: Surgical technology company Medivis is using Microsoft’s HoloLens technology to train medical students through interaction with 3-D anatomy models; Embodied Labs have used 360-degree video to help

medical workers experience the effects of Alzheimer's Disease and age-related audiovisual impairments, to assist in making diagnoses; manufacturing giant Bosch and the Ford Motor Company have pioneered a VR-training tool, using the Oculus Quest headset, to train technicians on electric vehicle maintenance. UK-based company Metaverse Learning worked with the UK Skills Partnership to create a series of nine augmented reality training models for front-line nurses in the UK, using 3-D animation and augmented reality to test learners' skills in specific scenarios and to reinforce best practices in nursing care.

With deep roots in online gaming, the metaverse can also start to tap the potential of gamified learning technologies for easier and faster skills acquisition. PixelMax's O'Carroll observed: "The game becomes the learning activity. In the medical world, we've used gamified technologies to train lab technicians; you'll break out in different groups and then go to, say, a virtual PCR testing machine where you'll go through stages of learning about how operate that machine, with your training result then recorded." For the first responder community in the UK — police, fire fighters, medical crew, etc. — PixelMax is working on games that combine physical training with immersive gamification to enable first responders to do repeat training, try different strategies, see different outcomes, and look at different ways of working as a team.

Research has established that virtual-world training can offer important advantages over traditional instructor or classroom-based training, as it provides a greater scope for visually demonstrating concepts (e.g., an engineering design) and work practices, a greater opportunity for learning by doing, and overall higher engagement through immersion in games and problem-solving through "quest-based" methods. Virtual-world learning can also make use of virtual agents, AI-powered bots that can assist learners when they get stuck, provide nudges, and set scaled challenges. The visual and interactive nature of metaverse-based learning is also likely to appeal particularly to autistic people, who respond better to visual as opposed to verbal cues. Virtual reality tools can also be used to combat social anxiety in work situations, for example by creating realistic but safe spaces to practice public presentations and meeting interactions.

New Roles in the Metaverse Economy

The internet didn't just bring new ways of working: it brought a whole new digital economy — new enterprises, new jobs, and new roles. So too will the metaverse, as the immersive 3-D economy gathers momentum over the decade ahead. IMVU, an avatar-based social network with more than 7 million users per month, has thousands of creators who make and sell their own virtual products for the metaverse — designer outfits, furniture, make-up, music,

stickers, pets — generating around \$7 million per month in revenues. Alongside the creators are the “meshers,” developers who design the basic 3-D templates that others can customize and tailor as virtual products. A successful mesh can be replicated and sold thousands of times, earning significant income for its developer. The Decentraland platform is creating virtual realtors, enabling users to buy, sell, and build businesses upon parcels of virtual land, earning a digital money called “Mana.”

Looking further ahead, just as we talk about digital-native companies today, we are likely to see the emergence of metaverse-native enterprises, companies entirely conceived and developed within the virtual, 3-D world. And just as the internet has brought new roles that barely existed 20 years ago — such as digital marketing managers, social media advisors, and cyber-security professionals — so, too, will the metaverse likely bring a vast swathe of new roles that we can only imagine today: avatar conversation designers, “holoporting” travel agents to ease mobility across different virtual worlds, metaverse digital wealth management and asset managers, etc.

Challenges and Imperatives

Despite its vast future promise, the metaverse is still in its infancy in many respects. Significant obstacles could stymie its future progress: the computing infrastructure and power requirements for a full-fledged working metaverse are formidable, and today’s metaverse consists of different virtual worlds that are not unified in the way the original internet was. The metaverse also brings a thicket of regulatory and HR compliance issues, for example around potential risks of addiction, or unacceptable behaviors such as bullying or harassment in the virtual world, of which there has been some concern of late. While many issues remain, business leaders, policy makers, and HR leaders can start with the following imperatives for successful collaboration in the metaverse:

- **Make portability of skills a priority:** For workers, there will be concerns around portability of skills and qualifications: “Will experience or credentials gained in one virtual world or enterprise be relevant in another, or in my real-world life?” Employers, educators, and training institutions can create more liquid skills by agreeing upon properly certified standards for skills acquired in the metaverse, with appropriate accreditation of training providers. This will help to avoid quality dilution and provide the necessary assurance to metaverse-based workers and future employers.
- **Be truly hybrid:** As the rush to remote work during the pandemic showed, many enterprises had been laggards when it came to the adoption of truly digital ways of working, with outdated policies, lack of infrastructure, and a strict demarcation between consumer and

business technologies. Enterprises must avoid these mistakes in the metaverse, creating integrated working models from the start that allow employees to move seamlessly between physical, online, and 3-D virtual working styles, using the consumer technologies native to the metaverse: avatars, gaming consoles, VR headsets, hand-track controllers with haptics and motion control that map the user's position in the real world into the virtual world (although some versions use only cameras). Yet this is only the start. Some companies are developing virtual locomotion technologies such as leg attachments and treadmills to create realistic walking experiences. Nextmind uses ECG electrodes to decode neural signals so that users can control objects with their minds.

- **Talk to your kids:** The metaverse will force companies to completely reinvent how they think about training, with a focus on highly stimulative, immersive, challenge-based content. In designing their workplace metaverses, companies should look particularly to the younger generation, many of whom have grown up in a gaming, 3-D, socially-connected environment. Reverse intergenerational learning — where members of the younger generation coach and train their older colleagues — could greatly assist the spread of metaverse-based working among the overall workforce.
- **Keep it open:** The metaverse of today has largely emerged in an open, decentralized manner, spurred on by the efforts of millions of developers, gamers, and designers. To fully harness the power of this democratized movement for their workers, enterprises must not only guard against efforts to control or dominate the metaverse, but must actively seek to extend and open it up even further, for example by pursuing open-source standards and software where possible, and by pushing for “interoperability” — seamless connections — between different virtual worlds. Otherwise, as we have seen in the social media sphere, the metaverse could become quickly dominated by major technology companies, reducing choice and lessening the potential for grass-roots innovation.

The workplace of the 2020s already looks vastly different from what we could have imagined just a couple of years ago: the rise of remote and hybrid working has truly changed expectations around why, where and how people work. But the story of workplace transformation doesn't end there. While still in its early stages, the emergent metaverse provides an opportunity for enterprises to reset the balance in hybrid and remote work, to recapture the spontaneity, interactivity, and fun of team-based working and learning while maintaining the flexibility, productivity, and convenience of working from home. But three things are clear. First, speed of adoption will be important. With most of the technology and infrastructure already in place, large enterprises will need to act fast to keep up with metaverse technologies and

virtual services, or risk being outflanked in the market for talent by more nimble competitors. Second, the metaverse will only be successful if it is deployed as a tool for employee engagement and experiences, not for supervision and control. And, third, metaverse-based work must match the virtual experiences that workers, particularly younger workers, have come to expect of the technology in their consumer and gaming lives.

Guided by these principles, business leaders can start to imagine and create their own workplaces of the future.