



# ARTILLRY INTELLIGENCE BRIEFING

## MOBILE AR: APP STRATEGIES & BUSINESS MODELS

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# Executive Summary

Augmented Reality (AR) comes in various forms, such as smartphones and smart glasses. Those are further segmented into consumer and enterprise uses. But the point along that spectrum that's gained the most traction is consumer-gear mobile AR, utilizing the smartphones we all carry.

Apple's ARkit and Google's ARCore have democratized mobile AR with app-building tools, while Pokémon Go and Snapchat put it on the map with mainstream-friendly AR features. Though these apps aren't "true AR," it doesn't matter: they've done AR a favor by supplying its gateway drug.

These early AR apps have also done the industry a favor by beginning to validate product and revenue models. What AR features do consumers want to use? And what will they pay for? Pokémon Go and Snapchat have already begun to answer these and other strategic questions.

Pokémon Go for example drove almost \$1 billion in revenue in the second half of 2016 alone. It did this through in-app purchases and brand-collaborations to drive local offline commerce. These are a just a few of many potential business models that will develop and drive mobile AR revenues.


































Meanwhile, giants like Amazon, IKEA and BMW are pursuing AR strategies and likewise teaching us important lessons. For example, should AR live within standalone apps or be incubated as a feature within already-established apps? And what should AR features be called to attract mainstream users?

In terms of market size, ARtillery Intelligence projects consumer AR revenues to grow from **\$975 million** in 2016 to **\$14.02 billion** in 2021. Until 2021, most of that revenue will come from mobile AR apps, as smart glasses aren't yet viable for consumer markets due to cost and style.

But how will this revenue materialize and what product and revenue models will be best positioned? In addition to industry giants and early movers mentioned above, the ecosystem contains developers, startups, media companies and brands. How will they deliver content and build value with mobile AR?

The best way to answer these questions is to examine today's best practices, historical lessons and market trajectory. This report sets out to do that by surveying the landscape, and uncovering product and revenue strategies for anyone interested in tapping the mobile AR opportunity.

# Key Takeaways

-  **Smart glasses will dominate enterprise AR in the near term, while smartphones dominate consumer AR.**
  -  As popularized by rudimentary AR like Snapchat and Pokémon Go, this involves graphical overlays that interact with the world seen through your smartphone camera.
  -  Smartphone ubiquity and componentry – image processing, sensors, camera – position it well for AR.
  -  ARkit and ARCore further democratize mobile AR through software that does the back-end heavy lifting.
-  **There are 476 million AR-compatible smartphones today, growing to 3.8 billion by 2021.**
-  **Consumer AR revenue will grow from \$975 million in 2016 to \$14.02 billion in 2021.**
  -  Most of this derives from mobile AR, until 2021 when consumer smart glasses begin to gain traction.
  -  Mobile AR revenue will be software dominant, including apps, in-app purchases and commerce.
  -  Mobile AR strategies and differentiation therefore reside mostly at the app level.
-  **Despite positive signals, mobile AR is still challenged**
  -  Mobile AR resembles iPhone apps ten years ago: underdeveloped capability, standards and demand.
-  **Product strategies will evolve natively with AR, but also include fundamental/historical app tactics.**
  -  Native thinking (“AR-first”) should dominate app design, rather than porting existing media into AR.
  -  Incubating AR features within established apps can be a stepping-stone to standalone native apps.
  -  Consider alternatives to industry terms like “AR” (historical example: Snapchat)
  -  Build AR experiences that happen in short bursts, due to arm fatigue and battery drain.
  -  Successful apps will address real consumer utility and demand, rather than “tech-first” engineering feats.
  -  “Solutions in search of problems” won’t succeed, such as apps that solve pain points that no one has.
  -  Apps built solely around novelty could succeed in download volume but languish in active/repeat use.
  -  Combining AR novelty with sticky behavior (e.g. social communication) is showing signs of success.
-  **Business models will likewise follow a combination of native evolution and established principles.**
  -  In-app purchases are proven in gaming and social apps, versus upfront purchases.
  -  Visualizing large items will enable commerce-based monetization such as car and home shopping.
  -  Commerce-based AR monetization success stories so far include BMW, IKEA, Amazon and Houzz.
  -  Google will pursue visual search (Google Lens), including cost-per-action local commerce.
  -  AR advertising could eventually drive revenue but doesn’t yet have meaningful reach and scale.
  -  Forthcoming models to watch include Niantic’s Harry Potter AR game and Snapchat’s AR Geofilters.
-  **Platform choice is important: Align goals with respective scale and strengths of ARCore and ARKit.**
  -  ARkit has an early advantage in platform reach, but ARCore will achieve greater long-term scale.
  -  ARkit has better software and hardware calibration, but ARCore could be more open and flexible.
-  **Before any of the above, clearly defined ROI goals are a critical first step to AR product strategies.**
  -  This will inform and dictate all other strategic directions, and make or break AR app outcomes.
  -  Doing AR for AR’s sake – or to check an item of a list – will set any AR product up to fail.

*Key takeaways are also highlighted throughout the main body of this report.*

# Introduction: The Right Vessel

Most people think of Augmented Reality (AR) as smart glasses that overlay graphics and information in one's immediate field of view, a la Google Glass. And that's certainly a form factor being deployed in enterprise environments, as examined in last month's ARtillry Intelligence Briefing.

But it's also a form factor with long-term consumer potential. Intel projects consumer smart glasses to inflect around 2027 with **50 million** annual unit sales, growing to **200 million** by 2031. The rationale is that smart glasses' consumer value and utility at that point could parallel that of today's smartphone.

But until then, AR glasses don't pass stylistic requirements for consumer markets (size, weight, cost etc.). So consumer AR's ruling form factor in the near term will be smartphones. You probably know the format: graphical overlays that interact with the world seen through your smartphone camera.

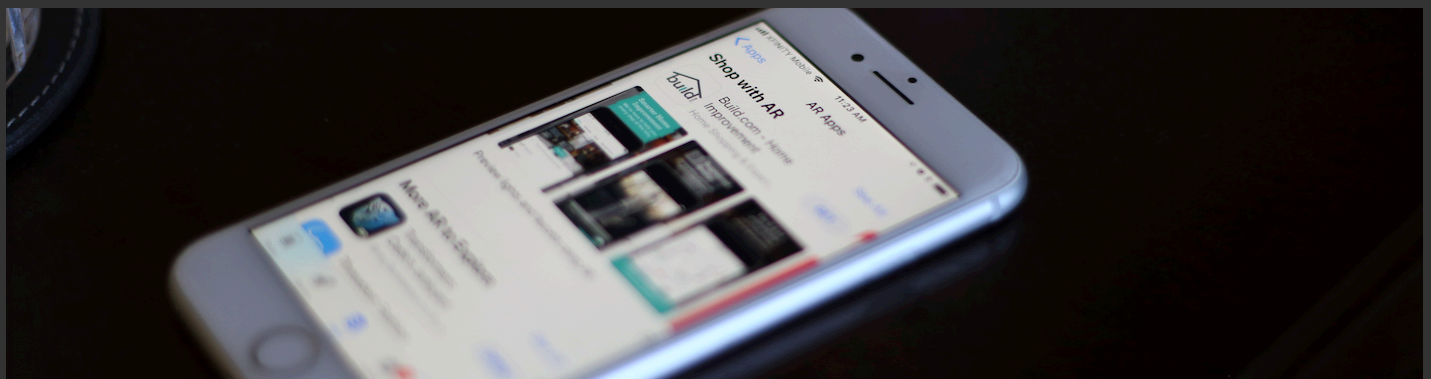
Further positioning the smartphone as a vessel for AR is its ubiquity and permanence as a fixture in our lives. And in addition to volume, smartphones have the goods when it comes to necessary hardware components to run basic AR, including image processing, sensors and camera.

Accelerating that capability, Apple's ARkit and Google's ARCore have standardized the development tools and democratized mobile AR app creation. And early apps like Pokémon Go and Snapchat – though they're not "true AR" – put mobile AR on the map and have acclimated consumers en masse.

Adding up all these factors, mobile AR is in a strong position for growth. But it also faces some challenges and is off to a slow start. In fact mobile AR today resembles iPhone apps ten years ago – underdeveloped in product capability, standards, consumer demand and several other factors.

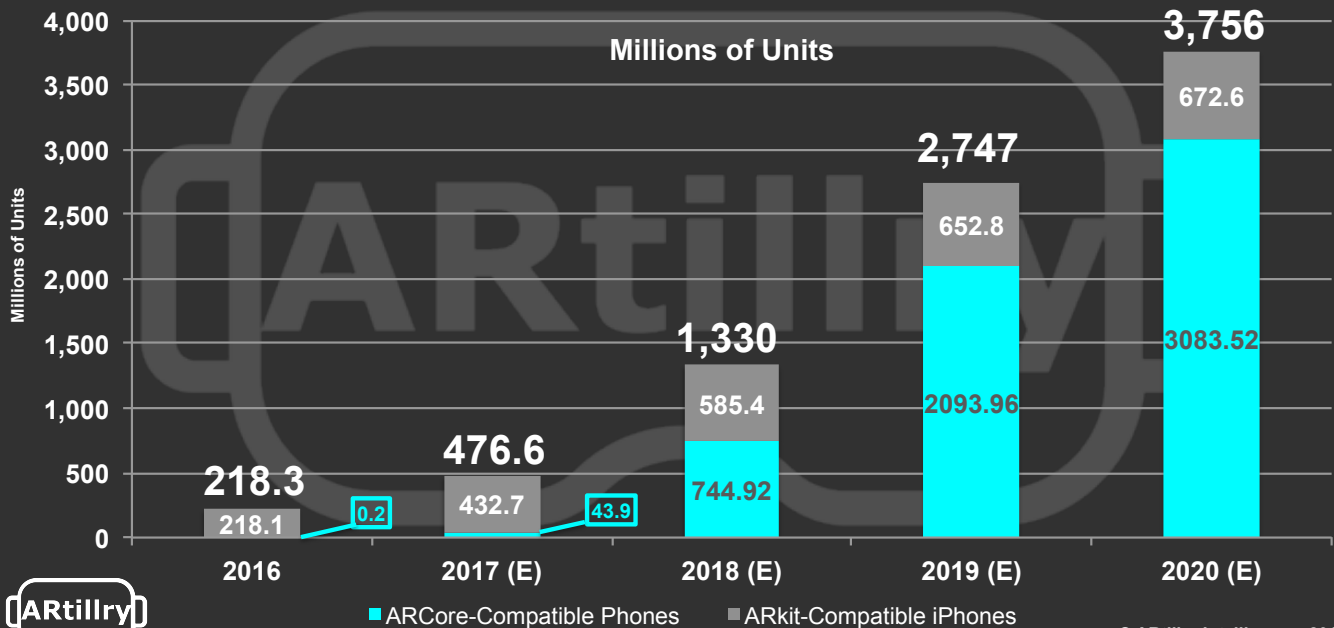
That makes it an opportune but also challenging period. For developers, startups, brands, media companies or anyone else that wants to explore Mobile AR opportunities, the best thing to do is stay informed. That means examine today's best practices, historical lessons, and market trajectory.

We'll do just that in the following pages, with the goal of informing mobile AR business strategies. That will include surveying the landscape of current product and business models, and looking to historical lessons that still apply from the smartphone era. We'll start by quantifying the opportunity.



## INSTALLED BASE OF ARCORE AND ARKIT

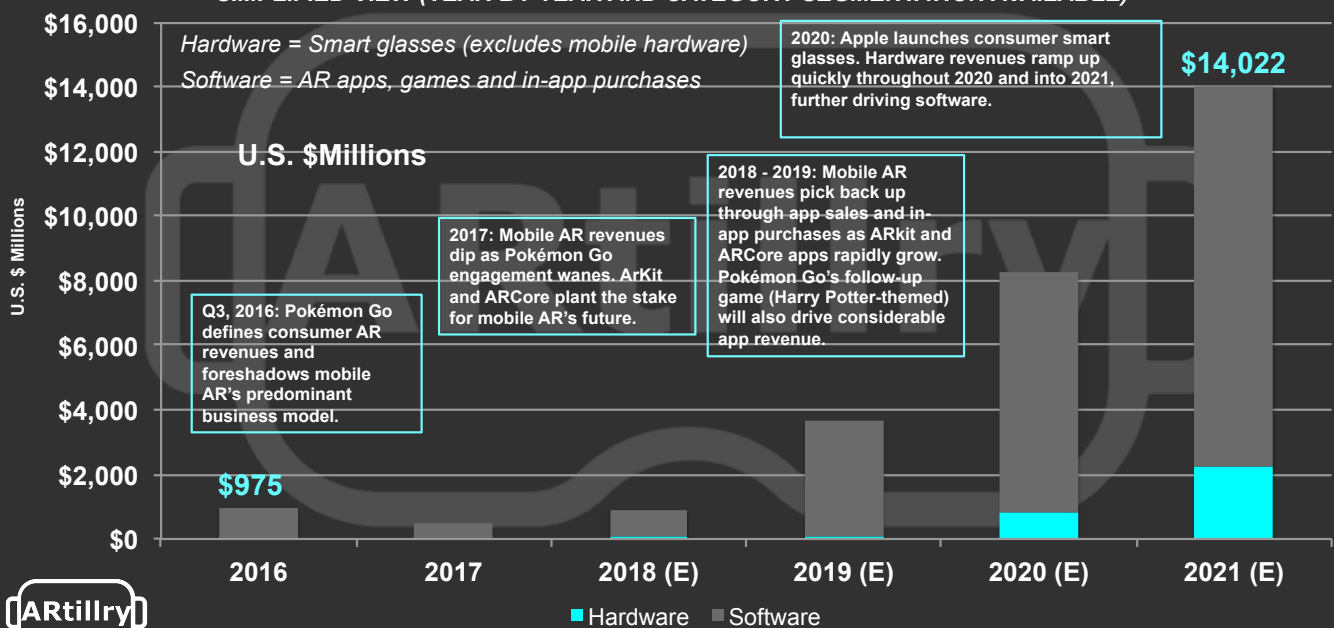
Global Handsets Compatible with ARCore or ARKit



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## CONSUMER AR: HARDWARE VS. SOFTWARE

SIMPLIFIED VIEW (YEAR-BY-YEAR AND CATEGORY SEGMENTATION AVAILABLE)



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Year-by-year breakdown and category segmentation available in full report.

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# Video Companion: Mobile AR App Strategies

(click URL to open)

[https://youtu.be/2fsyMHqR\\_Vw](https://youtu.be/2fsyMHqR_Vw)





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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 reports and weekly briefs on XR data, opportunities and dynamics.

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

**Conference Talks:** We watch, select and summarize video from XR events.

**Slide Bank:** We assemble charts for your presentations and knowledge building.

**Slack Channel:** We're here to answer your XR questions.

### 2018 EDITORIAL CALENDAR

**January:** Enterprise XR: Impacting the Bottom Line

**February:** Mobile AR: App Strategies and Business Models ([this report](#))

**March:** Local Commerce and the AR Cloud

**April:** XR Usage & Consumer Attitudes

**May:** XR Global Revenue Forecast

**June:** The State of XR: Mid-Year Review

**July & Beyond:** To Be Announced...

### COST

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

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

<https://youtu.be/WTruV4arTl0>



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# About ARtillery Intelligence

ARtillery is a publication and intelligence firm that examines augmented reality and virtual reality, collectively known as XR. Through writings, data 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>



# About Intelligence Briefings

ARtillery Intelligence Briefings are monthly installments of VR/AR data and analysis. They synthesize original and third-party data to reveal opportunities and dynamics of VR and AR sectors. In addition to data, 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 at:

<https://artillery.co/artillery-intelligence/>

## 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*, covering emerging tech.

Mike is a frequent speaker at industry conferences such as VRLA, ad:tech and LeadsCon. He has authored in-depth reports and market-sizing forecasts on the changing tech & media landscape. 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*.

Further background, history and credentials can be found at:

<http://www.mikebo.land/>





# Contact

Questions and requests for deeper analysis can be submitted at:

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



# Resources

*Links to additional information on consumer and mobile AR*

Matt Meisnieks (technical AR tactics)

<https://blog.prototypr.io/ar-first-mobile-second-614e85673083>

Augmented World Expo

[www.augmentedworldexpo.com](http://www.augmentedworldexpo.com)

Augmented Reality Dot Org

<http://www.augmentedreality.org/>

AR in Action (ARiA)

<http://arinaction.org/>

The VR/AR Association

<http://www.thevrara.com>



# Methodology

This report highlights *ARtillery Intelligence* viewpoints, gathered from its daily in-depth coverage of the XR sector. To support the narrative, 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 research and intelligence in the tech sector. This includes the past two years covering AR & VR as a main focus.

More about ARtillery's market-sizing credentials can be found here:

<https://artillery.co/artillery-intelligence/forecasts/methodology/>

# Focal Range

This report's intended focus is business strategies rather than technical ones. Though technical components are referenced throughout the report, it is not meant to be a technical guide. See the above resources for more technical analysis, and contact us above to engage over AR strategies.

# Disclosure and Ethics Policy

ARtillery has no financial stake in the companies mentioned in this report, nor was it commissioned to produce it. With respect to market sizing, ARtillery remains independent of players and practitioners in the sectors it covers. It doesn't perform paid services or consulting for such companies, thus mitigating bias — real or perceived — in market sizing and industry revenue projections.

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