retailVR

WHITE PAPER

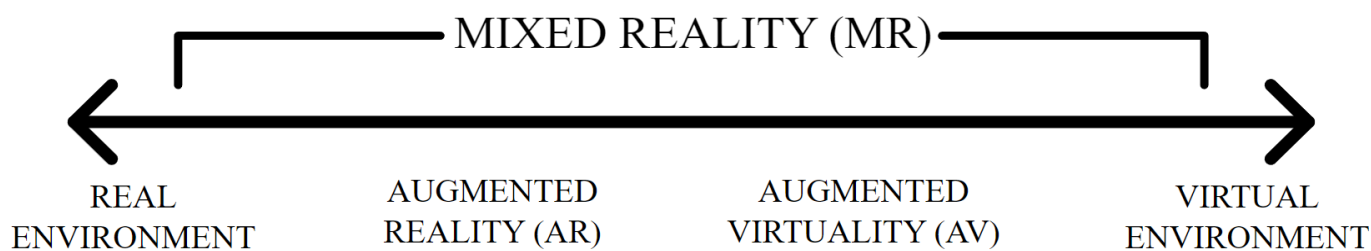## WHAT ARE THE CONTRIBUTIONS OF 3D TECHNOLOGIES IN RETAIL?

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A/ DEFINITIONS AND CONTEXT

3D technologies are not a recent development and have evolved significantly since their inception. As the 21st century progresses, they are becoming more ubiquitous in our lives. Before exploring the contributions of these technologies in the retail sector, let's revisit some definitions, the evolution of virtual reality headsets, and their impact on society.

1/ Immersive technologies and extended reality (XR)

To fully grasp these technologies, we must first delve into the **Continuum of Virtuality,** established in January 1994 by Paul Milgram, Haruo Takemura, Akira Utsumi, and Fumio Kishino.

MIXED REALITY (MR)

REAL ENVIRONMENT   AUGMENTED REALITY (AR)   AUGMENTED VIRTUALITY (AV)   VIRTUAL ENVIRONMENT

This continuous scale represents the boundary between virtuality (virtual environment) and reality (real environment). It encompasses all possible variations and combinations of real and virtual objects. This continuum now falls under a broader framework known as extended reality, which includes the entire spectrum from complete reality to complete virtuality. It covers various **immersive technologies: augmented reality, virtual reality, mixed reality, and even the metaverse.**

What is Augmented Reality (AR)?

Augmented reality is a technology that integrates 3D virtual elements (in real-time) into a real environment. The principle is to combine the virtual and the real to give the user the illusion of seamless integration. Augmented reality perceived through AR glasses is often referred to as mixed reality, as we will see below.

What is Virtual Reality (VR)?

Virtual reality is a technology that immerses users in a completely created 3D virtual environment or one generated from 360° real-world footage. To achieve immersion, a VR headset can be used, allowing the user to interact with this virtual world.

### What is Mixed Reality (MR)?

Mixed reality is a term that refers to the visualization of 3D content through dedicated devices (headsets or AR glasses). By definition, this term is a blend of augmented reality and virtual reality. With these devices, the user's position is calculated in real-time, and it is possible to physically interact with virtual elements through gestures or controllers.

2/ The evolution of virtual reality headsets

The history of virtual reality begins in 1957 with filmmaker Morton Heilig. He invented a machine called the «Sensorama,» designed to **immerse users.** The first «functional» virtual reality headset appeared in 1968 thanks to Ivan Sutherland. It could display simple shapes superimposed on the real world. It wasn't until 2010 that the first prototype of the Oculus Rift VR headset was created by 18-year-old student Palmer Luckey. The device, offering a 90° field of view, was acquired by Mark Zuckerberg in 2014 for 2 billion dollars. This marked the beginning of significant investment by Facebook in the first commercial version of the Oculus Rift, leading to a substantial expansion of virtual reality headsets, particularly for the general public.

The year 2021 represents a significant turning point for virtual reality headsets. According to **PWC's report**, «the virtual reality market generated a global revenue of 1.8 billion U.S. dollars in 2020, an increase of 31.7% compared to 2019.» By 2025, it is expected to reach 6.9 billion dollars.
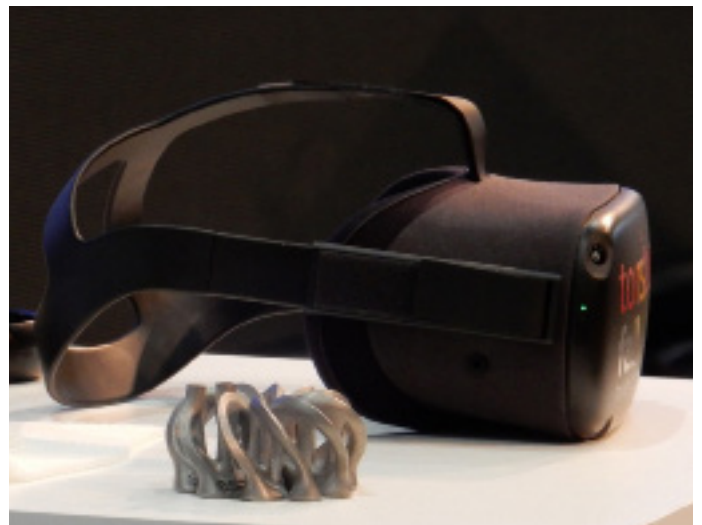
3/ The future of virtual reality headsets

The arrival of standalone headsets has simplified access to virtual reality. These devices are much more user-friendly as they now integrate graphics cards, reducing the need for cumbersome cables and connections that can trip you up.

In September 2021, Meta and Luxottica launched the **Ray-Ban Stories** Smart Glasses. These connected glasses allow you to listen to music, make calls, and take photos and videos on the go. These augmented reality glasses bring us closer to the metaverse through a functional and lightweight everyday object. In parallel, Meta revealed the results of seven years of research on haptic gloves, which could address the lack of sensation and dexterity that users may experience with their hands. The ultimate goal is to incorporate this technology into the metaverse to make the experience more authentic.

Apple is also working on **augmented reality glasses** scheduled for release in 2023 and a mixed reality headset that could debut as early as 2022. The evolution will involve reducing the size of virtual reality headsets, which are still quite bulky. The next step in immersion may come from the use of virtual/augmented reality headsets or glasses in everyday life. It may also involve the metaverse, the possibilities of which seem both unknown and limitless.

4/ The impact of virtual reality on society

The health crisis has put the spotlight back on VR. MarketsandMarkets anticipates «**annual growth of 28%** between 2020 and 2025». This would make VR the fastest-growing media segment, ahead of podcasts, online video and games. Beyond the figures provided by analysis firms, **virtual reality is already seeing real cases and returns on investment.**

Concrete Case: Walmart

Walmart uses VR on a daily basis to support its employees in their training softskills training. With over 20,000 Oculus headsets distributed throughout the U.S., more than a million Walmart associates can take advantage of immersive training sessions.

According to Derek Belch, Strivr's founder and CEO of Strivr: «You can do an eight-hour training eight hours and reduce it to 15 minutes in a headset headset, the learning outcome will be almost identical. «It's a return on investment that's beyond doubt».

Concrete Case: Nespresso
In 2019, Nespresso sought to extend its sales experience by launching a virtual boutique as part of virtual commerce (v-commerce). Following a qualitative study conducted with a panel of consumers, Jean-Michel CECCONI stated that the feedback was «much more positive than one could have imagined.» The solution notably allows for the showcasing of content from the current website, including videos, photos, and text.

Concrete Case: Mayo Clinic School of Health Sciences
Meanwhile, in one of the world's most prestigious clinics in the USA, a portion of medical training now takes place in VR. This allows students to immerse themselves in concrete scenarios, such as a surgical procedure in an operating room. All of this contributes to enhancing their learning and making it even more unique.

Concrete Case: Installux
The nearly century-old family-owned company decided to embrace virtual showrooms. Initially, the goal was to highlight the aluminum manufacturing profession. Then, to promote and make the showrooms of their client partners profitable. They wanted to find a way to capitalize on the showroom and position their partner manufacturers earlier in the buying process. All of this helped qualify contacts and provide more opportunities to their partner manufacturers.

As you can see, virtual reality allows for the creation of an entirely new consumer experience.

B/ 3D AS A RESPONSE TO WHAT NEEDS?

1/ Marketing needs

Retail marketing focuses on **creating a positive shopping experience, whether it's in a physical or virtual store**, with the aim of **boosting sales**. It's not just about the decor; it's about the ambiance, the environment, and the service (often provided by humans) that evoke emotions and encourage purchases while fostering customer loyalty. **Understanding the customer is paramount**. Without knowledge of their expectations, how can you provide added value or improve the way you communicate with them?

Two Marketing needs

Shopper study

A shopper study is a tool used to understand and **describe the motivations and buying behaviors of consumers.** This analysis tool helps identify consumer behavior during their shopping journey and adapt products to meet their expectations. As shopping journeys become more complex, understanding **shopper behaviors and their expectations becomes essentia**l. Shopper decisions are not always easy to interpret and comprehend. The goal of the study is to observe buyers during their shopping journey and analyze their choices in a physical store or on an e-commerce website. Research institutes subsequently analyze the behaviors exhibited during their journey and draw conclusions.

Traditionally, these studies are conducted in physical stores or locations. They are **time-consuming to set up and very costly** because they often involve recreating all or part of a physical retail environment, including the product offerings. They are **limited in terms of geography**, as it is rare to conduct this type of study across an entire territory, and they can only reach a **limited number of target audiences.**

The packaging

Packaging is the first attribute of a product that buyers encounter, making it a key element in any marketing strategy aimed at optimizing the customer experience. It should **reflect the brand's identity and highlight the product's strengths** to trigger the purchase.

Packaging also raises questions about consistency, product visibility, adaptability, and practicality. To ensure the optimal presentation for their products, it is essential to **test different packaging options.**

2/ Merchandising needs

What is merchandising ?

According to the French Institute of Merchandising, «merchandising is a set of studies and application techniques, implemented separately or jointly by distributors and producers, with the aim of increasing the profitability of the point of sale and the sale of products, through a continuous adaptation of the assortment to market needs and the appropriate presentation of goods.» The main objective is to **maximize sales or margins by encouraging the consumer to make purchases** in the store. To achieve this, merchandising optimization is based on quantitative analyses of sales and results (revenue, margins, panel data, etc.), highlighting the product offering, and taking into account the behaviors of point-of-sale visitors (paths, consumption habits, circulation speed, behaviors, and visual capabilities, etc.).

Two types of merchandising :

The macro merchandising

Optimizing the customer experience. It corresponds to **the layout of categories and shelving** in the store. To achieve this, universes are set up around the main customer traffic axes (penetration and central aisle). The universes bring together several categories that include complementary and substitute products. Macro merchandising also includes **aisle widths, traffic flow and gondola heights.**

The micro merchandising

This is the process of putting the **right product, the right range and the right assortment in front of your customers** on the shelves. It involves changing the arrangement of different products on the shelves **according to customer needs** and local markets.

These two aspects, planned in parallel, enable a retailer to know how to **organize his store optimally**, as well as to provide the ideal assortment of products on the shelf.

3/ The commerce evolution

In stores

The world is changing, consumer habits are constantly evolving, and companies must continually adapt. The retail sector, like many others, has been faced with a number of difficulties in recent months. The global crisis has plunged many retailers into an unprecedented situation. Faced with this health situation, consumers have also had to adapt and have changed their purchasing habits. As a result, physical sales (excluding food) found themselves in dire straits, while e-commerce and click & collect took off.

Open 24/7, it reaches a very wide audience. What's more, its accessibility via all connected media means you can buy what you want wherever you are, which explains its strong growth.

The health crisis has confirmed **2 trends:**
1. consumers want to buy locally, and failing that, to know the origin of their products.

2. digital and omnichannel channels are now essential. A return to local commerce, but above all, a new explosion in digital.

In e-commerce

The main disadvantage of e-commerce is the dematerialization of the product at the time of purchase. With just a few photographs and product characteristics, it's difficult to get a real feel for the product. Even if consumer comments can guide our research, we can only form our own opinion once we've received our purchase. The absence of visual and tactile perception of the product can result in the customer losing that sense of the buying experience. Consumers project themselves much less in front of their screens than they would in real immersion in a physical store. This can act as a brake on the purchasing act.

However, this **infinite purchasing possibility** is is a real advantage of e-commerce, and one that continue to grow. Nevertheless, consumers consumers continue to seek a more emotional emotional and human customer experience.

So how do you combine the shopping experience with greater digitalization?
Thanks to 3D! Virtual reality and augmented reality are two technologies that provide a concrete answer. They combine **immersion with the practicality of digital**. V-commerce, or virtual commerce, is the most obvious answer.

C/ THE 3D RESPONSE

1/ The contribution of virtual reality to retail

Thanks to virtual reality, we can now **immerse shoppers in a real store environment. store environment**. They can then carry out their purchase as usual. They can click on products, put them in the shopping cart and simulate the act of buying. By using virtual reality, **we free ourselves from the constraints of physical stores**, thereby reducing potential rental costs.

3D shopper study

One possible application is **3D shopper research**. Unlike a «classic» shopper study, it is possible to carry out several studies at the same time.
At the same time, with greater geographical coverage (national and even international). The **time** required for implementation is **considerably reduced.** This means you can reach a **wider target** more quickly. It is no longer necessary to have the consumer visit a point of sale, nor to set up the entire installation physically.

In a simulation logic, Retail VR can take 3D models and design them even before they are manufactured. This makes it possible to work at a very early stage with a design office, for example. The 3D model is then integrated into the virtual store,

enabling consumers to complete their traditional shopping journey.

Retail Staging

Our **Retail Staging** **solution** makes it possible to implement the elements listed above. Thanks to a digital twin of the 3D store, you'll be able to test a new department layout
or propose a new point-of-sale display. What's more, you can **define your layout and layout strategy** with this solution! It can even be used as a collaborative tool between brand and retailer.

2/ The contribution of augmented reality to the sales process

The contribution of augmented reality

Technological advances are providing concrete answers to consumer demand for more experience. Thanks to technological advances, customer experiences are no longer merely visual; they **immerse consumers in the brand experience.**
Augmented reality, now widespread, integrates virtual elements in 3D (in real time) within a real environment, appealing to our senses and enabling us to interact with the products we buy. This technology continues to change the game in increasingly diverse sectors. Whether in sales, in the healthcare sector, in support of local authorities, in the **implementation of marketing strategies...**
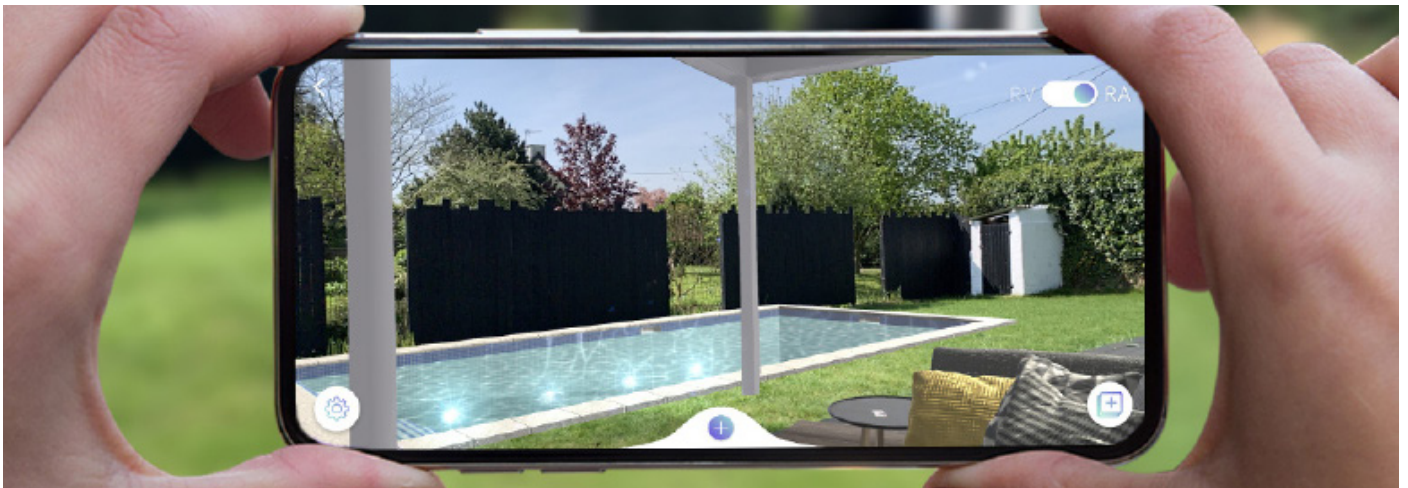
Real-life business cases

The Ikea Place mobile application lets you try out several pieces of furniture at the same time in your own home, thanks to augmented reality. In this way, you can visualize which piece of furniture is best suited to your target location.

For its part, the Maison Berger brand lets consumers visualize the product they're interested in at home without using a mobile application. Thanks to a QR code and augmented reality, consumers can easily project a particular product.

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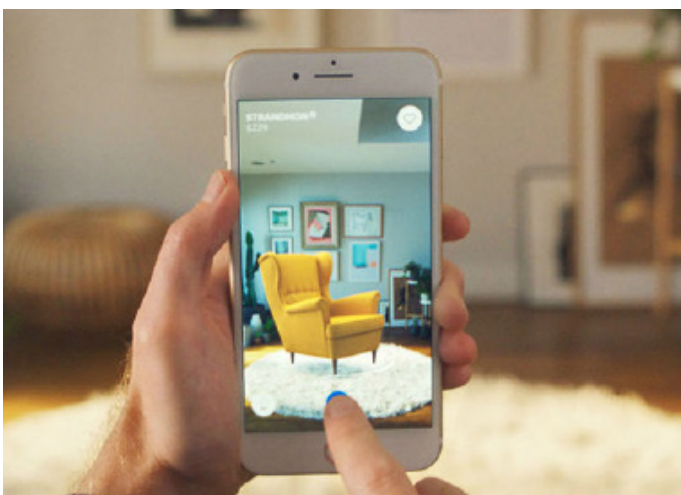
3/ A sales tool for sales reps

Instore Activation

Armed with a smartphone, sales staff equipped with the **Instore Activation** application will be able to **project a realistic visualization** of concept and layout proposals directly into B2C customers' points of sale. This tool is also available for B2B sales staff. From the platform, they can access the entire catalog of 3D-modeled objects: promotional furniture, point-of-sale displays, boxes and more. In this way, they can **personalize their approach to customers** and present future in-store operations.

No more misunderstandings and approximations: they respond to customers' requirements and negotiate the best locations with them. The aim: to **boost sales by adopting a new Merchandising tool that simplifies the work of sales teams!**

What's more, the sales force will have easy access to all promotional campaigns, and **a visual, high-performance tool** for applying the Merchandising strategy.


Today, many salespeople complain about the administrative burden of their mission: once they've returned from a field trip, they have to prepare a visual proposal before sending it to the customer.
Thanks to augmented reality, they will now be able to :
· React in real time to customer requirements,
· Take photos of the validated merchandising proposal
· Place orders with a simple click.
· Evaluate the size of the promotional operation and calibrate stocks

In perfect collaboration with customers, the sales team will save an average of 5 working hours... That's almost a working day!
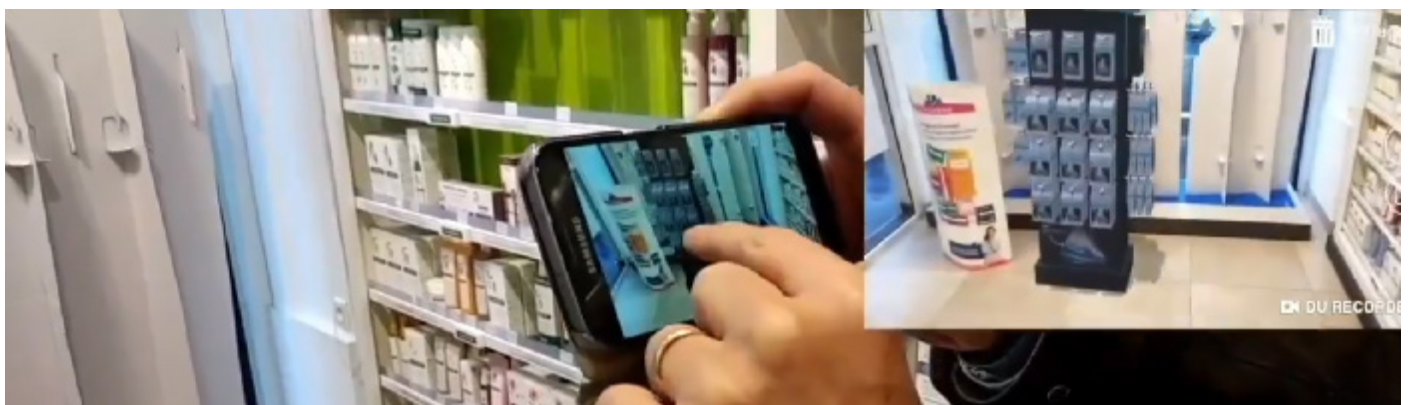
4/ Extending the sales experience

Customer experience

The shopping experience must remain memorable. Increasingly solicited by a multitude of channels, buyers no longer wish to be considered just another buyer. And this is not to be taken lightly!

In fact, according to Esteban Kolsky, «72% of customers will share a positive experience with 6 or more people.» Customers are always looking for that **unique experience**, that personal exchange. They are still looking for advice to help them make the right decisions. Retailers need to adapt to this new generation of online shoppers. According to a **PWC study**, «86% of shoppers are willing to pay more for a good customer experience». Following its 3D showroom, Nespresso asked customers to live the virtual experience and rate it. It scored 8.5/10, while e-commerce scored 5/10.

Phygital

The transition from multichannel to omnichannel has brought us us into the era of **TOTAL commerce**. We must We need to sell first and foremost, by all available means, on all available channels. One underlying trend is the need for the physical point to open up to digital and vice versa, for digital to find a way to offer a more a more «physical» experience. This is known as Phygital.

What is phygital? Introduced in 2013, it's the convergence of «online» and «offline». A contraction of the words «physical» and «digital», which refers to a marketing strategy, phygital commerce is a physical point of sale that integrates the data and methods of the digital world with a view to boosting turnover.

It's a way of giving physical stores back their sales leverage while cutting costs. It's important to note that today's customer jour-

ney is multi-channel. While 80% of sales take place in-store, 60% of consumers use the Internet for upstream information. It is therefore therefore **essential to bring digital** the point of sale through phygital. To grasp this new trend, and these new purchasing habits, companies need to quickly adapt their tools for interacting with with consumers.

5/ Immersion facilitated by 3D

V-commerce

With the rise of new technologies, the field of possibilities for brands is expanding, making it all the more difficult to stand out from the crowd. E-commerce continues to expand, but consumers are looking for a more **emotional and human customer experience**. This is exactly what v-commerce, or virtual commerce, is all about. V-commerce is a combination of **e-commerce and virtual reality.** In addition, it can involve sales made or facilitated by VR in physical stores, such as range extensions, or directly sales made within virtual environments.

For retailers, it's all about maintaining the quality of the customer experience. Personalization and immersion in the brand's universe are the two watchwords. This allows VR to establish itself as an essential element in the new customer journey, adding an **extra dimension** to the traditional e-commerce site.

The virtual showroom

With the [Virtual Showroom](#) solution, you can create a physical experience in the digital world! The use of a digital twin allows you to completely **rethink the customer's in-store journey**, offering a different, immersive experience. Thanks to our partner [Matterport](#), the world leader in digital twins, we can enhance your store with the virtual, according to your objectives. In this way, you can guide customers to the products they like, direct them towards additional purchases, and respond to their need for autonomy. In both cases, it serves as a link with physical stores. By adding interaction with a physical person, you can respond even more effectively to this problem.

Once the virtual store has been created, the results need to be analyzed. In the race for innovation, retail players are increasingly equipped with tools that all have one thing in common: data. Data management and analytics are essential to **improving the customer experience.** Virtual stores will be evaluated in the same way as websites, according to customer conversion rates, pathways, interactions, waiting times and satisfaction. **The analysis is fully customizable** and can show the impact of virtual showrooms.

This seamless transition to phygital can be achieved simply and quickly. Retail VR technology enables the showroom to be scanned in 360° and integrated into the platform within 24 hours.

D/ THE BENEFITS OF 3D TECHNOLOGIES

Throughout this white paper, we have seen **the importance of 3D technologies** for the merchandising and marketing professions. The evolution of retailing is forcing players in the field to find new experiences and sales channels. The «customer-centric» vision is confirmed by **the importance of the customer experience** and the renewal of sales actions.

New technologies provide answers to very real needs. They save time and money, but above all they **offer new experiences** that encourage consumers to buy. Adopting 3D is therefore a good way to adapt your marketing strategy and stand out from the competition.

Even more recently, **Web 3.0** and the **metaverse** have opened up new perspectives for brands. These 2 terms both refer to the **future vision of the Internet** that is now taking shape. The former through blockchain technology, the latter through virtual reality. **The future of retail** now turns to these new opportunities and the **new consumer behaviors** that are emerging: NFT, direct-to-avatar (D2A), cryptocurrencies. **V commerce will be more relevant than ever!**

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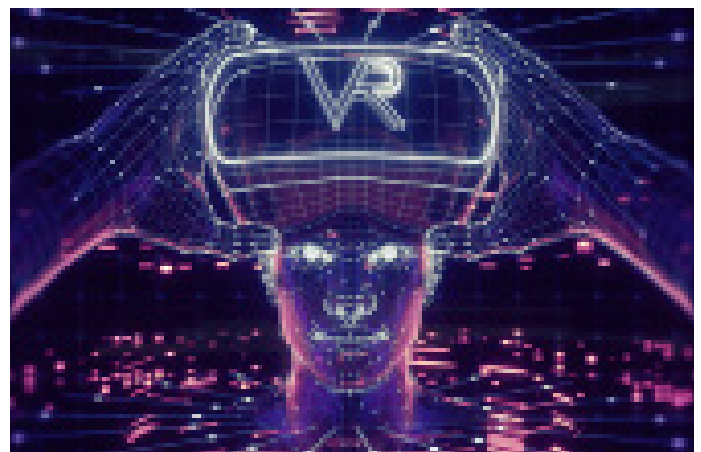
ABOUT RETAIL VR

Founded in 2018, start-up Retail VR develops 3D virtual and augmented reality applications for retail players.

Through its platform, Retail VR offers solutions to enable brands, retailers and e-tailers to improve their innovation processes and increase sales through more immersive and experiential shopping experiences. The team supports its customers from project design through to application use, to ensure successful deployment within their teams. For further information: **https://en.retail-vr.com/**.

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