TREND RADAR
METAVERSE

Year One

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01

Year One... and counting!

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At the beginning of 2021 there was a **lot of noise and hype around the whole Metaverse topic**. Hype or Reality? Evolution or Revolution? Opinions were split but when digging deeper pretty much everyone thought that investments would be made, and tangible action would be felt.

Since publishing our first "Trend Radar", **we have worked with stakeholders across a wide range of industries**, including government, manufacturing, finance, retail, universities, and even healthcare and wellness. Over the past few months, we have seen a shift in perception. Initially, there was skepticism towards the Metaverse, largely due to past endeavours, such as Second Life, Decentraland, and Roblox being equated as examples of what the Metaverse could look like.

Negative speculation surrounding cryptocurrency and pieces of land or houses sold at incredibly high prices also contributed to overall skepticism, but it also **motivated people to look beyond their initial reactions and further explore the possibilities of the Metaverse**.

In essence, the Metaverse is an immersive environment where people interact and engage through avatars, serving as an extension of the digital ecosystems already transforming the way we live and work.

While it is still early days, **there seems to be mounting consensus throughout the industry that the Metaverse is coming**. We expect multiple Metaverses and various ways of leveraging these services. As we have witnessed with the development and evolution of Internet first and Mobile Technologies later, we expect its uptake to pick up speed as we move forward. Once again, imagination can play a large part when looking ahead but increasingly **solid immersive experiences are bringing to life new ideas and potentially new business models**.

In this paper, we will discuss how we have begun to explore this exciting frontier and the applications and results we are testing and designing with our partners. But before we dive in, let us first revisit some key basics.

40% Reality
33% Hype

45% Revolution
40% Evolution

95%
and more

50%
believe...

+11%

The balance between hype and reality witnessed in 2022 is changing as there is a clear increase in people feeling this will be Reality.

Revolution still seems to be slightly ahead of Evolution.

There is a wide consensus that the Metaverse will reach maturity by 2033.

... that the impact of Metaverse will be relevant in the next 24 months.

Metaverse Projects since 2022.
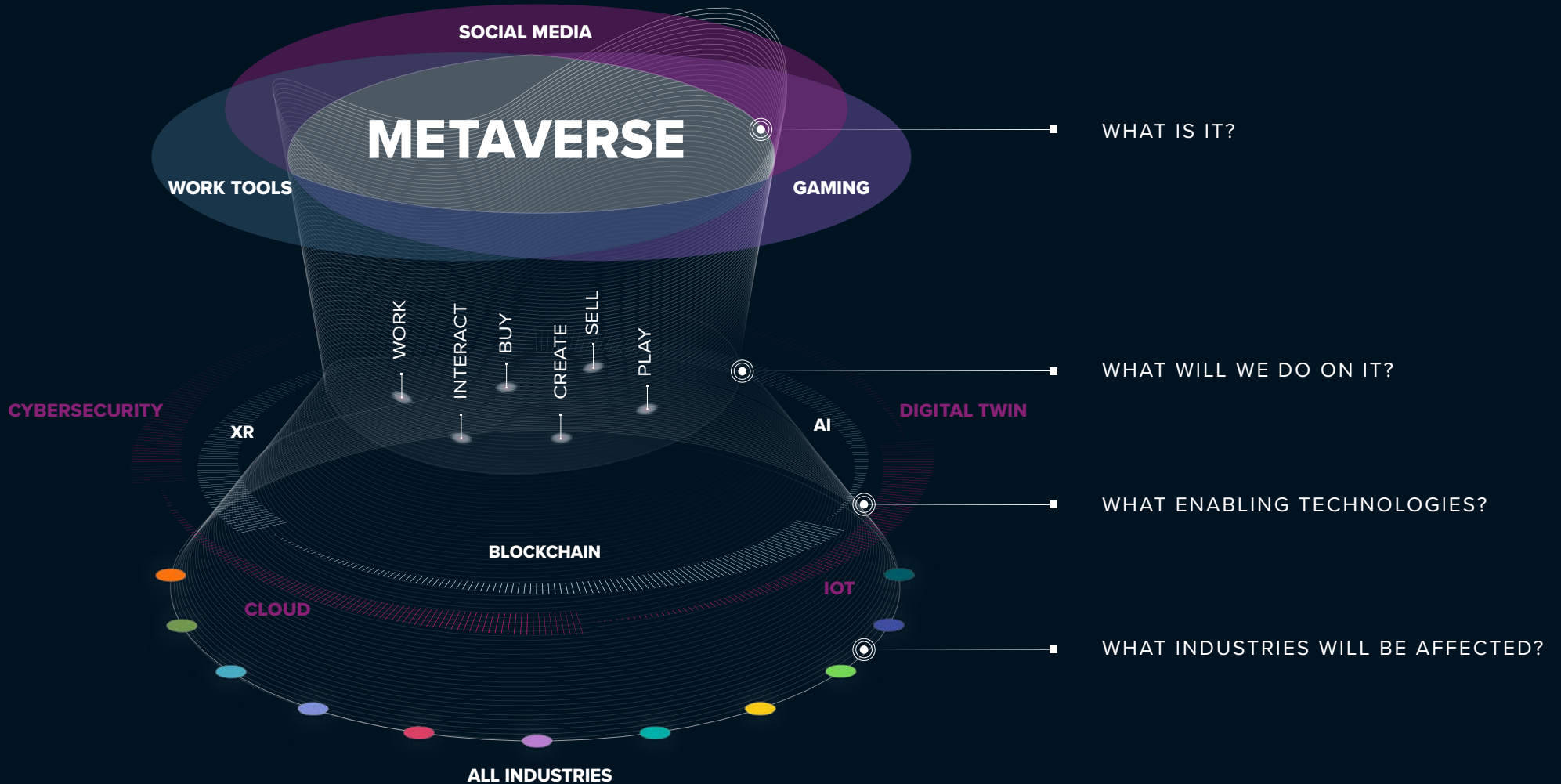
Year One... and counting!

Read More >

02

Metaverse Basics

As we highlighted in our first "Trend Radar", the Metaverse is a concept that is open to interpretation and subject to differing views. **But at its heart, the Metaverse is a virtual and immersive space where people can interact, representing a potential evolution** of the internet and digital ecosystems as we know them. It blends social media, gaming, and work/collaboration tools, opening possibilities for people to interact, play, work, collaborate, create, buy, and sell.

Current technologies are enabling us to imagine and even begin to try some of these activities. Primarily leveraging **Extended Reality (XR)** - which includes **Virtual Reality (VR)**, **Augmented Reality (AR)**, and **Mixed Reality (MR)**, - as well as **Artificial Intelligence (AI)** but overall leveraging **all digital enabling technologies** (from **Cloud** and **Cybersecurity** up to **Blockchain**). The pace at which technology is evolving is staggeringly fast and will exponentially increase the features and the possibilities of our activities in the Metaverse.

As this evolution progresses, **we expect that all industries will be impacted, with a proliferation of use cases and projects for digitally immersive experiences emerging at a rapid pace**. The rate of this evolution is linked to the evolution of technology and the global digital awareness and consciousness, which is becoming more informed and opinionated about how these technologies ought to be utilized. Once again, technology trigger and availability are not enough for evolution to happen: **maturity in adoption will follow tech maturity and human cultural awareness**.

METAVERSE

SOCIAL MEDIA

WORK TOOLS

GAMING

WHAT IS IT?

WORK
INTERACT
BUY
CREATE
SELL
PLAY

WHAT WILL WE DO ON IT?

CYBERSECURITY

XR

AI

DIGITAL TWIN

Metaverse Basics

WHAT ENABLING TECHNOLOGIES?

BLOCKCHAIN

IOT

CLOUD

WHAT INDUSTRIES WILL BE AFFECTED?

ALL INDUSTRIES

03

Tech Update

The Metaverse is constantly evolving both in terms of technology and physical devices. The ease of use and portability of these devices will determine whether they will be adopted widely or not. Currently, hype, technology, and awareness are not moving at the same pace.

The **underlying digital technologies, especially AI and XR, are evolving rapidly. While there is progress in the development of physical devices, these remain quite cumbersome**, with issues linked to battery length and use within certain experiences (think Sport or Healthcare). The ease of use of these devices will play a critical role in determining when the Metaverse reaches mass adoption and maturity. Additionally, **affordability**

will be a significant factor in this equation. We expect to see the same dynamics in the Metaverse industry as we saw in the Mobile Phone industry, with basic devices building momentum and a use base and more advanced devices pushing the frontiers of adoption.

XR visors that enable both AR and VR experiences and wearables could augment the potential of the Metaverse. The trend is moving towards devices that are easier to wear and use, have better battery life, and function well both indoors and outdoors. AI is evolving fast to manage user experiences and interactions autonomously, reducing the need for live digital service operators.

Digital Twins of users, advanced avatars, and 3D modeling are evolving fast and offer new possibilities from wellness to healthcare.

The Metaverse is made up of interoperable virtual and immersive environments that are frequented by multiple users, in which the **concept of persistence may exists**. Shared spaces can vary in state and configuration over time, depending on the actions carried out by users located in the same space who can interact through gestures, words, and movements, as well as with objects that can be integrated with external systems. AI plays an important role in these scenarios because it introduces the ability to adapt the experience to what happens

within the environment.

One of the features implemented by Engineering's Metaverse Lab is a functioning avatar chatbot (a chatbot that talks looks and listens like a human avatar) which, connected to Natural Language Processing systems, is able to interact with users consistently, and enrich its informational heritage as the service is used.

Blockchain has been viewed as a fundamental technology from the start, ensuring authentication, notarization, NFTs, interoperability between various Metaverses, and crypto payments.

As the Metaverse continues to evolve, security and regulatory compliance will increasingly become central to the debate. **Regulating this digital world may prove even more complex than regulating current digital behaviors**.

In the phygital world, comprehensive regulations have evolved over time with the detection of issues related to data management and cyberbullying. **Immersive ecosystems bring about an evolution of GDPR**, cybersecurity, and user protection issues. Entities are being organized to standardize not only technologies but also the drafting, dissemination, and enforcement of rules.

Key Technology Trends

XR

+890%
market size growth by 2025

Blockchain

$3.1 trillion
business value generated by 2030

Cloud

+50%
of IT Spending will shift to Cloud by 2025

Social Media

+115%
over the past 6 years

Cybersecurity

+20%
year on year

Gaming

+70%
market value growth by 2025

Tech Update

Data displayed represents our elaboration of data
coming from multiple sources (for example: STATISTA)

Our Approach

04

Engineering has been long focused on the **digital evolution and transformation of business processes and business models**.

Our approach is a mix of continuous and relentless research on frontier technologies, to gather experience early on, before they become mature for the market, but also a deep and strong focus on **how these technologies can change and improve the way we live and work**. As the value of data increased becoming the true value of the digital economy, we witnessed the progressive digitalization of businesses and siloed market verticals.

The **Metaverse is the next step in this process of digitalization and personalization of services**, still in its early stages but with great potential.

We believe the best approach is to identify processes that already add value and incorporate immersive elements to enhance the service offered.

We have identified a series of basic use cases: the Shop/Showroom where you can browse and buy. The meeting Room/Classroom where you can have meetings or teach and learn. The virtual Environment where you can recreate real places (a museum, a square, etc..) or build totally virtual realities. Mixing and matching these capabilities provides a first step in adding that immersive quality to processes that already provide value whilst improving them.

We **constantly engage with our partners and clients to drive these conversations forward**. Our Digital Experience competence centre has long been focused on digital solutions evolving through the years from web to mobile and now onto the next frontier: the Metaverse.

We aim to co-design solutions that strike a strong balance between functionality and usability.

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Our Current Projects

Orvieto in the Metaverse

Orvieto in the Metaverse is the app that Engineering, together with the Municipality of Orvieto, has designed to make the artistic, historical, and cultural heritage of the charming Umbrian village accessible to anyone through an immersive and sensory experience. Guiding the user through the simulation, which can be experienced both with traditional devices and through 3D viewers, is Anna: the avatar and mascot of the city. The interactive game starts from the Space, then continues from above to the town center before finally landing in Piazza Duomo. From here, you enter various virtual rooms where you can interact with objects, observe and receive multimedia information about museums, attractions, typical products; access virtual tours of the major beauties of the place or request the NFT technology Identity Card to become a citizen of the city of Orvieto in the Metaverse.
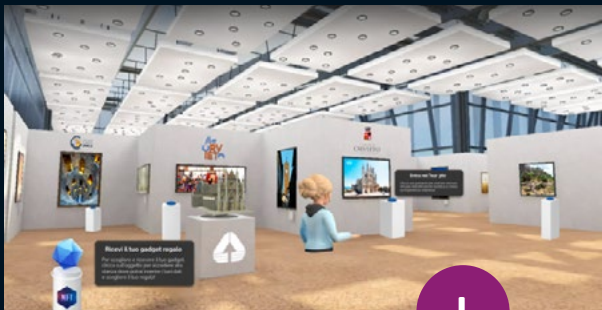

SMAT

An advanced technological system for water purification and reuse, although known as unique in the world for supplying water to space stations, is not an easy "object" to describe or bring to a trade fair. To meet this need, we have developed an Oculus App that features 360° photos and a 3D reproduction environment of a space station. The app allows user interaction with POIs (Points of Interest) on a map inside the plants and guided tours with background audio for explaining the processes and the brand's history. The new immersive communication channel allows not only to learn about the company's technological aspects and values but also to experience its uniqueness and innovative character.
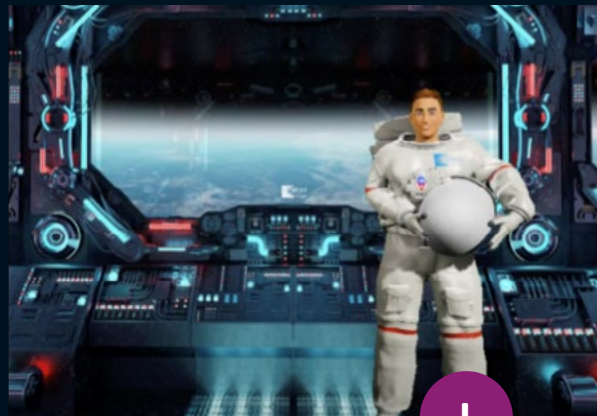
Ferentino Metaverse Academy

Metaverse Academy is a virtual experience through which you can acquire or update skills on Engineering, but it is also an effective tool for onboarding new hires. The experience is available through an immersive and multi-user app, available on both PC and Oculus platforms. The app allows you to expand your knowledge of company information and regulations, testing your skills with games and quizzes. Our "Enrico della Valle Academy", one of the main Corporate Schools on IT in Italy, is not only committed to the digital and managerial training of people but also based on dialogue with new generations and the use of new communication channels, towards a future that cannot ignore digital culture and awareness.
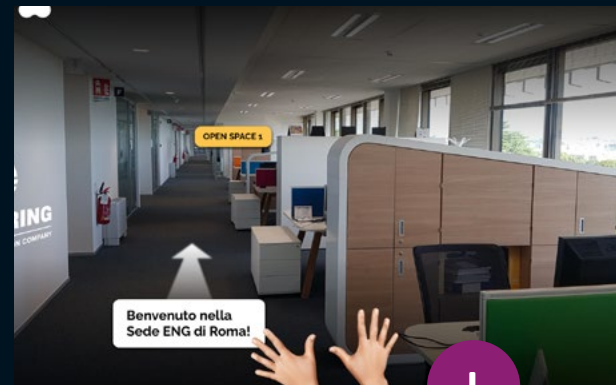
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Store ENG

Store ENG is an Oculus app that allows for immersive interaction with the company's identity to learn about the world of Engineering and interact with the virtual spaces of the company: multimedia content, gamification, shop with interactive display and selection of gadgets, clothing, etc. The journey through the ENG store allows for orientation with new ways of shopping, looking and choosing, for example, a piece of clothing from a virtual shelf, picking it up to observe it closely, moving around the store as if it were a physical space. Shopping in the Metaverse is already a reality, as is being advised by an influencer in the form of an avatar, but there are still many challenges to be faced, including realism, interoperability, and sharing. These challenges can be overcome, primarily through research and continuous improvement of the technologies underlying the experience.

Cotarella Family's wine cellars in the Metaverse

We create an immersive experience among the vineyards, barrels, and nature of the Cotarella Family, a famous Umbrian winery that has been producing high-quality wine since 1979. A virtual journey that represents an additional opportunity for all wine enthusiasts. Thanks to our app, we support the dissemination of wine culture and knowledge of the territory, nature, and work of the people of the Umbrian winery. Using cutting-edge technologies such as Virtual Reality, Digital Twin, and Artificial Intelligence, we have created a customer journey in the Metaverse to tell the story of the company, the quality of the wines, and the beauty of the estates. This allows visitors to access a new way of discovering the winery, which complements, rather than replaces, the real experience.

SUN Research Project

We participate into the HORIZON-CL4-2022-HUMAN-01-14 project which deals with supporting the creation of technological architectures for various fields, ranging from innovative industrial and social extended reality applications to human-machine interaction and cooperation. The goal is to promote a human-centered and ethical development of industrial and digital technologies (Innovative eXtended Reality) by using scalable solutions, wearable sensors, haptic interfaces, or AI-based solutions to achieve, for example, virtual copies of physical objects and natural interaction between the physical and virtual world.

Our Current Projects

06

What About Revolution?

What about the Revolution?

In our first paper, we posed the question: is the Metaverse an Evolution or a Revolution? After a year of developing projects and discussing with the market, we believe that evolution is currently underway. **Revolution is still a while away**.

For the Metaverse to be considered a revolution, it must become more relevant on a deeper level, such as cultural, educational, social, and medical.

From our observatory, we see that **use cases headed in this direction are being developed, and we are working on them alongside organizations and institutions** that view the Metaverse as a potentially disruptive technology that could revolutionize the way we educate ourselves, learn about other cultures, preserve traditions, treat physical and mental illnesses, and foster creativity.

We believe such projects will gain increasingly visibility in the next few months.

We believe that in the short term, the Metaverse will be **an evolution of our current Digital Ecosystems**, which are still developing. However, the revolutionary aspects of this phenomenon still have a lot of potential and will likely emerge as devices become easier to use, technology and use cases evolve, and users' digital awareness, consciousness, and maturity develop.

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07

Key Questions

The key question everyone is debating is whether or not, independently from bias or doubts...

...can anyone truly afford to ignore this trend?

Digital Transformation is affecting the way we live and work and above all enabling totally new business paradigms. Our advice is to **identify key services and processes that could benefit from an immersive element, as well as areas of your business suffering from digital distancing**. These are good places to start testing new approaches and getting tangible results. Learn from others, get creative, and find a partner to help you rethink your world.

You'll need to have deep knowledge of existing technologies and business processes, a strong awareness of the possibilities offered by advanced technologies, and you must begin, firstly, to think digital.

Come visit us at our events and Metaverse Dome to see our case studies.

Key Questions

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THE DIGITAL TRANSFORMATION COMPANY