

ARTWORK GENERATED BY AI

BEYOND THE HYPE CYCLE: THE METAVERSE MATTERS NOW MORE THAN EVER

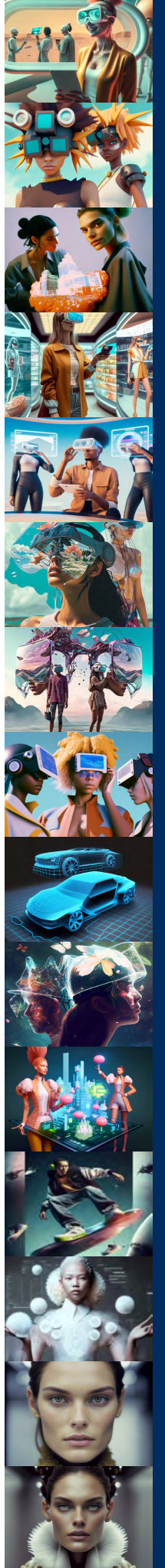


activate consulting

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Enabled by Generative AI, the Metaverse is closer to realization than ever; we expect that there will be over 600M Metaverse users by 2026

- ▶ **Generative AI will accelerate the development of the Metaverse**, enabling faster creation and scaling of virtual worlds, lowering barriers for entry and creation for all users, and allowing for a broad set of immersive social interactions
- ▶ **The Metaverse is already here in video games**: virtual worlds, users at scale, social interactions, and sophisticated user creation already exist today inside of video games
- ▶ **Today, there are already 300M+ active users in Metaverse video games and virtual world platforms**; with Generative AI as the enabler, we forecast that there will be over 600M people in the Metaverse within three years
- ▶ **The line between physical and virtual experiences is blurring**; most digital behaviors and daily activities are already taking place inside of Metaverse video games and virtual world platforms – this is just the beginning
- ▶ **Now that the Metaverse is beyond its peak hype cycle, companies will need to create practical and future-proofed Metaverse strategies**, prioritizing investments in the context of their companies' broader consumer engagement and technology development agendas



METaverse: TIME FOR PRACTICAL APPLICATIONS

► THE METaverse MATTERS NOW

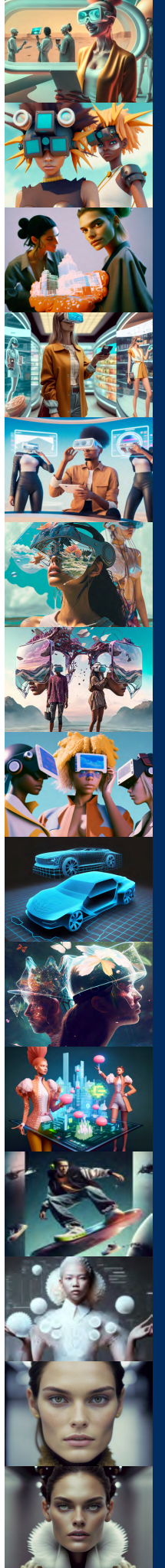
AI'S IMPACT ON THE METaverse

ELEMENTS OF THE METaverse

METaverse ECOSYSTEM

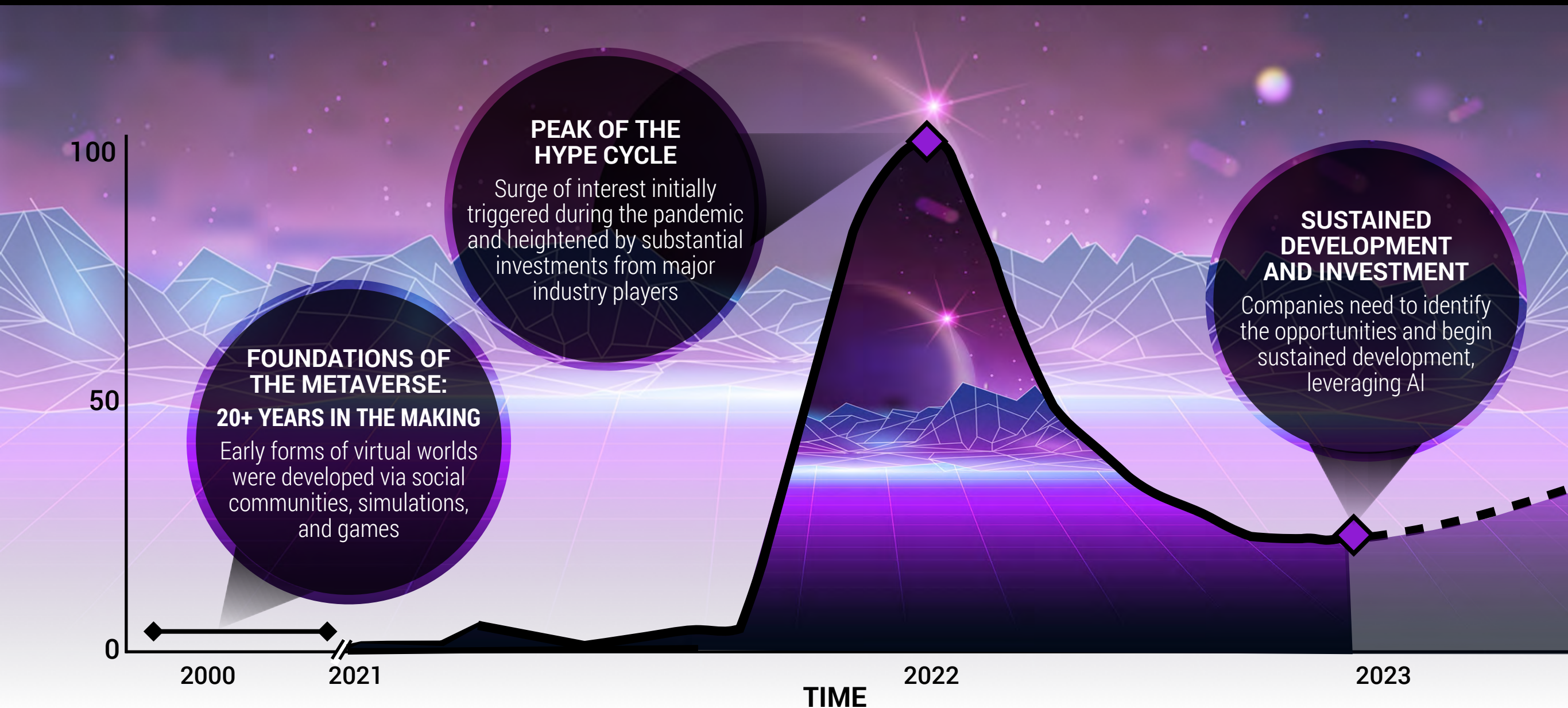
PRACTICAL PLAYBOOK FOR THE METaverse

ABOUT ACTIVATE AND OUR CAPABILITIES

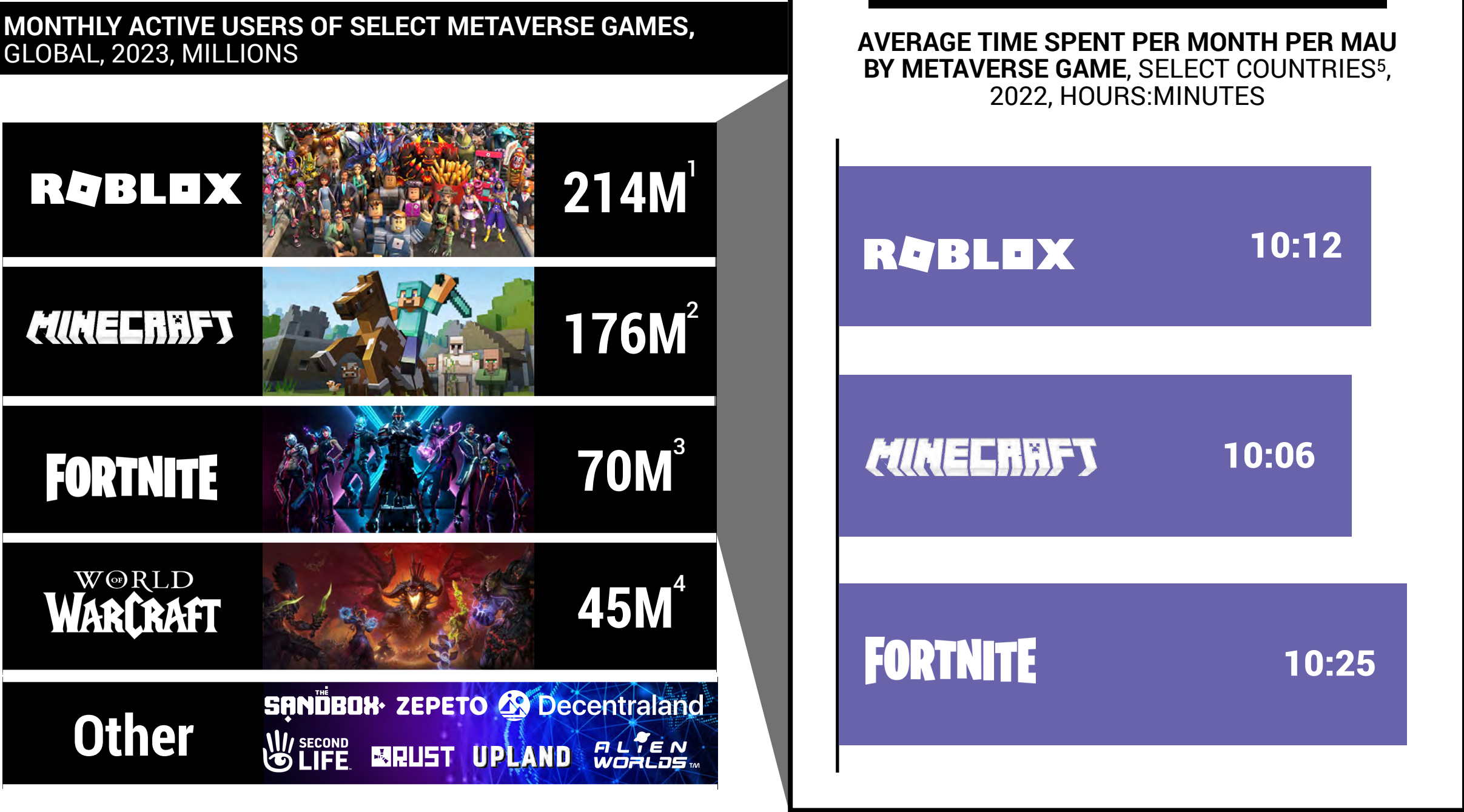


The Metaverse is beyond its peak hype cycle; we are at an inflection point where AI will accelerate its realization, and companies will need to begin sustained development and investment

GOOGLE SEARCH INTEREST¹ IN THE METAVERSE, U.S., JAN. 2021-JAN. 2023, INDEXED TO PEAK INTEREST



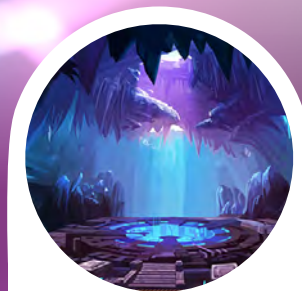
Today, there are already 300M+ people globally spending significant time in major Metaverse video games and virtual world platforms; enabled by Generative AI, this will be 600M people worldwide by 2026



1. Feb. 2023 estimate. 2. Jan. 2023 estimate. 3. As of Mar. 2023. 4. Includes MAUs for all Blizzard Entertainment games as of Feb. 2023. Users predominantly in China, Japan, and South Korea. 5. Includes France, Germany, U.K., and U.S.
Sources: Activate analysis, Company filings, Company press releases, Newzoo, RTrack, Yahoo

The Metaverse is already here in video games: virtual worlds, expansive user bases, social interactions, and user agency/creation largely exist inside of video games today and will provide the foundation for the future

VIDEO GAMES ARE THE FOUNDATION OF AN EXPANSIVE METAVERSE WORLD



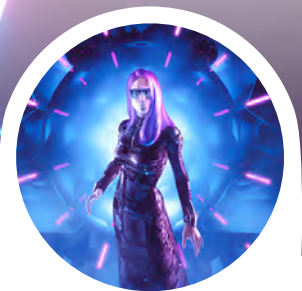
Video games already offer connected immersive experiences at scale



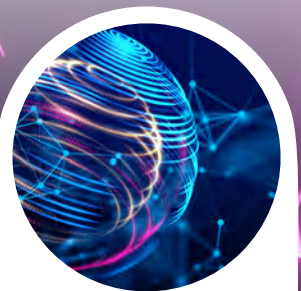
Consumers are participating in non-gaming activities and demonstrating social behaviors inside of video games



User creation, co-creation, and building are established behaviors
(e.g. user-generated activities, games, experiences, virtual goods, environments)



Players control their identity and can customize a digital persona distinct from their real-world identity



Digital twins exist as mirrors of the real world
(e.g. virtual representations of real-world spaces/objects)



Games provide established IP and relatable contexts and characters as hooks for users



Technology, game engines, and platforms are already in wide use
(e.g. game mechanics, concurrency, social, AR/VR integration, security, identity, content moderation)

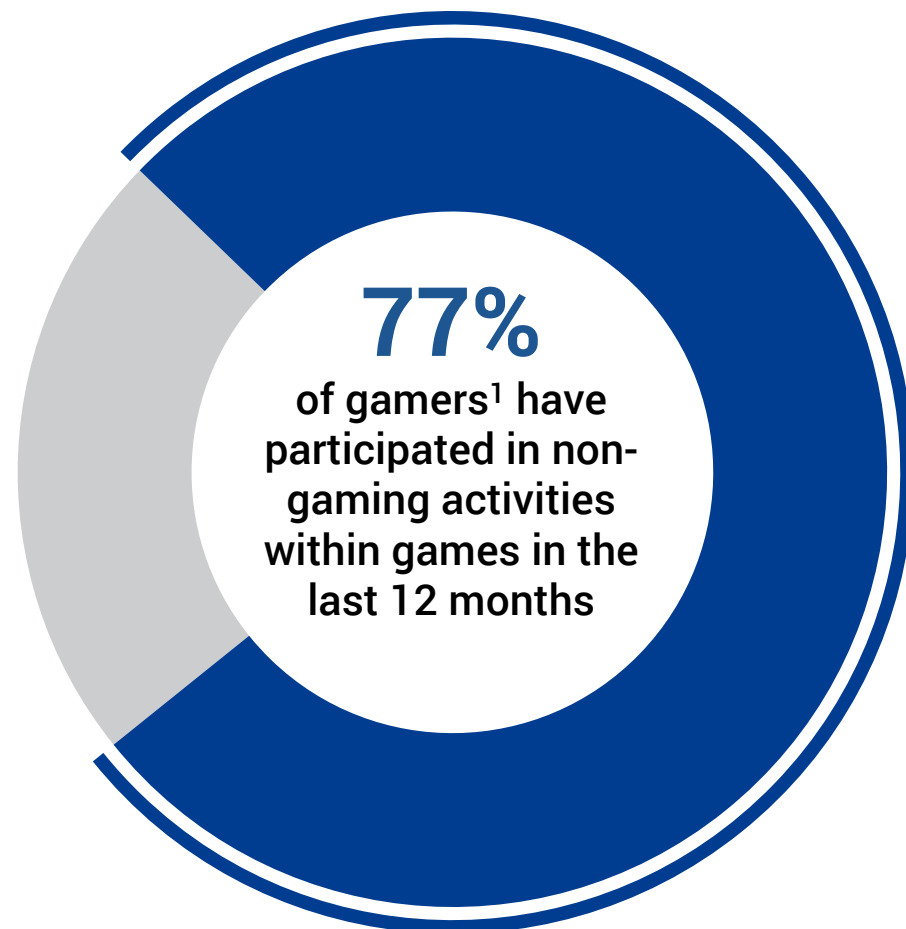


Consumers participate in large-scale, established global economies
(e.g. digital goods/services, eCommerce activities, brand/product placement)

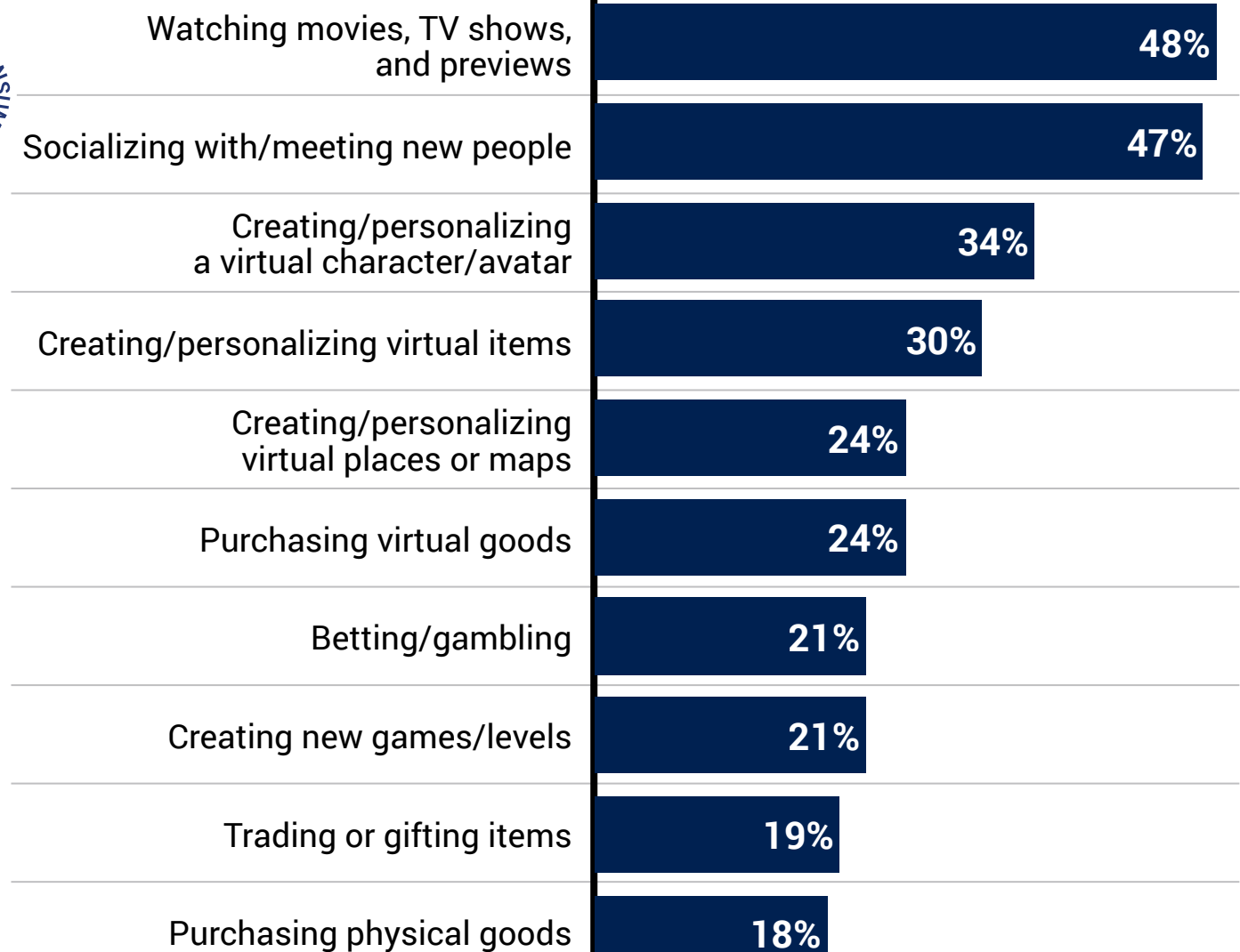
Our research shows that the majority of gamers already participate in non-gaming, Metaverse activities inside of video games

PARTICIPATION IN NON-GAMING ACTIVITIES OR EVENTS WITHIN VIDEO GAMES IN THE LAST 12 MONTHS, U.S., 2022, % GAMERS¹

100% = 148M U.S. Gamers¹



DETAILED PARTICIPATION IN NON-GAMING ACTIVITIES OR EVENTS WITHIN VIDEO GAMES IN THE LAST 12 MONTHS, U.S., 2022, % GAMERS¹



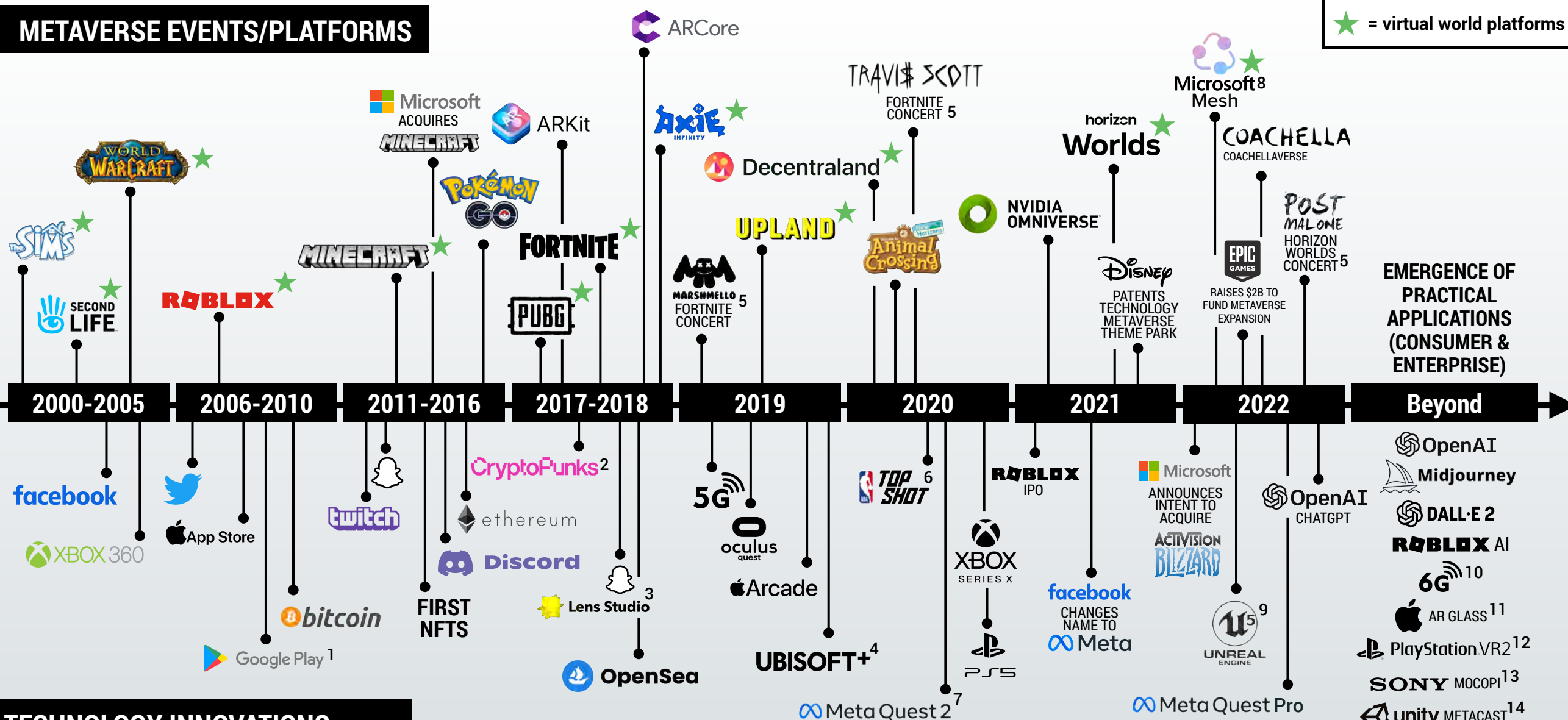
Most digital behaviors and many daily activities will happen in Metaverse platforms; many of these are already taking place in virtual worlds and video games



The foundation for the Metaverse has been in development for the last 20 years through video games, virtual experiences, and technologies; going forward, we will see the emergence of practical consumer and enterprise applications enabled by AI

METAVERSE EVENTS/PLATFORMS

★ = virtual world platforms



Note: Not exhaustive. 1. Previously Android Market. Rebranded to Google Play in Mar. 2012. 2. CryptoPunks is an early NFT project developed on the Ethereum blockchain. 3. Lens Studio is Snap's AR platform available on mobile devices. 4. Previously Uplay+, Ubisoft+ is a game subscription service that allows access to 100+ games. 5. Not exhaustive. Other Metaverse concerts include but are not limited to Ariana Grande in Fortnite, Charli XCX in Roblox, BLACKPINK in PUBG, and BTS in Minecraft. 6. Top Shot is a collection of NFTs that showcase memorable NBA moments. 7. Rebranded from Oculus Quest 2. 8. Microsoft Mesh became available for limited preview in Mar. 2022. Initially announced in Mar. 2021. 9. Unreal Engine 5 released in 2022. Unreal Engine originally released in 1998. 10. 6G projected in the coming years. 11. Apple AR glass and MR device rumored. 12. PlayStation VR2 launched in Feb. 2023. 13. Sony Mocopi wearables launched in Japan in Jan. 2023. 14. Unity Metacast to offer interactive 3D sports experiences. Sources: Activate analysis, Company press releases, Company sites

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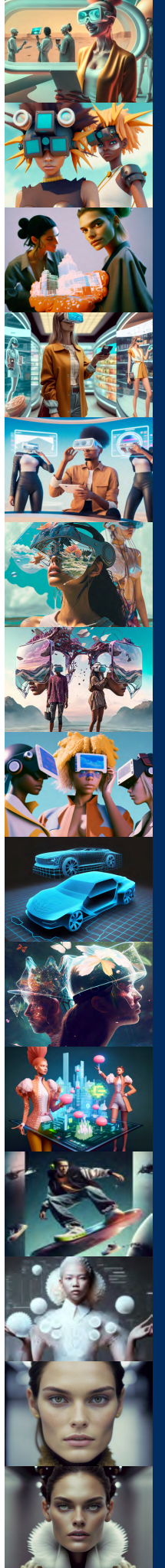
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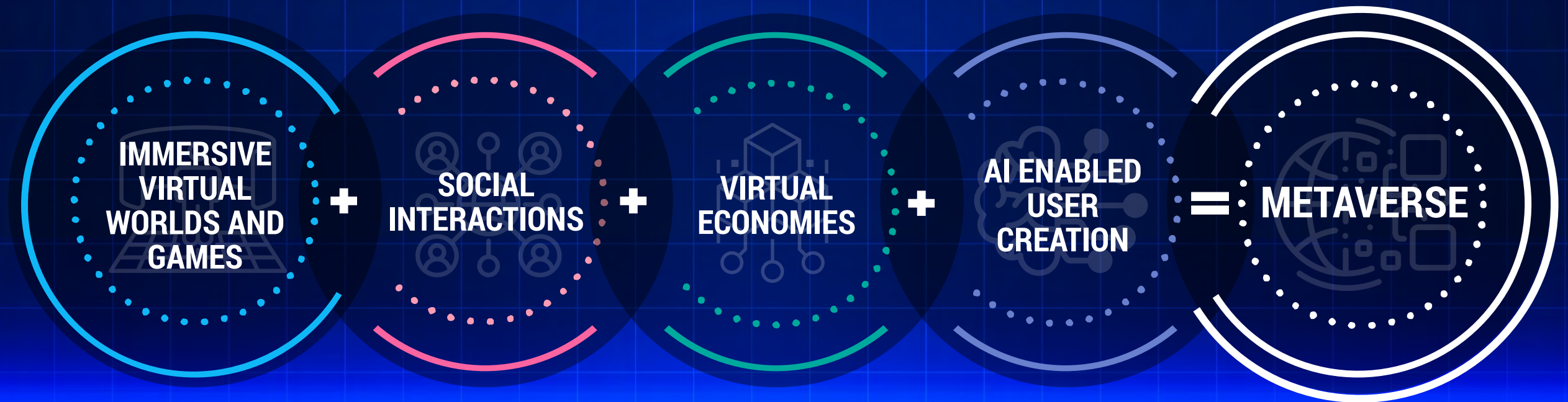
METAVERSE ECOSYSTEM

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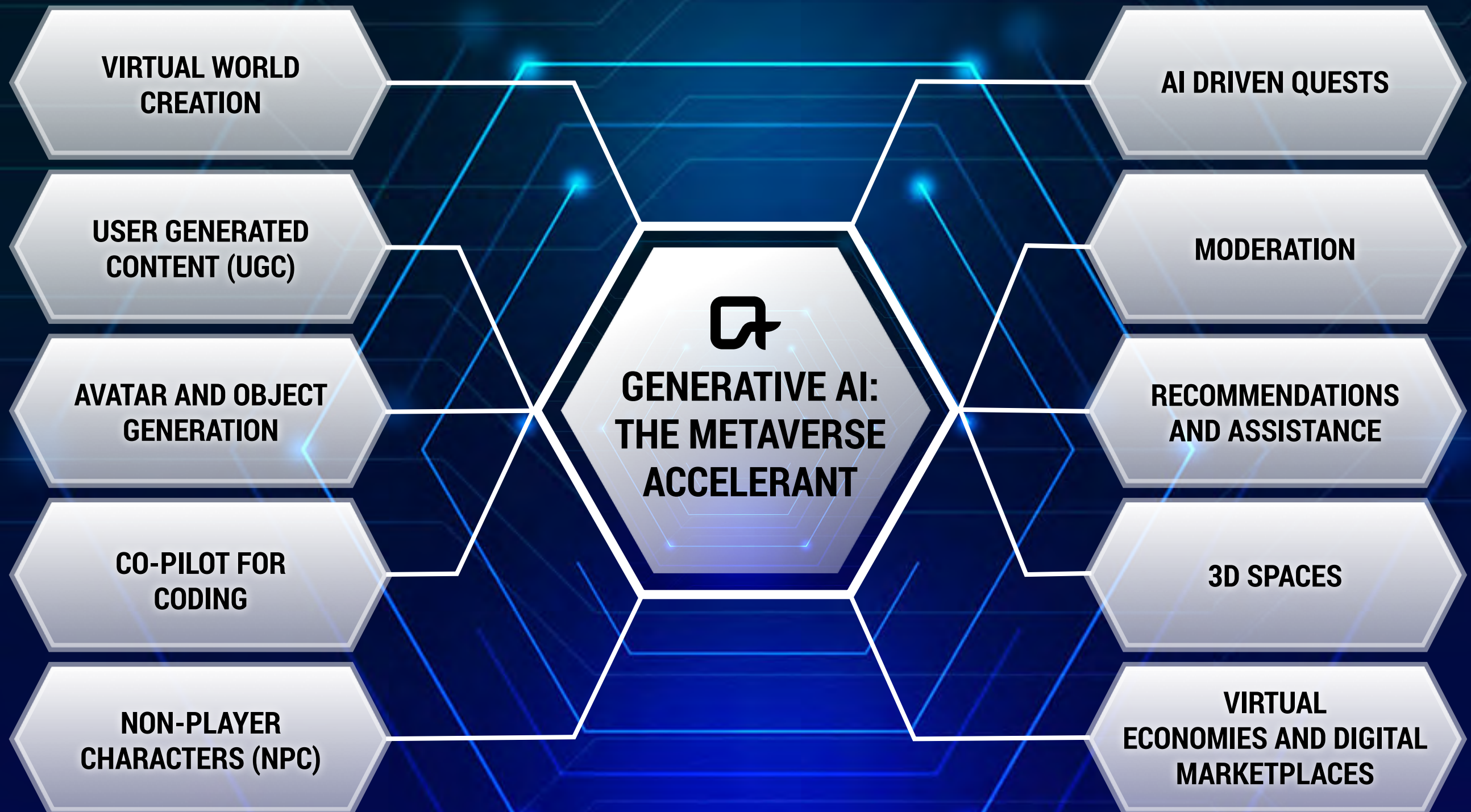
ABOUT ACTIVATE AND OUR CAPABILITIES



AI will accelerate the development of the Metaverse



Generative AI will accelerate the realization of the Metaverse



Generative AI's impact on the development of the Metaverse (1 of 2)



VIRTUAL WORLD CREATION: Allows the Metaverse to scale significantly faster through automatic, algorithm-based creation of virtual settings (e.g. cities, landscapes, terrain, textures, vegetation, etc.), generating a virtually infinite universe, creating billions of digital assets (text and code, audio, images, assets, and worlds) which would be impossible to do manually



USER GENERATED CONTENT (UGC): Enables every user to become a developer and creator, making user agency and creation practical today; significantly decreases the technical skill required (similar to short-form democratized video), empowering millions of people to build, play, share, and monetize their own interactive experiences



AVATAR AND OBJECT GENERATION: Enables users to express their personalities via avatars that can be created and customized beyond the limits of their imagination; virtual avatars and digital characters are highly realistic and expressive



CO-PILOT FOR CODING: Helps users today who are familiar with coding, offering autocomplete-style suggestions as they code; down the road, it will be designed for creative newcomers and those with no practical coding experience



NON-PLAYER CHARACTERS (NPC): Creates virtual characters that are believable and can interact with users naturally; generates dialogue for NPCs, allowing for more realistic and organic engagement

Generative AI's impact on the development of the Metaverse (2 of 2)



AI DRIVEN QUESTS: Creates an ever-evolving experience of unique storylines, settings, and character interactions that adapt to the preferences and needs of users



MODERATION: Provides the ability for users to determine what a “safe space” means for them and to implement those controls to create an experience that limits exposure to ill-intentioned actors



RECOMMENDATIONS AND ASSISTANCE: Enables the creation of virtual assistants, chatbots, and digital guides, providing users with personalized recommendations and assistance within the Metaverse; enhances the overall Metaverse experience, making it more intuitive, accessible, and tailored to a user's interests, and provides users with feedback on their creations and suggestions for improvements



3D SPACES: Allows for volumetric video capture, which can be easily be transferred into virtual reality and augmented reality experiences



VIRTUAL ECONOMIES AND DIGITAL MARKETPLACES: Generates virtual goods and services, allowing businesses and people to create new revenue streams within the Metaverse

Generative AI will make all users and companies into developers, with the power to create professional-level graphics and experiences via plain language text and image inputs, requiring little to no coding skills

GENERATIVE AI METAVERSE USE-CASES



CREATE INSTANT LANDSCAPES TO SCALE METAVERSE WORLDS



CUSTOMIZE AVATARS TO SPECIFICATIONS OF USERS



POWER SOPHISTICATED, HYPER-REALISTIC NPCs



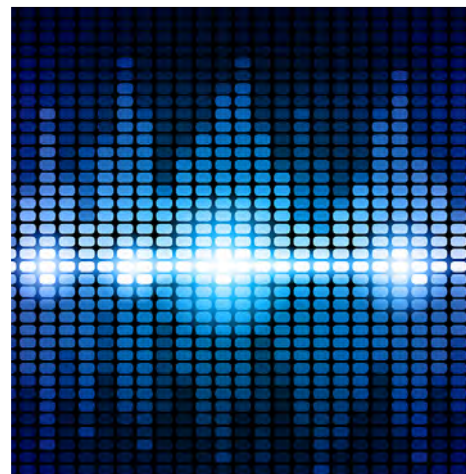
GENERATE ONE-OF-A-KIND ART PIECES



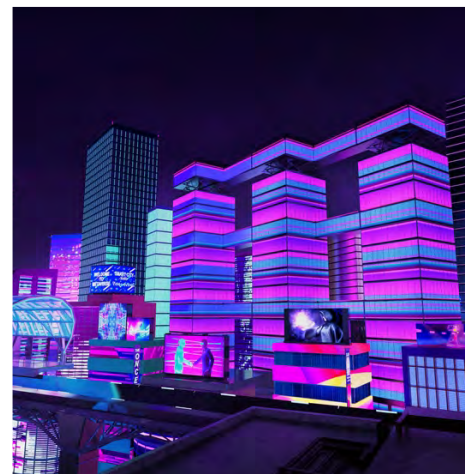
DESIGN ENGAGING EDUCATION AND TRAINING PROGRAMS



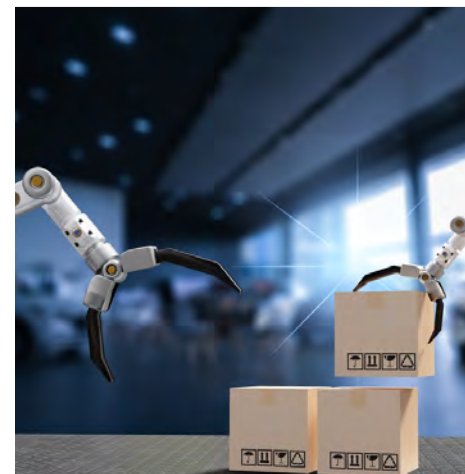
CRAFT ADAPTABLE USER-SPECIFIC STORYLINES



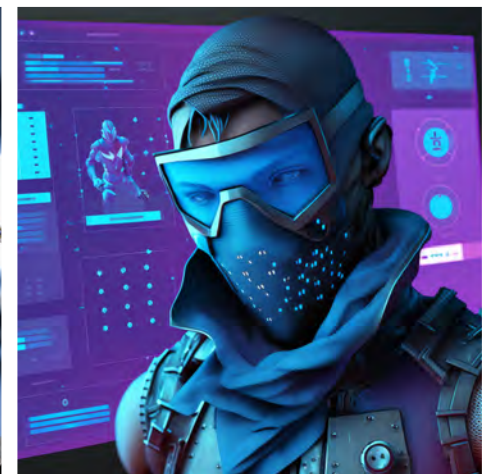
PRODUCE UNIQUE AUDIO TRACKS IN REAL-TIME



BUILD REPLICAS OF THE 3D PHYSICAL WORLD












DELIVER VIRTUAL SERVICES



CREATE CUSTOM PERSONALITIES AND BIOGRAPHIES

Generative AI tools significantly lower the entry barrier for user agency across the full set of creator use cases

ILLUSTRATIVE GENERATIVE AI COMPANIES & TOOLS

	<ul style="list-style-type: none"> • A free-to-play single-player and multiplayer text adventure game which uses artificial intelligence to generate content (launched Dec. 2019)
	<ul style="list-style-type: none"> • AI chatbot that responds to users' queries with detailed, comprehensive and human-like text answers (launched Nov. 2022)
	<ul style="list-style-type: none"> • AI system that translates natural language to code (launched Aug. 2021)
	<ul style="list-style-type: none"> • AI software that takes 2D reference images and rapidly creates 3D models of objects/spaces (launched Spring 2022)
	<ul style="list-style-type: none"> • AI service created by a San Francisco-based independent research lab, which generates images from natural language descriptions prompts (launched Mar. 2022)
	<ul style="list-style-type: none"> • Deep learning text-to-image model, focused on greatly minimizing image generation time (announced Jan. 2023)
	<ul style="list-style-type: none"> • AI tool that generates music matching the user's content preferences (launched Winter 2020)
	<ul style="list-style-type: none"> • AI tool that generates objects, animations, and textures using text prompts (launched Winter 2020)
	<ul style="list-style-type: none"> • AI model that allows users to generate hyper-specific images from any line of text (launched Nov. 2022)

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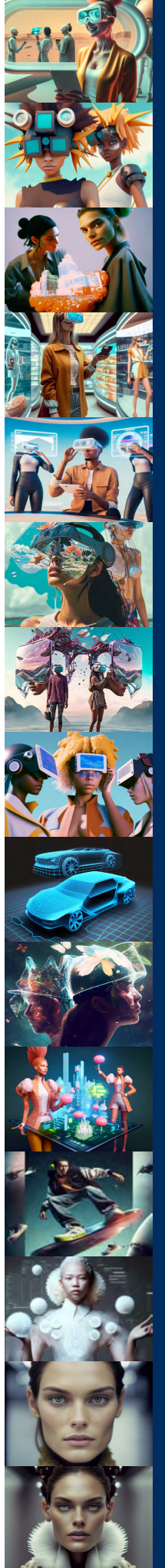
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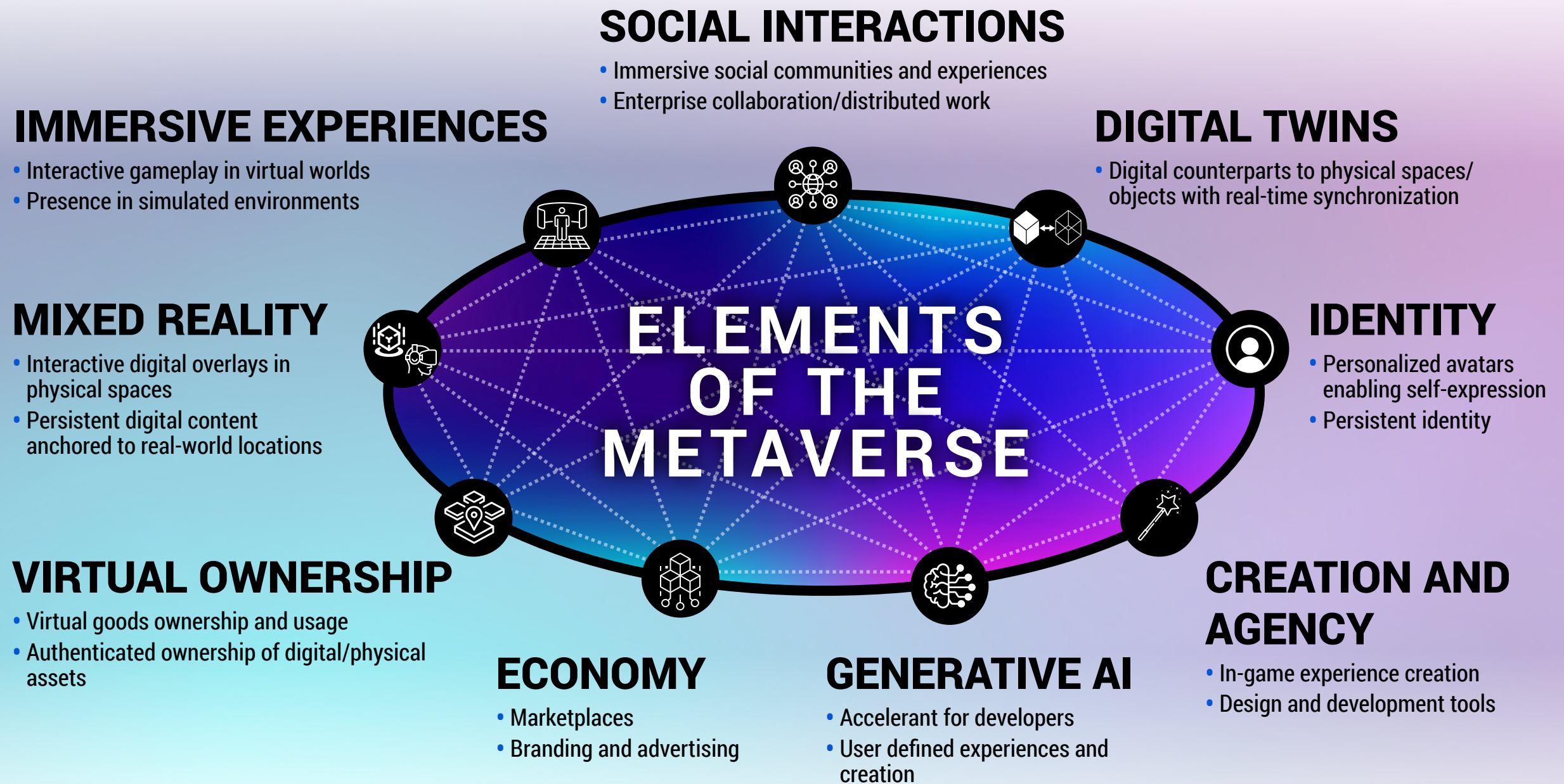
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ABOUT ACTIVATE AND OUR CAPABILITIES



We see nine foundational elements of the Metaverse; proof points for each of these elements already exist today



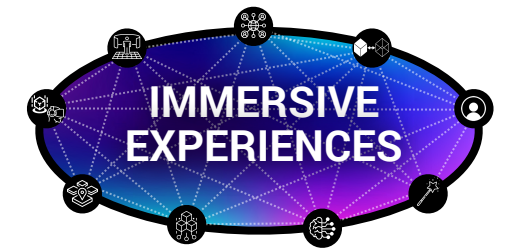
Virtual world video games already include most of the nine foundational Metaverse elements

SELECT VIRTUAL WORLD GAMES AND METAVERSE ELEMENTS

✓ FEATURE/CAPABILITY AVAILABLE

MAJOR VIRTUAL WORLD GAMES

METAVERSE ELEMENTS		FORTNITE	ROBLOX	MINECRAFT	WORLD WARCRAFT	SECOND LIFE
	 IMMERSIVE EXPERIENCES	✓	✓	✓	✓	✓
	 SOCIAL INTERACTIONS	✓	✓	✓	✓	✓
	 DIGITAL TWINS	✓	✓	✓		✓
	 IDENTITY	✓	✓	✓	✓	✓
	 CREATION AND AGENCY	✓	✓	✓	✓	✓
	 GENERATIVE AI		✓			
	 ECONOMY	✓	✓	✓	✓	✓
	 VIRTUAL OWNERSHIP	✓	✓	✓	✓	✓
	 MIXED REALITY		✓	✓		



Shared immersive experiences will be the foundation for Metaverse platforms

EXAMPLES OF IMMERSIVE EXPERIENCES WITHIN THE METAVERSE



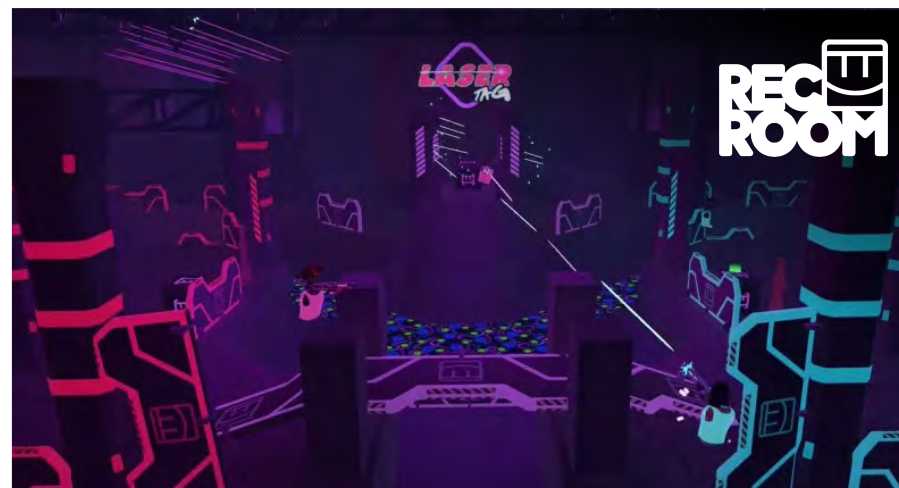
EXPLORE WORLD OF WARCRAFT'S OPEN-GAME WORLD, COMPLETE QUESTS, AND INTERACT WITH OTHER PLAYERS



ATTEND A LIVE VIRTUAL MUSIC PERFORMANCE WITH FRIENDS IN SOUNDSCAPE VR



PARTICIPATE IN A 3D VIRTUAL KARAOKE EXPERIENCE IN XRSPACE PARTYON

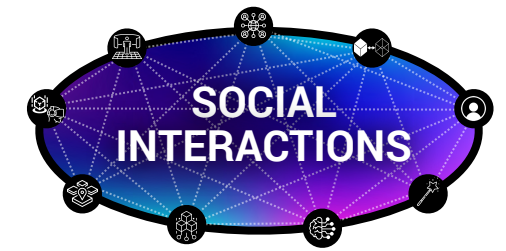


BATTLE OTHER USERS IN REC ROOM'S LASER TAG ARENA

ACTIVATE PERSPECTIVE

Immersive experiences in the Metaverse will:

- Grow in variety and number as the Metaverse develops
- Provide opportunities to meet people through both structured activities (e.g. sports, games, concerts) and non-structured activities (e.g. open space exploration)
- Increasingly replicate real-life activities and experiences as Metaverse participation becomes a more mainstream behavior
- Evolve in complexity, detail, and functionality to offer virtual experiences with greater similarity to physical world activities



Social experiences and interactions will increasingly take place in Metaverse platforms

EXAMPLES OF SOCIAL AND COMMUNITY-BASED INTERACTION WITHIN THE METAVERSE



SPEND TIME WITH FRIENDS IN FORTNITE'S PARTY WORLDS



PARTY WITH PARIS HILTON AT CRYPTOWEEN IN ROBLOX AND THE SANDBOX



PLAY GAMES OF PICKUP BASKETBALL IN NBA 2K22 "THE NEIGHBORHOOD"

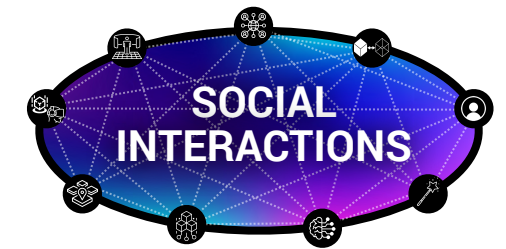


CELEBRATE A VIRTUAL WEDDING IN ANIMAL CROSSING

ACTIVATE PERSPECTIVE

Social and community-based interactions in the Metaverse will:

- Include the ability to engage with real-life friends and meet new people in virtual worlds (e.g. open spaces, events, meetings)
- Enhance activities with live user-to-user interaction (e.g. virtual gameplay)
- Develop additional applications as more activities become available (e.g. dating, attending festivals, professional networking)
- Supplement or even replace an increasing number of real-world social events over time (e.g. parties, weddings, sports games)



Metaverse workplace collaboration platforms will provide a more immersive vehicle for virtual interaction and an expansion of video conferencing technologies

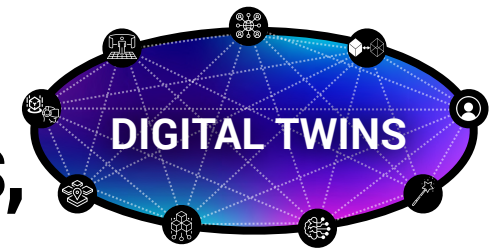
EXAMPLES OF EARLY METAVERSE WORKPLACE COLLABORATION



ACTIVATE PERSPECTIVE

Collaboration in the Metaverse will:

- Enable deeper levels of immersion over time
- Leverage avatars to create a sense of presence and provide users with agency over their own representation
- Include a broadening set of tools and resources to facilitate immersive collaboration (e.g. virtual conference rooms, shared whiteboards, spatial audio)
- Allow users to collaborate directly on files/projects as if in person together (e.g. object manipulation, 3D physical objects, interoperability of files across platforms)



The Metaverse has a broad set of enterprise applications, including digital twins of objects and environments



What is it?

A digital twin is a real-time virtual representation of a real-world physical system that serves as the indistinguishable digital counterpart.

Digital twins are made to:

- Monitor performance
- Test different scenarios
- Predict issues
- Find optimization opportunities

How is it built?

Building a digital twin requires the creation of:

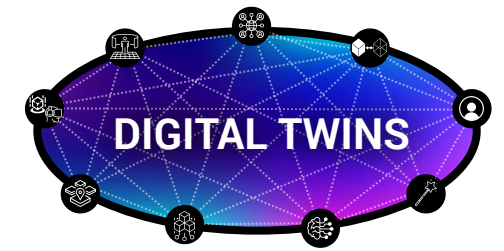
- Hardware to initiate the exchange of information between assets and their software representation (e.g. physical sensors, routers)
- Middleware to accumulate data from different sources in a centralized repository
- Software to turn raw observations into valuable business insights (e.g. machine learning tools, simulation software)

These components allow constant communication between the physical and digital items.

Who is enabling it?

Example companies enabling this technology:





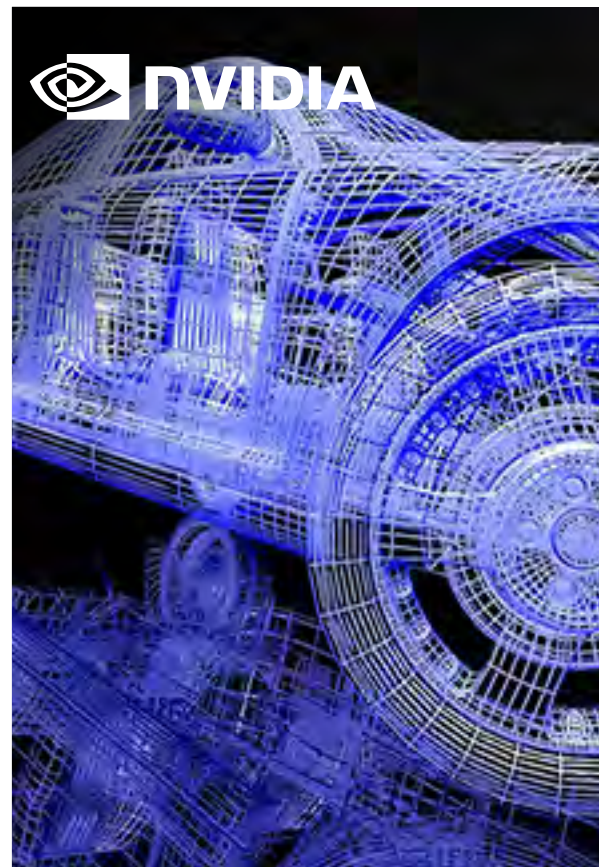
Enterprises and SMBs are accessing the tools to build digital twins

EXAMPLES OF DIGITAL TWINS WITH ENTERPRISE AND SMB USE CASES



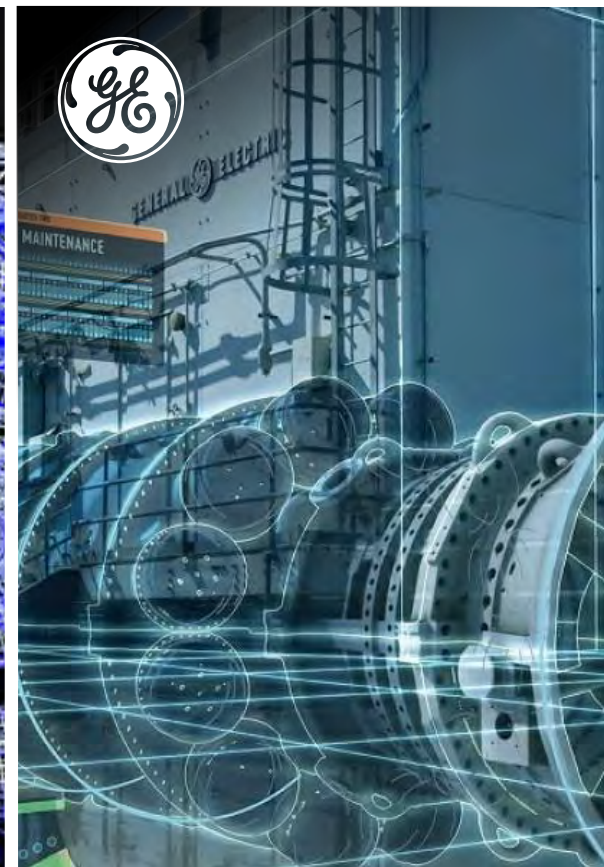
AZURE DIGITAL TWINS:

Allows users **to create digital models** of buildings, factories, energy networks, railways, cities, and more



NVIDIA OMNIVERSE DIGITAL TWINS:

Enables users **to develop physically accurate, AI-enabled virtual simulations of real-world environments; individual creators and developers** can download, use, and contribute to NVIDIA Omniverse for free



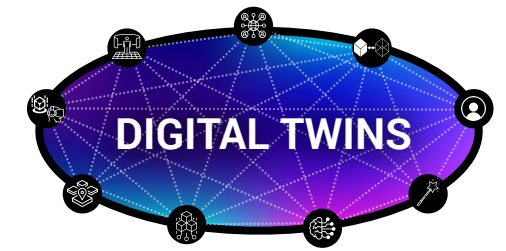
GE DIGITAL TWIN SOFTWARE:

Allows users **to create digital twins that represent an individual asset, an integrated system of assets, or a fleet of assets**

ACTIVATE PERSPECTIVE

Digital twins in the Metaverse will:

- Be applied to a greater set of enterprise use cases and leveraged across a widening set of businesses
- Become increasingly accessible to SMBs and consumers, in addition to enterprises, as tools for building and using digital twins become more user-friendly
- Evolve to support systems with greater size and complexity as technology improves

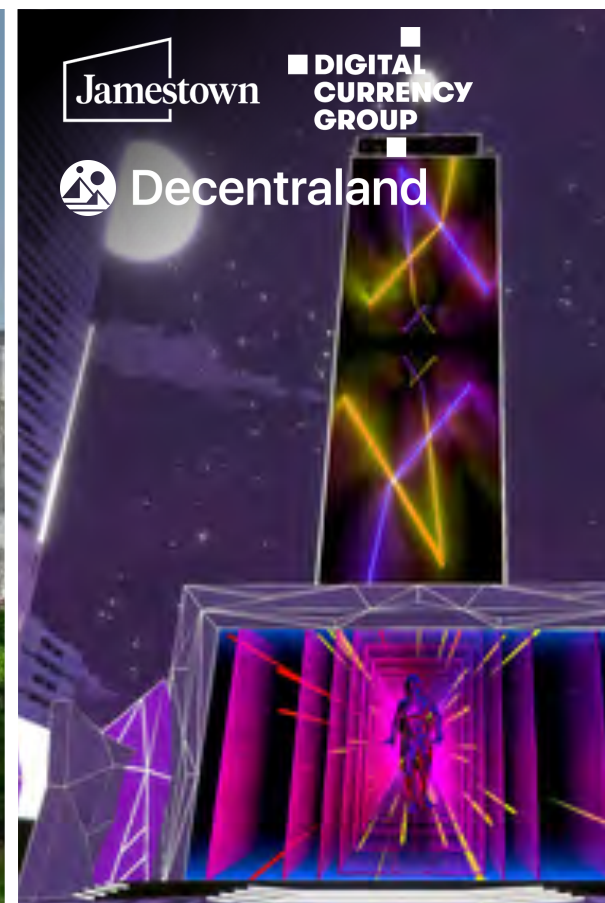


Digital twins provide a bridge between the real world and virtual worlds, with practical applications – many enabled by AI

EXAMPLES OF EARLY METAVERSE DIGITAL TWINS



BuildTheEarth is an open-contribution effort to **recreate the world at a 1:1 scale in Minecraft**



Real estate giant **Jamestown** and digital assets investor **Digital Currency Group** partnered to recreate **One Times Square in Decentraland**

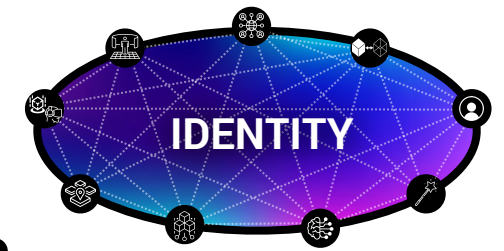


HDR, Inc. and Seattle City Light developed a digital twin model of **Diablo Dam** down to a **2cm visual accuracy** through high-res photography

ACTIVATE PERSPECTIVE

Digital twins in the Metaverse will:

- Serve as digital replications of a growing number of real-world systems, objects, and locations
- Develop to be larger, more complex, and more synchronized with their real-world counterparts
- Incorporate a range of data types beyond visual inputs (e.g. spatial data, performance data, health data)
- Become increasingly accessible for public viewing, usage, and contribution
- Feature two-way synchronization, more closely linking the physical and digital worlds (e.g. products, changes, ownership)

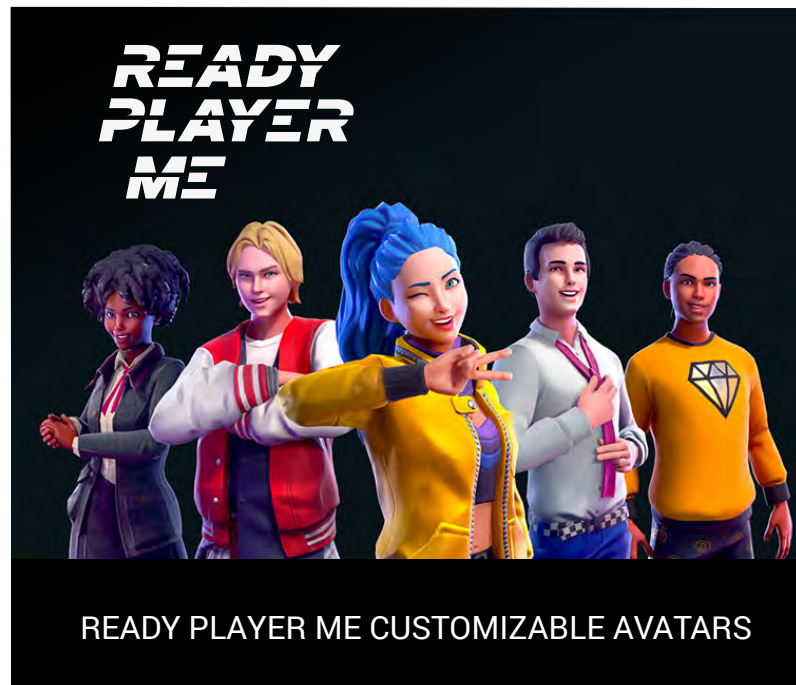


People will have an expansive set of AI-enabled options to define their avatar or Metaverse identity, either as themselves today, an idealized version, or an entirely new person

IMPORTANCE OF IDENTITY IN THE METAVERSE

IDENTITY WILL BE CORE TO THE METAVERSE

- AI will enable almost instant avatar creation
- **Personalized identities** will allow people to **reinvent themselves**, reflecting who they are and want to be
- The ability to use a **consistent identity across platforms** will serve to **unify the Metaverse** across separate systems
- Building the infrastructure and systems to **ensure security, privacy, and protections** for participants will be critical to the development of the Metaverse



KEY ELEMENTS FOR IDENTITY IN THE FUTURE STATE OF THE METAVERSE



Interoperability

(i.e. use the same avatar in separate platforms and environments)



Personalization

(i.e. customize how one wants to be perceived in a virtual world through self-expression)



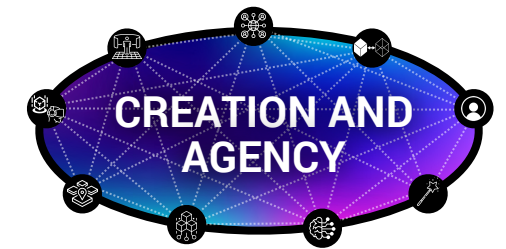
Authentication

(i.e. establish procedures for identify verification to ensure security and build trust between users)



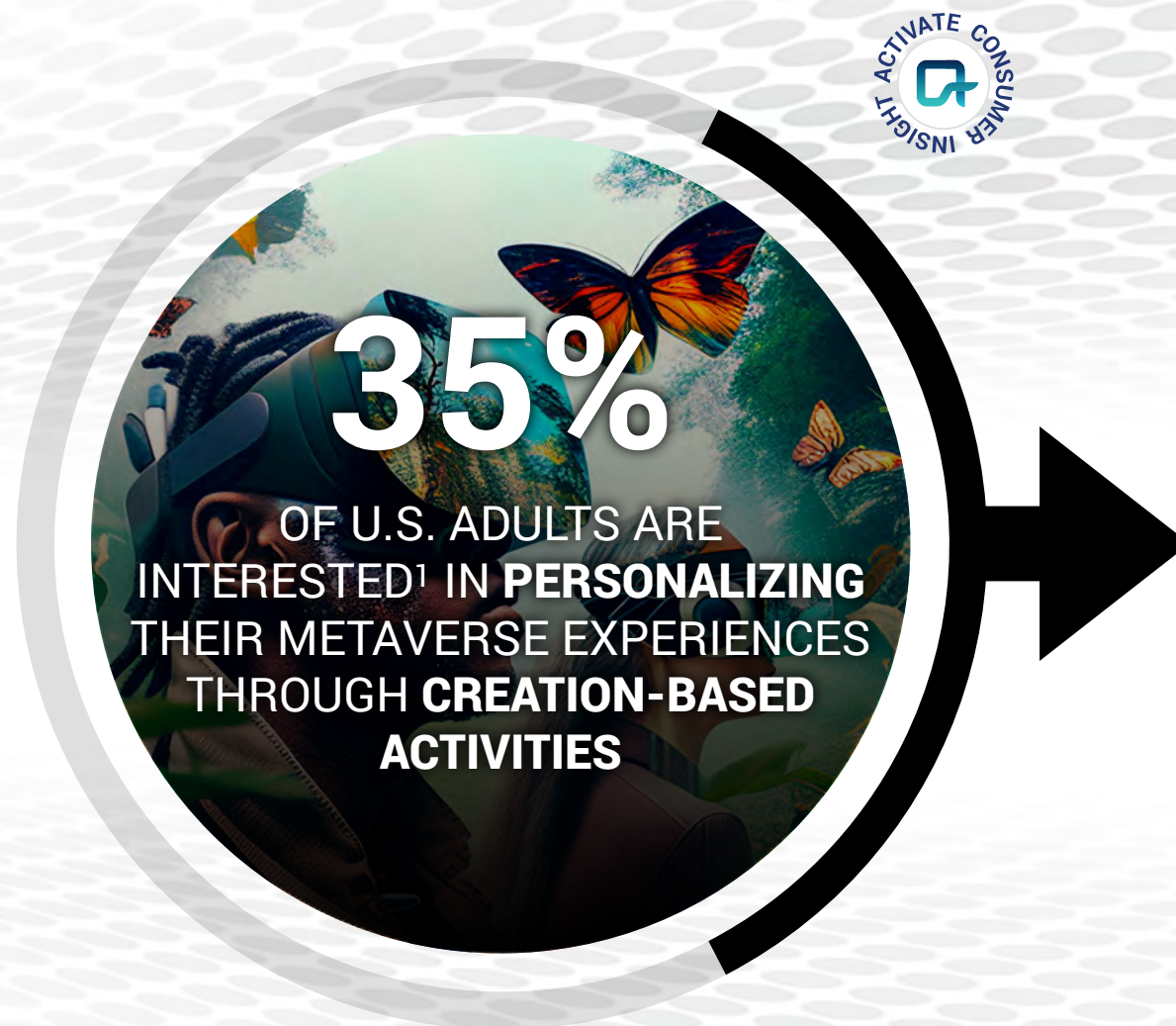
Privacy

(i.e. provide users the choice over how their personal data and digital identity are used)



AI-enabled User creation and agency will be critical to the full development of Metaverse platforms; people will expect to create and build themselves (not just accept a world created for them)

**INTEREST¹ IN FUTURE CREATION ACTIVITIES IN THE METAVERSE,
U.S., 2022, % ADULTS AGED 18+**



CREATING/PERSONALIZING VIRTUAL ITEMS

29%

CREATING/PERSONALIZING AN AVATAR

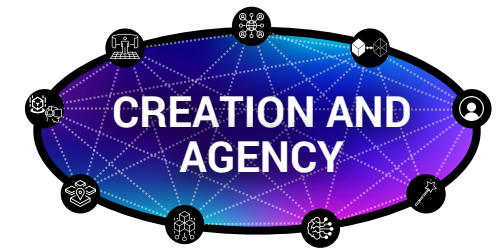
27%

**CREATING/ PERSONALIZING
VIRTUAL PLACES OR MAPS**

26%

CREATING NEW GAMES OR LEVELS

23%



Today, user creation and agency are core to major Metaverse platforms and games

EXAMPLES OF USER-GENERATED CONTENT AND CREATOR ECONOMIES WITHIN THE METAVERSE



ROBLOX

- Roblox experiences are **built almost entirely by users and developers**
- Roblox has **more than 10M developers** globally who have built **over 29M virtual experiences** as of June 2022
- In 2021, Roblox paid out over **\$500M in in-game currency to developers and creators**—2,200 creators earned over \$10K, and 500 creators earned over \$100K



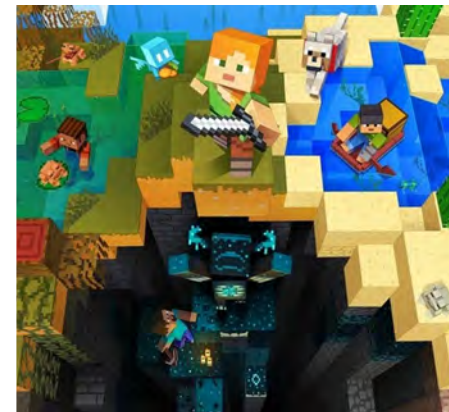
REC ROOM

- Rec Room enables users to **build, create, and play games** in rooms, with **over 12M rooms** created as of Dec. 2021
- Rec Room also offers community programs to **educate and connect creators**



FORTNITE

- Fortnite allows players to make **unique islands and games** to share with friends through its **Creative Mode**
- Fortnite also **features new games on their discovery page** to encourage **exploration of user-generated content**

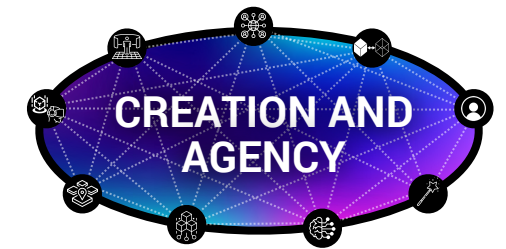


MINECRAFT

- Minecraft users can **build worlds** in Creative Mode and **develop story-based games** in Adventure Mode
- Users can **monetize creations** through the **Minecraft Marketplace** (e.g. maps, mini games, skins)

ACTIVATE PERSPECTIVE

- The Metaverse will be built by both professional developers and everyday users
- User-generated creation will lead to a rapid proliferation of virtual content and Metaverse experiences
- Tools for content creation will become more intuitive, widely available, and easy to use, allowing for greater participation, creation, and sharing of unique experiences (e.g. A.I.-enhanced hyper-personalization of avatars, drag-and-drop tools for in-game creation and customization, stable diffusion to create original image and video content)
- The development of Metaverse economies, virtual ownership, and content monetization will create an ecosystem that fosters user-led creation



Co-creation: Consumerization of development tools and AI enablement will fuel expanded Metaverse creation and participation

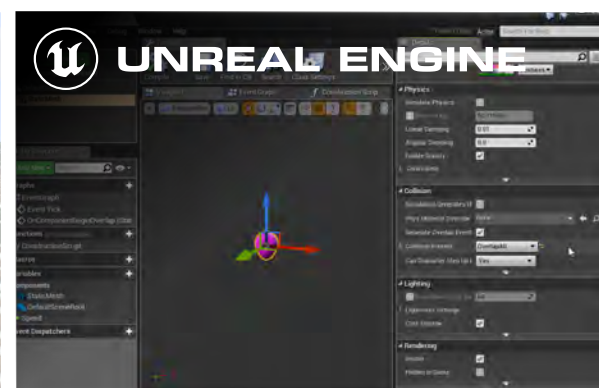
EXAMPLES OF CREATOR TOOLS WITHIN THE METAVERSE



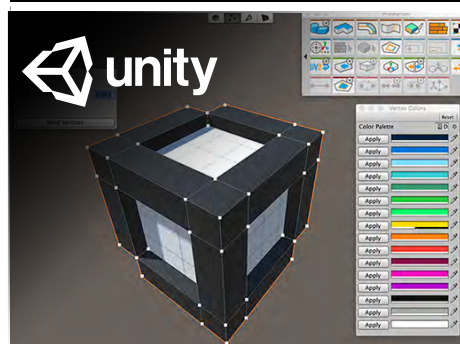
Roblox Studio is a **free immersive creation engine** that users can access **on their own Windows or Mac devices**



Creative mode in Minecraft is **free and simple**, and enables users to **generate custom content across all platforms**



Unreal Engine is **free for all creators**, and the Blueprints Visual Scripting system **allows beginners to create game elements without writing any code**



Unity's ProBuilder is a hybrid design tool with **tutorials for beginners** and a **consumer-friendly interface**, providing **easy access to world generation and object modeling**



Adobe Substance 3D, **available on desktop and in VR with a free trial**, allows users to design and simulate 3D models



Consumers of all design backgrounds can create in Meta Horizon Worlds by leveraging **templates and tutorials** in build mode

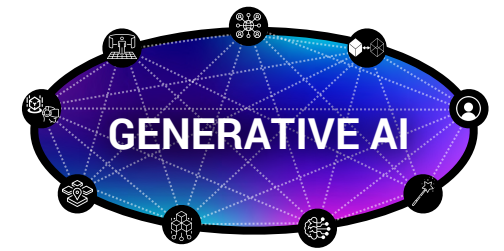


Everyday users can leverage Microsoft Mesh's simple **menu of creative actions** to quickly build collaborative spaces for free

ACTIVATE PERSPECTIVE

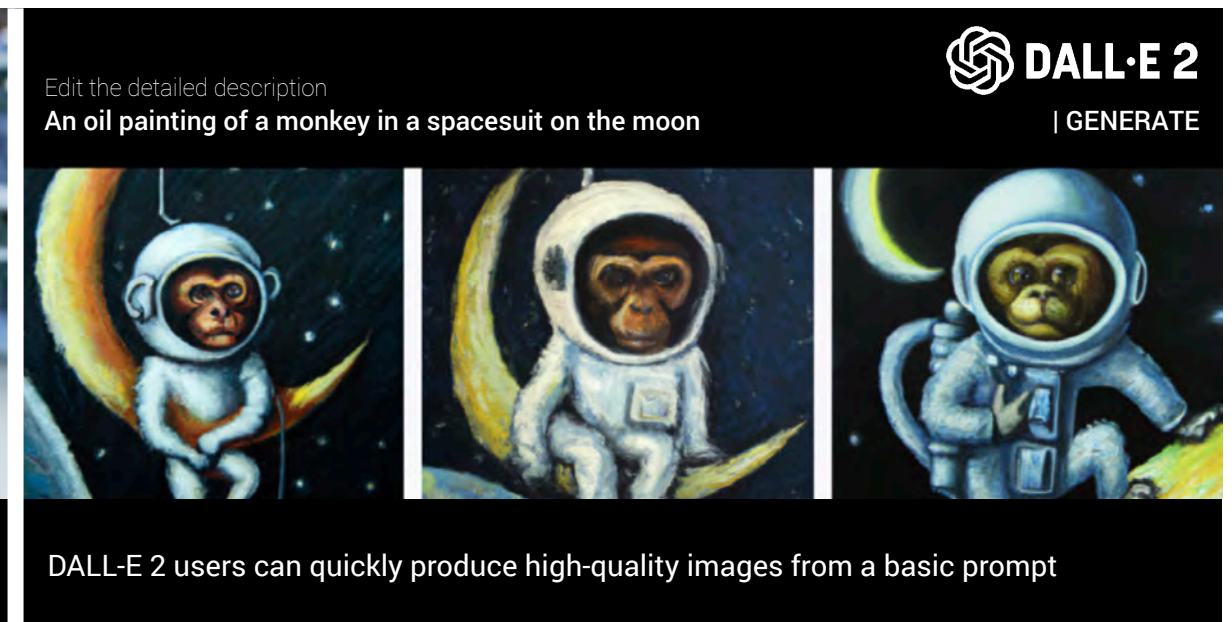
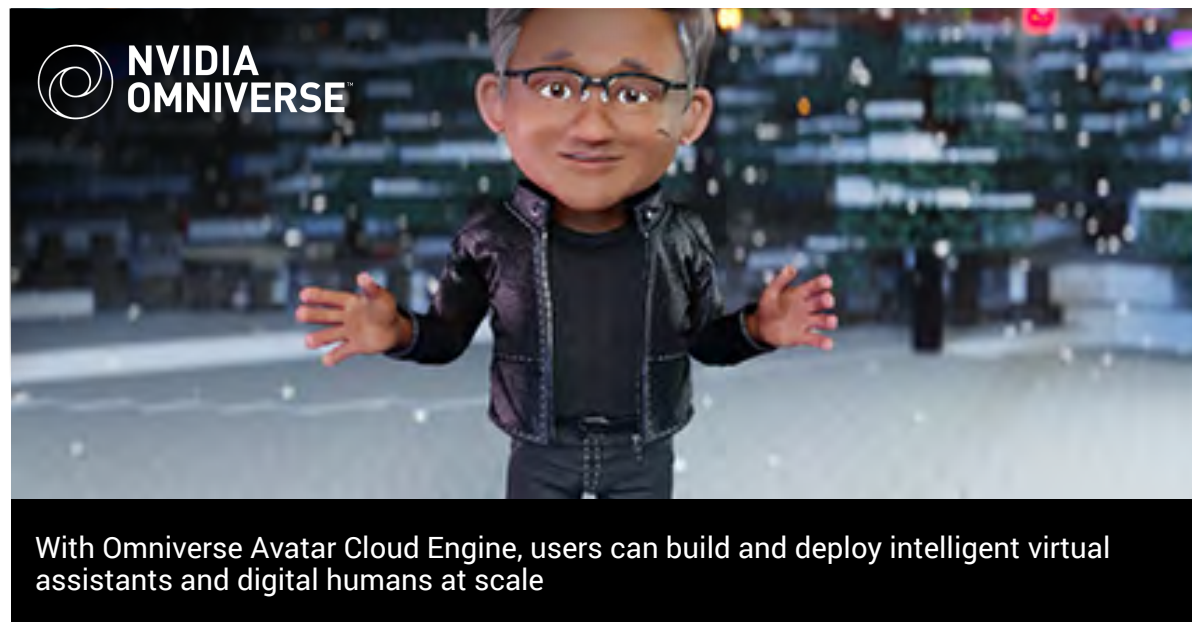
Developer tools will evolve to include:

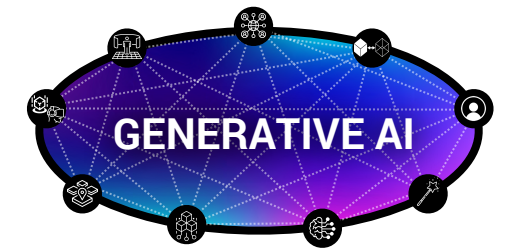
- Increasingly accessible versions for everyday consumers (e.g. user-friendly interfaces, project templates, free pricing)
- More complex capabilities and toolsets available to expand the possibilities of creation
- More comprehensive integration of data, analytics, and AI services to fuel creation in the Metaverse
- Ability to import content from third-party tools and other platforms, further enabling user creativity and unifying content across otherwise siloed experiences



Generative AI will be a Metaverse accelerant and critical to scaling the Metaverse

EXAMPLES OF GENERATIVE AI TOOLS THAT CAN BE APPLIED IN THE METAVERSE

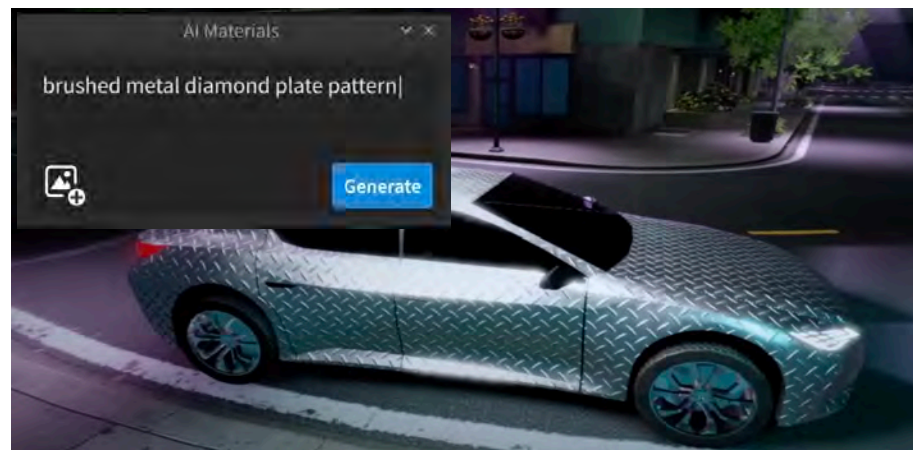




Roblox leads the way with new generative AI features to enhance and simplify the user creation process; other Metaverse platforms will soon follow

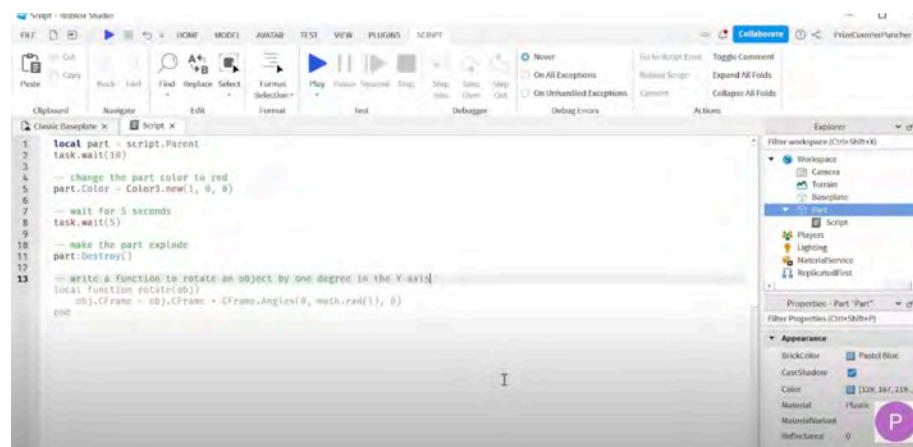
ROBLOX

AI INTEGRATIONS



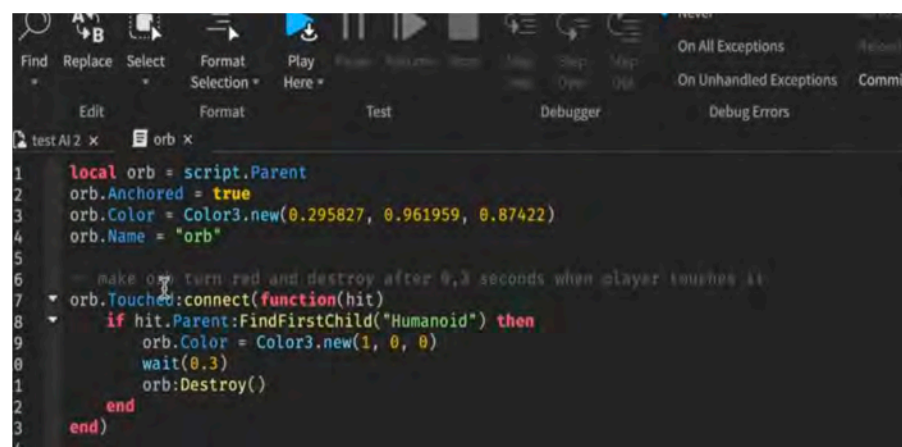
MATERIAL GENERATOR

Enhances 3D creation and UGC, as text description generates an artistic rendition which can be continually refined



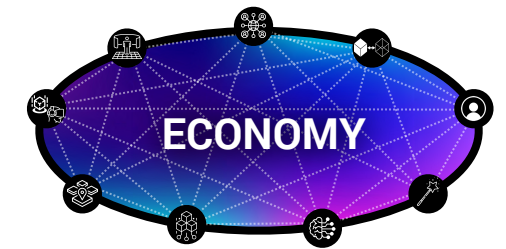
CODE ASSIST

AI assistant in Roblox's Studio Script Editor that suggests lines or functions of code as users type, helping users code more efficiently



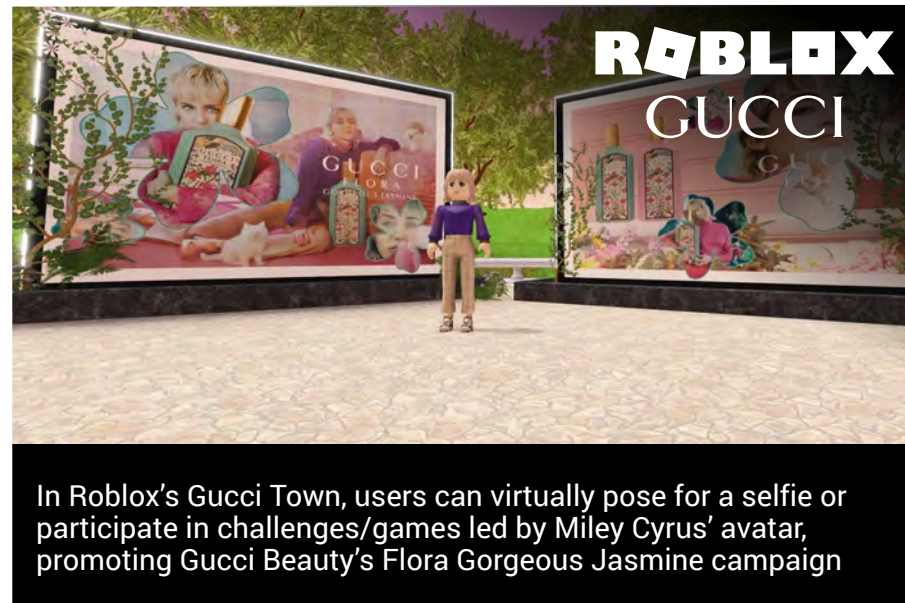
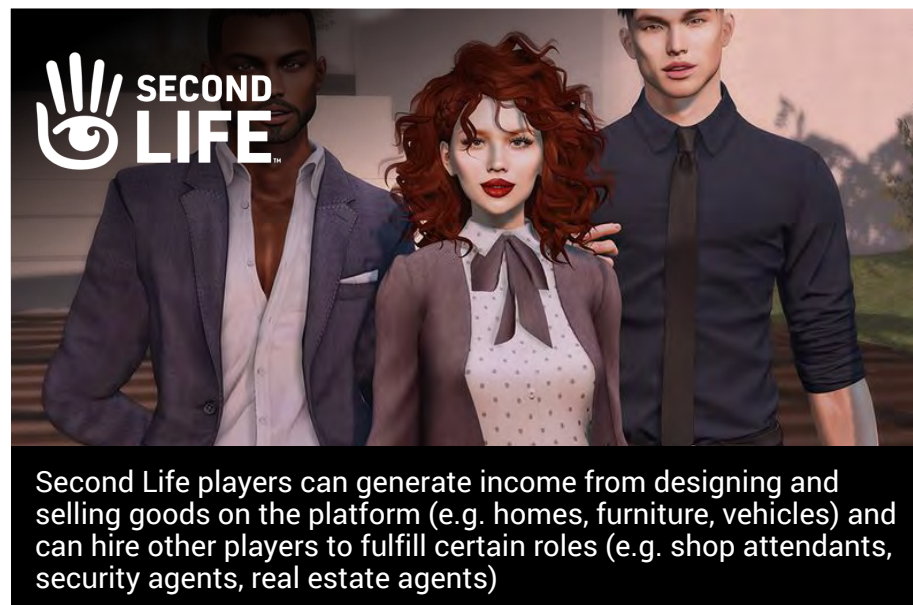
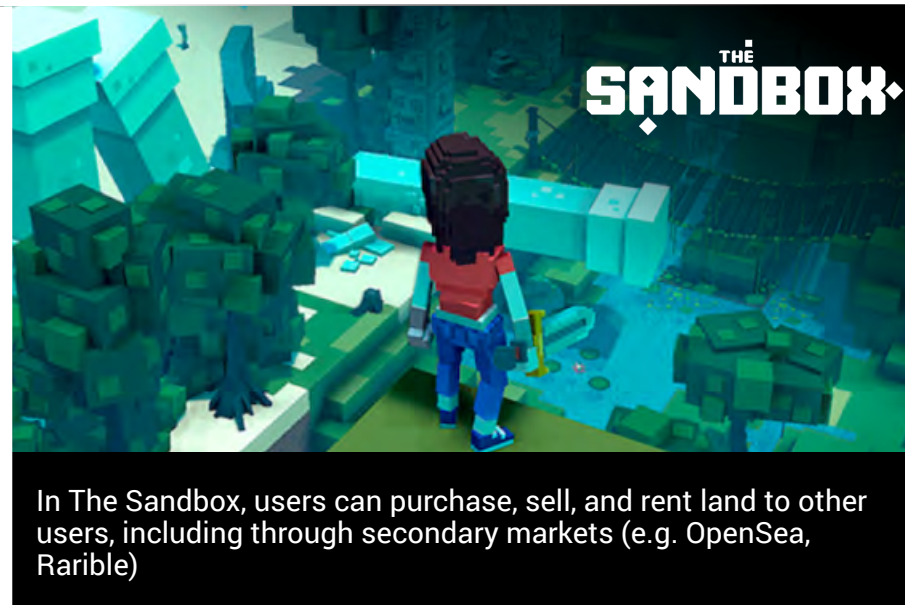
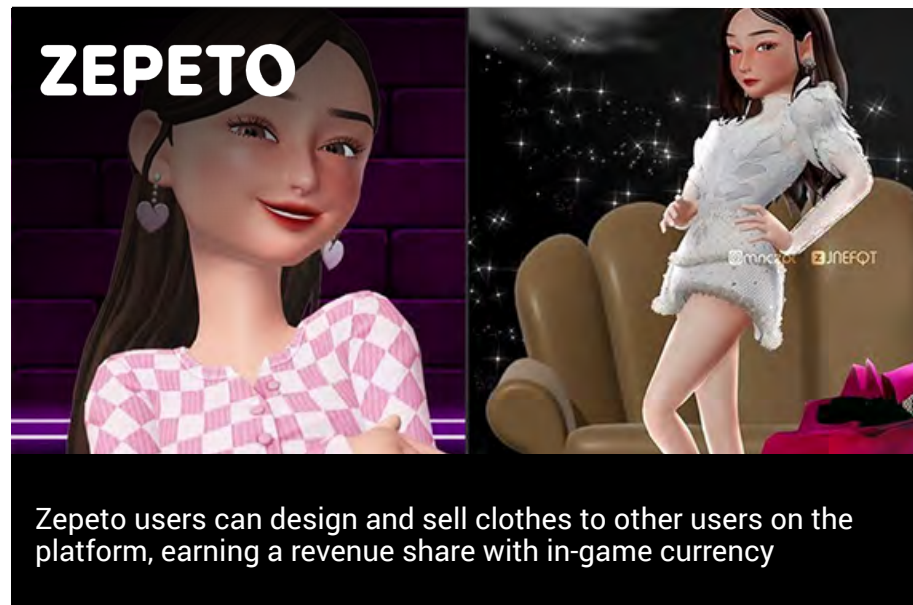
IMPACT ON ROBLOX UGC

- Significantly enhances user creation capabilities with limitless possibilities for creating custom images and objects
- Drastically increases the speed at which creators can design assets and expand virtual environments
- Removes technical requirements to code, which allows more users on the platform to become creators and to code more quickly and efficiently



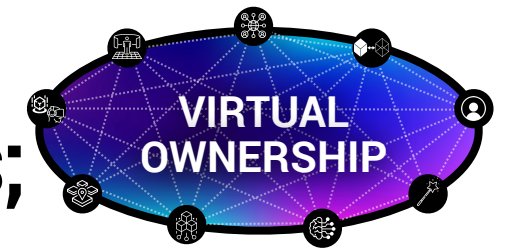
Virtual economies, created by companies and users, will become increasingly sophisticated and expansive

EXAMPLES OF VIRTUAL ECONOMIES WITHIN THE METAVERSE



ACTIVATE PERSPECTIVE

- Building blocks of the Metaverse economy will include:
 - Digital goods/services (e.g. skins for avatars, virtual fashion, virtual makeup)
 - eCommerce (e.g. shopping for physical goods in a virtual environment)
 - Advertising and brand/product placement (e.g. showrooms, product testing, sponsored experiences)
- Brands will utilize both virtual and real-world storefronts to engage with customers
 - Digital outfits from Balenciaga, Prada, and Thom Browne are coming to Meta's soon-to-be-unveiled Avatar Store

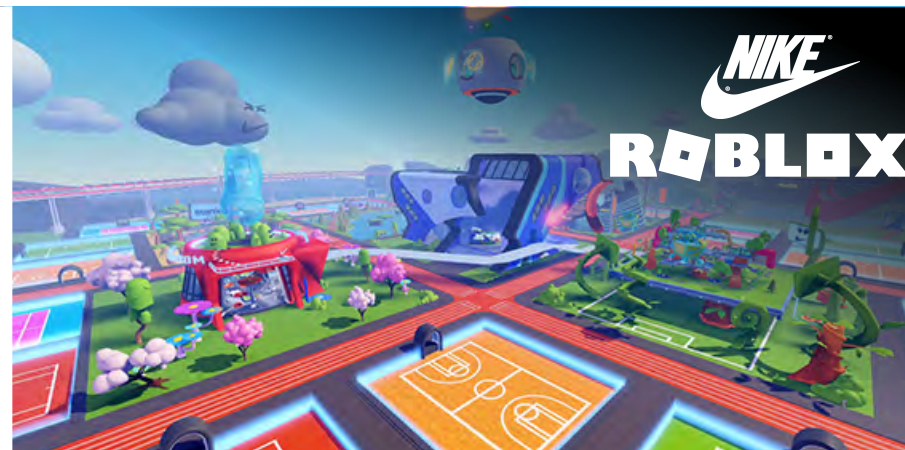


Virtual ownership will include more than just virtual goods; it will be about self-expression, prestige, personalization, and the fundamental need to belong

EXAMPLES OF OWNING VIRTUAL GOODS WITHIN THE METAVERSE



Fortnite partnered with the NBA to celebrate the NBA's 75th anniversary by offering a collection of transactable in-game character skins modeled after NBA team apparel and uniforms



Nike partnered with Roblox to create a Nike-branded virtual world called Nikeland where users can buy virtual goods from Nike; Nikeland has been visited over 32M times as of Apr. 2023



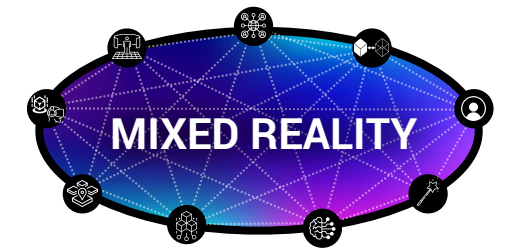
Decentraland users can display owned 2D NFTs on the platform, including displaying virtual art galleries in owned spaces



Zara partnered with Zepeto in Mar. 2022 to launch a limited-edition fashion "Metacollection" for users' avatars, with identical physical versions of the products available for purchase in Zara stores

ACTIVATE PERSPECTIVE

- Virtual ownership will become more mainstream as platforms make items more attainable, a wider range of items become available, and a greater number of brands and users participate
- Virtual goods will hold value for consumers (e.g. self-expression, status, exclusivity, personalization, ability to trade)
- Platforms will explore select circumstances in which consumers can access owned virtual goods from other platforms
- Physical items will be paired with ownership of digital items (e.g. ownership of real-world items will be reflected on virtual platforms)



AR, VR, and MR technology enable user involvement with Metaverse experiences, bridging the gap between physical and digital worlds

EXAMPLES OF AUGMENTED REALITY, VIRTUAL REALITY, AND MIXED REALITY

AR: AUGMENTED REALITY

A view of the physical world with an overlay of digital components

IKEA®



IKEA's in-room visualization feature allows viewing of Ikea furniture in a desired space with 98% scaling accuracy

VR: VIRTUAL REALITY

A view of a fully-immersive digital environment (through a VR headset)

 Supernatural



Fitness app, Supernatural, offers thousands of VR workout classes for Meta Quest headset users

MR: MIXED REALITY

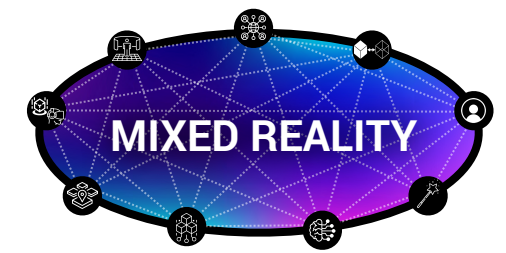
A view of the physical world with an overlay of digital elements that individuals can interact with



Mario Kart: Bowser's Challenge, a new attraction at Universal Studios' Nintendo World, leverages MR technology to provide a multi-dimensional, immersive experience

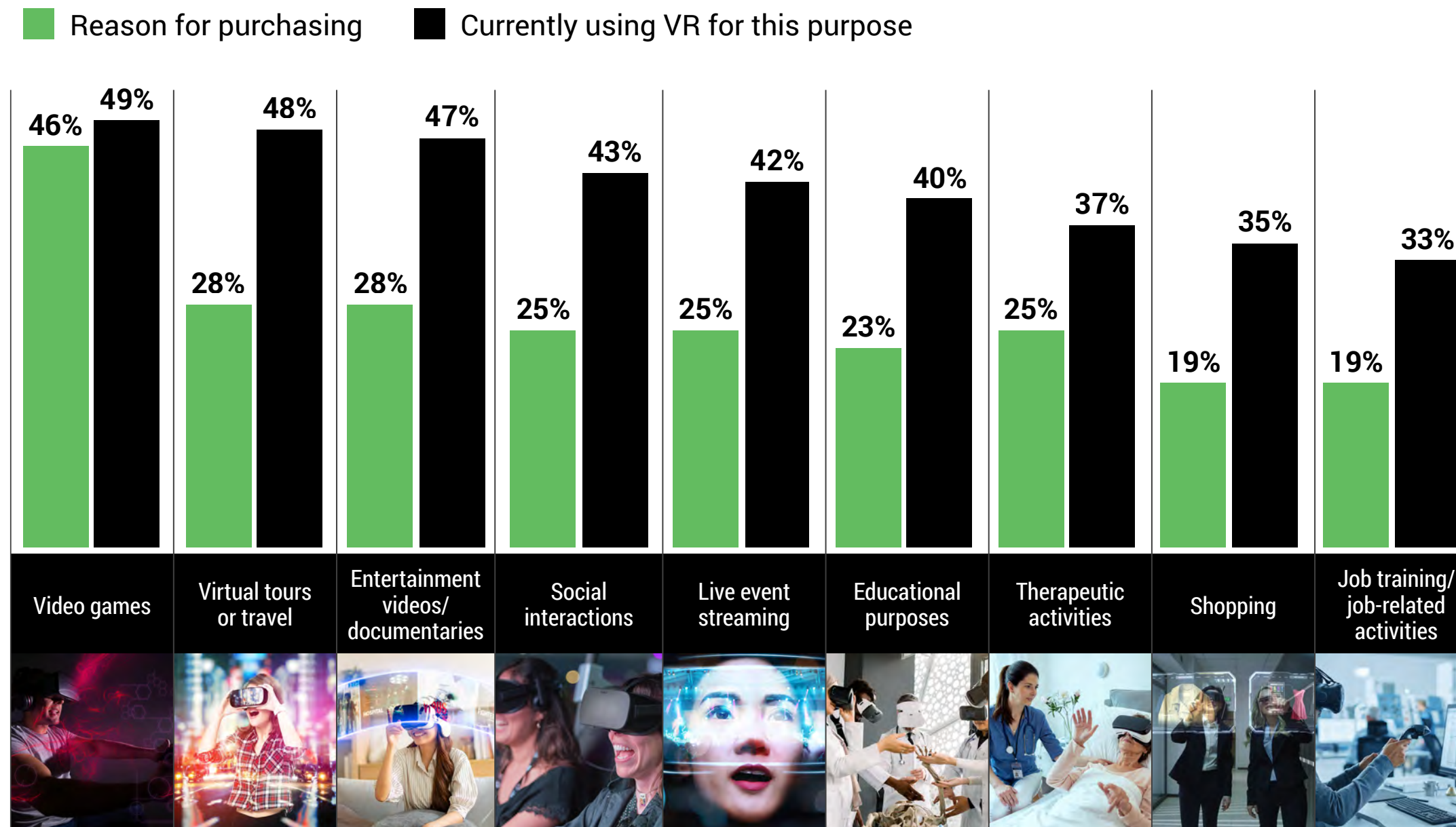
ACTIVATE PERSPECTIVE

- AR use cases include everyday experiences (e.g. filters, avatars, smart mirrors), novel experiences (e.g. fashion shows, museums, theme parks), and brand experiences (e.g. IKEA, Coachella, Louis Vuitton)
- VR is currently used for an assortment of activities (e.g. video games, digital fitness, social interactions) on a habitual basis; however, consumers indicate deterrents (e.g. price) to purchasing a VR headset
- MR capabilities will significantly impact the Metaverse experience, as users will be able to interact with digital elements

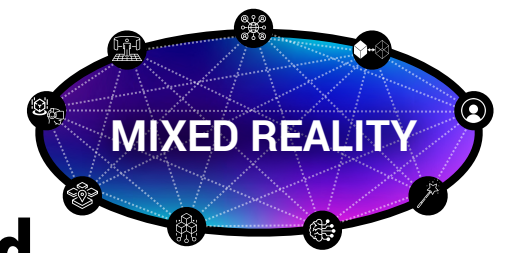


Actual usage of VR headsets for non-gaming/Metaverse activities has far exceeded the original purchase intent for the headset

REASONS FOR PURCHASING AND USING VR HEADSETS, U.S., 2022, % VR HEADSET USERS¹



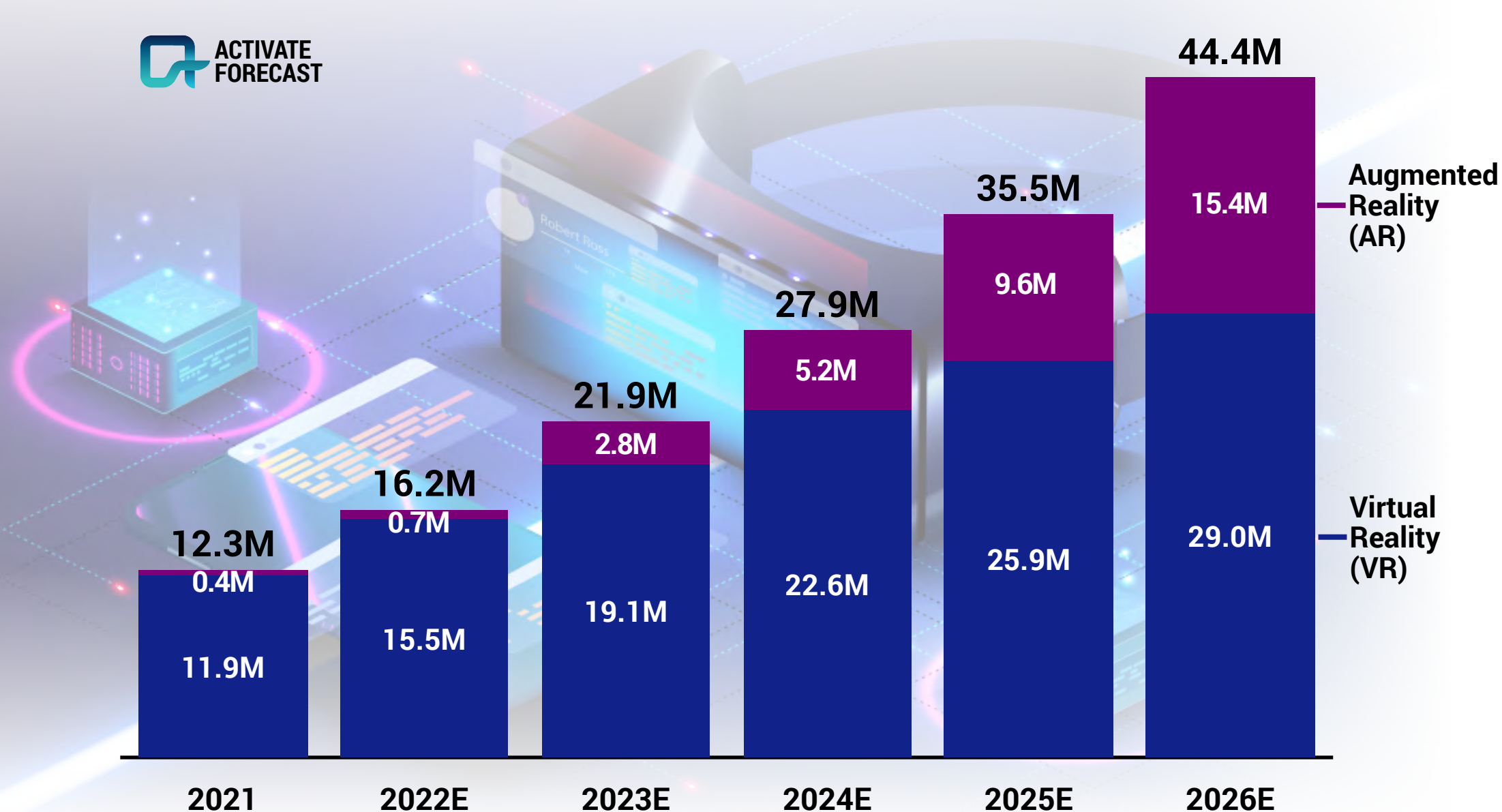
91% of VR users are gamers², and **78%** of VR users use VR for non-gaming activities



The growth of the Metaverse will far exceed the penetration of VR/AR devices; 2D Metaverse experiences have global scale and participation today and will continue to do so for years to come

AR AND VR HEADSET UNIT SALES¹, GLOBAL, 2021-2026E, MILLIONS UNITS

ACTIVATE
FORECAST

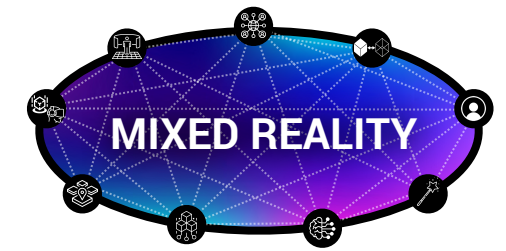


2021-2026E
CAGR:

29%

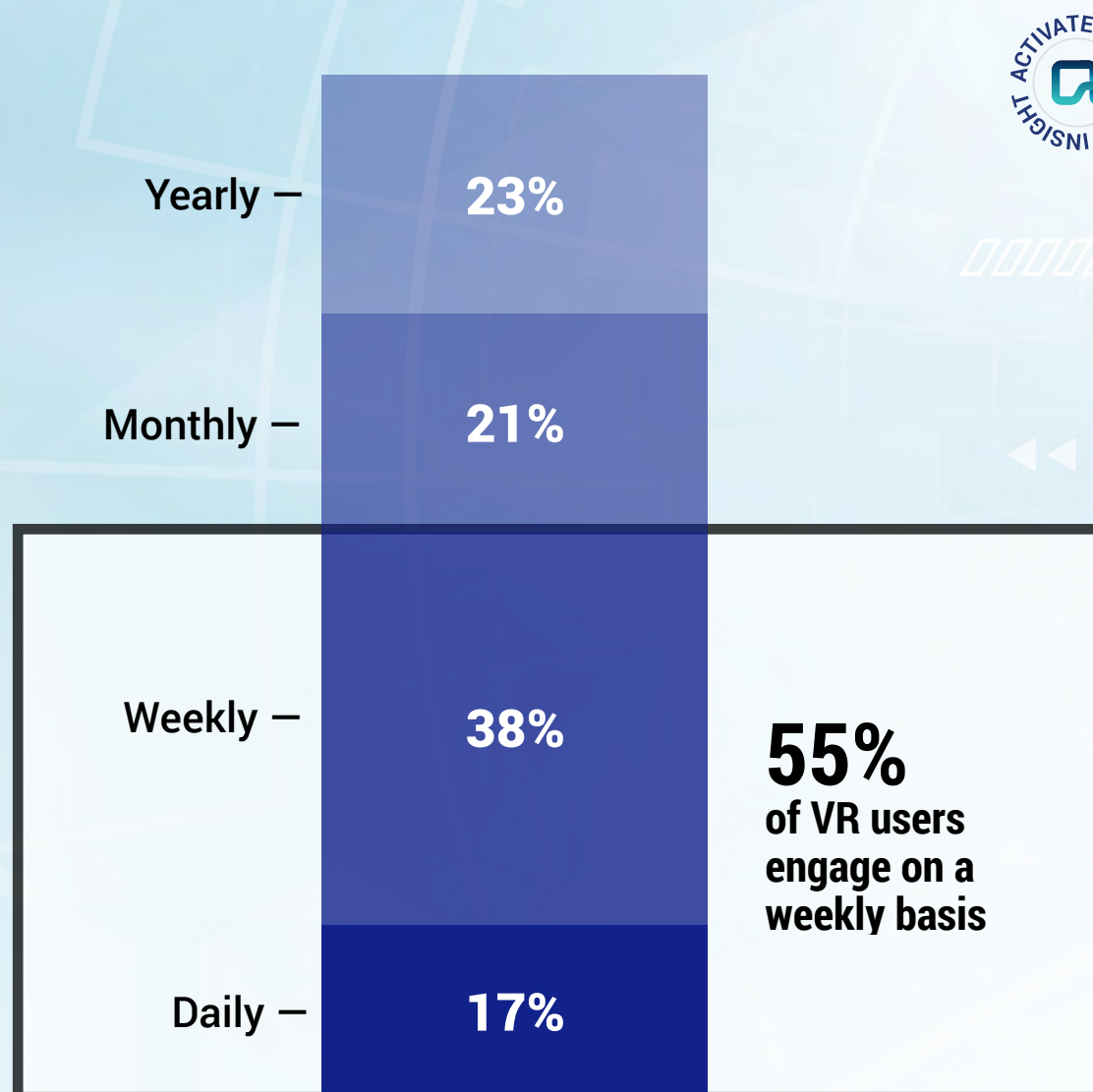
107%

20%

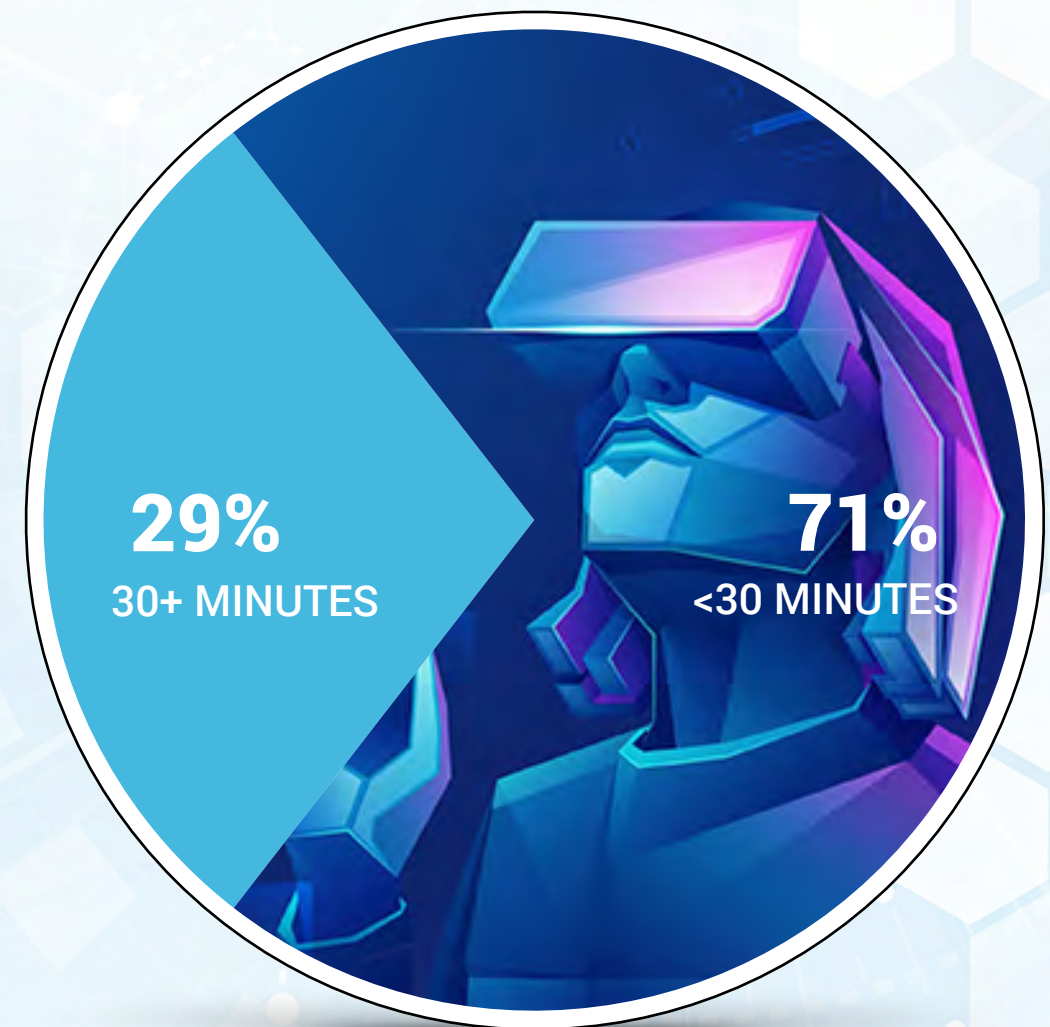


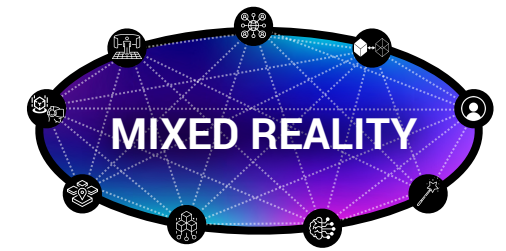
For the majority of VR owners, VR is a habit; however, most people cannot spend more than 30 minutes per session, emphasizing the importance of 2D experiences

**FREQUENCY OF VR HEADSET USE,
U.S., 2022, % VR HEADSET USERS¹**



**AVERAGE DURATION OF VR HEADSET SESSION,
U.S., 2022, % VR HEADSET USERS¹**

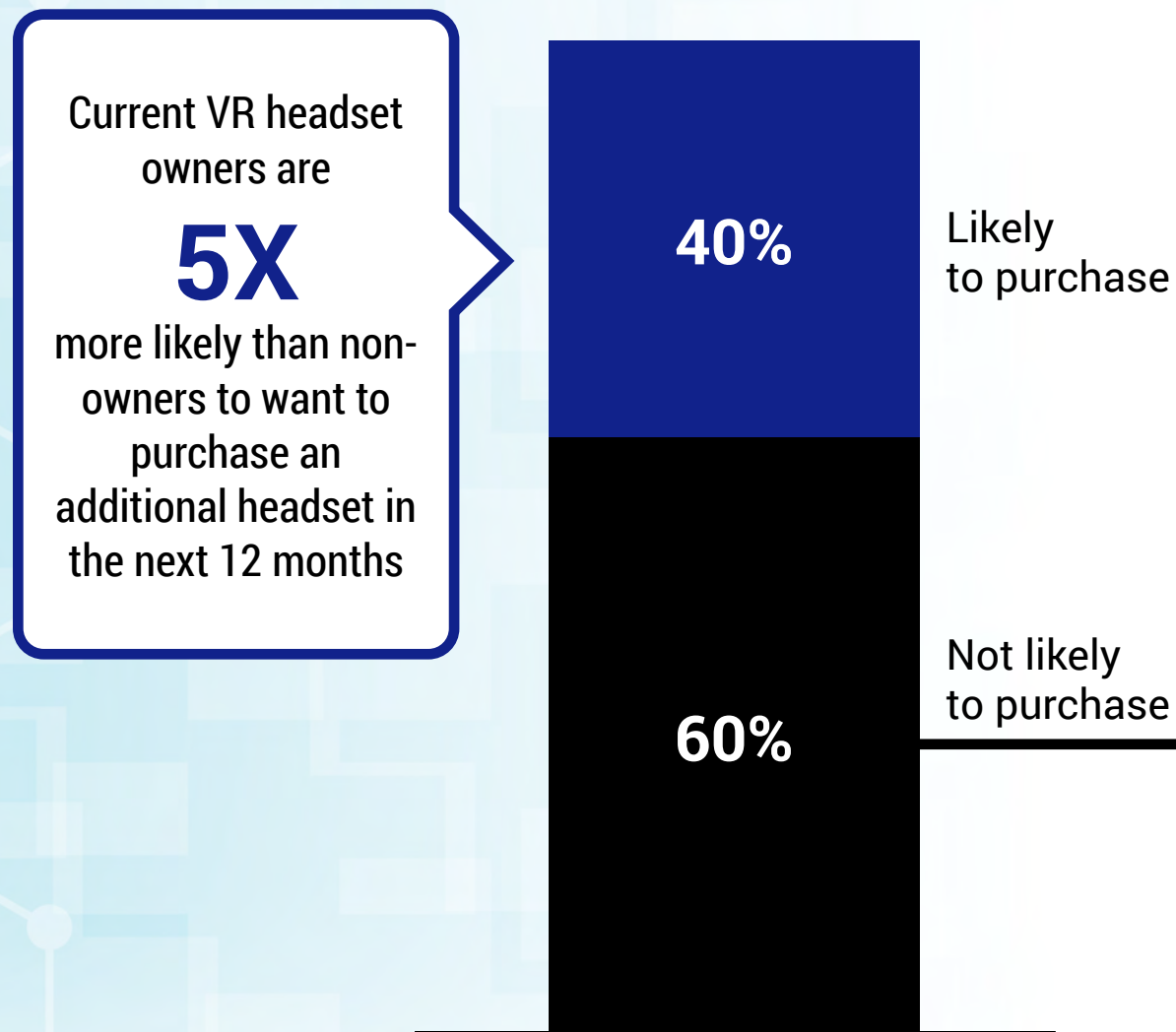




For large-scale adoption, VR headsets will need to be available at a lower price point

**LIKELIHOOD TO PURCHASE A VR HEADSET
IN NEXT 12 MONTHS, U.S., 2022, % ADULTS AGED 18+**

**REASONS FOR NOT INTENDING TO PURCHASE
A VR HEADSET, U.S., 2022, % NON-VR HEADSET OWNERS**



Price relative to value	45%
Lack of VR knowledge/awareness	31%
Excessive time spend	21%
Lack of spatial awareness	16%
Feelings of motion sickness	16%
Feelings of isolation	12%
Discomfort	9%
Lack of content available	8%
Negative emotional experience	7%
Unattractive appearance	4%

METaverse: TIME FOR PRACTICAL APPLICATIONS

THE METAVERSE MATTERS NOW

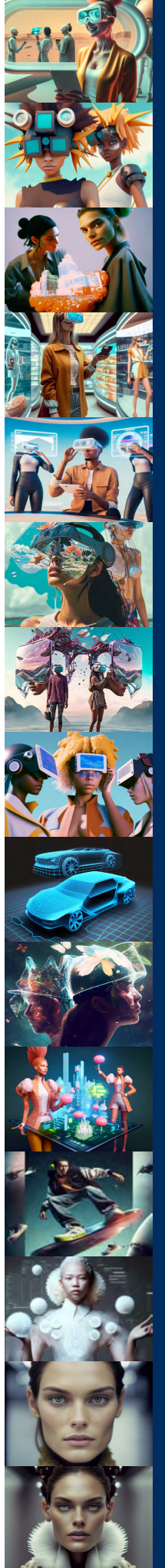
AI'S IMPACT ON THE METAVERSE

ELEMENTS OF THE METAVERSE

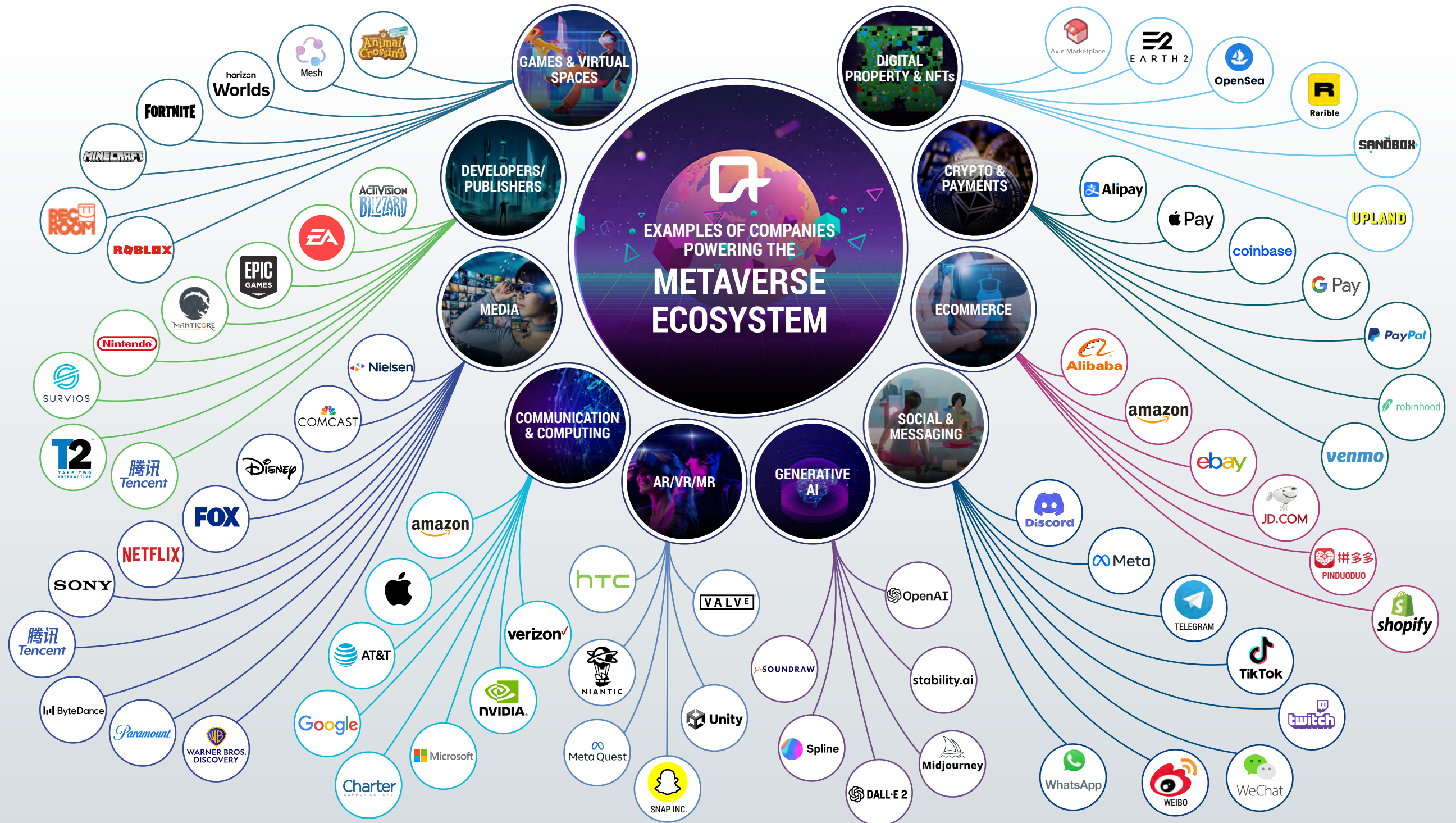
► METAVERSE ECOSYSTEM

PRACTICAL PLAYBOOK FOR THE METAVERSE

ABOUT ACTIVATE AND OUR CAPABILITIES













Over the next years, companies building the Metaverse will be part of an extensive ecosystem



The major technology and gaming companies will build out their capabilities across each element of the Metaverse

EXAMPLE METAVERSE CAPABILITIES OF MAJOR TECHNOLOGY AND GAMING COMPANIES

	amazon	Apple	EPIC GAMES	Google	∞ Meta	Microsoft	ROBLOX	SONY	Tencent
 Immersive Experiences	games Luna		FORTNITE		Gaming BEAT SABER horizon Worlds	XBOX ACTIVISION MINECRAFT Mesh	ROBLOX	PlayStation BUNGIE PlayStation Plus	Tencent Games
 Social Interactions	twitch	iMessage	FORTNITE PARTY ROYALE	Project Starline (In development)	Instagram horizon Worlds Messenger	Teams LinkedIn Mesh MINECRAFT	Roblox Chat & Community Space		QQ
 Digital Twins	aws IoT TwinMaker		Unreal Engine	Google Cloud: Supply Chain Twin and Pulse		Azure Digital Twins			Tencent Cloud
 Identity		Memoji	Fortnite Avatars	Google Chrome Avatar	Meta 3D Avatar	Teams and Mesh Avatars	Roblox Avatars	DESTINY Guardian Creation	超级QQ秀 SUPER QQ SHOW
 Creation & Agency	Amazon Sumerian twitch	ARKit Reality Composer RoomPlan	Unreal Engine FORTNITE CREATIVE	ARCore YouTube VR	Meta Spark	MINECRAFT Roblox Studio		dreams	
 Generative AI	Amazon Bedrock Amazon Titan			Google Bard AI Google Workspace Research projects including Google Muse (image generation) Google MusicLM (song generation)	Announced plans to launch generative AI to optimize advertisements and assist in Metaverse creation by December	Bing OpenAI Integration Copilot (Announced)	Material Generator Code Assist		Researching Generative AI tech based off Hunyuan training model
 Economy	amazon appstore amazon pay	Apple App Store Apple Pay	EPIC GAMES FORTNITE ITEM SHOP	Google Play G Pay	Meta Quest Store Meta Pay	Microsoft Store	ROBLOX Game Shop Robux	PlayStation Store	WeChat Pay 应用宝 MY APP
 Virtual Ownership	aws Build NFT Applications	Apple NFT Trading Cards (Rumored)	Enable NFT Games via Epic Games Store (e.g. Blankos Block Party)		NFT Sharing with Verified Ownership on Instagram/Facebook				幻核 Magic Core (No longer issuing new NFTs)
 Mixed Reality: AR	AR View	Apple Glass (Rumored)	RealityScan	Google Maps Live View Google Lens GLASS	Meta Quest Pro REALITY LABS	Microsoft HoloLens 2 Mesh		Partnership KRAMER	ultraleap (Series D Investment)
 Mixed Reality: VR	prime video vr	NEXTVR		Google Earth VR YouTube VR	Meta Quest Pro REALITY LABS horizon Worlds	HP REVERB G2 Co-development Mesh	ROBLOX VR	PlayStation VR2	ultraleap (Series D Investment)

We expect to see significant and sustained investment in innovation over the next years

EXAMPLE COMPANIES BUILDING FOUNDATIONAL ELEMENTS OF THE METAVERSE

IMMERSIVE EXPERIENCES	SOCIAL INTERACTIONS	DIGITAL TWINS	IDENTITY	CREATION AND AGENCY	GENERATIVE AI	ECONOMY	VIRTUAL OWNERSHIP	MIXED REALITY
BITCRAFT CLOCKWORK LABS BLOKTOPIA MINES OF DALARNIA HABYTAT ILUVIUM METROPOLIS WORLD 1 st PLAYABLE WORLDS REC ROOM SOMNIUM SPACE	GRAVVITY HIGHRISE IMVERSE IMVU KUMOSPACE SpatialChat Topia VR CHAT	5x5 Technologies LIVING CITIES PassiveLogic SharperShape siteaware VICTORYXR	Avatoon DIDI MO FILTERYA Genies LALALAND Rephrase.ai soul machines Tafi	INFINITE REALITY in verse inworld Pixel Canvas READY PLAYER ME Spatial	Blockade Labs DALL-E 2 IIElevenLabs LUMA AI Midjourney OpenAI SENSORIUM SOUNDRAW Spline stability.ai UNAKIN	CODA PAYMENTS ELUV.IO enya.ai metajuice MetaStreet MoonPay VOAX tZERO	exclusible HORIZON BLOCKCHAIN GAMES Immutable LOOKSRARE OpenSea Rarible REBASE sorare	blippar brightline DIGILENS eon reality JADU AR N I A N T I C OSSO ^{VR} portal ONE zSpace

EXAMPLE INVESTORS

Accel

GENERAL ATLANTIC

INSIGHT PARTNERS

TIGERGLOBAL

andreessen.
horowitz

Goldman
Sachs

Asset
Management

SEQUOIA

There will not be a single Metaverse platform – interoperability between platforms will take place through third-party companies and applications, creating significant opportunities for all businesses to capitalize on the potential of the Metaverse

INTEROPERABILITY LAYERS OF THE METaverse



METaverse: TIME FOR PRACTICAL APPLICATIONS

THE METAVERSE MATTERS NOW

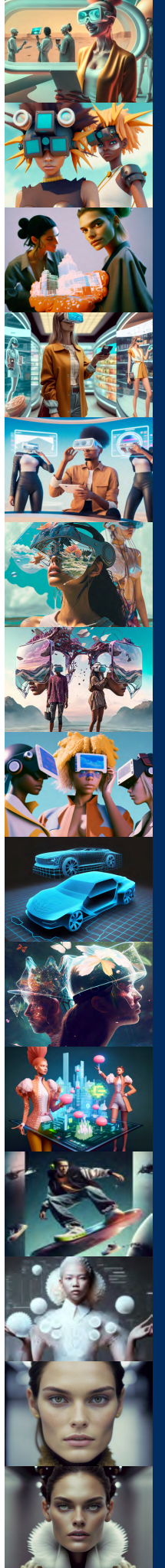
AI'S IMPACT ON THE METAVERSE

ELEMENTS OF THE METAVERSE

METAVERSE ECOSYSTEM

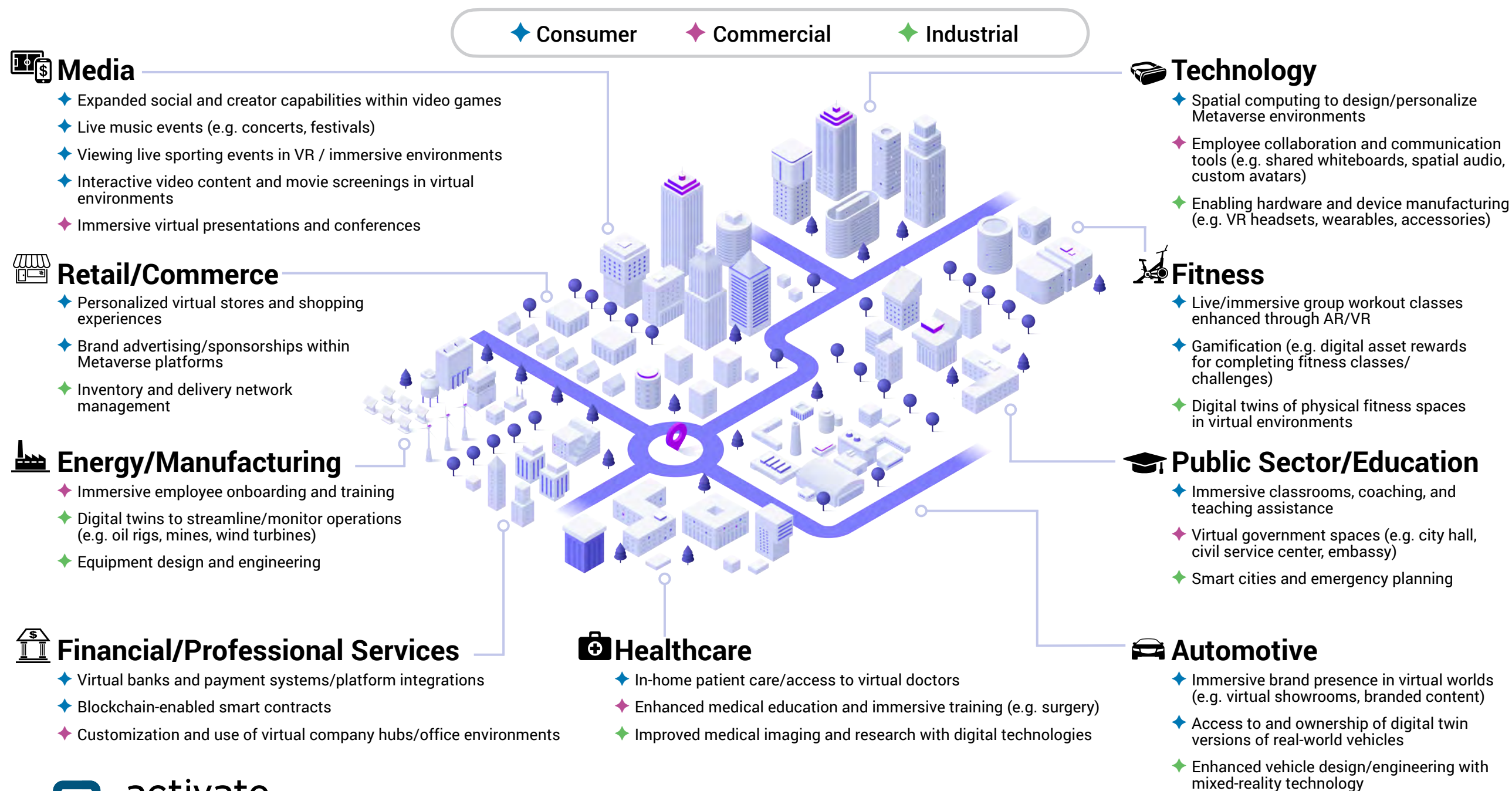
► PRACTICAL PLAYBOOK FOR THE METAVERSE

ABOUT ACTIVATE AND OUR CAPABILITIES



Companies, across a broad set of industry verticals, will need to create strategies and practical playbooks to exploit and profit from their Metaverse opportunities

EXAMPLES OF POTENTIAL METAVERSE USE CASES



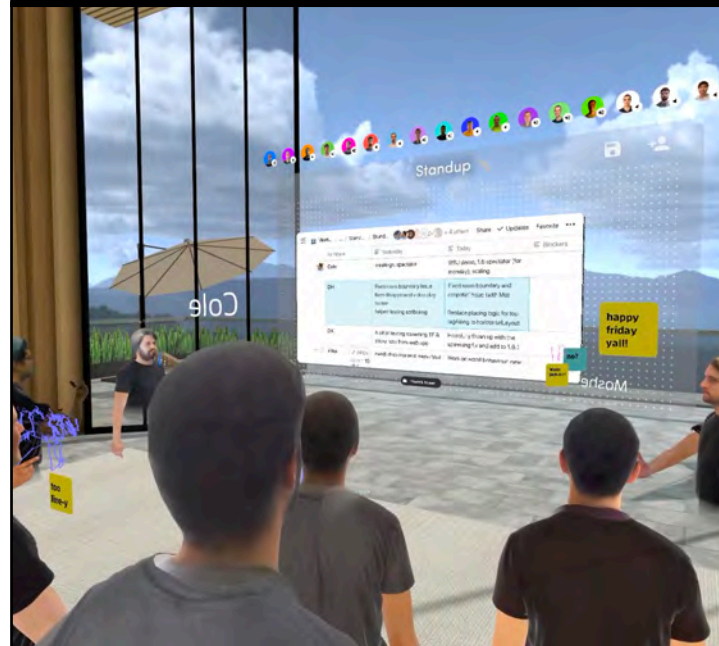
We see different use cases, strategies and playbooks across Consumer, Commercial, and Industrial Metaverses

CONSUMER METAVERSE



Immersive, consumer-facing experiences and content, where users can interact, create, and participate in various activities (e.g. events, games, virtual economies, socialization)

COMMERCIAL METAVERSE



Employee collaboration, communication, education, and training in a Metaverse-based work environment

INDUSTRIAL METAVERSE



Optimization of enterprise systems to improve the visualization, design, and management of physical structures/industrial operations

The Metaverse is here today; companies will need to start testing and building their Metaverse playbooks to lead their next wave of digital innovation (1 of 4)

ELEMENTS OF A METAVERSE PRACTICAL PLAYBOOK

START WITH THE USER

- Focus on what will drive deep consumer engagement, improve social interactions, and enable user creation
- Provide collaborative features and functionality
- Attract users with captivating consumer-grade content and events

EMPOWER CO-CREATION AND USER PERSONALIZATION

- Give users agency to create, ceding control to the user and allowing them to shape their own experiences
- Enable users to define and personalize their Metaverse experiences (e.g. avatars, virtual items, environments, games, events)

CATALYZE AND BUILD FOR SOCIAL INTERACTIONS AND CONNECTIONS

- Leverage the Metaverse's potential as a social medium
- Engage users through shared experiences, communication, communities, collaborative features, and social interactions
- Prioritize social experiences over immersive enablement, in the near term

The Metaverse is here today; companies will need to start testing and building their Metaverse playbooks to lead their next wave of digital innovation (2 of 4)

ELEMENTS OF A METAVERSE PRACTICAL PLAYBOOK

DEVELOP FOR 2D, WHILE BUILDING THE FOUNDATION FOR 3D

- Start with 2D platforms, which have large numbers of users today and will drive user scale and participation for years to come
- Mixed reality and 3D will significantly enhance immersion but will not yet be critical for the growth of a company's Metaverse presence
- Test 3D technologies, which hold the promise of bringing together the virtual and physical worlds, once the technology is more sophisticated and in wide use

LEVERAGE GENERATIVE AI TO LOWER THE BARRIER TO ENTRY FOR CREATION AND SCALE FASTER

- Leverage developer tools and software that require little to no experience to use
- Apply AI across your early Metaverse creator applications to realize the visions of your users
- Build AI into your innovation and product development process, creating virtual feedback from customers

PRIORITIZE METAVERSE INVESTMENTS IN THE CONTEXT OF YOUR COMPANY'S BROADER CONSUMER ENGAGEMENT AGENDA

- Fundamentally rethink your value propositions and how they translate into virtual worlds – from how you engage with consumers, to how your employees work together, to how you can optimize industrial systems
- Begin informed investments and develop early use cases and applications
- Don't let perfect get in the way of innovation; test, iterate, and retest

The Metaverse is here today; companies will need to start testing and building their Metaverse playbooks to lead their next wave of digital innovation (3 of 4)

ELEMENTS OF A METAVERSE PRACTICAL PLAYBOOK

BUILD FOR VIRTUAL ECONOMIES

- Create economies and virtual goods for consumer use / purchase
- Leverage advertising, sponsored content, and brand integrations
- Provide a developer ecosystem and the opportunity for individual income

TAKE ADVANTAGE OF EARLY USE-CASES, APPLICATIONS, AND ENTRY POINTS OF THE METAVERSE

- Determine the translation of current business models and products/services into virtual worlds and consider the full range of use-cases across:
 - **Consumer:** Establish immersive, consumer-facing experiences and content to enhance the user value proposition and increase engagement
 - **Commercial:** Enable employee collaboration, communication, education, and training
 - **Industrial:** Leverage digital technologies to optimize enterprise systems

PLAY IN THE LAYERS OF THE METAVERSE STACK WHERE YOU CAN WIN

- Evaluate current assets, capabilities, and value propositions to define your company's role in the Metaverse stack:
 - Content, Experiences, & Social Interactions
 - Hardware & Devices
 - Platforms & Enablers
 - Infrastructure

The Metaverse is here today; companies will need to start testing and building their Metaverse playbooks to lead their next wave of digital innovation (4 of 4)

ELEMENTS OF A METAVERSE PRACTICAL PLAYBOOK

ADDRESS POTENTIAL RISKS AND KEY CHALLENGES FOR METAVERSE INITIATIVES

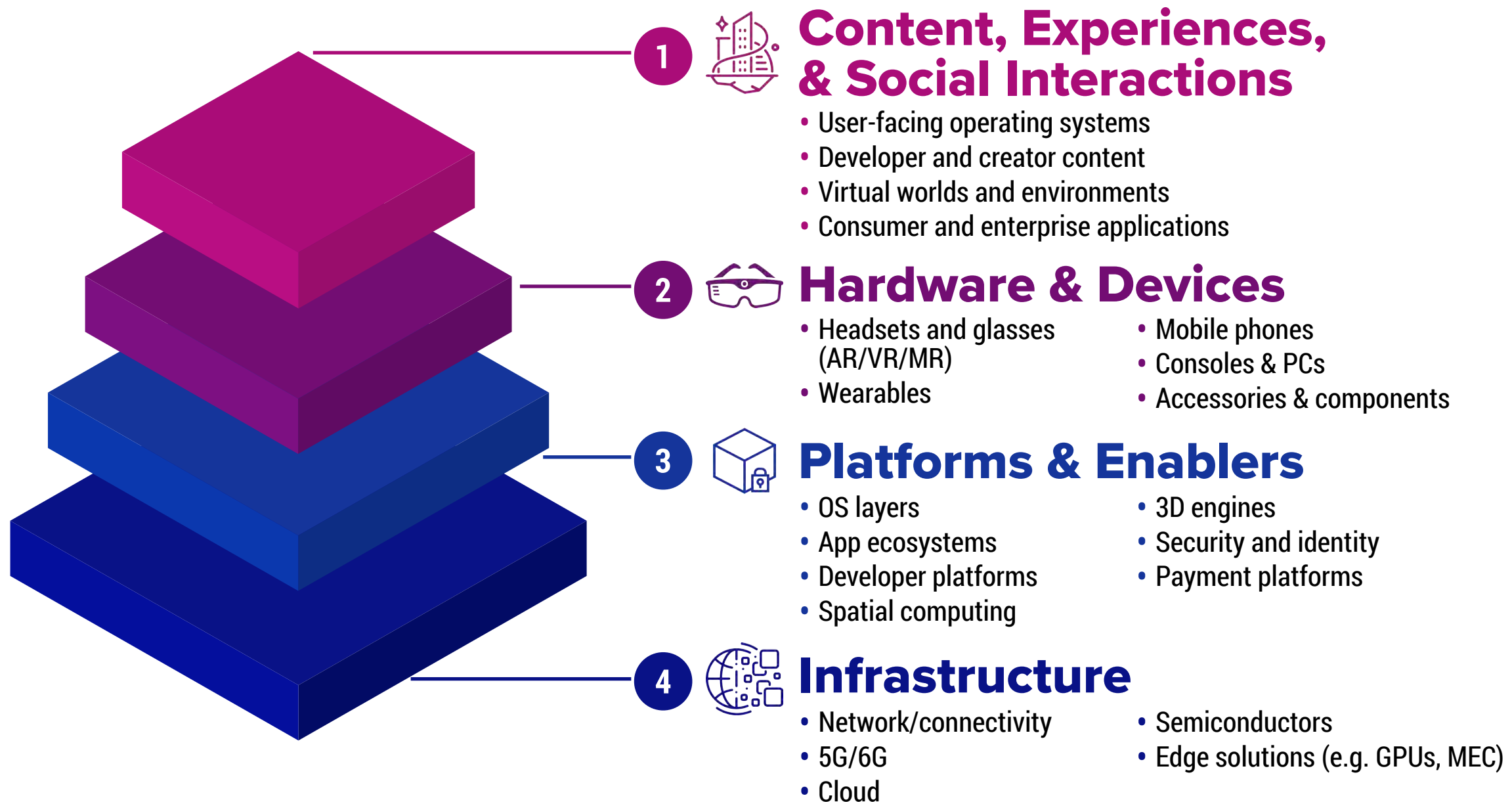
- Identify potential threats to success, including: security/safety, accessibility, and IP/ownership
- Anticipate overarching Metaverse ecosystem challenges, including: governance, authenticity/misinformation, and interoperability between platforms

FUTURE-PROOF YOUR METAVERSE STRATEGY








- Develop for multiple Metaverse environments, not betting on any single platform
- Prioritize accessibility and scale over graphical fidelity
- Bet on technology that is extensible and focus on platform portability
- Create a diversified portfolio of Metaverse initiatives
- Adopt a test and learn approach to adapt as the industry evolves

It will be critical for companies to play in the layers of the Metaverse stack where they can win

THE METAVERSE STACK



In addition, company leaders will need to address potential risks and key challenges for Metaverse initiatives

CHALLENGES	TACTICS TO ADDRESS
 SECURITY/SAFETY	<ul style="list-style-type: none"> • Create user-focused security & privacy regulations (e.g. protection of user data, management of asset ownership) • Develop platform-specific security measures
 GOVERNANCE	<ul style="list-style-type: none"> • Determine regulations and compliance mechanisms to mitigate unforeseen consequences related to virtual interaction (e.g. online harassment), data governance, asset ownership (e.g. mitigating theft), and antitrust issues
 IDENTITY	<ul style="list-style-type: none"> • Create trustworthy “identity” system, considering pros/cons of various solutions: <ul style="list-style-type: none"> - Single, global identity (tighter security, close tracking of fraud/phishing attacks) - Multiple identities (greater flexibility for user expression, but rise in impersonation tactics such as deepfakes) - Decentralized identity (i.e. establishing multi-factor authentication using unduplicated credentials)
 AUTHENTICITY/MISINFORMATION	<ul style="list-style-type: none"> • Incorporate social conversation-monitoring services (e.g. fact-checking, chat monitor), AI technology, and protocols to reduce misinformation, harassment, and abuse • Construct verification system for virtual economies • Establish guidelines for companies to embed safety mechanisms into Metaverse experiences to avoid brand exploitation
 IP/OWNERSHIP	<ul style="list-style-type: none"> • Establish legal protection for inventors and creators, upholding copyrights/trademarks and integrity of legacy brands • Generate guidelines for hosting others’ content in the Metaverse and verification of assets • Leverage a decentralized network to scale content storage management
 ACCESSIBILITY	<ul style="list-style-type: none"> • Apply uniform industry standards and protocols to hardware/software (e.g. VR headsets, speech recognition) • Utilize existing technology today, but plan for how technology will evolve (e.g. networks, hardware) in order to support many of the future use-cases described by developers and companies (i.e. fully immersive, synchronous environments) • Bolster disability accommodations (e.g. captioning system, smart touch and haptics)
 INTEROPERABILITY	<ul style="list-style-type: none"> • Pursue virtual environment interoperability to allow user participation in unified, socio-cultural activities • Target interoperability across technological connectivity (e.g. seamless networking/communication), economic ease (e.g. cross-functional virtual wallets / assets), and user experience (e.g. consistent design/set-up across platforms)

METaverse: TIME FOR PRACTICAL APPLICATIONS

THE METAVERSE MATTERS NOW

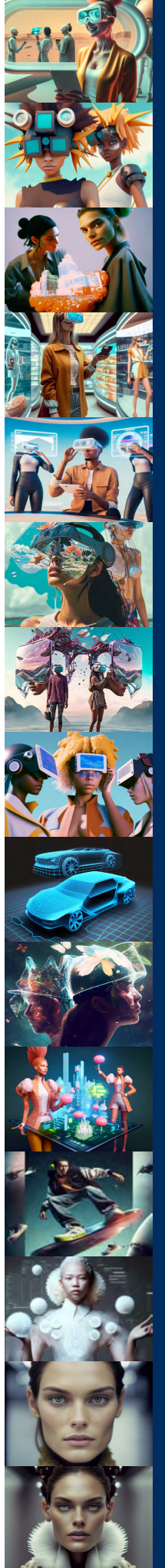
AI'S IMPACT ON THE METAVERSE

ELEMENTS OF THE METAVERSE

METAVERSE ECOSYSTEM

PRACTICAL PLAYBOOK FOR THE METAVERSE

► ABOUT ACTIVATE AND OUR CAPABILITIES



Activate growth. Own the future.

Technology. Internet. Media. eCommerce. These are the industries we've shaped, but the future is where we live.

Activate Consulting helps companies drive revenue growth, identify new strategic opportunities, and position their businesses for the future.

As the leading management consulting firm for these industries, we know what success looks like because we've helped our clients achieve it in the key areas that will impact their top and bottom lines.

Together, we can help you grow faster than the market and smarter than the competition.

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Activate's capabilities to position companies for growth



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Beyond the Hype Cycle:
The Metaverse Matters
Now More Than Ever

Thank you!

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