Potential volumetric capture applications for GroupM clients

Potential of Volumetric Capture for Brands

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Abstract

This study explores the potential use cases of volumetric capture for brands and GroupM clients, highlighting its benefits and providing real case examples. It also considers future prospects beyond volumetric capture and its role within the immersive technologies landscape. The report relies on a literature review to gather relevant insights.

Volumetric capture has transitioned from the entertainment industry to various sectors, including retail and marketing campaigns. It offers tangible business outcomes such as brand recognition, awareness, reputation, customer engagement, and data collection. Additionally, volumetric capture enhances immersiveness, attention-grabbing content, memorable experiences, and facilitates efficient 3D asset creation. Its potential lies in revolutionising ecommerce, transforming social media, augmenting reality, and contributing to the development of the metaverse. As immersive technologies continue to advance, volumetric capture becomes integral to everyday experiences, bridging the gap between imagination and reality.

The growing installed base of immersive technology headsets, ranging from virtual reality (VR) to augmented reality (AR) devices, signifies an increasing consumer appetite for immersive experiences. However, the intrusiveness of headsets remains a challenge to broader adoption. The immersion offered by headsets is unparalleled, but the need for physical wearability and potential discomfort can limit widespread usage. It is important for brands to consider the balance between immersive experiences and user comfort.

Brands that embrace volumetric capture gain a competitive advantage, capturing audience attention and enabling utilitarian functions such as informed purchasing decisions. In the short term, retail brands should explore practical applications of volumetric capture to achieve the "wow" effect while it remains relatively less mainstream. In the medium term, brands can leverage digital campaigns that blend the digital and physical realms, resonating with younger audiences through social media platforms. Looking ahead, as XR (Extended Reality) technologies become ubiquitous, brands can create groundbreaking marketing experiences by utilising the AR Cloud, the augmented reality version of the Metaverse, to merge the real world with interactive interfaces, blurring the line between fiction and reality.

GroupM and its clients can gain a competitive edge by investing in volumetric capture technology, aligning with brands already utilising this innovative tool. Embracing volumetric capture empowers brands to surprise customers and establish themselves as industry authorities. Retail brands, particularly fashion, cosmetics, and furniture industries, should explore practical applications of volumetric capture in the short term to stay ahead of the competition.While considering the installed base and intrusiveness of headsets, brands can navigate the evolving landscape of immersive technologies strategically.

Research strategy

Main question	What is the potential of Volumetric Capture for brands?
Sub Questions	● What are the benefits of volumetric capture for brands? ● What are real case applications of volumetric capture? ● How is volumetric capture being used by brands? ● How is volumetric capture being used in marketing? ○ What business objectives are being achieved? ● What are the future applications of volumetric capture? ● How are brands currently using immersive technologies? ○ What are forecasted emerging innovations in the field of immersive technologies? ■ How could volumetric capture play a role?
Methods	● Literature study

The Benefits of Volumetric Capture

Through the growing advancements in the fields of computer graphics, optics and data processing, volumetric capture manages to combine the visual quality of photography with the immersion and interactivity of spatialized content. This technology could prove to be the most important development in the recording of human performance since the creation of contemporary cinema.

Benefits for brands

Heightened Immersiveness

At its core, volumetric video offers viewers an unparalleled level of an immersive experience.

The result of volumetric capture is an image, video or hologram, which represents a genuine 3D space or performance. These volumetric assets can be viewed from any angle in a Web3D environment, augmented reality (AR) or virtual reality (VR), offering a highly realistic, immersive, and interactive 3D experience. Volumetric images and holograms combine the visual quality of traditional images with the unique immersion achieved through spatialized content. Viewers have the ability to control the content they consume by freely looking and moving anywhere within the image, creating a heightened sense of presence.

As volumetric video evolves into global capture and the display hardware evolves to match, we will enter into an era of true immersion where the nuances of captured environment combined with those of captured performances will convey emotionality in a whole new medium, blurring the boundaries between real and virtual worlds. This groundbreaking in the world of sensory trickery will spark an evolution in the way we consume media, and while technologies for other senses like scent, smell, and proprioception are still in research and development stage, one day in the not-so-distant future we will travel convincingly to new locales, both real and imagined.

Attention-Grabbing

Volumetric characters possess a unique quality of surprise, which sets them apart.

As of now, consumers do not interact with volumetric video in the same way they do with traditional forms of advertising such as Out of Home (OOH) advertising or social media marketing. Holding the attention spans of customers in these spaces has become a challenge for brands.

However, volumetric video presents a visually striking medium that has the power to captivate consumers, increasing the likelihood of engagement with the advertised product.

If you encounter a volumetric character today, it would likely catch your eye, prompting you to pause and even take a photo with it, unlike billboards or other conventional advertising formats. As marketers constantly seek attention-grabbing techniques, volumetric video emerges as a promising solution to stand out in the crowded marketing landscape.

Enhanced Engagement

Volumetric capture revolutionises marketing by providing brands unique opportunities to connect with the next generation. By enabling immersive storytelling and tapping into new technology innovations, volumetric video resonates with younger, tech-savvy audiences who actively engage in immersive experiences.

Its interactive nature allows viewers to move around and engage with 3D representations, fostering excitement and deep involvement. This heightened engagement boosts brand recall and prompts action. Moreover, volumetric capture facilitates emotional connections, enabling brands to align experiences with their audience's values, aspirations, and emotions. This strengthens brand loyalty and advocacy, forging stronger relationships between brands and customers.

Memorable and Shareable

Its uniqueness differentiates brands by providing audiences with exceptional and unforgettable experiences. This distinctiveness increases the likelihood of viewers sharing the content on social media or discussing it with others, amplifying the reach and impact of the marketing campaign.

By leveraging the capabilities of volumetric video to create content that is fun, surprising, or emotionally engaging, marketers can encourage viewers to share their experiences with friends and followers on social media platforms. The shareability of volumetric content enables it to go viral, generating buzz and significantly increasing the brand's visibility.

When viewers have an exceptional and memorable experience, it creates a strong connection between the brand and the positive emotions associated with that experience. This emotional resonance deepens brand loyalty and fosters a lasting impression in the minds of consumers.

Benefits for content & production

Full capture and re-use

Once a capture is created and saved, it possesses the potential for reuse and even repurposing beyond its original intended use. The creation of a virtual set empowers volumetric videographers and cinematographers to craft narratives and plan shots without requiring a physical crew or even their presence at the actual set. With proper visualisation, actors and performers can confidently block scenes or actions, knowing that their practice doesn't disrupt the rest of the production process. Additionally, digital capturing of old sets prior to their demolition allows them to exist indefinitely as places to revisit and explore for entertainment and inspiration.

Accelerated 3D asset creation

By capturing real-world objects, environments, or performances in volumetric form, the process of creating 3D assets can be expedited. Rather than starting from scratch and meticulously designing every aspect of a 3D asset, volumetric capture provides a realistic and detailed representation from the beginning. This allows artists, designers, and developers to build upon existing volumetric assets, saving time and effort in the creation process.

With volumetric capture, the intricate details, textures, and movements of real-world elements are preserved, ensuring a high level of accuracy and realism in the resulting 3D assets. This streamlined approach to asset creation not only accelerates the production pipeline but also provides a solid foundation for further customization and refinement, empowering creators to focus on enhancing and adapting the captured volumetric assets to suit their specific needs.

Real Case Applications of Volumetric Capture

Volumetric capture is not a technology of the future; it is already being utilised across different industries. Its capabilities are being harnessed to enhance content creation and deliver immersive experiences to audiences today, enhancing brand awareness and public audiences engagement.

From creating lifelike holograms and showcasing 3D environments to powering augmented reality (AR) experiences, its uses are diverse and impactful. This new way has already seen some real applications, mainly in the entertainment sector. Think of music videos and concerts, sporting events, and filmmaking.

Music

Volumetric capture has been embraced by various artists, showcasing its versatility in music videos and immersive performances. Notable examples include Radiohead and Eminem, who used volumetric technology to represent themselves in their music videos. BTS collaborated with Coldplay in a music video where volumetric avatars of both bands joined each other's performances.

Furthermore, artists like Imogen Heap have utilised volumetric capture to create immersive music performances specifically designed for VR headsets on platforms like TheWaveVR.

Zooming in on hologram concerts, volumetric capture has been instrumental in bringing back beloved artists or creating duplicate performances. Iconic figures such as Michael Jackson at the 2014 Billboard Music Awards and Madonna's opening performance with Maluma at the 2019 Billboard Music Awards exemplify this. Additionally, Swedish band ABBA has reunited through digital avatars known as ABBA-tars for holographic concerts in 2022 and throughout 2023, with the assistance of George Lucas' Industrial Light & Magic, capturing their Seventies prime.

These examples highlight how volumetric capture has become a powerful tool in the music industry, enabling artists to create captivating and immersive experiences that transcend traditional boundaries.

Michael Jackson hologram at the Billboard Music Awards (2014)

ABBA’s “Voyage” Hologram Concert (2022)

Sports

Volumetric capture has made remarkable strides in the world of sports, revolutionising the way fans engage with their favourite teams and players. The Premier League embraced Intel's 360-degree True View technology in 2019, providing viewers with an unprecedented immersive experience. This innovative technology allows fans to explore the game from any angle, enhancing their understanding and enjoyment of the match.

In 2017, the Super Bowl utilised Fox Sports' 'Be The Player' POV technology, enabling viewers to step into the shoes of the players on the field. This immersive perspective gave fans a firsthand experience of the action, immersing them in the intensity and excitement of the game.

Additionally, the integration of holographic interview broadcasts in 2023 has transformed sports reporting. Through volumetric capture, interviews with athletes and coaches are brought to life as dynamic holograms, creating a lifelike presence for fans. This revolutionary approach adds a new level of interactivity and realism to sports coverage.

The NBA has also embraced volumetric capture, enhancing the viewing experience for basketball enthusiasts. With the implementation of this technology in 2022, NBA broadcasts offer fans a deeper understanding of the game, allowing them to analyse plays from multiple angles and gain insights into player movements and strategies.

Premier League using Intel’s 360-degree True View technology (2019)

Super Bowl using Fox Sports’ “Be The Player” POV technology (2017)

Filmmaking & Documentaries

Volumetric capture technology has brought exciting advancements to the world of filming and documentaries, offering immersive and engaging experiences for viewers. Grease XR, a multi-user, location-based experience directed by Randal Kleiser, utilises volumetric capture to bring the iconic film Grease to life. Users can immerse themselves simultaneously in a three-minute live-action performance in augmented reality, featuring a volumetric capture of 20 dancers across four scenes. From dancing at school to the bandstand, diner, and the climactic carnival scene, viewers can join Sandy and Danny in this interactive journey.

In the realm of films, volumetric capture played a crucial role in the latest instalment of The Matrix franchise, Matrix Resurrections. The technology was employed to recreate the iconic bullet time effect that was a hallmark of the original film, enhancing the visual experience for viewers and capturing the essence of the Matrix universe.

In the realm of documentaries, Kvöldvaka offers a playful augmented reality experience inspired by Icelandic folklore and its relevance in the face of the climate crisis. This innovative documentary invites viewers to use their phones and explore nature, whether it be their own backyard or the wilderness. Guided by a sceptical elf known as Huldufólk, users discover a hidden world and develop a deeper relationship with nature, providing a unique and thought-provoking perspective on our connection to the environment.

Through volumetric capture, these film and documentary projects push the boundaries of storytelling, allowing viewers to engage with content in a more immersive and interactive manner. Whether recreating beloved film scenes, enhancing visual effects, or offering captivating AR experiences, volumetric capture brings new dimensions to the world of filmmaking and documentaries, expanding the possibilities for creative expression.

Intel Studios Grease XR (2019)


The Matrix Resurrections (2022)

The Use of Volumetric Capture by Brands

Volumetric video is being used in the fashion industry to showcase clothing collections. Models wear the clothes and demonstrate how they move and drape, allowing potential buyers to see the garments from all angles. Volumetric video can also be used to create interactive fashion shows, allowing viewers to explore the environment and interact with the models.

ANAYI

ANAYI has leveraged volumetric capture to showcase its new Spring and Summer Collection 2021. They released 19 original volumetric videos for shoppers to explore. Customers can easily access these videos labelled as "4D View" on their desktop browsers. They can then view the models in motion from any angle, including close-ups, to get a comprehensive understanding of how the fabric behaves and moves with the wearer. This approach enables customers to make more informed decisions, rather than relying solely on heavily stylized and potentially misleading product shots.

In addition to desktop browsing, ANAYI offers another exciting feature for potential buyers. By tapping the "3D Hologram" button or scanning a QR code on a mobile device, customers can experience the garments in their own surroundings through web-based augmented reality. This allows them to place a 3D hologram of the model in their room, further enhancing their visualisation and creating an immersive shopping experience.

ANAYI's utilisation of volumetric capture technology and interactive videos provides customers with an enhanced understanding of the garments, enabling them to make more confident and informed purchase decisions.

Watch on YouTube: [ANAYI WebAR Volumetric Video Experience]

Balenciaga

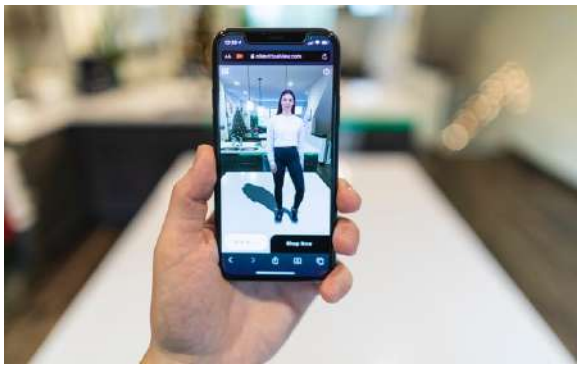
Multi-platform game Afterworld: The Age of Tomorrow is a radical immersive adventure and deep dive into Balenciaga's Fall 2021 collection. Volumetric capture technology was used to create a groundbreaking and immersive virtual fashion experience. The digital video game was set in a post-apocalyptic world where players could explore and interact with Balenciaga's latest collection. Volumetric capture technology was employed to create three-dimensional representations of models and garments, allowing players to view and experience the fashion pieces in a realistic and dynamic way.

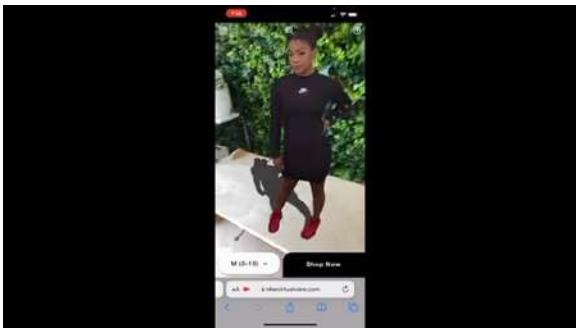
By incorporating volumetric capture, Balenciaga aimed to push the boundaries of traditional fashion campaigns and create a captivating digital experience that merged fashion, gaming, and technology.

Watch on YouTube: [Afterworld: The Age of Tomorrow | Balenciaga]

Nike Virtual View

Nike partnered with volumetric video agency Omnivor to create "Nike Virtual View" which is a feature that lets shoppers preview clothing on 3D holograms of models in WebAR while browsing the Finish Line website. Customers can select from XS-XL to see how Nike styles fit on a model that is their size, swipe to rotate, then tap "Shop Now" to purchase with size and fit confidence.





Watch on YouTube: [Omnivor Nike AR - YouTube]

Volumetric Capture in Marketing Campaigns

Gatorade Beat the Blitz VR Campaign

Watch on YouTube: [Gatorade | Go Inside Beat the Blitz]

Gatorade created 'Beat The Blitz' as an engaging way, using VR, to show athletes how dehydration works in the body. The virtual reality experience let's players quarterback and throw passes while being coached by Peyton Manning.

In the Gatorade Beat the Blitz VR campaign, volumetric capture technology is utilised to enhance the immersive experience of the game. Specifically, a volumetric capture of former All-Pro quarterback Peyton Manning is incorporated into the game. This technology captures a three-dimensional representation of Peyton's performance, allowing players to interact with a true-to-life sized hologram of him during the game. By using volumetric capture, Gatorade aims to create a more realistic and engaging experience for players, further immersing them in the game's narrative and educational content.

The utilisation of volumetric capture in the Gatorade Beat the Blitz VR campaign helped to achieve several business objectives.

Brand recognition

It enhances brand recognition and credibility by featuring a well-known and respected athlete like Peyton Manning. This association reinforces Gatorade's position as a trusted and authoritative brand in the sports industry.

Customer engagement

The use of volumetric capture contributes to increased player engagement. By integrating a lifelike hologram of Peyton Manning, players are provided with a unique and memorable experience. This engagement translates into a deeper connection with the Gatorade brand and its messaging, promoting brand loyalty and positive word-of-mouth.

Brand reputation and authority

The adoption of volumetric capture aligns with Gatorade's commitment to innovation and cutting-edge technology. By leveraging this advanced capture method, Gatorade showcases its dedication to pushing boundaries and delivering immersive experiences to its target audience. This, in turn, helps to position Gatorade as a forward-thinking and industry-leading brand, attracting attention and interest from consumers, partners, and the wider gaming community.

“Whoppa” on a Whopper Campaign

Watch on YouTube: Tiny Tinie Performs Whoppa on a Whopper

Burger King customers were able to scan a special QR code on their Whopper® burger to generate a miniature, volumetric Tinie, performing his latest hit ‘Whoppa’, with the iconic signature burger as his stage.

In the Burger King "Tiny Tinie performs Whoppa on a Whopper" campaign, volumetric capture technology is utilised to create a unique and engaging experience for customers. The campaign features a renowned artist, Tinie, who is captured using volumetric capture technology to generate a lifelike, three-dimensional representation of him. This enables customers to see Tinie performing his song "Whoppa" on top of a Whopper burger. By leveraging volumetric capture, Burger King aims to create a memorable and entertaining experience that blends the worlds of music and food.

The use of volumetric capture in the campaign achieved several business objectives for Burger King.

Brand awareness

It helped to generate buzz and increase brand awareness. The innovative use of technology and the collaboration with a popular artist like Tinie attracted attention and generated conversations among customers and the wider audience. This heightened visibility not only promotes the campaign but also enhanced Burger King's brand image as a creative and boundary-pushing fast-food chain.

Customer engagement

The integration of volumetric capture enhances customer engagement and creates a memorable brand experience. By allowing customers to witness Tinie's performance on top of a Whopper burger, Burger King creates a unique connection between its products and the music world. This interactive and immersive experience resonates with customers, strengthening their emotional attachment to the brand and increasing the likelihood of brand loyalty and advocacy.

Brand reputation and authority

The utilisation of volumetric capture aligns with Burger King's commitment to innovation and staying at the forefront of technology-driven marketing campaigns. By embracing cutting-edge techniques like volumetric capture, Burger King positions itself as a forward-thinking brand that understands and caters to the evolving preferences and expectations of its customers.

AT&T stadium 5G & AR Fan Experience Campaign

Watch on YouTube: [Dallas Cowboys Photo Booths]

Some giant and wild Dallas Cowboys players were brought to AR life at the AT&T stadium (the world's first 5G enabled stadium) to meet the visitors in a unique way, which reached mass-scale through the user-generated content that followed. During the Dallas Cowboys NFL season, fans were brought closer to the action and their heroes via hyper-accurate, persistent, never-seen-before AR experiences that can be viewed from any seat in the stadium in real-time, including photo-realistic holograms, games, live stats and more.

In the AT&T 5G Fan Experience ARCloud Ready venue, volumetric capture technology is utilised to create a cutting-edge augmented reality (AR) experience for fans. The venue incorporates volumetric capture to capture live performances of athletes, musicians, and other performers. This technology allows fans to view realistic, three-dimensional representations of their favourite stars in real-time, enhancing their immersive experience at the venue. By leveraging volumetric capture, AT&T aims to revolutionise the fan experience by seamlessly blending the physical and digital worlds.

The use of volumetric capture in the ARCloud Ready venue achieves several business objectives for AT&T.

Fan engagement and satisfaction

It enhances the overall fan engagement and satisfaction. By bringing the virtual representations of athletes and artists to life, AT&T creates an interactive and immersive experience that amplifies the enjoyment and connection fans feel towards their idols. This heightened engagement can lead to increased attendance, positive word-of-mouth, and enhanced brand loyalty.

Brand reputation and authority

The utilisation of volumetric capture showcases AT&T's technological capabilities and positions the company as an industry leader in the realm of AR and immersive experiences. By investing in cutting-edge technology like volumetric capture, AT&T demonstrates its commitment to providing innovative solutions that enhance customer experiences. This positioning helps to differentiate AT&T from its competitors and attracts attention from both fans and potential partners or sponsors.

Data collection

The ARCloud Ready venue and its use of volumetric capture allow AT&T to gather valuable data and insights about fan behaviour and preferences. Through the analysis of user interactions with the AR content, AT&T can gain a deeper understanding of what resonates with fans, enabling them to refine their offerings and create more personalised experiences in the future. This data-driven approach contributes to improved fan engagement and targeted marketing efforts.

Future Applications of Volumetric Capture

Digital video is always changing. Manufacturers and audiences alike constantly want to adopt improved versions of the technology, from SD to UltraHD. But no matter the development, the objective remains the same: to enhance the immersion of the viewing experience. Here are some examples of how volumetric video will affect how people consume digital content and how it will all work together.

Enhanced Ecommerce Experiences

Volumetric video technology offers tremendous potential in the realm of e-commerce. By capturing models and products from multiple angles, it provides an immersive shopping experience that bridges the gap between expectation and reality. Customers can explore products in three dimensions, gaining a realistic sense of how they look and move. Volumetric video empowers online retailers to stand out in a competitive landscape by enabling shoppers to make more informed purchasing decisions and enhancing their overall shopping experience.

Revolutionising Social Media Engagement

Social media platforms are on the cusp of a volumetric video revolution. With the integration of holograms created through volumetric video, users can expect a new level of engagement with their favourite influencers and celebrities. Instead of simply watching videos, users will have the opportunity to interact with virtual representations of their idols. From walking beside them in augmented reality to experiencing virtual performances, volumetric video adds an exciting and immersive element to social media content, elevating the overall engagement and entertainment value.

Enhanced Augmented Reality

Volumetric video is set to have a profound impact on augmented reality (AR). It enables the creation of interactive and dynamic experiences that enhance various aspects of daily life. With volumetric video, users can enjoy holographic instructors guiding them through activities, virtual family gatherings, and real-time informative overlays. By seamlessly blending digital content with the real world, volumetric video enriches AR experiences, unlocking new possibilities for education, entertainment, and practical applications.

The Metaverse: Shaping Virtual Identities

Volumetric video plays a significant role in shaping the metaverse, a network of interconnected virtual worlds. As users venture into these immersive environments, volumetric video technology allows them to create photorealistic 3D avatars that represent their virtual identities. By capturing detailed 3D scans and incorporating real-time animation, volumetric video brings these avatars to life, enabling users to communicate, conduct business, and interact within the metaverse. This integration of volumetric video enhances the sense of presence and realism, fostering deeper engagement and connectivity within virtual realms.

Beyond Volumetric Capture

Volumetric capture serves as a powerful technology and medium for capturing highly realistic content, which can then be applied within the realm of immersive technologies. To fully understand the potential of volumetric capture, it is essential to explore the range of applications that brands have developed within the immersive space. These applications leverage the immersive technologies to create captivating and interactive experiences that blur the boundaries between the physical and digital worlds. From virtual reality (VR) and augmented reality (AR) to mixed reality (MR) and beyond, brands have been pushing the boundaries to create transformative experiences that engage users in unprecedented ways.

By examining these applications, we can gain insights into the vast possibilities and impact of volumetric capture within the immersive technology landscape.

The Use of Immersive Applications by Brands

Ikea

In 2018, IKEA launched its AR mobile application called "IKEA Place," which enables customers to visualise IKEA products in their homes using their smartphone cameras and AR technology. The app also allows users to take a photo of any furniture they come across and search for similar IKEA items. By offering the flexibility to view IKEA products against any background, the application enhances user engagement while assisting them in finding desired furnishings and making informed purchasing decisions.

The ability to see realistic representations of Ikea products in their intended rooms enables shoppers to make more reliable buying choices. This feature addresses one of the challenges faced by IKEA in e-commerce sales, which is the slow adoption of digital platforms. By enabling people to preview how a product would look in their own home without the need for a lengthy trip to an IKEA store, the company can improve its online sales performance.

The success of IKEA Place demonstrates that augmented reality is the next evolutionary step in the thriving e-commerce industry. With AR technology, businesses can offer a more immersive and interactive shopping experience, eliminating the inconveniences of measuring, comparing, and transporting items from the store to evaluate their appearance.

Implementing AR into a dedicated app not only has the potential to increase customer engagement but also to enhance customer retention. By embracing AR, businesses can cater to the growing demand for seamless and convenient online shopping experiences, thereby staying competitive and attracting a loyal customer base.

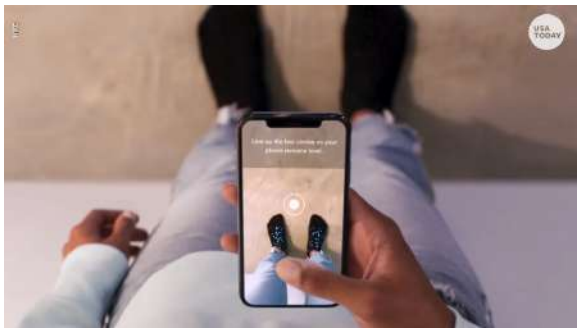
The success of this application showcases the potential of augmented reality to revolutionise the e-commerce industry, providing customers with a realistic preview of products in their homes and simplifying the buying process. Embracing AR can lead to increased customer engagement, improved online sales, and enhanced customer retention.

Nike

Nike has increasingly been betting over the years on innovative technologies, mainly on AR and its in store experience. Below are some examples.

Nike Fit AR

To assist customers in finding the perfect fit for their shoes, Nike introduced the Nike Fit AR feature in their app. Using augmented reality, users can scan their feet with their smartphone camera to obtain accurate measurements and receive personalised shoe size recommendations.



Nike House of Innovation

Nike's flagship stores, such as the Nike House of Innovation in New York City, incorporate immersive technologies to offer unique retail experiences. These stores feature interactive digital displays, AR-enabled product try-ons, and personalised digital experiences to engage customers and showcase the brand's products in an innovative way.

Nike Adapt BB – House of Innovation (2019)

House of Innovation Paris (2020)

Sephora

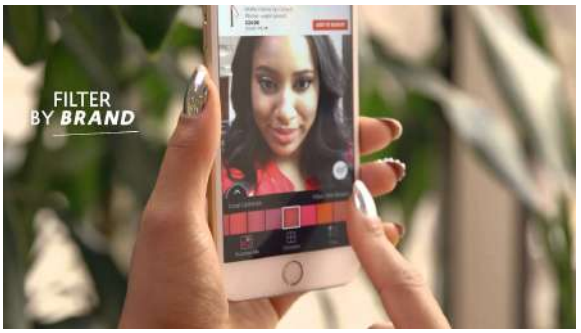
Sephora is revolutionising the makeup buying experience through its innovative use of augmented reality (AR) technology. With the help of Modiface technology, the company has developed a cutting-edge AR application that allows customers to purchase makeup in a way that suits their comfort level.

The AR app utilises facial recognition software to detect key facial features like eyes, cheeks, and lips. Through this technology, users can virtually apply Sephora's makeup products to their own face, offering a realistic and immediate experience. The app allows you to experiment with different colours and compare various options within seconds, making it an entertaining tool for makeup enthusiasts.

One of the standout features of this AR app is its ability to provide step-by-step tutorials tailored to each individual's face. By offering personalised guidance, users can easily recreate the makeup looks they love. Additionally, the app conveniently displays and allows immediate purchase of the products and tools needed to achieve those looks.

By allowing users to virtually "try on" makeup products and see how they look on their own faces, Sephora encourages online purchases with greater confidence. This is particularly significant in the current context, where traditional makeup testers in physical stores have become less appealing due to the impact of the Covid pandemic. Furthermore, this technology generates earned media as users can record and share their augmented reality looks on various social media platforms.

Sephora's Virtual Artist App not only drives engagement, generates buzz, and increases brand awareness, but it also serves as a powerful sales-driving initiative.



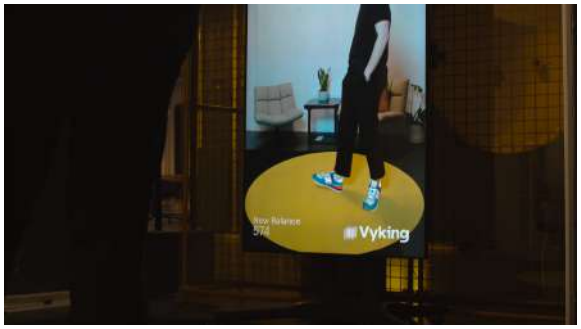
Vyking

SneakerKit

Through the Vyking app, users can browse a collection of sneakers from popular brands. By leveraging AR technology, the app superimposes virtual sneaker models onto the user's feet in real-time. This creates a highly accurate and interactive representation, giving users a sense of how the sneakers will look and fit.

Magic Mirror

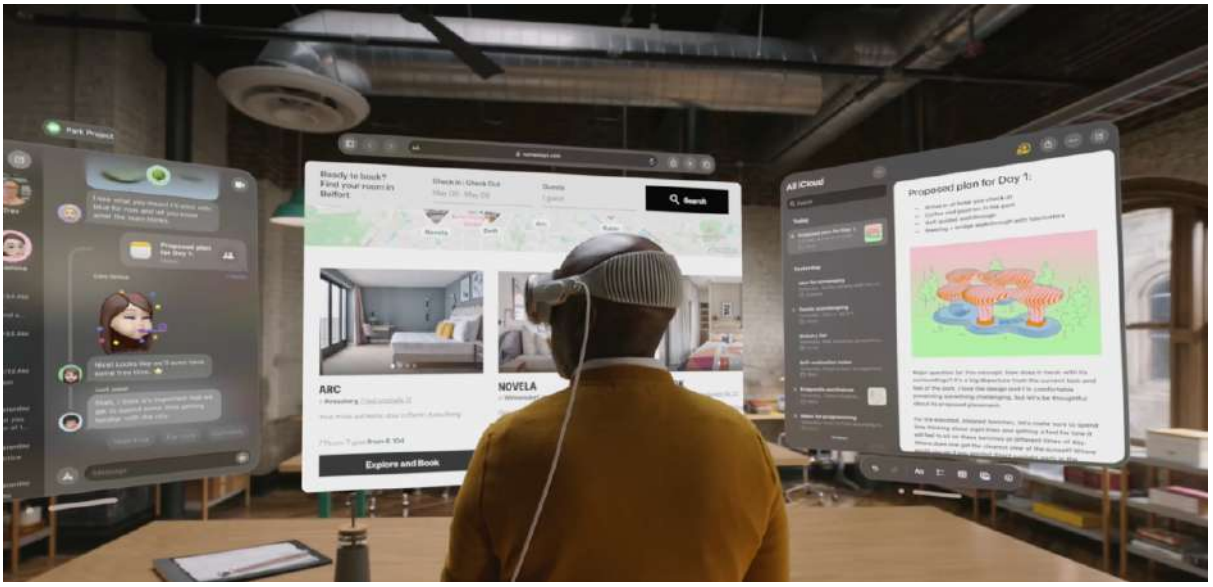
The Magic Mirror consists of a large interactive display that resembles a traditional mirror. However, behind its reflective surface lies a powerful AR system. When a user stands in front of the mirror, they can see their own reflection combined with a virtual overlay of the sneakers they choose to try on.



For retailers and brands, Vyking's virtual try-on offers significant benefits. It reduces the need for physical try-ons, saving costs and logistical challenges. By integrating the app into their online platforms, retailers can provide a more immersive and interactive shopping experience, leading to increased customer engagement and higher conversion rates. The app also generates valuable data and insights into customer preferences and behaviours, enabling retailers to refine their product offerings and marketing strategies.

Innovations in the field of Immersive Technologies

Apple’s Vision Pro



Apple's Vision Pro headset introduces a groundbreaking spatial computing experience. With the world's first spatial operating system, users interact naturally using their eyes, hands, and voice. The headset offers immersive entertainment, transforming any room into a personal theatre with Spatial Audio and a high-resolution display. Users can capture and relive memories with the 3D camera and Spatial Audio. The advanced audio system adapts to the room's acoustics, while responsive eye tracking enables precise input. The sensor array provides clear visuals, head and hand tracking, and real-time 3D mapping.

In addition to its array of features, the Vision Pro headset has the capability to turn users into digital avatars during FaceTime calls. By scanning the user's face with an advanced encoder-decoder neural network trained on a diverse group of individuals, the headset creates a hyper-realistic avatar that accurately represents the user's appearance. This virtual persona tracks the user's facial expressions and hand movements, making FaceTime conversations more interactive and engaging.

Apple’s Vision Pro face scan

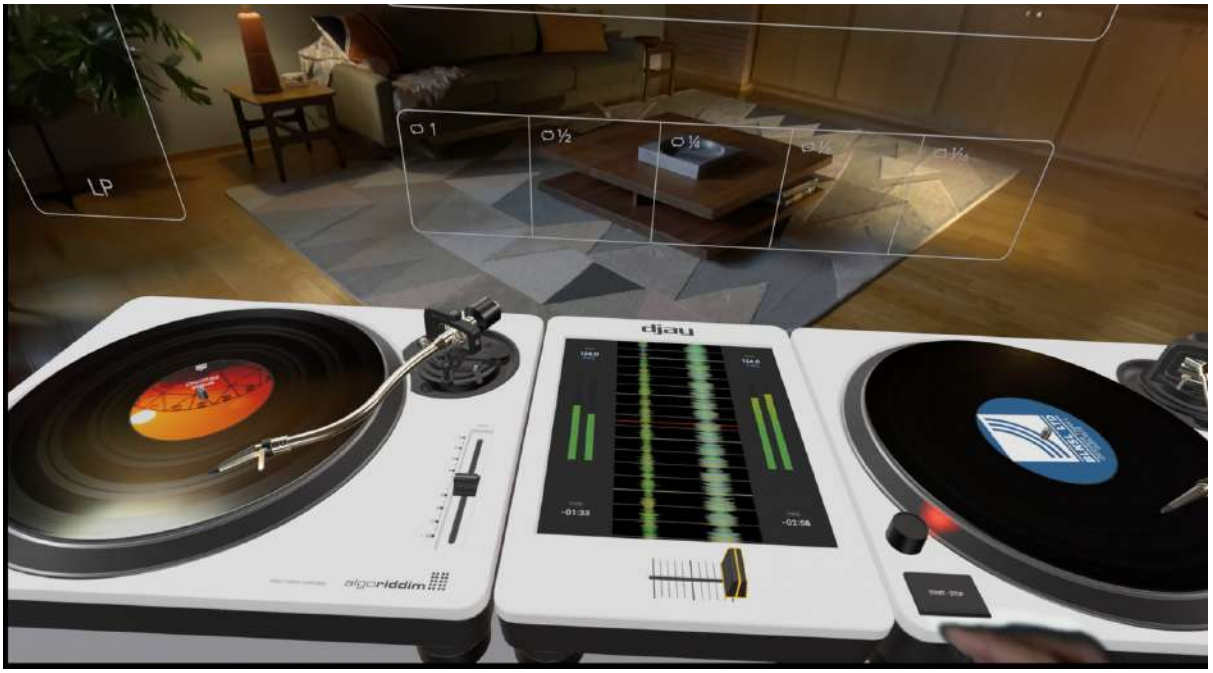
The Role of Volumetric Capture

By incorporating volumetric capture capabilities into the Vision Pro headset, users could potentially capture and interact with volumetric content in their physical space. Users could capture their surroundings in 3D and overlay digital content seamlessly within their environment. This could allow for more realistic and immersive augmented reality experiences. Users could place virtual objects or characters within their physical space, and these objects would appear to interact with the real-world environment accurately.

Volumetric capture could also enhance telepresence and communication. Users could capture themselves or others in 3D and project these volumetric representations during video calls or virtual meetings. This would create a more lifelike and immersive presence, enabling more engaging and realistic interactions.

Furthermore, volumetric capture could be utilised in content creation and storytelling. Users could capture dynamic scenes, performances, or events in 3D and share them with others, allowing them to experience the captured moments from different angles and perspectives.

By leveraging volumetric capture technology, the Vision Pro headset could bring a new level of realism and interactivity to the spatial computing experience, offering users the ability to seamlessly blend digital and physical worlds.



Preview of the djay app on Apple Vision Pro

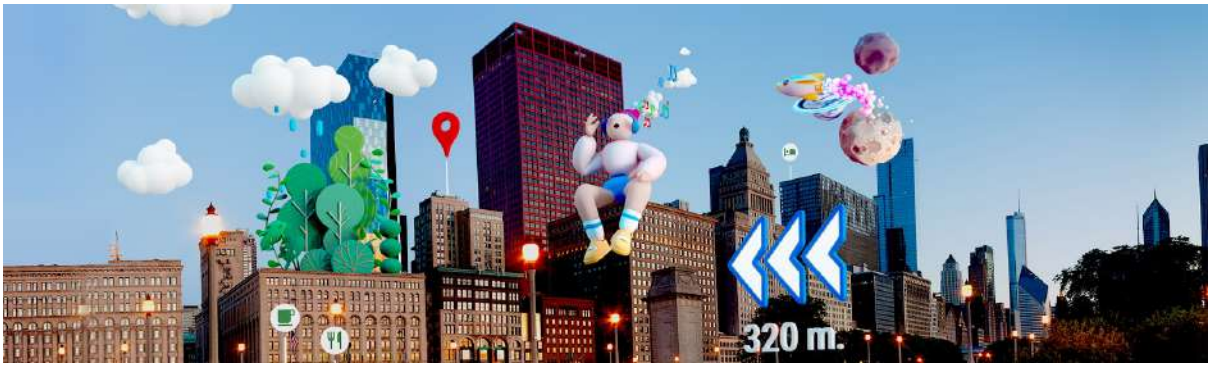
Installed base headsets

Over the past years, the global VR demand has increased significantly. Although gaming remains at the forefront of consumer VR, the technology has found other use cases, like virtual concerts and virtual workouts. Many businesses have also increased their usage of virtual reality, from teaching and designing, to manufacturing and creating a better user experience. This presents an opportunity for GroupM to apply volumetric capture as well in this technology.

Intrusiveness of headsets

On the other hand, the intrusiveness of headsets remains a challenge to broader adoption, so it is for the Apple Vision Pro. The immersion offered by headsets is unparalleled, but the need for physical wearability and potential discomfort can limit widespread usage. It is important for brands and GroupM to consider the balance between immersive experiences and user comfort.

Google & The AR Cloud



Immersive Stream for XR

Immersive Stream for XR is a Google Cloud service that renders and streams immersive 3D and Augmented Reality (AR) experiences using the power of the cloud. This service hosts, renders, and streams 3D and eXtended reality (XR) experiences. It immediately engages users in an immersive, interactive, and photorealistic experience without having to download an app. Simply create content once and run on any device.

Users can enter 3D and AR experiences in seconds without having to wait for new apps to download. Experiences run on iOS, Android, and web, so developers do not need to build for each OS, model, or year. The experience is rendered on powerful, cloud-based GPUs and then streamed to any device. Augmenting and offloading the processing from the mobile device provides the best user experience.

ARCore

ARCore is Google's platform for building augmented reality experiences. Recently, they launched the ARCore Geospatial API developer tool, which leverages Google's understanding of the world through Google Maps and helps developers build AR experiences that are more immersive, richer, and more useful.

With these new tools, developers can build applications where users can interact, visualise and transform buildings' geometry around them. Not only that, but it also allows developers to anchor digital content to buildings through AR apps, measure depth and movement through the camera to create astonishing immersive and interactive applications.

Interestingly, Snapchat has been working on the same capabilities as Google, the so-called **AR cloud**.

The AR cloud

The AR Cloud is an augmented reality version of the Metaverse. Instead of a separate virtual world with limitless immersive experiences and interactions, the AR Cloud quite literally augments reality. The AR Cloud promises the existence of countless immersive experiences linked to real-world objects, and use cases that enhance social interactions in the physical world. Imagine putting on your AR glasses and seeing an additional digital layer of content augmented on top of the real world.

The key difference between Snapchat's version of the AR Cloud and that of Google's is that the latter does not exclude users to its own platform, democratising the technology and opening the door to immense possibilities. Next to that, Google makes use of Google Maps data, making it possible to easily integrate the AR Cloud into Google Maps services in the future, just like it already displays relevant information regarding businesses in an area.

The Role of Volumetric Capture

Volumetric capture has the potential to amplify the immersive and dynamic world of the AR Cloud. By merging its realistic assets with this technology, volumetric capture brings users and brands directly into the new digital realm in real-time. This integration enhances the sense of presence and realism through volumetric video, fostering deeper engagement and connectivity within virtual realms. Developers can leverage volumetric capture technology alongside the AR Cloud to create highly immersive and photorealistic 3D and AR experiences. The AR Cloud acts as a foundation for overlaying digital content onto the real world, while volumetric capture adds depth and realism to these virtual elements, resulting in captivating and interactive user experiences.

Scene from film "Free Guy"

Scene from Netflix's series "Altered Carbon"

Conclusion

Volumetric capture has evolved from its roots in the entertainment sector to find applications in various industries such as retail and marketing campaigns. This indicates that the technology is not just a future prospect but is already delivering tangible business outcomes, including brand recognition, awareness, reputation, customer engagement, and data collection. Beyond these benefits, volumetric capture offers heightened immersiveness, attention-grabbing content, memorable experiences, and the ability to fully capture and reuse scenes, accelerating 3D asset creation. As a result, volumetric capture is poised to revolutionise the ecommerce experience, transform social media, enhance augmented reality, and contribute to the development of the metaverse.

Moreover, in the context of the surge in immersive technologies, volumetric capture plays a crucial role in making immersive experiences a part of everyday life. Advancements like Apple's Vision Pro and the AR Cloud, which create digital clones of the real world, will further blur the lines between imagination and reality, allowing brands to reach customers at unprecedented levels with techniques once confined to fiction movies and futuristic video games.

Those brands that embrace these technologies early on stand to gain a significant advantage by capturing the attention and awe of audiences. Volumetric capture also serves as a utilitarian tool for brands, helping customers make informed purchasing decisions, addressing issues like indecision and avoiding incorrect purchases. In the short term, brands can leverage these utilitarian goals, while in the long run, they can develop innovative and inspiring campaigns to amaze their audience.

Recommendations

Investing in volumetric capture technology would give GroupM and its clients a competitive edge, as many brands have already started utilising this technology. By harnessing the numerous benefits of volumetric capture, GroupM's clients would have the opportunity to surprise their customers and establish themselves as authorities in innovation. Brands that already have an innovative reputation can elevate their positioning to the next level by incorporating volumetric capture. By guiding its clients into this new digital era, GroupM can position itself as an innovative and dependable partner that embraces future trends, serving as a valuable bridge to this future for its clients.

In the short term, it is advisable for retail brands, including fashion or apparel, cosmetics, and furniture industries, to explore practical applications of volumetric capture. As the competition has already begun, brands can still achieve the "wow" effect while volumetric capture remains relatively less mainstream.

In the medium term, brands can consider digital campaigns that blend the digital and physical realms, fostering high engagement and brand recognition. Social media platforms, particularly popular among younger audiences, provide an ideal avenue to showcase these innovative experiences and captivate audiences eagerly awaiting new technologies.

Looking to the long term, when the short and medium-term practices have become commonplace and XR technologies have become as ubiquitous as smartphones are today, brands can take marketing to the next level by turning science fiction into reality. Utilising the capabilities of the AR Cloud and merging the real world with digital and interactive interfaces, brands can create unprecedented experiences that blur the boundaries between reality and imagination.

Finally, it is advice for GroupM to take into consideration the desired outcomes for every campaign, aligning it with the technology at choice, as I have previously explored with my prototypes using different kinds of volumetric capture techniques such as High-End Capture, Sensor-based Capture, and Mobile-based Capture. These techniques can complement each other in producing immersive environments. Furthermore, GroupM should also take into consideration the limitations of technologies such VR headsets, given the need for physical wearability and potential discomfort can limit widespread usage.

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