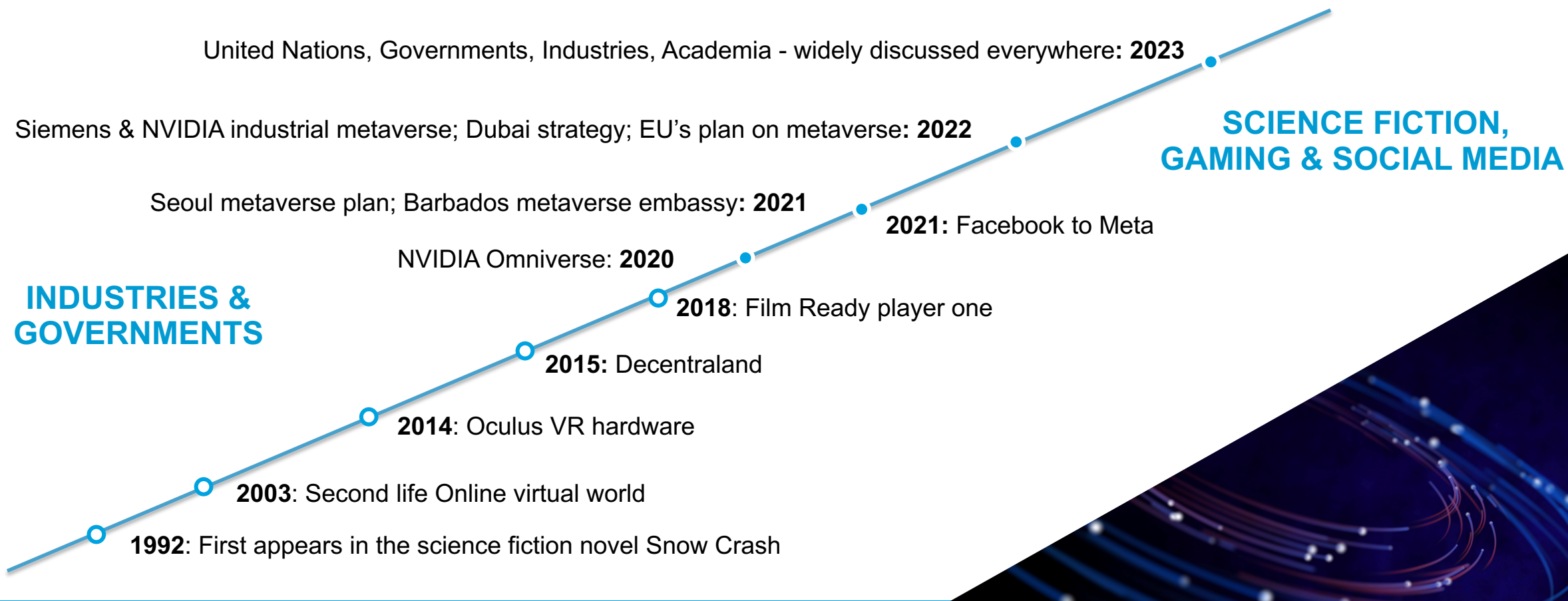


Setting the stage: why are standards important for the metaverse

Bilel Jamoussi
Chief of Study Groups, ITU



Metaverse: A disruptive area of innovation



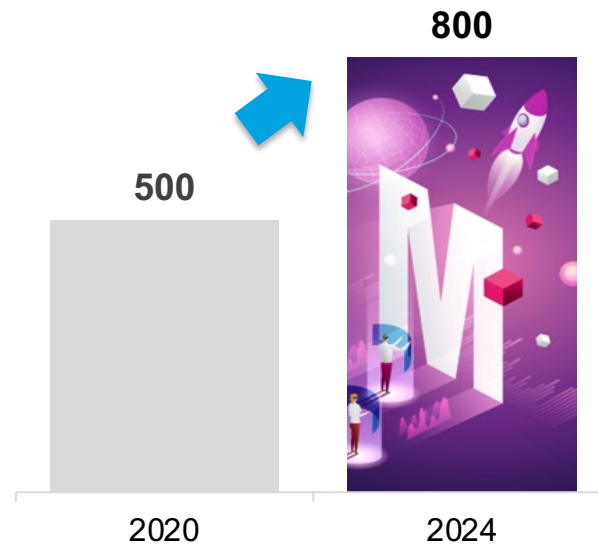
Wonder what the metaverse actually is?

Footage: Meta Quest VR Tube

Not just a game, but a **GAME CHANGER**



25% of people
will spend >1hr/day in a
metaverse in 2026



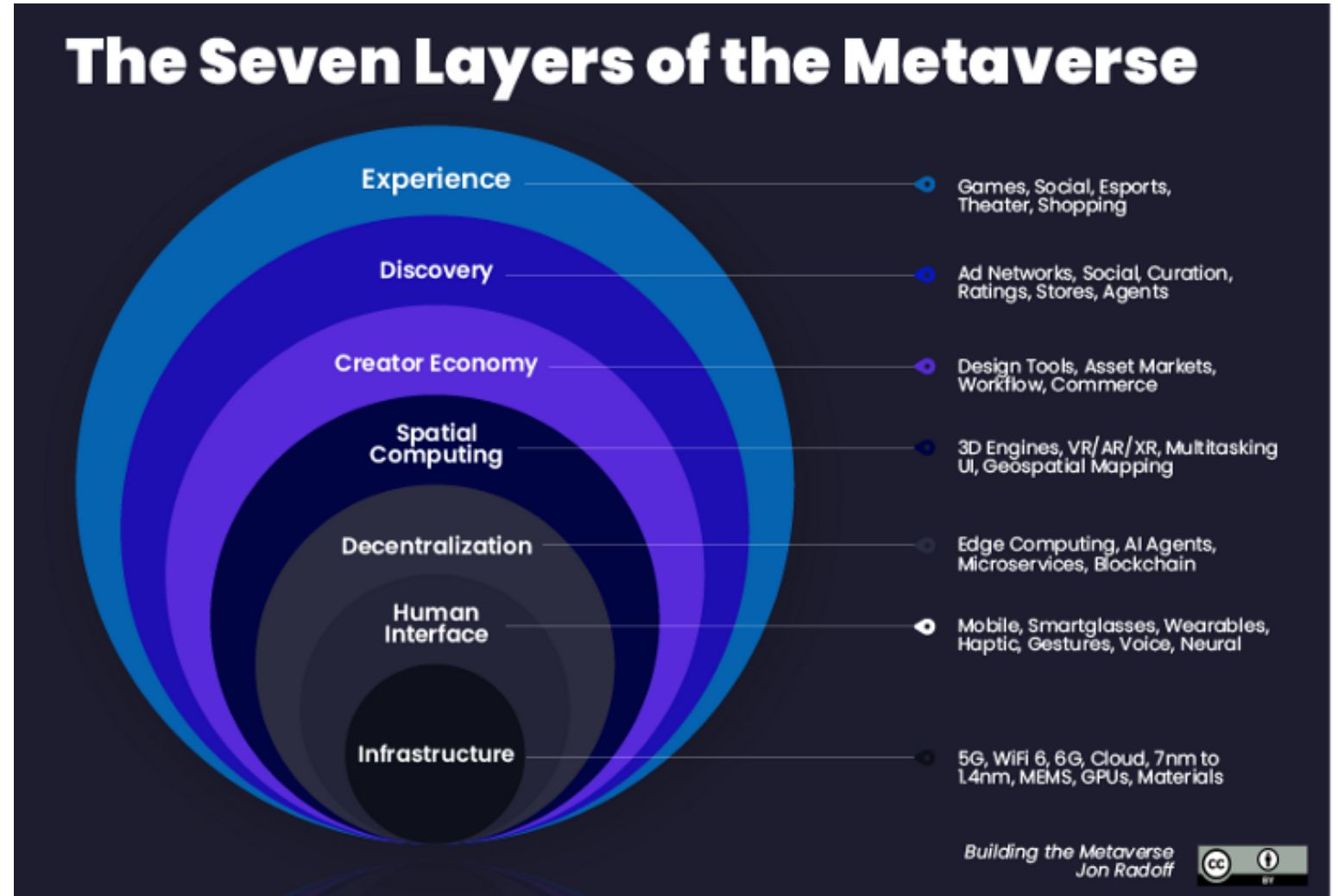
**USD 800
billion**

global metaverse revenue
opportunity in 2024

Sources: Bloomberg, Gartner

Underlying metaverse technologies

The metaverse is not dependent on one single technology, but rather various technologies that support its layers



The metaverse: a growing ecosystem

Metaverse Gateways

Centralized

AltspaceVR, Decentraland, HBBDO, FORTNITE, SENSORY, HORIZON, Anamverse, CORE, VRCHAT, TFFI, NEOS, crey, VIRTIX, SANSAR, REWORLD, MINECRAFT, PLAYABLE WORLDS, RAVE SPACE, Stadium, Challou, UPLIFT

Decentralized

SANDBOX, BLOKTOPIA, DIVISION, Decentraland, YOM, SOMNIUM SPACE, PolkaCity, Loot, BLOKTOPIA, DIVISION

NFT PFP Collections

world of women, VeeFriends, DEADFELLAZ, FLY, FORTNITE, etc.

Social & Meeting Hubs

Zoom, Discord, Facebook, Meetin, etc.

Economy

General: MoonPay, Coinbase, PayPal, Shopify, GBA Pay, Sqallo, VNTANA, Stripe, etc.

Crypto Wallets & Access: METAMASK, Fortmatic, EXODUS, Trezor, vvenly wallet, Temple, Ledger, Atomic, etc.

Music & Entertainment

Audius, ALICIA, HYPERREAL, VRJAM, PIXELYNX, etc.

Avatar & Interoperability

CRYP TO AVATARS, IMMO, AVATAR SDK, etc.

Digital Fashion & Identity

Tribute, PLACEBO, DREST, etc.

newzoo © Newzoo 2022

User Interface & Immersion

AMD, Apple, atmaky, Beem, bHaptics, CYBERITH, Cybershoes, D-BOX, enVerge, Google, haptx, Microsoft, Movella, Meta, HP, DeltaRobots, NEURALINK, SAMSUNG, PICO, logitech, immersion, TESLASUIT, Mach 1, XBOX, WOJOER, KNTVR, oculus, OWO, nreal, VIVE, VALVE INDEX, CoVince, SHADOW CREATOR

Visualization & Digital Twin

invelon, plain concepts, KeyShot, ENGAGE, echo3D, Quixel, MAXON, dltc.feld, TAL, 3DLOOK, NIANTIC, matterport, Artrec 3D, Foyr, CESIUM, blender, Spark AR, Labster, perfly, NVIDIA OMNIVERSE, AnamXR, occipital, SEVERSE, BROWWEAR, unity, CONDENSE REALITY, USD, VNTANA, METARSE, matterverse, AUTODESK, ARCTURUS

Development & Infrastructure Tools

BEAMABLE, Roll, unlock, INFURA, consensys, unity, ORTE, FRACCOLLO, Klaytn, ULTRA, PlayDapp, ENJIN, METANOMIC, STARUST, overwolf, epik, alchemy, EXCERT, XVERSE, Pixura, vvenly, thirdweb, PAVILLION

Cloud, Scalability & Storage

aws, intel, IBM, Alibaba Cloud, HUAWEI CLOUD, RPTCloud, PLAYTAB, sio, Google Cloud, HADEAN, gamed, MAWAIFI, Polystream, IMPROBABLE

Connectivity

Akamai, EGINIX, Mobile, Verizon, NIKKIA, ST/CKPATH, Qualcomm, H3C

Decentralized Infrastructure

Layer 1s: TRON, Tezos, VEC, NEM, Algorand, Flow, Zilliqa, EOS, BINANCE, SOLARIN, HecolInfo, etc.

Layer 2s: ParaState, SCALE, X, FINITY, OPTIMISM, zkSync, Polygon, Boba, etc.

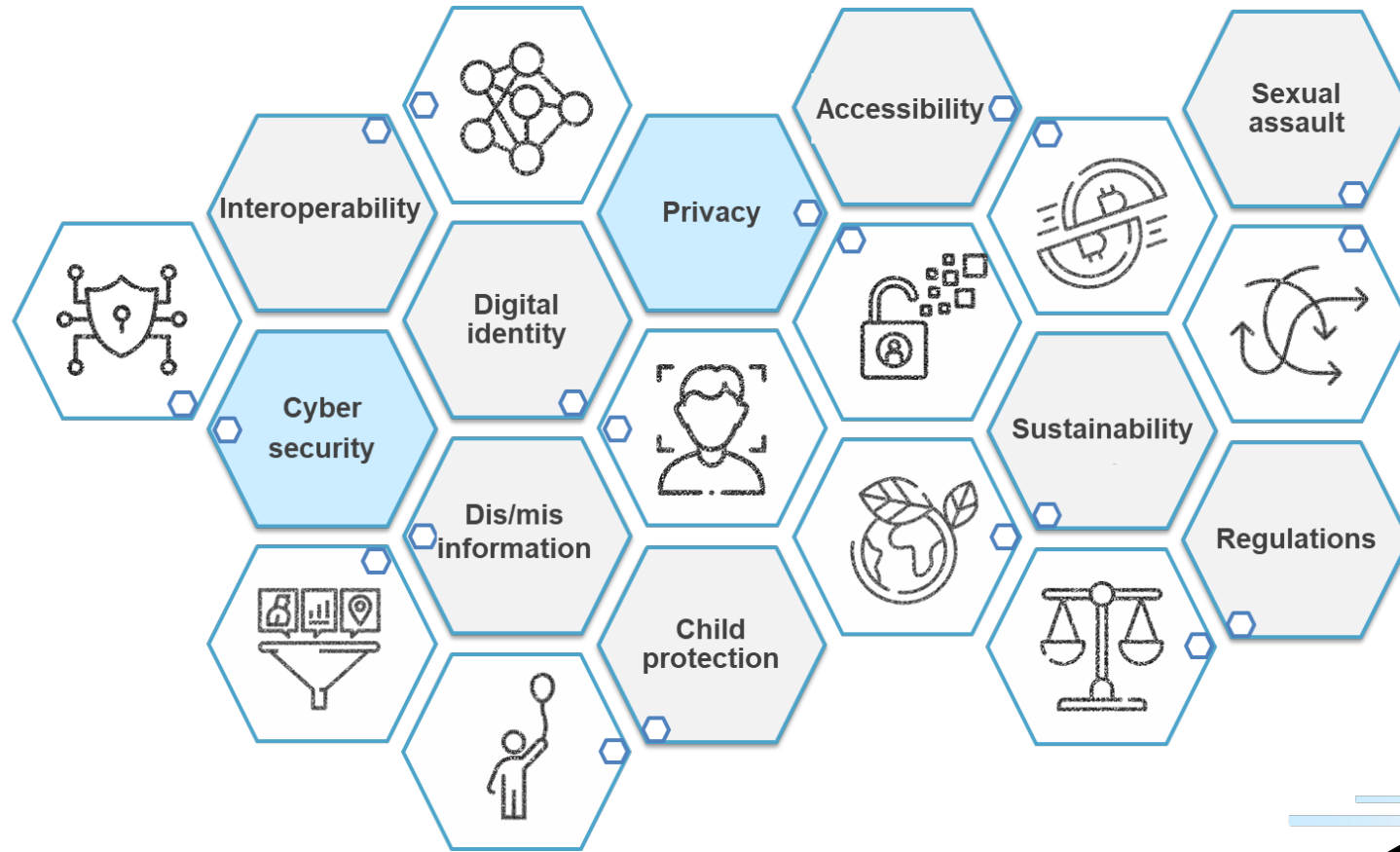
Artificial Intelligence

beingAI, wrnch, beingAI, wrnch, etc.

Adtech & Marketing

VERSED, HOTPLAY, KARTA, 4BSIGHT, METANOMIC, admix, adverty, Frameplay, BIDSTACK, anzu, GADSME, AdinRo

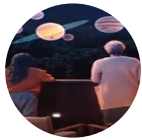
Challenges in the metaverse



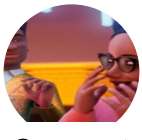
Consumer metaverse

| Digitalized lifestyle for people

- **Art & Culture:** The Sandbox provides creators with ownership of their creations as NFTs
- **Work:** Bring your teams together in Meta Horizon Workrooms



Learn



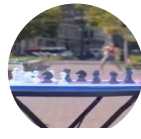
Connect



Work



Shop



Game

Industrial metaverse

| Digital transformation for industries

- **Manufacturing:** Mercedes-Benz's Next Gen factories in NVIDIA omniverse



Metaverse in cities

| Smart sustainable cities

- **Dubai Metaverse Strategy**



Key sectors:

- Tourism
- Education
- Government services
- Retail and real estate



Ecosystem

Applications

Regulations

Standards

MAGISTRADA

Colombia just held a court hearing in the metaverse

Footage: Vicky Quiñones, YouTube

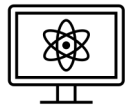
Opportunities of the metaverse for the SDGs



Cities and countries are maximizing opportunities offered by the metaverse to accelerate the achievement of SDGs



Tourism



Education

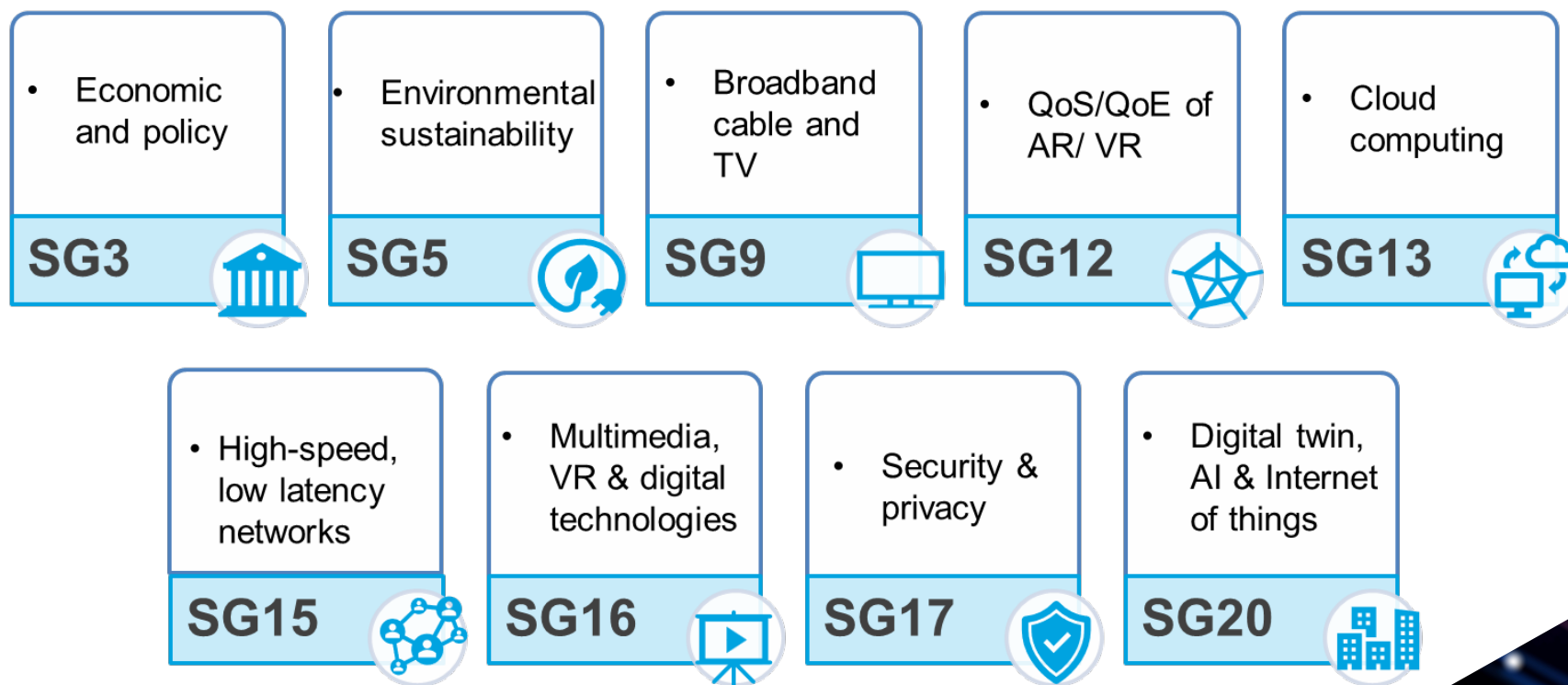


Government services



Retail and real estate

How international standards support the metaverse



New ITU-T Focus Group on metaverse (FG-MV)

A unique collaboration platform



Build a **community of experts and practitioners**



Stimulate **international, cross-sector collaboration**



Identify stakeholders and liaise with **other organisations**



Facilitate **dialogues** and **sharing findings**



Develop a series of **Technical Reports** and **Technical Specifications**.



TSAG created the Focus Group in **December 2022**

1st Meeting of ITU Focus Group on metaverse

- 8-9 March 2023, Riyadh, Kingdom of Saudi Arabia
- Hosted by NCA

Let us join forces to shape an open metaverse



Industry Partners



Governments and Cities



SDOs and Fora



Academia and Research
Partners



UN Partners



UN Sustainable
Development Goals



ITU Strategic Goals



Thank you!

Questions? Interested in learning more?
Let us know!



Email

tsbfgmv@itu.int



Website

[ITU-T Focus Group on metaverse](#)

