



**ABRIDGED VERSION
FOR PREVIEW**

ARTILLRY INTELLIGENCE BRIEFING
TECH GIANTS TACKLE AUGMENTED REALITY
July 2017

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Executive Summary















A lot can be learned about augmented reality's (AR) market opportunity by examining the moves of tech giants tackling it. And in the past six months alone, we've seen a flood of activity in various announcements and developer conferences – everyone from Google to Facebook.

To zero in on the biggest players making the most impactful moves, this report examines the AR positioning of Apple, Google, Facebook and Amazon – the so-called “Four Horsemen of Tech.” Microsoft, though not on that list, is making considerable moves that we’ve included in this report.

Recognizing each of these giants' priorities and positioning can inform decisions about the market's trajectory, fill necessary gaps in the AR value chain and "skate to where the puck is going." This report is a foundation for such market analysis, sizing and opportunity-spotting.

There will continue to be rapid advancements in AR, meaning that ongoing examination will be necessary. In addition to daily coverage on ARtillry.co, this report is meant to give subscribers a base for that knowledge position.

Key Takeaways

-  There are several factors causing multimedia capture and sharing to become a prevalent consumer use case: better camera optics, mobile broadband and millennial behavior.
-  This is causing the smartphone camera to take over as the next app development platform. And that has natural synergies with AR (portability, viewfinder, graphical processing, etc.).
-  We've seen proof of concept in several early and primitive examples of smartphone AR, such as Snapchat Selfie Lenses and Pokémon Go.
-  Though they're not "true AR," these early mobile AR products have indicated the mass-market appeal for AR, and served as a "gateway drug."
-  Most major tech giants have responded to that market validation with major AR investments... and each respective strategy mirrors the positioning and priorities of that company.
 -  Google sees AR as a way to boost "visual search" and user engagement, towards supporting its core search business.
 -  Amazon wants to get you to buy more stuff, using AR to qualify purchases and visualize product placement in home.
 -  Facebook wants to boost multimedia sharing through AR lenses, supporting its core ad business and setting a foundation for an immersive media future.
 -  Apple launched ARKit to breathe new life into waning iPhone sales and generally position its future hardware for continued dominance.
 -  Microsoft will combine a vertically integrated hardware approach (Hololens) with its classic model of licensing mixed reality software to OEMs.
-  Recognizing these giants' goals can inform decisions about the market's trajectory, filling necessary gaps in the AR value chain and "skate to where the puck is going."
 -  **For developers**, the opportunity starts with AR app toolkits that these giants provide. Aligning platform capabilities and audience will be key success factors.
 -  **Startups** can triangulate areas where greatest demand and valuations lie, especially if interested in market exits or partnerships with tech giants setting this course.
 -  **Non-developers and startups such as media companies**, should watch the approaches and market shares of these tech giants to decide which platforms offer opportunities for audience extension, user engagement and monetization.



Introduction: Finding an Addressable Market

Smart glasses – the modality in which augmented reality is mostly envisioned – is several years from meaningful consumer adoption, due to factors like cost, size and cultural acceptance. The nearer term AR opportunity lies instead with the installed base of 2.6 billion global smartphones.

Smart glasses will see near-term adoption in the enterprise though. There, stylistic and cultural concerns don't exist. Enterprise buyers also have less price sensitivity to costly smart glasses, due to potential savings and streamlined operations in areas like manufacturing and assembly.

Back to consumer markets, recent moves by major tech giants support the assertion that smartphones will be the near-term vessel for AR. And Smartphone hardware advancements align with AR capability -- including optics, screen size, processing power and mobile broadband speeds.

There are also cultural factors, such as Millennials' affinity for sharing multimedia like Snaps. These social sharing use cases have been the initial proving grounds for widespread mobile AR acceptance. They've taken form in features like Snapchat Selfie Lenses or games like Pokémon Go.

Though these early versions of AR lack the dimensional mapping to classify them as "true AR," it doesn't matter: Their value lies in proof of concept for widespread market acceptance. That market validation has in turn signaled tech giants to invest heavily in mobile AR, as this report examines.

Part of that investment has been to advance "true AR." In recent moves by Google, Facebook, Apple and others, there's been deliberate emphasis on dimensionally accurate AR graphics. That science is known as simultaneous localization and mapping (SLAM), as explored in this report.

These foundational advancements have taken form in SDKs and toolsets for developers to carry us into AR's next phase. That period will be characterized by more advanced, utilitarian, varied (and monetizable) AR apps, compared to the relatively primitive forms of mobile AR we've seen to date.

With that backdrop, we examine the individual moves of five market-defining players in mobile AR: Facebook, Apple, Amazon, Google and Microsoft. We'll tackle them one by one.



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About ARtillry Insights

ARtillry Intelligence partners with the VR/AR Association to deliver a research package. Known as *ARtillry Insights*, it will equip subscribers in AR and VR sectors to make informed business decisions.

FEATURES

Original Research: Monthly original reports examining opportunities and dynamics of VR and AR.

Curated Research: ARtillry analysts collect, analyze and filter recommended reading and data.

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EDITORIAL CALENDAR

June: The State of Virtual Reality (published)

July: Tech Giants Tackle AR (published)

August: VR Usage & Consumer Attitudes (published)

September: When will AR & VR Reach Consumer Ubiquity (forecast)

October: Discussions & Takeaways from AR & VR Investors

November & Beyond: To Be Announced...

COST

VR/AR Association Members: **\$39/month**

Non-VR/AR Association Members: **\$89/month**

<https://youtu.be/WTruV4arTI0>



About ARtillery

ARtillery is a publication and research firm that examines augmented reality (AR) and virtual reality (VR). Through writings and multimedia, it provides deep and analytical views into the industry's biggest players and opportunities. It's about insights, not cheerleading.

Run by career analyst and journalist Mike Boland, coverage is grounded in a disciplined and journalistic approach. It also maintains a business angle: Though fun and games permeate VR and AR (especially the former) long-term cultural, technological and financial implications are primary.

Learn more at <https://artillery.co/>





About Intelligence Briefings

ARtillery Intelligence Briefings are monthly installments of VR/AR data and analysis. They synthesize original and third party data to reveal the dynamics of VR and AR sectors, and their opportunities.

In addition to data, a layer of insights is applied to translate market events and raw figures into prescriptive advice. This takes form in a narrative story arc, grounded in market figures.

Questions and requests for deeper analysis can be submitted at:

<https://artillery.co/contact/>

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, covering emerging tech.

Mike is a frequent speaker at industry conferences such as VRLA, ad:tech and LeadsCon. He has authored in-depth reports on the changing tech & media landscape including social networking and mobile. He contributes regularly to highly read online 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. Mike was previously a San Francisco-based journalist for business and technology print publications, such as Red Herring, Business 2.0, and Mobile Magazine.

Note of Disclosure

ARtillery has no financial stake in the companies mentioned in this report, nor received payment for its production. ARtillery's disclosure and ethics policy can be seen at:

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