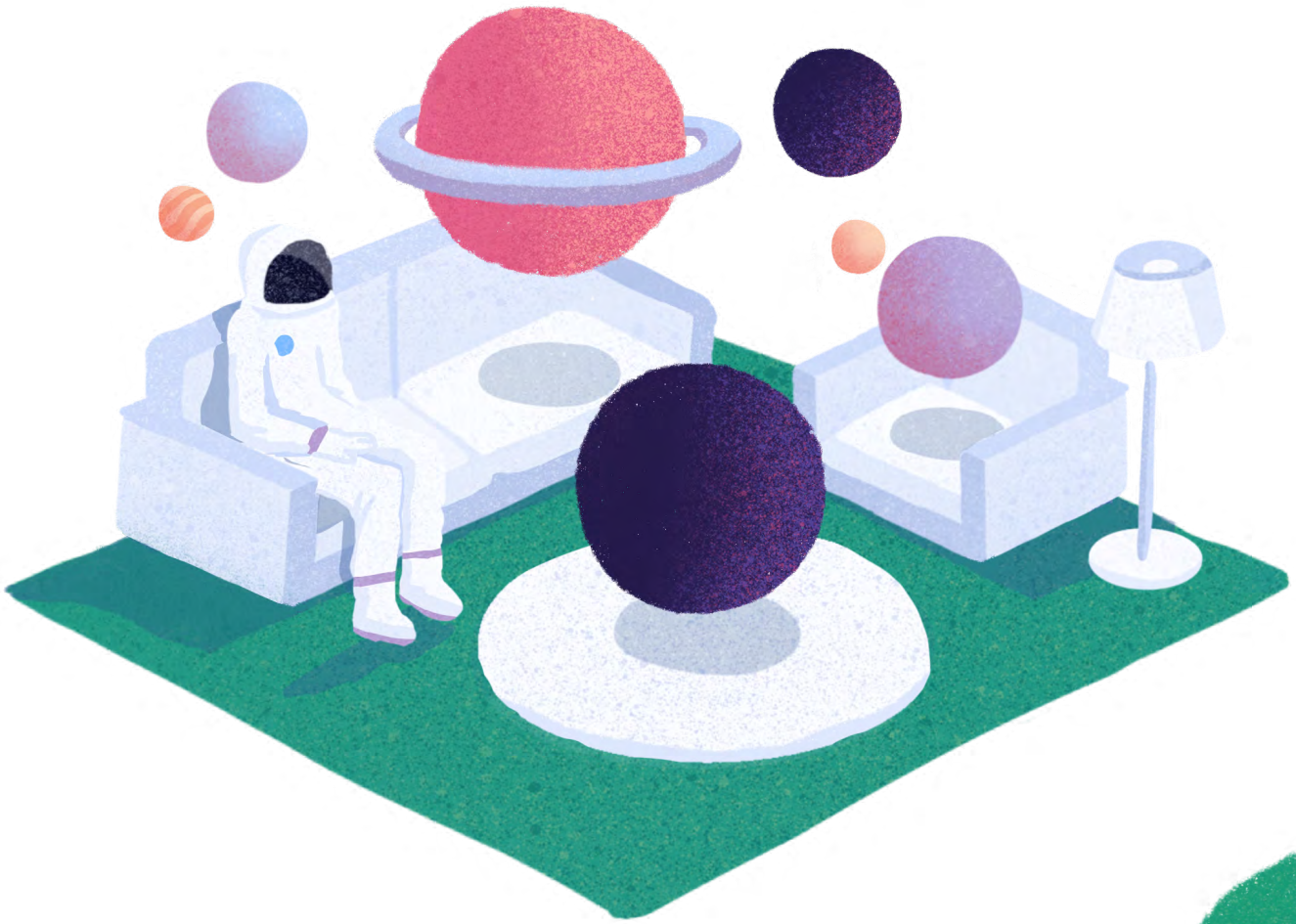
zappar

Guide to WebAR



Zappar is the world's leading augmented reality platform and creative studio for mobile and web apps. Since 2011, Zappar's mission has been to democratise AR and get it into the hands and lives of as many people as possible, unlocking value for businesses and end-users alike. Zappar's award-winning AR platform and creative consultancy, enable brands, businesses and license partners across the world to deploy innovative and market-leading AR solutions across the mobile web and native apps.



Illustrations by Anna Broadhurst
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W: www.annabroadhurst.com/

iOS 14.3 update - Dec 2020

With the introduction of iOS 14.3, Apple devices can now enjoy even more seamless access to AR content deployed across social media apps, including Instagram, Snap, WeChat and more.

Those with iOS devices have been enjoying Zappar WebAR in Safari since iOS 11.3. There has, however, been a gap in support - the technology (called WKWebView) provided by Apple to developers looking to integrate web pages into their own apps, and leveraged by all third-party browsers on their platform, has not thus far supported the web's camera APIs. This means that camera-based web applications, such as augmented reality, or video conferencing, have had to direct users to access content in Safari.

With iOS 14.3, Apple has fixed this issue, finally providing the web's getUserMedia API for use by websites launched in WKWebViews.

This means that Zappar's full suite of WebAR technology is now fully supported through third-party browsers, in addition to links and posts in social media apps like Instagram, Snap and Facebook messenger. Existing content built with our tools and SDKs should work out-of-the-box, with no changes or re-deployments required, including:

1. Our set of Universal AR SDKs, enabling developers to leverage Zappar's computer vision technologies with the content platforms they already know and love, such as ThreeJS, A-Frame and Unity
2. Content authored and published using our fully integrated 3D development environment for AR, ZapWorks Studio
3. Experiences built with Zappar's drag-and-drop tool, Designer

For more information, visit www.zappar.com or http://docs.zap.works

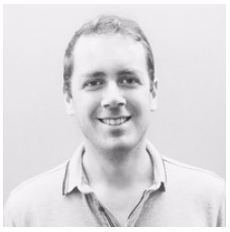
With thanks
To our contributors



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Sky Digital SA

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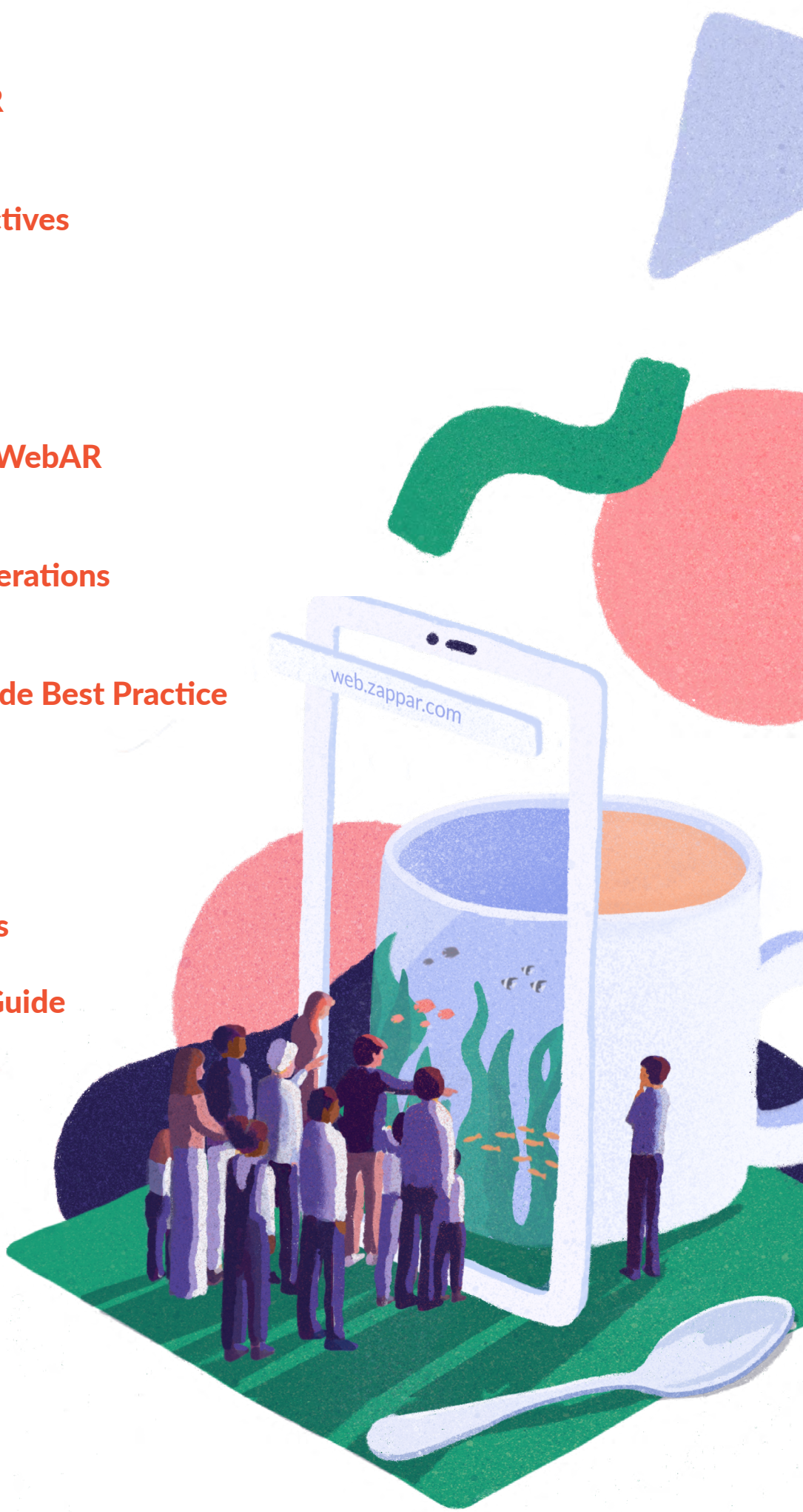
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The introduction of WebAR (augmented reality made accessible through the mobile browser) with Zappar in 2019, was another important milestone for an industry still in its infancy that has begun to find its feet over the last decade as more businesses look to define their camera strategy. As with native apps back in 2010, there's both excitement about the potential but also confusion about the possibilities that WebAR offers. This guide has been written to give brands and agencies practical advice surrounding the benefits and opportunities of WebAR but also highlight the current limitations and pitfalls of the tech in the short term.

At Zappar we've had the privilege to work with hundreds of brands across the world delivering thousands of AR experiences for a multitude of use cases spanning **retail**, **connected packaging**, **learning & development**, entertainment, sports marketing, tours & events, product visualization, remote assistance, new product development, enterprise sales and more. As with all things in life there's no substitute for learning through doing and practical application to understand what works and more importantly, what doesn't. This guide is designed to not only to give you a thorough grounding in the current capabilities of WebAR but to also showcase some of these use cases.

The reach and accessibility that WebAR delivers opens up many new possibilities for brands and businesses who were excited about the notion of AR but had concerns surrounding app downloads. But as with all things technical, the fact that WebAR is possible is not a good enough reason to execute unless the experience delivers a genuine end user benefit. That requires greater thought as AR matures into a facilitating technology as part of an always-on mobile strategy with more practical everyday utility that needs to be robust, scalable and effective.

Our mission has always been to democratise AR for the mass market to deliver value for brands, businesses and end-users alike. WebAR is another step on that journey. We hope this guide gives you a holistic overview of WebAR and provides the insights and tools to help you better execute against your given objectives across your organisation.

What we know from experience is that the AR landscape, especially as it pertains to WebAR, will continue to evolve and improve at pace. The current capabilities and case studies already show the effectiveness of this new canvas to drive engagement, user interaction, sales success and better analytics. For all the talk of future technologies and possibilities, the opportunity exists now through WebAR if executed properly.

Caspar Thykier, Co-Founder and CEO at Zappar

1 What is WebAR?

Simply, **WebAR** refers to augmented reality that can be accessed from a web browser, rather than a native app, enabling a much more seamless user journey from scan to experience.

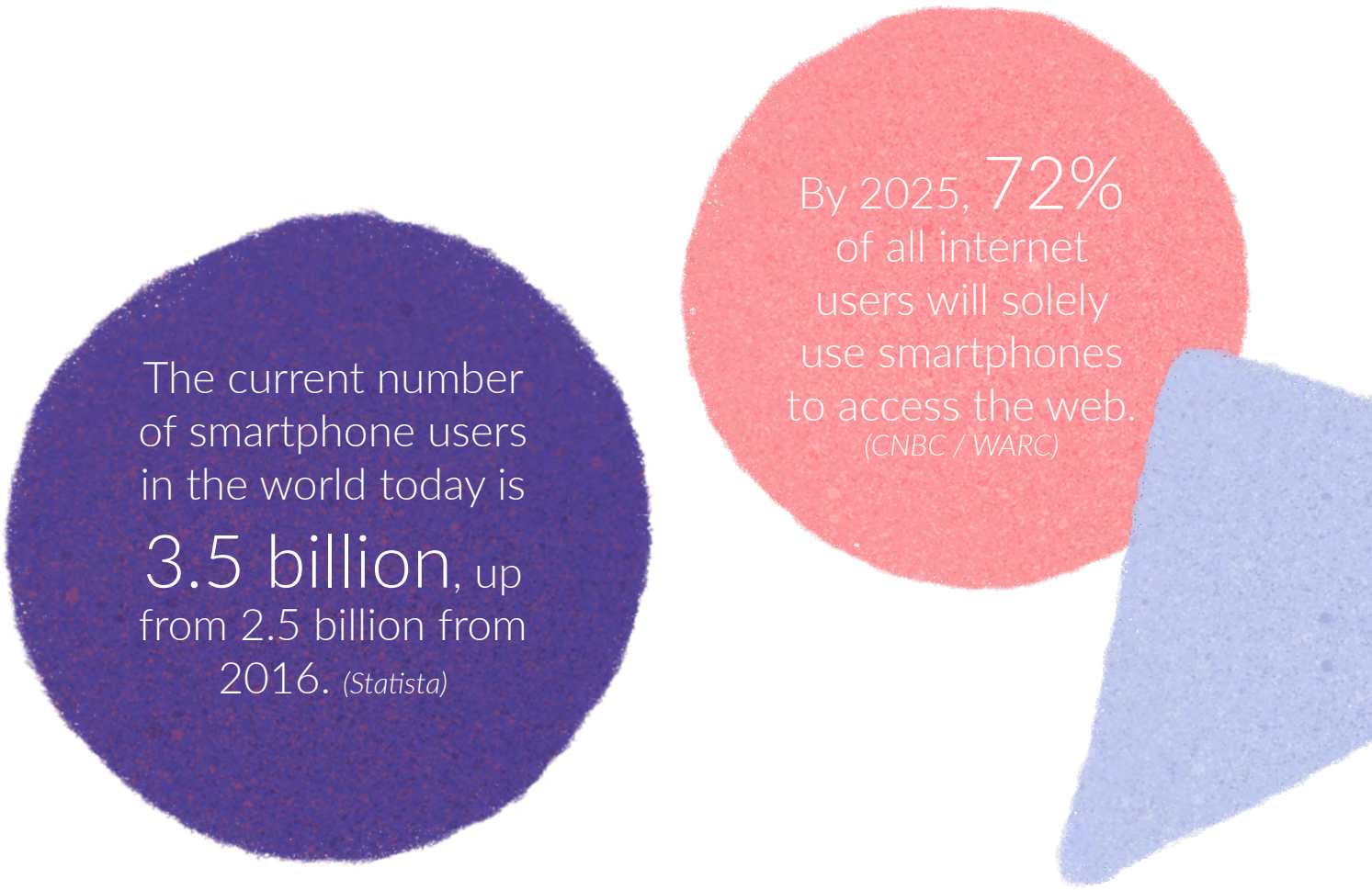
Frictionless AR

As one of the newest developments in augmented reality (AR), WebAR allows immersive content to be delivered straight to the user's smartphone without the need to stop and download an app. Scan a QR code or tap on a web link, and start interacting with the virtual world.

Removing the need to search for and download an app reduces the number of steps a user has to take between awareness and experience. Fundamentally, WebAR means less friction and more effective AR experiences, customers can simply enjoy the in-the-moment experience.

Unmatched Reach

Compared to traditional AR campaigns with native apps or social media platforms, for example, WebAR offers unmatched reach and scale. With 3.5 billion smartphone users worldwide, the distribution opportunity alone has been enough to turn brands' heads as they look to free themselves from apps and platforms and imagine more seamless executions across the mobile web.



June 2019

WebAR beta launches with face @image tracking

September 2019

First WebAR campaign with Puma for their NYC flagship store

November 2019

ZapWorks makes Coca-Cola the first brand to use WebAR in South Africa

March 2020

Instant World Tracking for WebAR enables users to place and anchor objects in the real world

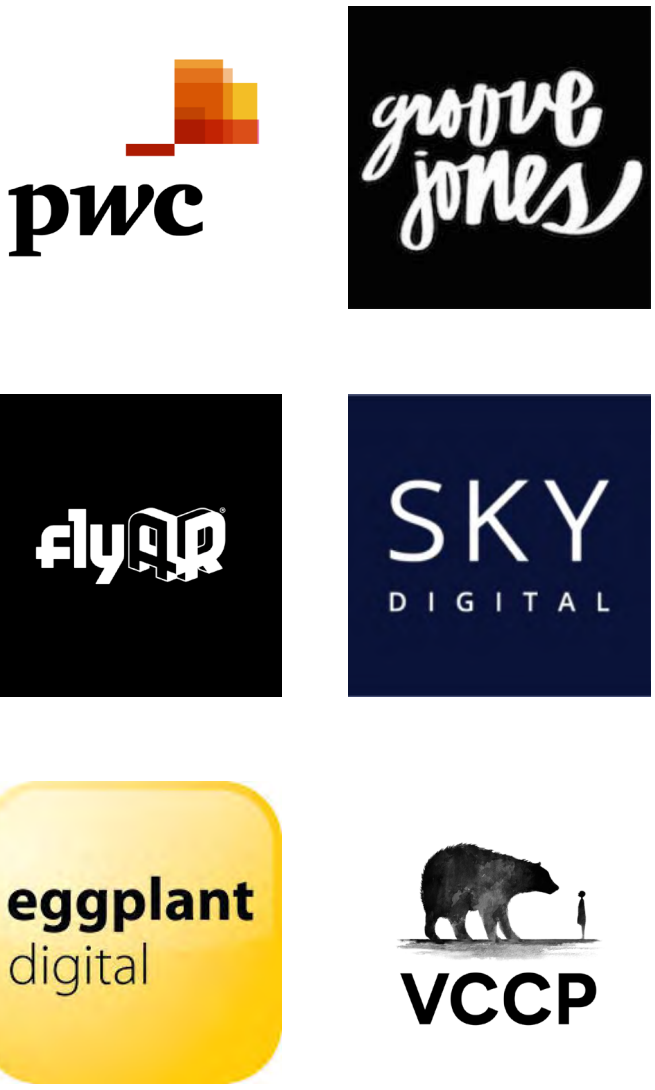
May 2020

Universal AR enables WebAR deplotment for A-frame, three.js, Javascript, Unity
Video recording in WebAR



2 Market Perspectives

We have not been on our WebAR journey alone, here at Zappar we have the pleasure of working with companies from a variety of industries in different parts of the world to bring augmented reality to life through the web browser. Their different market perspectives provide significant insight into a new and growing technology.





How WebAR has impacted the rate at which businesses (and wider society) are adopting AR

WebAR has undoubtedly increased the adoption of augmented reality. For any technology to be widely adopted, it needs to be frictionless. Prior to WebAR, if users wanted to experience augmented reality on their smartphone, they needed to install an application. With users already drowning in apps, this is an immediate disincentive.

In an age where we are trying to reduce the number of clicks on a website to motivate users to take an action, why would we expect them to go through the far lengthier process of finding and installing a dedicated mobile application?

How has it affected the use of AR

We saw a spike in interest once clients realised that an app was no longer a prerequisite to experiencing augmented reality. Most people are wired to associate any functionality beyond browsing the web with a mobile app. For them to see the richness of an AR experience made possible through their mobile web browser is an eye-opening and awe-inspiring experience.

What opportunities and use cases are there for WebAR in the next 12 months

WebAR has been used a lot as a sales and marketing tool but I see a lot of potential in business to enhance communications, data visualisation, and ultimately corporate reporting. We explored only the surface of this in our **Seeing is Believing report** which uses WebAR to deliver engaging messages to readers and helps them visualise the global economic impact of both VR and AR technologies as a whole. I look forward to taking WebAR even further in the future!

Jeremy Dalton
PwC's Head of VR/AR



A little bit about PwC

Technology is evolving at breakneck speed and is already defining what's next — for your company, competitors, and industry. The Essential Eight technologies—artificial intelligence, augmented reality, blockchain, drones, IoT, robotics, virtual reality, and 3-D printing—matter most for business today. The convergence of these individual technologies is unlocking the next wave of innovation, yielding new business solutions that are greater than the sum of their parts. We help businesses in every sector leverage this convergence of emerging technologies to multiply their capacity to work better, smarter and more seamlessly through technology. PwC's professional services cover such areas as virtual reality soft skills training, job simulation training, collaborative augmented reality and remote assist/job aids.

PwC's accounting practice originated in London well over a century ago. As times changed and PwC expanded worldwide, our commitment to clients—like you—never wavered. With us, you're supported by a global network of over 276,000 people in 157 countries with one goal: to help your business thrive. Let's combine your aspirations with our leading capabilities to achieve your goals.



The state of AR in the market and the current use of WebAR

AR has been around for a long time. Nearly a decade ago I helped LEGO with an AR production when they were launching the Ninjago product line. It was an EXE application running on a PC connected to a web camera. Back then it was able to track your face and turn you into a Ninjago minifiger. However, performance was terrible as it was getting 5-10 frames per second. It looked like one of those stop motion animations. Revolutionary at the time but looks ridiculous compared to what we can do today.

With WebAR, we are able to seamlessly connect a user to a robust AR experience today without the need of an App. Delivering a robust experience via a web browser removes any barriers. When we tell our clients about what can be done without an App they are usually blown away.

Current use cases

We work with big brands and their agencies to create AR experiences for marketing campaigns. From product visualization at the store shelf to creating socially shareable moments. The possibilities are endless.

Storytelling - The experience we created for Modelo is a great example of a surprise and delight moment. People were so blown away by what they saw, it actually became a destination for people to visit in New York and Miami during the Halloween season. **Case Study >>**

Sweepstakes Scavenger Hunt - We created a scavenger hunt game for Corona for the chance to win a pair of custom-made sneakers. People stepped into an AR Portal that allowed them to walk out onto the iconic Corona beach and if you found the box of sneakers, you could enter a sweepstakes to win them. **Case Study >>**

Game for Fan Engagement and Social Good – We've been using AR with the Dallas Mavericks NBA team for multiple seasons. This year we created a mural that people could scan and activate a 1 on 1 game with Kristaps Porzingis. Fans got the opportunity to shoot on a virtual basketball hoop, all while trying to avoid being blocked by Porzingis. $500 was donated for each blocked shot to the Mavs Foundation, which was then to be distributed to local organizations to help stop hunger in North Texas. **Case Study >>**

Product Visualization with Interactive Hot Spots – We are doing numerous AR product visualization programs. AR allows you to not only display what is in a box, but to also display what is inside the product. Being able to show animations and give the user the ability to tap and activate additional content is really compelling. For Callaway we did this for their Mavrik golf club line to show how AI was used to create their new Drivers and Irons. The experience is running in 1,200 retail stores right now. Case Study >>

Watch-outs for WebAR

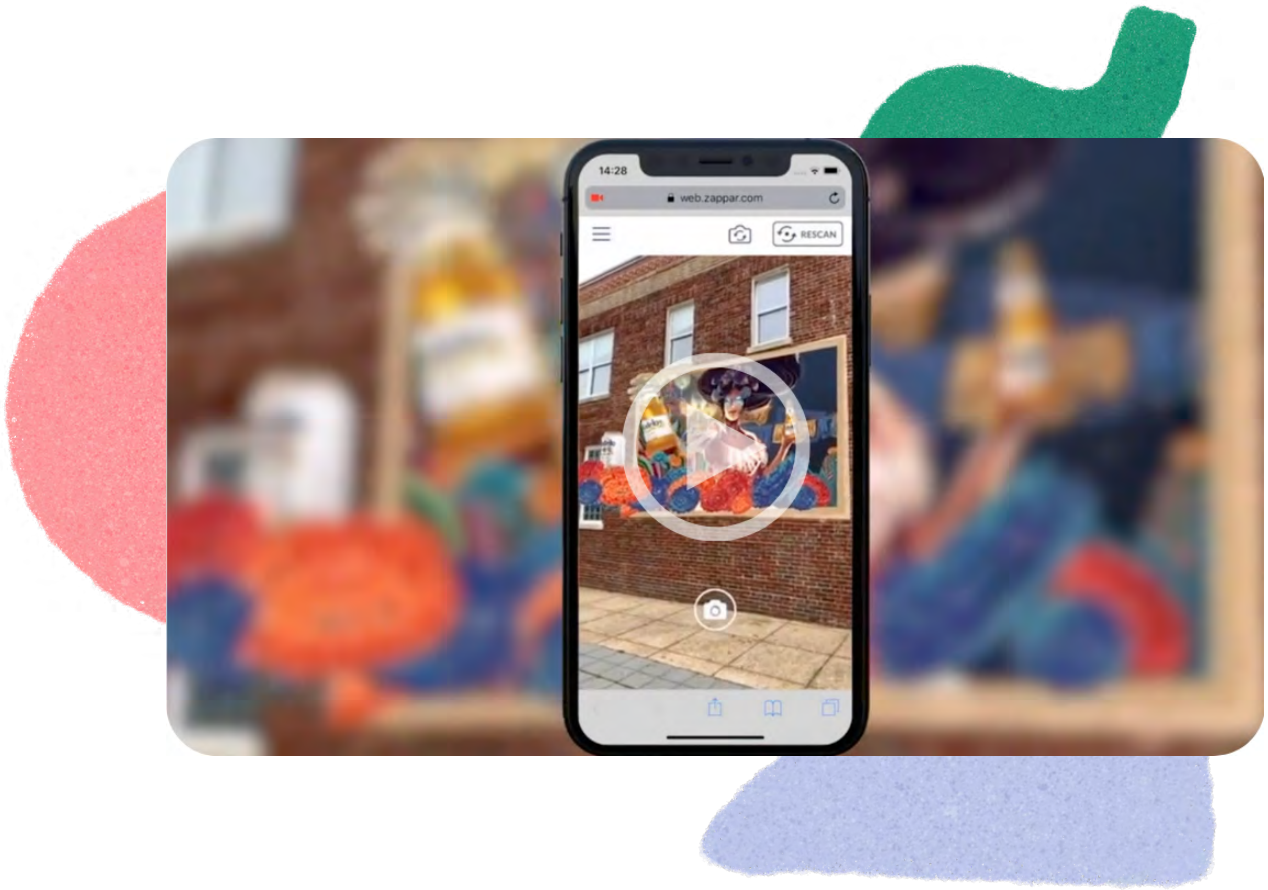
We love that WebAR allows us to easily deploy a program via any device – iOS or Android with one single build. We want to efficiently deliver a robust experience. But we are always conscious of file size. So we always ask our client's about where the user will be engaging with the content. If it is in a store, there may be a poor internet connection, so file size is important. We tend to focus on trying to keep our content payload under 10MBs to ensure a fast download and display.

We do a lot of programs that leverage image recognition, especially outdoors for large murals and OOH displays. So we review where the ad units are being placed to ensure the camera can view the entire image. We are also conscious about the lighting conditions as that will affect the experience.

What's next?

Low Touch and No Touch experiences are the new norm. WebAR allows you to engage in an experience without touching it or even being there. With the idea of in person conferences apparently on hold, we see the use of WebAR as a great way for people to engage and interact with a product demo than before. We are implementing tactics that will allow a presenter to give their audience a way to interact with a product without being there in person. On a video conference call, you can see people react immediately when they activate your content themselves. It is really rewarding.

Dan Ferguson
Co-founder / EVP of Digital and XR Strategy at Groove Jones



A little bit about Groove Jones

Groove Jones is an award-winning creative and technology studio that specializes in developing immersive Augmented Reality applications for brands. The team has a proven track record of delivering amazing digital experiences for a client roster that includes AT&T, Comcast, FX, Ford, Intel, Lexus, MasterCard, McDonald's, Samsung, and Toyota.



WebAR In China. Is there interest?

The appeal of WebAR in China may come from the ease of just scanning a QR code – coupled with the omnipresence of WeChat and using that as a platform for launching WebAR pages. Opening up a website while you shop and finding new experiences that way is much easier than downloading an app.

What WebAR is happening in China?

AR use in China has largely focused on retail, entertainment, and tourism. When most people think of AR, they probably think of games like Pokemon GO. In China, consumer giants Tencent and Alibaba launched 'Red Packet' games through their platforms where people could scan physical objects with their cameras to find digital financial prizes.

Since then, AR has been used to help market brands and integrate new experiences into consumers' experiences. Many retail outlets, for example, created games that encouraged consumers to engage with their brand through offers of rewards. Shoppers could 'try on' clothes, influencers could superimpose their faces into new destinations.

For tourism, Chinese tourist sites have been using AR to place old buildings or relics into the users' viewpoints, recreating history in front of their eyes. And while zoos and other tourist sites see a lot of VR additions, AR has crept in as well, with some sites allowing children to augment their experiences with bats, for instance, showing them how the animals 'see' with sound.

How Is Tech reacting to WebAR needs in China?

One of the benefits of using an app-based AR platform is the ability to create a higher fidelity, more interactive environment for consumers. And while WebAR in China has capitalised on brief, more limited, one-time marketing campaigns or experiences, the constant development of the technology sees WebAR becoming more and more sophisticated.

And, with the advent of 5G, web AR in China could boom even further. Many of the limitations surrounding the use of WebAR – limited depth perception, lag time, environment analysis – are being solved as we speak, and with the ability to use 5G network speeds (instead of potentially unreliable wifi), could drastically improve the experience on users' phones.

Is there an obvious next step?

As the technology improves, the ability for brands to use WeChat as the platform for WebAR increases as well. In a country where nearly everything is done via one app – WeChat – being able to keep consumers within that environment and also experiencing a new AR could be ground breaking. All the factors for quick adoption and accelerated development are ripe in China, so watch this space!

Alex Dodkin
Founder / Digital Strategy
Eggplant Digital

A little bit about Eggplant Digital

Eggplant Digital create mobile and web strategies to accelerate growth in China. With China's digital landscape shifting faster than any other market and leading the way in many social, e-commerce and mobile experiences. We make it our business to understand the changes and embrace them for our customers. Find out more - https://eggplantdigital.cn/could-webar-be-a-new-tool-for-you-in-china/

Creative agency perspective and the opportunities of WebAR

At VCCP CX we specialise in creating dynamic design-led experiences, that allow brands to reach their customer audiences in fun and engaging ways. Six months ago VCCP CX launched the easyJet Randomiser AR experience on Instagram, allowing users to get personalised holiday recommendations, and the ability to share them with their friends. This moved from concept to deployment in two weeks, and has been a big success, with 50,000 captures by the end of the first week.

Jumping to today, with the universe in lockdown, digital communication channels have become key and the adoption of emerging technologies such as WebAR have accelerated alongside this. Working in the mobile browser, WebAR allows us to create experiences without the friction of downloading an app, enabling spontaneous interaction. Whether you're outdoors, in a store, eating in your favourite restaurant - WebAR allows endless opportunities to provide dynamic content and real-time on the go experiences - wayfinding in the park, enhancing retail stands, or providing reviews on a menu. Users decide when, where, and how they use these experiences, and it's the brands challenge to create content, creative, and functionality that their customers will love. Traditionally, the social networks and mobile apps have been the gatekeepers of creating AR experiences, with complex tools and technical knowledge often required to launch them.

WebAR allows creative agencies and brands to rapidly develop experiences in days, not months, reacting to real-life events and fine-tuning as we go. Whilst AR is not new, 2020 has already seen an explosion in its use, and in my opinion will mark the beginning of a new era of frictionless, browser based WebAR experiences.

Nathaniel Hulley
Technical Lead
VCCP CX

A little bit about VCCP

Customer experience has become a critical success factor for brands, and VCCP has built a market-leading team of designers and engineers to help our clients meet the high expectations of the modern, connected consumer. VCCP CX combines insight, creativity, and technical expertise to design and build exceptional interactive experiences for famous brands including O2, Domino's, easyJet, The FA and Kia. Find out more - https://www.vccp.com/capabilities/digital



The state of AR in the market and the current use of WebAR

AR experiences are still mainly consumed via mobile application platforms or custom applications. Within marketing and entertainment fields, which hold a significant part of the AR market, the shift to web-based experiences is only a matter of time. In the context of more complex and performance critical experiences (e.g. industrial cases), the shift might not happen as quickly due to the differences in end users and their needs. At the moment we are working on a few AR-experiences that are being created for mainly WebAR-use.

Current use cases

The many sides of marketing. Traditional print and packaging of course, but we've also seen AR (not web-specifically) used in live television. Events and their related material are prime candidates for web-based experiences as the target audience rarely has the drive to download and install apps. Public services (e.g. cities delivering rich content to citizens) is another context where ease of use is essential.

Watch-outs for WebAR

WebAR is another platform and properly supporting it should not be considered an easy task. Browsers have varying limitations and features and they might behave differently on different devices. In addition to the great potential, WebAR comes with an increased need to do testing.

The mobile data market in Finland supports online services (including AR) very nicely as almost all plans include unlimited data and LTE network reach is very good. With 5G networks growing at a steady pace, download size limits are diminishing as well. Nevertheless, optimizing content and delivery methods will always remain important for user and customer satisfaction.

What's next?

Shifting away from the need to install apps will help make AR more common and known in many parts of the market. Web-based AR is also easier to integrate and combine with other existing media and services. These are clear advantages when pitching new AR projects to potential clients. All of

Eero Salminen,
Chief Technology Officer,
flyAR



A little bit about flyAR

FlyAR is a small Helsinki-based creative digital studio specializing in interactive Augmented Reality productions for a broad spectrum of clients. The flyAR team shares over 15 years of experience around XR technologies. flyAR's augmentations range from simple image-based palm-scale AR-experiences to more complex and experimental building-scale (and soon city-scale!) wonders. Check out some selected projects via their **YouTube-channel >>**.



The state of AR in the market and the current use of WebAR

The road to establish a broader acceptance and use of AR technologies in South Africa and Africa since the original launch in 2014 has been extremely exciting. A major part in making this successful has been the ongoing education of both companies and brands on the many use cases and applications AR could be used for and how this could add significant benefit in various ways to their brand message and promotional activities.

We have seen a gradual increase in activities where AR has been used in extremely inventive ways, some of these include industries like Automotive, Manufacturing, Liquor, Pharmaceutical and FMCG related products. The introduction of WebAR also allowed us to alleviate the reluctance of consumers and brands alike to make use of AR executions, the fact that no app downloads are required and that AR campaigns could now be extended to the online space has been of huge interest and has been well received by all.

Current use cases

The use cases for AR and WebAR are endless and we can see it playing an important role for brands in showcasing products and services in ways never seen before. This includes campaigns that are using WebAR for activities like, Connected product packaging, Events and trade shows, In-Store activations, Point-of Sale enhancement an in increasing their own application downloads as part of the AR call-to-Action.

We have also recently launched two new products on behalf of FMCG companies that incorporated WebAR onto their packaging and other activities and have seen great results in terms of consumer participation and engagement. This shows the consumer interest in both adopting WebAR as a media channel and it also allowed us to show improved ROI for our clients and their brands.

Watch-outs for WebAR

The key watch-outs for our market would be to cater for all the various market segments of which some of these might still be using feature phones and as everywhere else worldwide data costs and connectivity is always a consideration. The device usage in our markets is mainly Android and to a lesser degree iOS devices.

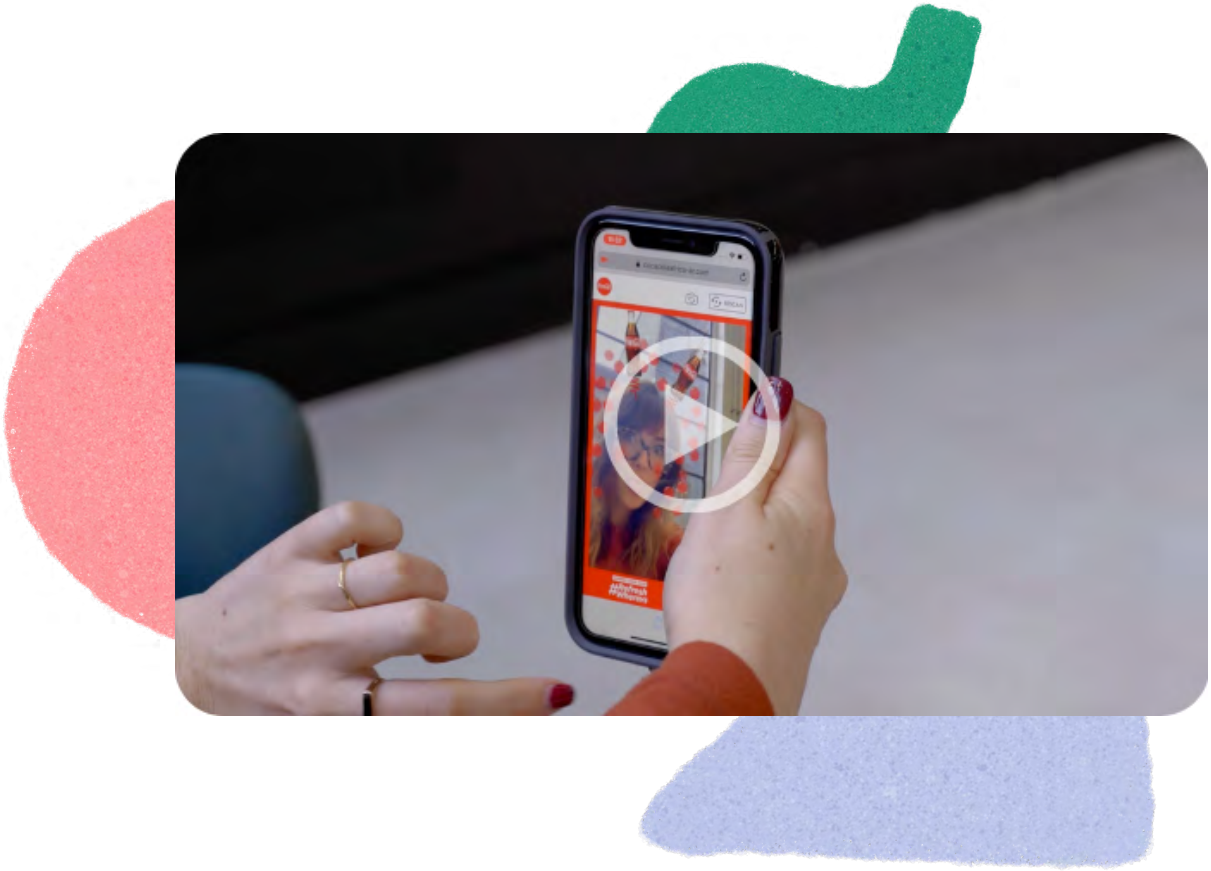
In S.A and Africa it stays a key part of each execution for us to align all campaign mechanics to deliver clear value to brands and infotainment to consumers. We remain true to the fact that all campaigns must have a clear call to action, relevant content and must be used in the correct context. The aforesaid allows us to deliver campaigns where we utilise the proprietary ZapWorks platform to minimise data usage on each campaign by compressing relevant content and decrease data costs to participating consumers.

What's next?

We foresee that the main growth will be for more brand owners to create connected packaging solutions whereby they are enabled to create their own media channels to communicate to consumers and clients. We have also seen an unprecedented increase in the need to communicate, market and engage through the use of Digital channels including WebAR...

I also believe that the capabilities to deliver more in-depth and engaging marketing and communication campaigns through the use of WebAR to mobile devices without the need to scan any type of code will see some great growth area's in the near future. This now allows our clients to create meaningful AR campaigns and enhance traditional online marketing with various AR component to all mobile devices.

Riaan Nel, Director,
Sky Digital SA



A little bit about SKY Digital

SKY Digital has been at the forefront of digital marketing and providing digital and AR solutions in South Africa and Africa for over 14 years. Their industry experience and their in-depth understanding of fundamental marketing principles has secured their place in the new and innovative world of digital marketing. By combining traditional marketing and groundbreaking technologies like AR/WebAR it has allowed them to provide ongoing value to their clients in a variety of different industries and verticals worldwide they connect users to brands through digital innovation and offer their clients a fully fledged service and product package as a digital agency based out of Johannesburg and Cape Town South Africa. Find out more - **https://skydigital.co.za**

3 WebAR vs...

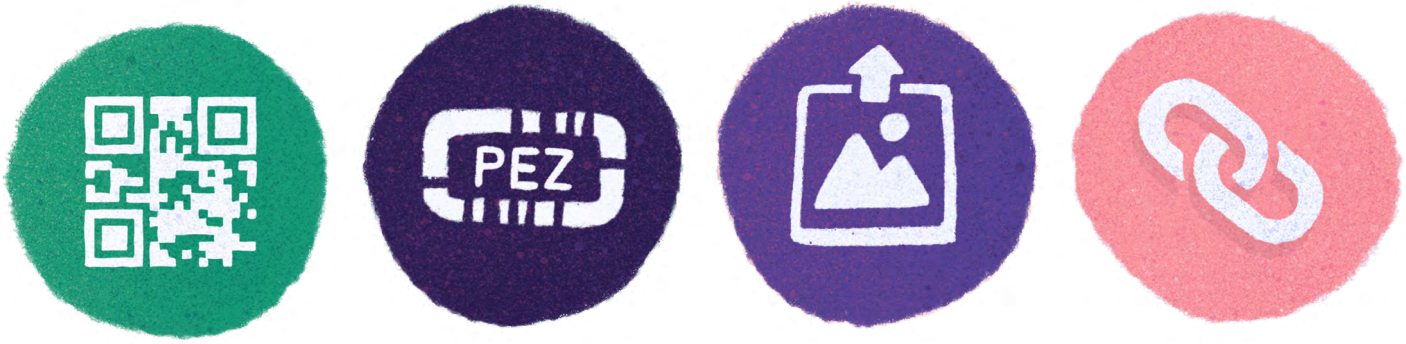
There are now a variety of different ways to distribute your AR experiences each with their own positives and negatives...

	Native Apps	WebAR	Model Viewers	Social Apps
Share as a web link via social media	★★★	★★★	★	★★
Capturing and sharing video	★★★	★★	★	★★★
World Tracking	★★★	★★	★	★★
Capturing and sharing images	★★★	★★★	★	★★★
Image and facial recognition	★★★	★★★	★	★★★
Works across iOS and Android	★★★	★★★	★★★	★★★
Requires an App download	Yes	No	No	Yes
Shareable in private messaging apps	No	Yes	No	Yes
Easy development and deployment	★★★	★★★	★★	★★

4 How to deliver WebAR

Before we get into the specifics of WebAR functionality, it's important to remember that you're always going to need to get the end user to a specific URL. The move from app to WebAR, should, in most cases mean a more frictionless journey for the end user but only if executed right.

WebAR Triggers



QR Codes | Custom Codes | Cloud Image Look Up | Deeplinks

QR Codes

QR codes are already associated with scanning, and on some devices are scannable using the native camera app. However, not all devices support this and therefore for many QR codes have a negative association.



Most devices can scan QR codes via the camera app. Any iPhone or iPad running iOS 11 (released 2017) or later can scan natively via the camera.

However for Android, QR code reading support varies between device and manufacturer. Many devices support QR scanning through the Google Lens feature that can be activated from the native camera app. Otherwise there are a number of well-reviewed apps on Google Play that scan QR codes.

You can also print the URL on the physical material alongside the QR code for those users that may not know how to scan. This will allow them to type in the URL in Safari (on iOS) or Chrome (on Android) to access the experience.



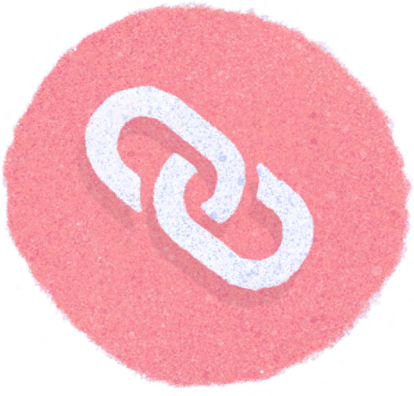
Custom barcodes

Custom barcodes, develop brand association and offer superior scanning performance. For these (barcodes), users must visit a microsite to start scanning.



Cloud image lookup

Cloud image lookup, removes the need to alter printed materials, so it can, for example, support existing inventories of products. The cons of this route are that it requires more server infrastructure, a more intensive setup, and users must visit a microsite or download an app.



Deeplinks

Deeplinks open up amazing possibilities. Essentially web URLs, these can be added to websites as an entry point to experiencing AR - meaning interactive content, such as face-filters, can be near-instantly accessed via social media messages, email newsletters or paid media ad placements.

Other ways you can distribute your URL

Email



AR experiences can be distributed via email as part of a CRM campaign by including the URL as a deeplink. One of the key considerations here is, what will happen to those users who are reading the email on a computer as opposed to a mobile device?

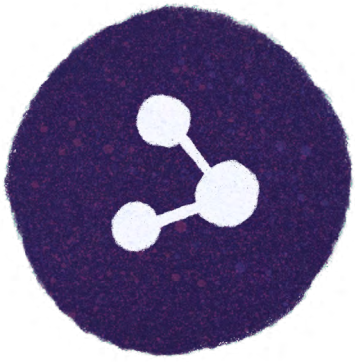
To provide an option to these users, you can distribute a QR code as well as a URL, which will mean if they can't tap on the link to open it, they can scan the QR code using a second device. Understanding your audience and how they interact with you mailouts is crucial here.

From a website



There are similar considerations to be made as with the email option above how do your users typically browse your website? You may need a URL as well as a QR code to account for both mobile and desktop users.

Social media



Posting a link on a Facebook or Instagram page is an increasingly popular way of distribution. iOS provides a number of ways for developers to embed web pages into apps (three specifically). Currently, only one of these allows for access to the camera, so WebAR won't work on some internal browsers of some apps - we're hoping this bug is addressed with future versions of iOS but for now, it's a key consideration. In these cases, we have an option to allow the user to copy the URL (see image above).

Currently, WebAR works in Safari on iOS and Chrome on Android. There are some internal app browsers where it works perfectly (e.g. Gmail app on iOS, Slack app on iOS). If in doubt, always test.

5 Product Considerations

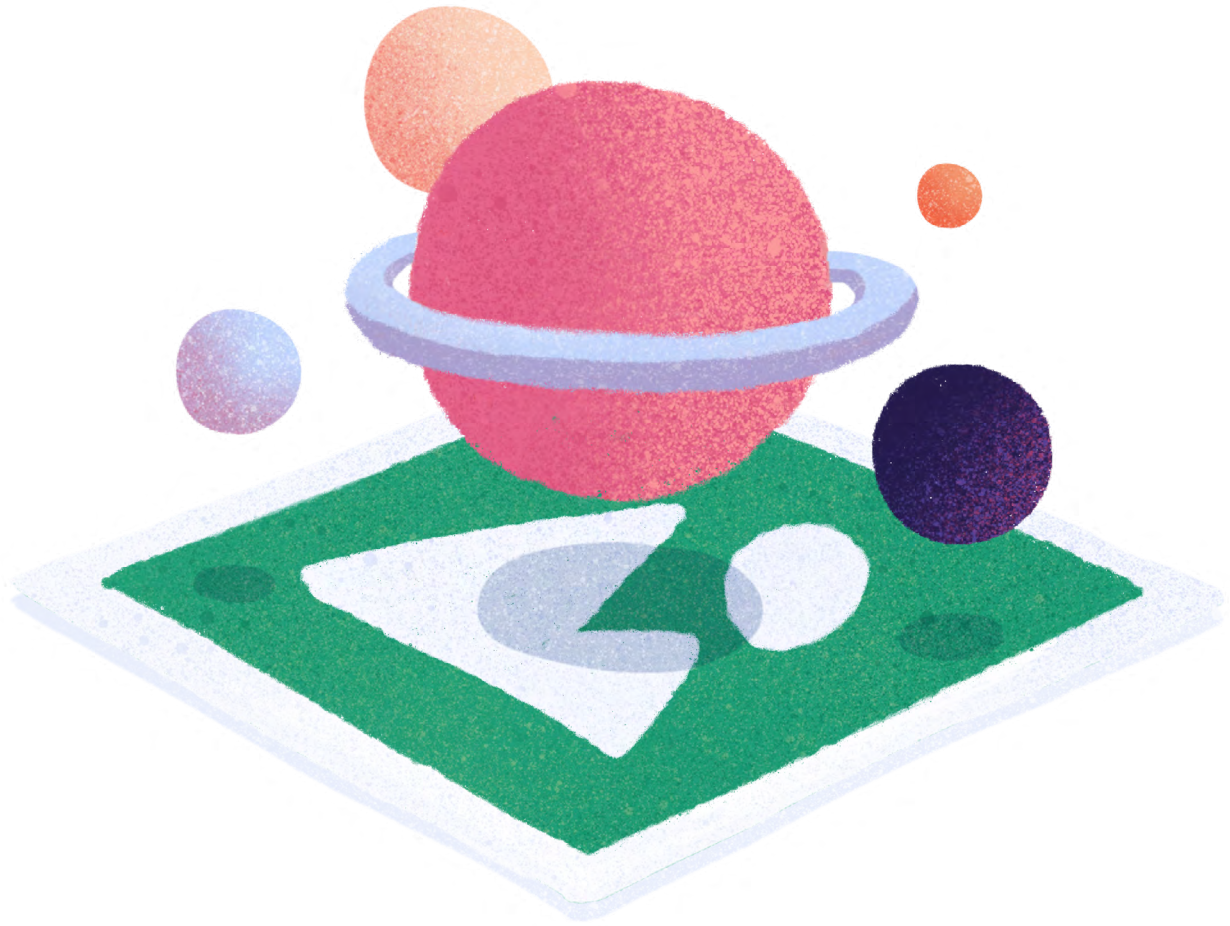
Zappar's learnings for the best UX experience...

Like with any new technology over the past year of creating WebAR experiences we have come across areas where there are gaps in functionality (primarily due to browser constraints) and we have had to implement a few graceful fallbacks to improve the user experience. In this section we will share our learnings for creating the best user experience possible.

When operating in a native browser environment, you're always going to need to consider some of the quirks that come with the 'one-size-fits-all' nature of browsers. The nature of applications is to allow flexibility and to allow developers to be expressive and optimise UX for specific functions. In contrast, browsers are a one-size-fits-all approach.

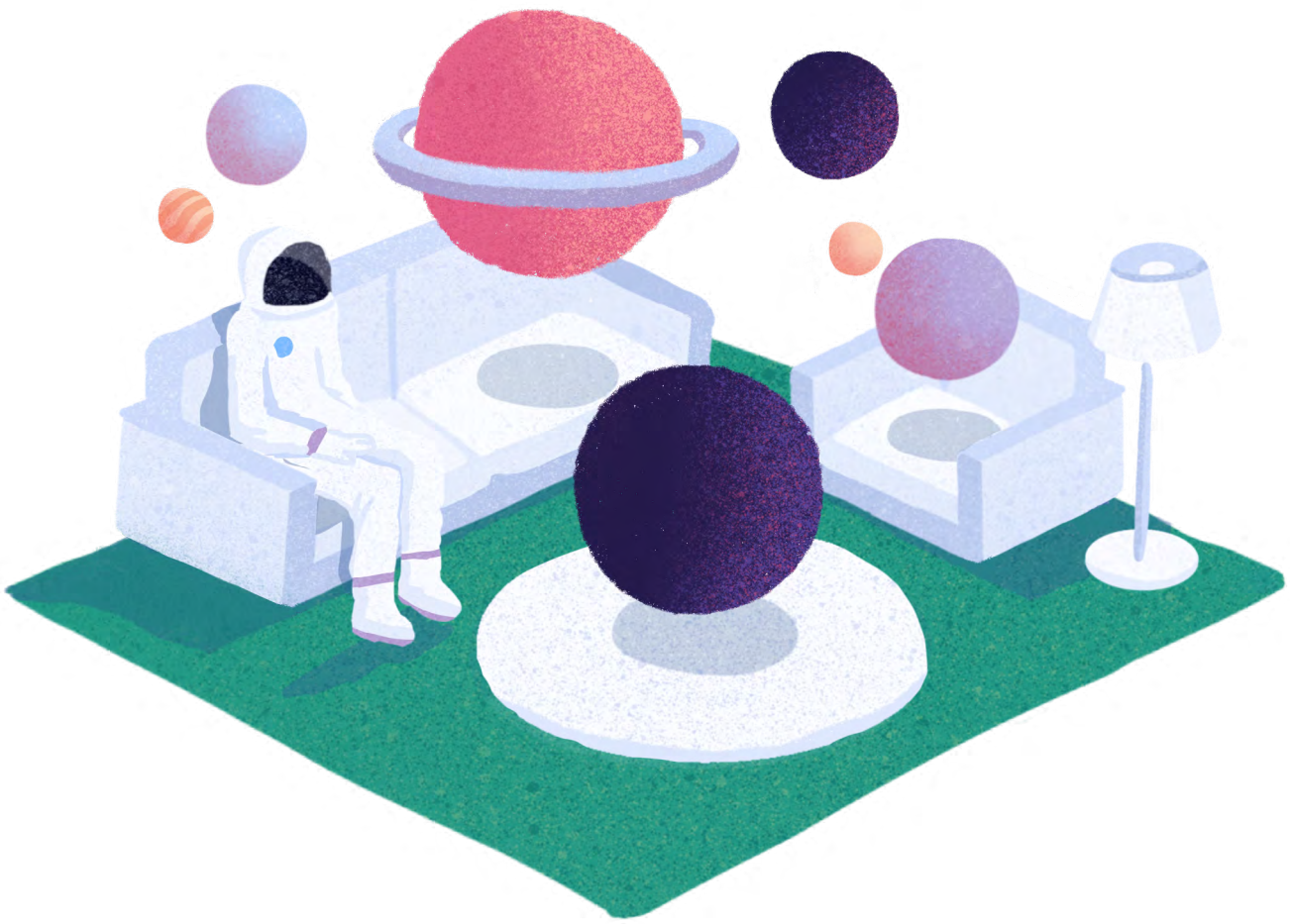
Most features of our platform are supported in WebAR, and whilst there are a few gaps in functionality, the likes of image and face tracking, full adaptive quality streaming video (with alpha channel support), 3D models, dynamic lighting, code scanning, scripting and analytics are all present and correct. Plus, users don't need any special web browsers; the version of Safari or Chrome that came with their device should work.

We have collated some of the general 'watch-outs' and caveats to consider when utilising WebAR to serve content.



Instant Tracking

Our app-based World Tracking solution allows users to place and anchor objects to surfaces in their physical environment. With World Tracking, we can set the size of the digital model to a predetermined scale. i.e. if you wanted to visualise a car in the camera view, you would be able to ensure that when it appears, it would be the correct size.

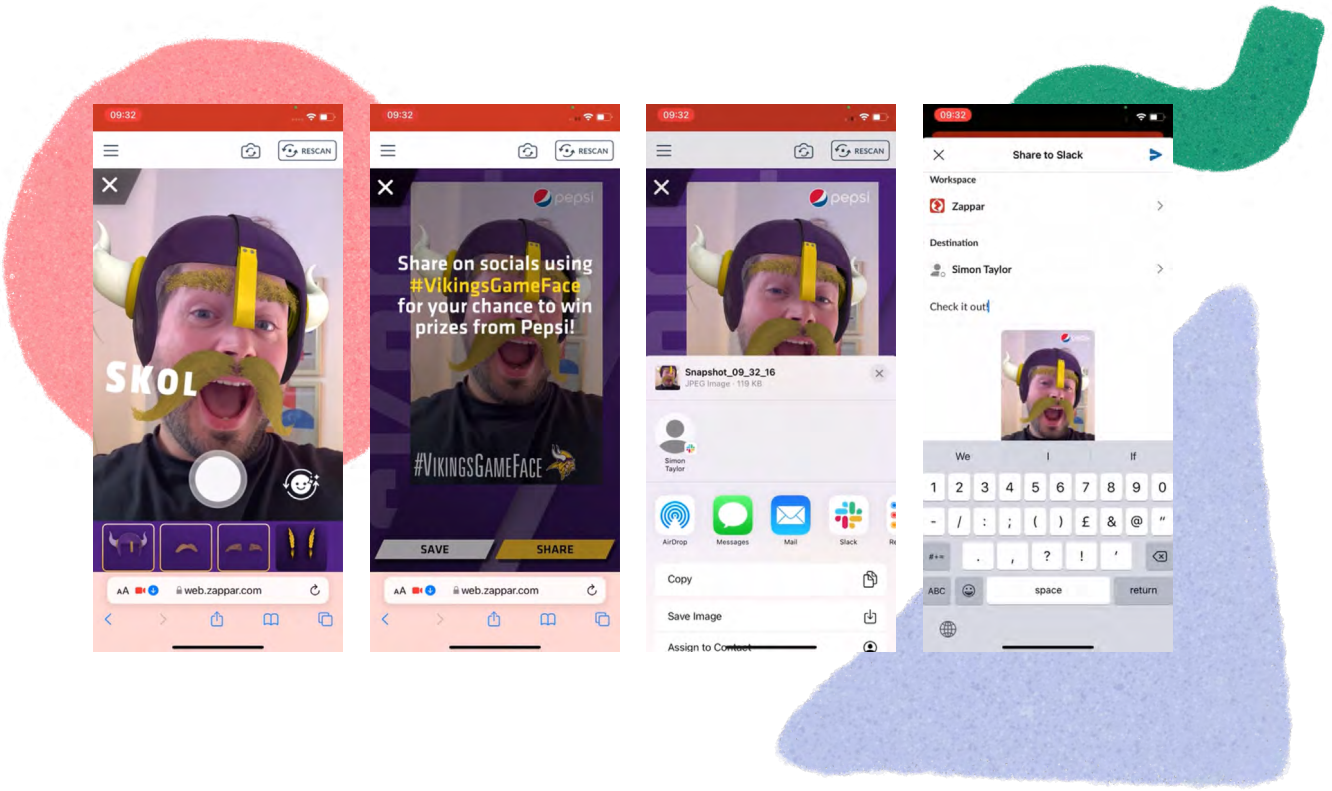


However, with WebAR, one-to-one scale isn't currently possible, as neither AR Kit or ARCore are currently supported in the browser to deliver world tracking. As an alternative, we have what's called Instant Tracking. With Instant Tracking, users can place objects on a horizontal surface in the camera view without having to do a scan of the environment first, also making it more performant on a larger number of devices in the browser.

File Saving/Sharing

On iOS

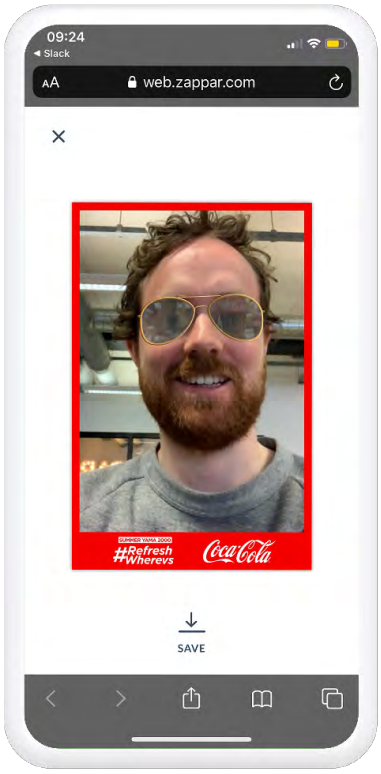
Thanks to Apple's iOS 15 update it's now possible for users to share images directly from within Safari to their installed social media and messaging app



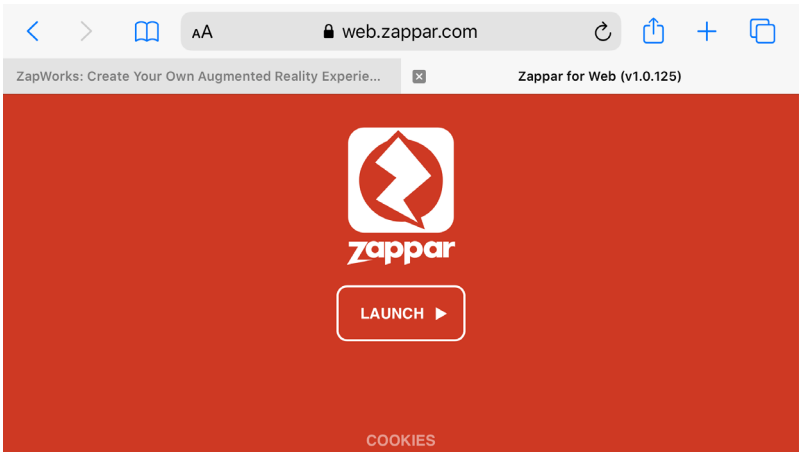
On Android

File saving/sharing is more flexible on Android and will be more similar to the app-based user journey.

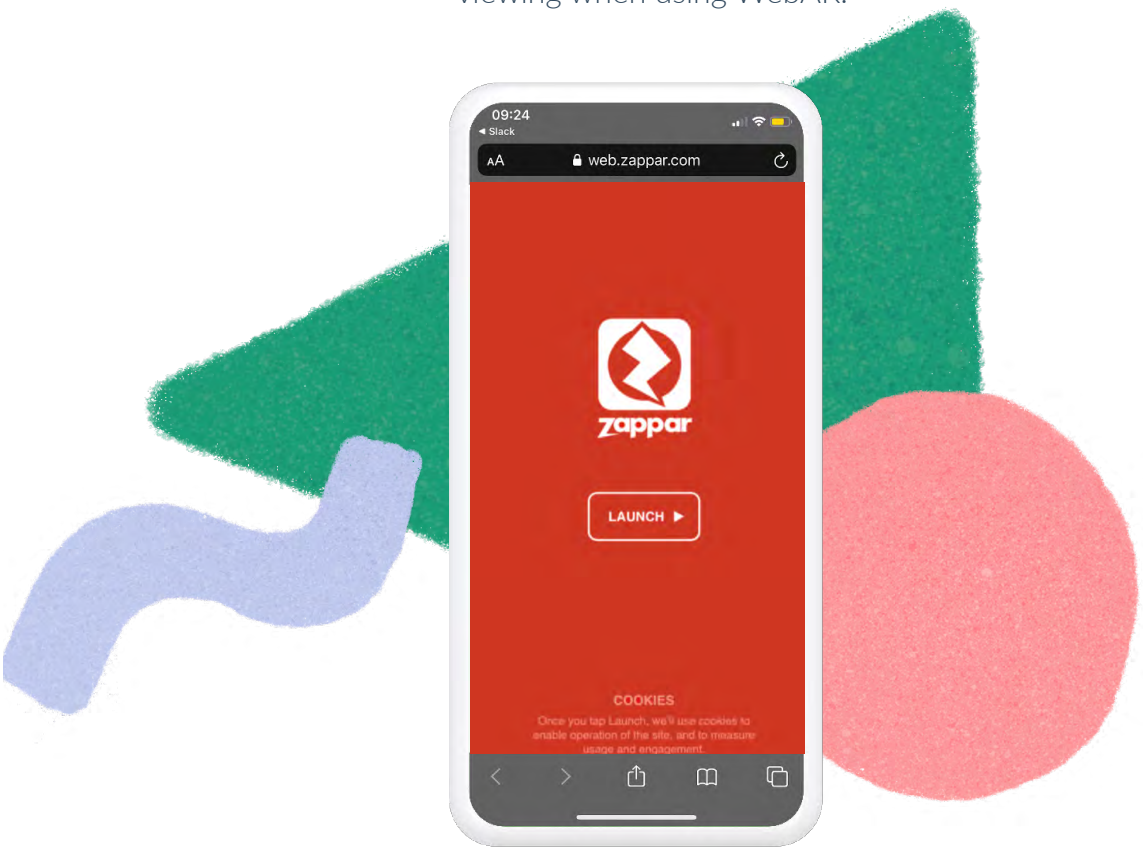
The Toolbar



On iOS, the toolbar of Safari will always remain visible - so a full-screen camera view isn't possible on iOS.



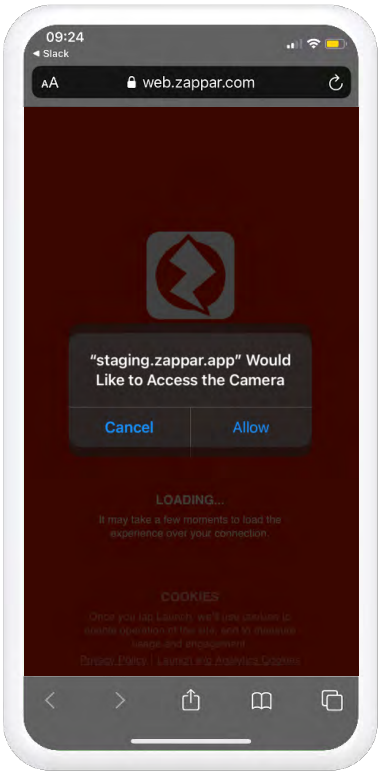
Safari's landscape mode (particularly on the thinner iPhones) means that the tabs also appear below the toolbar, which leaves little room for the camera view. We'd usually design a UX to encourage portrait viewing when using WebAR.



When we have a landing page, we'd usually have a 'launch' button that will prompt users to allow these permissions before entering the experience.

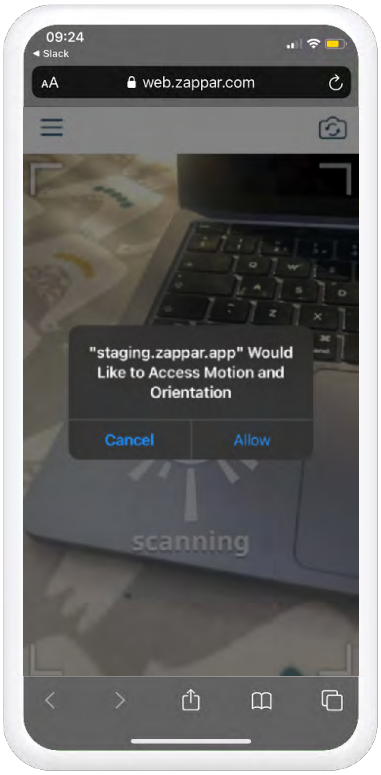
Permissions

Before entering a WebAR experience, the user will need to accept two permissions, Camera and Motion.



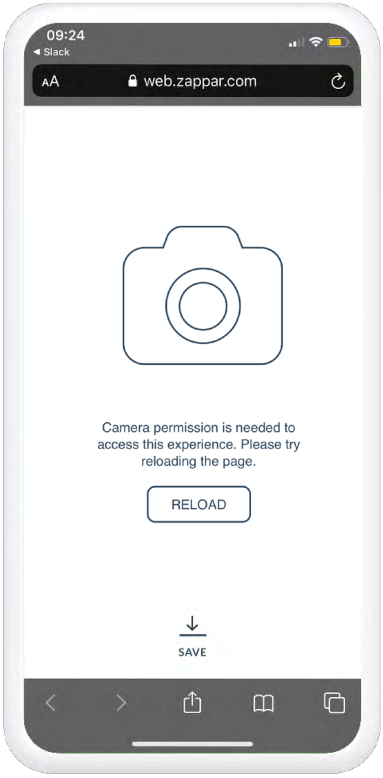
Camera

Permissions prompt



Motion

Permissions prompt



Reload

Shown if permissions are not permitted

What happens if the user denies either permission?

If the user denies camera permission, a prompt will appear asking them to reload and allow camera access. If a user denies 'motion and orientation access' then the gyro will not function within the experience. The gyro is required for Instant Tracking and any experience (e.g. 360 photospheres) that depends on gyro-based orientation.

Analytics

When it comes to collecting data and reporting on your WebAR campaign there are several different approaches you can take. Ranging from Google Analytics or your current data analytics solutions through to proprietary analytics platforms, like our own ZapWorks Analytics.

It is important to note that with proprietary analytics platforms there are some key differences in what data some are able to retrieve for WebAR compared to traditional app-based methods of launching AR content, for example those served using the Zappar app.

	Native Apps	WebAR
Total Scans	✓	✓
Unique Users	✓	✓
Average Dwell Time	✓	✗
Total Dwell Time	✓	✗
Adjustable Data Range	✓	✓
Countries	✓	✓
Device Platforms	✓	✗
Custom Events - tags for measuring interaction & engagement within an experience	✓	✓ ✗ Partly
Time of Day (local)	✓	✓
Aggregate data for multiple codes or access points	✓	✓
CSV Exports	✓	✓

How proprietary analytics platforms differ with native apps and WebAR



There can also be issues when it comes to custom-branded WebAR splash screens, or pages, which are the user's first destination when they scan a QR code or visit a WebAR url. As a custom splash screen (traditional html) and AR experience (ZapWorks Studio) are currently authored separately, so there is an immediate disconnect between the way stats are collected.

However, with Google Analytics comes the ideal solution...

Google Analytics

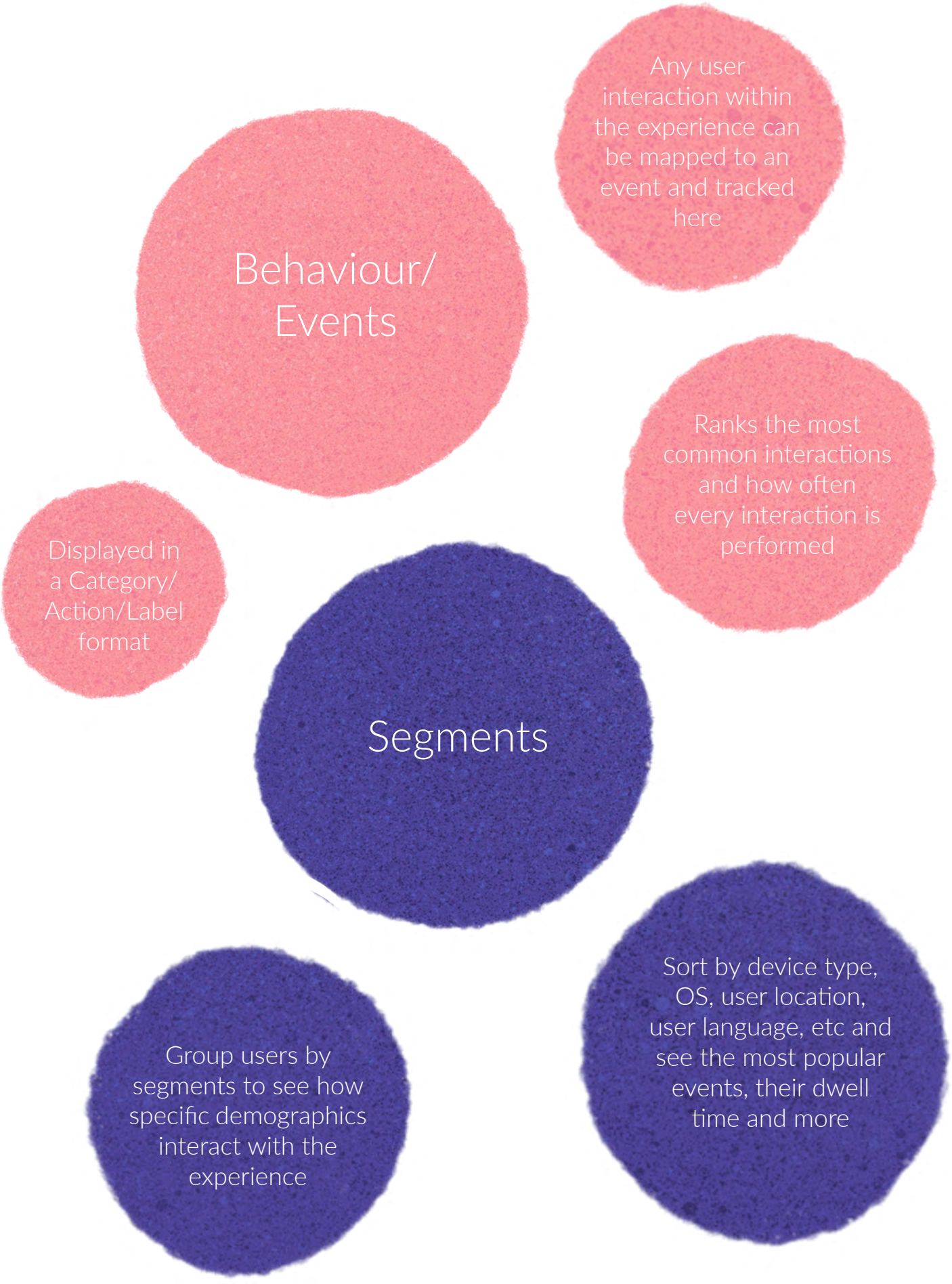
By integrating with Google Analytics and using a single Google Analytics Tag ID, this disparity can be addressed, and everything can be consolidated into a single, real-time dashboard. The same ID can be used throughout, so that the data can be associated from splash screen through to AR experience to form the complete picture. If a GA Tag ID is embedded during the development of the splash screen the following additional metrics can be recorded:

Metric	Explanation
Number of visits to the splash page	This data shows us how effective the traffic drivers to the WebAR have been, whether these are QR codes on-pack or digital marketing channels directing users to a link.
Number of unique users to the splash page	
Number of times a user tapped "Go" on the splash page	Remember, tapping "Go" isn't a guarantee that a user will proceed to the AR experience
Number of users who tapped "Go" on the splash page	This allows us to calculate how many users/ how much traffic dropped out of the "funnel" at this first stage.
Number of times a user gave access to Camera	Here we see how many iOS users dropped out of the funnel during the permissions stage. (event tracking subject to confirmation)
Number of users who have access to Camera	
Number of times a user gave access to Motion and Orientation (if applicable)	

Google Analytics can be easily integrated into you AR experience and provide the following vital data that allows you to track, measure and adapt your campaign for optimum success.



** Note that if a user plays with the experience, puts the device down for a minute and the device sleeps and then picks it up and plays again: this will count as two sessions.*



This allows you to get comparative data, particularly useful in projects where it is rolled out across multiple countries. For example, you can see how Russian markets interact as opposed to Italian markets.

Cookies

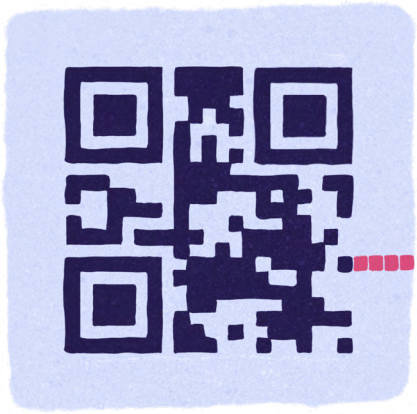
A WebAR site will cache the content of WebAR experiences locally on a user's device to improve performance and can remember what experiences the user has accessed or previously "unlocked". It may also use cookies to improve performance and delivery of content to end users.

You can use cookies to locally manipulate and cache AR content (so that any subsequent use of an experience is faster). This use is essential for the correct operation of the WebAR site. The data stored in this cookie is kept perpetually but never transmitted from the device, and it is not used to measure, track or profile the user.

To comply with GDPR regulations you would also be required to include messaging about how cookies will be used on your WebAR site - together with an option to launch without cookies if preferred.



6 Zappar's QR Code Best Practice



Margin of QR Code

4 module wide margin is required around a symbol

Color Contrast

Good contrast between the background and the QR code colour (this is particularly important when a standard black & white code is not used).

In cases of colour-corrected codes (where the colours are changed from black and white), the QR Code should have a dark colour with a light background color.

Do not reverse the colours e.g. ensure the light parts stay light and the dark parts remain dark.

Please note, whilst the above is generally best practice, most cases will require further analysis, especially when deviating from a standard black and white code.

If in doubt, test and test again!

Size:

For QR codes that will be scanned up close e.g. packaging, business cards, flyers etc.

12mm is our recommended size.

If you're printing for use at events, point-of-sale or out-of-home, please consider the distance your average user is likely to be when scanning the code.



The ratio of the scanning distance to the size of the QR code should be close to 10:1.

i.e. If you want someone to scan from 10 metres away, your code should be 1 metre in size.

** sizing information based on a 26 character code*

Your Call to Action

Tell users what they stand to benefit from scanning (what is the value proposition).
Use phone graphics to make the action of scanning clear.



Put yourself in the shoes of the user. In the context it's placed in, would someone scan it? If the answer is 'no', you probably need to go back to the drawing board to ensure the QR code is visible and the call to action is incentivising scanning.

Creating this clear and effective Call to Action is part of what we call the 5 C's for success:

The 5 Cs for Success

What we have found is that the success of an AR campaign can have everything to do with the process and communication, something that is even more important when using WebAR.

Context - Put yourself in the shoes of your end user in the exact moment of assistance and ask yourself what that moment would feel like: do you have a hand free at the moment, good network connectivity and the dwell time to make it a positive scanning experience?

Control - How well can we control this context: the lighting, the image itself being scanned, the distance of the user from it, occlusion, the acoustics, file size etc. The more control we have in that context the better the end user experience. Remember that when it comes to AR, the experience will only be as good as what the camera on the device can see at that scanning, detection, initialisation and tracking moment.

CTA - Make sure the Call to Action clearly tells people HOW to scan and WHAT they are going to get for their efforts. Make sure the CTA is connected to the image or place you're asking people to scan. The greater the distance from CTA to scanning moment the greater the drop-off in activation. Getting the CTA right is crucial. This is the C that on the surface seems the simplest to get right but 9/10 is left too late or not thought about deeply enough. Remember that no one is looking for (or cares about!) your AR experience so be very clear about what you are asking them to do and what they're going to get.

Content - Make sure the content you are delivering is valuable to your users and could not have been more easily accessible or better delivered by just going to your website or YouTube channel! Reward them for their participation with digital value add or real world value (sweeps, coupons etc.) and offer levels of immersion, engagement and interaction that make AR so powerful.

Communications - Make sure to leverage your other comms channels to tell people about this new camera capability (through POS, Print, TVCs, social, online ads, influencers, PR, internal comms etc.). This is a new behaviour for your audience so help them understand the benefit and how they can participate. Remember, beyond your core consumers, your internal audience and sales staff are your most powerful advocates for spreading the message.



We find that when there are failures or shortcomings in a campaign, going back and revisiting how everyone collectively performed against the five C's is instructive to improving for the process going forward.

7 Summary

It's safe to say that AR is a dynamic and evolving sector with constant and iterative changes that mean the capabilities, performance and permissions surrounding WebAR are in a constant state of flux.

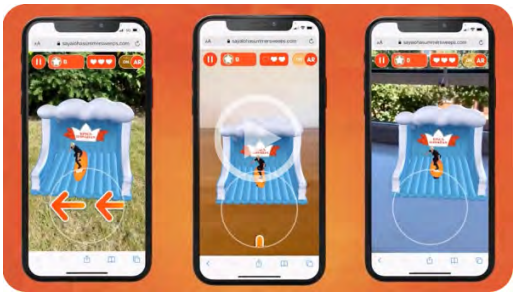
But to focus on the latest developments and bleeding edge features, as I hope we've outlined in this report, is to fundamentally misunderstand the opportunity that WebAR affords already that can work reliably now and has already been proven by pioneering brands.

The fundamentals of WebAR will remain. Layering on better network connectivity, smoother operating system integration, great access to camera and sensor data, and new hardware features will of course mean that the depth of experience and creative possibilities will only expand.

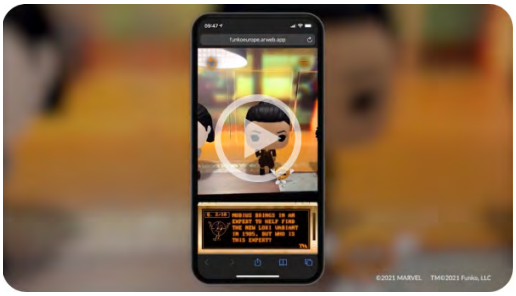
Our advice would always be to continue to be excited about the future but execute in the present; understand the future potential but deliver within the current limitations; execute well for the mass market and array of devices not just for the handful of latest handsets owned by the few.

Increasingly WebAR delivers a camera capability for brands and businesses that opens up an array of business opportunities and solutions. The use of augmented reality is becoming more commonplace and practical in application and we expect that trend to continue. Building a camera strategy for your business built around best practice and firm foundations will ultimately ensure you have the best chance at success. We hope this guide helps you achieve that goal when it comes to WebAR.

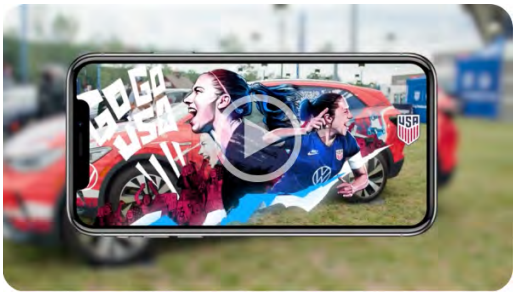
Caspar Thykier, Co-Founder and CEO at Zappar



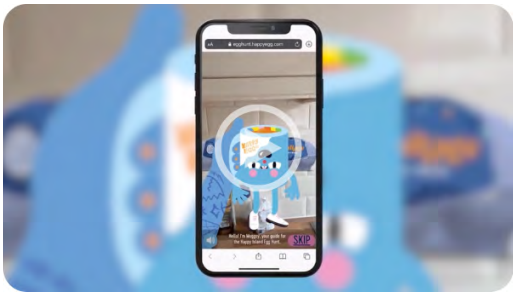
Zappar Creative Studio
Kings Hawaiian Guy Fieri
Flavortown experience



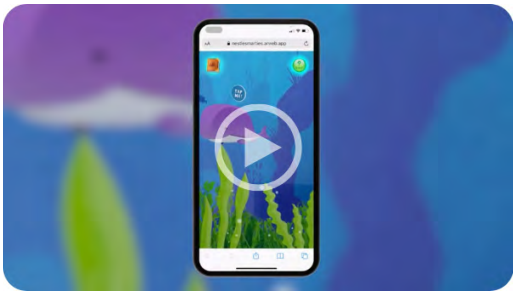
Zappar Creative Studio
Disney Funko Europe Loki
Pop! AR Quiz



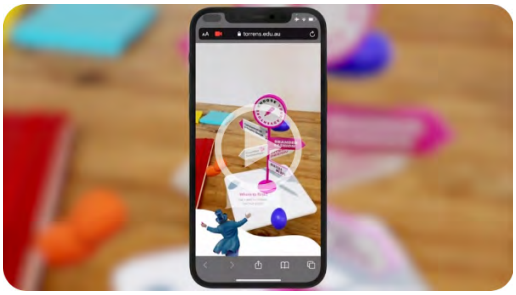
Groove Jones
Volkswagen of America ID.4
and U.S. Soccer Experience



Zappar Creative Studio
Happy Egg Happy Island Egg
Hunt



Zappar Creative Studio
Nestlé Smarties ‘Smart Seas’



Unbnd
Billy Blue College AR
Experience



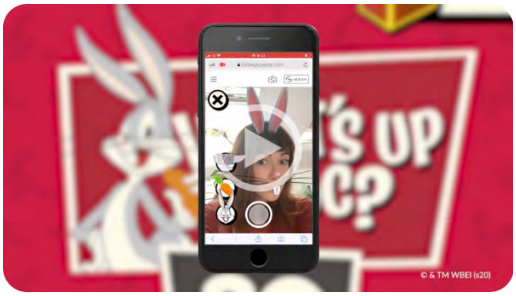
Zappar Creative Studio
Gravity Road, Diageo
Legends Untold



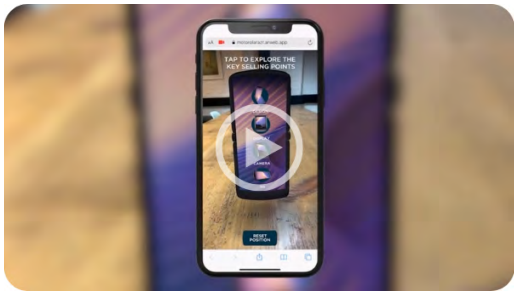
Groove Jones
Modelo Dia de Los Muertos



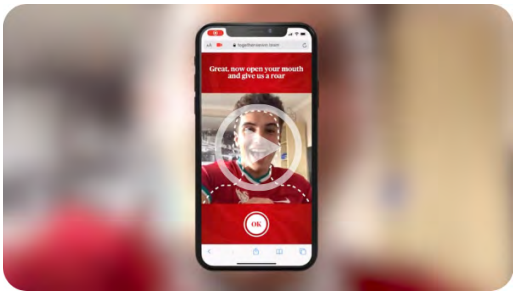
Zappar Creative Studio
Bandai Namco Dragon Ball Z: Kakarot



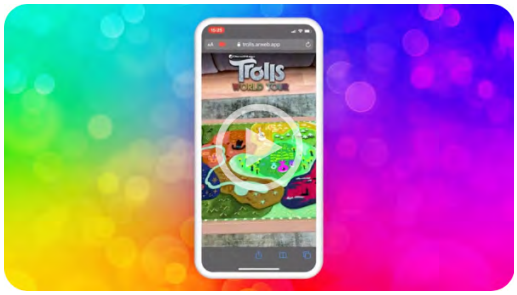
Zappar Creative Studio
Warner Bros. 80 Years of Bugs Bunny



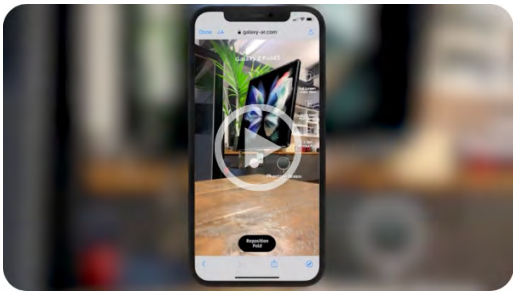
Zappar Creative Studio
Motorola RAZR



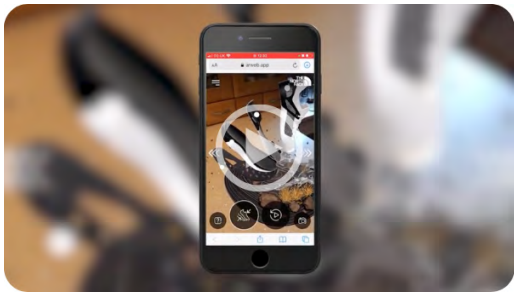
Zappar Creative Studio
Visualise Creative: AXA x Liverpool FC #TogetherWeWin



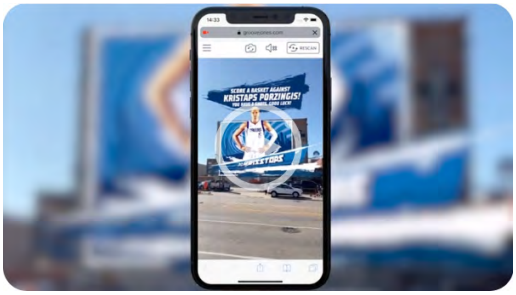
Zappar Creative Studio
Universal Trolls World Tour



PLAYAR
Samsung Galaxy AR



Curious Company
North Face Vectiv



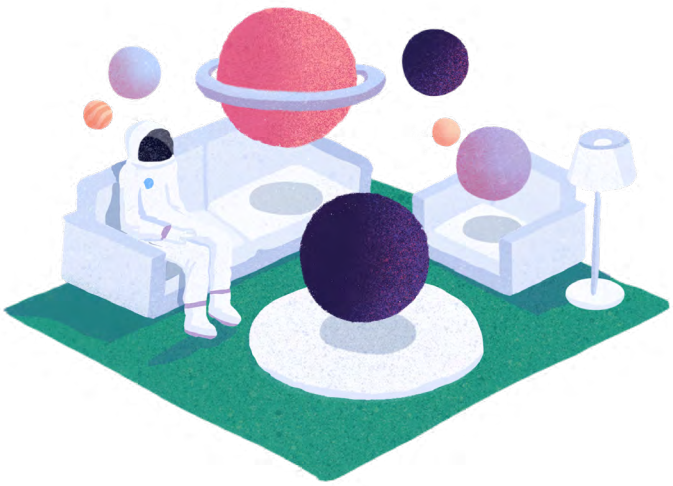
Groove Jones
Dallas Mavericks Web AR Mural Game

Getting started with WebAR

Supported Tracking Types

Instant World Tracking

Instant World Tracking lets you track 3D content to a point chosen by the user in the room or immediate environment around them. With this tracking type you could build a 3D model viewer that lets users walk around to view the model from different angles, or an experience that places an animated character in their room.





Face Tracking

Face tracked experiences consist of two main components: a face tracker and a face mesh. The face tracker reports back the pose of the face, while the face mesh reports the information necessary to generate a mesh that tracks the shape and expressions of the face over time.

Image Tracking

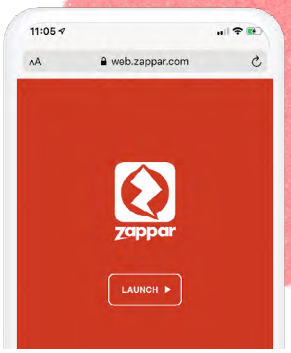
Zappar's best-in-class image tracking algorithms makes it possible to create augmented reality experiences where digital content appears attached to a physical image as it moves around in the camera view. Images that content track to are known as targets.

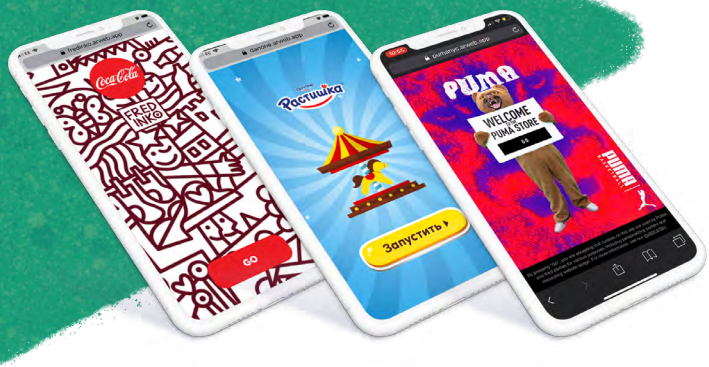


Instantly publish with...

Zappar WebAR

Zappar WebAR is the web version of our native Zappar app and allows users to view ZapWorks experiences directly from within their browser, without downloading the app.





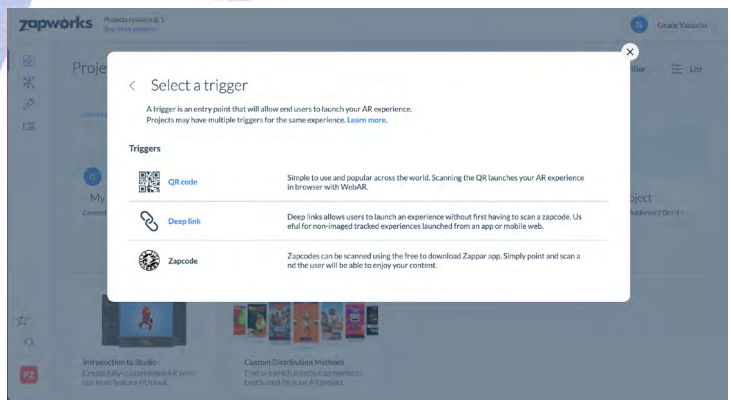
Custom branded WebAR

Our white label solutions are built upon years of experience working with the world's biggest brands. From custom micro-sites to branded URLs, we empower you to leverage this new era of super-accessible AR with complete brand control.

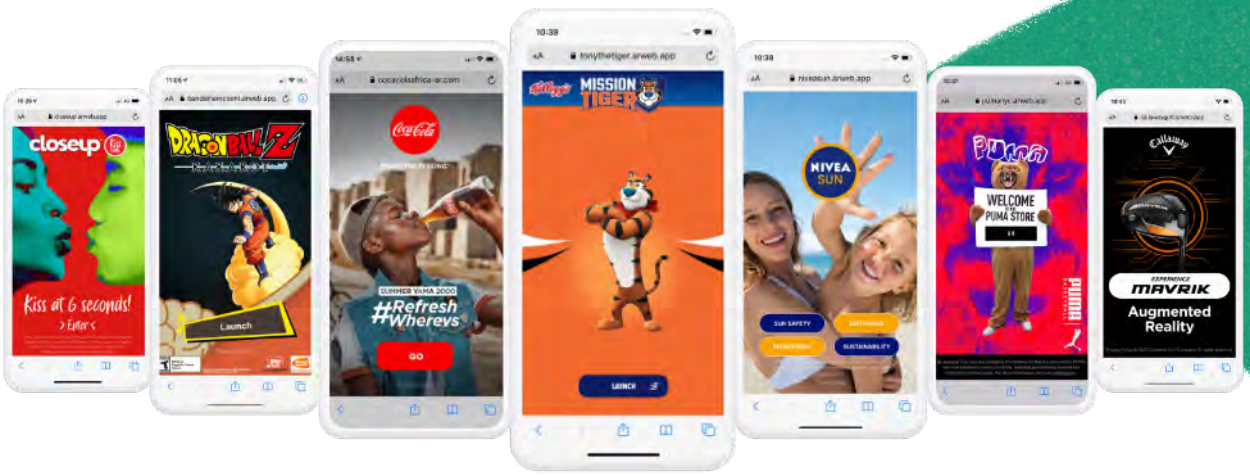
via..

Multiple Triggers

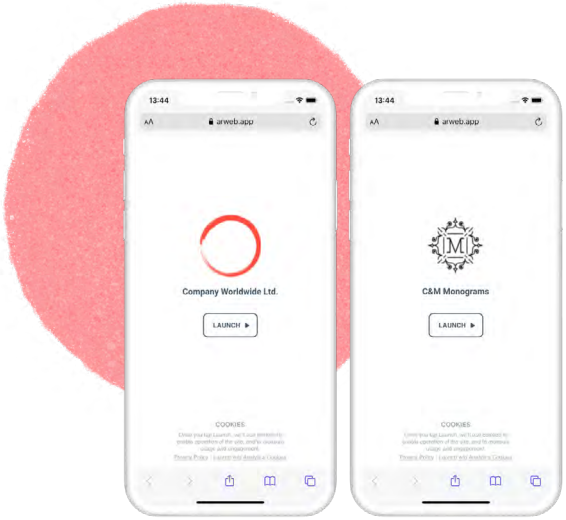
Triggers determine the methods that an experience can be launched, these can be custom codes, QR codes or deeplinks. You can change your trigger type at any point without having to edit your experience, as well as change your current app based experiences to WebAR.



Branded Splash Screens



When launching a project in WebAR Zappar gives you complete control over the entire user journey. Design your own custom splash screen, which offers you an opportunity to place your brand as the gateway to your immersive experience.



Lite Branded Splash Screens

Bridging the gap between fully customizable AR experiences and content delivered through the Zappar app - with Lite Branded Splash Screens, you can now customize the title and branding of your AR experience right from the ZapWorks CMS. No custom code or heavy lifting, simply select it as a trigger, add your brand icon and experience title and you're good to go.

Custom URLs

Give yourself complete brand control with a custom URL, recognisable and accesible to your customer base.



Zappar

Looking to leverage WebAR in your business?

Get in touch today >>

