Metaverso e industria 4.0

Juan Gutiérrez
VP Executive Programs
November 2022

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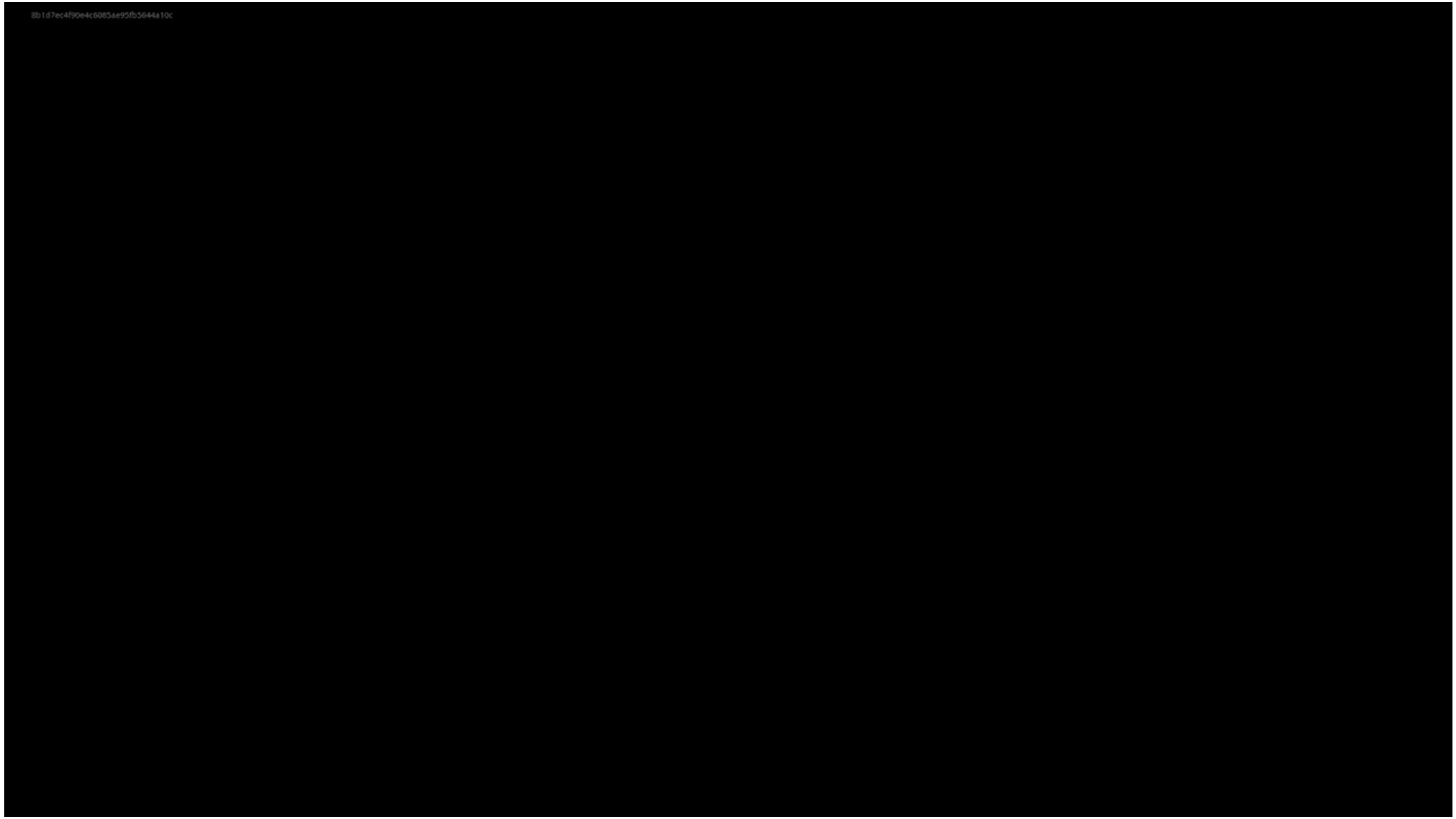

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Industrial metaverse

Meetings and collaboration

Onboading and training

Experience commerce and Products

Gartner's definition of the Metaverse

A collective virtual shared space, created by the convergence of virtually enhanced physical and digital reality. A Metaverse is persistent, providing enhanced immersive experiences.

It will have a virtual economy of itself, enabled by digital currencies and nonfungible tokens (NFTs).

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Build the Digital Future

Source: Gartner

761111_C

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THE
SANDBOX

Martin
Decentraland

horizon
FACEBOOK

ROBLOX

Second Life

treeverse

What drives the demand/realization of a Metaverse?

LAND

PORTION OF METAVERSE

ERC-721

LANDS are portions of the metaverse open to player ownership.

They can be edited by their owner and contain other tokens (ASSETS, GAMES) to create experiences.

Multiple LANDS can be linked together to form a bigger parcel (ESTATE)

The Sandbox Metaverse

Host
contests and events

Stake sand
to earn and customize ASSETS

Monetize
assets and experiences

Vote
in the metaverse governance

Play
games that you or others create

‘Skins’ – Gaming: Gucci

Technology Vendor

GENIES

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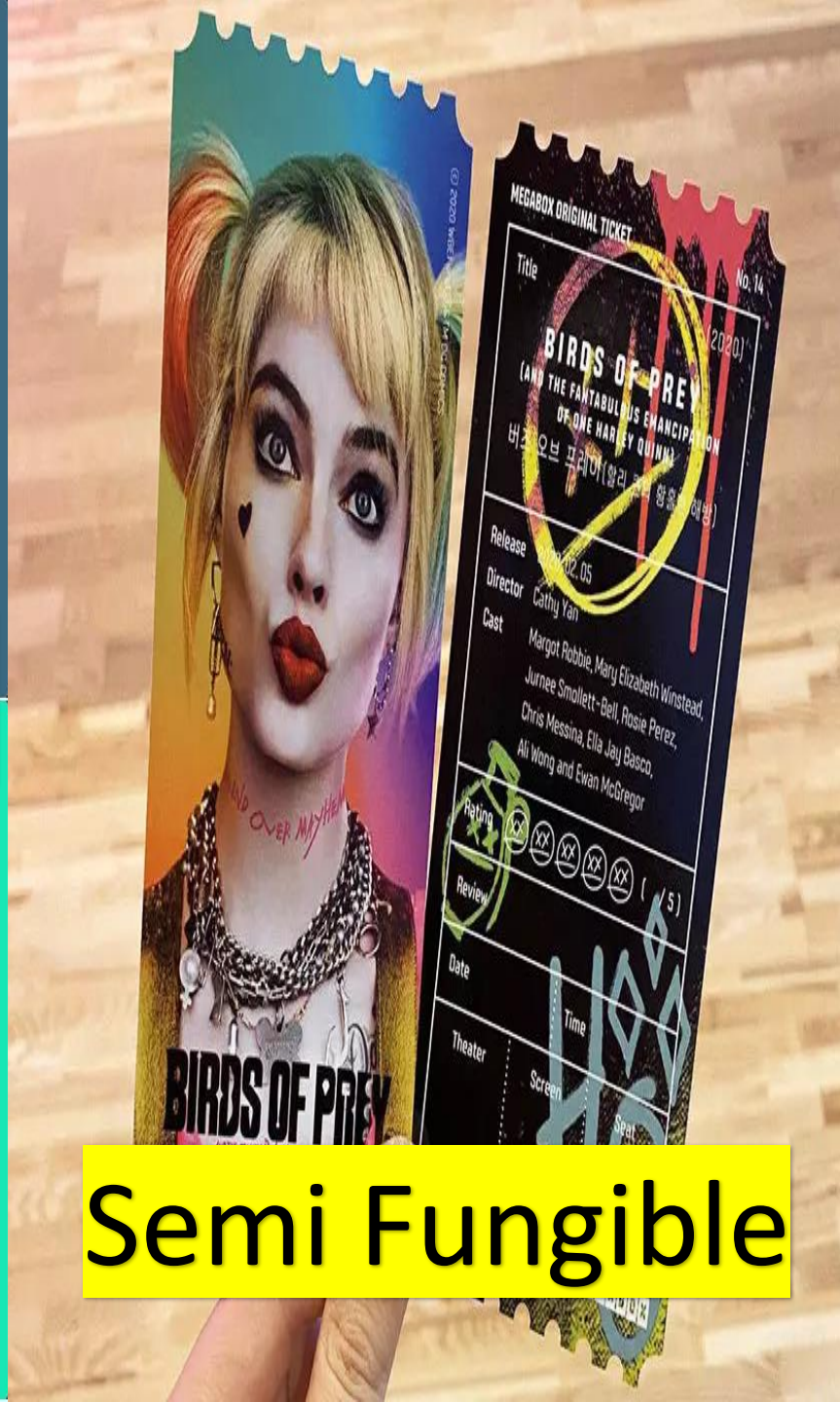
Fungible

Non Fungible

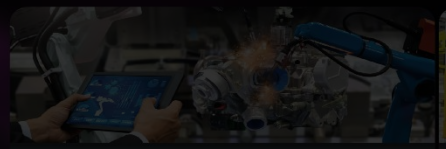

MEGABOX ORIGINAL TICKET
BIRDS OF PREY
Director Cathy Yan
Cast Margot Robbie, Mary Elizabeth Winstead, Jurnee Smollett-Bell, Rosie Perez, Chris Messina, Ella Jay Basco, Ali Wong and Ewan McGregor
BIRDS OF PREY
Semi Fungible

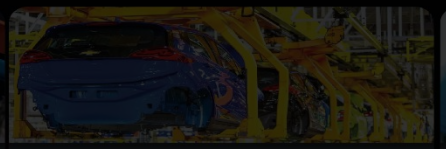
Industrial Metaverse

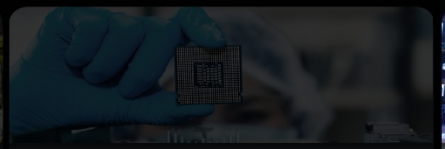
The emergence of the metaverse will directly impact product and service marketing, branding, and sales roles in the industrial organizations, as it becomes the next frontier for online interaction and customer engagement.

EVOLUTION OF THE DIGITAL MANUFACTURING INDUSTRY

zinnov







	INDUSTRY 1.0	INDUSTRY 2.0	INDUSTRY 3.0	INDUSTRY 4.0	INDUSTRY 5.0
	MECHANICAL PRODUCTION	MASS PRODUCTION	AUTOMATION	DIGITAL MANUFACTURING	HUMAN-ROBOT CO-WORKING
PRODUCTION FEATURES	Mechanical Assemblies	Initial Electrification and Assembly Lines	Automated Production using Memory Programmable Controls and Computers	Network Connection and Production Automation	Mass Customization through analytics, and intelligence, Cyber-Physical Production System
TECHNOLOGIES	Steam Powered Engines & Machinery	Electrically Powered Mechanical Assemblies	Digital Logic, MOS Transistors, Integrated Circuit Chips, Microprocessors	Cloud, AI-ML, IoT, RPA, Edge Computing, 2G-5G, Digital Twin, Additive Manufacturing, Cabots, Edge AI	Metaverse, Quantum Computing, Web 3.0, Distributed And Decentralized Systems, Fog Computing, 6G, Cyber-Physical Cognitive Systems
TIMELINE	1780s	1860s	1970s-2012	2013-2022	2023-2030
HUMAN-MACHINE INVOLVEMENT					

AI-ML

- Intelligent Automation
- Greater Efficiency
- Quality Control
- Quick Decision-making

Cobots

- Increased Productivity
- Robustness
- Higher Consistency & Accuracy
- Advanced Dexterity

IOET

- Asset/Equipment Productivity
- Cost Efficiency
- Supply-chain & Logistics Visibility
- Reflects Intelligence in Network

Blockchain

- Decentralized Management
- Operational Transparency
- Create Digital Identities
- Compartmentalized Approach

Digital Twin

- Cost Efficiency
- Predicting Future Errors
- Design Customization
- Predictive Maintenance

Metaverse

- Virtual Product Designs
- Asset Management & Maintenance Simulations
- Digital Humans for Human Behavior Simulation

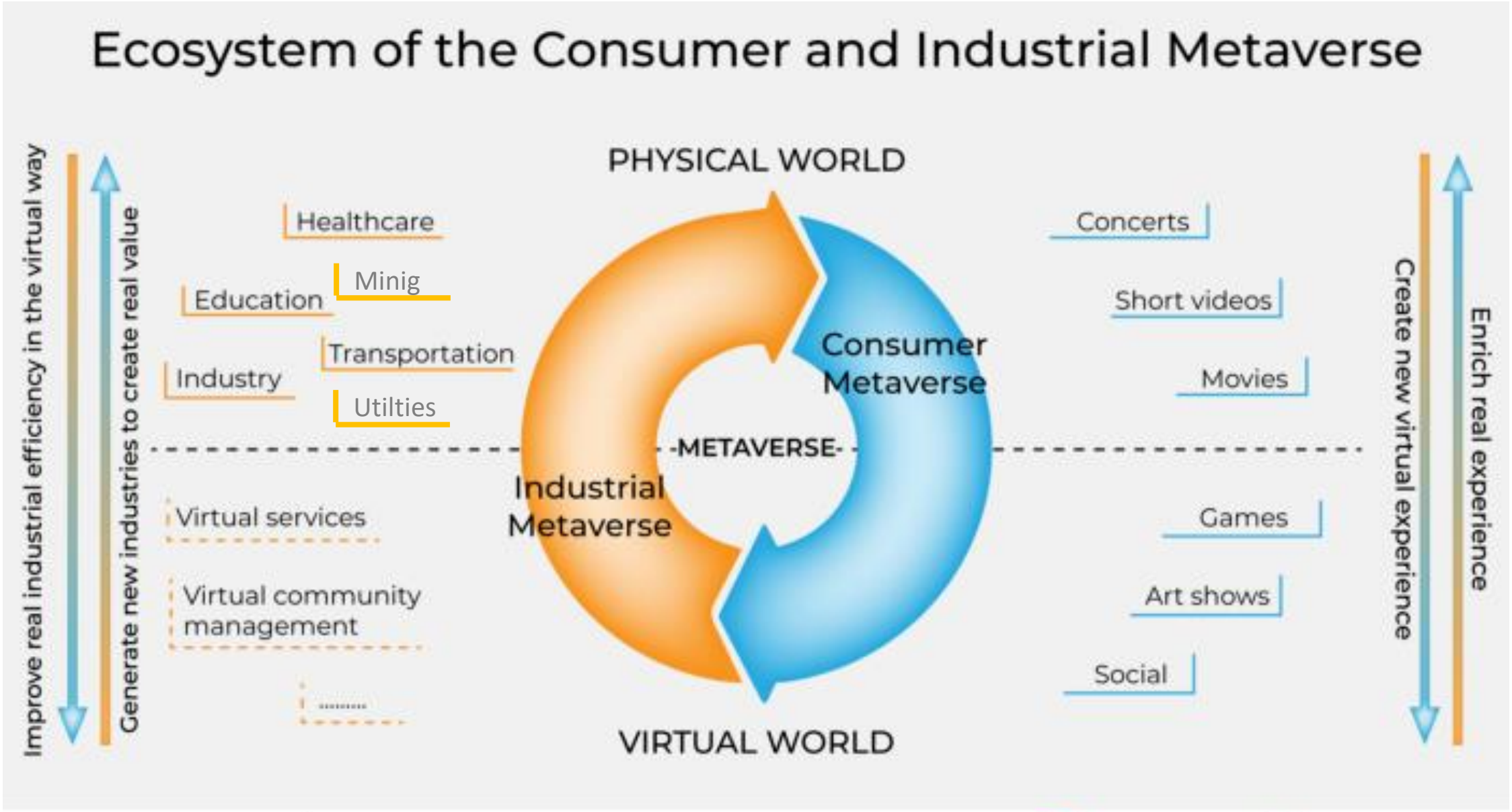
Quantum Computing

- Lower Latency
- Increased Cybersecurity
- Expanded Interoperability
- Reduced Storage Costs

6G & Beyond

- Knowledge Discovery
- Smart Resource Management
- Lower Latency
- Higher Reliability

Legend: Evolved | Introduced | *Involvement in repetitive & manual tasks:* LOW | High


Ecosystem of the Consumer and Industrial Metaverse
PHYSICAL WORLD
Improve real industrial efficiency in the virtual way
Generate new industries to create real value
Healthcare
Minig
Education
Transportation
Industry
Utilties
Virtual services
Virtual community management
.....
Industrial Metaverse
METAVERSE
Consumer Metaverse
Concerts
Short videos
Movies
Games
Art shows
Social
Create new virtual experience
Enrich real experience
VIRTUAL WORLD
Infographic redesign by Antonio Grasso
@antgrasso
@agrassoblog

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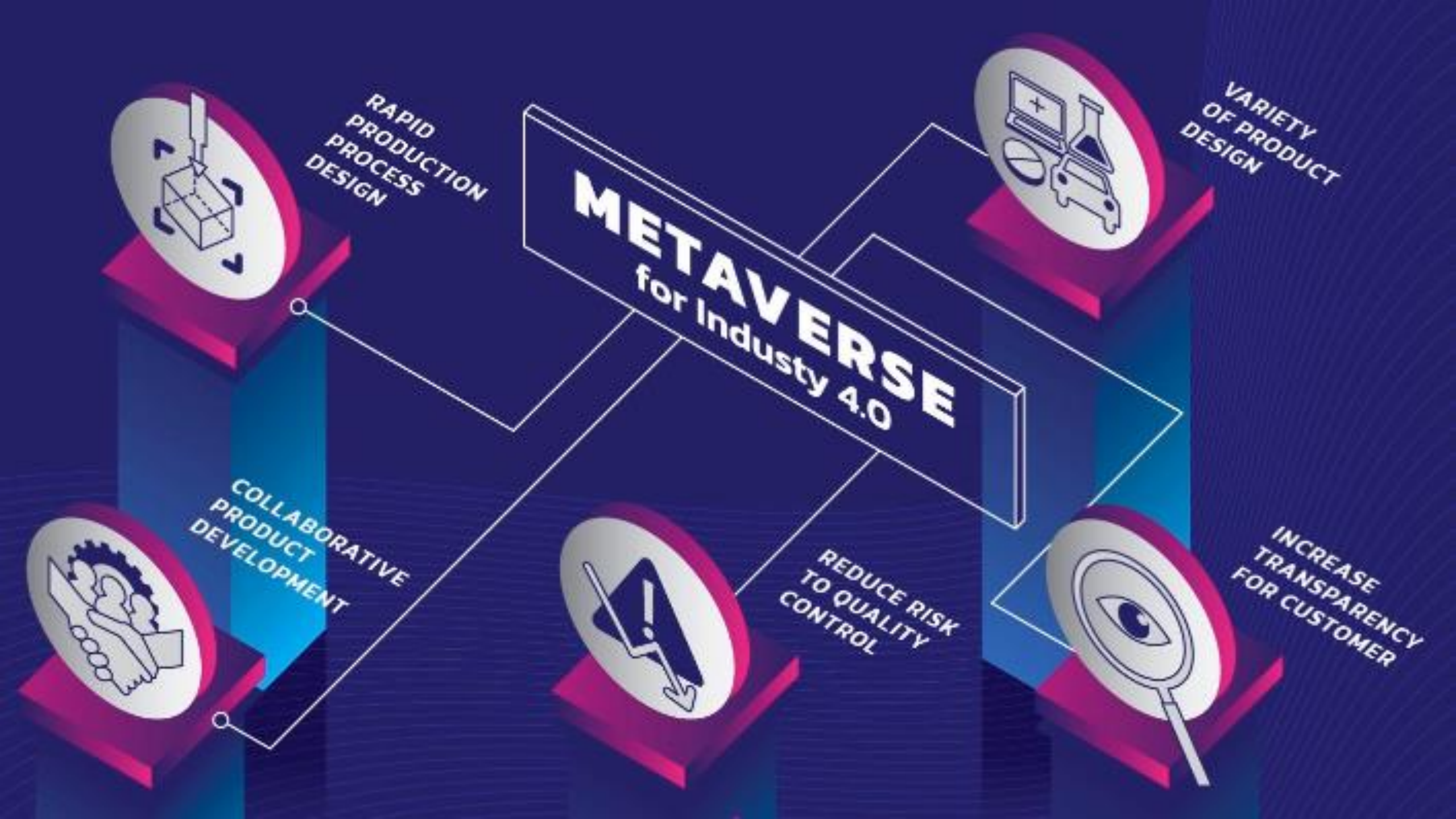
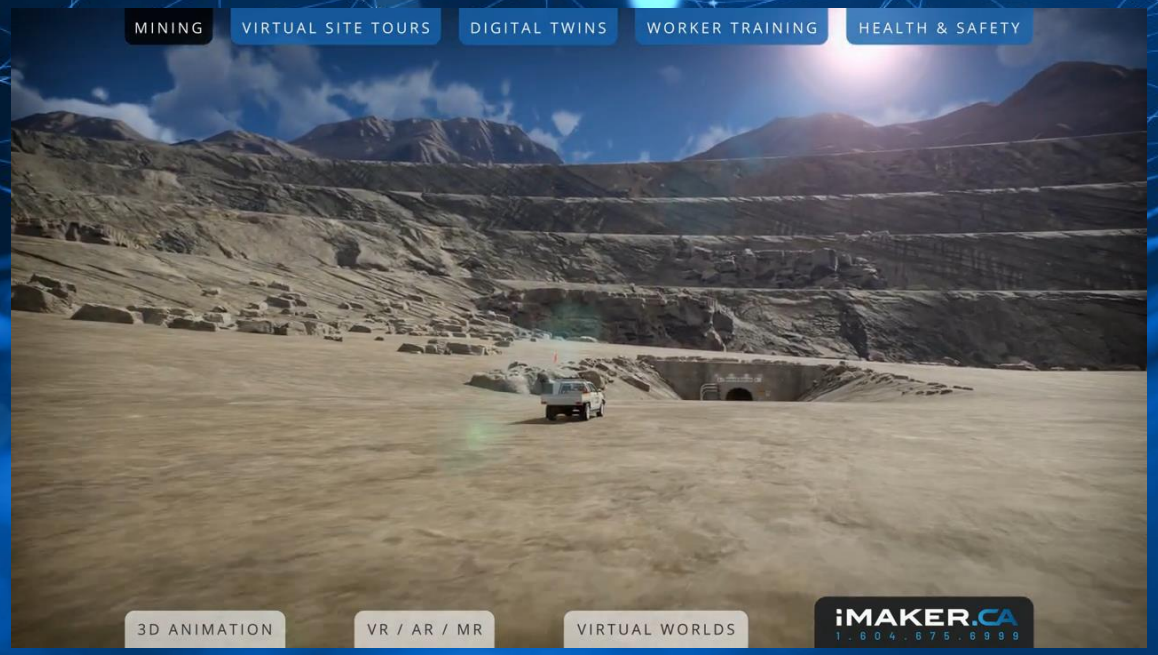

METAVERSE
for Industy 4.0
RAPID PRODUCTION PROCESS DESIGN
VARIETY OF PRODUCT DESIGN
COLLABORATIVE PRODUCT DEVELOPMENT
REDUCE RISK TO QUALITY CONTROL
INCREASE TRANSPARENCY FOR CUSTOMER


MINING
VIRTUAL SITE TOURS
DIGITAL TWINS
WORKER TRAINING
HEALTH & SAFETY
3D ANIMATION
VR / AR / MR
VIRTUAL WORLDS
iMAKER.CA
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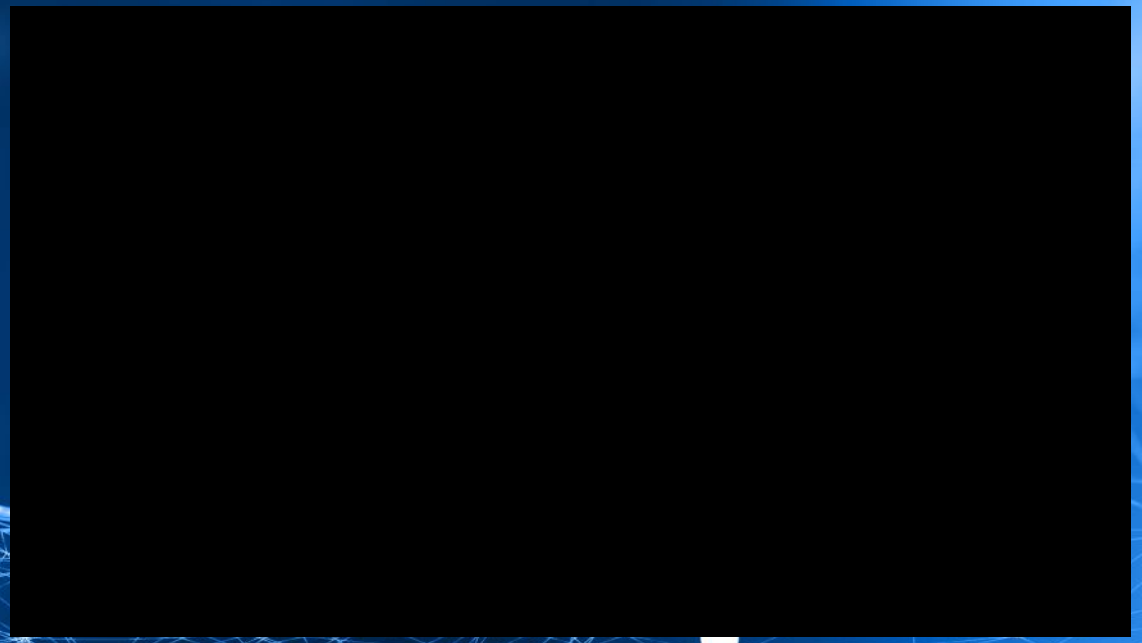
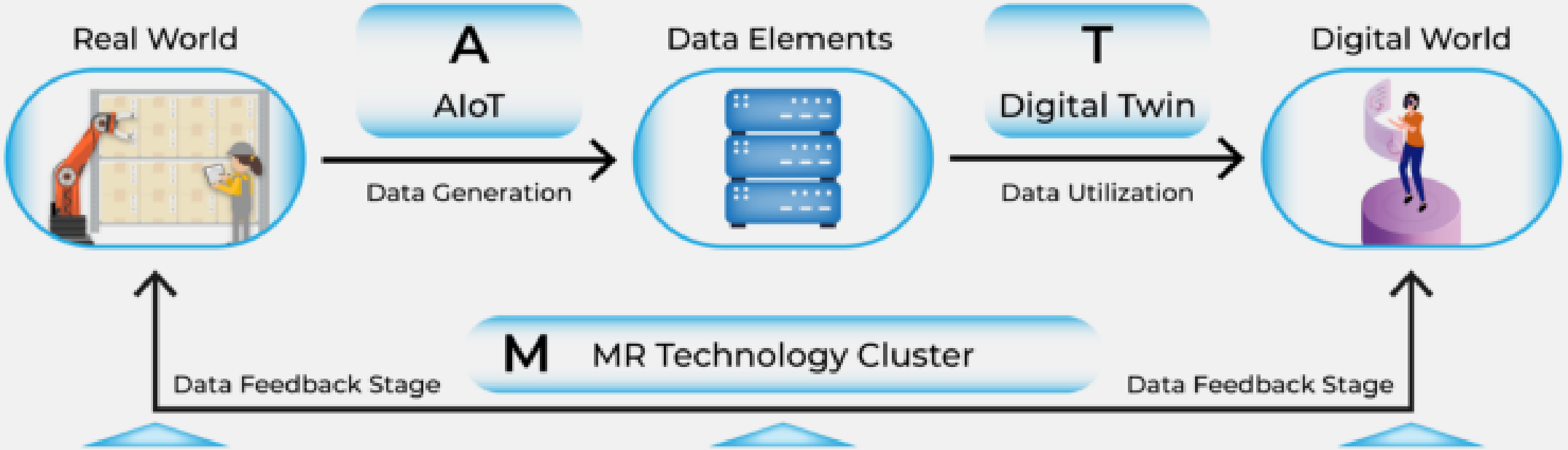


The technologies involved in the industrial metaverse



META Technology Cluster is the cornerstone to build out the industrial meta-universe with the fusion of reality and imagination.

X means the infinite possibilities brought about by a large collection of technologies.

Original creativity: EqualOcean | Infographic redesign by Antonio Grasso

@antgrasso @agrassoblog

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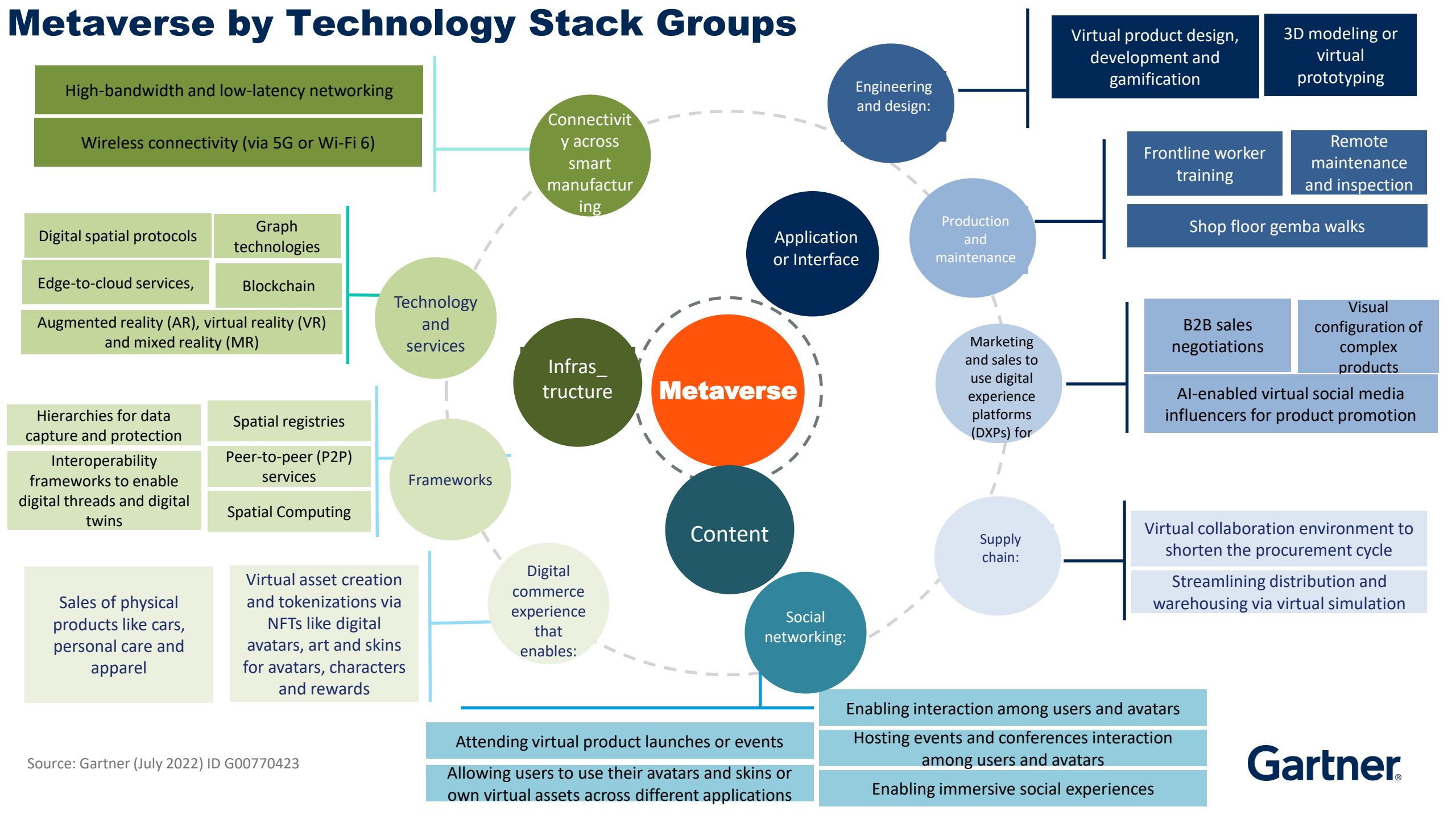
Metaverse by Technology Stack Groups



Source: Gartner (July 2022) ID G00770423

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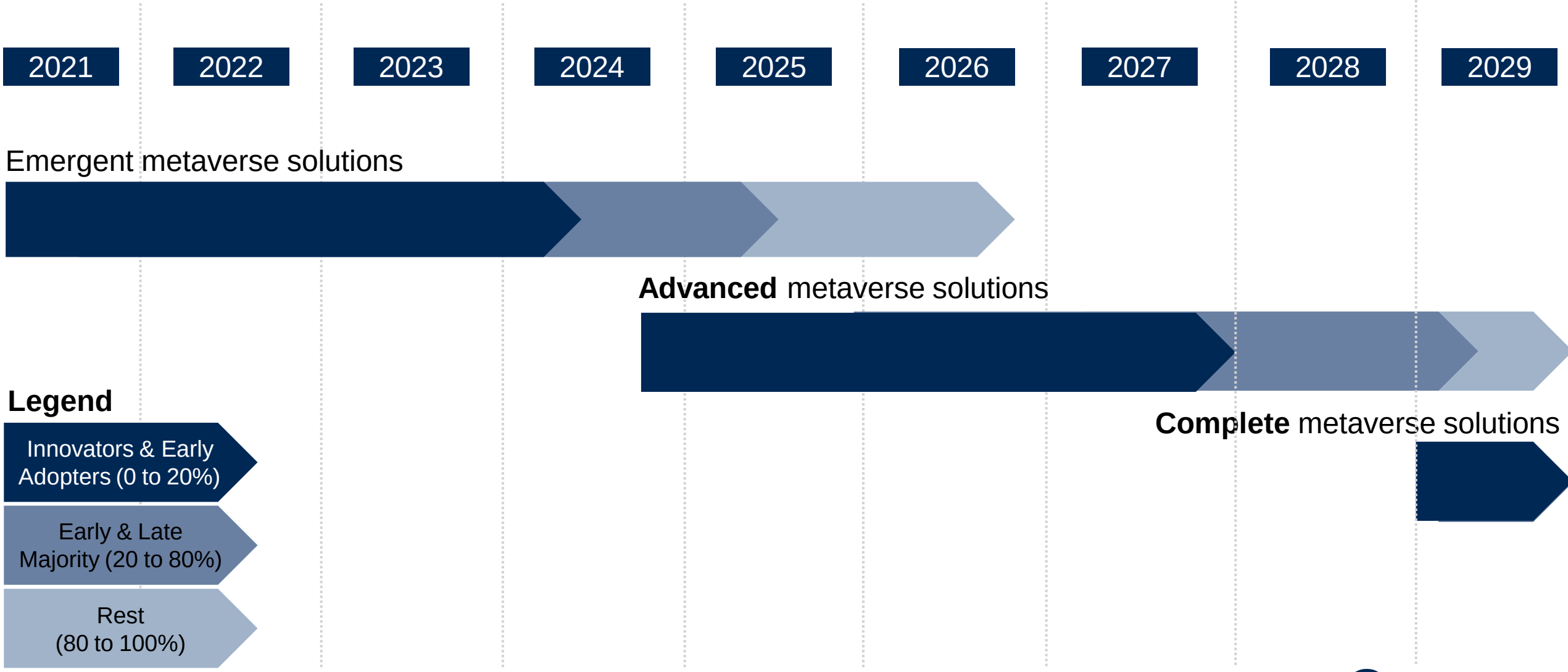
That’s now.
So, what’s next?

Metaverse Evolution Spectrum



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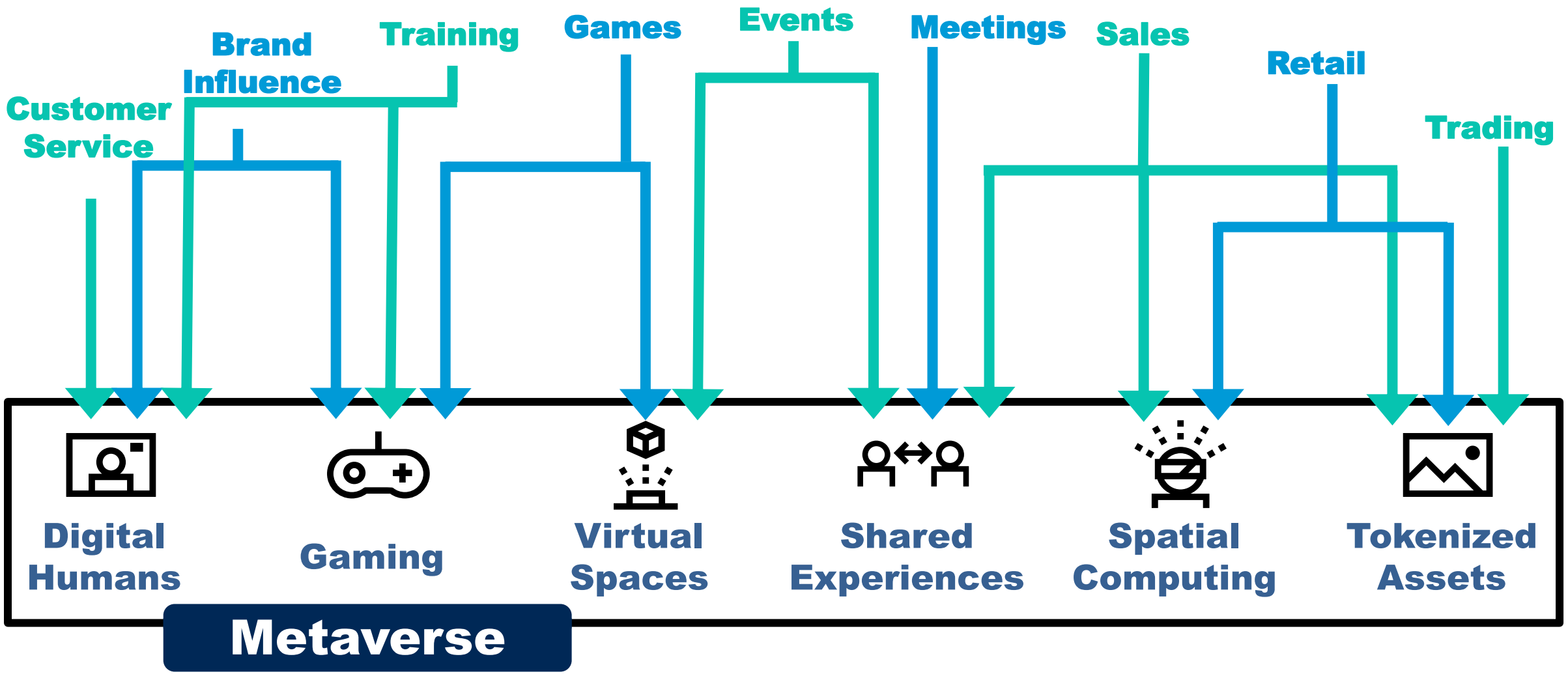
Do Any of These Interest Your Organization?



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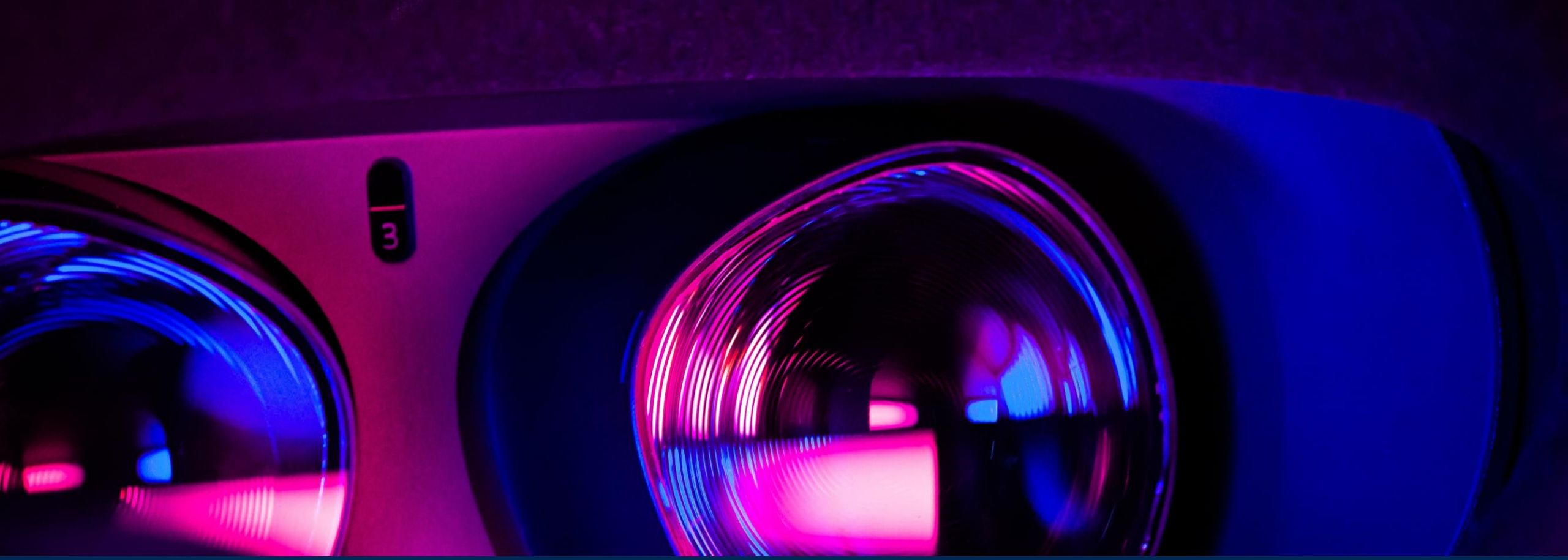

The metaverse provides innovative new opportunities and business models, allowing businesses to extend digital business to be persistent, decentralized, collaborative and interoperable.

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Despite all of the hype, the adoption of metaverse technologies is nascent and fragmented.

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Recommendations

- Explore opportunities.
- Build metaverse products and solutions.
- Identify metaverse-inspired opportunities.
- Evaluate the route to market your industry by engaging in co-creation, sharing specific intellectual property or participating in consortia. This will also support in reducing time to value and deliver higher return on investments.Invest in specific emergent metaverses cautiously.
- Drive by prioritizing enablement of metaverse use cases with a high degree of human engagement — that is, augmented decision making and operations support or collaboration

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