



Metaverse

Hype oder ernstzunehmende Entwicklung?

Paul Affentranger
affentranger@afca.ch
03.02.2022

afca.



Cloud Computing

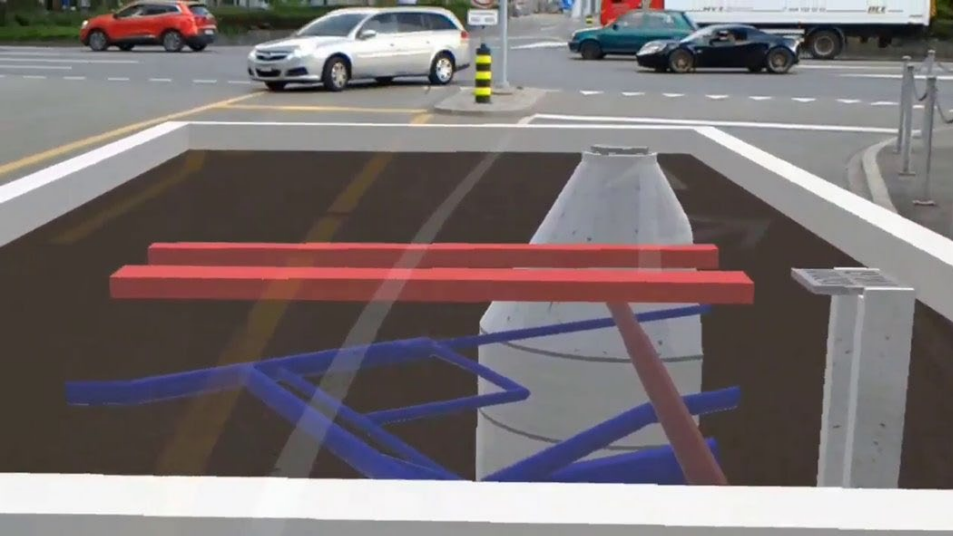
&



Extendet Reality



www.afca.ch



Metaverse – Hype oder ernstzunehmende Entwicklung?

Ja und Ja

Agenda

01 Was ist das Metaverse und wie funktioniert es

02 Bedeutung

03 Existiert das Metaverse bereits?

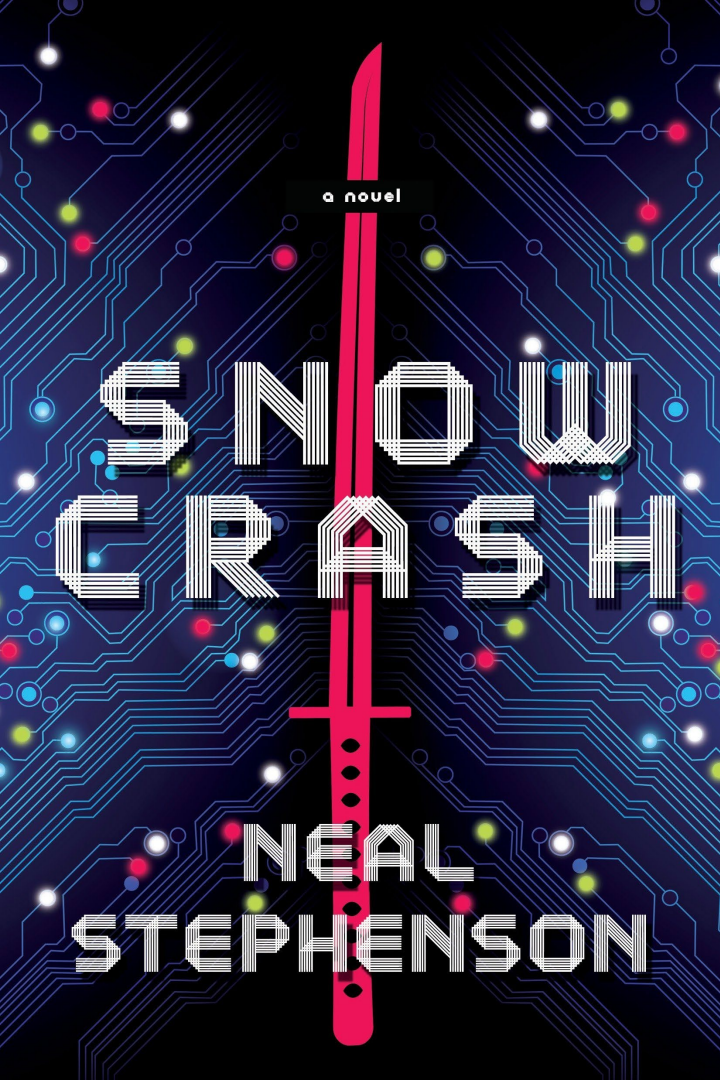
04 Metaverse und Hochschule

05 Ausblick



Was ist das Metaverse

Und wie funktioniert es



Snow Crash
Science-Fiction-Roman
von Neal Stephenson
1992

A metaverse is a network of 3D
virtual worlds focused on
social connection.

(Wikipedia)

A metaverse is a network of 3D
virtual worlds focused on
social connection **and**
interactions.

(**extended** Wikipedia)





Metaverse

=

XR + AI + Blockchain + 3D + IoT

Extended Reality (XR)

AR, MR & VR





360° Picture / Video



Virtual Reality (VR)



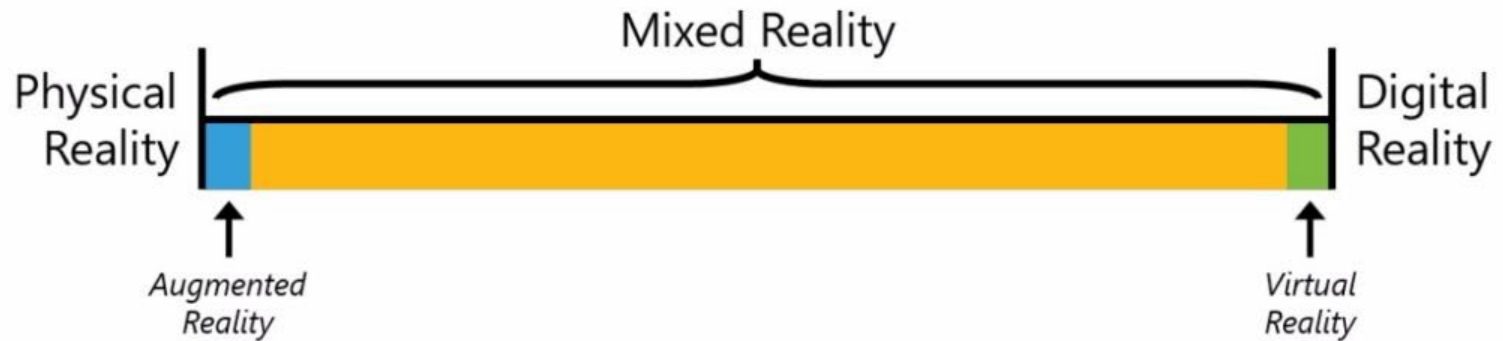
Augmented Reality (AR)



Mixed Reality (MR)



Mixed reality spectrum



XR

X = Variable

VR
Virtual Reality



oculus

Oculus Go
Facebook



Windows Mixed Reality
Headsets
Microsoft



Microsoft
HoloLens

HoloLens
Microsoft

AR
Augmented Reality



ARKit iOS 11
Apple



ARCore
Google

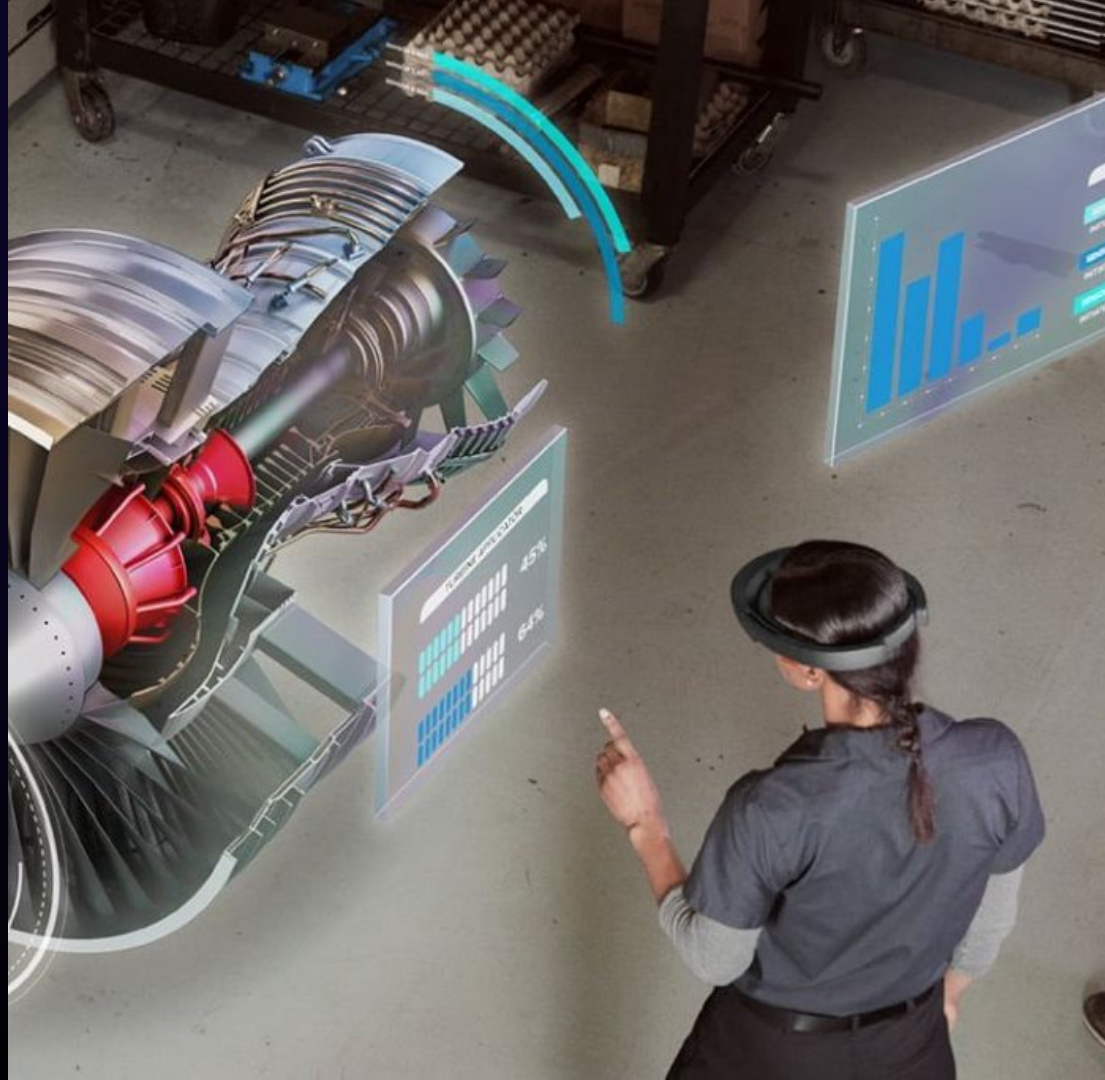
Presence

Feels like you are really there



3D Data

- User interaction in 3D
- Data / Objects in 3D
- Avatars
- Spatial understanding



Avatars



LiDAR Scanner iPad/iPhone pro



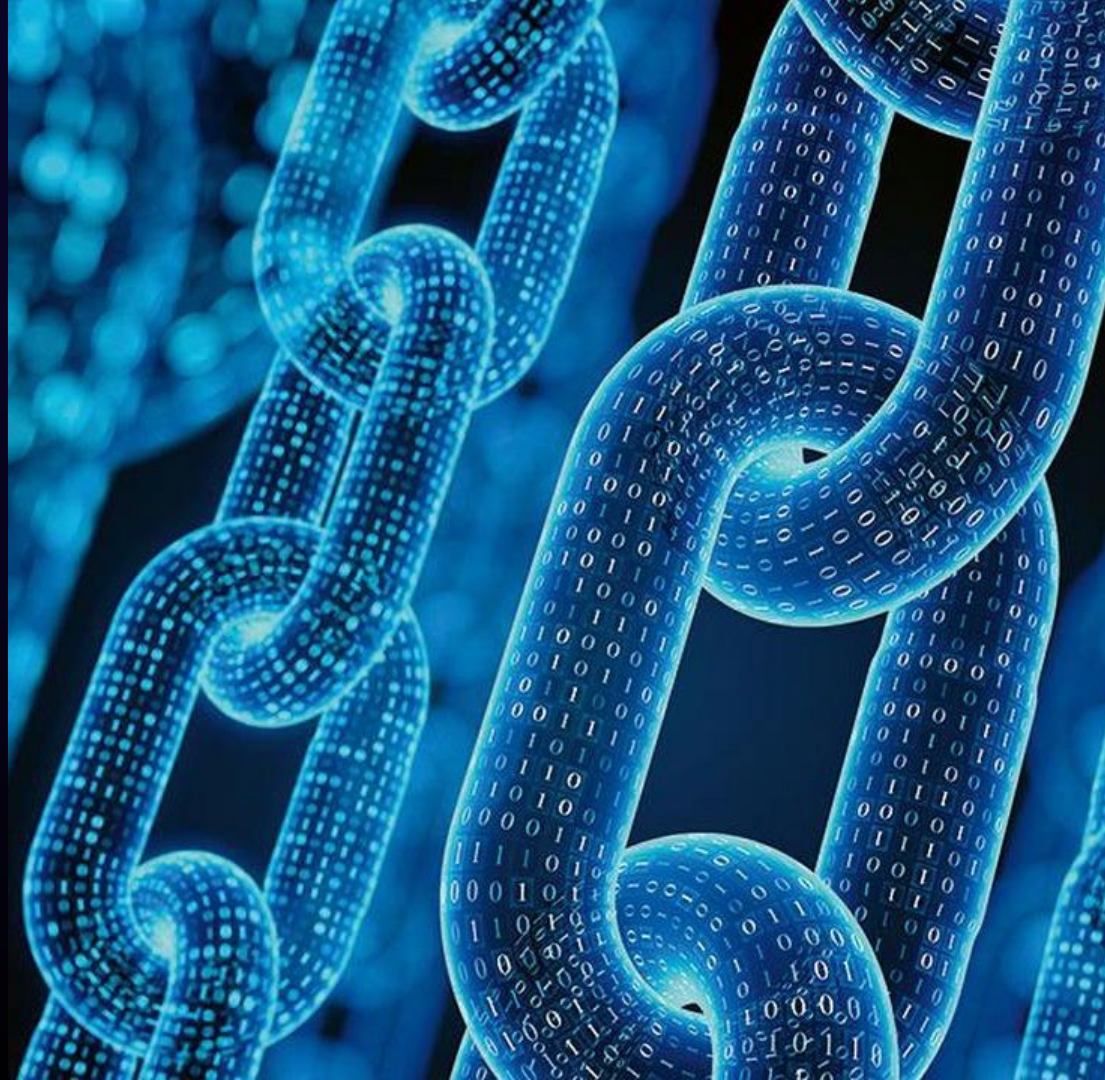
Blockchain

Blockchain is a system of recording information in a way that makes it difficult or impossible to change, hack, or cheat the system.

Crypto Currencies like bitcoins are based on Blockchain.

Invented in 2008

Unhacked



What to Wear in the Metaverse

Dressing for a virtual world is going to be both enormously liberating and potentially very, very messy.





DIGITALER HANDEL 04.01.2022

Virtual Reality

H&M plant Eröffnung des ersten virtuellen Stores im Metaverse

Quelle: CEEK/Screenshot

Viele große Marke planen mittlerweile ihre Metaverse-Strategie. Auch der schwedische Modekonzern H&M will sich in die virtuellen Welten begeben und seinen Kunden künftig ermöglichen, in einer 3D-Filiale zu shoppen.



NFT

non-fungible tokens

Buy and sell ownership of digital items

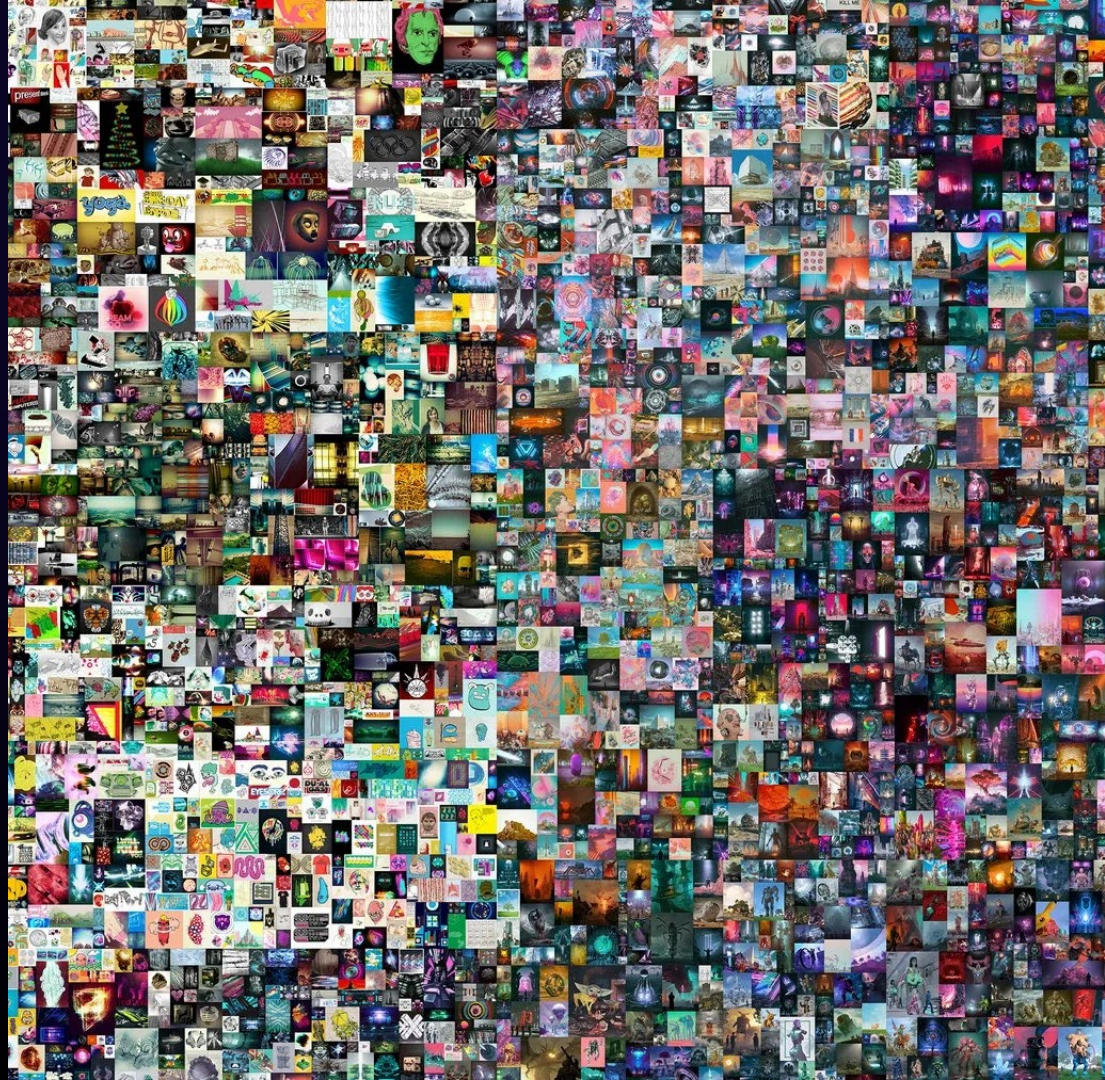
Keep track of who owns them

Based on blockchain



NFT & Art

Everydays: The First 5000 Days
by Beeple
Sold at Christie's for \$69 million



Artificial Intelligence (AI)

Tracking

Conversational UI / Assistant

Accurate avatars

World understanding

Digital Humans

Generate virtual World



Internet of Things (IoT)

The Internet of things (IoT) describes physical objects (or groups of such objects) that are embedded with sensors, processing ability, software, and other technologies that connect and exchange data with other devices and systems over the Internet or other communications networks.

8.74 billion in 2020

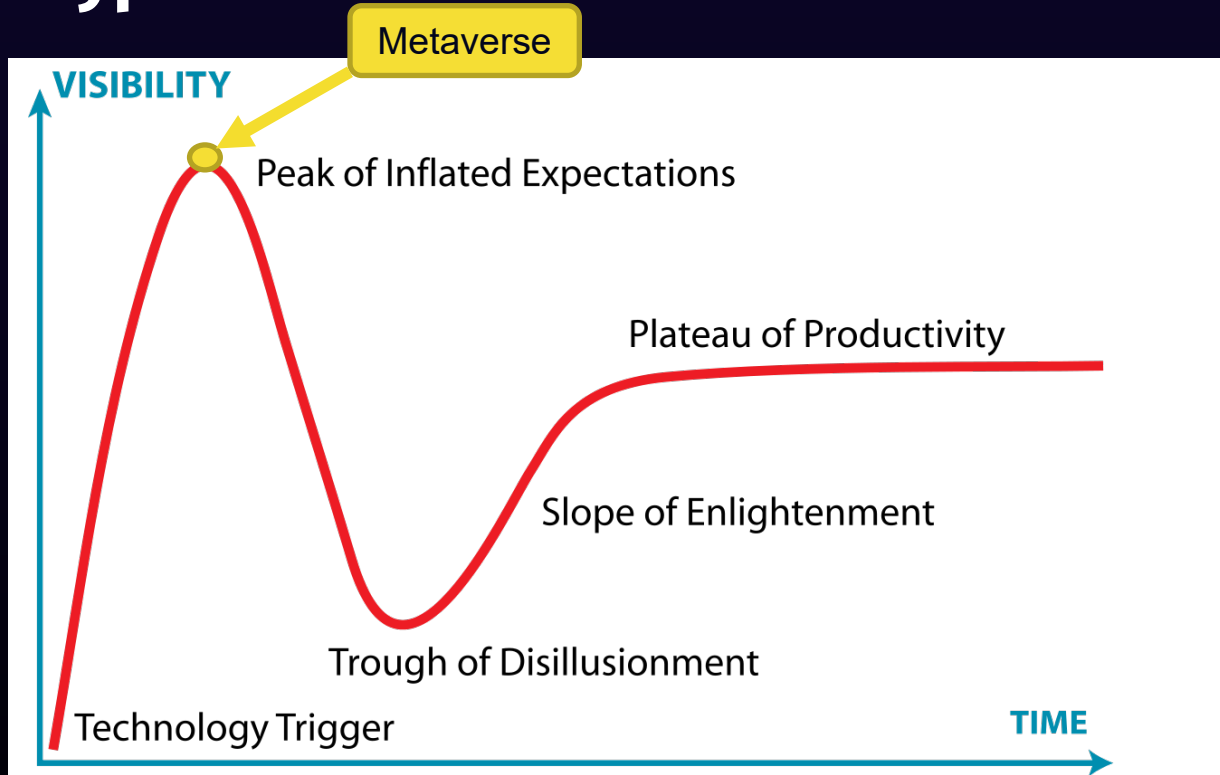
25.4 billion IoT devices in 2030



02

Bedeutung

Hype





THE VERGE

PODCASTS

MARK IN THE METAVERSE

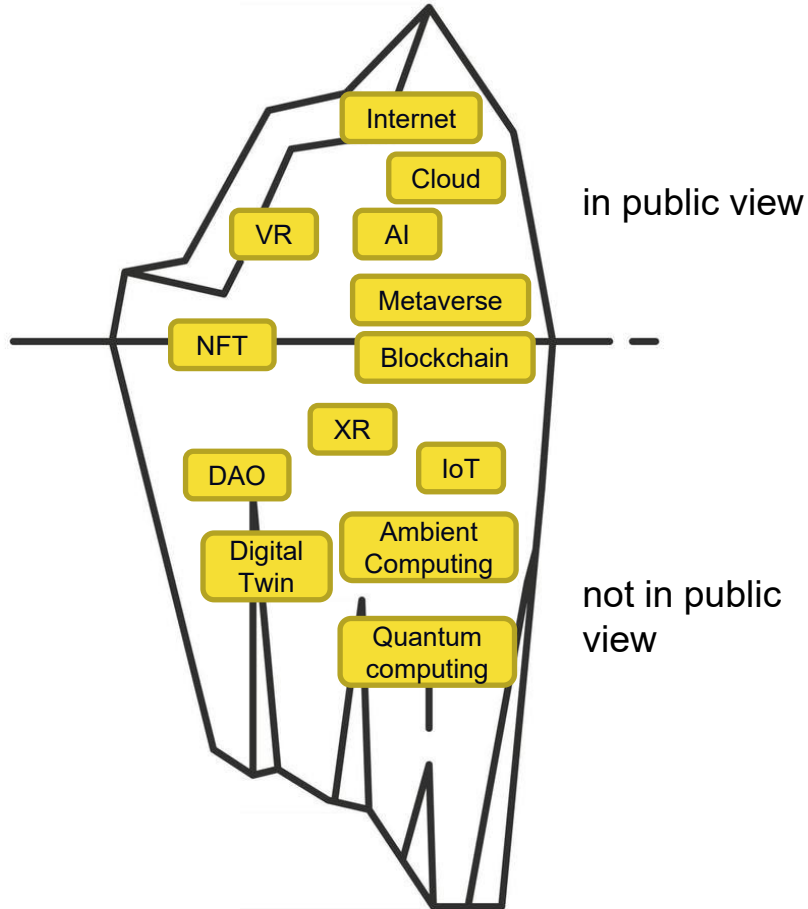
Facebook's CEO on why the social network is becoming 'a metaverse company'

By [Casey Newton](#) | [@CaseyNewton](#) | Jul 22, 2021, 10:00am EDT

Illustration by Alex Castro /
The Verge Photo by Justin
Sullivan / Getty Images

[f](#) [t](#) [SHARE](#)

As June came to an end, Facebook CEO Mark Zuckerberg told his employees about an ambitious new initiative. The future of the company would go far beyond its current project of building a set of connected social apps and some hardware to support them. Instead, he said, Facebook would strive to build a maximalist, interconnected set of experiences straight out of sci-fi — a world known as the metaverse.



Businessweek | Technology

Microsoft Makes a \$69 Billion Down Payment on the Metaverse

Its deal for Activision Blizzard heats up the land grab for what Big Tech sees as its next frontier.

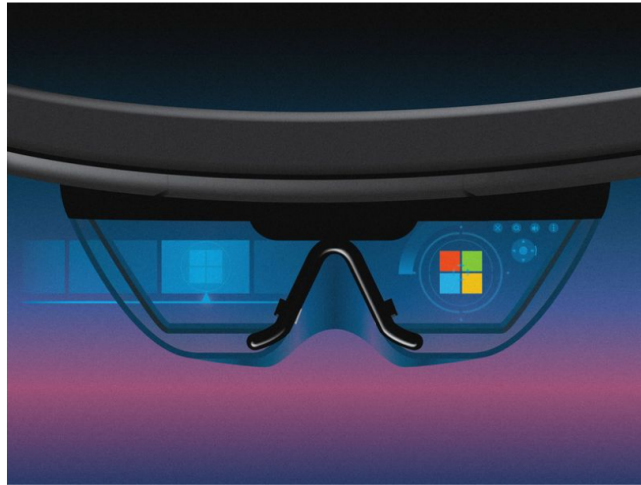


Illustration: 731

By [Sarah Frier](#) and [Dina Bass](#)

January 19, 2022, 6:10 PM GMT+1

Listen to this article

▶ 7:07

Share this article

There are many reasons why Microsoft Corp. would have wanted to purchase Activision Blizzard Inc., which publishes a range of famous video game franchises, from Call of Duty to Candy Crush Saga. The \$68.7 billion deal,

• LIVE ON BLOOMBERG

Watch Live TV >

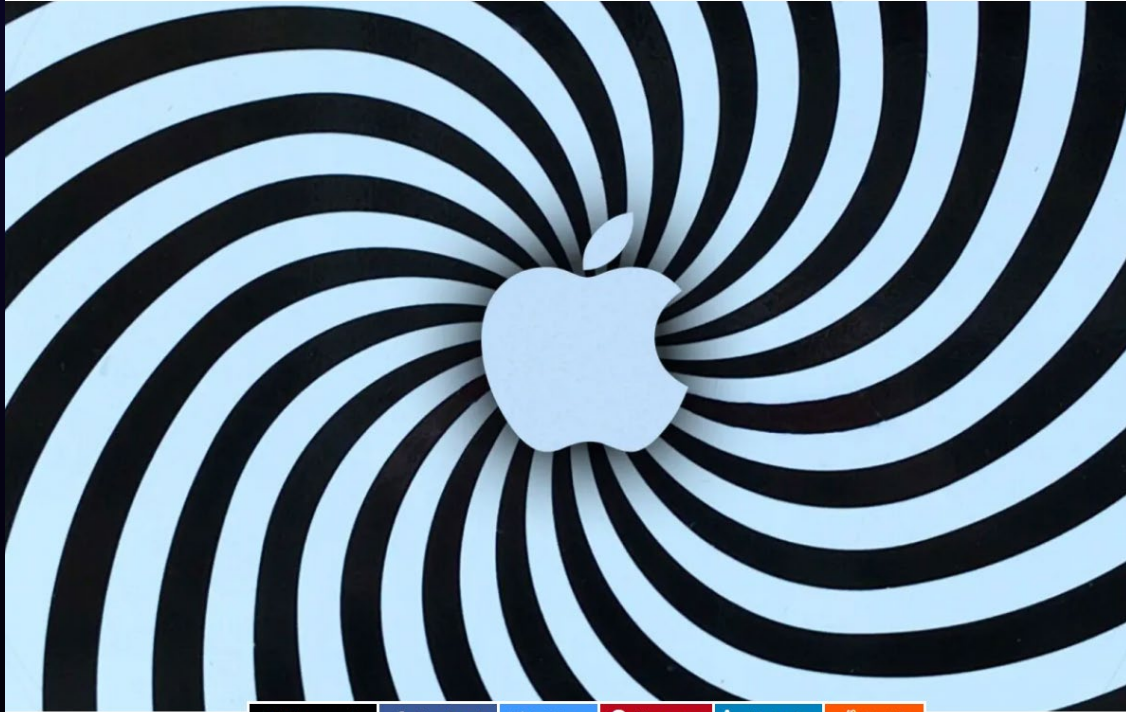
Listen to Live Radio >



YESTERDAY

Tim Cook says Apple 'sees a lot of potential' in the metaverse, 'investing accordingly'

Chance Miller · Jan. 27th 2022 2:52 pm PT [@ChanceHMiller](#)



10 Comments

[f](#) Facebook

[t](#) Twitter

[P](#) Pinterest

[in](#) LinkedIn

[r](#) Reddit

During Apple's Q1 2022 earnings call with analysts and investors today, Apple CEO Tim Cook addressed the idea of the "metaverse." In response to a question from Morgan Stanley analyst Katy Huberty, Cook explained that Apple sees a "lot of potential in this space."

GOOGLE

GOOGLE IS BUILDING AN AR HEADSET

Project Iris could see Google go up against Meta and Apple in the coming headset wars

By [Alex Heath](#) | [@alexheath](#) | Jan 20, 2022, 11:59am EST



[f](#) [t](#) [SHARE](#)



Meta may be the loudest company building AR and VR hardware. Microsoft has HoloLens. Apple is working on something, too. But don't count out Google.

Google VP Clay Bavor. |
Photo By Liz Hafalia/The San
Francisco Chronicle via Getty
Images

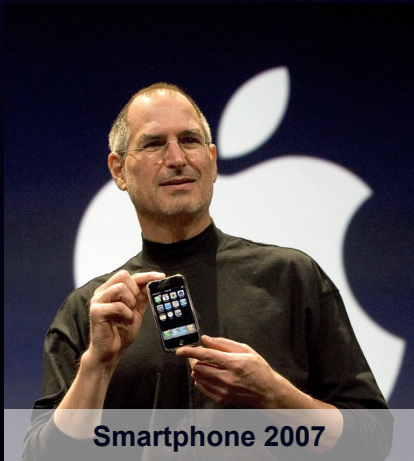


Mainframe 1943



PC 1981

Computing Generations



Smartphone 2007



Ambient Computing 202X

Ambient Computing 202X

Ambient Computing

(also: pervasive or ubiquitous computing)

- Computer «disappears»
- We interact in (3D) World
- Digital & real world come together
- Growing 30% / year





amazon go



03

Existiert das Metaverse bereits?

Early Stage

The next five years will still be the emergent metaverse and pre-metaverse stage.

(Tuong Nguyen, Gartner)



Virtual Worlds



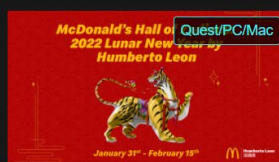
Events

AltSpaceVR

Spatial

Attend these events in
AltSpaceVR

[SIGN IN](#)




Quest/PC/Mac

McDonald's Hall of Zodiacs
Monday, January 31st
3:00 PM CET - 9:00 PM CET



Quest/PC/Mac

Kingdom Purpose VR The...
Tuesday, February 1st
6:00 AM CET - 5:59 AM CET




Quest/PC/Mac

Death Q&A
Tuesday, February 1st
7:00 PM CET - 8:00 PM CET



Quest/PC/Mac

Recovery Dharma: Meditation...
Tuesday, February 1st
8:00 PM CET - 9:00 PM CET
Starts in 4 minutes



Quest/PC/Mac

Money On The Block (Cha...
Tuesday, February 1st
8:45 PM CET - 10:00 PM CET
Starts in about 1 hour




Quest/PC/Mac

Arabic lessons for begin...
Tuesday, February 1st
9:00 PM CET - 10:00 PM CET
Starts in about 1 hour



Quest/PC/Mac

Weekly Workshop
Exploring Immersive Education
Metaverse: Bullies, Trolls, ...
Tuesday, February 1st
10:00 PM CET - 11:00 PM CET
Starts in about 2 hours




Quest/PC/Mac

Depeche Mode in Concert!
Tuesday, February 1st
10:00 PM CET - 12:00 AM CET
Starts in about 2 hours



Quest/PC/Mac

Warnings and signs of m...
Tuesday, February 1st
10:30 PM CET - 12:00 AM CET
Starts in about 3 hours



Quest/PC/Mac

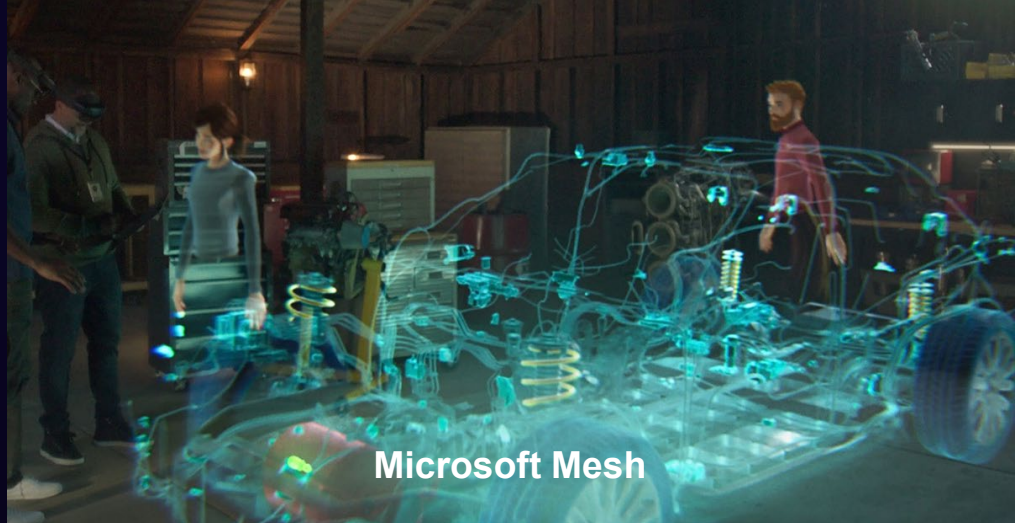
Can you Catch the Beat
Wednesday, February 2nd
12:00 AM CET - 2:00 AM CET
Starts in about 4 hours



Quest/PC/Mac

Creative Writing Meetup
Wednesday, February 2nd
12:00 AM CET - 1:00 AM CET
Starts in about 4 hours

Collaboration



Microsoft Mesh



Mozilla Hubs



Meta Horizon Workrooms



Kreuzlingen

Zürich

VR Spass für alle

Erlebt eine einzigartige Unterhaltung, stärkt euren Teamgeist und beweist Köpfchen, Mut und Schnelligkeit.

Für gross und klein bieten wir Einzelrunden, sowie vergünstigte Doppelbuchungen an. Am Mittwochnachmittag haben wir jeweils einen Spezialpreis für Familien.

Unser Schutzkonzept



04

Metaverse und Hochschule

Immersive Learning



Teamwork



Remote Collaboration



Research Environment



HoloAnatomy® Software

Search...



[Why HoloAnatomy®](#)

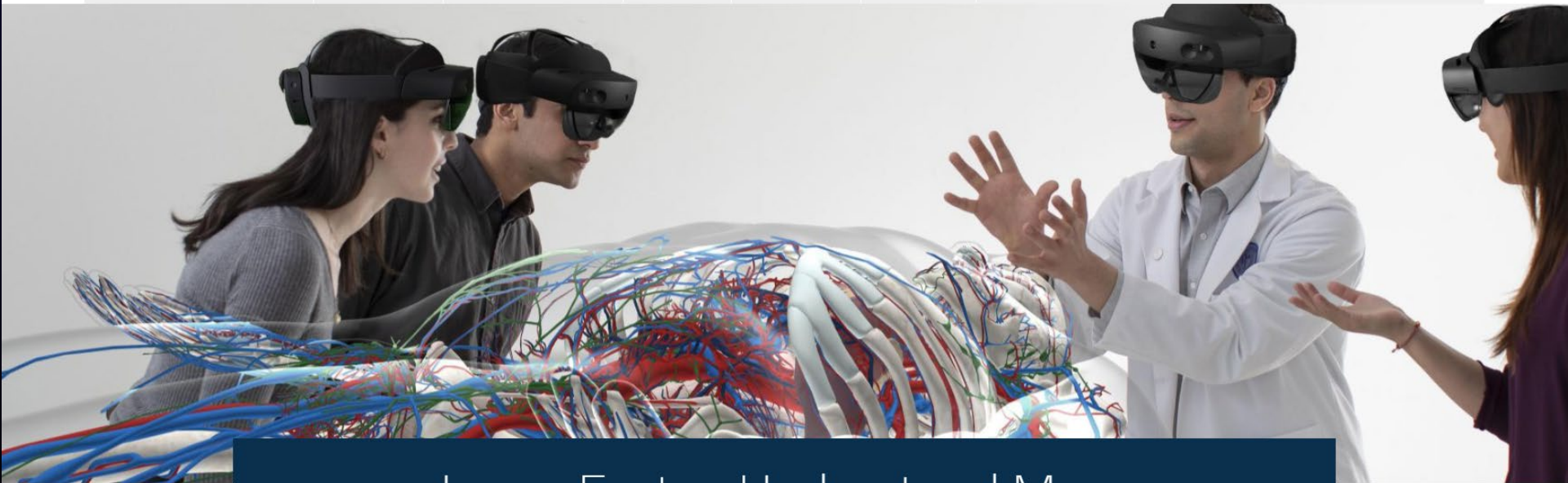
[Research](#)

[Partner Stories](#)

[Events](#)

[About](#) ▾

[Contact](#)



Learn Faster, Understand More

HoloAnatomy® Software Suite* was developed in collaboration with experienced anatomy faculty, our software gives students 3D perspectives of every part of the body – offering views impossible through any other means.

Das immersive Arbeitsheft

Digitalisierung in den Geisteswissenschaften sichtbar gemacht.

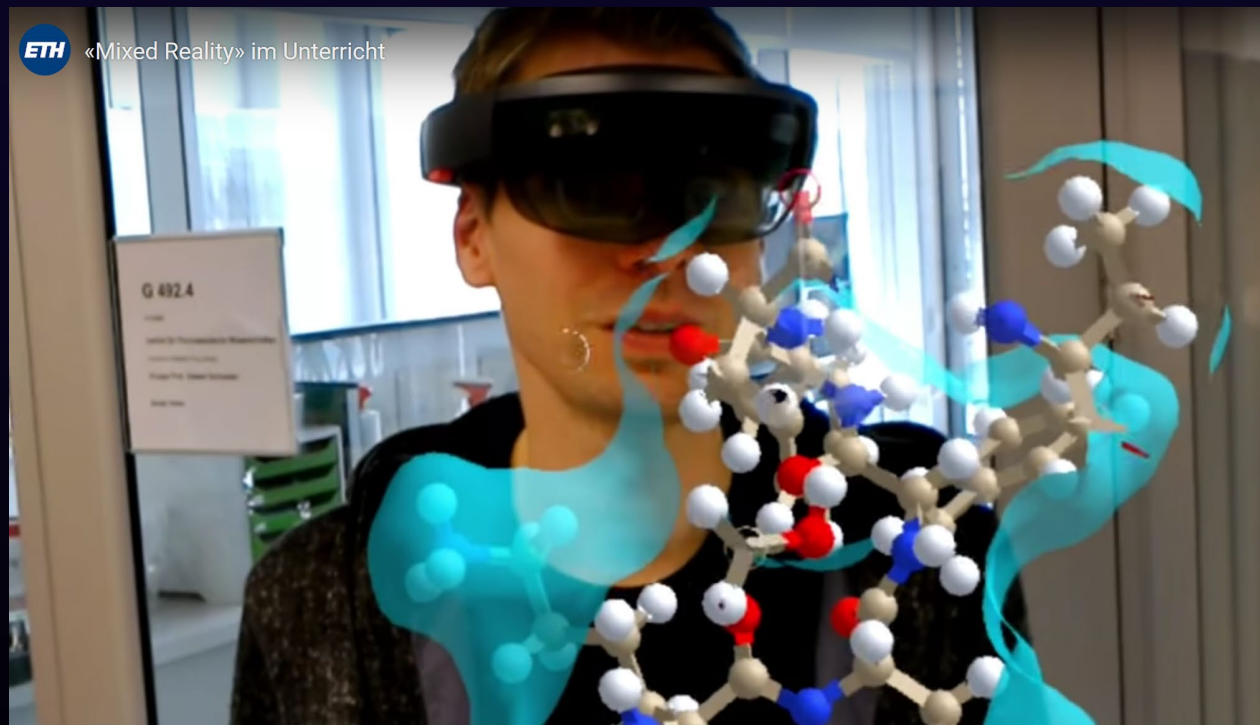
Institut für Designforschung (IDE)



Molegram

The Molegram Explorer project provides a mixed-reality framework to facilitate and broaden students' understanding of molecular structure.

*Dr. Jan Alexander Hiss
Pharmazeutische Wiss.
ETH Zurich*



«Mixed Reality» im Unterricht

ALETHA: A Mixed Reality for an Enhanced Lab Course on Microfluidics



Overall, we observed greater intuition building and engagement from MR students compared to the control group.

*Prof. Dr. Simone Schürle-Finke
Health Sciences and Technology
ETH Zürich*



05

Ausblick

Do the hard Work

- Presence
- Interoperability
- Inclusive Design
- Standardization
- Privacy
- Security



No single company, country or culture can build an equitable and inclusive metaverse. That's why the global IT community should unite with the communities they serve to develop open, secure and trusted virtual environments.

(WEF)

How to avoid the Ills of Social Media?

- Regulation
- Own your data
- Pay with cash (not with data)
- Decentralize
- Avoid radicalizing algorithms
- Ethically humane design



New Devices



Google Project Starline



Photorealistic Avatars



Connect the Meta-Islands to Metaverse



Real World Integration



«Metaverse Vaccine»



“We are only starting to see how digitization is going to change our lives.”

— **Bill Gates 2021**



Thank You!



Paul Affentranger
affentranger@afca.ch

www.afca.ch



afca.