

media exploration

at Stanford University

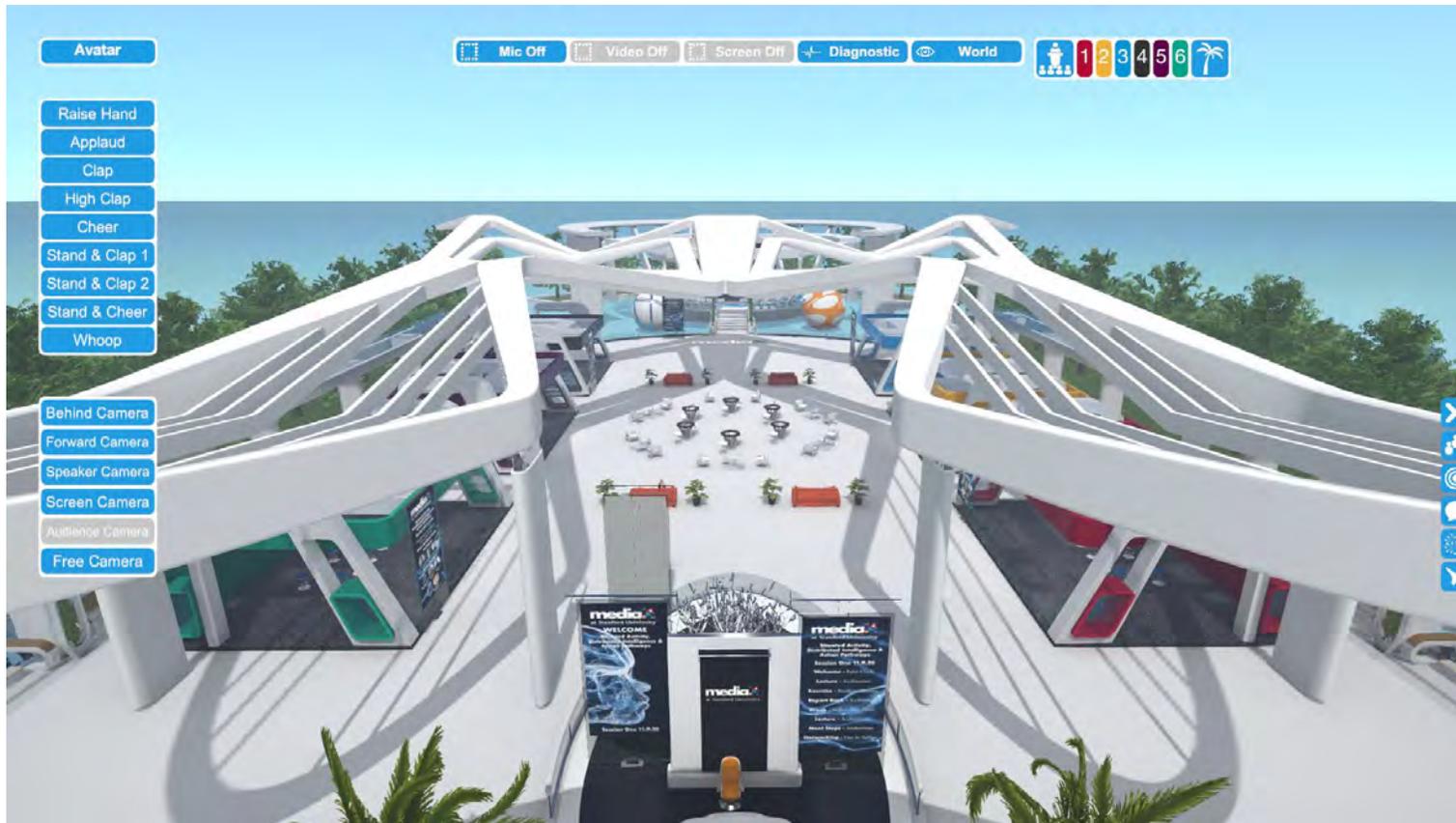
2020
Explorations
& Discoveries



The Sky's No Limit

The mediaXploration Experiment, Part 1

With a virtual world, you are not limited by the constraints of the physical world. Flying and fireworks are just two examples of the advantages of using a virtual environment





How Did We Get Here? And Where Is “HERE”?

mediaXploration, an experimental virtual and immersive environment, enabled mediaX at Stanford University to explore virtual worlds as a means to connect our community, do work together, and create presence and shared experiences. These experiences are essential elements in the collaborations we create with colleagues from around the world, even in a time of travel restrictions.

We have used the mediaXploration space to deliver community experiences that build and share insights from the mediaX membership community of scholars, researchers, instructors, and learners.

With research insights, thinking tools, demonstrations, and working sessions, we continue to reflect on what we know and what we’d like to know about using immersive technologies to collaborate, discover, and learn.

Planning

Why go virtual? With the COVID-19 pandemic forcing all live events at Stanford University to be rescheduled or cancelled, we sought an alternative. We began our planning process by exploring new methods for delivering programs to our member community. Given a decade and a half of supporting research on virtual environments and avatar representations, a virtual world was an obvious candidate for exploration.

The mediaX Community is accustomed to visiting the campus of Stanford University for mediaX events, where we provide a welcoming atmosphere of discovery and innovation, top caliber events and interactions, and a high level of service.

Guided by the knowledge that our member community includes people from many countries, in different time zones, using various computer operating systems and a variety of devices, we sought a platform that would have a low barrier of entry but still deliver a robust experience, deliver a sense of presence and encourage participation. To clearly understand our users' requirements, we made specific inquiries to each member of the mediaX community about the availability of various technical options and their comfort level with them.

With this feedback, we produced a set of user requirements and developed questions regarding functionality and usability of possible platform solutions. We investigated platforms and narrowed our consideration to a group that appeared to meet our community's requirements. Then we held discussions and requested demonstrations with those platform providers. We gathered information from seven virtual platforms, and we met with each to inquire further. After receiving answers to our many questions, we selected our top options to receive test visits. Several platforms were contenders but failed to deliver on our requirements at the demonstration stage.



We Asked Platforms Providers To Answer Specific Questions:

- Which devices are compatible with your platform?
- How much space is needed around the user for those who wish to use a 6-DOF headset?
- Can rooms/spaces be made private?
- Can events be password protected?
- How many participants can comfortably be accommodated?
- How long is required to customize an environment?
- Is support available to customize the platform and at what cost?
- How can avatars be customized?
- How long is the set up/entrance process for new users?
- Do you provide speaker/presenter support?
- Do you provide attendee support on the day of the event?

And More Questions...

- Does your platform require an installed application?
- What kind of data is collected about users of the platform?
- What kind of audio/visual media are supported?
- Is there a mute function?
- How many guests can be accommodated?
- How many rooms can be used?
- Is integration with other platforms (such as Zoom, YouTube) supported?
- Are there any known firewall restrictions?
- How does Q&A work inside your platform?
- What resources/tools/media can be used interactively?
- What experiences have you had in hosting events?
- Can we test the platform in advance of hosting?



Choosing A Path Forward

We ultimately chose Sine Wave Entertainment Company's *Breakroom*. It offered cross-platform support and browser-based access. There were no firewalls and their management offered that access was available around the world, even within China. We chose a business-centric Expo environment and worked closely with the Breakroom team to customize and develop the virtual world for our specific needs.

Sine Wave has vast experience in virtualization, with significant emphasis on video gaming and extreme customization. Although their browser-based platform was new, we chose to experiment with the company and embraced the challenges we both faced.

We had three weeks to make it work!

mediaXploration Is Born

We wanted a platform name that represented and embraced the experimental nature of the space and aligned with the mediaX brand.





Customization Of Environment

It was important to craft our environment as a space that blended familiar “real-world” elements of the mediaX experience with the “impossible” to do in real world elements - WOW Factors.

As in the physical world, the primary goal was to create an experience that served the mediaX community while allowing us to push the limits of a virtual arena. To accomplish this, the mediaXploration space was organized into different areas, each of which required unique design elements.

- WOW Factors
- Primary Landing/Welcome Area – Palm Circle
- Networking Space
- Breakout Rooms
- Main Auditorium

Wow Factors – one to start the event

A key question was: How can we create something that will differentiate this experience from a regular physical-world event? One way we chose to do this was through the creation of two extraordinary experiences: a flyover and a fireworks show.

Around the world, many large sporting events begin with a flyover. We used this same philosophy to begin our event. At the tap of a button, everyone would look to the sky as a plane flew over and dropped the mediaX word mark into the Networking Lounge. The wordmark would explode into pieces and then build itself back together. It was an incredible attention-grabbing moment and was something that would be 100% impossible to do over the Stanford campus for a regular conference.



And another Wow Factor to close it

If you start with a bang, you should also end with one. For the conclusion of an event, we created a fireworks grand finale. Again, with the push of a button, a 40 second fireworks show began. The show exploded above the entire scene and allowed people to see and hear the show while still talking and networking with colleagues.

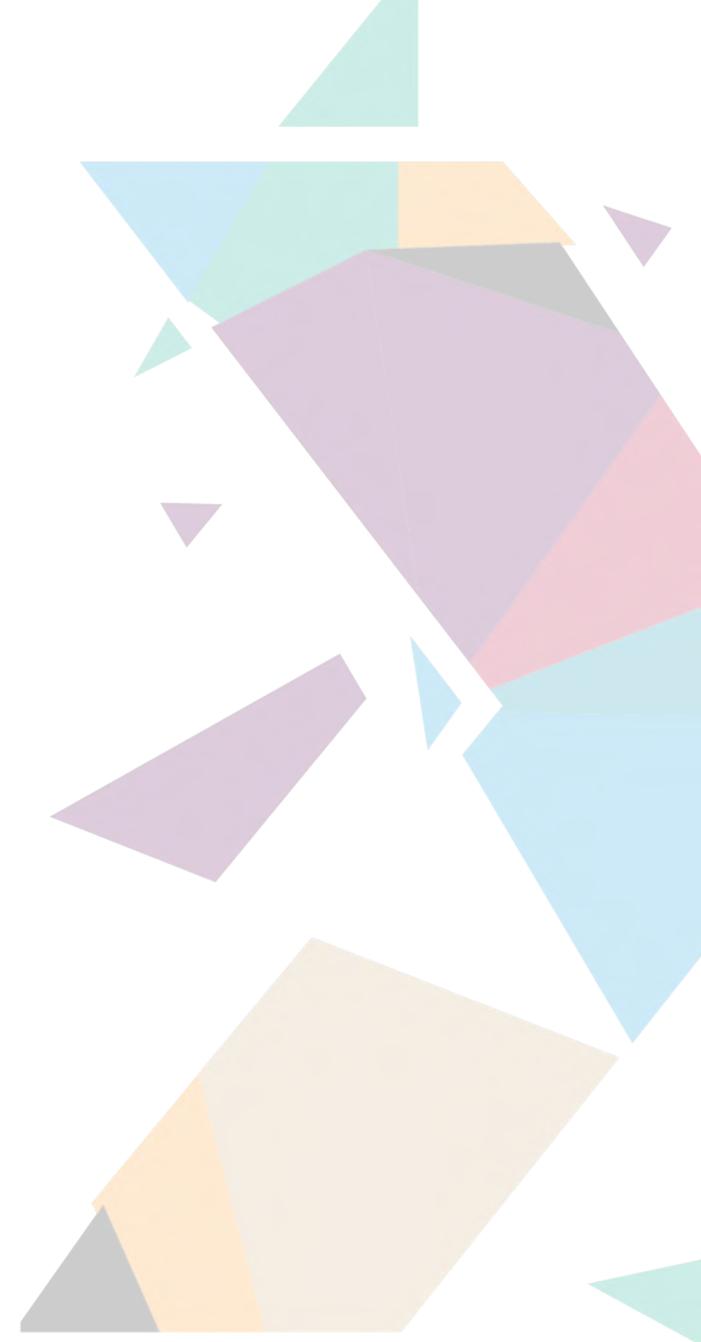
Both the fly over and fireworks were true WOW elements and illustrated the opportunities to take advantage of our new world's affordances.



Palm Circle, A Landing Area

We wanted to have the place where everyone arrived in-world (the “spawning” location) be a welcoming space. To that end, we developed a wide-open area to ensure that people would not enter on top of each other. In this space we also created our own representation of the palm trees that mark Stanford University’s physical entry. Our Palm Circle was reminiscent of this and allowed people to walk among the palm trees.

As with a welcome area in the physical world, we created posters with the events’ speakers and the day’s schedule. These posters could be larger than life without the associated real-world cost. We were able to scale them as if they were 10 feet tall and this brought familiar real-world elements into play at a scale much larger than usual.

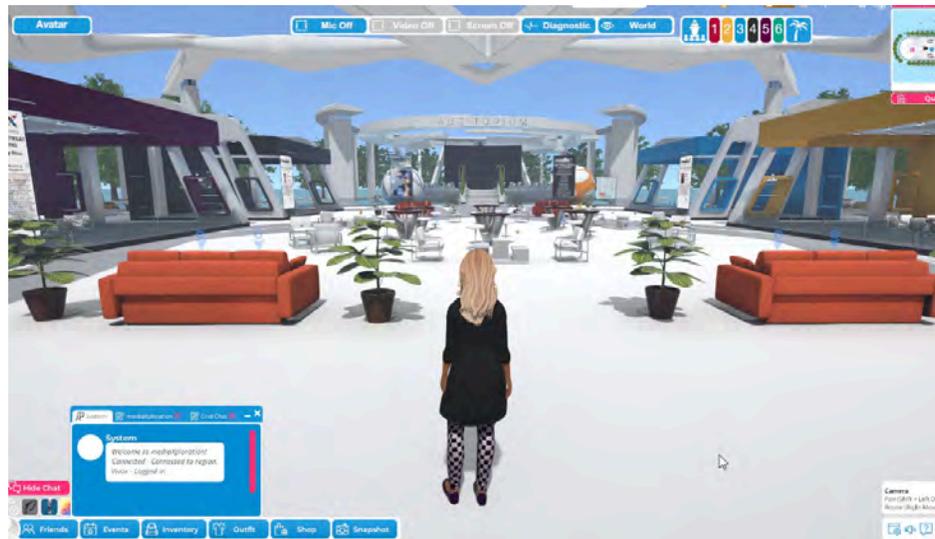


Networking Lounge

A community event needs a place to mingle. Over the years our members have told us that in addition to meeting Stanford's world-class thought leaders, they love meeting and networking with each other. We added chairs, tables with refreshments, and couches to invite people to sit and talk.

The Networking Lounge is wide open with no roof, bright light and high energy. It is also the gateway to the Breakout Rooms. All 6 Breakout Rooms can be seen from the Networking Lounge, so participants can see what's happening even while sitting.

The Networking Lounge also has spatially differentiated acoustics, enabling people to hear others nearby but not those farther away or in the other spaces.



Breakout Rooms

It was vital for us to customize the 6 Breakout Room spaces to be differentiated in appearance and function from the other places in-world. They were intended to serve as working areas for small groups, for presentations with lively interaction, and for private conversations. We used the mediaX color pallet and chose a signature color for each room. Creating these colors made it simpler to transport people to different rooms (a feature of customized teleporting). Color-coding the rooms also made it easy to direct participants for small group activities, as well as for participants to arrange their own private meetings.

We also decided that instead of having the seating facing a screen on the back wall in every Breakout Room, it would be preferred to have people facing the main common lounge space. This design element intended to give participants the perception of being connected, that their avatar was not isolated, and provide a sense of ‘place’ for participants, who could see activities elsewhere in mediaXploration.

The importance of being able to work as a team was critical in creating the breakout spaces. All users in the Breakout Room can share personal screens that quickly materialize at the front of the area with the click of a button and can accommodate a video feed or presentation file from any participant.

Each of the 6 Breakout Rooms has its own acoustic space; only people in that specific room can hear each other, and conversations in the other locations are not audible.



Breakout Rooms – two designs



Auditorium

The Auditorium inside mediaXploration was set up to give an expansive feeling within an intimate setting. Its design is similar to an auditorium in the physical world with front facing seats set in semi-circular rows, facing a stage/screen area. Consistent with our emphasis on innovation, the Auditorium in mediaXploration has an upscale and futuristic aesthetic. Our design objective was to retain the entire virtual space's primary aesthetic yet allow presenters to be the focus of attention in the Auditorium.

Like the other spaces, the Auditorium had its own acoustic space, so only people in the auditorium can hear each other, and sounds in the other region locations are not audible. Audience expressions of appreciation (clapping, shouting, standing) are enabled by button clicks – for each avatar seated in the audience.



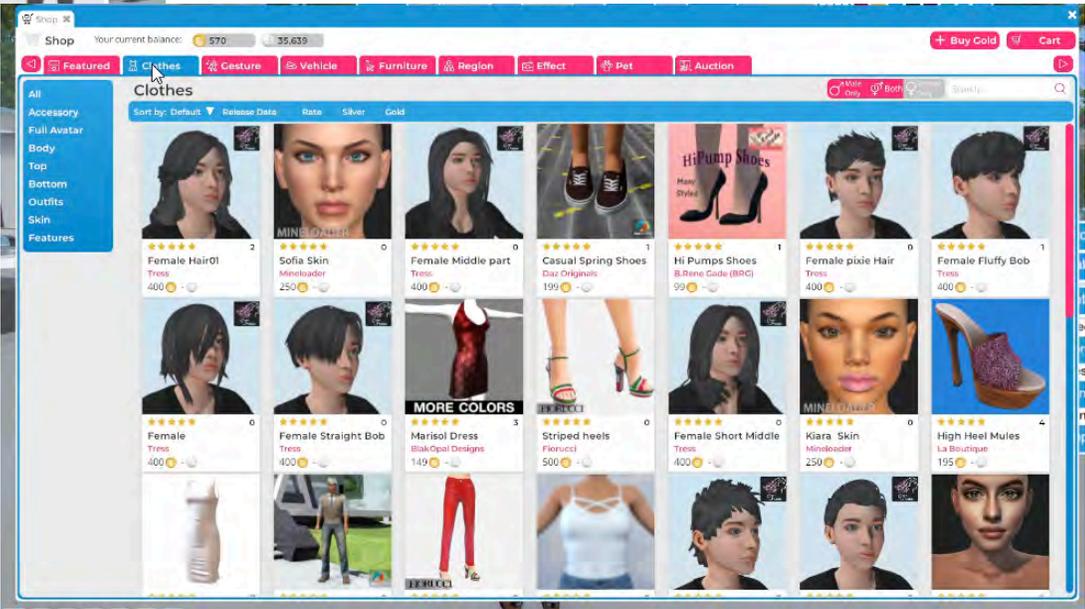
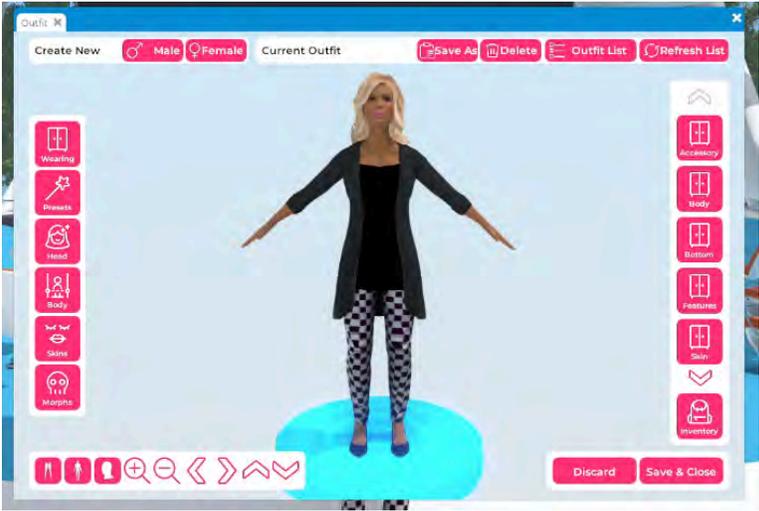


Customization

The opportunity to create a customized avatar was an attractive feature in our choice of Breakroom as our base platform. The range of customizable features is extensive. From hair color to skin color to cheekbone and nose positions, the platform's interactive tools allow each person to create a unique representation. Everything on the avatar can be adjusted, which allowed participants to be creative, have a personal identity and stand out in the space rather than blending in. However, to focus our experimentation, we did not dive deeply into customization. We requested six pre-determined 'business casual' avatars for users to choose from, with relative parity between their appearance and at-rest gestures.

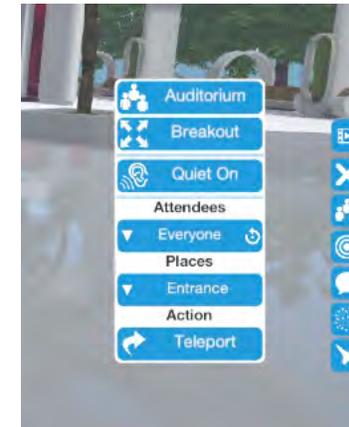
Although each avatar could be further customized, most users did not have the time to explore all the available options. We also found that the system for customization was not intuitive, so those unable to spend significant time navigating the system were more limited in their choices. Participants who had increased exposure to video-gaming were more adventurous in their customization efforts. Within a range of professionally appropriate options, there were extensive choices to customize an avatar and add features, change clothing or accessories.

Customization



Event Management

We created custom teleportation between locations within the mediaXploration region to facilitate smooth event flow with novice users. More experienced users easily navigated the regions using color coordination identification of the Breakout Rooms, and icons for other spaces. The teleportation admin control panel permitted us to move less experienced users from region to region easily. Overall, this combination of features helped us run the space smoothly.



So, What Did We Learn?

For mediaX planned events, a key priority is always to create an environment and experience that is empowering and inspiring. It was critical for our virtual platform to make the in-world experience as convenient and smooth as possible for our members and speakers – from the time they joined to the time they left.

To do this effectively, we offered multiple touchpoints in an onboarding process to create comfort with the virtual environment:

- A. Each speaker and each participant was offered the opportunity to have a personalized training session in-world. This training let them practice logging in and ensure that their bandwidth was sufficient to support the platform and to learn the buttons that allowed for controlling sound, video, movement, and teleportation within the space.
- B. In each of these training sessions, a Breakroom employee was present to provide additional support. This presence enabled a higher degree of effective troubleshooting when questions arose in the training sessions, particularly in setting up our speakers' needs.
- C. Each participant was emailed a “User Guide” with instructions for the space’s main operational tasks. We anticipated the most frequently asked questions and worked to provide those answers in a format easy for users to access on their own.



What Else Did We Learn?

Another aspect of creating ease of use for event participants was to guide them through the event whenever possible. To do this, mediaX utilized the customized teleportation controls. In feedback from the event, both the event staff and the event participants commented on the beneficial use of the teleportation buttons. These buttons allowed avatars to jump between various spaces in the virtual world quickly.

As event coordinators, the mediaX staff also could manually teleport participants. This was most useful when gathering all participants to the Auditorium for both the official start of the event presentations and gathering all participants back into the Auditorium from the breakout spaces or to Palm Circle for the event's close.

Event Management Insights

As people familiarized themselves with how to maneuver and participate in the mediaXploration space, either in the training sessions or at the mediaX events, another key element to a smooth user experience for us as event managers was the ability to troubleshoot technical issues as they arose. We were grateful that almost all participants and all the speakers took advantage of the offer for training sessions, as it enabled time to work through technical questions in advance of the live events.

Even so, as this was an experimental, first-time foray into virtually-hosted events, we did experience technical difficulties. Each day we learned new tips for supporting our speakers and participants.

A few key learnings evolved from those technical challenges as follows:

- Even with these advance preparations, some participants did have challenges logging into the virtual world. Several participants shared that they believed that their network connections were insufficient to maintain participation in the world. So, in the future, we will provide recommendations on bandwidth requirements.
- The mediaX definition of “testing” has been expanded in time and complexity for activities in virtual worlds. Compared to in-person physical events, more elements are not under our immediate control, and therefore our standard amount of testing and troubleshooting time is insufficient. For example, speaker orientation by showing the controls to share their screen was not enough. We found it necessary to have them share their screen, with the presentation they would use, from the physical location they would use, and from the computer they would use.



More Insights...

- It was beneficial to have the ability to move to an alternate space within the mediaXploration region with a speaker – during a program - to troubleshoot an issue, and while the program continued without pause.
- However, this required enough event coordinators to fulfill the many diverse roles necessary in a virtual environment: entry and initial welcome, hosting, emceeing, moderating, and troubleshooting.
- For this initial event, multiple backchannels (Instant Messenger, texting, Zoom, phone) were employed, requiring switching windows and devices. In the future it will be useful to be able to remain in-world while maintaining easy backchannel communication.
- An in-world chat system can be an effective tool in troubleshooting as well, and this was exemplified in multiple ways. One of the participants was unable to get his microphone to work. However, he was able to send questions to other participants via the chat window. The other participants were then able to share that question with the speaker.

And some opportunities to further push the limits:

- In the future, we are hopeful that virtual space event coordinators will have visibility into the functionality of a speaker's microphone or network connection. This would enable the event coordinators with administrative control permissions to ensure that speakers and attendees can seamlessly engage in full participation.
- Chat can also be a useful tool for the administrators to communicate during the event, as a backchannel, and we found this is necessary. Differentiating the grid chat, system chat, and administrative chat functions of this platform was challenging. For both participants and event managers, the user interface and notification functionality of chat functions is an opportunity for further developments.
- While we had created a small number of stock avatars available for ease of participants' initial exposure into the virtual world, we did learn that a few additional personalization elements are desired to increase feelings of presence and identity in the virtual world. These elements included: gender, skin color, eye color, hair style and color, facial hair, and clothing options top and bottom. With the ability to alter these few elements, people could feel more connected to their avatars.



...more opportunities:

- Some people chose to customize their avatar similar to their ‘live’ appearance, others wanted to portray a different image as an avatar. Represented as avatars, participants and speakers reported that they felt group participation in the event. The ability to add their own physical appearance to their avatar would be a desirable addition to the customization options.
- The participants’ ability to provide feedback to speakers by clapping and waving was also appreciated and increased the feeling of active participation. In the future, there will hopefully be more nuanced avatar interaction and expression, which can enable a more realistic engagement between people in-world together.

One unexpected finding was that it is possible to have an event where the hosts and the attendees are having significant technical difficulties, yet the speakers have an excellent experience. Conversely, the attendees can have a well-functioning experience, yet the speakers have significant challenges, such as trouble screen-sharing, losing voice or audio capabilities, or freezing.

What can our Partner, Breakroom, Learn?

We recognize that we are early adopters in this experiment. We trust that our learnings will inform Sine Wave Entertainment’s Breakroom about our user experience and provide pointers for priorities in supporting white label users of the platform. Some of the identified needs are accessible right now, some can be achieved with a dedicated Unity technician on our staff, some will need Breakroom to implement the improvements:

Likes	Wants & Needs		
Modern, business-like template appearance	Ability to edit, add, remove, reorganize region	Whiteboard, post-it notes, video player in furniture inventory	Ability to download pdf agendas, documents, certificates
Human-centric avatars	More lifelike features on avatars (selfie/morphs)	Add profile information (photo/bio/links) to ‘inspect avatar’ function	Be able to swap business cards, email addresses, etc.
Willingness to provide or create solutions	Prompt responses to urgent issues	Reliable, tested solutions	Gesture control improvements – raise hand more obvious, applause sound
Customer Service – dedicated project manager and support staff	Prompt communications	Clear channel of support, with backup options, especially during live events	Platform upgrades announced via communications to grid admins



Reflections

Given the current continuation of remote work during the COVID-19 pandemic, and the likelihood that some changes to working styles and expectations will have long-term effects, we are very pleased that we chose to engage in hosting virtual events.

As mediaX and our member organizations explore the possibilities of virtual worlds to connect and work together, the ability to create feelings of presence and of shared experiences are something to be further explored. When initiating our virtual events in July, we understood that this would be an opportunity to learn about virtual worlds and the unique challenges and benefits of hosting events in those worlds while simultaneously providing a new experience for mediaX members.

We did not anticipate the number of technical challenges that we would encounter, as we expected a smoothly-functioning system for our events. We are certainly cognizant that engaging in a virtual world was a new experience for many participants, so some the challenges originated on their end as well.

Attendees, as well as speakers, have generally been enthusiastic about the opportunity to participate in an event held in mediaXploration. We will continue to explore new opportunities and formats to use the mediaXploration space while also striving to build a stronger feeling of connection to the mediaX brand and the spirit of Stanford University.

We look forward to continuing to develop our relationship with Sine Wave Entertainment's Breakroom (now a mediaX member company) and learning together how we might offer visitors to mediaXploration the best combination of programmatic content in a virtual environment, in the locations of their choice.

Always Ready for Feedback, Always Ready to Learn

Onward!

We want to thank the entire mediaX member community for their contributions and participation in mediaXploration. Their open mindedness allowed us to experiment in this virtual and immersive environment.

For more information on joining the mediaX member community please email Martha Russell martha.russell@Stanford.edu.

For more information about mediaXploration, please contact Addy Dawes adelaide@stanford.edu

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