ILI.DIGITAL

The Metaverse

What it takes to be successful in the next generation of business models

SCIENCE TO BUSINESS

Scientific advancement is driven by being inquisitive, and business is no different. ILI. DIGITAL has emerged from research: we bring together science, business, and technology to foster new thinking and business model disruptions.

We believe that data driven disruptions bring fascinating changes to the industrial landscape: better customer experience, new value business models, increased operational efficiency, and more.

With our origin, digital mindset, and solution competence, we provide the right setup to do so. Our multidisciplinary team combines data analysts, software developers, engineers, sociologists, etc., with a deep expertise in design research, behavioral economy, artificial intelligence, and beyond.

We see it as our responsibility to accelerate the transition from scientific concepts to executable business. With the intention in mind, ILI.DIGITAL Team presents a series of white papers on the trending topics — sustainability, circularity, digital health, metaverse, behavioral economics, — that show scientific advances in each area and their application in practice.

WHY ILI.IGITAL
FOR THE METAVERS

As a digital business building company with over 300 innovation and transformation projects, we have learned one thing: the best time to start would always have been at least five years earlier. That is why we have developed a strong sense for opportunities based on new technical evolutionary stages to challenge the status quo and come up with promising concepts.

As technology experts we also have the tools to implement virtual business models — no matter if they are cloud-based or on premise, two- or three-dimensional, AI-driven or blockchain-based. Our high-performance teams have the ability to execute ideas that no one has done before.

And at the end of the day, it's the added value that counts. We are experts in business model transformation. And the Metaverse is the next evolutionary step of the business model: from analog to digital to virtual. We understand how to think of new megatrends from the end user perspective and transfer unclear topics into something simple and tangible. All that with an intention to scale new concepts in entrepreneurial spirit.

PREFACE

After being a “buzzword” for a long time, the Metaverse seems to be approaching us from every direction — in the form of activities, questions, requests, etc.

Our aim is to get a grip on the topic, as we see ourselves as believers and consider the Metaverse to provide a wide range of opportunities for our customers and stakeholders.

Today, ILI.DIGITAL wants to give you our aligned direction and principles:

- We are not being actionistic, but strategic!
- We act brand-led, not tech-led!
- We want to find new ways of entering the Metaverse, not copy-paste our world into it!
- We want to give room to innovation!
- We go global rather than regional or local. We align with other regions!
- We collaborate!

Let us take this into account when we talk about the first approaches to Metaverse initiatives.

And let us align the first steps and craft a common message we will give to the markets that have already approached you.

Sincerely,

Dr. Serhan Ili

CEO & Founder
ILI.DIGITAL AG

MANAGEMENT SUMMARY

Since Facebook changed their company name to Meta and disclosed their strategy to become a Metaverse in the fall of 2021, the term “Metaverse” has become widely used. Especially since the announcement, the controversy surrounding the term has been higher than ever. A common understanding of the term and its meaning seems to be missing, and the fear of missing out makes companies jump on the Metaverse bandwagon at all costs. But what is it all about? Is it enough for a company to launch an NFT to be part of the Metaverse?

With the Metaverse, the next level of subjectivation of value is reached, resulting in the disappearance of rational economic principles. While the inclusion of enhancing technologies, such as Extended Reality, Artificial Intelligence, and 5G Connectivity is the foundation, the Metaverse will be defined by those who can create experiences.

Right now, the Metaverse is in its absolute earliest stages and will take its first mature shape in the next five years. The business potential for companies in the Metaverse ranges from core business optimization to new revenue streams but currently can only be leveraged through a coordinated strategy.

In this paper, we will explain the basics and define the term “Metaverse” from the perspective of a digital business builder. We will also present the key terms, characteristics, and technologies in a short and aggregated way.

In addition, our behavior experts will address the user preferences in the Metaverse. We will look at the end-user of the Metaverse and where he stands right now. We will present a quantitative end-user study with valuable insights for the conception and implementation of corporate initiatives in the Metaverse.

The presented results will be concluded with an in-depth Metaverse use case investigation of a global automotive OEM (original equipment manufacturer) to demonstrate, how the Metaverse can generate value for an organization that is internally oriented for productivity and externally oriented for growth.

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INTRODUCTION

It is always amazing how quickly some trends become megatrends and then fall into the disrepute of hype or a buzzword. Since the renaming of Facebook, the Metaverse has been on everyone's lips. The potentials of an almost limitless virtual world are tempting for everyone: consumers, companies, and industries. Add some impact stories about crypto millionaires overnight, unicorns arising on the Metaverse horizon, and absurdly high prices for virtual art, and there you go — you created the hype.

But what motivates us to conduct a study on this topic? This hype that everyone wants to jump on looks so speculative. As digital business builders by nature and native innovators, we are committed to analyzing such phenomena, unveiling the added value behind them, and presenting a crystal-clear roadmap for companies.

If you subtract all the exaggerated expectations, a Metaverse is first and foremost an overarching term for the virtual extensions of our physical reality. That is why there is only one Metaverse (hence the capital M), even if it is currently driven by various approaches of various players. We like to compare the Metaverse with a cell, which has always existed, but only now became visible and accessible to us through the technology of a microscope. And so is our current age with the most advanced technologies that allow us to see and interact in our universe more extensively.

And these very aspects are the source of never-before-seen opportunities for business models. Even more they are the kick-off of a new generation of business models. From analog to digital to virtual business models. More technology, more interaction, more experience. And above all, more empathy and user-centricity.

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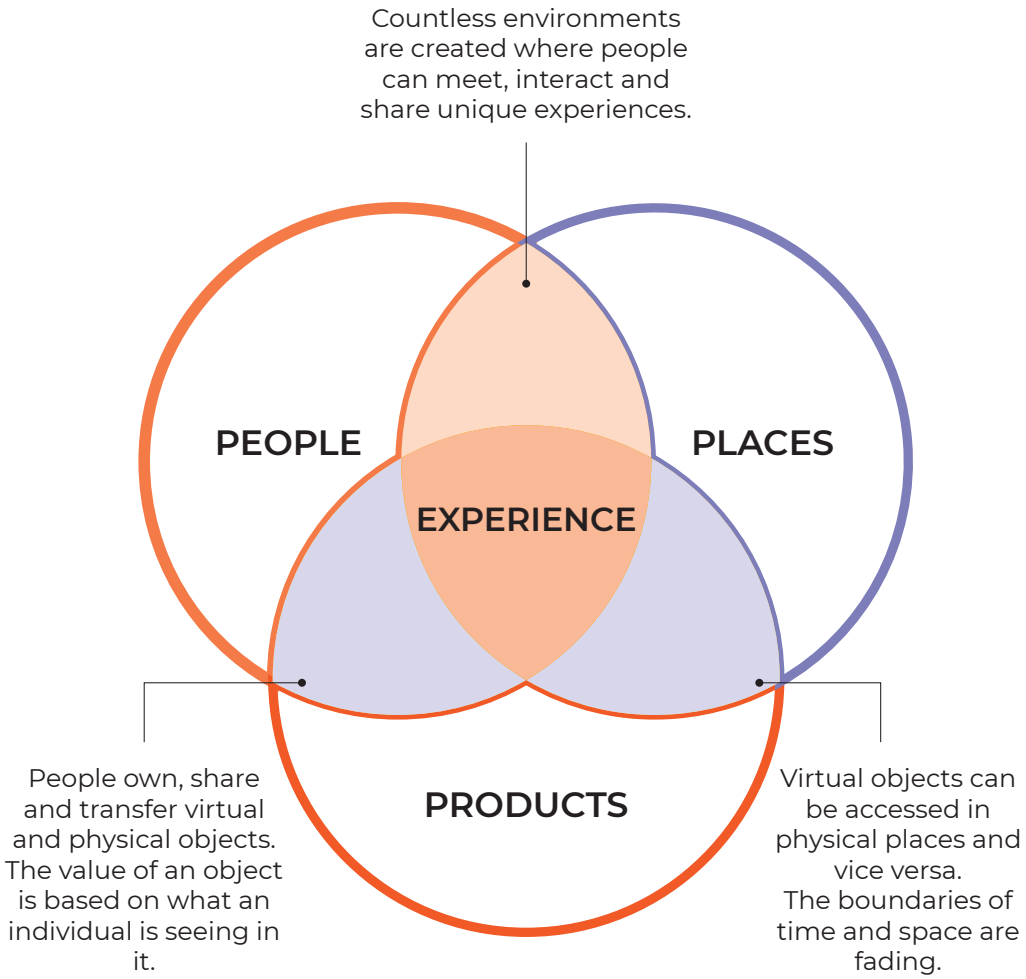
WHAT IS THE METAVERSE?



Graph 1: ILI.DIGITAL strategy analysis

The term “Metaverse” has not just been around for a few months. As early as 1992, the term was coined in the novel “Snow Crash” by Neal Stephenson. With the emergence of the internet, people started creating a parallel world where they could interact in a “Second Life”. Throughout the years, countless platforms appeared for creating social interaction, scanning profiles, exchanging information, and sharing experiences without being physically present.

The Metaverse is first and foremost an overarching name for the experiences from virtual extensions of our physical reality. That’s why there is only one Metaverse (hence the capital M), even if it is currently driven by various approaches of various players. We like to compare the Metaverse with a cell, which has always existed but only became visible and accessible to us through the technology of a microscope. With the combination of advanced technologies, we can see new perspectives of our universe — the Metaverse.

For the Metaverse, the core idea is about alternating, expanding, and enhancing the physical elements of one’s individual reality with technology. It means, the Metaverse arises from experiences compiled from (1) people, (2) places, and (3) products. To be considered a Metaverse, this experience must be:

- **Ubiquitous:** The connection between the elements creating the experience is persistent.
- **Interoperable:** This experience is independent of medium and platform and provides a seamless connection.
- **Immersive:** The user who enters the Metaverse will perceive this experience through immersion and telepresence.
- **Integrated:** The experience integrates and combines all channels between physical and digital elements and enables the interaction between those.
- **Individual:** The experience around physical and digital objects is individual and cannot be replicated.

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THE ROLE OF TECHNOLOGIES

> Any sufficiently advanced technology is unmistakably of magic.
>
> **— Arthur C. Clarke**

The relevant driver technologies, the so-called extending technologies, must be understood to create the Metaverse. A total of four major technological disciplines work together and are both prerequisites and enablers of one another, enabling the Metaverse. They have advanced recently to the point where the concept and vision of the Metaverse, which have been discussed for more than 30 years, is now taking shape.

Extended Reality (VR, AR, MR)

The first core technology in the Metaverse context is Extended Reality. This technology is often used as a synonym for the Metaverse. Even though the creation of virtual worlds (Virtual Reality), the extension of the physical world with digital content (Augmented Reality), and the fusion of digital and virtual worlds (Mixed Reality) are vitally important, they alone are not sufficient to fulfill all the characteristics of the Metaverse. The seemingly endless possibilities of creating new digital worlds pixel by pixel and letting users fully immerse themselves is nevertheless a powerful tool to push the physical boundaries of our universe.

Artificial Intelligence (AI)

Evaluating infinite amounts of data was yesterday. Artificial Intelligence manages to make and anticipate connections. It creates human-like interaction with digital content and assets. Moreover, it can mimic the behavior of physical objects. This creates a second order when an element from the physical world interacts with the digital. There is a growing understanding that Artificial Intelligence is not only driven by algorithms and does not only process data into information.

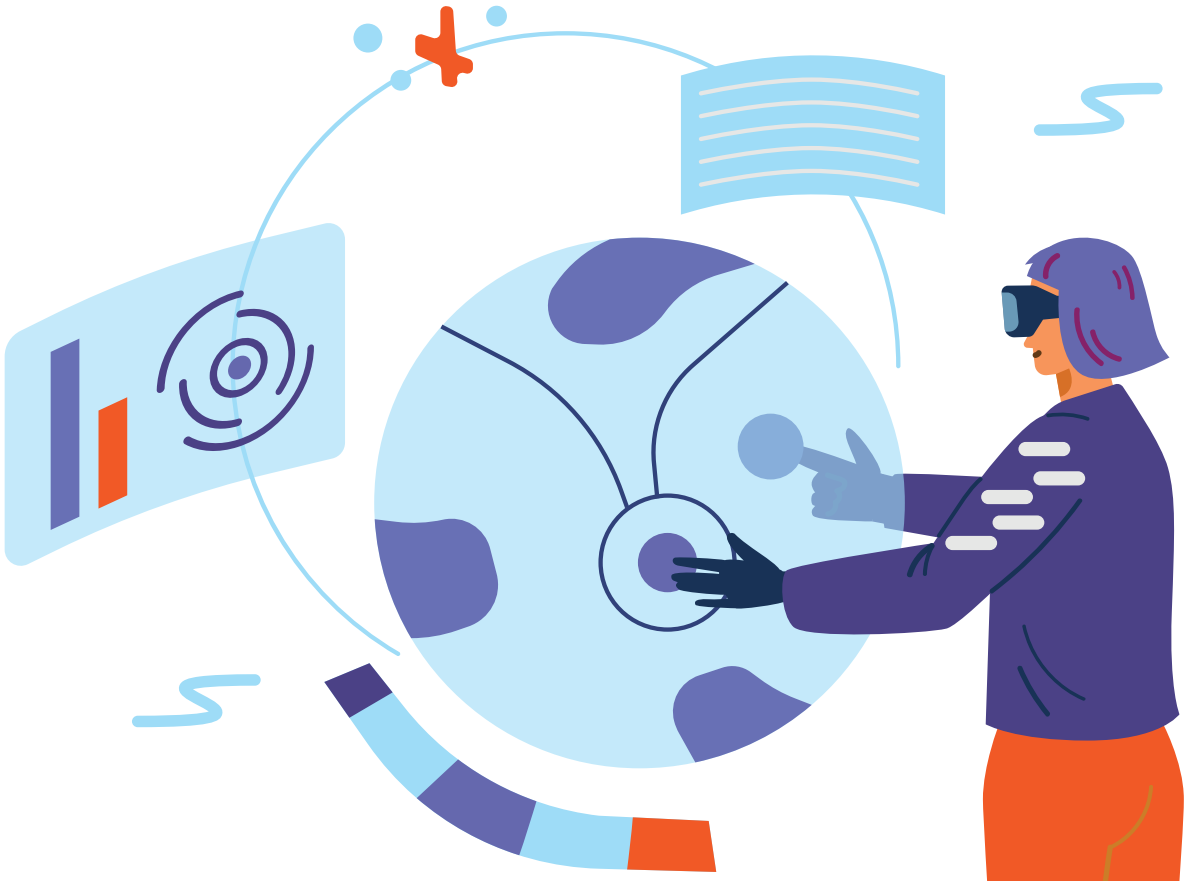
Connectivity (ICT)

Communication technology has advanced steadily from the first text message over video calls to three-dimensional collaboration platforms over the past decades. The users can express their individuality and engage in social contact in the Metaverse thanks to the fundamental technology. The Metaverse is primarily driven by the integration of various communication channels, the scalability of information flow, and the format of information reception. Ultimately, all the mentioned technologies are based on data transmission. The less latency prevails, the more natural the feeling and experience of this data. The possibilities with 5G technology to transmit at unprecedented speeds and process in a decentralized manner through edge computing serve as the technology foundation for the other core technologies in the Metaverse.

Blockchain Technology

One of the core components of the Metaverse is individuality. The transferability of digital assets through blockchain technology breaks with the endless content replication in Web 2.0. Whether expressing the technology as a cryptocurrency or a non-fungible token (NFT), blockchain technology enables a digital singularity. It is not just an expensively purchased JPEG or toy currency for money laundering. It is nothing less than the assurance of digital ownership. And this opens endless possibilities through decentralization and individualization to create a parallel digital society that is connected to the physical world.

Technological advances are commonly the result of the combination of existing technologies. And so is the Metaverse a result of combining the described extending technologies. However, the value of the Metaverse does not lie in its technological maturity but (1) in how the users perceive it and interact with it as well as (2) how the business models are designed.



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USERS IN THE METAVERSE

As an individual experiences the Metaverse, it is crucial to unconditionally focus on the user. It is well known that the design of digital products and services is a strong determinant of their market success, as the value added to a product is directly connected to the experiences associated with it. When this idea meets the fact that users have become increasingly more sophisticated in their demand for the technologies they consume, we conclude that a delightful experience is an imperative for modern business success, which translates into the Metaverse.

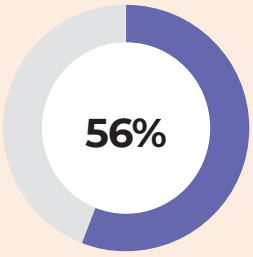
In a world where technological features are becoming more and more essential, new enthusiasm features must be created. The social value disruption in the economic context has already been triggered by digitalization and is omni-present. Away from a rational understanding of added value. Not faster, higher, and further toward individualization and experience. Towards a greater purpose. The user wants to be the focus even more in the future. The value of any asset, regardless of if it is physical or digital, is determined by what the user sees, how he experiences it, and what higher values he reads into it. In a nutshell, the Metaverse defines new economic paradigms.

To understand what the potential user of the Metaverse looks like today, we conducted an end-user market survey for the Metaverse readiness[1]. We structured the results of the survey to understand the affinity of the users towards digital technology, their experience with extending technologies and the Metaverse, as well as the expected behavior in the Metaverse.

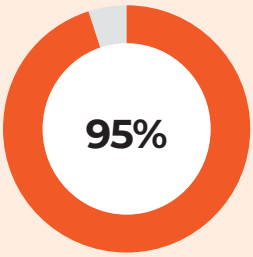
Digital Technology Affinity and Purpose

7.36 h/day

Time spent online



of the time spent for private



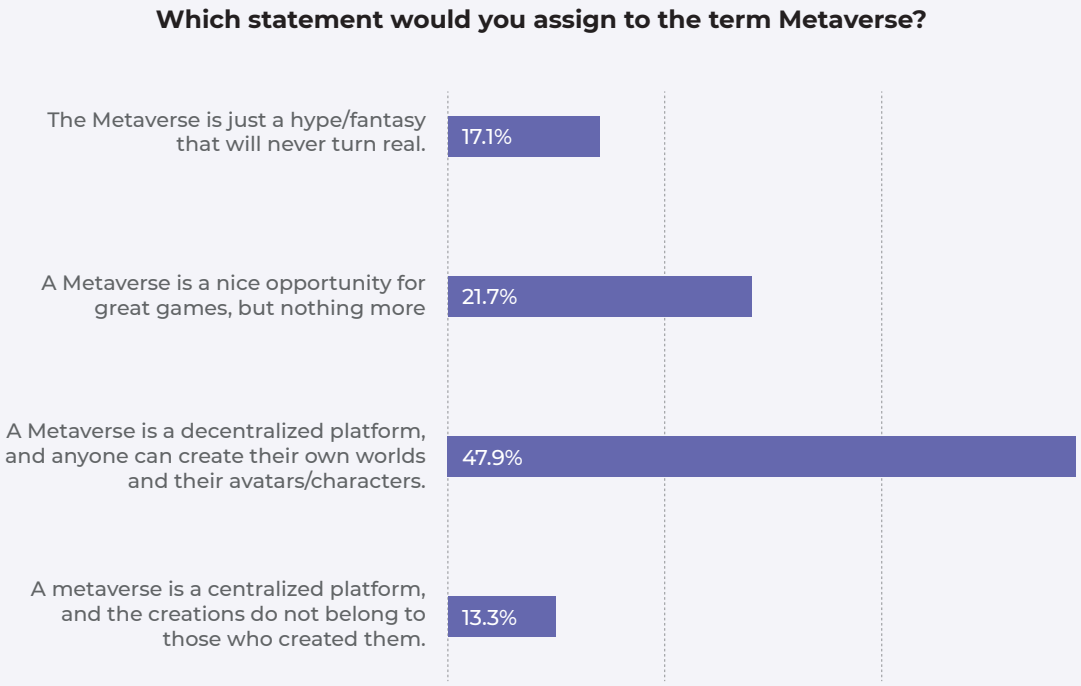
Go online with Laptop or smartphone

Source: ILI.DIGITAL market analysis

[1]n = 4597 participants, 25 -75 years old, 53 % female, 45 % male, 2 % diverse, Focus area: Central Europe & UK

An average user spends 7.36 hours in the digital world each day, with 56 percent of this time being spent on leisure. Assuming the willingness to be online increases for the Metaverse, from a private perspective, the leisure business use cases of the Metaverse offer the serious potential to be served. However, the convenience of accessing the Metaverse must be given through mobile devices (i.e., cellphones or laptops), as access through fixed-located devices provides a physical hurdle to the Metaverse.

Experience with Extended Technologies and the Metaverse

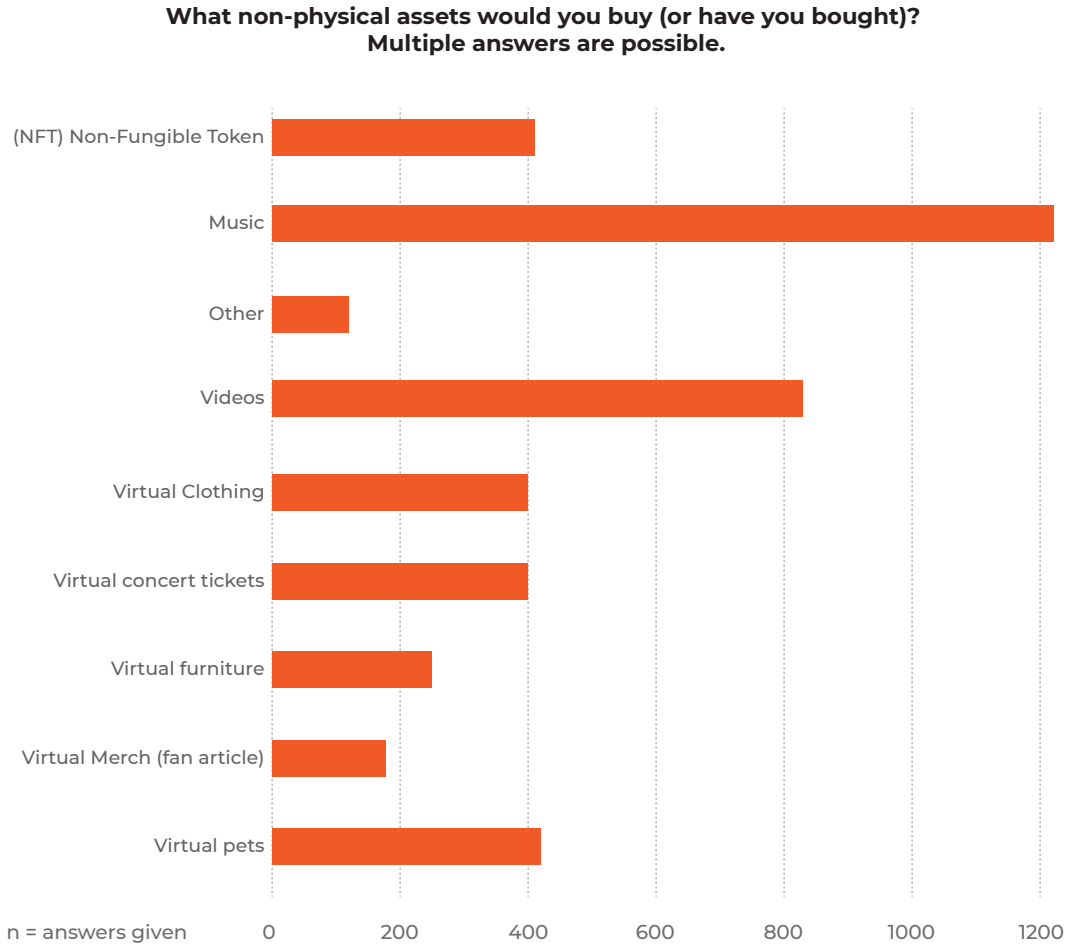


Source: ILI.DIGITAL market analysis

Most participants have heard of the term Metaverse before, with the majority seeing the Metaverse as a decentralized platform for everyone. From the users' perspective, it is less of a centralized institution, yet a connection of multiple providers.

In terms of Extended Technologies, the users are most familiar with Augmented Reality. While 69% of the users have already experienced AR, only 41% have experienced VR, mainly due to a lack of device accessibility or health concerns. Blockchain technology, however, is still unknown to the users — less than 1% understand the technology very well, and less than 12 % understand it well. Furthermore, 76% of the participants believe that AI will work in harmony with the people and support them going parallel in the Metaverse rather than replacing humans.

Expected User Behavior in the Metaverse



Source: ILI.DIGITAL market analysis

Since most participants would describe the Metaverse as a decentralized platform where anyone can create their worlds and their avatars/characters, it is interesting that the percentage of participants who would recreate themselves and those who would make a different representation of themselves is very balanced. The intrinsic motivation of the users to access the Metaverse is escaping reality, expanding the things they can experience, and the social aspect of meeting people virtually. The extrinsic motivation of interaction in the Metaverse is the economic value generated through the trade of digital assets or the time reduced to perform manual tasks.

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CASE STUDY: BUSINESS OPPORTUNTITES IN THE METAVERSE FOR AN AUTOMOTIVE OEM

The financial potential of the Metaverse is enormous. Its market potential is estimated to be 800 billion USD by 2024. The new methods of generating revenue are ludicrous with examples ranging from people renting digital land in a virtual environment to an artist making about 92 million USD with a single NFT piece, the height of perversion. However, this new business is not entirely transferable into traditional or even digital business models, especially for large companies. So how can companies take advantage of the Metaverse megatrend, allow their existing business model to benefit from it, and transform it in a future-proof way?

First, for a company's adoption of the Metaverse, we must align a partially unrealistic expectation. In a nutshell and from a business model perspective, the Metaverse is "just" a name. A name for the potential of combining advanced technologies for creating an experience. Under this name, initiatives can be created and driven with purpose to deliver one piece of a heterogeneously growing Metaverse without claiming to provide one holistic solution. Within our use case analysis, we have collaborated with a global automotive OEM and identified various use cases across all business areas to transform the business model and exploit the Metaverse for the value chain. The value of the Metaverse use cases can be addressed internally to leverage productivity within the value chain or externally to enable growth, new revenue streams or brand image.

Use Case	Description	Impact
AdWords 3.0 for marketing	There are a lot of people moving around and meeting in the Metaverse. These people reveal a lot about their preferences, habits, and wishes in the Metaverse. By collaborating with respective NFT artists, the brand gets visibility to a huge community. By selecting an artist from the scene reflecting similar values as the company, the awareness of the company is created for a dedicated audience. Furthermore, the brand image is pushed towards a futuristic image. The selection of both a collaboration partner and a product line to be presented must be done carefully to avoid a backlash, for example, through sustainability concerns in blockchain activities.	· Brand awareness · Product awareness · Knowledge generation for core business
Virtual Car Configurator for R&D	The idea of an online configurator for cars itself is not new. The selection due to the prerendered options is restricted. Providing a web-based 3D visualization experience to configure a car with maximum flexibility, individuals can project their personal requirements onto imaginary car designs. While adding a community to compare and vote over the designs, the users feel engaged, and the company can identify market requirements in the earliest stages. Based on the help of the Metaverse.	· Customer individualization · Design influencing · Capturing of future market requirements
Showroom 3.0 for Marketing	Providing a virtual and accessible platform to demonstrate and show new products to users. By collaborating with an existing player in the Metaverse and using XR technologies to visualize new cars, a community can experience the brand and the product in a whole new way. Through interconnected technologies, multiple access to VR glasses, mobile or through web is enabled. The interaction around the product can be empowered through specific initiatives and virtual scarcity.	· Product awareness · Customer experience enhancement

Use Case	Description	Impact
Augmented Reality Community App for Sales	Combining the physical reality with a virtual community. Existing customers can get an account and join the AR Community. Their car will then be recognized in Augmented Reality. It is the physical representation of the customer's virtual profile. If another person scans the car with the AR app, they can connect and exchange opinions about the car, share experiences and best practices.	· Community building · Connection between existing and potential customers · Interaction on products · Enabling decentral product experience · Product identification of existing customers
Digital Twin of a car for Operations and After-Sales	After ordering a car according to one's individual needs, the production process is a black box. Through defined gates throughout the process, a digital twin of the customer's car is created in a mobile application. The customer can follow up on the status as well as be presented with targeted information about his product. After receiving the product, the app collects all the data about the car's usage and maintenance. Through tokens, the data can be stored decentral, and the customer can keep track of the car's lifecycle. In the case of selling the car, the aggregated data can be retrieved to prove the status of the car.	· Standardization · Customer connection · Up-selling · Add-on Services

06
YOUR METAVERSE TO-DO LIST

The Metaverse of today is at its very early stage. Although countless business opportunities are looming on the horizon, it is still unclear where the journey will take us. There will be a lot of movement in the next five years until the expected Metaverse is partially achieved. And that is exactly why you need to start defining and executing your Metaverse strategy now. Because what we have learned so far from more than 300 digitalization projects is that the best time to start was five years ago. Here are five points that you can do right now to get your business into the Metaverse.

Master the experience economy
It is all about experiences because rational economic principles will lose relevance. The real value stems from an individual understanding of a product, service, or brand. Clarify what it is in your brand that triggers enthusiasm in people. Determine how to virtualize these assets and map them in the Metaverse. And identify how you can trigger new excitement about your company using extended technologies.

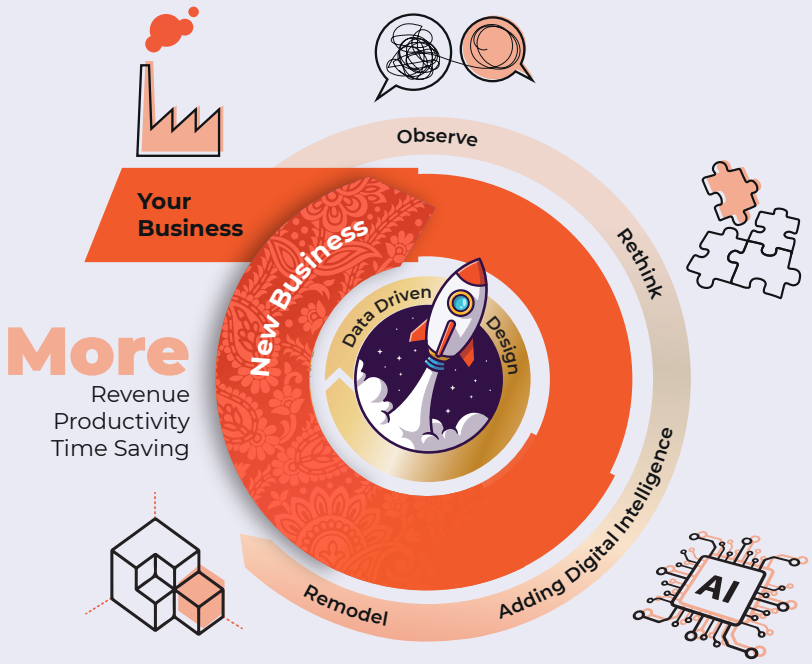
Understand your target audience
To create experiences, you need to know who you are creating experiences for. To do this, on the one hand, you need to critically challenge your existing assumptions. On the other hand, you should develop an understanding of how your target audience can change or grow in the Metaverse. Early adopters in the current Metaverse think differently about technology than your core audience might do. And a large amount of Gen Zs and Gen Alphas are flowing into the Metaverse with a completely different worldview and values. How will you address these groups?

Determine your home turf in the Metaverse
The Metaverse comes from the gaming industry. The Metaverse is fast, flashy, and borderless. The Metaverse is also very pragmatic. There are partners and platforms. And there are countless interfaces. Are there suitable partners for your purpose? Do you want to cooperate with an existing player and use their platform? Or do you want to create your part of the Metaverse?

Launch initiatives. Now
There is only a considerable amount of information you need to decide. After that, the quality of a decision decreases significantly. So instead of trying to assume, what a possible Metaverse might look like in 5 years, better start working on it now. Identify the potential in your value chain and create use cases with extended technologies. Keep in mind, that Metaverse is, for now, the name to encapsulate those potentials, and don't be afraid of what it could (not) be.

Learn and iterate
With all these steps in mind, listen to your audience. Collect valuable feedback and experience with extended technologies in the Metaverse. Only by identifying suitable pivot points for your concepts and use cases, the full value of the Metaverse for your business can be unleashed.

07



ILI.DIGITAL

Founded in 2010, ILI.DIGITAL is a company focused on digital business model transformation with expertise in multiple different fields. With 82 employees, ILI.DIGITAL has two offices across two countries (Germany and Pakistan). ILI.DIGITAL's mission is to "make corporates entrepreneurs again", empowering people from the upper management level to rediscover their inner entrepreneur and take the next steps for their company's future.

ILI.DIGITAL focuses on collaborating with customers from the automotive, pharma-, chemistry, and construction sectors as well as the industrial sector. The portfolio of the company's project-based services includes:

- Digital Business Building
- Strategy Consulting
- Project Management
- Marketing
- User/Design Research
- Development
- 3D Development
- Machine Learning
- Data Engineering
- Artificial Intelligence
- E-Learning
- Gamification
- Psychology
- Behavioral Economy
- Customer Experience

The company's multidisciplinary team combines entrepreneurs, business consultants, strategists, project managers, marketers, user researchers, designers, engineers, developers, 3D developers, gamification experts, and psychologists across a diverse spectrum of specializations.

TEAM

Serhan Ili (CEO & Founder)
Serhan has a keen sense of opportunities, strong execution skills, and a passion for business. He has the right mindset, which empowers and dynamically pushes the team and projects. He makes success independent of coincidence. By turning physical assets into virtual miracles in the Metaverse, he enables the next generation of business models.

Tim Krodel (Strategy & Extended Technologies)
Tim is with the customer throughout the entire journey of digital business building. He builds strategic concepts for projects and helps turn physical assets into virtual miracles. With his deep understanding of future business models and extended technologies, he is key to bringing a business into the Metaverse.

Vinicius Ferraz (COO & Data Scientist)
Vinicius is where technology and behavior meet. He combines both topics and thus has a unique understanding of the two drivers in the Metaverse. As a data enthusiast, his ever-growing data knowledge enables him to rule core Metaverse technologies and predict potential outcomes.

Daniel Füger (Head of Digital Business & UX Design)
Daniel is responsible for concept transfer. He maintains everything in the IT systems and is on the technical side of things. Starting with a lot of UX design experience, he is now part of project management. He can transform ideas and concepts into virtual success stories.

Vera Schott (CMO)
Vera creates strategic concepts for projects and designs virtual business models for a sustainable future. To further exploit the opportunities for the customer's journey in the Metaverse she brings in powerful marketing perspectives. "By combining these two skills, we elevate customer experiences by unleashing the magic power of extended reality."

Federika Ajdini (Project Manager)
Federika uses her background in biological engineering to design innovative concepts in the digital health world. Her past experience in the pharmaceutical industry provides us a deeper understanding of the pain points and helps us identify new opportunities.

Omar Abdelkafi (Project manager & Data Scientist)
Omar has a doctorate in artificial intelligence since 2016. With a solid technical background and a very fine knowledge of innovation, he is able to have a deep understanding of digitalization projects. Researcher in the soul and entrepreneur in the spirit, he will take your project to the next level.

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CONTACTS

ili.digital

info@ili.digital

+49 721 6190970

Ludwig-Erhard-Allee 20

76131 Karlsruhe

ILI.DIGITAL