Cities and the metaverse: shaping a citiverse for all

3rd ITU forum on metaverse
Outcome Document

Hosted & Co-Organized by:

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The technical coordination of the Outcome Document was conducted by Cristina Bueti (ITU).

Additional information and material related to this report are available at the Cities and the metaverse: shaping a citiverse for all webpage and the Focus Group on metaverse Webpage.

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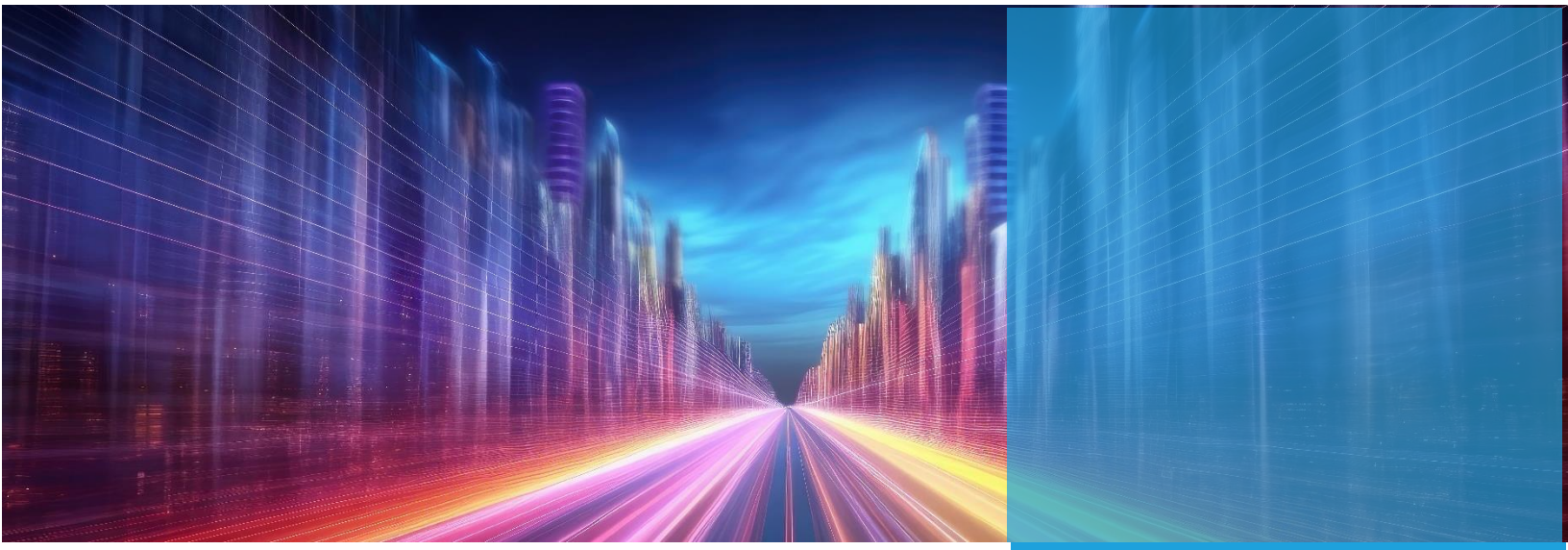

The 3rd ITU Forum on "Cities and the Metaverse: Shaping a Citiverse for All" took place on 13 September 2023, in Arusha, Tanzania, hosted by the Government of Tanzania. The Forum fostered collaboration and addressed metaverse-related challenges and opportunities. It convened global smart cities and metaverse experts to explore the metaverse's role in cities and communities, identifying areas for cooperation, including standardization activities.

Keynote speeches and sessions covered topics such as the future of Seoul with Metaverse Seoul, the citiverse in the African Region, and shaping inclusive cities through global collaboration. The Forum particularly focused on the African region, discussing the role of international standards, policy, and regulation in developing an open, interoperable, secure, and inclusive metaverse. Representatives from various sectors shared insights and best practices for shaping a citiverse for all.

The event also provided a platform for examining the role of international standards in creating a citiverse for all. Leading cities showcased use cases and experiences, demonstrating the metaverse's benefits for their inhabitants. City leaders shared lessons learned to help others harness the metaverse for their communities and support the achievement of Sustainable Development Goal 11.

The Forum concluded with the adoption of the **Arusha Call to Action**, which captured key discussions and views. The Forum's key message is best reflected by the African proverb "If you want to go fast, go alone, if you want to go far, go together".

Opening ceremony

Officially opening the third Forum on metaverse, Ms Emmanuella Mtatifikolo welcomed everyone to Arusha, Tanzania and emphasized the excellent conference infrastructure the city has to offer. She stressed that Arusha is ready to host important meetings like the Forum and in addition has unique tourism experiences for the benefit of all delegates.

H.E. Mr Kundo Mathew stressed the urgent need to rethink urban planning by incorporating digital solutions such as the metaverse and engaging all stakeholders in smart city development. The Tanzanian government is developing its new capital city, Dodoma, as a pilot smart city. Outlining the project, he emphasized that smart city development is the future of urban planning and management in Tanzania. This includes the metaverse and its potential role to accelerate digital transformation of smart cities and communities, while shaping a citiverse that benefits all.

In his opening remarks, Mr Seizo Onoe welcomed attendees to the **third ITU Forum on "Cities and the metaverse: shaping a citiverse for all"** and expressed gratitude to the Government of Tanzania for hosting the series of smart cities & metaverse events, acknowledging Tanzania's role as a leader in using technology to benefit its society and economy. Mr Onoe mentioned that after previous ITU forums in Riyadh and Shanghai, the focus shifted to discussing the metaverse's implications for the African region, highlighting its vibrancy, diversity, and innovative potential.

Mr Seizo Onoe encouraged African leaders to join the International Telecommunication Union's work on developing smart city and metaverse standards, highlighting ITU's long history as a global platform for technology standardization and regulation. He stressed the importance of shaping a citiverse for all, built on open, transparent, and inclusive international standards.

Speakers

Emmanuella Mtatifikolo,
Representative of Arusha Regional Commissioner, Tanzania (on behalf of H.E. Mr John Mongella, Regional Commissioner of Arusha, Tanzania)

H.E. Mr Kundo Mathew
Deputy Minister of Information, Communication and Information Technology, Tanzania

Seizo Onoe
Director, Telecommunication Standardization Bureau, ITU

Session 1: Executive roundtable on the citiverse in the African Region

The Session 1 was moderated by Ms Wendy Teresa Goico Campagna, who is a Vice-chairman of the United for Smart Sustainable Cities Initiative (U4SSC).

Emphasizing the critical role that governments play in enhancing connectivity, Mr Davis G. Mwamfupe spoke of the need to ensure it is inclusive and accessible to all inhabitants. He also shed light on the unique challenges Africa faces when it comes to embracing the metaverse, such as limited connectivity and underdeveloped infrastructure. Despite these hurdles, he acknowledged that these challenges present an opportunity for collaboration between cities, countries and businesses across the continent.

Mr Jabiri Kuwe Bakari elaborated on the importance of developing metaverse regulations that are inclusive and consider the needs of all stakeholders. He highlighted the vast potential the metaverse presents for African countries in terms of accessing global markets and expanding their economic reach. Mr Bakari also emphasized the crucial role of digital literacy in ensuring that everyone, regardless of their background, can benefit from the numerous opportunities available within the metaverse and contribute to its growth.

Referring to a recent report, Mr Philip Besiimire detailed the significant economic value promised by the metaverse and its impact on various industries. He highlighted the potential opportunities the metaverse presents, such as economic value creation and smart city traffic management, while emphasizing the need to address the gender divide and interoperability to create a more inclusive digital environment.

Mr Dinesh Balsingh discussed the government's critical role in supporting the industry with infrastructure development, including aspects such as spectrum allocation for wireless communications. He explained that a collaborative approach is vital for fostering innovation, enhancing the overall user experience, and ensuring that the metaverse can truly deliver on its potential for widespread social and economic benefits.

Speakers

Wendy Teresa Goico Campagna
Vice-chairman, United for Smart Sustainable Cities Initiative (U4SSC)

Davis G. Mwamfupe
Mayor, Dodoma City, Dodoma

Jabiri Kuwe Bakari, Director General,
Tanzania Communications Regulatory Authority (TCRA)

Philip Besiimire,
Managing Director, Vodacom Tanzania Plc

Dinesh Balsingh,
Managing Director, Airtel Tanzania Plc

Keynote Speech on “The present and future of Seoul with Metaverse Seoul“

In her keynote speech, Kyunghee Oh introduced the Metaverse Seoul, a virtual municipal world created by the Seoul Metropolitan Government (SMG). She emphasized the platform's pioneering status as the first of its kind worldwide, offering various services in areas such as economy, education, and tax affairs.

Kyunghee Oh explained that Metaverse Seoul aims to provide public services centered around the core values of freedom, inclusion, and connection. The platform was designed to create a hyper-realistic community that encourages creativity, communication, and augmented experiences for all users.

She emphasized that the platform was custom designed, instead of using existing commercial solutions, to facilitate 24/7 access to public services all year round. This includes visiting the virtual mayor's office and library, participating in seasonal mini-games, and engaging in public contests.

In addition to public services, users can explore Seoul Fintech Lab, Seoul Business Support Center, and the city's top 10 tourist attractions within the virtual space. The platform aims to provide immersive experiences for users, such as students meeting with mentors for virtual consultations and citizens filing civil complaints, obtaining official documents, and paying local taxes.

The Metaverse Seoul project is an archetype for virtual municipal administration of the future.

Kyunghee Oh
Director of Digital Policy Division, Seoul Metropolitan Government

Session 2: Shaping inclusive cities of tomorrow: unlocking the potential of metaverse through global collaboration

The Session 2 was moderated by Mr Hyoung Jun Kim, who is the Chairman of ITU-T Study Group 20 “IoT, Smart cities & communities”.

H.E. Mr Belal Al-Hafnawi stressed that the most important application of the metaverse is in smart cities to create better lives and experiences for city inhabitants. He spoke of three pillars of improving urban planning, enhancing education and training, delivering public services, and promoting tourism and economic development.

Discussed the role of the metaverse in creating inclusive cities for the future, Mr Peter Ulanga emphasized Tanzania's ICT engine in accelerating industrialization through advanced technology. He highlighted the importance of both fixed and mobile data infrastructure and services in achieving this vision. He also explained how Dodoma will become a metaverse-ready city, supported by a highly resilient government network.

Mr Chao Ma discussed the potential of citiverse to redefine the future of urban planning, governance, and city envisioning. He explained that citiverse emerged as a virtual domain rooted in the convergence of advanced technology and urban development principles, providing a new dimension to city planning and management of complexities.

Speakers

Hyoung Jun Kim,
Chairman, ITU-T Study Group 20

H.E. Mr Belal Al-Hafnawi,
Commissioner & Board Member, Telecommunications Regulatory Commission (TRC), Jordan

Peter Ulanga,
Director General, Tanzania Telecommunications Corporation (TTCL)

Chao Ma,
Director of Business development of Industry and Internet of Things institution, China Academy of Information and Communications Technology (CAICT)

Session 2: Shaping inclusive cities of tomorrow: unlocking the potential of metaverse through global collaboration

Mr Yong Jick Lee discussed the potential of citiverse services for persons with disabilities, those with specific needs and the elderly with age-related disabilities, emphasizing the role of emerging technologies and the metaverse in enhancing urban life. He shared some potential use cases of citiverse in the area of mobility and community care. He also highlighted the role of international standards such as Recommendation ITU-T Y.4211 on accessibility requirements for smart public transport services.

Highlighting the significant gaps in electricity and connectivity access across Africa, Ms Christina Yan Zhang stressed the importance of addressing these disparities to foster economic development and growth. She underscored the crucial role of digital literacy and the challenges posed by the world's aging society. As a sample response, she shared the Tampere Metaverse Vision 2040, the world's first people-centered metaverse strategy, designed to create an inclusive and accessible digital environment that caters to diverse populations.

Mr Nguyen Tien Dung discussed the advancements and implementation of the metaverse in cities, a convergence of physical and digital life. He explained that the metaverse can create a unified virtual community where participants can work, play, and communicate. Mr Nguyen Tien Dung emphasized the importance of operators building the infrastructure for the metaverse, which requires stable connections with low latency and high speed.

Speakers

Yong Jick Lee,
President, Center for Accessible ICT, Korea

Christina Yan Zhang,
CEO, The Metaverse Institute

Nguyen Tien Dung,
Managing Director, Viettel Tanzania PLC (Halotel)

Closing Remarks

Delivering the closing remarks, Mr Emmanuel Manasseh highlighted the metaverse's potential for cities, emphasizing its ability to make communities more efficient, open, and beneficial for all inhabitants. This also includes accelerating digital transformation and achievement of the Sustainable Development Goals. He acknowledged the African region's unique digital solutions and the importance of learning from best practice examples, such as from the presentation about Metaverse Seoul.

Also, he stressed the need for participation in global discussions to shape metaverse and smart city standards and appreciated ITU's efforts in providing an open global platform for all stakeholders. He noted that by making their voices heard, they could ensure that ITU standards reflect their unique experiences and priorities.

Before closing, Mr Emmanuel Manasseh read the Arusha Call to Action, which captured key messages and views shared during the Forum's discussions. The Call to Action was approved by audience through applause.

Call to Action: Cities and the metaverse: shaping a citiverse for all in Africa

13 September 2023, Arusha, Tanzania

We the participants of the 3rd ITU Forum on "Cities and the metaverse: shaping a citiverse for all" have acknowledged that:

- Cities act as engines of national economic development. Strong urban economies are essential for poverty reduction and the provision of adequate housing, infrastructure, education, health, safety, and basic services.
- Cities worldwide are facing increasing challenges brought on by indiscriminate urbanization and climate change. Solving these challenges requires new models of inhabitant engagement, new ways of cooperation between various institutions and stakeholders, supported by novel ways of decision-making.

Speakers

Emmanuel Manasseh,
Vice-chairman, ITU-T Study Group 20

- Smart sustainable cities can harness the full potential of information and communication technologies (ICTs) and frontier technologies such as metaverse to address the urban challenges, offering the transparent and viable pathway for the achievement of the Sustainable Development Goals, especially SDG9 and SDG11.
- International standards are instrumental in disseminating best practices, guidelines, frameworks and generating key consensus that would address these urban challenges and build a more sustainable future for all.
- Recognizing the work carried out by the Focus Group on metaverse, ITU-T Study Groups and in particular ITU-T Study Group 20 on IoT, smart cities and communities,
- Recalling ITU-T Resolution 98 on enhancing the standardization of the Internet of Things and smart cities and communities for global development, ITU Resolution 200 on the Connect 2030 Agenda and the United Nations 2030 Agenda for Sustainable Development,
- Emphasizing the digital transformation opportunities presented by the metaverse to connect the unconnected and achieve the Sustainable Development Goals (SDGs).
- We the participants of the 3rd ITU Forum on "Cities and the metaverse: shaping a citiverse for all" declare a Call to Action by calling upon all stakeholders in the African region to join us in the development and standardization of an open and secure metaverse for the benefit of all including the key points of action:

    1. ***Connectivity*:** Accelerate the development of digital public infrastructure to enable the metaverse, which allows for the combining the physical and virtual worlds, ensuring reliable and affordable connectivity for all.
    2. ***Diversity and Inclusivity*:** Ensure the metaverse reflects and supports the diverse needs and aspirations of the African region by promoting and facilitating participation of all stakeholders, including governments, industry, academia, and civil society.

Speakers

Emmanuel Manasseh,
Vice-chairman, ITU-T Study Group 20

3. ***Open, Interoperable and Transparent Standards:*** Working together with standards developing organizations such as ITU, industry fora and other key stakeholders to develop metaverse standards that are open, safe, secure, and inclusive.

4. ***Socioeconomic Opportunities:*** Create new socioeconomic opportunities to improve the quality of life for all by maximizing the opportunities of the metaverse to drive sustainable digital transformation.

5. ***People-centred cities and the Citiverse:*** Enable smart, sustainable, and resilient cities and communities by creating innovative metaverse applications in urban planning, transportation, health, and public services to accelerate digital transformation in cities and communities for the benefit of all inhabitants.

We urge all stakeholders in the African region to join us, as we continue our metaverse journey. Together we can harness the power of the metaverse to accelerate innovation, connectivity, and prosperity, realizing the promise of the SDGs and building a better future for all to ensure that no one is left behind.

Speakers

Emmanuel Manasseh,
Vice-chairman, ITU-T Study Group 20

For more information
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