



ARTILLY INTELLIGENCE BRIEFING

XR: 2017 LESSONS, 2018 PREDICTIONS

DECEMBER 2017





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Executive Summary

2017 was quite a year for AR & VR (a.k.a. XR). As is often the case with emerging technology, XR's early days have included a fair amount of exuberance. This year kicked off as such, continuing from 2016. But excitement levels began to recede in mid-2017 as several market signals emerged.

Among those signals, we saw the beginnings of a funding crunch as several companies perished after failing to secure follow-on investing rounds. We saw TechCrunch pronounce (falsely we believe) that VR is dead. Many of these activities stemmed from disappointing consumer VR adoption.

This realization caused the XR world in 2017 to shift attention from high-end VR to mobile AR, given its large installed hardware base. Apple's June ARkit unveiling amplified those excitement levels, which then weakened as the platform's September release was met with tepid consumer response.

So the question is: Where are we now with AR & VR, and what can we expect in 2018? Drawing from ARtillery's XR coverage and market sizing over the past two years, we have ventured to answer this question. In short, excitement levels haven't been misplaced... but some have been mis-timed.

As a historical comparison, e-commerce was prematurely heralded in the early 2000's dot-com bubble (which ARtillery analysts lived through). The market sizing and exuberance at the time wasn't overblown: In fact it underestimated eventual revenues. It was just early, by about five years.

ARtillery Intelligence believes that has parallels – though a different timeline – to where we now sit with XR. Massive opportunity exists but expectations should be adjusted about its imminent arrival. This realization can help inform go-to-market strategies and operational execution for XR players.

But how and when will it all come together? What are the top factors and trends to examine? What are key drivers for interlocking pieces in the XR universe (AR, VR and enterprise and consumer segments of each)? And what does it all mean for where you sit? This report tackles these questions.

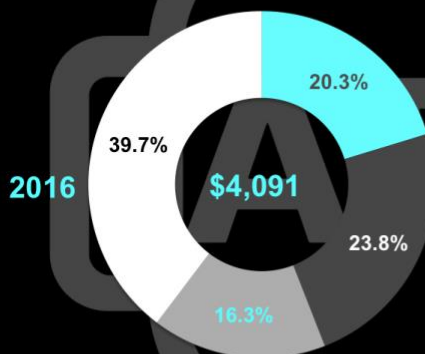
We'll take a look back at 2017 to extract measurable lessons, and predict XR's direction in 2018. It's all about zeroing in on the pockets of greatest opportunity, and -- as always -- timing. Spoiler alert: there will be real revenue and value creation in 2018, but they'll require strategic precision.



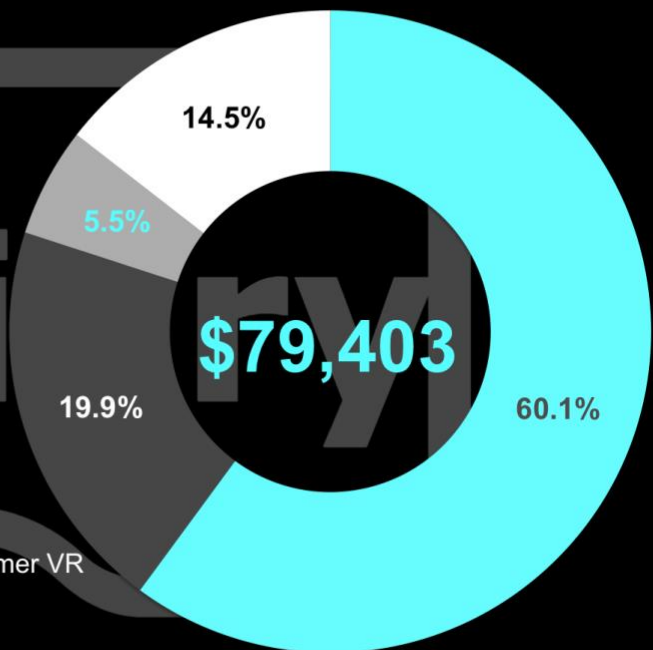
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GLOBAL AR & VR REVENUES

U.S. \$Millions



2021



■ Enterprise AR ■ Consumer AR ■ Enterprise VR ■ Consumer VR



Preview: 2018 Predictions

1. Enterprise AR Pulls Ahead: Enterprise AR will pull ahead of Consumer VR as the leading XR sub-sector (consumer VR held that leading position in 2017), reaching revenue of \$10 billion. The biggest adopters in 2018 will be manufacturing and assembly, which have the clearest ROI potential for enterprise AR. The biggest challenge will be organizational red tape and sales cycles. So the name of the game will be quantifying ROI, demonstrating bottom line impact and having domain knowledge in enterprise verticals (in addition to immersive tech competency). Those who can hit those marks will be most successful in tapping into enterprise AR's \$48 billion opportunity by 2021.

2. Mobile AR Rebounds: After surging in 2016 due to Pokémon Go, then dipping in 2017, mobile AR revenues will rebound in 2018, exceeding \$1 billion. This will mostly come from app revenue, including Niantic's Harry Potter game that inherits Pokémon Go's architecture and game mechanics. The predominant mobile AR business model in 2018 will follow Pokémon Go's established model of in-app purchases. We'll also begin to see experimentation with ad support or sponsorship that are tied to location-based discovery and commerce (i.e. retail store visits, navigation, product info).

3. Mobile AR Standards Develop: After disappointing mobile AR app libraries in 2017 (in both quantity and quality), 2018 will continue to see many misfires and unsuccessful apps. A small minority will break out and begin to define the category and seed user demand. They will apply native thinking, "AR-first or "AR-Only" approaches, but these success stories will be very limited in quantity – likely fewer than ten. At least one of these apps will break out in 2018 as mobile AR's first truly native and category-defining "killer app," and will be location-based gaming, social, or commerce oriented.

4. Consumer VR Gets a Jolt: Oculus Go will launch in Q2 2018 and fuel consumer adoption more so than any other single headset to date. Its sales will exceed one million units in 2018, and begin to climb to a leading headset market share in later years. With a \$199 price tag, and more room for discounting, this will jumpstart VR's sluggish sales and adoption rates. It will also create a greater installed base to motivate developers and content creators to build content, thus attracting *more* users to VR in a sort of virtuous cycle. This process will take more than one year to play out, but will accelerate in 2018 to the tune of about 20 million total headsets sold (including cardboard and low-cost units throughout China); and a cumulative installed base of about 43 million headsets globally.

5. Unifying Technologies Emerge: Beyond slower-than-expected consumer VR adoption, the sector has further suffered from fragmentation. The already small user base is divided into smaller subsets when you consider the different platforms and walled gardens (HTC, Oculus, Daydream, etc.). This makes it harder for developers to justify ROI in investing in content because an already-small addressable market gets smaller. Alleviating this challenge will be a major industry priority in 2018, including interoperability across platforms, more low-barrier and cross-platform development tools like Google Blocks and Poly; and unifying technologies such as WebVR and WebAR. Google will take the lead on – and benefit most from – web-based delivery of AR and VR experiences. The AR cloud will develop and gain importance as a repository of geo-tagged data and content to enable and populate AR apps and games. It will be a critical component, given AR's understated need to access mapping and positional data to overlay graphics properly.



Video Companion: XR's 2018 Predictions

(click URL to open)

https://youtu.be/o_6R39hLFGo





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<https://artillery.co/pro>

About ARtillery PRO

ARtillery Intelligence has launched an intelligence vault containing data, insights and analyst access. Known as *ARtillery PRO*, it equips subscribers in XR sectors to make informed business decisions.

FEATURES

Original Research: Monthly reports and weekly briefs on XR data, opportunities and dynamics.

Curated Research: ARtillery 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.

Data Concierge: We'll help you find what you're looking for.

2018 EDITORIAL CALENDAR

January: Enterprise XR: Impacting the Bottom Line

February: Mobile AR: App Strategies and Business Models

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

Packages starting at **\$49/month**

https://youtu.be/dFZVGE_UA8A





About ARtillery Intelligence

ARtillery is a publication and intelligence firm that examines augmented reality (AR) and virtual reality (VR). 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/>





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 any 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:

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

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.

ARtillery's disclosure and ethics policy can be seen in full at:

<https://artillery.co/about/disclosure-and-ethics-policy/>

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Questions and requests for deeper analysis can be submitted at:

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