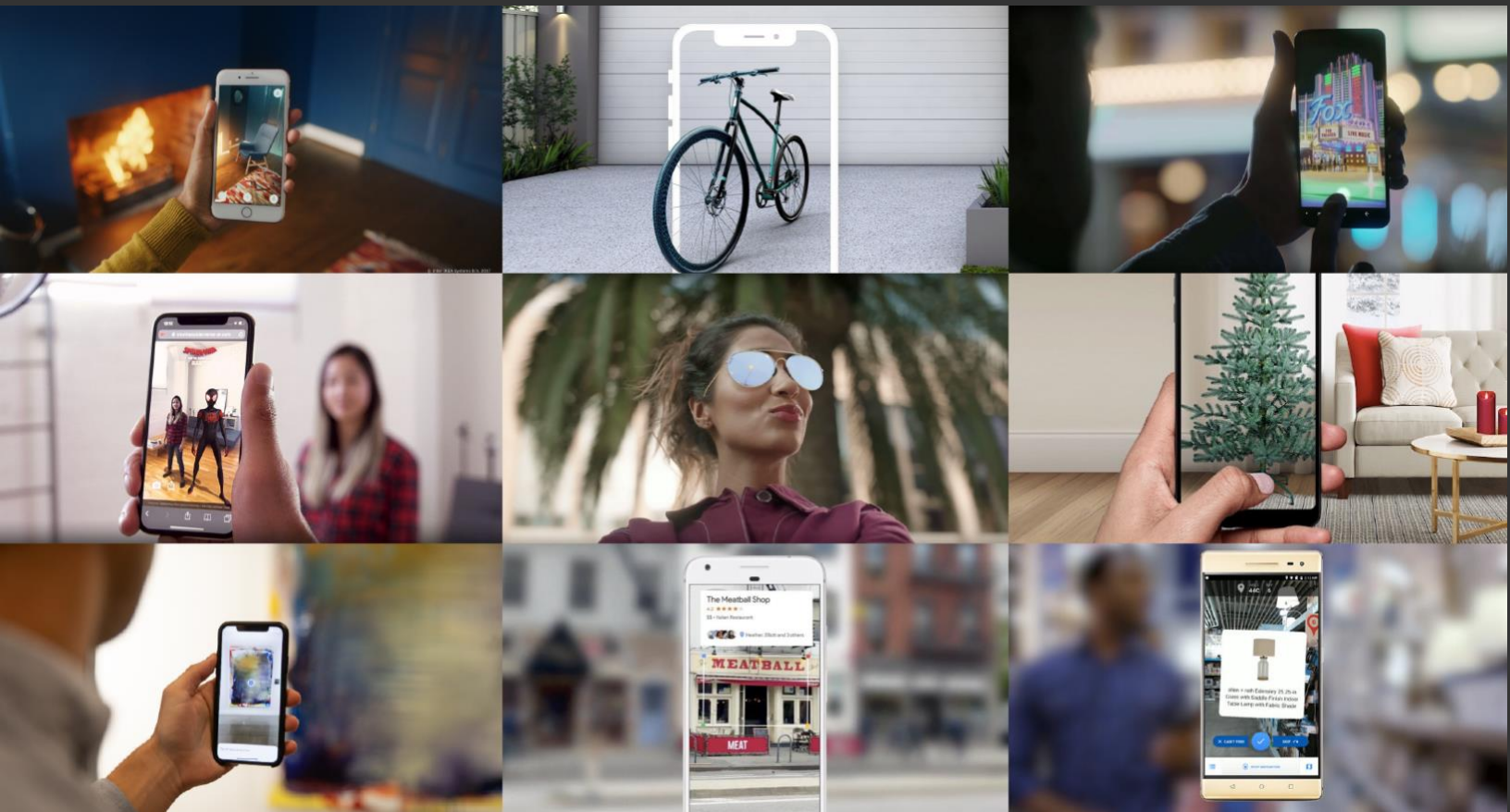# ARtillery Intelligence Briefing

AR Advertising Deep Dive, Part I: The Landscape

June 2020

⬛ Executive Summary

Augmented reality continues to evolve and take shape as an industry. Like other tech sectors, it has spawned several sub-sectors that comprise an ecosystem. These segments represent standalone topics in ARtillery Intelligence's ongoing analysis, including monthly Intelligence Briefings like this.

Those segments include things like industrial AR, social, gaming, and shopping. But existing alongside all of them – and overlapping in a classic Venn diagram – is AR advertising. This includes immersive animations that let consumers visualize products in their space through the smartphone camera.

AR advertising is actually the AR sub-sector with the greatest revenues today. That happened to the tune of **$1.58 billion** last year according to ARtillery Intelligence estimates, growing to **$8.8 billion** by 2023. These figures measure the money spent on sponsored AR experiences with paid distribution on networks like **Facebook** and **Snapchat**.

As we've examined within past reports, the factors propelling this revenue growth include brand advertisers' growing affinity for, and recognition of, AR's potential. Its ability to demonstrate products in immersive ways resonates with their creative sensibilities, transcending what's possible in two-dimensional formats.

Beyond that high-level appeal for creative constituents, there's a real business case. AR is proving to have the rare ability to span the purchase funnel – from upper funnel brand awareness to lower funnel conversions and transactions. And it's demonstrating favorable performance at all funnel stages.

Proof points for the above claims can be seen in the numbers, such as campaign

performance metrics analyzed in this report. We'll double down on that in Part II of this series with a procession of case studies and actionable takeaways for AR advertising.

But before we get to that point, who are the players? What does the value chain look like? And what are the comparative platforms for ad creation and distribution? Competitive intelligence like this is required to fully understand the AR advertising landscape and its players. We'll do that in the coming pages.

Throughout this process, we intend to maintain a strategic angle. There's lots of flowery language out there about AR's potential (which we've admittedly done in the preceding paragraphs). But it often falls short of actionable takeaways for AR startups, ad tech players or advertisers themselves.

Put another way, we'll methodically examine the *what*, *why* and – most importantly – *how* of AR advertising. All three will be examined in this first installment, while following reports will go deeper into the *how*. What's working and not working in these early stages while the AR advertising playbook is still being written?

As a bonus, ARtillery Intelligence will create a dynamic tracking index for AR ad campaigns, available to PRO subscribers. This will be an at-a-glance chart that shows hundreds of AR ad campaigns, including results and other key attributes and source links. As always, the goal is to empower you with a knowledge position.

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Key Takeaways

Of all the subsectors of augmented reality (AR), advertising is the revenue leader.
ARtillery Intelligence estimates AR ad revenues were **$1.58 billion** in 2019, growing to **$8.8 billion** by 2023.
This measures the dollars spent on sponsored AR lens distribution in channels like Snapchat and Instagram.
It does not include the money companies spend on AR experiences for self-distribution (e.g. apps).

Driving this revenue is a combination of accelerating usage and advertiser interest.
AR-adorned lenses have gained popularity with users, building on already-popular behavior like sharing media.
Advertisers have followed that usage and discovered that AR affords them greater creative capabilities.
The ability to demonstrate products in immersive ways has sparked interest among brands and creative agencies.

Brand advertisers are also attracted to AR's business case that continues to be validated in ROI metrics.
AR has a proven and rare ability to span the purchase funnel from engagement to action.
AR lens campaigns can reach Superbowl-sized audiences via high-reach channels like Facebook's News Feed.
They can also achieve high conversion rates via immersive product try-ons that engender informed purchases.

Snapchat is the AR ad revenue leader so far, owed mostly to its dedicated focus on the technology.
AR is native to Snapchat, as well as its "camera-company" ethos and its camera-forward user base.
This has started with face filters that play on users' vanity and existing penchant for sharing selfies.
This has unlocked the opportunity for face-oriented product advertising such as cosmetics and sunglasses.
A larger opportunity is developing for product visualization on the broader canvas of the physical world.

Facebook looms in Snapchat's rear-view mirror with increasing attention to AR advertising and lenses.
Facebook's larger global scale gives it strong potential as a longer-term AR advertising powerhouse.
Its Spark AR platform is in early stages of its true potential to gain community and advertiser traction.
This is aligned with Facebook's core advertising business and will scale through its several properties.
Though News Feed is the prevalent lens distribution channel, Messenger, WhatsApp and Portal will grow.

The Facebook property with the greatest potential to lead AR activity and advertising revenue is Instagram.
Spark AR was opened up to Instagram developers last summer, and continues to ramp up.
AR is more aligned with Instagram's use case and user base than any other Facebook property.
AR advertising will find fertile soil on Instagram due to the visual shopping and transactional use its cultivated.

Web AR likewise holds lots of promise as an AR advertising distribution channel.
Web AR is one of the least-used AR formats today, but has strong potential to eclipse others over time.
Its greater compatibility and cross-channel interoperability (like the mobile web) will reduce user friction.
Resulting user growth will unlock advantages, one of them being greater ad distribution capability and scale.

Though the above AR ad distribution channels are most prevalent today, the sector will be a moving target.
TikTok looms not just in global scale and engagement levels, but conduciveness to sponsored AR lenses.
Beyond social and web, other developing AR advertising channels include email, messaging and gaming.
Beyond lenses, wholly-new formats are developing such as visual search from Google, Pinterest and Amazon.
The "search what you see" use case could follow online search as an opportune ad format, given high user intent.

As the AR advertising landscape quickly develops, many questions remain.
Opportunity gaps exist, such as scalable 3D asset creation for visualizing large product libraries.
Analytics remain undefined as 2D metrics like click-through-rates don't capture immersive product experiences.
There's still too much friction in the UX... success will come from ad-to-transaction flows that are seamless.

Part II of this series will dive deeper into all of the above and "show rather than tell."
This will feature a procession of case studies and an interactive index of AR advertising campaigns.

Defining AR Advertising

AR's biggest revenue category today is advertising. ARtillery Intelligence's market projections peg AR advertising revenue at **$1.58 billion** last year, growing to **$8.8 billion** by 2023.
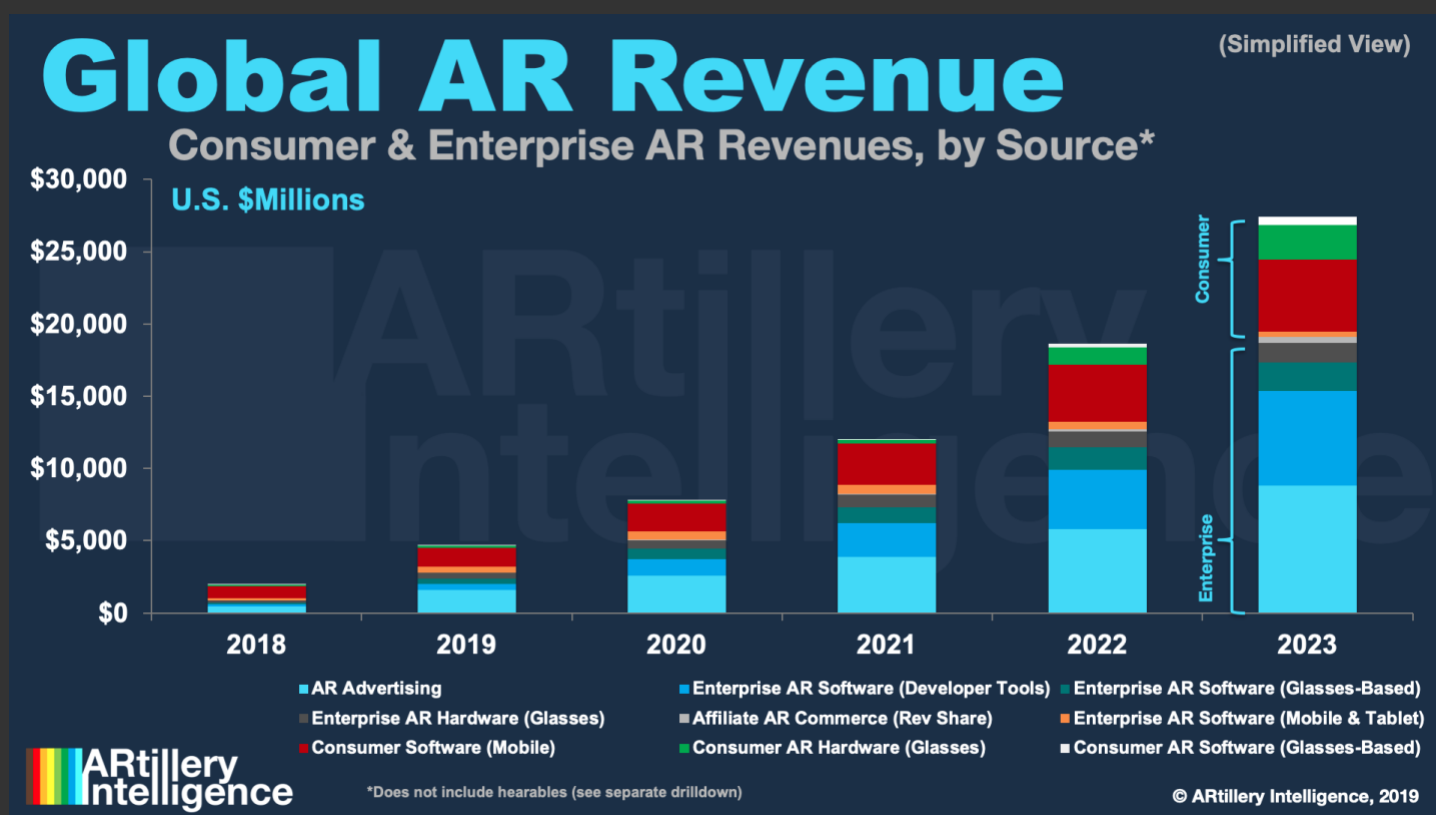
To define what we mean by AR advertising, these are paid media placements that allow consumers to activate their smartphone camera and superimpose branded animations on the real world. This is usually to promote or visualize a given advertiser's products in the various ways we'll detail in this report.

To further clarify, the figures above include paid placements to promote and distribute these AR experiences, such as sponsored AR lenses in **Facebook** and **Snapchat**. It doesn't include AR features within a company or brand's own apps, such as AR furniture visualization in the **IKEA Place** app.

The latter falls under the category of *AR commerce*, a topic we'll cover in a subsequent ARtillery Intelligence report. AR advertising of course *leads to* commerce, but it's a different area of spending (marketing versus advertising) in terms of how companies budget and execute promotional strategies.

To put it another way, AR advertising and commerce flow into each other, just as advertising's goal is to drive commerce in the ways we'll examine in this report. But commerce can also happen outside of paid ad campaigns, such as a company's own app, web properties, and self-distributed AR.

Global AR Revenue (Simplified View)
Consumer & Enterprise AR Revenues, by Source*

U.S. $Millions

Legend:
- AR Advertising
- Enterprise AR Software (Developer Tools)
- Enterprise AR Software (Glasses-Based)
- Enterprise AR Hardware (Glasses)
- Affiliate AR Commerce (Rev Share)
- Enterprise AR Software (Mobile & Tablet)
- Consumer Software (Mobile)
- Consumer AR Hardware (Glasses)
- Consumer AR Software (Glasses-Based)

*Does not include hearables (see separate drilldown)

© ARtillery Intelligence, 2019

Creative Sensibilities

AR advertising's revenue growth is being driven by a few key factors. One is that brands are attracted to the technology's ability to demonstrate products in immersive ways. That appeals to their creative sensibilities – erstwhile stuck in 2D media and confining formats like mobile banner ads.

Adoption is also driven by the fact that it's working. There's a feedback loop of campaign performance, results and ROI. This causes AR ad creation and investment to grow in the form of recurring campaigns among brand advertisers, as well as new entrants that hear about its effectiveness through case studies.

"We've shown in our first test of AR ads that the AR version of the ad, when A/B tested against a non-AR ad, drives statistically-significant more conversion," **Facebook's** Elise Xu said on stage at AWE Europe. "The next step is making the creation of these assets far easier and cheaper."

Spanning the Funnel

Another influential factor that's driving AR advertising's appeal is its ability to span the consumer purchase funnel. It's conducive to upper-funnel *reach* and lower-funnel *response*. This is a relatively rare attribute in advertising media, as a sliding scale exists between endpoints of the funnel.

For example – for those unfamiliar with these terms – upper-funnel advertising includes things like TV, newspaper and billboard advertising: It's all about reach and brand awareness. Lower funnel advertising includes things like search: It's all about high-intent action, but it's not optimal for brand awareness.

Back to AR, it can span this funnel by achieving high-reach distribution in places like **Facebook's** News Feed and **Snapchat's** Lens Explorer. From there, it can achieve high-performance (as we'll cover in this report) when users activate immersive product try-ons, then convert to purchasing items on the spot.

That last step in the funnel — the actual transaction — is obviously the most impactful. AR's inherent visualization can boost these conversion rates, but it's also accelerated by transactional functionality that's increasingly incorporated into lens-forward social channels like **Snap**, **Facebook** and **Instagram**.

◗▮▮ The Landscape

Speaking of these leading AR ad channels, how are they positioned and where are they headed? **Snap** has the most AR traction given its focus and ethos as a "camera company. But **Facebook** has the most global scale, where it continues to integrate AR to **News Feed**, **Portal**, **Messenger** and **Instagram**.

Instagram could actually be AR's sleeping giant. Not only did it incorporate AR last summer by opening it up to **Facebook's** Spark AR lens developer platform, but it's more natively aligned with visual shopping. **Instagram** has cultivated a strong use case for product discovery in fashion, food and other categories.

And it's become more transactional over the past few years with integrated buy buttons. With AR, that shopping use case is now infused with more dimension through interactive product try-ons. This could be a powerful combination that attracts ad dollars to **Instagram** to promote and amplify branded AR lenses.

Meanwhile, other players loom. Social lenses are the most prevalent form of AR today, but visual search could eventually be a more powerful AR modality. For those unfamiliar, visual search lets you hold up your phone for descriptive overlays to contextualize (or buy) a given product you see in the real world.

Building from the high-intent qualities of web search, this could be a true utility as it develops from **Google**, **Pinterest** and others. **Google** in particular is motivated to develop visual search apps like **Google Lens** to "future proof" its core businesses. And visual search is naturally monetizable... just like web search.

Image Source: 8th Wall

◗▮▮ History Repeats

So when you boil it down, the flavors of AR advertising include AR visualization (placing a 3D product in your space), and visual search (using AR overlays to get info on a real-world object). That makes AR map to the main divisions of digital advertising we know today: *display* and *search*.

In fact, when looking at the interplay of AR lenses and visual search, they could follow an evolutionary path similar to display and search ads online. Display was out of the gate first as an ad format (just like lenses lead today), but then search developed over time as a more technically-nuanced and lucrative ad format.

Could we see AR follow the same path? We'll dive into each of these main subdivisions of AR advertising and their players in the coming pages. And we'll do so in their order of real-world appearance, given the sequence and marketing evolution examined above. So naturally, we'll start with AR lenses.

||| Today: AR Lenses

Lenses are the most popular AR "flavor" today. That goes for consumers, as they lean in to whimsical overlays that help them produce and share animated selfies. Advertisers have followed those eyeballs, as they often do; and have likewise leaned in to the creative capacity that AR affords for 3D product visualization.
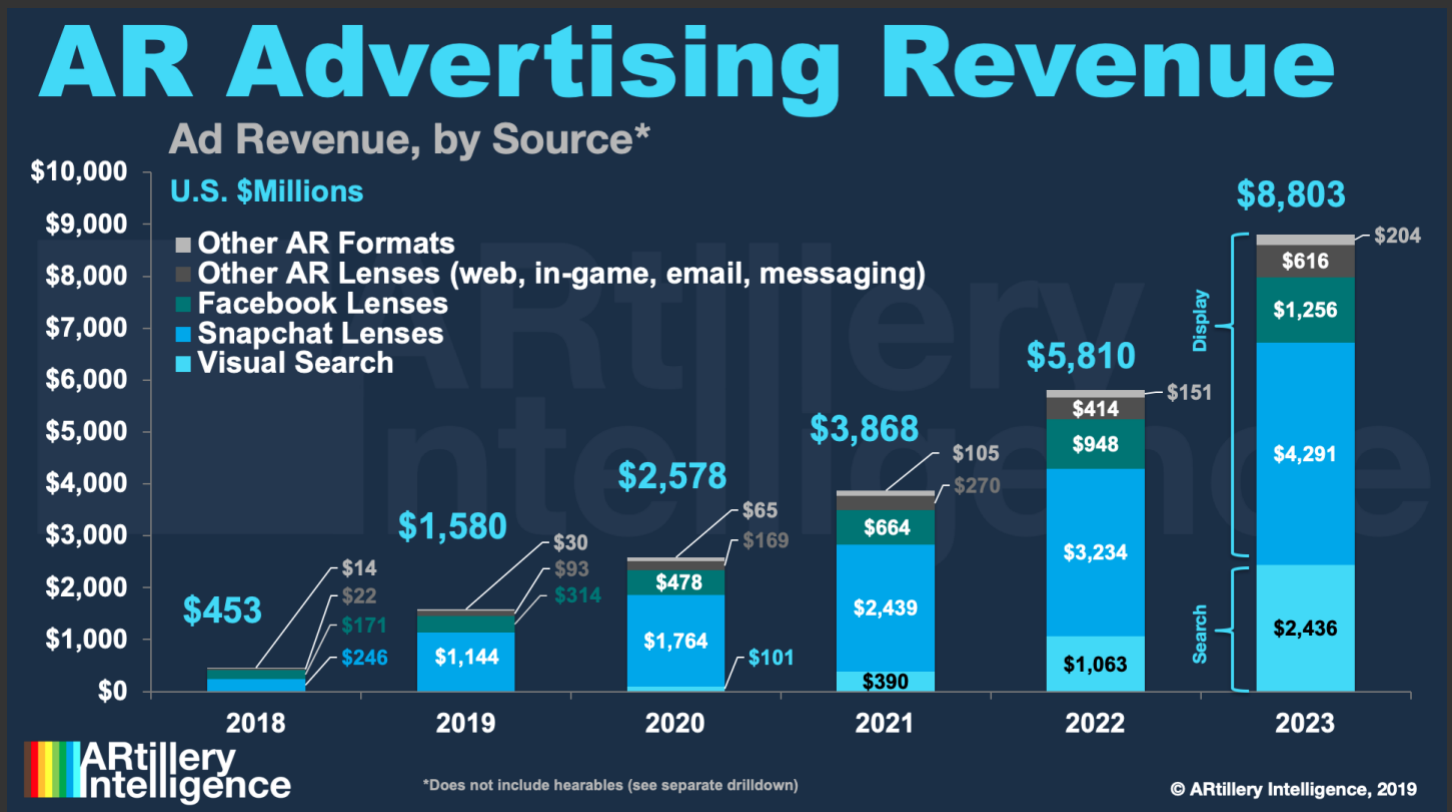
This started with face filters. After all, people are vain. They like to see and share their own faces. This has presented natural opportunities to a range of products that go on your face. That includes cosmetics, sunglasses and other fashion fodder that fits well with existing product discovery in social media.

But could the larger opportunity be to flip the orientation to the rear racing camera that looks outward at the physical world? Could that present a broader canvas for real-world augmentation? This would certainly open the opportunity to many more products and advertiser categories.

We believe this is where the growth in AR lens-based advertising lies. **Facebook** has already gone down this road with location-based lenses. **Snapchat** has World Lenses and Landmarkers, which offer templates for developers to build AR animations on waypoints like the **Eiffel Tower** and **Flatiron Building**.

For a deeper dive on these players and others, let's examine them, one by one.

AR Advertising Revenue
Ad Revenue, by Source*

U.S. $Millions

- ■ Other AR Formats
- ■ Other AR Lenses (web, in-game, email, messaging)
- ■ Facebook Lenses
- ■ Snapchat Lenses
- ■ Visual Search

Year	Total	Other AR Formats	Other AR Lenses	Facebook Lenses	Snapchat Lenses	Visual Search
2018	$453	$14	$22	$171	$246	
2019	$1,580	$30	$93	$314	$1,144	$171
2020	$2,578	$65	$169	$478	$1,764	$101
2021	$3,868	$105	$270	$664	$2,439	$390
2022	$5,810	$151	$414	$948	$3,234	$1,063
2023	$8,803	$204	$616	$1,256	$4,291	$2,436

Display / Search

*Does not include hearables (see separate drilldown)

▋▋ Snap

Daily Active Users: 229 million
Daily AR Active Users: 163 million
AR Usage Levels: 15 billion lenses viewed
Lens Volume: 735,000
Estimated 2019 AR Ad Revenue: $1.1 billion
Estimated AR Ad Rates: $17 average CPM

Snap has long labeled itself as a camera company. That designation naturally led into the current wave of mobile AR excitement, likely by design. But even as AR slogs through what some call the "trough of disillusionment," **Snap** is doubling down on its vision for an AR future.

This involves three-levels that map to **Snap's** main constituents: developers, users and advertisers. A greater volume of lenses attracts users and boosts engagement rates. That growing audience attracts more lens developers which further expands the library and, in turn, attracts more users.

This virtuous cycle then achieves the ultimate goal of attracting advertisers who want to get in front of **Snap's** engaged and demographically-attractive users. In fact, the emerging and coveted Generation-Z is already showing affinity for **Snapchat** lenses, with **40 percent** reporting engagement, according to **Snap**.

Over half (56%) of gen Z use social apps to express themselves creatively

56%
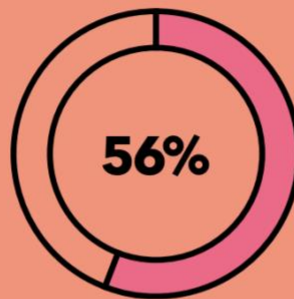
Further, 40% of gen Z state that they've used AR filters/lenses to enhance a photo/video of themselves or with friends; 43% have enhanced with emojis, 44% with a color filter, and 51% with text or a caption

40%	43%	44%	51%
AR filters/lenses	Emojis	Color filters	Text or a caption
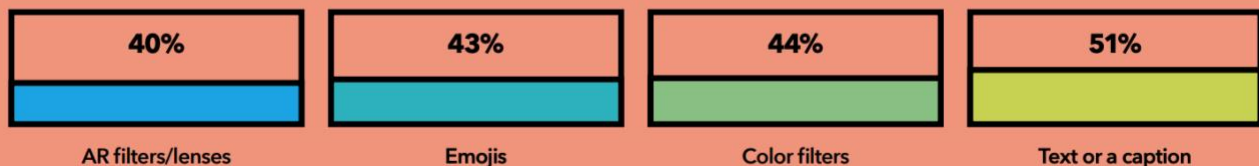
IG x Source: 2019 JWT Intelligence study in partnership with Snap Inc.

Image Source: Snap, Inc.

▮▮▮ Developers

When looking at the virtuous cycle outlined above, developers are the starting point, which **Snap** has begun to realize and accommodate. It has come a long way from initially keeping AR lens design in-house. With **Lens Studio**, it opened up lens creation to developers and thus scaled up volume and creativity.

735,000 Snapchat lenses had been created as of March 2020 and lens creators grew **20 percent** during Q3 2019 (latest available data). This follows **Snap's** move to open the **Lens Studio** platform and make it increasingly accessible. Some creators can make as much as **$40,000** per month.[i]

That's a notable flip from **Snapchat's** early AR lens experiences that were limited in volume and gated by a highly curated approach (which **TikTok** is currently doing as we'll examine later). Like **Facebook**, examined next, it has since leaned into the idea of scaling up lens development with a steady flow of tools for lens creation, distribution and monetization.

That includes creator profiles that give developers a presence to promote their work and make it discoverable. There are also new templates for popular formats such as lenses that augment hands, bodies and pets. This handles the heavy computational lifting and simplifies lens creation.

Image Source: Snap, Inc.

In the same spirit, **Landmarkers** templatize AR lens creation for high-traffic places like the U.S Capitol Building. Developers can use those templates to infuse their own creativity. Templates also mean a focused set of subjects for which **Snapchat** has done advance work for mapping and tracking.

Landmarkers are also smart in that **Snapchat** has concentrated its efforts in a smaller subset of locations, thus sidestepping the AR cloud[ii] challenge of recognizing every building and street in the world. It instead focuses on high-traffic areas that get the most bang for the spatial-mapping buck.

More recently, **Snap** launched its Lens Web Builder, a browser-based tool to make lens creation even easier. Users and developers alike can create lens animations in just a few steps and without design expertise.

Other developer tools include 3D paint, launched alongside the new user-facing AR Bar. This lets users annotate live scenes with stylistic overlays, essentially making anyone a lens developer. This aligns with the pattern of crowdsourcing creation, while feeding and fueling socially-oriented AR.

Image Source: Snap, Inc.

▌▌▌ Users

Refined experiences like **Landmarkers** not only support developers but they engender more robust AR experiences for users – the counterpart in the virtuous cycle. **Snap** is also expanding capabilities beyond selfie lenses to the rear-facing camera to augment the outside world, thus a greater range of use cases.

So far, these non-selfie AR activations include World Lenses, Snapcodes (AR activations from branded QR codes) and song identification from **Shazam**. Through a partnership with **Amazon**, it's also moved into visual search to identify physical-world products with your mobile camera.

Snapchat has also moved into a broader range of AI-fueled lenses with its **Scan** feature. This applies object recognition, then adds context-aware AR animations to a given scene. So gifs from **Giphy** can automatically and serendipitously animate related scenes, or math problems can be solved on the fly.

"Now you can scan anything, and we'll show you the most relevant lenses. Just press and hold the screen and we'll show contextually-relevant gifs," said **Snap's** Bobby Murphy at a developer event. "If you're trying to solve a math equation, we'll help you do that with our partner Photomath."

These moves extend **Snap's** AR persona from lenses to more utilitarian functions. That's evident in solving math problems – a lighthouse feature that will lead to other creations. As we've examined in past reports,[iii] mundane utilities like search and navigation are where AR killer apps could germinate.

Meanwhile, the above moves are proving out in terms of attracting users and getting them to engage on deeper levels. **Snap** currently reaches **229 million** active users, **163 million** of which are AR lens active users. And it has reported that many of them engage lenses as often as **30 times per day**.[iv]

Image Source: Snap, Inc.

▌▌▌ Advertisers

The above usage levels are at the heart of **Snap's** AR revenues because they provide a key function: attracting brand advertisers. **Snap's** real AR revenue driver is sponsored lenses. They offer many options but, at a basic level, let brands utilize the developer tools outlined earlier to craft on-brand AR lenses.

The tools to do this are included in the free-to-use Lens Studio. **Snap** essentially gives this away as a loss leader to seed AR lens creation and thus drive a small share towards paid distribution. This paid lens distribution is similar in pricing and targeting capability as **Snap's** existing (non-AR) ad offerings.

This is a key point, as **Snap** doesn't want to create friction for brands that are considering sponsored lens distribution. If they can fold it into existing campaigns and apply existing knowledge and social advertising playbooks, it won't force advertiser learning curves, nor other barriers that could impede adoption.

That said, the economics and ad rates of sponsored lenses will continue to shift with the supply and demand dynamics of the sector. So though **Snap** wishes to keep things simple and congruent with other ad formats, sponsored lenses will deviate to some degree. They currently average at about **$17 CPMs**.
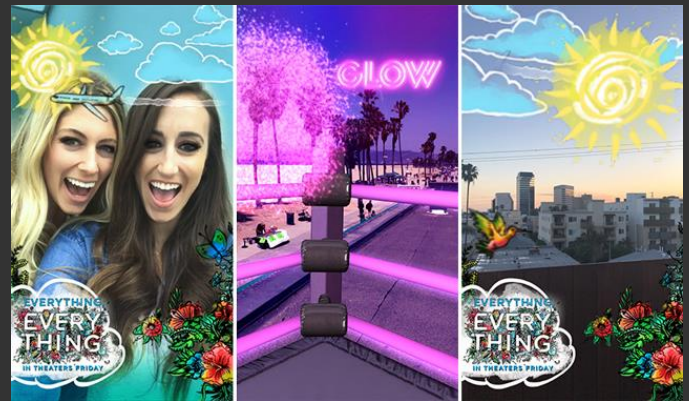

Image Source: Snap, Inc.

Image Source: Snap, Inc.

Meanwhile, capabilities continue to improve for brand advertisers, as they have access to the evolving set of tools examined earlier for non-brand lens developers. This provides them an expanding toolbox for product animations for faces (cosmetics, etc.), and the larger canvas of the physical world (Landmarkers, etc.).

As mentioned earlier, this appeals to creative professionals at ad agencies or within the marketing departments of brand advertisers. Erstwhile stuck in confines of 2D media, they can flex creative muscles and see real results with AR-based immersive product try-ons.

One example is the **NFL's** lenses for Superbowl LIII, featuring selfie animations for each team's fans to show their support. They were viewed **303 million** times, which is **3x** the television viewership of the game itself. This shows AR's potential for reach and audience scale (more case studies to come in Part II).

By doing all of the above, **Snap** made an estimated **$1.1 billion** from AR advertising last year. The company also attributes AR to its notable 2019 stock market rebound. Beyond that, it broadly sees AR as a core part of its business as a camera company. So it will continue to double down on it.

▎▎ Video Companion: Lessons From Snap's AR Revenue Lead

Click video to open

![ARtillery Intelligence]

▌▌▌ Facebook

QUICK STATS:

Platform Reach: 2.45 billion users
Mobile Monthly Active Users: 1.9 billion
Estimated AR Active Users: 126 million
AR Usage: 1 billion lenses viewed per year
Estimated 2019 AR ad Revenue: $478M

Though **Facebook** has well-known aspirations for face-worn AR (and VR), it knows the near-term gateway drug is AR that occurs on your smartphone. Fortunately, that's aligned with the company's core ad monetization and social engagement positioning. In other words, mobile is where **Facebook** already lives.

"Headsets are not quite ready for large-scale consumer adoption," said **Facebook**'s Elise XU at AWE Europe. "We want to give developers and creators easy and cheap ways to create things in AR… Mobile is a wonderful gateway into that, and there's a ton of scale."

As noted, AR supports **Facebook's** core business: advertising built on social engagement. Its primary revenue correlates to the time we spend in its walled garden. AR gives it more ways to keep us there longer through visually immersive – and advertising-conducive – content to share with friends.

As further background, **Facebook's** News Feed ads have grown stale and overcrowded so it's motivated to innovate new forms of user engagement. It has thus followed **Snapchat** in making AR lenses a currency in social sharing. Its **Spark AR** platform parallels **Snap's Lens Studio** in lots of ways.

The difference between the two partly comes down to features, but is more about reach and distribution options. The possibilities are a bit more varied than **Snapchat**, given **Facebook's** many properties that include **News Feed**, **Messenger**, **Portal** and **Instagram**.

▮▮▮ Viral Kick

For example, **Facebook's** flagship News Feed has lots of advantages in combining reach and audience targeting. That's been the case for a while with typical 2D News Feed ads like banners and videos. But now that **Spark AR** has been brought to the News Feed, it amplifies AR's potential reach.

Just like regular News Feed ads, AR ad placement is based on advertisers' chosen targeting metrics. But for an additional AR spin, advertisers can work with **Spark AR** to add dimension. From the user's perspective, he or she can activate the camera directly from those ads to launch a sponsored AR experience.

For example, launch partner **Michael Kors** built a campaign that lets users quickly go from the News Feed ad to a front-facing camera

activation that virtually tries on sunglasses. Videos of those usually-boisterous try-ons can also be captured and shared for an additional viral kick.

The result was a campaign that ran for two weeks and achieved a **14 percent** incremental lift in purchases. It also achieved strong upper-funnel branding, including a **20-point** lift in ad recall, **5-point** lift in favorability and **3.9-point** lift in purchase intent.

As noted earlier, these ads can flow into a transaction on **Facebook** or to the advertiser's web pages. This gets back to the "full-funnel" principle mentioned earlier, hitting the marks of high reach (News Feed distribution), brand awareness (News Feed banners) and high-intent transactions (AR try-ons).
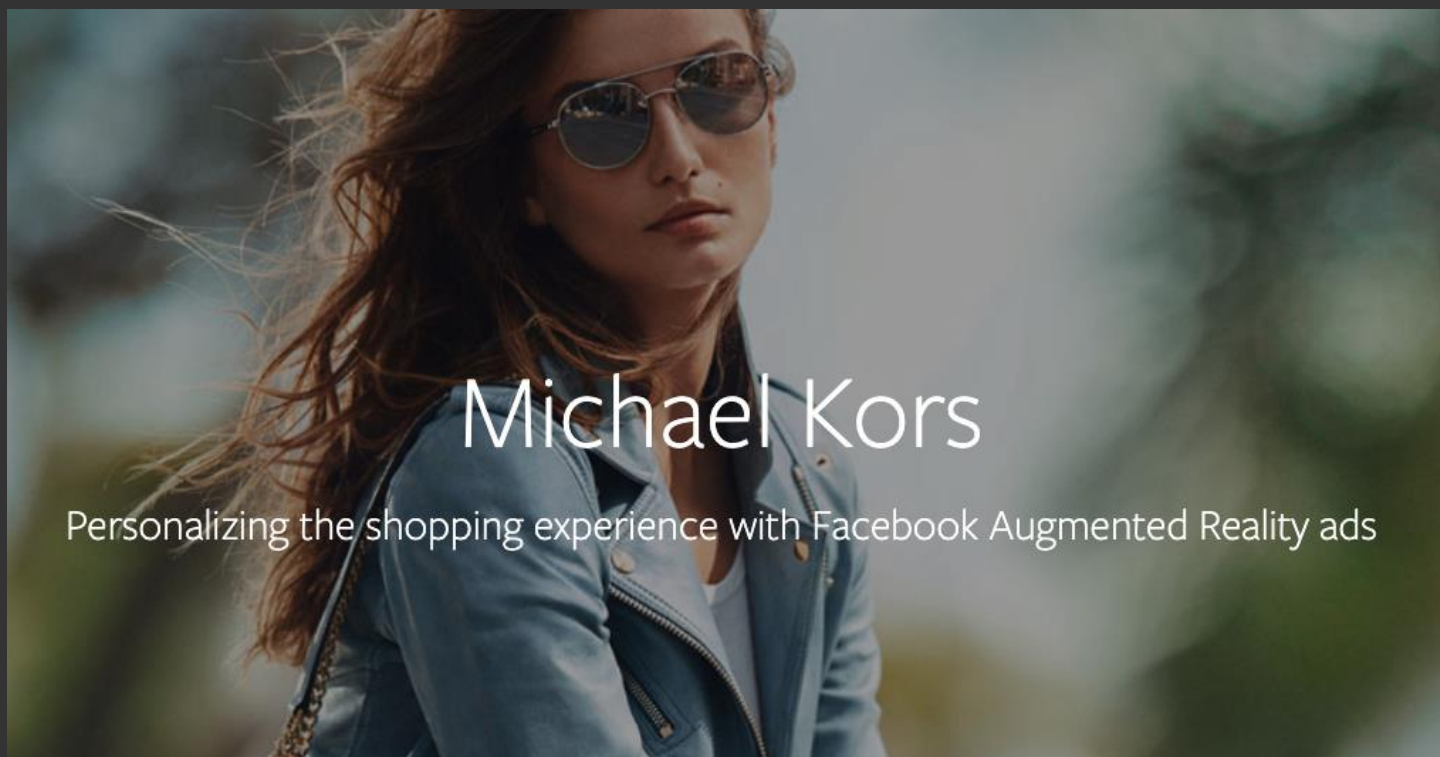

Michael Kors

Personalizing the shopping experience with Facebook Augmented Reality ads

Image Source: Facebook, Inc.

▐▌ Other Avenues

The opportunity transcends the **News Feed**. AR in **Facebook Messenger** likewise brings **Spark AR** to **1.2 billion** monthly active users who expressly follow and converse with brands. This offers a large and engaged audience for brands to reach consumers and drive them towards e-commerce transactions.

Nike went this route with an AR virtual podium that showcased its Kyrie 4 shoe drop. It included 360-degree product visualization that flowed right into transactions, causing the shoe to sell out in less than an hour. This brings immersive product views where consumers and fans already engage directly with brands.

Other AR integrations in **Messenger** include **ASUS**' ZenPhone 5 virtual unboxing which saw **10x** greater engagement compared with its non-AR campaigns. **Kia** likewise saw a **46 percent** boost in dealer inventory searches, and phone calls from its car visualization campaign.

Beyond **Messenger**, **Facebook Portal** is increasingly integrating AR. Though that hasn't made its way to sponsored experiences yet, the potential is there. There have been many natural use cases developed such as animated face filters for storytelling to children (think: remote grandparents).
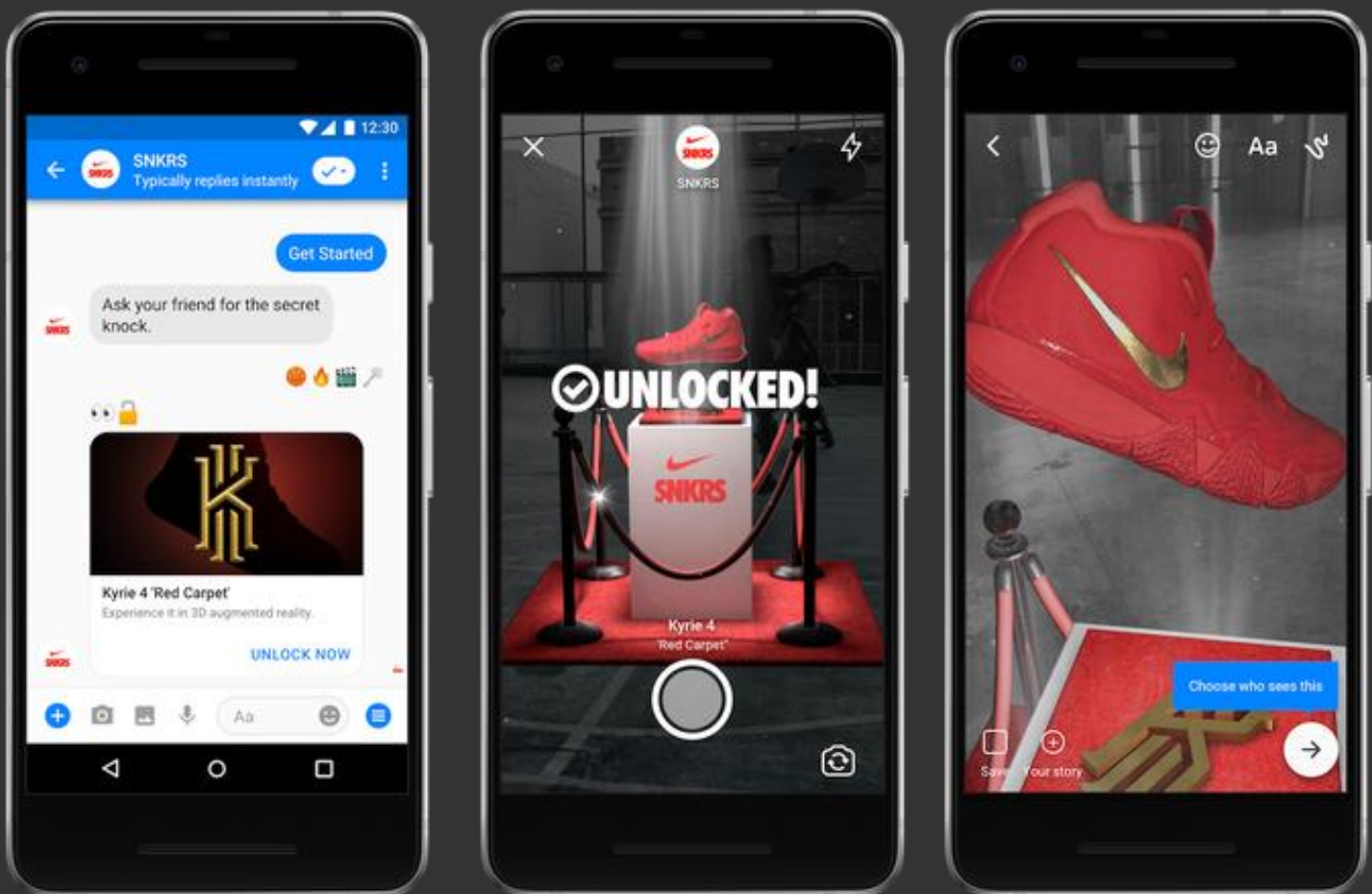
Image Source: Facebook, Inc.

▐▐▌ Sparking Innovation

A question that sprouts from all of the above is, what tools does **Facebook** offer developers, creative agencies and brand advertisers? Just like **Snap's** efforts to increasingly cater to lens creators (which in turn fuel user engagement and ad dollars), Facebook has a parallel path.

This all comes together in its developer platform, **Spark AR Studio**. As examined above, it's attracted advertisers like **Nike** and **Michael Kors**. Its main goal with the platform is to offer something that's easy to use and offers distribution scale to reach-driven brands.

"Because it's delivered through the Facebook camera, you have potential to reach **1.5 billion** people," said Facebook's Xu in the AWE talk cited earlier. "We want to expand that [by] growing the inventory of AR content and giving developers the ability to make AR experiences [for] more people and more channels."

Regarding ease of use, programming such as JavaScript isn't required to make AR experiences on **Spark AR Studio**. And it's doubling down on that strategy by making it easier to import AR graphics. A partnership with **Sketchfab**, for example, makes it easy to import thousands of 3D objects.

▐▐▌ About Face

Facebook is meanwhile evolving its interactions for augmenting people (front-facing camera), and the physical world (rear-facing camera), similar to **Snap**. For example, it's making advertiser-friendly enhancements, such as better face-tracking for trying on style items.

"We launched a high-fidelity tracker that tracks **30 percent** more points on the face," said Xu. "It enables more precision and accuracy around areas like the eyes and the mouth, and this is important for realistic makeup effects [...]

one of the major verticals we're tackling with that is cosmetics."

As for outward (rear-facing camera) effects for augmenting the world around us, Facebook's **Target AR** feature is a marker-based approach to activate 3D content on any 2D plane. This is meant for things like pop-up animations on museum placards, or ad-friendly use cases on product packaging.

Facebook's **Location AR** meanwhile works towards geographically-anchored AR graphics that carry location relevance. This will be a key value-driver in AR, tied to the concept of geographic scarcity. And it carries a lot of the same benefits and appeal as **Snapchat's Landmarkers**, examined earlier.

"As AR evolves and expands, it'll become more important for these experiences to be location relevant, and to be particularly tied to certain locations so they feel like they're part of that place," said Xu. "Location can be as broad as a country or as specific as a particular address."

Last among **Facebook's** overarching AR initiatives is broadening distribution. This is a numbers game – per the "virtuous cycle" principle – to attract developers who are deciding where to apply resources. And the next untapped frontier for AR among Facebook's properties: the mighty **Instagram**.

Image Source: Facebook, Inc.

📷 Instagram

When considering the directions **Facebook** is moving with AR, the near-term "ace up its sleeve" very well may be **Instagram**. Its **500 million** daily active users and camera-centric use case are more aligned with AR than other **Facebook** properties.

These are all reasons why **Facebook** launched its **Spark AR** developer platform on **Instagram**. It was in closed beta for most of last year, then opened up to the public in August. This has been followed by steady feature updates such as last month's addition of filters that interact with music or animate previously-published **Instagram** photos.

That will grow over the next year, and it will follow the same progression we've seen on

Facebook's other properties. This entails a period of user acclimation, community lens creation, followed by monetization. The latter is where brands create and distribute lenses at meaningful scale.

Facebook is motivated to make all of this happen because it's running out of ad inventory on the News Feed, as noted earlier. Because that's its core product, which it doesn't want to oversaturate with ads, it's looking to untapped ad inventory in places like **Messenger** and **Instagram**.

Besides financial motivation, **Facebook** knows AR "fits" on **Instagram** and it wouldn't force an unnatural union. Not only does it fit from a user perspective, but it fits in with **Instagram's** appeal as a promotional vehicle. This goes back to the visual shopping and product-discovery use case it's cultivated.

▮▮▮ Shoppable AR

One promising outcome for AR on **Instagram** is shoppable lenses to transact right on the spot. We predicted this in 2018v when it was clear that AR was coming to **Instagram**. That put AR on a convergence path with its existing and continued e-commerce integrations.

This has since unfolded as **Instagram** works with fashion retailers to integrate AR product try-ons as part of the in-app transaction features they already utilize. These integrations are logical, as **Instagram** has become a place for consumers to discover products and transact, especially for fashion items.

AR will now join that shopping flow to make products more demonstrable, pursuant to boosting sales. This continues to be validated by **Snapchat** and others. For example,

Facebook itself has reported that AR-based cosmetics try-ons have boosted conversion rates by **28 percent**.vi

Altogether, **Facebook** has several tracks for spatial computing, which will eventually converge. It has primary VR ambitions to connect the world in more immersive ways (and monetization therein). It's also working towards AR glasses, "Live Maps"vii and nearer-term mobile AR lenses.

The latter is the least sexy of the three. But it's a key step to get users and developers acclimated to spatial interfaces. That will prime the next era of immersive UX that **Facebook** is aiming for. But in the meantime, mobile AR — potentially fueled by **Instagram** — is beginning to generate real revenue today.
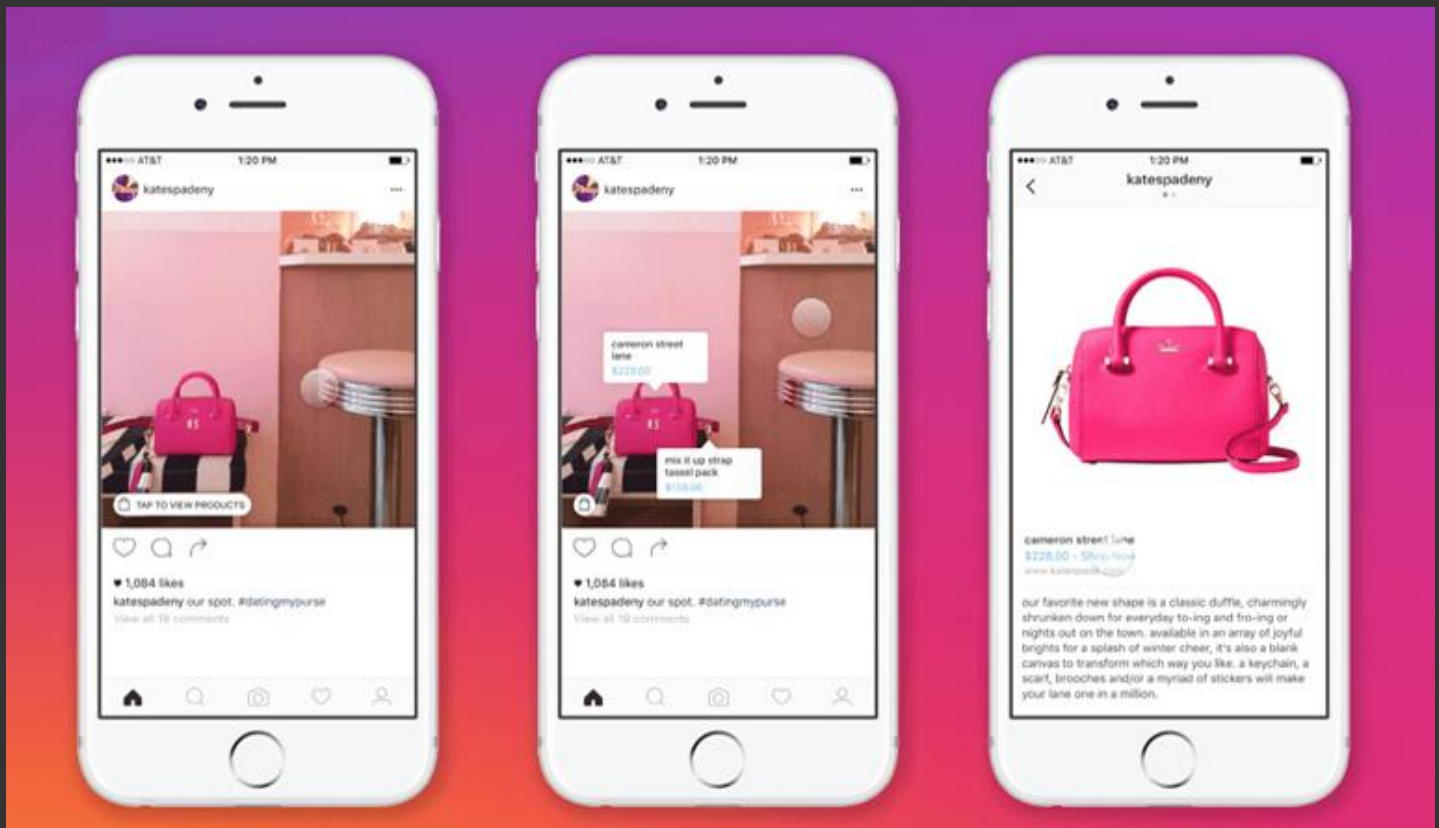

Image Source: Facebook, Inc.

▌▌ Scale of Influence

Another component of **Instagram** that could create fertile soil for AR advertising is its core influencer framework. But rather than rely on a relatively small batch of high-influence celebrities, AR can decentralize that sphere of influence by creating micro-influencers throughout the social graph.

This brings in what **8th Wall** VP of Product **Tom Emrich** calls *incarnations*. The principle stems from ever-popular selfie lenses by allowing consumers to wear (or *be*) a given product through branded accouterments. In this case, brands can empower anyone as an ambassador or influencer.

Puma's "Pumans" campaign on **Instagram** did this by letting users pose with a Puma mask and share with friends. Its viral appeal

jumpstarted a network effect with exponential growth as people acted as micro-influencers among their social graphs. AR has a unique ability to amplify and optimize that shareability.

"They inspired their followers to use the filter themselves by sharing the link when they showed off the filter in their stories," said Emrich. "This in turn created a population of 'Pumans' who would then market the filter to their followers and so on. The scale of influence where the use of filters creates other users of the filter is something unique to AR. That's because the asset that your influencer is marketing is a digital one that can be shared and used throughout the network, rather than a physical product that's captured and shared on one influencer's feed, relying on likes and comments."

Web AR

There's growing realization that apps aren't the optimal vessel for AR. Yet with mobile AR, it's born on a device where apps rule. **90 percent**viii of mobile users' time is spent in apps versus the web. Can AR break that cycle and instead condition users towards the web?

This involves AR that's launched from the mobile browser. Advantages include dynamism for AR's serendipity and short sessions, versus the friction of app stores and downloads. All that "activation energy" dampens AR adoption, which is already challenged by its nascent and unproven status.

In other words, will consumers spend 90 seconds downloading an app for an experience that lasts 30 seconds? Consider this in light of dynamic AR activations within a store aisle or sharing a new lens with a friend. These scenarios have implications for web AR's reach and accessibility as an ad platform.

"Web AR has some nice advantages," **8th Wall** CEO Erik Murphy-Chutorian told ARtillery Intelligence. "You're not tied into a social network. You're not tied into a platform. You don't have to go to an app store and you aren't restricted on devices. You really can get on most peoples' phones."

8th Wall's eponymous 8th Wall Web is an AR engine that works on mobile browsers. Built on standards-compliant JavaScript and WebGL, it has SLAM, positional tracking and some of the trappings of "true AR" seen in native apps, but without the bloat and activation energy.

This approach has attracted **Sony Pictures**, **Miller Lite**, and **Porsche** as clients for promotional AR experiences. It powers more than **5,000** web AR apps and reports that **80 percent** of its AR activations have session lengths greater than one minute, and **50 percent** are greater than two minutes.
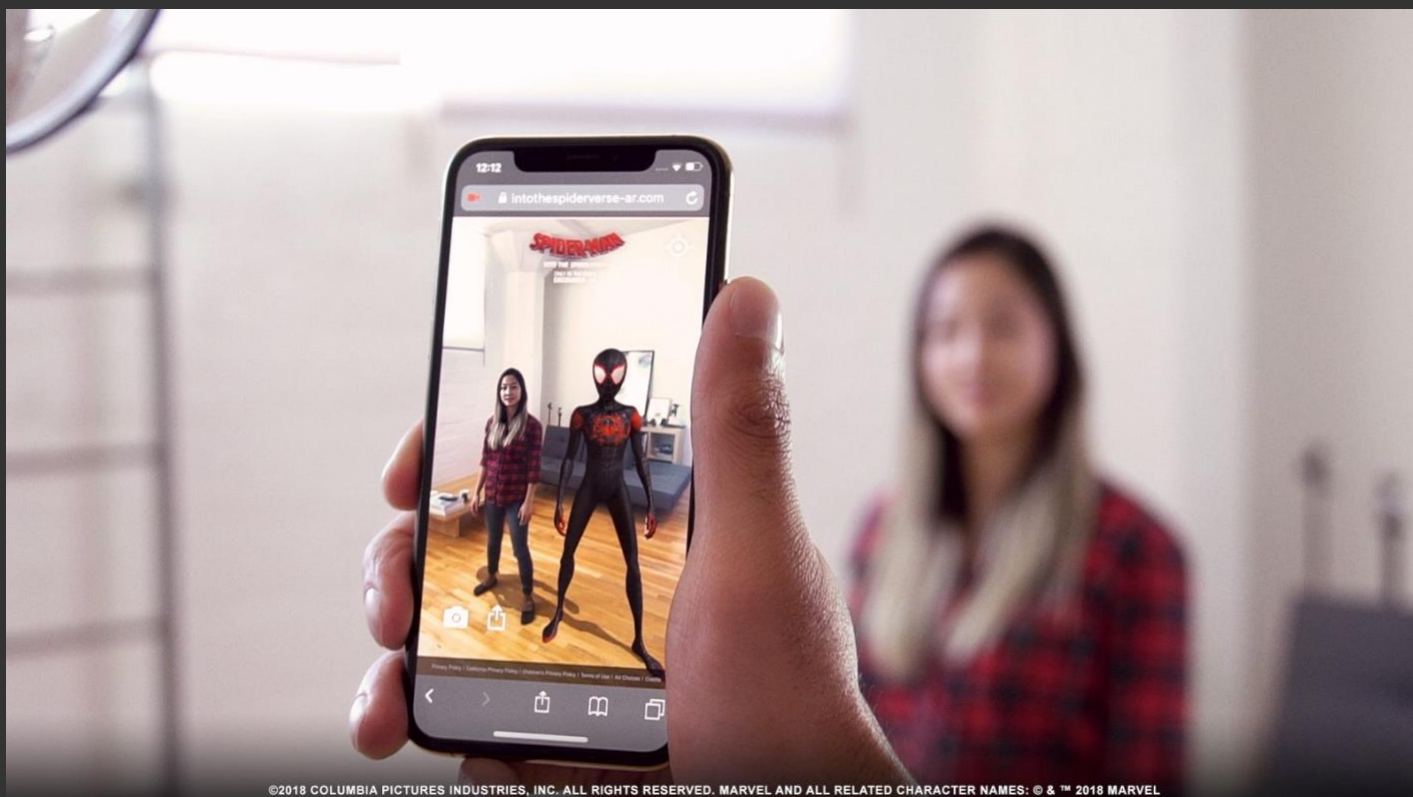
🏳️ Native Advantage

As further background on apps versus web AR, Murphy-Chutorian admits that apps can have some advantages. For one, they can more-directly tap into device sensors when using a native platform such as **ARkit** that has purpose-built vertical integration with the hardware. (see "Platform Rundown" section).

"Apple specifically has done a really good job of getting accurate scale in AR," said Murphy-Chutorian "There are things like measuring if my suitcase fits inside a box, or virtual tape measures. They've done an excellent job getting the accuracy right for those things."

As for practicality, apps work well when it's something you use frequently, such as the small tray of daily-use apps like **Facebook**, email, messaging or games like **Candy Crush**. For these few use cases, home-screen positioning and quick access can be well served by native apps.

"Apps are really good for these things that you come back for all the time, like if you're going to sit there checking your **Facebook** feed multiple times per day," said Murphy-Chutorian. "It's almost like apps are a commitment: once you have that level of commitment, they're appropriate."

🏳️ Not So Fast…

Some of these app advantages only apply to a limited set of high-use apps. For newer apps, getting into that exclusive club is very hard. So for any app developer building something today — especially in the still unproven AR category — the calculus is different.

"Say you're a new company and you want to do something in AR… you build a native app and put it in the store. How many downloads do you get?" posed Murphy-Chutorian. "People

really struggle to get their apps downloaded, and their reach and visibility is much smaller."

But things open up a bit in web AR, as you can plant universally-operable web links wherever you have existing presence. That includes a brand's existing marketing assets like product packaging (this is more in the *AR commerce* category as defined earlier). It also includes the advertising distribution channels that are the focus of this report.

"Any source of traffic you have becomes an opportunity to show AR," said Murphy-Chutorian. "Another great area for reach is people who own restaurants, stores or sell goods that are printed on anything. It's AR on the back of the toy you just bought or the cereal box or Starbucks lid."

Along with that comes functionality for all the things the web does, added Chutorian. If operating outside of apps or social walled gardens like **Facebook**, you can connect the AR experience to your payments processor. You can also integrate the **Google Maps** API for location-relevant content, **Google Analytics** for tracking and other such tie-ins.

"Those kinds of web combinations let you build much more powerful things than what you can do on AR apps and social networks."
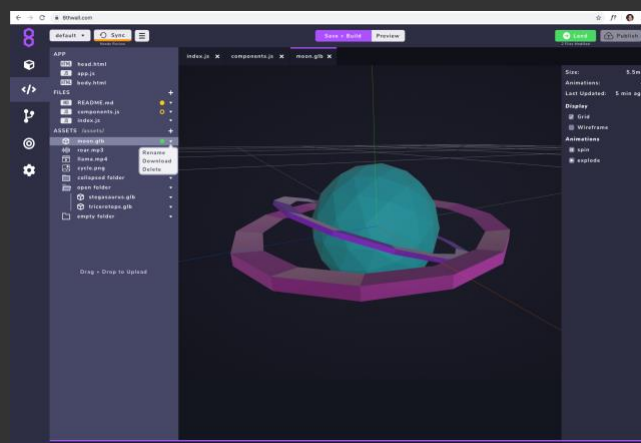

Image Source: 8th Wall

▮▮ Numbers Game

Web AR may have another advantage: platform reach. One way to compare AR platforms and their comparative advertising reach is to look at installed bases. ARtillery Intelligence recently performed this exercise including compatible hardware bases and active users. Some of those figures have been already cited throughout this report.

Among these platforms, web AR has the biggest growth capacity given that it has the greatest device compatibility at almost 3 billion. But it has the least active users. Along with all of web AR's technical and practical benefits explored earlier, this scale and headroom – though active use is low today – could be a positive sign for web AR's future.
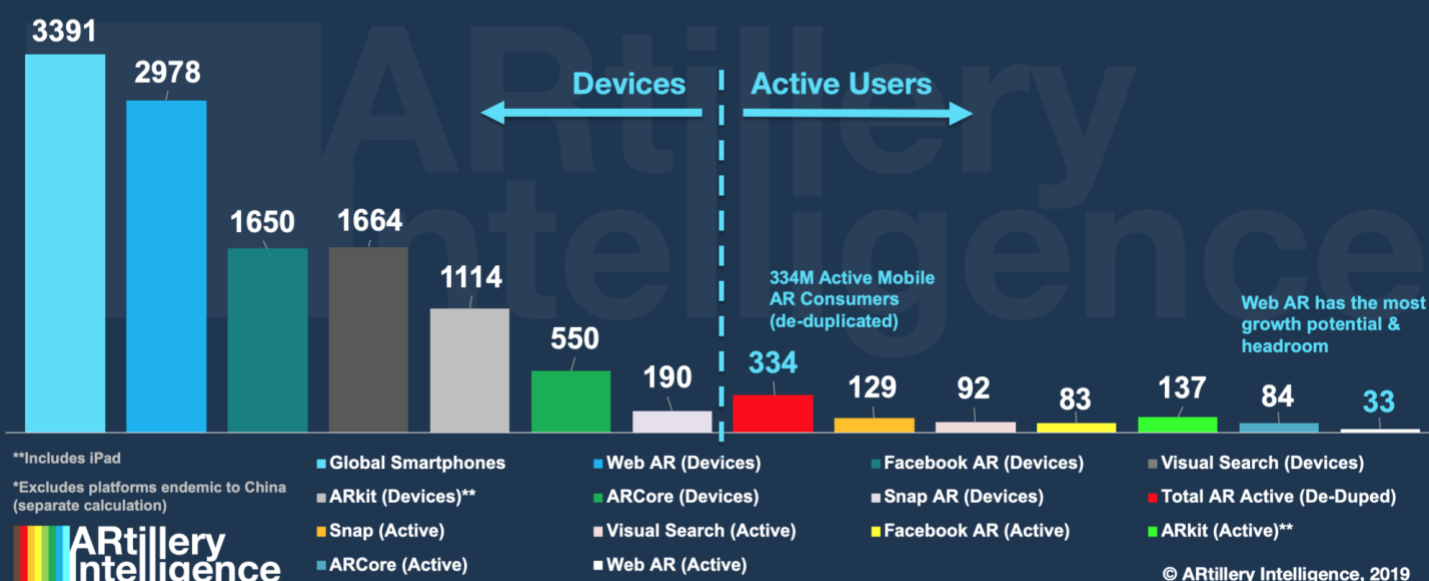
Furthermore, this mobile AR market-sizing exercise reveals another key factor: platform fragmentation. Compared to the mature smartphone market that has two platforms, AR (and VR for that matter) have several, which could further compel web AR and its cross-platform advantages.

"Magic Leap is building a software ecosystem around its product. Microsoft is doing the same with Hololens. Oculus, HTC and Playstation are doing it in VR," said Murphy-Chutorian. "But it may be that if there is no dedicated winner, the winner becomes something that works across all of them."

Mobile AR Global Penetration
2019 AR-Compatible Devices & Active Users, Across Platforms*

Millions of Units

| Devices | Active Users |

3391 · 2978 · 1650 · 1664 · 1114 · 550 · 190 · | 334 · 129 · 92 · 83 · 137 · 84 · 33

334M Active Mobile AR Consumers (de-duplicated)

Web AR has the most growth potential & headroom

**Includes iPad
*Excludes platforms endemic to China (separate calculation)

ARtillery Intelligence

- Global Smartphones
- ARkit (Devices)**
- Snap (Active)
- ARCore (Active)
- Web AR (Devices)
- ARCore (Devices)
- Visual Search (Active)
- Web AR (Active)
- Facebook AR (Devices)
- Snap AR (Devices)
- Facebook AR (Active)
- Visual Search (Devices)
- Total AR Active (De-Duped)
- ARkit (Active)**

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Platform Rundown

Sticking with the theme of comparing AR ad platforms and distribution channels, how do they stack up quantitatively and qualitatively. Starting with quantitative analysis – and stemming from the platform reach exercise on the previous page – ARtillery's recent survey findings[ix] can provide more color.

When asked what types of AR formats that users have tried, the leading category was "AR as a feature." To define what that means, it's AR experiences that have been integrated into existing (non-AR) apps. That includes many of the social AR platforms examined earlier including **Facebook** and **Snapchat**.

Web AR meanwhile lingers at **18 percent** of survey responses. That's not surprising given the data on the previous slide. Indeed, web
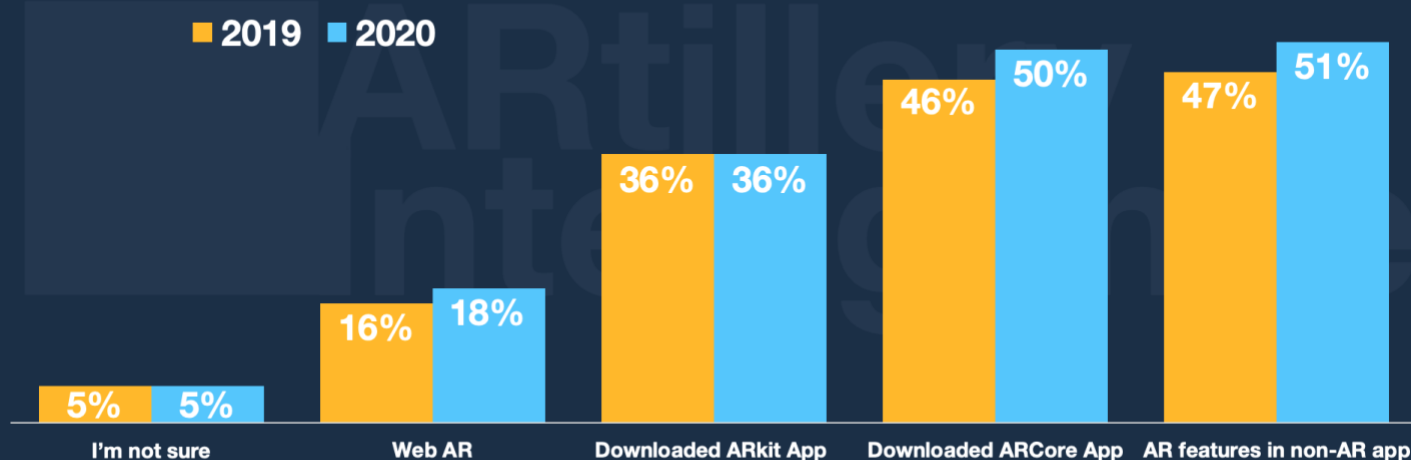
AR's best days are ahead. Though its current active use is lowest among platforms, its installed base is greatest... meaning it has the biggest shell to grow into.

As for apps, they perform well in the survey, but we'll set them aside for now. That's simply because this report is focused on AR ad distribution platforms and channels. **ARkit** and **ARCore** apps don't fit that description and are more in the category of *AR commerce* and marketing (see definitions in opening section).

But for web AR and AR-as-a-feature (social platforms), usage levels are telling of the potential these formats hold as advertising channels to distribute sponsored AR lenses.

Mobile AR Formats

What mobile AR formats have you used?

■ 2019 ■ 2020

I'm not sure	Web AR	Downloaded ARkit App	Downloaded ARCore App	AR features in non-AR app
5% / 5%	16% / 18%	36% / 36%	46% / 50%	47% / 51%

ARtillery Intelligence   THRIVE ANALYTICS   2018-2020 Base = 6,135 U.S. online adults   © ARtillery Intelligence, 2020

▌▌▌ Compare & Contrast

Moving on to a qualitative analysis, mobile AR ad platforms' pros and cons were outlined throughout this report in dedicated sections on the main players. But to boil that down, how do they stack up? AR ad agency Poplar put together a useful chart to answer this.

Specifically, when choosing an AR ad platform, considerations include capacity for organic discovery, paid promotion, developer skills required, and lens capabilities. At a high level, these factors stack up evenly among social AR platforms but deviate from web AR.

Poplar has also included native apps in its comparative exercise. This is useful for the purpose of perspective, but we'll ignore that column for now for the same reason stated on

the previous page: This report's focus on AR advertising doesn't include native apps as a prevalent distribution channel (one exception is in-game AR ads, covered in the next section).

So what are the takeaways? They're listed below in detail, but we'll underscore a few points. First, social platforms excel in organic discovery. Built-in social graphs and media-sharing use cases create that advantage. But they fall short in advanced campaign analytics when compared to web AR.

Social channels also fall short in being able to advertise products like alcohol. Indeed, web AR has become a go-to channel for AR campaigns around spirits brands, which we'll cover in Part II of this report series.

Image Source: Poplar

What's Next?

The analysis in this report so far has looked at the state of the present. But given AR's early and underdeveloped stage, we can expect a much different landscape in 3-5 years. With that in mind, what are some of the emerging or potentially-opportune AR ad channels on our radar screen?

As mentioned briefly in some of the narrative so far, they include things like visual search and messaging apps (a.k.a. conversational commerce). There's also AR ad experimentation underway in traditionally-robust ad channels like email and gaming. And then there are wild cards like the emerging and ever-opportune **TikTok**.

We'll touch on each of these briefly to round out the report...

TikTok: The Sleeping Giant

We often refer to **Instagram** as AR's sleeping giant. But the company truly deserving of that title may be **TikTok**. The **ByteDance**-owned app has grown as a user-generated media powerhouse. Its differentiation has come from a few key factors including creative media production and authenticity.

It also has a different UX that makes it more conducive to discovery. From a creator or brand perspective, this makes them more *discoverable*. As a result, they're incentivized which has fueled creation on the platform. As we examined earlier in light of **Snapchat**, that creation is the fuel of any social media.

All of this has led to rapid growth and favorable engagement levels. According to *Business of Apps,ₓ* **TikTok** has **two billion** total downloads, which is about **30 percent** of the world's population. Monthly active users total **800 million** which is almost **3x** the population of the United States.

This combination of reach and engagement has made **TikTok** attractive for brand advertisers. The app brought in **$177 million** in ad revenue in 2019 which is relatively little for a company with such massive usage. But it has just begun to monetize, and massive revenue growth is expected in the next few quarters.

Back to AR, **TikTok** is primed for it. This traces back to a lot of the same reasons AR fits so well on **Snapchat** and **Instagram**. Each of these social networks have camera-forward user bases that appreciate creative tools – in this case, lenses and graphical effects – to enhance their creations.

Image Source: Kon Karampelas

But what about the "sleeping" part in the sleeping-giant analogy? **TikTok's** has done relatively little with AR so there's lots of growth to come. Just like **Snapchat** started with a small set of in-house lenses, that is the approach **TikTok** has taken. But like **Snapchat**, it could soon open that up.

Poplar CEO David Ripert believes this will lead to an explosion of AR activity. He already sees clues that it will open the platform, and is already doing so on a gradual basis. **Poplar** itself is working with **TikTok** as one of its agency partners, which is usually a first step before platforms open up to public access.

When this happens, it could have perks for AR developers for the same *discoverability* reasons mentioned above. AR lenses can be discovered directly from **TikTok's** home page or signature Challenge page. Rippert contrasts this to **Snapchat** where users often find AR effects in the lens Carousel or Explorer.

We'll watch closely to see if **TikTok** can truly be AR's sleeping giant, and if it can further catapult AR as an advertising vehicle.

▐▐▌ Email, Messaging & Games

As explored earlier, the AR advertising landscape will evolve in ways that are similar to online and mobile advertising. Display ads (lenses) are out of the gate first, and we could see search (visual search) next. But what about other ad distribution channels that are prevalent on the web?

We already alluded to one of these when examining **Facebook Messenger's** AR integrations. Messaging as a communication platform could be ripe for AR, given that it's already evolving into what's known as "conversational commerce." This is when brands have direct communication with consumers.

That can be in customer service contexts or in pre-sales questions. It's primed for AR because messaging agents (or chatbots) can send web AR links for interested users to "try on" a given product. Picture this unfolding in a product return or exchange scenario to see various product-color and size variants.

This is more in the *AR commerce* realm, but as shown earlier by **Facebook Messenger**, brands can also use the messaging channel to promote products in paid and targeted ways. It's also aligned with millennial and Gen-Z sentiments as they're messaging natives.

Email is another potential channel. Just as email marketing is a massive segment of global ad revenue, it can carry AR activations. This is already being demonstrated by companies like **Movable Ink**, which prompts email recipients to activate their camera for various branded AR experiences.

And it's showing strong signs. In email campaigns in the style, travel and food verticals, the company has seen email open rates as high as **81 percent**, and post-open engagement rates as high as **75 percent**. That compares with average open rates in the email marketing world of **21 percent**.

Lastly, gaming is emerging as an AR ad channel. As background, the free-to-play mobile game industry has exploded in the past decade. These games are monetized through in-game-purchases (like **Pokémon Go**) or advertising. The latter happens through video or interstitial ads during game breaks or levels.

AR has entered the picture, taking the place of some of those 2D formats. **Unity** is leading the way, given its in-game ad network that reaches **1.7 billion** people. This ad network was built to help developers monetize the games they build on **Unity**. Now it's become a natural channel for AR ads.

"We realized that with the magic of **ARkit** and **ARCore**, we could deliver interactive AR experiences into that same stream," said Unity's Tony Parisi on the AR Show. "So instead of just a linear video ad, you can have an interactive experience and then if you turn the camera on, you get an AR version of that."
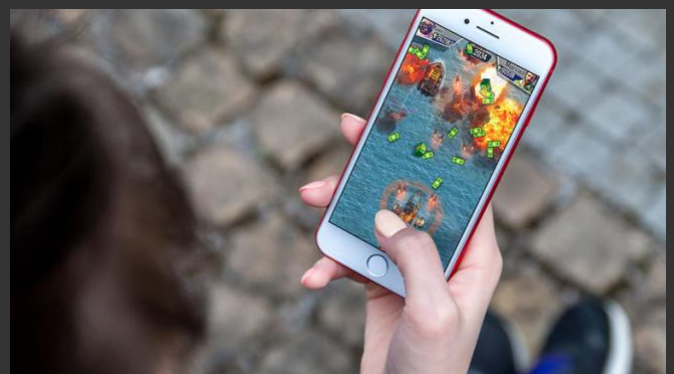

Image Source: Unity

▌▌▌ Search What You See

We'll say once again that AR advertising has started just as the digital ad world did, with display ads (in this case, lenses) out of the gate first. Visual search will follow, led by **Google**, **Pinterest**, **Amazon**, and **Snapchat**. It will bloom later than AR lenses due to greater technical complexity, but could carry more "high-intent" value… just like search itself.

Google is highly motivated for visual search to "future proof" its core business. This plays out through **Google Lens**xi (visual search) and **Live View**xii (AR navigation). In both cases, you can "search what you see" by holding up your phone to contextualize the world.

This will start with general-interest search categories like pets and flowers, but eventually move to products and packaged goods (monetizable). In all cases, it will utilize **Google's** robust image database for object recognition. **Google** is also advantaged in that it can "incubate" visual search in web search.

For example, at the **Google** I/O developer conference last May, it showed how it's positioning AR within search results for users to see 3D visual representations of search results. This will be like training wheels or a "gateway drug" to acclimate large audiences to AR in a trusted environment.

The first step, as always, will be growing users and engagement levels in these ways. But then monetization will follow. We believe **Google** will eventually monetize things like **Google Lens**, given that it has a natural use case to identify commercial products or local storefronts with one's smartphone.xiii

Once it flips the monetization switch, we believe growth will come quickly. That will be a function of **Google's** reach as a mobile search engine (**95 percent** market share) as well as the global penetration of **Android** OS. Specifically, we project visual search to grow to **$2.44 billion** by 2023 (see earlier chart).
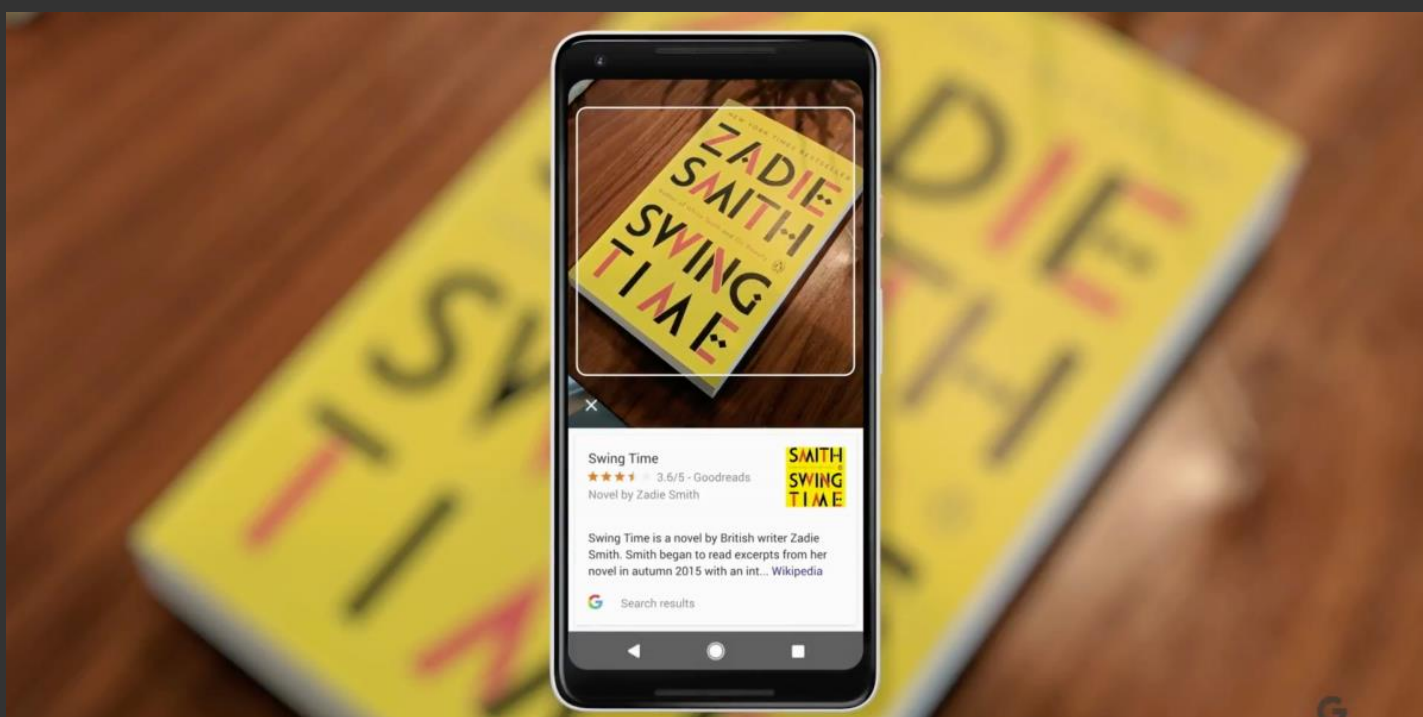

Image Source: Google

🏳️‍🌈 Lessons & Learnings

After going through the AR advertising landscape as it looks today – and potentially tomorrow – what are the biggest lessons? For those doing AR advertising right, *what* are they doing right? This will be a key theme of the second installment of this report series (case studies), but we'll outline a few here.

One common theme among successful AR advertising players is reducing friction. That goes for both users and advertisers. Users are drawn to AR experiences that don't require "activation energy," such as **Snapchat's** integration of AR into the existing behavior of social media sharing.

Similarly, with transactional functionalities that flow from AR ads – such as **Instagram** and others examined earlier – the entire purchase funnel happens all in one flow. In successful cases, users aren't bounced to another app, nor to a website to further browse products and transact. It all happens in one place.

🏳️‍🌈 Opportunity Gap

Another key lesson has less to do with what's present in today's market and more about what's *missing*. A big opportunity gap in AR advertising is tools to create 3D graphical assets for AR product visualization. Large players like **IKEA** have done this in house, but a more open and scalable tool is needed.

That could unlock AR advertising by democratizing it for more businesses, especially smaller ones. It could also enable companies with massive catalogs (think **Walmart**) to scale up the digitization of their inventory cost-effectively. That will better enable product visualization in AR ads.

Image Source: Panera/JAB Holding

🏳️‍🌈 New Metrics

Another noteworthy dynamic is the question of analytics. What are the right metrics for AR engagement? The advertising world tends to stick to what it knows, such as impressions and click-through rates (CTRs). But activities like AR product try-ons can't be captured by CTRs.

One metric that can better capture AR engagement is session lengths, as noted earlier. Completed e-commerce purchases that flow from AR product try-ons are also a strong signal. Indeed, a finished sale is a universal metric, and most online metrics we know today are just proxies for that ultimate goal.

This is all to say that AR advertising will eventually need more native metrics. In addition to session lengths, that could include biometric sentiment analysis using computer vision (given that faces are sometimes in frame). Like all industry standards, this is something that requires widescale agreement, and will take several more years to fully develop.

Part II Preview

After examining the landscape, market sizes and driving factors for AR advertising today, the next move is to *show rather than tell*. This will be the goal of Part II of this report series. It will feature case studies that demonstrate the principles covered in the preceding pages.

These will span the range of AR advertising campaigns examined here. We'll look at upper-funnel campaigns that are reaching superbowl-sized audiences; And we'll drill down to lower-funnel campaigns that are driving measurable e-commerce sales or offline foot traffic.

Stay tuned for that deep dive. Outside of this series, you can also look forward to ongoing analysis of AR advertising's opportunity. It will continue to be a moving target.

▌▌ Video Companion: What's Working in AR Advertising?

Click video to open
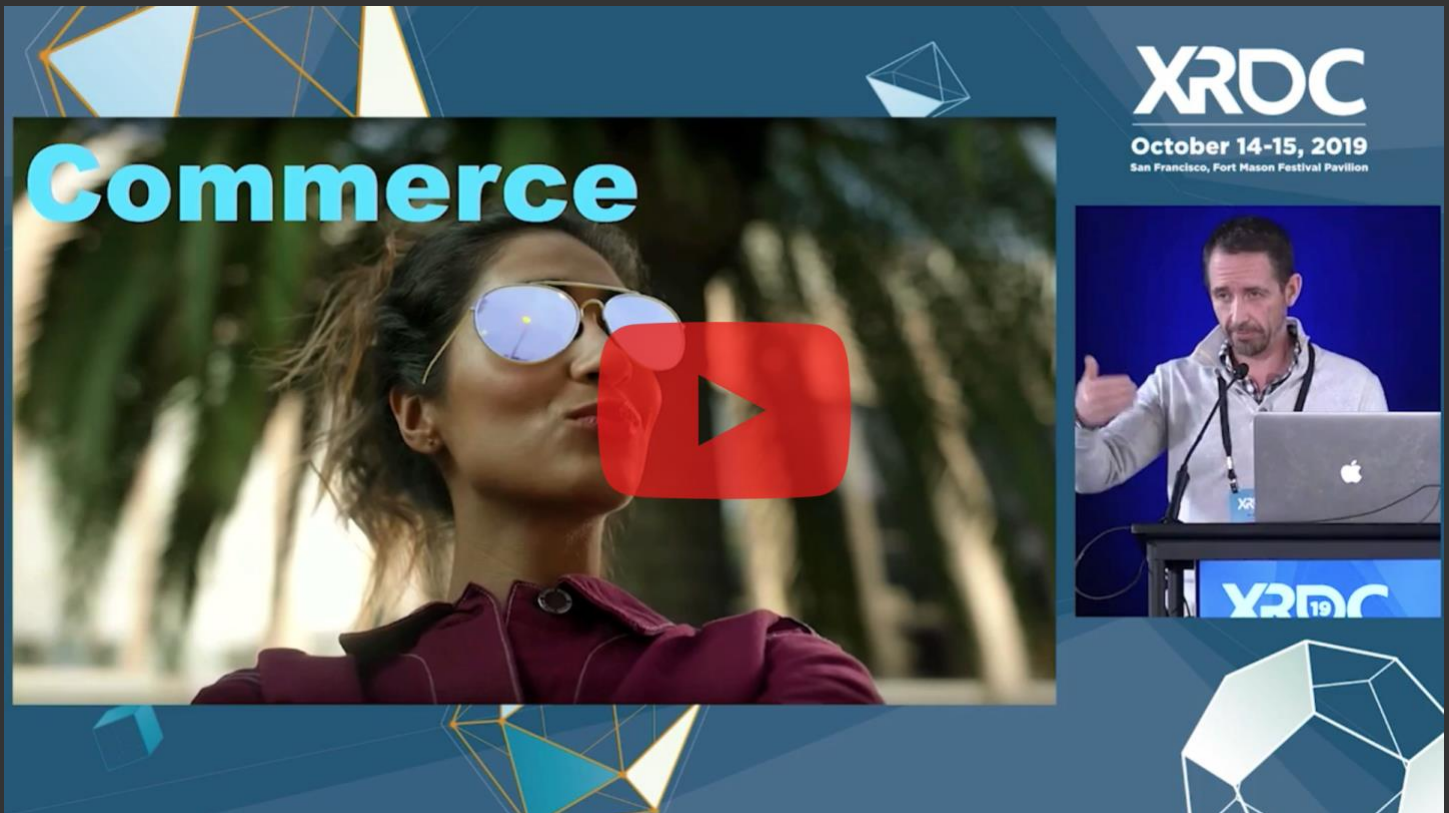
▌ Key Takeaways

▌AR Of all the subsectors of augmented reality (AR), advertising is the revenue leader.
▌AR ARtillery Intelligence estimates AR ad revenues were **$1.58 billion** in 2019, growing to **$8.8 billion** by 2023.
▌AR This measures the dollars spent on sponsored AR lens distribution in channels like Snapchat and Instagram.
▌AR It does not include the money companies spend on AR experiences for self-distribution (e.g. apps).

▌AR Driving this revenue is a combination of accelerating usage and advertiser interest.
▌AR AR-adorned lenses have gained popularity with users, building on already-popular behavior like sharing media.
▌AR Advertisers have followed that usage and discovered that AR affords them greater creative capabilities.
▌AR The ability to demonstrate products in immersive ways has sparked interest among brands and creative agencies.

▌AR Brand advertisers are also attracted to AR's business case that continues to be validated in ROI metrics.
▌AR AR has a proven and rare ability to span the purchase funnel from engagement to action.
▌AR AR lens campaigns can reach Superbowl-sized audiences via high-reach channels like Facebook's News Feed.
▌AR They can also achieve high conversion rates via immersive product try-ons that engender informed purchases.

▌AR Snapchat is the AR ad revenue leader so far, owed mostly to its dedicated focus on the technology.
▌AR AR is native to Snapchat, as well as its "camera-company" ethos and its camera-forward user base.
▌AR This has started with face filters that play on users' vanity and existing penchant for sharing selfies.
▌AR This has unlocked the opportunity for face-oriented product advertising such as cosmetics and sunglasses.
▌AR A larger opportunity is developing for product visualization on the broader canvas of the physical world.

▌AR Facebook looms in Snapchat's rear-view mirror with increasing attention to AR advertising and lenses.
▌AR Facebook's larger global scale gives it strong potential as a longer-term AR advertising powerhouse.
▌AR Its Spark AR platform is in early stages of its true potential to gain community and advertiser traction.
▌AR This is aligned with Facebook's core advertising business and will scale through its several properties.
▌AR Though News Feed is the prevalent lens distribution channel, Messenger, WhatsApp and Portal will grow.

▌AR The Facebook property with the greatest potential to lead AR activity and advertising revenue is Instagram.
▌AR Spark AR was opened up to Instagram developers last summer, and continues to ramp up.
▌AR AR is more aligned with Instagram's use case and user base than any other Facebook property.
▌AR AR advertising will find fertile soil on Instagram due to the visual shopping and transactional use its cultivated.

▌AR Web AR likewise holds lots of promise as an AR advertising distribution channel.
▌AR Web AR is one of the least-used AR formats today, but has strong potential to eclipse others over time.
▌AR Its greater compatibility and cross-channel interoperability (like the mobile web) will reduce user friction.
▌AR Resulting user growth will unlock advantages, one of them being greater ad distribution capability and scale.

▌AR Though the above AR ad distribution channels are most prevalent today, the sector will be a moving target.
▌AR TikTok looms not just in global scale and engagement levels, but conduciveness to sponsored AR lenses.
▌AR Beyond social and web, other developing AR advertising channels include email, messaging and gaming.
▌AR Beyond lenses, wholly-new formats are developing such as visual search from Google, Pinterest and Amazon.
▌AR The "search what you see" use case could follow online search as an opportune ad format, given high user intent.

▌AR As the AR advertising landscape quickly develops, many questions remain.
▌AR Opportunity gaps exist, such as scalable 3D asset creation for visualizing large product libraries.
▌AR Analytics remain undefined as 2D metrics like click-through-rates don't capture immersive product experiences.
▌AR There's still too much friction in the UX... success will come from ad-to-transaction flows that are seamless.

▌AR Part II of this series will dive deeper into all of the above and "show rather than tell."
▌AR This will feature a procession of case studies and an interactive index of AR advertising campaigns.

About ARtillery Intelligence

ARtillery Intelligence chronicles the evolution of spatial computing. Through writings and multimedia, it provides deep and analytical views into the industry's biggest players, opportunities and strategies.

Run by analysts and former journalists, coverage is grounded in a disciplined and journalistic approach. It also maintains a business angle: Though there are lots of fun and games in spatial computing, cultural, technological and financial implications are the primary focus.

Products include the **AR Insider** publication and the **ARtillery PRO** research subscription, which together engender a circular flow of knowledge. Research includes monthly narrative reports, market-sizing forecasts consumer survey data and multi-media, all housed in a robust intelligence vault.

Learn more **here**.

▌About Intelligence Briefings

ARtillery Intelligence Briefings are monthly installments of spatial computing analysis. They synthesize original and third-party data to reveal opportunities and dynamics of VR and AR sectors. A layer of insights is applied to translate market events and raw figures into prescriptive advice.

More information, past reports and editorial calendar can be seen **here.**

▌About the Author

Mike Boland was one of Silicon Valley's first tech reporters of the Internet age, as a staff reporter for *Forbes* (print) starting in 2000. He has been an industry analyst covering mobile and social media since 2005, and is now Chief Analyst of ARtillery Intelligence and Editor-in-Chief of *AR Insider.*

Mike is a frequent speaker at industry conferences such as AWE, VRLA and XRDC. He has authored more than 120 reports and market-sizing forecasts on the tech & media landscape. He contributes regularly to news sources such as *TechCrunch*, *Business Insider* and the *Huffington Post.*

A trusted source for tech journalists, his comments have appeared in A-list publications, including *The New Yorker*, *The Wall Street Journal* and *The New York Times.*

Further background, history and credentials can be read **here.**

▐▌ Methodology

This report highlights ARtillery Intelligence viewpoints, gathered from its daily in-depth coverage of spatial computing. To support narratives, data are cited throughout the report. These include ARtillery Intelligence original data, as well as that of third parties. Data sources are attributed in each case.

For market sizing and forecasting, ARtillery Intelligence follows disciplined best practices, developed and reinforced through its principles' 15 years in tech-sector research and intelligence. This includes the past 4 years covering AR & VR exclusively, as seen in research reports and daily reporting.

Furthermore, devising these figures involves the "bottom-up" market-sizing methodology, which involves granular revenue dynamics such as unit penetration, pricing and growth patterns. More on ARtillery Intelligence market-sizing research and methodologies can be read **here.**

▐▌ Disclosure and Ethics Policy

ARtillery Intelligence has no financial stake in the companies mentioned in this report, nor was it commissioned to produce it. With respect to market sizing, ARtillery Intelligence remains independent of players and practitioners in the sectors it covers, thus mitigating bias in industry revenue calculations and projections.

ARtillery Intelligence's disclosure and ethics policy can be seen in full **here.**

▐▌ Contact

Questions and requests for deeper analysis can be submitted **here.**

▌▌▌ **References**

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i See ARtillery article: **How Much Do Snap Lens Creators Make?** (sign-in required)
ii See ARtillery Intelligence Report: **AR Cloud and the Internet of Places** (sign-in required)
iii See ARtillery Intelligence Report: **2018 Lessons, 2019 Outlook** (sign-in required)
iv See ARtillery article: **Snapchat Lens Users Engage 30x Per Day** (sign-in required)
v See ARtillery article: **Is Instagram AR's Sleeping Giant** (sign-in required)
vi See ARtillery article: **Facebook Boosts Purchases 28% with AR** (sign-in required)
vii See ARtillery article: **Is Facebook Building a Social Layer to the Spatial Web?** (sign-in required)
viii **Mobile Users Time Spent with Apps Versus Web**
ix See ARtillery Intelligence Report: **AR Usage & Consumer Attitudes, Wave IV** (sign-in required)
x **TikTok Usage Figures**
xi See ARtillery article: **Test Driving Google Lens: The Strategic Take** (sign-in required)
xii See ARtillery article: **Can Google's Live View Popularize AR?** (sign-in required)
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