



Rountable 02

Equity & Inclusion in the Metaverse

March 10th, 2023

Meta • Artificial Intelligence Institute of Seoul National University • XR Hub Korea • metaverse • equity • inclusion • diversity • non-discrimination • accessibility • empowerment • transparency • digital divide • stereotyping • marginalization • denigration • bias • cultural differences • representation • capacity building • multilingual support • collaboration • bottom-up approach • accessibility standards • assistive technology • community guidelines • property • open-source • democracy • infrastructure • commons • regulation • governance



PARTICIPANTS

Moderator



Yong Lim

Director, SNU AI Policy Initiative
Associate Professor, School of Law,
Seoul National University

Presenters



Esther Jeong

Director, Diversity, Equity & Inclusion,
Reality Labs, Meta



Youngjoon Kim

Coupang Financial

Experts (A~Z)



Marcus Carter

University of Sydney



Kieu-Nga Nguyen

Center for Studies and Applied
Sciences in Gender - Family - Women
and Adolescents (CSAGA - Vietnam)



Hammad Cheema

Professor, Principal & Dean, School
of Interdisciplinary Engineering &
Sciences, National University of
Sciences and Technology, Pakistan



Hai Jin Park

Hanyang University, School of Law



Rachel Gong

Khazanah Research Institute (KRI)



Melanie Reyes

Miriam College
Women and Gender Institute



Winnie Law

Centre for Civil Society and
Governance, The University of
Hong Kong



Rohan Samarajiva

LirneAsia



Eun-Ju Lee

Seoul National University, College
of Social Sciences, Department of
Journalism & Information



Panote Siriaraya

Kyoto Institute of Technology



Sun Sun Lim

Singapore Management University



Joan Yoo

Seoul National University, College of
Social Sciences, Department of
Social Welfare



Jih-Hsuan Tammy Lin

College of Communication, National
ChengChi University

Meta and the Artificial Intelligence Institute of Seoul National University (AIIS) conducted the second in a series of four roundtable discussions, focused on building the Metaverse responsibly. The second roundtable discussion was on "Equity & Inclusion", with the next two scheduled roundtables slated to focus on Privacy & Data and Safety & Well-being.

Esther Jeong (Director, Meta Reality Labs) presented on "Changing the World by Building an Inclusive Metaverse". Youngjoon Kim (CEO, Coupang Financial) presented on "How the Metaverse Can Foster and Promote Equity and Inclusion".

The discussion was moderated by Yong Lim (Director, Seoul National University AI Policy Initiative; Associate Professor, School of Law, Seoul National University). 14 experts from 12 countries across the Asia Pacific region shared their views on the following questions:

1. **How do we understand Equity & Inclusion in the Metaverse.** Specifically, what does Equity & Inclusion mean in the Metaverse?
2. **How can the Metaverse be used to espouse Equity & Inclusion?** (For example, facilitating inclusive workspaces for people with disabilities, working parents, etc.)
3. **How can we address representational harms such as underrepresentation, denigration and stereotyping in XR technologies and the Metaverse?** How should avatars or other self-representing tools function and look like, to address or minimize those harms?
4. **How can developers and content creators help make the Metaverse more inclusive?** What can be done to make assistive technologies standardized across devices? How could we deal with language barriers, cultural gaps, differences in physical features which may affect XR device functionality, etc.?
5. **Are there any economic equity or inclusion problems involving property ownership in the Metaverse?** (For example, owning property in the Metaverse, virtual currencies, assets protected by intellectual property, etc.)
6. To attain diversity, a bottom-up approach or participation of diverse groups would be necessary. **How can we facilitate this process or governance?**



1 What is Equity & Inclusion the Metaverse?

The potential of the Metaverse lies in the fact that the technology empowers people in ways unimaginable in the real world. To fulfill its potential, we should foster an environment where all perspectives and interests are welcome and support areas where the 'digital divide' hampers the ability to meaningfully participate in the communication. In so doing, we should also be mindful to openly discuss important issues and promote the free exchange of ideas.

2 How can the Metaverse be used to espouse Equity & Inclusion?

The Metaverse has far-reaching positive impacts as a communication medium. Therefore, we should invest in the space so that as many people can derive value from it. It is crucial to develop social programs to incentivize people to access the Metaverse or get trained and be familiar with these issues, so that their voices may be heard throughout the Metaverse and they can reap the full benefits that the Metaverse can offer. The efforts to promote and incentivize people to participate in the Metaverse should be followed by the efforts to regulate the Metaverse to make it a safe and sound place of communication.

3 Addressing representational harms in the Metaverse:

Our efforts should be geared towards 'capacity building' for the marginalized and the underprivileged, so that they are armed with the right tools and skill sets to be actively involved in building the Metaverse. We should conscientiously seek out avenues to ensure the participants are properly represented in the Metaverse, and in so doing, even try to transcend traditional classifications and stereotypes. We should also think about ways to address some of these issues in a more open and creative way, so that we are not unilaterally imposing a certain viewpoint upon others to follow.

4 Roles to be taken on by developers and content creators in the Metaverse:

We should develop accessibility features and ensure proper representation of participants. In designing the Metaverse, we should respect cultural differences and provide multilingual support. The design should go through and withstand user testing processes which will lead to a refinement of community guidelines. Industry actors should implement training of necessary skills, governments should enforce minimum standards, and users should voice their opinions in this collaborative process to promote utility and safety in the Metaverse.

5 Economic Equity & Inclusion and the issue of property ownership:

The Metaverse could be a testbed for various social models for property ownership and democracy within its environment. We need government leadership and investment to further develop Metaverse infrastructure and connectivity so that we can harness the potential of the Metaverse as a technology that can enhance and finetune our democratic and capitalist economy.

6 Facilitation of governance in pursuing diversity through bottom-up approach:

We should be able to create the Metaverse where people are incentivized and motivated to join. Once we provide user experiences in the Metaverse that engage users on a personal level, the users will care about the Metaverse enough to build norms that will resonate across differing viewpoints and various backgrounds. That is why we should strive to widen the user base to include even the most indifferent, nonchalant critics and skeptics of the Metaverse.

“For the Metaverse to live up to its hype as an empowering communication tool and a futuristic space to enhance our democracies and economies, we should collaborate to equip, educate and engage with the users from various backgrounds and with different perspectives.”



How to Cite this Report

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* This report was prepared by SNU AI Policy Initiative (principal: Seungbum CHOI)

1 What is Equity and Inclusion in the Metaverse?

Participants discussed how the Metaverse could be a source of empowerment and how best to design it to be inclusive of people from different backgrounds and viewpoints. Their thoughts are summarized as follows.

Empowerment Tool

The Metaverse can be an enabling technology. It empowers people in such a way that they are no longer limited by disabilities. Through the enabling technology of the Metaverse, disabilities no longer become much of a hindrance to interaction. For example, to make interactions within the Metaverse more accessible to people with a cognitive disability of some kind, a particular VR application could slow down the pace at which information was being delivered to the user. If we actually could perhaps include a little slider that would change the pace of the delivery of the information, the same application could be inclusive for a much wider variety of people. (Marcus Carter)

Open Design

Equity and inclusion are what we strive to achieve as part of an open design, where everyone can participate and engage in minimalistic intervention to the architecture of public spaces so that no one is actively excluded. Equity and Inclusion are not some absolute conditions of equality or outcomes that stifle the freedom of participants of the Metaverse. The goal should be to provide minimum levels of access to all and then leave the rest of rulemaking to the participants or app developers that enjoy or provide services on that basic structure. (Rohan Samarajiva)

Safety and Relevance

Equity and Inclusion should be discussed in terms of both access to the Metaverse and experience within the Metaverse. Although digital devices and services have become cheaper and more affordable, potentially narrowing the gap in access along the spectrum of socio-economic status, the divide can still exist in user experience, depending on the content and activities available in the Metaverse. Media reports on the Metaverse, at least in Korea, frequently highlight its commercial usage, like purchasing luxury brand goods and other highly expensive virtual items, which many people would find irrelevant to them. To ensure Equity and Inclusion in the Metaverse, two things are crucial: (i) Everyone should feel safe and welcomed; and (ii) the content should be diverse enough so that everyone can find something that is personally relevant. (Eun-Ju Lee)



Marcus Carter

Associate Professor,
University of Sydney



Rohan Samarajiva

Chair, LirneAsia



Eun-Ju Lee

Seoul National University,
College of Social Sciences,
Department of Journalism &
Information

Accommodating Different Perspectives

Three basic concepts that I think should be added when we're talking about equity, diversity and inclusion are (1) non-discrimination, (2) respect for culture, and (3) gender sensitivity. We need to promote an environment where people can interact in a way that is free from harassment, culturally sensitive and gender sensitive. The virtual world should be designed to be inclusive and accommodate the diverse needs, experiences, and perspectives of users, regardless of their background, ethnicity, race, gender, age, sexual orientation and ability status. The Metaverse needs to be designed in a way that is gender neutral and does not reinforce gender stereotypes. We need to avoid using gendered language and symbols that may exclude or offend certain groups; avoid using pronouns that assume a person's gender (such as 'he' or the 'she' and instead use gender-neutral language like 'they' or 'them'). More importantly, there should be established policies and guidelines that promote a safe and respectful environment for all users and tools that allow users to report inappropriate behavior or harassment. In a sense, equity, diversity, and inclusion in the Metaverse refers to the creation of a virtual environment that is free from discrimination, bias and prejudice where all users have equal access and opportunities to participate and engage. (Melanie Reyes)

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Leveraging Diversity to Enhance Communication

Presenter: Esther Jeong, "Changing the World by Building an Inclusive Metaverse"

How do we build a Metaverse with equity and inclusion in mind? By building diverse teams that leverage cognitive diversity and different perspectives. At Meta, we aspire to do this by fostering an inclusive workplace where everyone can bring their best selves to work, and designing inclusive products with an inclusive mindset.

Utilizing the next generation of tools that support productivity, people can feel truly present, productive and connected at work, regardless of their physical distance will enable real collaboration. It is also important that the Metaverse is broadly accessible both for creators and for users from diverse backgrounds. There will be many entry points through which people can participate using any device, including their mobile phones. The Spark AR platform, for example, has

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Melanie Reyes

Executive Director, Miriam
College Women and Gender
Institute



Esther Jeong

Director, Diversity, Equity &
Inclusion, Reality Labs, Meta

hundreds of thousands of creators and 190 countries building immersive experiences across Metas, apps and devices.

Breaking down language barriers is also crucial in building a more inclusive and connected Metaverse. Imagine you are on a vacation abroad at a restaurant with a menu that you cannot understand. You put on your AR glasses and the words from the menu are being translated, leaving you with the menu in your language of choice. This allows you to be present.

Avatars will be a crucial bridge into the Metaverse, so we're making them more expressive, more customizable, more diverse, and more accessible to use easily across different apps. Avatars today can be designed with cochlear implants and over-the-ear hearing aids for one or both ears.

An inclusive Metaverse benefits everyone, and we strive to be proactive together as a community and aim to make every facet of the Metaverse reflect the diversity of the physical world, with equity and inclusion at the forefront.

Opportunities and Challenges for Equity and Inclusion in the Metaverse

Presenter: Youngjoon Kim, "How the Metaverse can foster and promote Equity and Inclusion"

The Metaverse can be a powerful tool for promoting equity and inclusion in society, but it may also lead to significant challenging risks that may need to be addressed by various parties. How can the Metaverse enable access to information, resources, opportunities and communities that may otherwise be limited or unavailable in physical reality? We can think about this in terms of some examples as below.

First, the Metaverse can enhance educational outcomes by providing immersive and interactive learning experiences that cater to different learning styles and preferences. Students can explore virtual worlds that simulate historical events, scientific phenomena, or artistic expressions. Second, the Metaverse can offer inclusive and accessible spaces by allowing people with disabilities or marginalized identities to express themselves freely and authentically through avatars and other various modes of communication such as voice, text, or gestures that suit their needs and preferences. They can also join communities that share their interests, values or experiences without facing discrimination or stigma. Third, the Metaverse can create global networks of collaboration and innovation by powering individuals and groups to solve complex problems and achieve social impact. People can participate in co-creation platforms that enable them to design, prototype and test solutions for

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various challenges such as climate change, poverty or healthcare. They can also leverage collective intelligence and crowdsourcing tools that allow them to tap into diverse perspectives, skills, and resources from around the world.

However, the Metaverse poses some challenges and risks for Equity & Inclusion by creating new forms of discrimination, exclusion, or harm that may affect users' well-being or rights. Allocative fairness issues arise

Allocative fairness issues arise when a computational system allocates resources or opportunities differently to different groups of people, resulting in unequal outcomes or benefits.

when a computational system allocates resources or opportunities differently to different groups of people, resulting in unequal outcomes or benefits. These issues may present themselves when not all people have equal access to high quality XR devices to enhance their immersion and interaction in the Metaverse, or when language barriers and governmental bans

or regulation limits their experience within the Metaverse. Some users may have an unfair advantage over others in the opportunity to buy and sell virtual property due to their wealth, power, or influence.

Representational fairness issues arise when a computational system misrepresents or erases the identities, values, or experiences of various groups of people resulting in harm to their dignity or agency. This can manifest itself in various forms. First, some users may fall victim to stereotyping in the Metaverse based on their race, gender, ethnicity, religion, sexuality, or disability. They may be exposed to inaccurate or harmful representation of their groups that reinforce these biases. Next, some users may face under-representation in the Metaverse due to a lack of diversity and inclusion in content creation and consumption. They may have limited access to content and platforms that cater to their needs and preferences. Third, some users may face denigration in the Metaverse due to harassment and assault from other users. They may be subject to verbal abuse, cyber bullying, and so forth.

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Equity and inclusion in the Metaverse are important and challenging issues that require careful consideration and collaboration between various stakeholders. Developers should ensure accessibility features, implementing safeguards against abuse, and so forth. Users should be encouraged to behave responsibly and respectfully in the Metaverse by following community guidelines and respecting others' boundaries and reporting others' behavior. Finally, policymakers may regulate the Metaverse by establishing clear standards, enforcing accountability mechanisms, and protecting user rights. They should also collaborate and discuss with other stakeholders to ensure interoperability across different platforms and jurisdictions.



Youngjoon Kim

Representative Director/
Attorney at Law
Coupang Financial

2 How can the Metaverse be used to espouse Equity and Inclusion?

An Empowering Technology with Far-reaching, Positive Consequences



Joan Yoo

Professor/ Department Head,
Seoul National University,
College of Social Sciences,
Department of Social Welfare

The Metaverse will definitely help address some of the inequalities that its users are experiencing in the real world, particularly those who have been experiencing physical restrictions as a result of disabilities or illnesses. It will give some people the opportunity to travel to different destinations or grant others the chance to overcome mental health issues as a result of some tragedy or trauma they experienced in the real world. As an example, one of my students suffers from panic disorders and consequently was unable to leave his home. Typically this would have severely restricted his access to education. However, through online classes offered by universities during the COVID-era, he was given the opportunity to interact better with his peers and professors in virtual worlds or online.

There is room for improvement when it comes to designing workspaces that are accessible to individuals with disabilities. Companies are generally reluctant to hire individuals with physical disabilities. Fear of fines for discriminatory employment practice does not give them adequate incentive to hire people with physical disabilities. In many cases, the companies would rather pay the fine than hire people with disabilities. However, these marginalized individuals are more likely to thrive in such a Metaverse-based online system. If they are provided with proper job training programs, their chances of joining the work force will be enhanced and we might be able to see discriminatory employment patterns dwindle over time.

Individuals from low socioeconomic status often do not have the luxury to try out the Metaverse. In that regard, we should try to develop social programs to incentivize people to access the Metaverse or get trained and be familiar with it, so that their voices may be heard regarding critical issues regarding the Metaverse and they can also reap the full benefits that the Metaverse can offer.

On a related note, it is crucial to think about governance and rulemaking in the Metaverse. The way in which we can ensure adequate representation in these various decision-making processes will promote transparency in the Metaverse.

As a final point, the way we collect and use data should be more transparent. Marginalized individuals are either not aware or they do not have the skill sets to understand and evaluate the important issues regarding privacy and personal data collection. Moreover, they may not

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have access to this information. We must raise awareness about their privacy issues, and how their thoughts, decisions, and behaviors are processed in the digital sphere, and, in turn, may influence their future thoughts, decisions, behaviors, and even opportunities through the big-data processing mechanisms. (Joan Yoo)

Promote First, Then Regulate

While I agree in setting boundaries and policies to regulate discrimination in the Metaverse, I would like to first emphasize how the element of the Metaverse, in and of itself, can be a great empowerment to the so-called marginalized individuals, and that therefore, we need to bring our attention to designing the key functions of the Metaverse to maximize its potential in enhancing human interaction and communication.

Almost 10 years ago, I conducted an ethnographic study on a virtual platform called Second Life. We didn't have VR glasses back then, and all we had was a keyboard and a mouse to navigate the virtual world. Among the 15 of the users I interviewed, 50-60 percent had physical disabilities and I remember them enthusiastically endorsing the platform, saying how it made them feel more normal.

Avatars and voice-based chat technologies are also interesting facets of the Metaverse. People who may have faced certain biases in real world interactions due to their disabilities or accent may be liberated from those biases in their alter-ego, when mediated through an avatar in a virtual environment or aided by text-to-speech (TTS) technology. (Panote Siriaraya)

A Space that is Safe and Sound

Under-represented populations in the Metaverse, e.g., groups including women, people with disability, and members of LGBTQI+ community are more susceptible to cyber bullying and harassment. We need to provide a sense of security and belonging to these individuals by designing the Metaverse in a way that their interaction with the world is no longer hostile and abusive. (Kieu-Nga Nguyen)



Panote Siriaraya

Assistant Professor, Kyoto
Institute of Technology



Kieu-Nga Nguyen

Deputy Director, Center for
Studies and Applied Sciences
in Gender – Family – Women
and Adolescents (CSAGA-
Vietnam)

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3 How can we address representational harms such as underrepresentation, denigration and stereotyping in XR technologies and the Metaverse? How should avatars or other self-representing tools function and look like, to address or minimize those harms?



Eun-Ju Lee

Professor/ Department Head,
Seoul National University,
College of Social Sciences,
Department of Journalism &
Information

Transcending Stereotypes

The concept of Inclusion in the Metaverse should go well beyond an 'equal representation' of demographic traits as they exist in the real world, because the Metaverse allows people to create their own self identities that are not even feasible in the physical world. Thus, when building an avatar, users should be provided with a wide range of options to choose from, including those transcending the binary classification of gender (male versus female) as well as non-human entities.

Further, not only do we need to empower people to freely express themselves in the Metaverse, not bounded by their physical conditions and associated stereotypes, but we should also continue to promote the Equity and Inclusion principles in and outside of the Metaverse. Without such efforts, the same old social stereotypes and discriminations, this time on the basis of avatars, will be reproduced and reinforced in the Metaverse. After all, it is how others react to our appearances and behaviors that define who we are and who we think we should be. In cultivating such awareness, XR technologies can be a great asset because they afford us truly unique opportunities to experience the world in someone else's body and make sense of it from a completely different perspective. (Eun-Ju Lee)

Capacity Building

If Chat-GPT is the 'iPhone moment' of AI, the Metaverse would be the 'iPhone moment' of VR. We can draw on our experience of the world wide web and think about how human rights issues have progressed and will continue to be solved through this new medium which is the Metaverse.

In that regard, a lot more 'capacity building' efforts should be channeled towards the marginalized and the underprivileged, so that they are armed with the right skill-sets to be actively involved players in building the Metaverse.

I would like to share my experience in Singapore of something called the Alliance for Action to tackle online harms against women and girls. This was actually started by the Singapore government with a few politicians driving the effort. But it was primarily driven by a 47 member committee of people from everywhere—from academia to public service to civil society. The beauty of the alliance was that everyone came from diverse perspectives and were able to give their insights from where they had contributed to the effort. We charted what kinds of achievable targets we could strive toward, and shared 'report cards' that reflected

the targets we have set. We implemented our collaborations and built on the networks we created over the course of the alliance. This is a practice that could prove useful in other countries or even across countries when we think of our roles as architects of the Metaverse. (Sun Sun Lim)

A Need for Transparency to Address Underrepresentation

I also welcome the opportunity where people can freely choose their appearance in the Metaverse. However, we need to inform the platform of the gender or race or nationality of people behind their avatars so that they can correct instances where certain resources are disproportionately allocated across different traits.

For example, although it is prohibited to target people by their gender, race, employment status, or housing, advertisements on many platforms are still disproportionately distributed across these categories, even if demographic traits are not intentionally used to determine who receives an advertisement. This can result in a disparate impact, even when policies are facially neutral. According to one study, it found that men were shown more STEM job advertisements than women, even when the ads were targeted at both men and women. The reason was that women tended to convert more easily after clicking on an advertisement, making them comparatively more expensive than showing the same ad to male viewers.

At the same time, we need to be aware that our attempts to address some of the inequalities or injustices can be seen as another form of injustice. We should therefore think about ways to address these issues in a more open and creative way, so that we are not unilaterally imposing a certain viewpoint upon others to follow.

If we provided information about the users' demographic traits to the platform or the advertisers, we may be able to correct such imbalances. (Hai Jin Park)

Non-human Avatars

I am interested in how people represent themselves in the Metaverse. The opportunity to reconstruct a personal digital representation in VR using one's own facial features and voice is an exciting prospect. However, I would suggest that we experiment with a more fluid concept of identity, because we need not be boxed in the idea that we need to represent ourselves as human beings. For example, as in Second Life, we could provide more avatar options so that people could create representation of themselves as robots or cars, etc. (Jih-Hsuan Tammy Lin)



Hai Jin Park

Associate Professor, Hanyang
University, School of Law



Sun Sun Lim

Professor, Singapore
Management University



Jih-Hsuan Tammy Lin

Professor, College of
Communication, National
ChengChi University



Joan Yoo

Professor/ Department Head,
Seoul National University,
College of Social Sciences,
Department of Social Welfare

Dialogue, Not Order

One of the strengths of the Metaverse is that it is a communication tool that enhances interactions among individuals, particularly those from marginalized cultures or groups. Developing and conscientiously creating a dialogue around these complex issues will be very important. At the same time, we need to be aware that our attempts to address some of the inequalities or injustices can be seen as another form of injustice. We should therefore think about ways to address these issues in a more open and creative way, so that we are not unilaterally imposing a certain viewpoint upon others to follow.

I would like to stress how diverse representation of oneself in the Metaverse and the disconnect between the digital and physical self may affect youth identity development. In Korea, for example, K-POP is really popular, and a lot of young women really want to have that skinny and pretty body shape popularized by Korean K-POP singers. But circling back to the disconnect that Professor Lee talked about between the physical and the digital worlds, we need to be mindful of the effect such disconnect would have on the formulation of identity in our youths. (Joan Yoo)

4

How can developers and content creators help make the Metaverse more inclusive? What can be done to make assistive technologies standardized across devices? How could we deal with language barriers, cultural gaps, differences in physical features which may affect XR device functionality, etc.?

Access, Representation and Diversity support

There are a number of objectives that we should focus on to make the Metaverse more inclusive. First, we need to incorporate accessibility features into virtual environments and experiences. We need to do this to ensure access to all users, including people with disabilities. This might include options for alternative forms of interaction and navigation, such as voice commands and gesture recognition. Of course, there are already some apps with this kind of recognition. But I think we need to advocate more for this general objective. Second, we need to ensure proper representation, i.e., the virtual characters, environments and experiences accurately represent the diversity of the real world, including people with different abilities, races, genders, and cultural backgrounds. Third, we need to be culturally sensitive and avoid using cultural stereotypes in virtual environments, and should be mindful of cultural differences when designing virtual experiences. Fourth, we



Melanie Reyes

Executive Director, Miriam
College Women and Gender
Institute



Kieu-Nga Nguyen

Deputy Director, Center for
Studies and Applied Sciences
in Gender – Family – Women
and Adolescents (CSAGA-
Vietnam)

need to provide multilingual support. Developers need to incorporate multilingual support into XR devices and experiences, to ensure that they are accessible to users who speak different languages.

Fifth, designers of the Metaverse should conduct user testing with a diverse group of participants to identify and address the many issues related to cultural differences, language barriers and physical features. Sixth, we need to set up community guidelines that prohibit hate speech, harassment, and other forms of discrimination in virtual environments. Developers need to provide tools and resources for users to report and address such behavior. Also, such guidelines should promote a gender-inclusive Metaverse, providing enforceable rules against gender-based harassment and encourage gender-neutral language.

Other noteworthy objectives would be 1) to conduct regular diversity and inclusion training, 2) to establish government regulations that enforce standards for assistive technologies (e.g., standards for accessibility, certification and testing thereof) and provide funding and resources for research and development of such assistive technologies, and 3) to promote user advocacy so that users of assistive technologies will advocate for their standardization and accessibility. (Melanie Reyes)

The Metaverse should, at the initial designing stage, incorporate elements to allow users to feel safe, secure and have a sense of belonging. The Metaverse should not be a space where historically marginalized or vulnerable communities are further stigmatized and harmed. In this regard, it is important to partner with underrepresented and disadvantaged groups, including women, children, older people, people with disability, the LGBTQI+ community, and especially survivors of sexual and gender-based violence (SGBV). It would make sense to set up a Virtual Support Center for disadvantaged people and survivors of SGBV through an instant online chat, a hotline or a chat-board. (Kieu-Nga Nguyen)

Addressing Toxic cultures

Dr. Nguyen has raised a critical point that the Metaverse should be safe. I would like to add that because the modern virtual reality started out as a gaming technology, we encounter in the Metaverse a toxic, male-oriented gaming culture that tolerates sexual harassment, racist and homophobic jokes. Addressing the kind of (stereotypical, negative) gamer culture that has been brought into VR will be one possible avenue to achieve safety in the Metaverse.



Sun Sun Lim

Professor, Singapore
Management University

Equipment and Skills

We need to think about capacity building in terms of providing hardware for use in the Metaverse, and equipping people with skill and knowledge

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Marcus Carter

Associate Professor,
University of Sydney

to actively represent themselves in the Metaverse. We are seeing sizable gaps in these areas so that the rich are getting richer and the poor are getting even poorer. (Sun Sun Lim)

Accessibility Standards

I would also echo Dr. Reyes' point that accessibility standards are important. Development of such standards would involve a coalition between designers, policymakers and disabled people. (Marcus Carter)



Marcus Carter

Associate Professor,
University of Sydney



Rachel Gong

Khazanah Research Institute
(KRI)

Beyond a Mere Representation of the Real World

On equity and inclusion, I think we should aim higher than merely recreating our current world.

We should move beyond representation and discuss how we want to distribute governance power and allocate decision-making authority. People need to be included in the overall design, development, governance, and administration of the Metaverse, which will entail a redistribution of power beyond private developers to governments, rights activists, and marginalised communities.

There is a need to separate the challenges that come with designing Equity and Inclusion in the Metaverse and the challenges of facilitating Equity and Inclusion to the Metaverse. The latter matter encompasses the issue of gaining access to the Metaverse.

I agree that access to devices will be a challenge, particularly for developing countries. I would even question the assumption that governments in low and middle income countries would consider access to devices for the Metaverse a priority for their universal service provision, internet connectivity priorities, and funding at this time. I am worried that governments will not be as interested in supporting or providing inclusive access unless the Metaverse will be used as a public space or as a platform to provide public sector services.

To address the issue of governmental engagement, it may be useful to promote facilities and public sector services that are provided within the Metaverse, such as education and healthcare. This approach would interest and empower governments to play an active role in shaping the delivery of these services.

This emphasis could lead governments to adopt a more targeted approach, specifically catering to disenfranchised groups that stand to gain the most from government involvement within the Metaverse. Private sector and industry actors can provide auxiliary access to the Metaverse in areas such as workplaces, gaming, and socialization. (Rachel Gong)

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Infrastructure and Open-source Communities

I fear that the same disparities we see in the real world will reappear in the Metaverse as well. In developing the content, policies, and procedures of the Metaverse we somehow need to unlearn our existing opinions and prejudices and way of thinking to develop new rules, SOPs and architectural content for a more inclusive Metaverse.

In certain areas of the world, the infrastructure regarding online connectivity (e.g., 5G technology) or access to hardware is lagging behind. Governments and industries need to step in to fill this gap by creating an open-source community. (Hammad Cheema)

5 Are there any economic equity or inclusion problems involving property ownership in the Metaverse? (For example, owning property in the Metaverse, virtual currencies, assets protected by intellectual property, etc.)

Metaverse as the Commons

The Metaverse should be the commons, a place for sharing and collective ownership. The trend of luxury brands and multinational corporations buying virtual land in the Sandbox or Earth-2 etc., is expanding consumerism which hinders the movement towards building an inclusive community.

We have the potential to build an inclusive economy in the Metaverse, using our knowledge, skills or patterns of kindness as currency. We can develop collaborative governance models for the management of common resources in the Metaverse, in the same way we develop those models in the physical world. (Winnie Law)

Governance

Public versions of the Metaverse are governed and owned by Decentralized Autonomous Organizations (DAOs). This is sometimes preferred, because it is considered to be more democratic and interoperable. However, voting mechanisms may introduce new governance issues as voting power is often based on token holdings, and therefore, the final decision of the DAOs often reflect the opinions of so-called 'whales' who own a significant amount of the asset associated with the DAO.

DAOs have several other shortcomings, including inefficient decision making, security risks, and regulatory uncertainty. As we continue to develop blockchain-based virtual worlds, it is critical that we address these issues and experiment with innovative voting systems to ensure democratic governance and fairness. (Hai Jin Park)



Winnie Law

Deputy Director and Principal
Lecturer, Centre for Civil
Society and Governance, The
University of Hong Kong



Hai Jin Park

Associate Professor, Hanyang
University, School of Law



Hammad Cheema

Professor (Doctor),
Principal & Dean, School of
Interdisciplinary Engineering
& Sciences (SINES), National
University of Sciences and
Technology (NUST), Pakistan



Rohan Samarajiva
Chair, LirneAsia

Network and Connectivity

Private Metaverses may have their own rules, some of which might even discriminate. However, the public Metaverse must have different standards. If we think of the Metaverse as some form of gaming platform, government intervention may not create significant positive externalities. However, if we think of the Metaverse as the next generation of the internet, we will need government intervention to shape the public Metaverse. If the state or industry actors can address bigger questions of network and connectivity infrastructure, individuals will join the network, resulting not only in the reduction of network equipment costs, but also the unit costs of the devices necessary to participate in the network. (Rohan Samarajiva)

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To attain diversity, a bottom-up approach or participation of diverse groups would be necessary. How can we facilitate this process or governance?

Near and Dear to One's Heart

For a bottom-up approach, we could provide resources or tutorials of enabling certain accessibility features or language support. However, more importantly, we should be able to create value for people so that they are incentivized and motivated to join the Metaverse. Once people feel eager and excited about the Metaverse and experience how the Metaverse impacts their lives on a personal level, overcoming technological challenges in accessibility would not be a major concern.

One way to promote diversity would be to encourage interdisciplinary collaboration in the Metaverse. By bringing people from different backgrounds together, we may achieve some interesting outcomes and discover new use cases that have never been thought of before. (Panote Siriaraya)

I have been working in rural revitalization and, with the support of Meta, was able to help physically disabled individuals experience through VR what it is like to be inside these rural villages that had previously been practically inaccessible on wheelchairs. We need to ask ourselves what people might be interested in experiencing in the Metaverse and engage with those deep-rooted desires. (Winnie Law)

Coexistence of Clashing Norms

The Metaverse gives us great opportunity to recreate and archive some of the cultural history in indigenous, underrepresented groups. We should try to promote quality VR experience across users of different devices, ranging from headsets to mobile phones. To Dr. Reyes point



Panote Siriaraya
Assistant Professor, Kyoto Institute of Technology



Winnie Law
Deputy Director and Principal Lecturer, Centre for Civil Society and Governance, The University of Hong Kong



Jih-Hsuan Tammy Lin
Professor, College of Communication, National ChengChi University

about welcoming different cultures and non-binary gender groups, we should carefully establish the governance process and set the guidelines and boundaries of communication so that we can promote coexistence of clashing norms. (Rachel Gong)

Engaging with Indifferent Users

I would like to point out that some people just may not be willing to use or embrace this new technology and not feel the need to participate in the Metaverse. We need to pay attention to what they think and how they feel about the Metaverse to meaningfully boost participation. (Jih-Hsuan Tammy Lin)

CLOSING REMARKS

This discussion was an opportunity to discuss important issues in achieving Equity & Inclusion in the Metaverse. For the Metaverse to live up to its hype as an empowering communication tool and a futuristic space to enhance our democracies and economies, we should collaborate to equip, educate and engage with the users from various backgrounds and with different perspectives. Two future roundtables will discuss additional issues related to the Metaverse, specifically (1) privacy

and data, and finally (2) safety and well-being. Our aim is to facilitate these discussions so that they may inform a range of different actors with an interest in the future of the Metaverse as well as the various social, professional and cultural transactions that may soon take place within the Metaverse.



Rachel Gong
Khazanah Research Institute (KRI)