

ODR in the Metaverse

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Abstract

The term metaverse describes a vision for the next iteration of the internet where users can navigate computer networks that resemble interconnected 3D spaces, discovering information and interacting with others. While the concept of the metaverse is not really new, it has recently become a hot area for investment, as CEOs are now spending billions of dollars to bring it to fruition in the near future. While many questions remain about how the metaverse will work and whom it will benefit, early implementations of different components of the underlying technology (e.g. virtual reality, digital holograms and avatar-based interactions) are giving us a chance to see how these technologies might be useful in resolving disputes online. This article explores the promises and challenges of online dispute resolution (ODR) in the metaverse by defining the key components, describing recent metaverse experiences, analysing impacts on party psychology and assessing the reasons to be both optimistic and sceptical about the potential for metaverse technologies in ODR moving forward.

Keywords: metaverse, ODR, virtual reality, hologram, avatar, mediation, negotiation, technology, algorithm, resolution.

The latest buzzword in Silicon Valley is the *metaverse*. Ever since the CEO of Facebook, Mark Zuckerberg, announced that he was renaming his company ‘Meta’¹ and spending \$10b to make ‘the metaverse’ a reality, the race has been on to create a new virtual space that will change the world, perhaps on the scale of the original internet.

But these discussions have also led to many people wondering exactly what the term ‘metaverse’ means. The word originated in the 1992 science fiction novel *Snow Crash* as a merger of ‘meta’ and ‘universe’. To most science fiction writers since, the metaverse has represented a future online space where users could navigate an infinitely large virtual environment through the use of advanced technology like headsets and gloves.

Like many ideas that first emerged in science fiction novels, entrepreneurs in Silicon Valley are now working feverishly to convert the concept of the metaverse into a reality. This transformation has already occurred for ideas like the wristwatch

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1 <https://about.fb.com/news/2021/10/facebook-company-is-now-meta/> (last visited 24 March 2022).

radio in the Dick Tracy comics from the 1950s, or the voice-based commands for computers depicted on the 1970s TV show Star Trek; now, decades later, we have Apple watches on our wrist to make phone calls, and Amazon Echos on our desk (and Siri on our phones) ready to take our voice instructions. It appears that now it is the metaverse's turn to move from science fiction into a daily reality accessible to all of us.

The modern version of the metaverse is described as a network of 3D virtual environments focused on social connection and interaction. Media and entertainment companies are all scrambling to create content that will capture the popular imagination and push the leading edge of creating these new environments. The goal of this version of the metaverse is 'immersion', which has led to a major push towards advancing virtual reality technology. There have been many prior experiments in creating metaverses over the years, but none of these experiments have yet captured the potential of the metaverse to offer a 'next web' interface that users will choose over the standard web-page-and-links internet that most people use every day.

In this article we define different technological components of the metaverse, describe our recent experiences using several of these components, analyse how communication in virtual spaces may affect the psychology of parties in resolution processes and then discuss various reasons to be optimistic and sceptical about the use of metaverse technologies in online dispute resolution moving forward.

1 Different Paths into the Metaverse

A couple of definitions at the start may help us to understand the major currents in the development of the metaverse. One is *virtual reality (VR)*, where participants wear goggles containing miniaturized computer screens that create a sensation of being in a completely immersive world. Sensors in the goggles rotate the view as the user rotates their head, creating the sensation of being in a physical space. Experiencing a virtual environment in VR can be quite immersive, and it feels like you are exploring an entirely new reality. But watching someone experience VR from the outside is a very different experience: they may feel like they are flying through space like an astronaut, but if you are sitting next to them on the couch you cannot see anything that they are seeing, because it is all happening in their goggles. The VR user may even look a little goofy, oohing and aahing as digital comets fly by their head, but to an outside observer they are just sitting on a couch with a headset covering their eyes, cut off from their surroundings.

Augmented reality (AR) is a little bit different. AR users also wear a set of goggles, but those goggles are see-through, so the user can actually observe their surroundings – but images are projected onto the lenses in the goggles that overlie on actual reality. So, as an example, you could be in your dining room seeing the room as it is through the clear lenses of the goggles, but then via AR a virtual miniature elephant could pop up, standing on the table. The AR goggles overlie the digital image of the elephant over the actual table, merging the real and the virtual. Similarly to VR, as you rotate your head the image of the elephant moves

appropriately, so you could walk around the table, and the digital elephant would stay in the same place, appearing to be a physical object. But if you were to lift the glasses up the elephant would disappear, and you would just be looking at the table. AR users may appear to outsiders to be more engaged with their surroundings, because they can see and participate in their actual environment while at the same time seeing virtual images projected around them, but that also means that the AR experience is likely less immersive than VR.

Digital hologram technology recreates a distant object or person in such a way that it appears that the object or person is actually occupying the physical space near the observer. Originally invented in 1947 by Dennis Gabor,² photographic holograms leverage a technique that records the light scattered from an object and then presents it in a way that appears three-dimensional. Today this technology is sometimes used on credit cards or event tickets as a way to prevent counterfeiting. Digital holograms usually work differently, reproducing that sensation of seeing a three-dimensional object without necessarily leveraging traditional photographic holography. These digital holograms usually do not require any particular set of goggles for the observer, because they can simulate the physical presence of the remote party through other techniques (like projecting an image on a semi-transparent screen), but the experience is usually not as immersive as wearing VR or AR goggles.

Another important concept in the metaverse is the idea of an *avatar*. The term originated in Sanskrit (*avatāra*), but in computer parlance it has come to mean a “graphical representation of a user or the user's character or persona”.³ Avatars can range from flat pictures to elaborate animated three-dimensional models, but they are always representations of the user. The concept of an avatar is widespread in video games and VR environments, where the avatar can be as unrealistic as the user chooses (think: a giant pink dragon or rainbow fairy avatar), but for most holograms and AR applications the avatar selected is usually somewhat similar to the physical appearance of the user in the real world.

2 Recent Experiments in the Metaverse

We have been lucky enough to have had several recent experiences that provided first-hand experience with the technologies that will likely power the future of dispute resolution in the metaverse: one involving VR, one involving digital holograms and one involving a digital conferencing platform.

2.1 Experience #1: Virtual Reality

First, we had the opportunity to collaborate with some fellow mediators on a mediation simulation conducted in the Meta (formerly Facebook) Workroom environment. We all put on our VR goggles (called Oculus headsets) and convened in a virtual meeting room as avatars sitting around the mediation table.

2 www.nobelprize.org/prizes/physics/1971/gabor/biographical/ (last visited 11 April 2022).

3 [https://en.wikipedia.org/wiki/Avatar_\(computing\)](https://en.wikipedia.org/wiki/Avatar_(computing)) (last visited 11 April 2022).



You can watch a video of the full simulation at <http://y2u.be/slQol87thsw>.⁴ Once we oriented ourselves, the mediator welcomed us and gave her opening statement. The simulation then proceeded almost entirely as a face-to-face mediation would have, with storytelling, brainstorming and resolution. You could read the ‘body language’ of the other avatars (who appeared as friendly, cartoony characters) because they tracked the head movements and gestures of the actual people wearing the VR headsets. They even blinked occasionally and smiled when they were not speaking.

Overall, the experience was quite immersive and enjoyable. The Oculus 2 headset we used to enter this VR represents a huge leap forward from the clunky, wired headsets of just five or six years ago. But it should be noted that even with these advances the headset is still quite heavy and uncomfortable to wear for a long period. After about 30 minutes in a virtual mediation, one can definitely feel the head and neck strain from wearing the hardware. Being in virtual space for an extended period can also lead to a slight sense of vertigo and queasiness that is off-putting. But the experiment did demonstrate the promise and potential of dispute resolution in the metaverse. There are rumours that Apple is working on a VR headset that would be even more powerful and light than the Oculus 2 version, so more technological advances may be coming through soon to address some of these shortcomings.

- 4 Apologies for the shaky video. One of the limitations about recording video when you are in VR is that you are essentially wearing the virtual camera on your forehead, and while it may seem natural for you to be nodding along as the other participants are telling their stories, it makes it very annoying for someone to watch the recorded video when they are not wearing a VR headset later.

2.2 Experience #2: Digital Hologram

The second experiment in metaverse interaction was a presentation delivered via digital hologram. We collaborated on a keynote for the Japanese Online Dispute Resolution (JODR) conference, where Mayu was on stage in Tokyo and Colin was in San Francisco,⁵ but via digital hologram we appeared right next to each other:



We could hear each other in real time, so we took live questions from the audience. Even though Colin was appearing digitally, he could walk around the stage, turn 360 degrees and even sit in a chair for a part of the discussion. The illusion of physical presence was created by projecting a special video onto a semi-transparent screen, so it was most effective from the perspective of the audience sitting right in front of the stage.

The technology was provided by a company called ARHT Media (arhtmedia.com), which facilitates hologram presentations for corporate clients. The technology is not cheap; a single presentation at full price can run into tens of thousands of dollars (they gave us a sizeable discount because they are looking to build demand in Japan). But the experience was impressive and professional, and it clearly made an impression on the audience.

The presenter experience was, however, quite different from the audience experience. The presenter wears wireless headphones and a wireless microphone, holds a wireless clicker to advance slides, and is filmed in a well-lit studio with green floors and a green backdrop (the ARHT technology removes the background from the final visual presented to the audience). The presenter can see a video of

5 www.yahoo.com/now/arht-media-hold-hologram-technology-133000655.html (last visited 11 April 2022).

the audience on a monitor but cannot see themselves as a hologram during the presentation. It actually feels somewhat like being on a television programme, staring into the camera and unable to see the audience. But once the hologram connected and the presentation began, the enthusiasm of the audience in Tokyo was apparent, because they bunched together to view the digital hologram from the optimal angle.

2.3 Experience #3: Digital Conferencing

The third recent experience in ‘virtual interaction’ was the recent International Ombuds Association (IOA) conference, held from 4-6 April 2022.⁶ This conference, like many other recent events, was forced by the pandemic to proceed virtually. And similar to other virtual conferences, most of the presentations were delivered via the videoconferencing platform Zoom. However, the IOA conference this year also made use of a platform called Gather (<http://gather.town>), which enabled participants to interact as avatars in a virtual conference centre.

When attendees first connected to the platform, they were presented with options to customize their (very simple, 8-bit style) avatars with different outfits and appearances. Once those selections were made, they could then ‘walk around’ in a two-dimensional space that was set up to simulate a conference environment, with meeting rooms, ballrooms, exhibit tables and casual areas for mingling and hanging out. Similar to face-to-face gatherings, as your avatar passed other avatars, their video would appear at the top of your screen and you could hear what they were saying, even if they were talking to someone else. It really did a good job approximating the experience of walking through a conference, fortuitously encountering a friend and starting up a conversation.



6 www.ioaconference.org/ (last visited 11 April 2022).

This environment was not nearly as immersive as a VR or AR experience, and there was no ‘wow’ factor as there was in the digital hologram presentation. But many IOA members expressed just how much they missed the collegiality of conferences during the pandemic lockdowns and that they were eager to experience casual interactions with their friends outside of the traditional videoconference/web meeting format.

IOA had customized the space to be welcoming to ombuds, with areas like the ‘Belonging Ballroom’ and the ‘Gadlin Conference Room’ (named after legendary ombuds Howard Gadlin) to make the environment seem less generic. Wandering around the conference space in an environment that looked like an old Nintendo video game initially felt odd, but once the video and audio popped up and an old friend appeared via video, the virtual space technology moved to the background and the conversation felt natural and engaging. Communication via videoconference has become quite normalized in the last few years, but what felt new was the ability to walk up and engage with others without having to dial into a specific meeting and announce one’s arrival. It really did feel like being in a social hour at a conference, surrounded by others engaged in conversation.

3 Evaluating the Potential for Metaverse ODR

The three recent experiments described previously have helped to clarify our thinking about what the metaverse is, how it may operate in the future and what opportunities it may present for dispute resolution moving forward. But they have also crystallized some of the potential shortcomings of dispute resolution in virtual spaces, how much of the buzz is just hype and some of the challenges metaverse dispute systems designers will face over the coming years. After considering some of the psychological ramifications of communicating in these environments, we see some reasons for both optimism and scepticism.

3.1 *The Psychology of Interaction in the Metaverse*

As noted by Prof. Jean Sternlight in her excellent article, “Pouring a Little Psychological Cold Water on Online Dispute Resolution”,⁷ ODR designers need to think hard about the psychology of disputants and not assume that technology-based processes can always lead to better resolutions. There is still so much we do not know about how computer-mediated communications affect the dispute resolution process, but it is clear that these new virtual technologies offer new opportunities for us to explore. As Professor Sternlight notes in her article, “[p]erhaps holographic mediators will actually be able to build better empathy and rapport than many humans?”

It can be difficult to predict where technological innovation will occur next. Twelve years ago Professor Susan Exon wrote an article laying out the potential

7 Jean Sternlight, “Pouring a Little Psychological Cold Water on Online Dispute Resolution,” *J. Dispute Resolut.* Winter 2020. https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3446140 (last visited 11 April 2022).

benefits of holograms in dispute resolution that seemed absurdly futuristic at the time,⁸ yet here we are a decade later, discussing first-hand experience using technology similar to what she described. Innovations that may seem so far off as to be unworthy of serious scholarly consideration can quickly become a reality. The hologram projected on the stage in Tokyo was of such high resolution that the audience could see every time the speaker blinked, and even the fabric pattern on the speaker's jacket, even though the video was beamed halfway around the world. But for a disputant, standing in front of a green screen with multiple lights and cameras, and only a small monitor to see how the appearance was being received on the far end, the experience might not be conducive to an effective mediation. This imbalance in experience can definitely affect the fairness and level playing field required for an online dispute resolution process.

Participating in a mediation via VR is also a significantly different experience from sitting in a room with other disputants in the face-to-face world. The avatars can be quite expressive, and their movements can feel authentic, but when you realize the blinks and smiles have been coded in by programmers – not taken from the actual expressions of your counterparties – it can feel somewhat manipulative. Cartoony avatars can do positive things like give high fives, but most do not have an option that expresses more negative body language, like eye rolls and crossed arms. This may lead to an artificially sweetened sense of how well one's comments are going over with the other parties and the mediator. Also, when someone lifts the VR goggles off their eyes and rests them on their head, maybe to find a pen in their drawer, their avatar rolls their head back and looks at the ceiling in a highly unnerving way. It is obvious to the other participants why it is happening (probably because the user is explaining by voice what they are doing as they do it), but it does break the magic of the moment and cuts off the illusion that one is interacting with actual bodies in a physical space as opposed to mere computer-generated cartoons representing the participants.

The Meta Horizon workrooms platform also lets hosts change the configuration of the table in the meeting room with a single click, so it is possible to move from a round to a curved table observing a monitor, or even a presentation set-up where all of the seats are looking at a shared whiteboard in the front of the room. This all happens instantly based on a selection of the host. The parties can also project their desktop computer screen onto the virtual wall or use their 3D controller as a kind of marker to be able to write on the shared whiteboard in front of the attendees. Reorganizing the participants like this in the face-to-face world can be very time consuming and disruptive, but it can be effective in changing the dynamics between the participants. Perhaps the ease of this type of room reorganization in the metaverse will one day make mediators more likely to change room configurations at different stages of the online resolution process.

8 Susan Exon, "Next Generation of Online Dispute Resolution: The Significance of Holography to Enhance and Transform Dispute Resolution," 12 *Cardozo J. Conflict Resol.* 19 (2010-2011), <https://heinonline.org/HOL/LandingPage?handle=hein.journals/cardcore12&div=5>, last visited April 11, 2022.

It is tempting to make comparisons between virtual mediations and face-to-face mediations, but the more appropriate (and useful) comparison may be between virtual mediation and videoconferencing. Mediations over Zoom have become quite commonplace, perhaps even becoming the new default for many practitioners. Do these new virtual environments in the metaverse offer meaningful benefits over a standard videoconference? Videoconference-based mediations present largely the same advantages in terms of cost, convenience and accessibility. They are also as green (environmentally friendly) as metaverse mediations. Our sense is that the current preference is strongly in favour of videoconferencing, if only because headsets (and holograms) are expensive and VR-based meetings are still more complicated to set up than sending a Zoom link.

However, there are some participants who are uncomfortable having their real-world face visible to other participants in a videoconference. Having all of the participants in a video call arranged on the screen in a Brady-Bunch-like grid can emphasize difference, especially if the visual appearance of one of the participants is unlike those of all of the other participants. As an example, during the pandemic many schools launched video classrooms for young students with a requirement that all students keep their camera on at all times so the teacher could see who was paying attention and who was distracted, but over time many schools relaxed those rules because students indicated a discomfort with having their video constantly projected out to all of the other students in the class. Videoconferencing platforms often provide other participants with the ability to pin a selected video and zoom in on it, and the knowledge that other students might be zooming in on their video without their knowledge made some students quite uncomfortable. So VR tools may offer participation options that assuage some of this discomfort.

Research is beginning to analyse how these new virtual and AR communications channels affect people's behaviour.⁹ VR/AR technology is largely trying to trick our brains into thinking that we are looking at actual objects when, in fact, we are just observing pixels. When the resolution on our screen is very low, images come across as quite blocky and unconvincing. But when computers become more powerful and display technology is capable of reproducing many more pixels, our brains are much more easily fooled. Studies of humans interacting with holograms have revealed that the humans treat the holograms as if they are actually taking up physical space. For example, if a hologram is displayed as sitting in a chair, another human will avoid sitting in the same chair because their brain is fooled into thinking that the hologram is taking up physical space even though it is not.

In computer graphics there is a concept called the 'uncanny valley', where a 3D graphical representation of a human face is somewhat accurate, triggering implicit and subconscious notes of empathy within our brains, but there is something just a little off that makes the graphical human face seem alien or off-putting.¹⁰ As computer graphics get better and better and computer processors become more

9 "New Stanford Research Examines How Augmented Reality Affects People's Behavior," <https://news.stanford.edu/2019/05/14/augmented-reality-affects-peoples-behavior-real-world/> (last visited 11 April 2022).

10 www.verywellmind.com/what-is-the-uncanny-valley-4846247 (last visited 11 April 2022).

powerful (i.e. they can process more polygons in a shorter time, thus increasing realism), we may get closer and closer to crossing this uncanny valley. Movie studios and video game companies are working tirelessly to solve this problem, with millions of dollars of new revenue from consumers flowing to whomever surmounts the challenge best. Eventually we may see the release of new movies featuring long dead movie stars, accurately reproduced with this advanced technology. But that just highlights how effective technology may eventually become in manipulating our emotions once we cannot easily distinguish the fake from the real.

One concern that has been repeatedly expressed by mediators is that technology-based communication eliminates the non-verbal communication that is essential to understanding the true reactions of parties in a mediation. If videoconferencing is only shoulders up you may miss signs like crossed arms or a tapping foot. It is possible that holograms or VR could one day more effectively convey those non-verbal signals by showing the full body of participants, replicating the face-to-face experience. Researchers have increasingly been exploring this question.¹¹ Maybe having a hologram display on our desk will one day be as common as the computer monitor is today (there are certainly many start-ups working towards turning that vision into a reality, like <https://holotch.com>).

3.2 *Reasons for Optimism*

A reason why so many science fiction writers have written books about the metaverse is that it is cool. The vision of future global citizens interacting peacefully in gleaming virtual cities captures the imagination, and the power of imagination should not be underestimated. If we are to build new civic institutions for the virtual world arising in the metaverse, the promise and potential unleashed may motivate innovators to design systems that significantly improve upon the legacy processes we use in the 'meat' (or face-to-face) worlds. The shortcomings of the existing systems are well documented (systemic bias, barriers to access, corruption, a lack of transparency, etc.), so perhaps the metaverse is an opportunity for us to build new systems that can work better for more people. Fully realized, the metaverse could enable individuals around the world to transcend their geographic and identity-based limitations to live richer, fuller, more peaceful lives. That is the hope articulated in science fiction about the metaverse, and hope is not something to be dismissed out of hand.

The younger generation, in particular, may be sympathetic to this optimistic vision for the future. Certainly, to date, young people have logged the greatest number of hours in virtual environments. But they have not been spending that time resolving disputes; mostly they have been playing computer games.

Much like online dispute resolution first arose out of e-commerce, the metaverse has really arisen out of computer gaming. Video games have come a long way from the 1980s, when they mostly offered flat graphics on cathode-ray tube (CRT) monitors, with simple characters controlled by joysticks or dials. Now computer games have become incredibly immersive, with rich-textured 3D models

11 <https://ryanschultz.com/2021/07/19/nonverbal-communication-in-social-vr-recent-academic-research/> (last visited 11 April 2022).

that look uncannily accurate, sometimes even more than actual reality. The younger generation has grown up playing these kinds of games, and as a result they have become highly comfortable in virtual environments.

The richest current examples of the metaverse are sprawling open world games like Fortnite, Destiny, World of Warcraft, or Elder Scrolls Online (to mention only a few). The graphics are vivid and often breathtaking, and as graphics processors inevitably get more powerful, the visual quality keeps improving. Other games like Minecraft and Roblox do not aspire to accurately replicate the look of the real world, but they offer players nearly unlimited opportunities to construct in virtual spaces, which unleashes creativity and enjoyment for players. Young people have flocked to these virtual environments, logging hundreds, if not thousands, of hours of playtime. It is a short jump to conclude that these environments are early examples of metaverses.

The fluency and comfort experienced by the younger generation in these environments will definitely shape the way they construct the future as they grow older. Already code created for video games is bleeding over into other less entertainment-oriented sectors, like business and education. The younger generation grew up playing games where they interacted as avatars with others from around the world (perhaps as animated penguins on an ice-floe-based amusement park, as in the game Club Penguin¹²), making such interactions seem not only normal but also fun. Having that experience at a formative age makes an indelible impression, and those of us who did not have a similar experience until adulthood will probably never achieve a similar level of comfort.

As a result, we do believe that the metaverse, as it evolves, will provide helpful options for dispute resolution in many cases. In fact, there will be new kinds of disputes that arise in the metaverse that will be difficult to resolve in the face-to-face world. The fluid identity of online avatars may seem confusing to individuals used to face-to-face interaction, but the younger generation may not only see it as a viable option but may in time come to prefer it. As a result, the younger generation will likely be much more open to communicating with counterparties through the use of avatars in virtual spaces than the older generation will ever be.

It is not hard to envision ways that, for example, metaverse technology could make dispute resolution more effective (perhaps by enabling disputants to jointly manipulate a visualization of their settlement or zoom over property involved in a land use dispute). It could create opportunities for meaningful involvement for remote parties in discussions, perhaps more effectively levelling the playing field. Or maybe metaverse technology could embolden participants to effectively advocate for their needs or change an unproductive or threatening set of dynamics between disputing parties. The metaverse offers all of these potential opportunities, and the best reason for investing time and energy into developing the metaverse now is to learn about the opportunities it presents (as well as the downsides) so that we can lay a strong foundation for improvements yet to come.

12 https://en.wikipedia.org/wiki/Club_Penguin (last visited 11 April 2022).

3.3 Reasons for Scepticism

If some of this idealism about the future of the metaverse sounds familiar, it is because many of these arguments were also being made twenty-five years ago during the initial expansion of the internet. A quick glance at John Perry Barlow's *Declaration of Independence for Cyberspace*¹³ offers many of the same revolutionary sentiments that now motivate pioneers in the metaverse, and we have since seen how that has worked out. Techno-utopianism is a feature of our modern era, and now that version one of the internet has become largely realized (both for better and for worse), the utopians need to find a new mountain to climb. Realists might conclude that there are few reasons why the development of the metaverse should proceed differently from the development of the internet, which shifted quickly from techno-utopianism to profit seeking.

It should also be noted that this buzz around the metaverse is nothing new. Ethan Katsh was consulting on the design of resolution systems for virtual worlds at Second Life/Linden Labs back in 2006.¹⁴ VRML, a language for building these virtual worlds, was invented back in the mid-1990s.¹⁵ So it may be that all of this recent buzz about the metaverse is just another wave of hype. Yes, big money is rolling into the space, and money is often what is required to turn hype into reality. But as advanced as current headsets may be, it is still very much an open question as to whether people will elect to spend any meaningful time in these virtual worlds in the near future. It may require another decade or more of innovation before we cross the usability frontier and see the metaverse become ubiquitous.

A more intractable issue may be the physical discomfort associated with the hardware. There is no denying that it is exhausting to wear a set of VR goggles for any extended period. It not only causes a bit of vertigo looking into computer screens, as opposed to the actual surrounding environment, but it also strains your neck to support the weight of the goggles for more than a short time. Parties would therefore be very unlikely to be willing to use VR goggles for a multi-hour mediation. This may also result in shorter sessions interspersed with frequent breaks to allow the participants to reset their perspective and rest their muscles before they engage in the next session. (We have already seen an increased use of breaks in mediations during video-based sessions, owing to similar concerns around fatigue.)

Chaos can be unleashed by innovation, and the casualties of that chaos should not be overlooked. Back in the 2000s one of the strongest criticisms against ODR was that only rich people could afford the technology and fast bandwidth connections that provided internet access, leaving the less affluent behind. This criticism lost some traction as the price of technology came down. Mobile technology democratized internet access, making it possible for people to leverage ODR tools through inexpensive mobile phones in addition to expensive laptops.

The metaverse suffers from this same shortcoming as the headsets and powerful computers required to access it are prohibitively expensive for most people. Users who can afford to pay top dollar for their technology will have the

13 www.eff.org/cyberspace-independence (last visited 11 April 2022).

14 https://en.wikipedia.org/wiki/Second_Life (last visited 11 April 2022).

15 <https://en.wikipedia.org/wiki/VRML> (last visited 11 April 2022).

whip hand in these virtual environments for the foreseeable future. So if we build redress processes that require access to the metaverse, we are essentially building redress processes that advantage the affluent, thus widening the digital divide. Any new technology goes through this cycle of expensive early adoption leading to commodification and wider access. At this point, hologram and VR/AR technologies are still very expensive, much like laptops were 20 years ago, but over time prices are likely to decrease so they can become more widely available. The question is how long this will take and how powerful (and portable) the technology will need to be if the tools are to become ubiquitous.

In addition, if the younger generation are going to be the primary users of metaverse dispute resolution tools in the near-term, we need to factor this into the design of our ODR processes. This may require additional involvement from parents, teachers or legal counsel to ensure the systems are designed in a way that protects the interests of younger participants.

4 Conclusion

There is no denying that the metaverse is a new, bright, shiny object on the horizon, and it is fun to think about where it will lead us. But as dispute systems designers and dispute resolvers, we need to prioritize the needs of disputants in any discussion about exciting new technologies like the metaverse. It may be exciting to play with these innovations, and marvel at their richness and power, but if they are of no demonstrable value in helping parties find quick and effective resolution of their disputes, we should set them aside. We need to leverage what we know about the psychological needs of disputants, and the neuroscience of disputes, to inform us about the true utility of these new tools. If we get wrapped up in idealism about the potential of these new technologies, we may lose sight of our core task: helping people find fair and effective solutions to disputes.