AUGMENTED REALITY

FOR LIVE AND VIRTUAL EVENTS & EXHIBITIONS

eBook by

SERENA FERRARI & GAETANO SERRANO

WHY USE AUGMENTED REALITY AT YOUR NEXT EVENT?

In the last two decades, the digital transformation, known as the “Third Industrial Revolution” has dramatically impacted modern society.

In 2001 Wikipedia was launched with the idea of producing for the first time an online encyclopaedia co-created and co-managed entirely by users.
Facebook was introduced in 2004 to connect people throughout a universal website.
In 2005 YouTube became the first video sharing online platform, the iPhone appeared on the market in June 2007 and radically changed our communication ecosystem.
The recent global pandemic crisis has accelerated the digital transformation and forced the event industry to rely on digital technology to cope with the consequences.
Nevertheless, despite the long-time use of Augmented Reality, the technology still has not found its place within the event landscape.

What we want to point here is that although technology will never replace the value of live events Augmented Reality can offer new ways to complement the physical and virtual experience and engage attendees at an emotional and cognitive level.

The primary value of Augmented Reality is that it is a social technology in its essence. AR enables us to interact with the digital world while maintaining our human way of communicating in the “normal world".

It also offers sponsors and exhibitors a unique way to showcase products and connect directly with attendees. Besides, given the ubiquity of smartphones, scalable Augmented Reality offers cost-effective opportunities to deliver on-demand and at-the-time-of-need support.

ABOUT THE EBOOK

The purpose of this eBook is to provide event professionals with practical information and inspiring ideas on the use of AR to engage attendees and sponsors.

After reading the ebook, you will be able to:

- ✓ Identify the real opportunities and added value of AR.
- ✓ Leverage the capabilities of AR to capture participants' imaginations and fully engage them.
- ✓ Understand the technology, related costs, and how to choose the right provider.

The content of the eBook is structured in three broad sections.
In the first chapter, the reader is introduced to the AR technology and its history. The following chapter offers some inspiring ideas to encourage event professionals in using their creativity.

The third chapter provides practical information on how to choose the right provider and a range of costs.
The conclusion briefly summarises the pros and cons outlined in the book.
We hope this eBook will answer your questions, but if you need more information, or want to share your experience, please, get in touch with us!

Serena Ferrari, Gaetano Serrano

GET IN TOUCH

Get in touch with us if you want to send comments, questions, or know a little bit more about the use of Augmented Reality.

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About Serena
Serena Ferrari is a digital events manager, a globe-trotter, and a long-life learner. She has a love for creativity and digital technology. In addition to being the author of this guide Serena has also created a blog to post her inspirations, and resources that she hopes others find interesting. She is currently living in the UK and open to collaborating with organisations interested in developing a digital event strategy.

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About Gaetano
Gaetano is a Business Developer with over ten years of experience within the digital technology industry. He has collaborated with several International Tourism Organisations such as Visit Barcelona, Spain; Visit London, UK; Rome City Hall, Italy, Costa Rica Tourism Organisation, to name just a few. Gaetano has implemented with success the B-Card application and created the first-ever Barcelona AR tourist map. He is currently living and working in Barcelona, Spain.

TABLE OF CONTENTS

THE AUGMENTED REALITY TECHNOLOGY IN A NUTSHELL

The technology was initially developed for technical purposes.

From 1997 to 2001, the Japanese government and Canon Inc. jointly funded the Mixed Reality Systems Laboratory as a temporary research company.
Since then, the industry has undergone some development and suffered some setbacks, such as the failure of 'Google Glass' wearable technology which resulted in AR being adopted using smartphones.

The technology changes the space perception around us by overlaying data, such as 2D or 3D images, audio, or short videos on top of the real world, and it merges the boundaries between the real and digital world.
It involves technologies like S.L.A.M. (simultaneous localisation and mapping), depth tracking (briefly, a sensor data calculating the distance to the objects), cameras and sensors for collecting data about user's interactions and sending it for processing.

Nowadays, any new generation of mobile devices can magnificently support a high-performance AR experience that can be enjoyed in a verity of modes.
Unlike Virtual Reality (VR), AR does not create the whole artificial environments to replace real with a virtual one.

HOW IT WORKS

APP AND SMARTPHONE CAMERA SENSORS COMBINE REALITY WITH VIRTUAL OVERLAYS

The experience is delivered through smartphones and tablets and overlays text, images or videos over physical objects. As its core, AR provides all types of information such as locations, heading, visual, audio and acceleration data, and opens an avenue for real-time feedback.

STEP 1

Point the camera of your phone toward the object, the printed material, or the surface to activate the AR experience.

STEP 2

The AR app searches for images and patterns on a server.

STEP 3

The AR App validates the images and sends back the associated control.

Technical requirements

AR can be experienced whenever you want, and wherever it suits you, which makes AR a perfect tool for live and digital events.
However, there are some technical considerations to be taken into account. Firstly, the application has to be downloaded from Apple Store or Google Play, respectively, the IOS & Android systems. To overcome this step, regarded as a limitation by many users, Apple & Google have decided to deploy the same software architecture in their mobile operating systems, namely ARKIT (Apple) and ARCORE (Google). This has given developers more freedom and increased the number of AR users. In addition, to respond to the growing need to equip cell phones with a universal Augmented Reality reader, both companies have started to incorporate the same AR readers in the latest generation cameras of mobile devices, thus allowing simple and automatic activation. As a result, a large population of users that were not interested in the technology can now be reached.

Size of application

There are differences in sizes and types of AR applications. The ones that work without Wi-Fi have a considerable size in terms of data to download that will require more memory space on mobile phones. On the other hand, users will not need to be connected to a Wi-Fi to activate the AR app, and this might be the best solution in case the Venue doesn't have a robust internet connection. It is, therefore, important to give careful thought to which type of application you choose.

Activating the application

Augmented Reality technology uses the mobile camera to trigger the AR experience. To do so, it must have a good level of lighting to recognise the physical point, which in jargon is called "marker". The marker is a visual indicator which triggers the display of virtual information.
The camera recognises the geometries of the marker by identifying specific points. The marker can be geo-positioned on any surface, such as on printed paper; on a three-dimensional object; or displayed on a screen or the monitor of a desktop. People standing on the wrong spot with limited light, pointing in the wrong direction or doing the wrong thing will lead to a failure of the AR experience.

Markers' visibility

As explained, the camera must identify the "marker" to trigger the AR application and to do so, there are several requirements to consider. First, the marker must be visible and well-illuminated but not excessively. It should also be clearly outlined and not covered by external elements. For example, in case the AR experience is delivered on-site, event planners should check the area to secure that the marker is recognisable and there are no obstructing objects. To avoid pitfalls, we recommend choosing the right AR provider and discuss any problems that may arise.

Deployment to App Store & Google Play

The two main AR operating systems available on the market, the IOS (Apple) & the Play Store, display an incredible range of AR applications, most of them available for free.
In case the event organiser wishes to brand a tailor-made AR app, this will have to be developed and published both in the Apple and Play store to make it available to event attendees. In case the developer has already a PLAY / IOS account, the event organiser may use the developer's account to publish the application. Alternatively, the event organiser has to open an account on both Play and IOS stores with a one-off payment of £25 in Google Play and a £99 yearly subscription for IOS Apple Store.
All AR apps must undergo an approval process by Google and Apple. The Google approval process can take only a few hours and it is fairly straightforward. On the contrary, all Apple applications must meet quality standards to be approved, and the process can sometimes take up to 3 days. Once the quality assurance test is passed, the application will be available in the online "Store", and displayed among other AR applications, with a short description, user ratings, and comments.

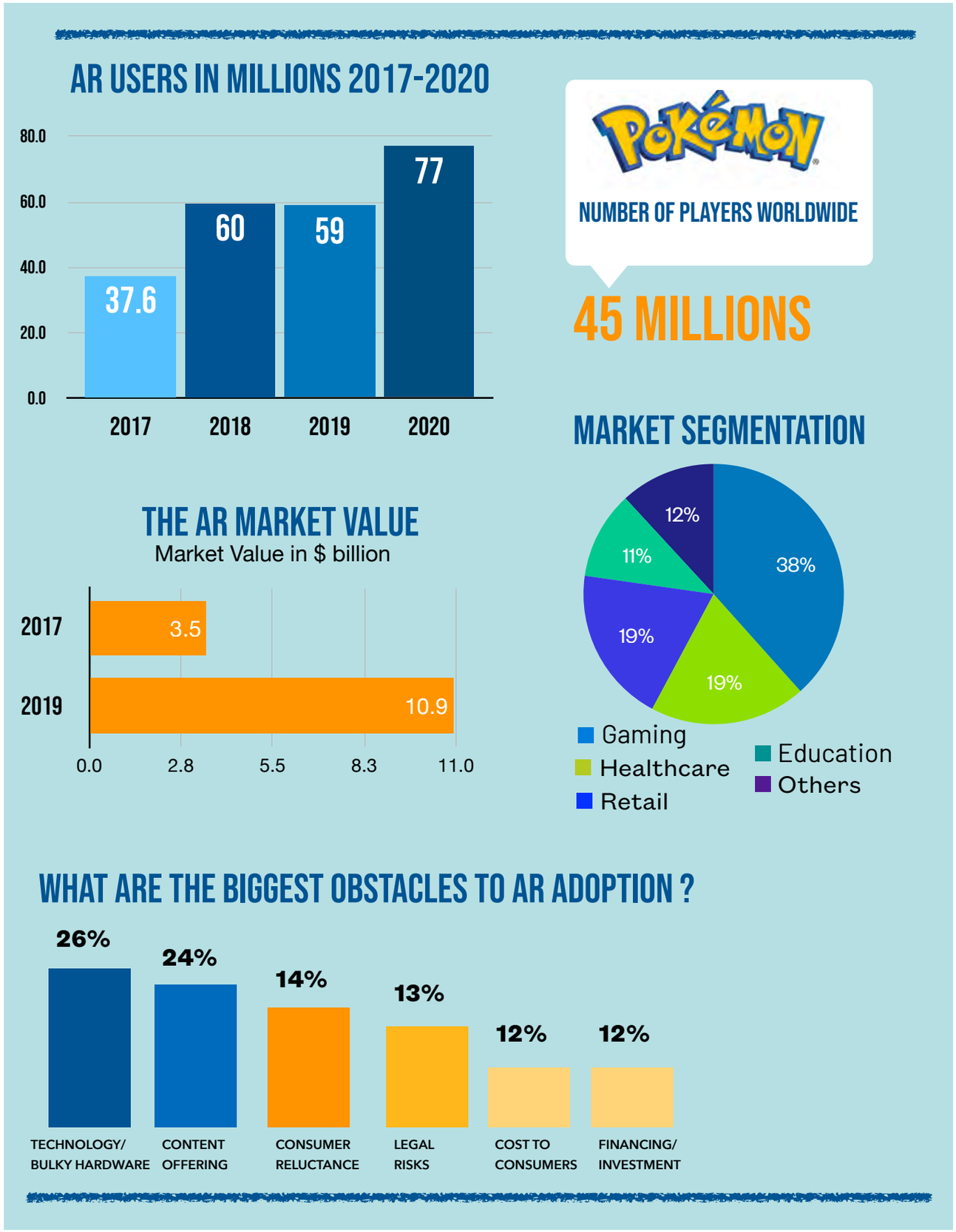
Apple Augmented Reality

Apple is investing in Augmented Reality. AR is directly built into iOS and IPadOS, so you can experience AR not only from an app, but also in Safari, Mail, Messages, Files and more using ARR Quick Look. The APP store has amazing AR apps such as: Apollo Moon shot; Plantale; Jig Space and Snapchat. TheApple also organises in-store courses about AR coding, open to everybody with no previous experiences. The store provides the iPad and the magnetic pen, and you will learn how to use the basic feature of coding to create a simple 3D object from a sketch you have designed. It is a fun experience, popular among children and teenagers. https://www.apple.com/augmented-reality

Microsoft HoloLens, and alternative way to experience Augmented Reality

The latest form of consumer-facing AR technology is the Microsoft HoloLens headset consisting of translucent glasses overlaying images and graphics within the user's environment.

Microsoft has demoed the product in numerous different events, showing off its capabilities. During the 2017 Microsoft Build Conference, the set design team for Cirque Du Soleil showed how they utilised the HoloLens to visualise their entire set. However, the technology still has its limitations and is far more expensive than using AR with mobile devices.



THE GLOBAL MARKET

The technology touches about every use case and allows high-speed and intuitive access to information. In 2017 the global market was worth **$3.5 billion** and in 2019 was estimated at around **$10,9 billion**.

Statistics show that AR technology has been successfully used in several industries, including retail, engineer, education, health care, automotive, packaging.

An example is the popular AR **Game Pokémon Go** that had an estimated number of **45 Million players worldwide**.

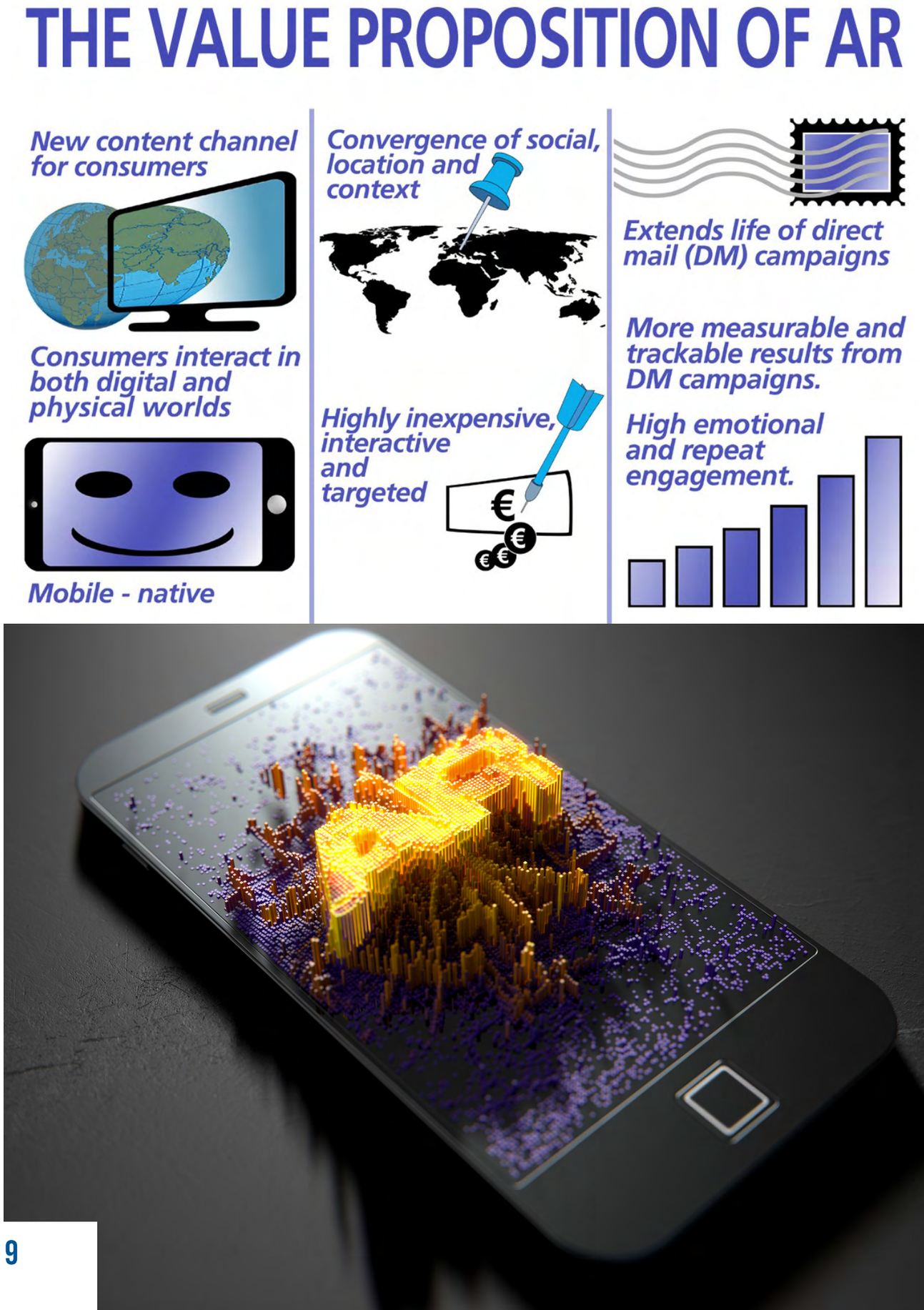
The number of **AR users is counted in 77 million globally**.
The recent introduction of **Apple's ARKit** and **Google's ARCore** software that have standardised the AR software **has doubled the amount of mobile AR-enabled devices** since 2017.
As a result, Apple has secured its market leadership, but ARCore-compatible Android devices grew from 250 million devices in December 2018 to 400 million in May 2019.

Sources: Statista, StitinVestore,

CAN AUGMENTED REALITY HELP IN DESIGNING ENGAGING EVENTS?

First of all, let us clarify that the most well-known AR application, the "Pokémon" game that reached a global scale of 45 million players does not represent the best example of AR application alone.
It gives, however, an idea of the opportunities offered by AR to engage with millions of people from different cultures, languages, and nationalities.

In this chapter, we focus on **three main areas** in which AR can add value: **Sponsor's activation, digital presentations, and networking**.
At the end of the chapter, we briefly explain how AR can gather valuable data to analyse and manage the performance of events and marketing campaigns.



ENDLESS OPPORTUNITIES FOR SPONSOR'S ACTIVATION

AR can translate sponsors' complex information into engaging and insightful content so that the audience has a much deeper level of understanding of what the company is offering.

The AR experience can be as simple as a pop-up 3D animation, a video, or a more complex site-specific immersive experience. This opens the door to a wide range of opportunities to boost the sponsor's visibility with well-designed user experience.

Real-time data
AR allows sponsors to connect directly with attendees. In this way, it is possible to gather real-time data that helps to understand customer's behaviour and analyse the type, duration, and level of engagement.

Anytime; Anywhere.
The AR experience can be replicated anywhere and anytime.

Fundraising activities

AR can promote philanthropic activities. A sponsor's donation to a good cause or a charity can be triggered every time the AR app is opened during an event.

Virtual audience engagement.

It's possible to blend the physical and virtual spaces by sending out to remote attendees an object that activates the AR experience.

INSPIRING IDEAS | SPONSORS' ACTIVATION

Any object can be enhanced with an AR experience. In 2020 Microsoft took advantage of AR by sending out cups to remote attendees of the Business Applications Summit. The item that the attendees received unlocked access to AR immersive premium content.

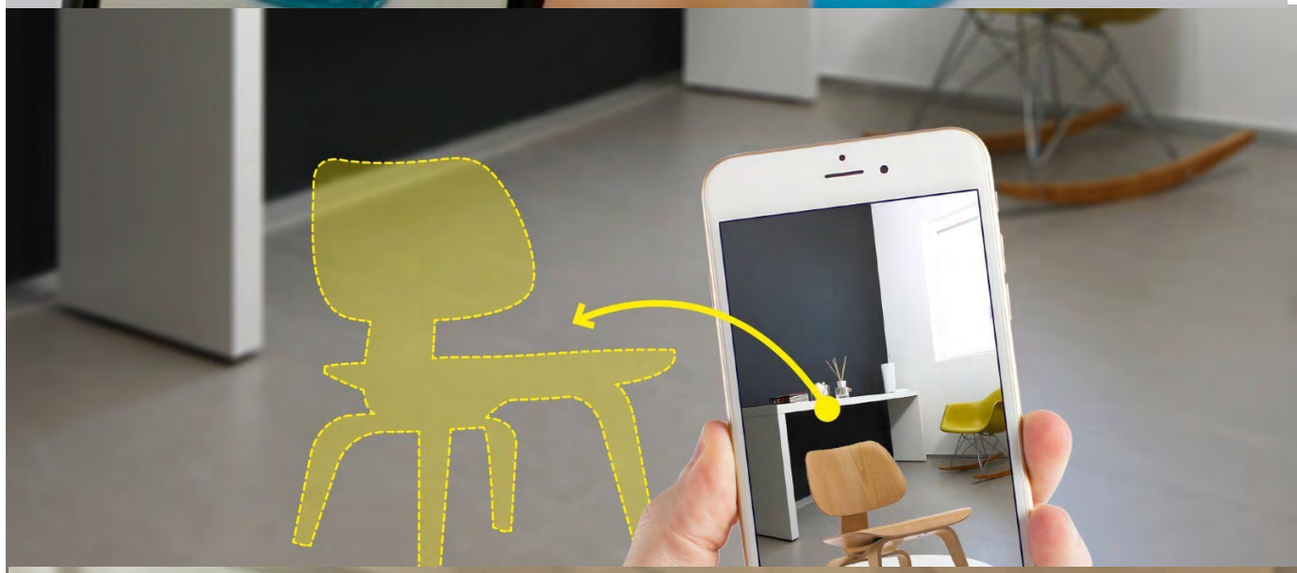
INSPIRING IDEAS | VIRTUAL AUDIENCE ENGAGEMENT

AR experience can be delivered anywhere and at any time by embedding the AR experience into the product packaging. For example, Fanta and Bombay Sapphire transformed the labels of bottles into an AR experience.

INSPIRING IDEAS | BRINGING PRODUCTS TO LIVE

This is where AR becomes the perfect tool to offer an immersive brand experience. For example, IKEA has successfully used AR to help customers to visualise how the furniture will look like in their home. Why not use this idea for bringing products to live at trade exhibitions or events?
Check the youtube video from IKEA .

IKEA | https://bit.ly/39w80C4



ENHANCING DIGITAL PRESENTATIONS WITH AR

An image, a 3D animation, or a video can worth a thousand words.

AR can help to better visualise a concept, an idea, or a process, and make presentations more vivid and engaging. The AR experience can be delivered through PowerPoint, business cards, brochures, or forwarded by email.

Showcasing Venue facilities
It is sometimes difficult for a venue to show the possibilities offered by the location in terms of room size and set-ups. Having an interactive AR map that overlays information can be an effective solution to transform a site-visit into an immersive AR experience or, alternatively, creating an interactive document, such as a floorplan.

INSPIRING IDEAS | INTERACTIVE FLOOR PLANS
A successful example is the Barcelona map created by the Smartech Group. The experience integrates an audio tour and 3D images. By using the same concept, Venues can produce an interactive floorplan.
Watch the video presenting the Barcelona Interactive Map. Click the link below.

BARCELONA INTERACTIVE AR CITY MAP

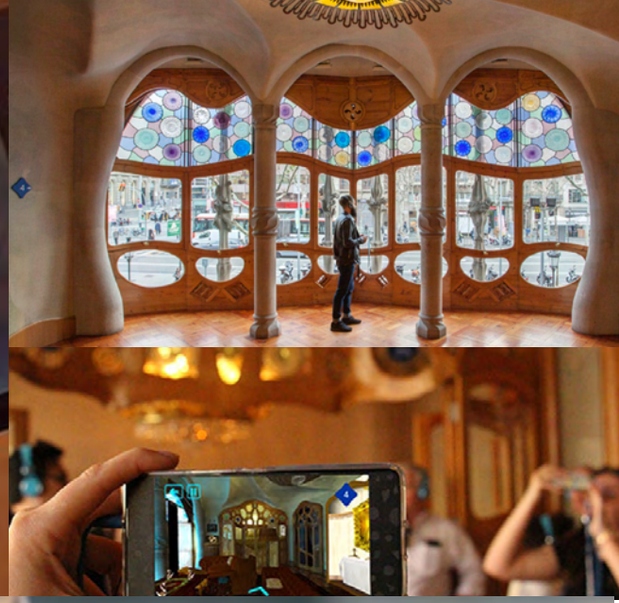
INSPIRING IDEAS | SITE-SPECIFIC AR APPLICATIONS

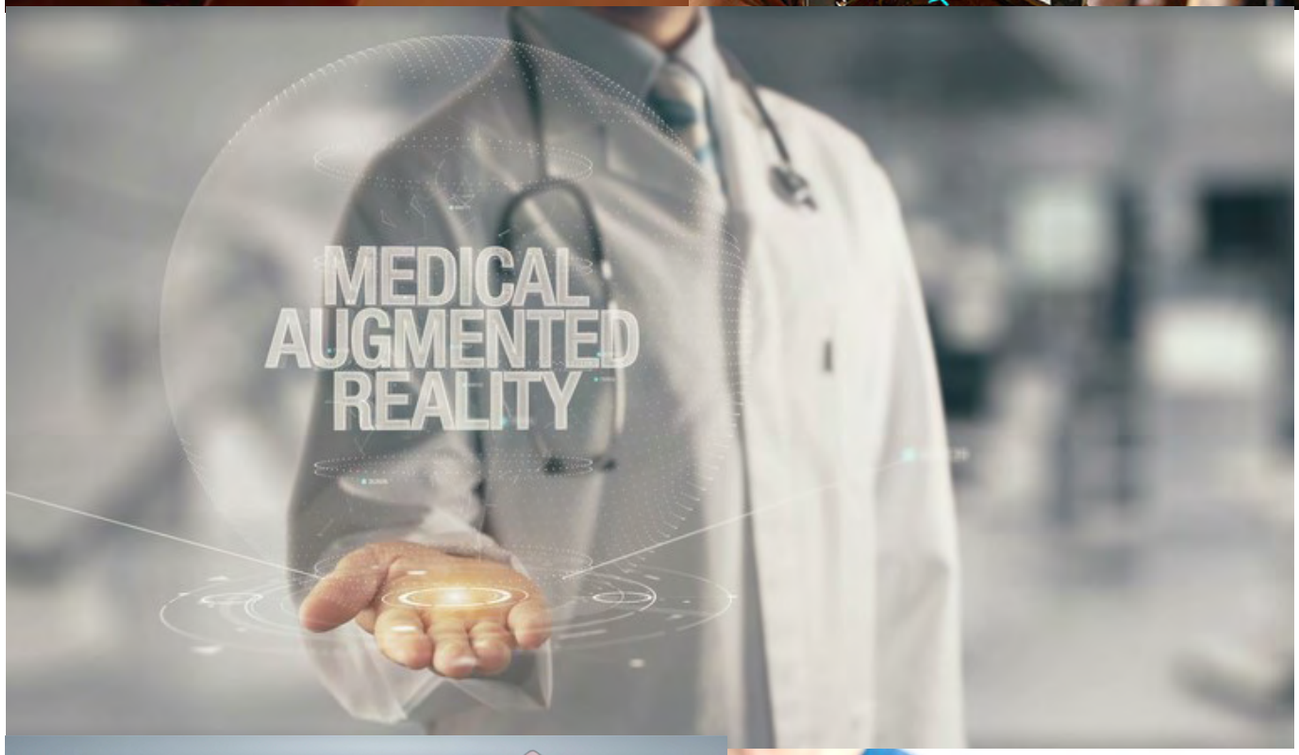
An example of a unique site-specific AR experience is Casa Batlló, Barcelona, Spain. Visitors are carried away by the spatial storytelling animation of the Gaudi building. The same concept can be used to design an Augmented Reality venue site inspection overlaying room set-ups and catering solutions on empty rooms. Click to the link below to watch the video.

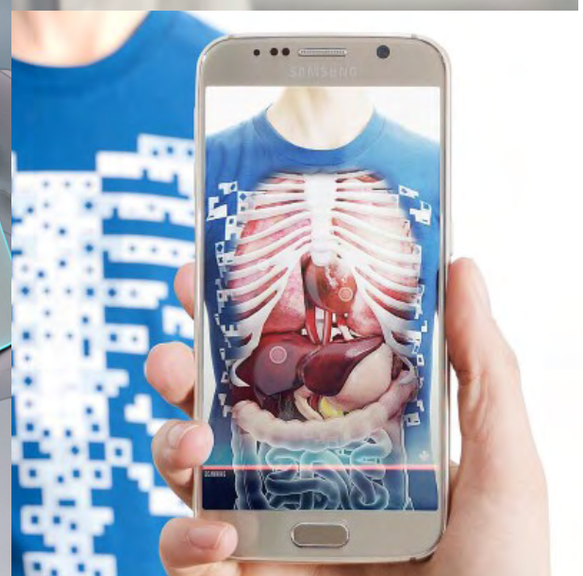
CASA BATLO' | https://bit.ly/2D5W2mH

INSPIRING IDEAS | TRAINING DOCTORS

The British National Health System (NHS) is constantly searching for better ways to train their employees and achieve better learning results. One problem they identified was that certain subject areas were challenging for learners using conventional training methods, which are both costly and time-consuming. They needed a solution that would accelerate knowledge transfer of crucial subject areas, reduce costs, and improve the number of people who can be exposed to training. As a result, they created an AR application that saved man-hours needed to qualify trainees.







INSPIRING IDEAS | DIGITAL PRESENTATIONS

AR can be embedded in business cards, flyers, brochures, company's presentations or PowerPoints. For example, the B-Card App transformed a simple business card into a video presentation.

TRY AUGMENTED REALITY ON YOUR PHONE !
SCAN THE QR AND WATCH THE VIDEO

To promote a film festival in Barcelona (Spain), the organisers embedded a video in all promotional materials, direct marketing, tickets, and social media. SCAN THE BELOW QR and point the camera to the INORI image to watch the video.

NETWORKING, ICE BREAKERS, AND GAMIFICATION

AR it's a great technology to facilitate networking.

For instance, Snapchat allows users to create funny selfies via smartphone cameras. Adding AR to activities, such as treasure hunting or trivia quiz make games more engaging. AR can also be used to educate the audience. By taking characteristics from games and adding them to everyday actions, it is possible to create an educational game that entertains as well as educating attendees.

INSPIRING IDEAS | TREASURE HUNTING

In this video unusual animals and robots appear from every angle of the trade show. Take inspiration to create your own virtual AR hunting game.
Click the link below to watch the video.

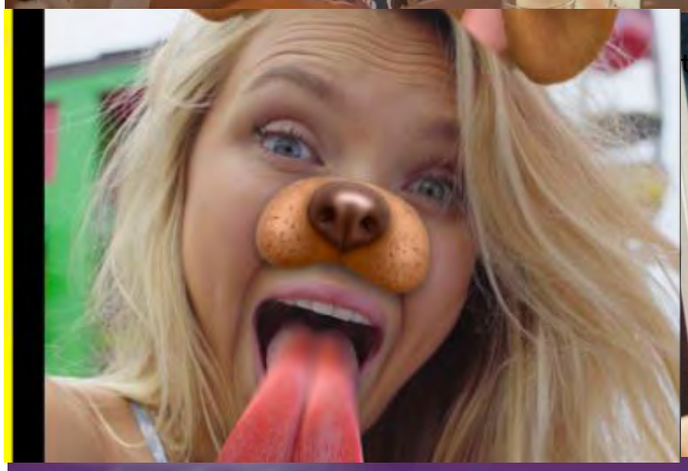
Treasure hunting with AR:

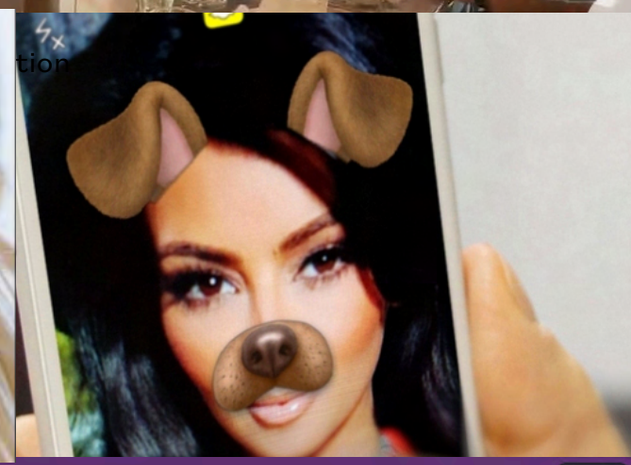
INSPIRING IDEAS | GAMIFICATION

Gamification is becoming a hugely popular trend, Amazon created an educational game around transportation risks. This isn't really the most gripping topic to talk about, but they created a fun AR mini-game to entertain as well as educate customers about transportation risks.

INSPIRING IDEAS | SNAPCHAT

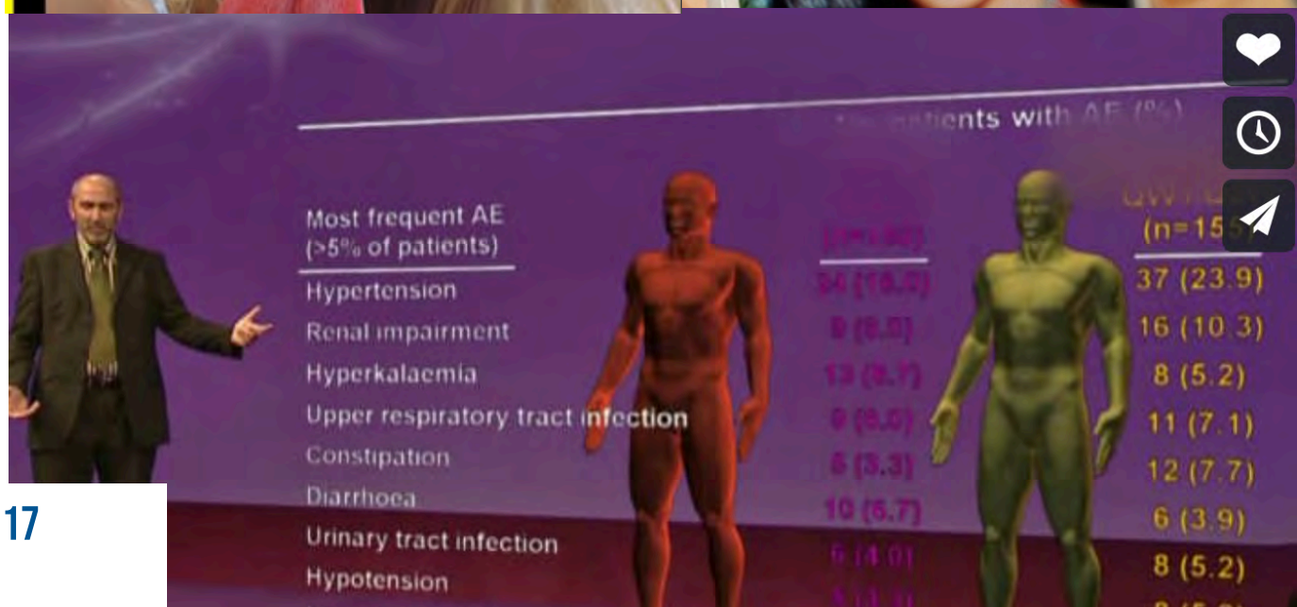
AR is core to the Snapchat experience with cross-platform distribution on iOS and Android. The Lens Studio is the most active independent community of Snapchat developers. Create your own “Snapchat fun game” to entertain attendees.
To connect with the Lens Studio click the link below.
https://lensstudio.snapchat.com





INSPIRING IDEAS | LARGE SCREENS.

AR can also be delivered through large screens. For example, in this video, the CEO is speaking as if he is inside the 3D presentation.
Click the link below to watch the video.
Conference presentation



USING AUGMENTED REALITY FOR DATA ANALYSIS

AR can gather valuable data to analyse and manage the performance of events and marketing campaigns which can maximise the return on investment (ROI).

The personalised app can provide accurate "control panels" to reach a high-level of statistics which can monitor the entire activity of the user, from the moment the application is downloaded, until the user' exits or uninstalls the application.

AUGMENTED REALITY DATA

- ✓ NUMBER OF DOWNLOADS
- ✓ NATIONALITY OF USERS;
- ✓ AVERAGE TIME OF USE OF THE APPLICATION;
- ✓ USERS INSTALLATION;
- ✓ TECHNICAL PROBLEMS;
- ✓ USER INTERNET PROVIDER;
- ✓ THE EXACT NUMBER OF EXPERIENCES DISPLAYED;

HOW TO DESIGN AN AR EXPERIENCE

Augmented Reality allows entwining contents in a digital storytelling format that gives a new way to expand the shared experience, and to truly connect people at an emotional level.

Digital storytelling is a new "media" that stems from the traditional mythological narrative structure and uses digital content to deliver the narrative. In digital storytelling, the content is designed from the "user-experience" perspective. (the person using the AR application).

The design of the "user-experience" starts by considering opportunities and limits offered by the technical medium such as the platform, the type of application, the environment.

The team then focus on the "why" of using AR: its purpose, its advantages, and its disadvantages.

The last step is the digital narrative and the production of digital content.

The advantage of investing in a well-designed digital content is that it can be re-edited for multiple purposes and channels. For small projects, the best option is to use open platforms.

In more complex projects, it is better to follow digital storytelling techniques to ensure that good quality content is consistent across all devices.

For those who want to know more about this topic, we recommend reading "Digital Storytelling fourth edition: A creator's guide to interactive entertainment" written by Carolyn Handler Miller.

CHOOSING THE RIGHT PROVIDER

A lot of companies are entering the industry, which brings more challenges when choosing the right providers.

There are also plenty of poor applications that use AR more as a gimmick than an added value experience, which has the adverse effect of switching people off entirely.
Choosing the right provider is, therefore, crucial to avoid the classic sentence "I tried AR, but it didn't work".

Here are some tips to help you:

- ✓ If you are unfamiliar with the technology download and try a lot of AR apps, the more you utilise AR, the more you learn.
- ✓ Select a company that develops AR apps in-house and speak directly with the developer to avoid pitfalls and unwanted misunderstanding.
- ✓ AR is a scalable technology; you can start with a small project, and once you are confident you can venture into more complex storytelling AR experiences.
- ✓ Don't be afraid to ask questions and look at the portfolio and past experiences. It will give you an idea of the level of expertise and creative style.
- ✓ If unsure how to use AR in your event, think of which information can be better communicated using animated graphics, 3D, images, sounds or videos.
- ✓ Carefully think of the type of experience you want to deliver before choosing the provider. Is it site-specific? Will you deliver the experience on-site or remotely? Do you need to enrich a presentation ? Do you need to produce new content or just re-editing old ones?
- ✓ The production of an AR App requires two months at least.
- ✓ Ask the provider to support your attendees throughout the entire experience.
- ✓ Verify if anything is preventing the "marker" from being readable.
- ✓ Explain the technology to your attendees and set a "help desk" for the less "tech-savvy", but also, excite them about the new experience.
- ✓ Ultimately, check the speed and how robust is the Wi-Fi of the Venue before deciding the type of app.
- ✓ If it is the first time you are venturing in the world of Augmented Reality, consider hiring a Digital Event Strategist for your peace of mind.

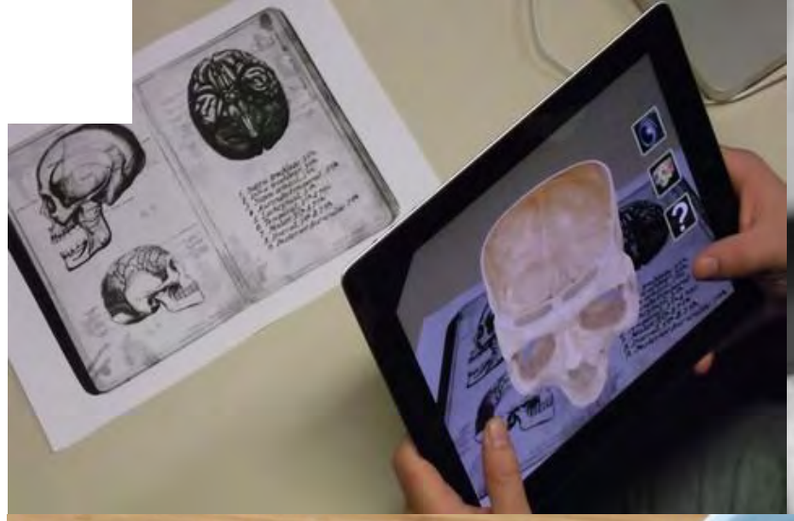
HOW MUCH CAN IT COST TO DEVELOP AN AUGMENTED REALITY EXPERIENCE?

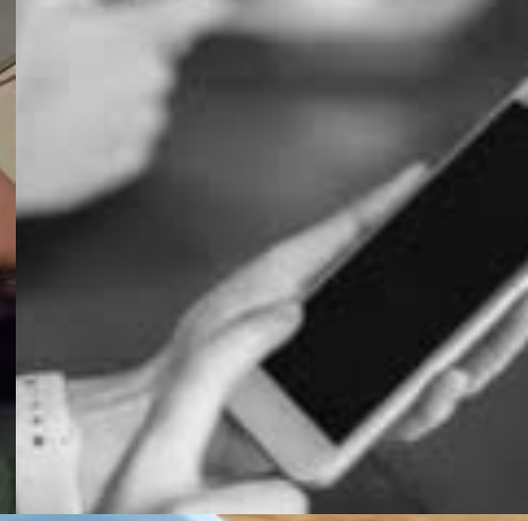
The cost of producing an AR experience depends on the customer's needs and the complexity of the project.

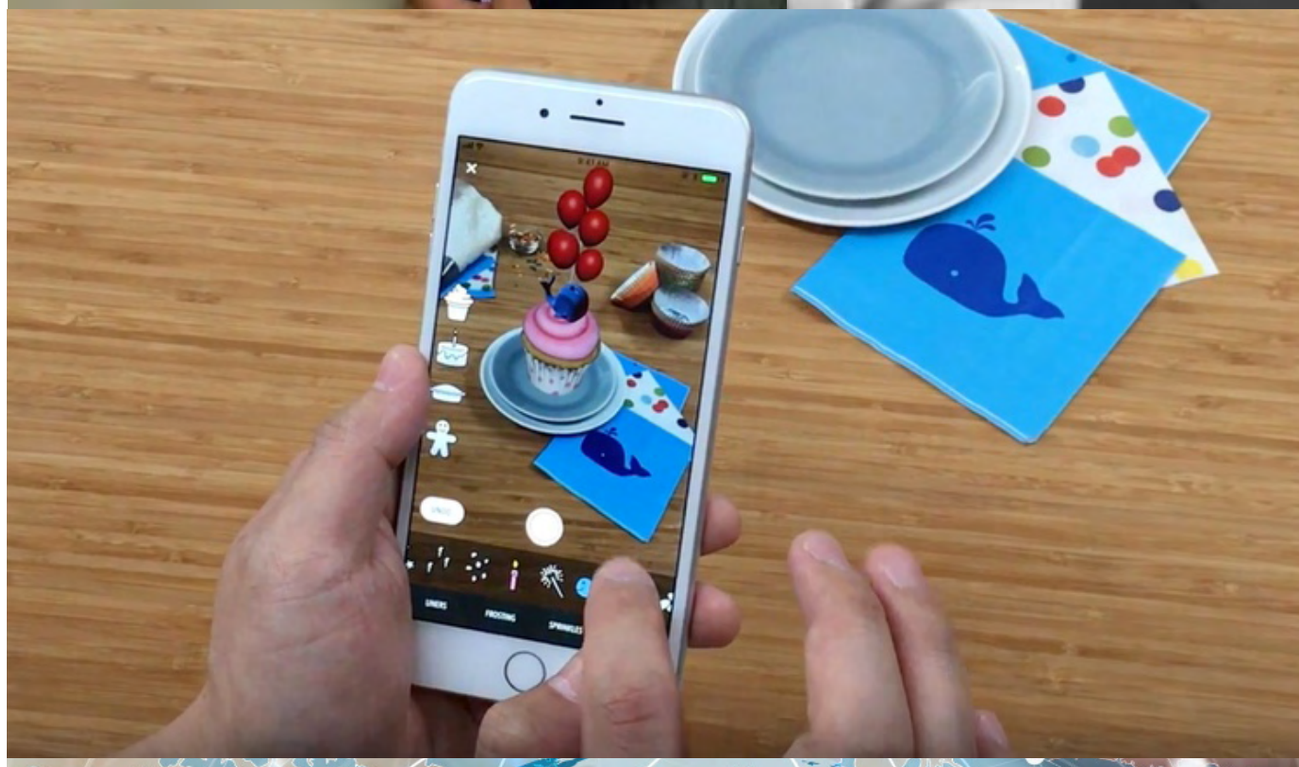
The most affordable option is to adapt the visual content that has been already produced and use an open platform. The second option is to develop a branded platform that can deliver the breadth and depths of content that you want to display across devices and distribution channels.

This option allows brands to create a custom-tailored solution that can be scalable and robust, and that can genuinely add value to end-users.
The cost for a **branded** platform might range **$15,000 up to $50.000, depending on the platform and the production of the content.**

Alternatively, if the organisation is looking for a bite-size moment of surprise and delight, **there are open platforms that enable a good AR experience at affordable prices.**
To keep costs down, the developers create a "Library" enabling multiple users to access the same platform.
Costs can vary from $150 for simple digital content up to a range between $2.000 to $4.000 to produce beautiful small projects that can entertain, inform or educate.







CONCLUSIONS

The purpose of this eBook is to provide some basic knowledge about the Augmented Reality technology delivered through smartphones and tablets.

Here's a brief summary of the pros and cons of using AR, but for more information, don't hesitate to get in touch with us.
We will be happy to help you in deciding if Augmented Reality is the right application for your audience and how to maximise the return on investment.

PROS

- ✓ Easy to use with all mobile devices.
- ✓ It's scalable. Costs can vary according to the complexity of the content and the type of experience sought.
- ✓ It's a social technology in its essence. It enables users to interact with the digital world while maintaining their human way of communicating in the "normal world".
- ✓ It can reach people from different cultures, languages, and nationalities, anywhere and at any time.
- ✓ The technology touches about every use case and allows high-speed and intuitive access to information.
- ✓ The engaging experience connects sponsors to attendees in a fun and interactive way.
- ✓ It can trigger a sponsor's donation for charities or a good cause.
- ✓ It can be embedded in printed materials, emails, websites, objects sent home to remote attendees, or become a site-specific experience for Venues, Conference Centres, or Trade shows.
- ✓ It can gather valuable data to analyse the performance of events and marketing campaigns.

Caption

CONS

- ✓ The technology changes the space perception around us and allows entwining contents in a digital storytelling format. If the content is not well-designed, the experience may not meet attendees' expectations.
- ✓ In most devices, the application must be downloaded from Apple Store or Google Play, respectively for the IOS & Android systems which could be regarded as a barrier by some attendees.
- ✓ The “marker” must be visible and well-illuminated but not excessively. It should also be clearly outlined and not covered by external elements.
- ✓ When not liaising directly with the developer pitfalls and misunderstandings may lead to a disappointing AR design.
- ✓ If you fail to communicate clear instructions or set-up a "help desk" for the not-so-tech-savvy attendees, the experience may not meet stakeholders expectations.
- ✓ Allow at least two/three months to produce the AR app, and start with a small-scale project. Investing large sums in your first AR project can be overwhelming.

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