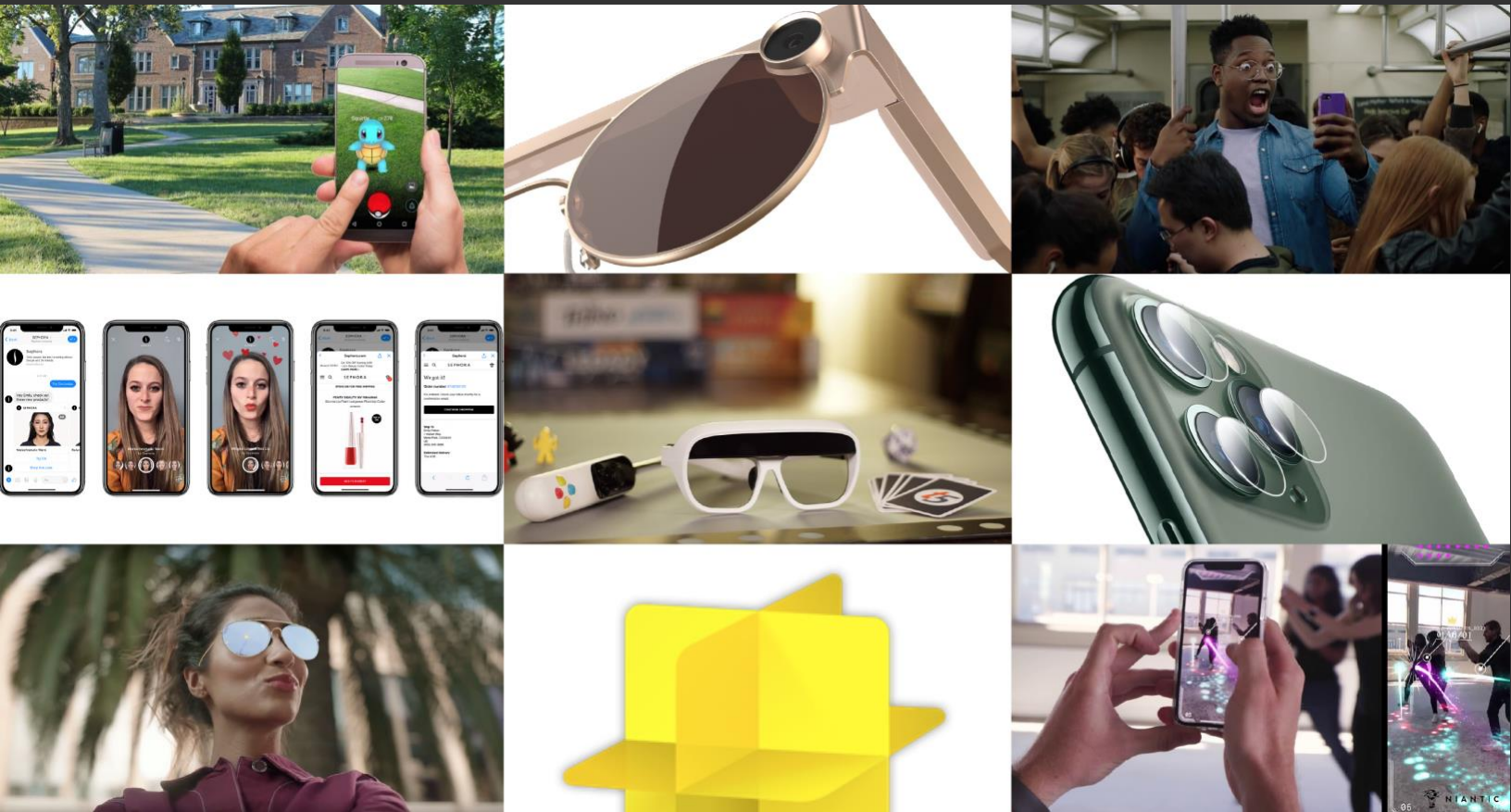# ARtillery Intelligence

ARtillery Intelligence Briefing

Lessons From AR Revenue Leaders, Part II: Niantic

February 2020

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▐▌ Key Takeaways

▐▌ During consumer AR's early stages, success stories are scarce but critical for extractable lessons.
   ▐▌ This includes product models (UX design) and business models (when/how/whom to charge).

▐▌ After examining Snapchat through this lens in Part I of this report series, we now examine Niantic.
   ▐▌ Like Snapchat, Pokémon Go has popularized AR in mainstream culture (usually without calling it "AR").
   ▐▌ There's an ongoing debate over whether or not the game is indeed AR. We believe it is.
   ▐▌ Though it's arguably not AR on a *pixel-level*, it is AR on an *experiential level*.
   ▐▌ The game successfully augments reality by altering gameplay based on situational relevance.

▐▌ Pokémon Go's credibility as an AR benchmark and strategic exemplar lies in its performance.
   ▐▌ It has derived $3 billion in lifetime revenue, including its highest annual revenues to date in 2019.
   ▐▌ Last year, it grossed $894 million in player spending and 55 million downloads (Sensor Tower).
   ▐▌ 2019 contained its 4th and 5th highest revenue months to date: August ($116M) and Sept. ($126M).

▐▌ The game's biggest achievements not only include traction and revenue, but sustainability over time
   ▐▌ Longevity is rare for mobile games, which often lose novelty and player engagement over time.
   ▐▌ Pokémon Go has bucked this trend with a combination of IP, game mechanics and frequent updates.
   ▐▌ Updates include the incorporation of Team Rocket, AR+ Mode, Snapshot and Buddy Adventure.
   ▐▌ Upcoming features include multiplayer environment syncing to pose with several players and Pokémon.

▐▌ Broader success factors come down to a combination of design principles and Niantic's core values.
   ▐▌ The game applies AR sparingly, averaging 2-3 minutes per session and usually to pose with Pokémon.
   ▐▌ This takes into account impracticalities of upheld phone orientation during the game's migratory play.
   ▐▌ Niantic has also observed natural user behavior and leaned into it, resulting in the Snapshot feature.
   ▐▌ Ultimately, AR is a technology that can enhance an experience, not yet a product in itself.

▐▌ Beyond product design and game mechanics, Niantic should be examined for business model innovation.
   ▐▌ In-app purchases (IAP) are successful in AR as the tech isn't yet proven enough for upfront payments.
   ▐▌ IAP builds on the behavioral economics of microtransactions, proven in the broader gaming world.
   ▐▌ Consumers are acclimated to this payment scheme as demonstrated by Fortnite and Candy Crush.
   ▐▌ ARtillery Intelligence survey data further validate consumers' comfort with IAP as an AR revenue model.

▐▌ Further business growth will come as the maturing Niantic finds adjacent revenue streams.
   ▐▌ Pokémon Go's secondary revenue stream of advertising has lots of growth potential.
   ▐▌ This organic ad format utilizes in-game components to drive measurable foot traffic to businesses.
   ▐▌ Used by large brands like McDonald's, Niantic recently opened it up to the long-tail SMB market.
   ▐▌ Another revenue stream will include the Real World Platform to enable other location-based AR apps.

▐▌ Real World Platform could end up being Niantic's primary product in the long term.
   ▐▌ Applying the best practices, scaling capacity and architecture from Pokémon Go, it's a valuable tool.
   ▐▌ Enablers like this (a.k.a. AR "building blocks") represent a top area of opportunity in AR's next era.
   ▐▌ The platform itself will continue to evolve towards Niantic's "planet-scale AR" ambitions.
   ▐▌ It will get stronger with use, as apps built on the platform will feed into its data and spatial maps.

▐▌ We will return in Part III of this series to examine success factors for AR's emerging players.
   ▐▌ These will include Minecraft Earth, Instagram, Tilt Five and others.

▟▌ Executive Summary

The consumer AR sector still lingers in early stages. Among other things, this means the playbook is being written mid-flight. There's a great deal of experimentation underway as companies test and iterate rapidly to discover winning formulas and business models.

This goes for consumer AR product strategies. Though a common sentiment in 2016's hype cycle was that AR applies to everything, it's become clear that it's not a silver bullet. It will have native and natural applicability to some aspects of our lives and work… but not all.

Beyond macro categories and use cases where AR should or shouldn't be developed, there are more granular strategies around user experience (UX). What types of AR interactions resonate with consumers? And what best practices are being standardized for experience and interface design?

Equally important is the question of AR monetization and revenue models. Just as user experience is being refined, questions over what consumers will and won't pay for are likewise being discovered. The same goes for brand spending behavior in cases of sponsored AR experiences or ads.

These lingering questions compel acute attention to quantifiable AR market successes and best practices. Not only does the sector's early stages mean that these questions are prevalent… but also that their answers are scarce. That includes evidence of successful execution, as well as transferrable lessons.

With that backdrop, ARtillery Intelligence ventures to find, aggregate and draw meaning from finite AR successes in today's environment. And by "success," we mean large-scale consumer traction and revenue. When examining consumer AR engagement and revenue leaders, what product attributes and tactics are driving their performance?

This includes Snapchat. Its social lenses have the greatest consumer AR active usage, and it holds the leading share of AR ad revenue. Among other things, this is propelled by product-market fit, ease of use, distribution and fulfilling key goals for brand advertisers.

Also on the list is Pokémon Go. Though the tech press has moved on to other shiny things, 2019 marks its best revenue performance to date. This is attributed to innovation cycles that breed ongoing novelty and replayability, as well as its sparing use of AR as a game element.

Other consumer AR exemplars include Houzz and Instagram. Emerging AR players also show early signs of traction that's worth examining, such as Tilt Five. Altogether, how do we triangulate best practices and extract tactics and takeaways for AR players today?

We'll do just that in the coming pages, continuing from Part I in which we examined Snapchat. We now pick up the discussion with Niantic and its flagship, Pokémon Go. This draws from the rigor of market watching and analyst work. We'll synthesize these findings, pursuant to the core mission of empowering you with a knowledge position.

Introduction: Revenue Leaders

A lot can be learned from consumer AR's early leaders. What are they doing right? How are they engaging users? And how are they making money? These are key questions in AR's early stages, as there's no standardized playbook quite yet. This also makes successes and transferrable lessons scarce.

Given the rigor applied to market watching – through typical analyst work and daily editorial coverage at our sister publication, *AR Insider* – We collect these lessons. They're not easy to find, often fragmented in insider discussions, product reviews and conference presentations. So it's all about synthesizing them.

But before unpacking those variables and diving into the tactical lessons we're tracking among AR leaders, who are they? First, to define the segment we're including in this report, its narrowed down to consumer-based AR. Industrial AR is an important, but separate, topic we'll continue to track.i

Second, it's important to define at the onset what we mean by "AR success." We're talking about user traction and revenue. Importantly, this traces AR product tactics back to real monetary results. It also means that revenue models, pricing and other such strategies are included along with product and UX strategies.

For example, Snapchat has achieved the greatest active AR usage and the most revenue from sponsored AR lenses from brand advertisers. This is attributed to several factors examined in Part I, including its ability to reach an AR-forward audience in targeted ways.

Sticking with AR lenses as an ad format, Facebook is also worth watching. Though

Snapchat has greater focus on AR – congruent with its "camera company" designation – Facebook has greater global scale. This raises questions if it can eclipse Snapchat over time as the AR advertising revenue leader.

Related to that is the rise of Instagram as an AR player. Though it only integrated AR lenses recently in Q3 2019, it has a potentially strong product-market fit, given its camera-forward audience. It's also cultivated a common use case around shopping and product discovery, where AR could find natural integrations.

Pokémon Go is also on this list, though its revenue isn't as directly attributable to AR. While the tech press has moved on to other shiny objects, the game is doing better than ever, including active use and revenue generation. This is a notable feat, given the common arc of mobile games which don't sustain repeat play for such long intervals.

How is it doing that? And how are all of the above players driving usage and revenue with AR? We'll examine them in the coming pages. After covering Snapchat in Part I of this series, we'll now drill down on Niantic, followed in Part III by other leaders and emerging players. Altogether, there will be key lessons to extract.

Image Source: Niantic

Pokémon Go-ing Strong

AR is a "thing" in mainstream consciousness due largely to Pokémon Go. It's derived more than $3 billion in revenue cumulatively as of this writing,ii and had its best annual revenue performance to date in 2019. Thought the tech press has moved on to other things, the game continues to thrive.

Just like we said for Snapchat in Part I of this report series, this success makes it a credible source of transferrable lessons. And in that way, Niantic is doing the AR sector a favor through large-scale experimentation on AR experience design and user sentiments.

There are therefore valuable lessons, replicable tactics and best practices for anyone paying attention. Given AR's nascence and lack of benchmarks, data like this can be valuable in vetting product models, which is the central goal of this three-part report series.

But before diving into those learnings and best practices, we should address the Snorlax in the room. There's an ongoing industry debate over whether or not Pokémon Go – and its associated revenues – should technically be considered "AR." That's where we'll start the discussion.

AR or Not: Settling the Debate

Arguments against Pokémon Go's AR designation include graphical overlays that lack advanced AR functionality like scene awareness and object occlusion. Rather than interacting with the real world, graphics are more like floating stickers. In fairness, the game's AR+ Mode addresses these issues.

Another argument against Pokémon Go's AR status is that most players turn off AR Mode when playing. This is mostly because AR can make gameplay harder. The requisite camera activation can also drain smartphone batteries, which isn't conducive to the game's migratory play.

For those unfamiliar, AR Mode in Pokémon Go activates the user's camera so that encountered Pokémon appear overlaid on real-world scenes. When AR Mode is off, the camera is likewise off so the backdrop within gameplay is animated, and can vary based on situational factors.

Niantic is first to admit AR's current shortcomings. CTO Phil Keslin said at TC Disrupt that most players turn off AR Mode. They rather use AR to occasionally pose with and share photos of captured Pokémon (more on that in a bit). CEO John Hanke likewise said at GDC 2019 that AR Mode is limited.

"AR in and of itself is not a magic bullet for a hit game. There are some real drawbacks to it," he said on stage at the conference, adding that average interaction time for AR Mode is two-to-three minutes per game session. In fact, he admits that the majority of the gameplay should and does take place outside of AR.

The 2-3-minute sweet spot makes sense given physical realities. As we've examined, "AR is a snack, VR is a meal."[iii] Not only is there arm strain, but cultural and practical factors preclude holding up a camera while walking around. And focus can be distracted in dangerous ways in high-traffic areas.

Image Source: Niantic

Devil's Advocate

But countering some of these points is a compelling set of arguments for an official AR designation. For example, Pokémon Go "augments" physical world realities in a broader sense. In other words, gameplay is dynamically altered based on where you are — a sort of *geographic augmentation*.

"Around parks, there are more grass Pokémon," said Niantic's AR product lead Ross Finman in a recent interview with Infinite Retina. "We're near water here in the [San Francisco] Ferry Building, and there are more water Pokémon. So it already changes based on location."

This takes the debate from *pixel-level* — where Pokémon Go might not be AR for the above reasons — to an *experiential level*, where it is. Instead of "overlaying" digital elements on the

physical world, physical world variables like geography augment gameplay. Digital and physical are melded

Niantic is working on ways to make this more contextually nuanced. The location-based dynamics currently happen on a city block-by-block basis, but Finman projects forward to the goal of having situationally-relevant game interactions on more granular levels. This includes things like terrain.

"What happens when you get even more specific and fine-tuned to the area?" he posed. "There could be experiences on sidewalks versus grass, versus a flower bed, versus a small pond. As you get more fine-grained, the complexity increases… AI can help us get to the next level."
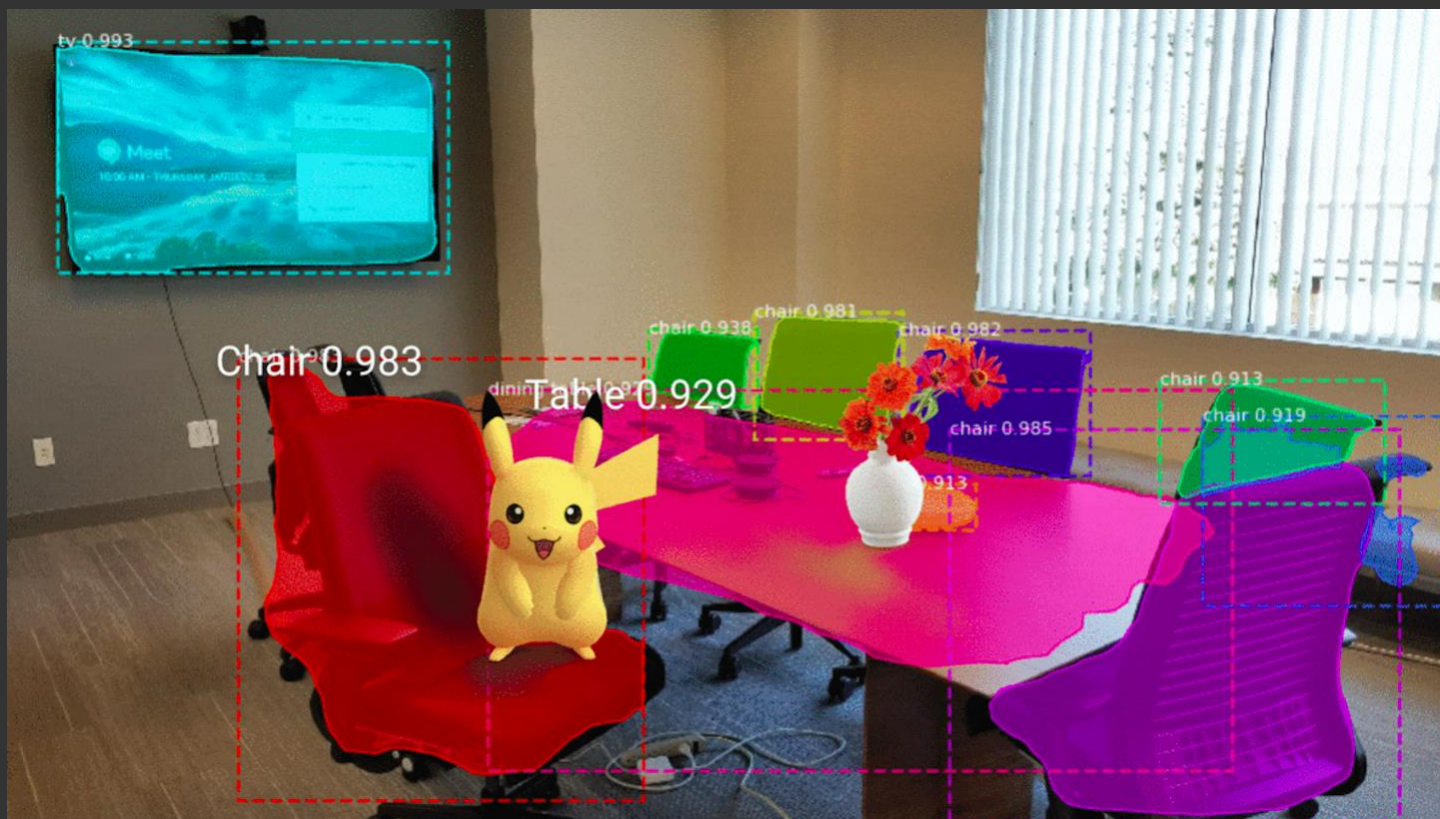

Image Source: Niantic

Judgment Call

So is Pokémon Go AR? It depends if your definition lies with technical/graphical-AR, or on broader and more experiential levels. There are decent arguments on both sides. But ultimately, history will remember PGO's impact on spatial computing… and categorizations won't matter.

"I think one of the craziest debates of the past year was whether Pokémon Go was augmented reality or not," Intel's Chris Croteau said from the stage at the AR in Action conference in 2017 – a dated but relevant comment. "The [750 million] people that downloaded that app…none of them care."

A similar theme emerged more recently in a discussion ARtillery Intelligence had with Happy Giant CEO Mike Levine. He compares Pokémon Go to Elvis: He didn't embody the Rock & Roll we'd come to know, but he warmed audiences up to an early version of it, thus paving the way.

Meanwhile, we side with Finman. The "experiential AR" view aligns with our construct of broadening the definition of "augmentation" beyond its common graphical connotations. For example, "audio AR" augments daily physical-world interactions with sound, as we examined in a recent report.iv

Video companion: Broadening AR
(click to play)

ARTILLERY BRIEFS, EPISODE 26
POKEMON GO AND BROADENING AR DEFINITIONS

Staying Power

Now that we've established Pokémon Go's fair (or at least defensible) designation as an AR app/game, what can other AR startups learn from it? Like we examined in Part I of this report series around Snapchat's AR success and best practices, what are the transferable lessons?

First, to establish Pokémon Go's credibility as a benchmark, it's gained $3.1 billion in lifetime revenue, including its highest annual revenues to date in 2019. There, it reached $894 million in gross player spending and 55 million downloads, surpassing the $832 million from its famous 2016 debut.

Here, there's an important caveat: its 2016 blitz has a greater revenue run rate and monthly pace, given that the $832 million was derived within 6 months after the game's June launch. But this shouldn't take away from the 2019 accomplishment, given its rebound from a 2017 low.

2017 brought in $589 million, which then rebounded to $816 billion in 2018. With respect to 2019, it should be noted that the year contained its fourth and fifth greatest revenue months to date, including August's $116 million and September's $126 million. So momentum is clearly on its side.

Image Source: Niantic

Bucking the Trend

One reason this is all notable is that the common arc for mobile games is to lose novelty. There are a few games that have been able to counteract this natural occurrence with a combination of game updates and inherently-replayable game mechanics. One example is Candy Crush.

Pokémon Go's staying power is owed to inherent qualities like strong IP and smart game mechanics. The game balances challenging play with attainable accomplishments. And though it's technically asynchronous (one-player), it's conducive to group outings and social activity.

"There are two different aspects of what makes something fun," said Niantic's AR lead Ross Finman at the GamesBeat Summit. "The first is novelty, which is where a lot of AR is today. Then there are mechanics that you can work in to create new game loops that make people want to come back."

Pokémon Go has also sustained its momentum and player interest — including the rebound quantified above — through active updates. That includes, most notably, 2019's incorporation of Team Rocket. This was a new cast of characters that allowed the game to regain some novelty.

Niantic has also integrated AR+ Mode on more advanced phones. This achieves some of the world-immersive features noted earlier, allowing overlaid graphics to have more realistic interactions with their surroundings. This will continue to advance given Niantic's recent acquisitions, like Matrix Mill.

It also incorporated game mechanics around physical accomplishments by offering in-game rewards for distances traversed. This not only breeds more novelty and gamification (and further ties digital and physical components) but it's aligned with Niantic's mission to get kids outside more.

Friends & Foes

In addition to adding game characters à la Team Rocket, Niantic has incorporated new ways to interact with in-game characters. This involves both friends and foes, playing on the inherent stickiness and engagement triggers for both gaining allegiances, and stoking competition.

On the "friends" front, Niantic incorporated Buddy Adventure. This builds on the existing buddy system where players select a sidekick from their captured Pokémon. Now, buddies can amplify in-game rewards (based on step counts) as if they're virtually trailing players and collecting items.

"Since launching Pokémon Go, this might be the most collaborative feature we have had," said Ryuta Hiroi, Niantic's lead product manager for Buddy Adventure in a blog post. "Even with your phone in your pocket, you'll feel like your buddy is right beside you."

Niantic's will next combine its Snapshot feature (explored in the next section) with Buddy Adventure. Players will be able to sync game environments for group photos with buddies. This notably brings multi-player functionality to Pokémon Go for the first time – possibly a sign of things to come.

"The upcoming shared AR Mode creates a meaningful real-world social experience by letting up to three trainers place their Pokémon in the same space and take a photo together," Niantic technical lead for Buddy Adventure and Pokémon GO client engineer Ethan Chan told Next Reality News.

On the "foes" front, Niantic has launched Pokémon Go Battle League. It lets players face off by building on the existing trainer-battle structure. Players can unlock the feature by walking 5 kilometers (or paying a fee), then challenge other players to battles in order to gain rewards and rank up.
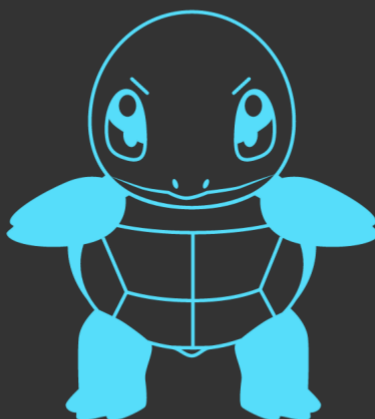
Learning and Leaning In

Another notable addition is the Snapshot feature – a key lesson for AR UX design. As background, and as explored earlier, the average AR activation time per game session is 2-3 minutes. And the most prevalent use of that time is to pose with captured Pokémon to share the accomplishment.

So Niantic decided to learn from that organic player behavior, then lean into it. It formalized the use case in an in-game feature known as Snapshot. This takes the natural behavior that was already happening – aligned with AR's natural interactions – and created an easier way to do it.

This also created natural marketing for the game, as viral media sharing from players posing with their captured Pokémon represents free advertising. These players are motivated by competitive spirit, creative energy (and probably some vanity), so Niantic simply created a tool to capture that.
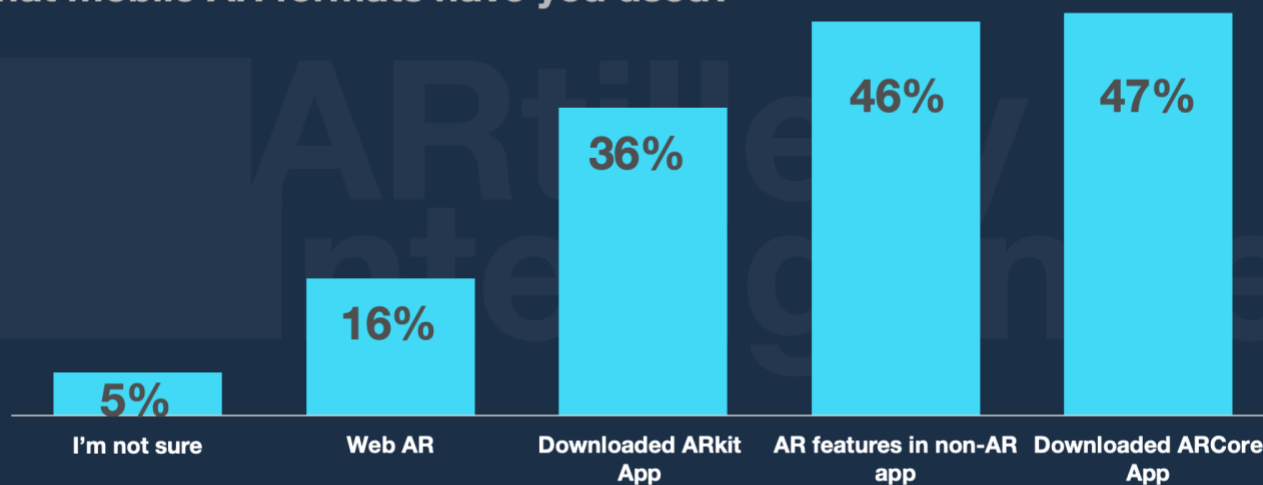
This is also congruent with a key theme that continues to thread throughout this three-part series: AR training wheels. AR shows the most success when developers integrate it as an organic and value-added component to existing behavior. It's about placing AR in additive ways in users' existing paths.

This is an AR user-experience concept also known as "AR as a Feature." Rather than creating standalone apps that users have to deliberately download, it brings AR to where they already are. Practiced also by Snapchat, it's an AR delivery vehicle that 46 percent of users experience.

For similar reasons, Niantic has limited AR to a feature rather than a primary function. This sparing use of AR where it's organic and additive – rather than a gimmick or novelty – is a key design principle for Niantic. This will continue to drive its product development in all AR endeavors.

Mobile AR Formats

What mobile AR formats have you used?

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

Base = 3,118 US online adults (18+).

ARtillery Intelligence   Thrive Analytics — smart decisions that drive success

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Principles Behind the Product

After covering the in-game dynamics that represent Pokémon Go's success, it's time to pan back and examine some of the high-level rationale and principles that stand behind those design choices. This has materialized at Niantic from a combination of founding principles and acquired talent.

One of those people is Ross Finman. Now holding the role of AR lead at Niantic, he was picked up in the acquisition of Escher Reality and has a reputable background in building AR products in the field's relatively short lifespan. It's his job to now steward the AR components of Niantic's road product map.

In doing this, Finman contends that AR resides in lower portions of the stack as an enabling technology. That realization is important as it informs how AR should be developed and deployed. For example, this drives the above strategy to use AR sparingly as a feature, rather than an app in itself.

"Do remember that [AR] is a technology and not an application," he said on the AR Show. "There are things that touch on an emotional need and there's also, on the business side, a useful need. It's thinking through what is that application? And can AR actually speed that up? […] There are applications being explored that may not: It's kind of like AR got shoved in there […] AR is a good component of [Pokémon Go], and it is an AR game. But people didn't download it for AR. It's key to know that AR can enhance the experience. It cannot create the experience. So designing AR for AR sake is a fallacy in the AR market today"
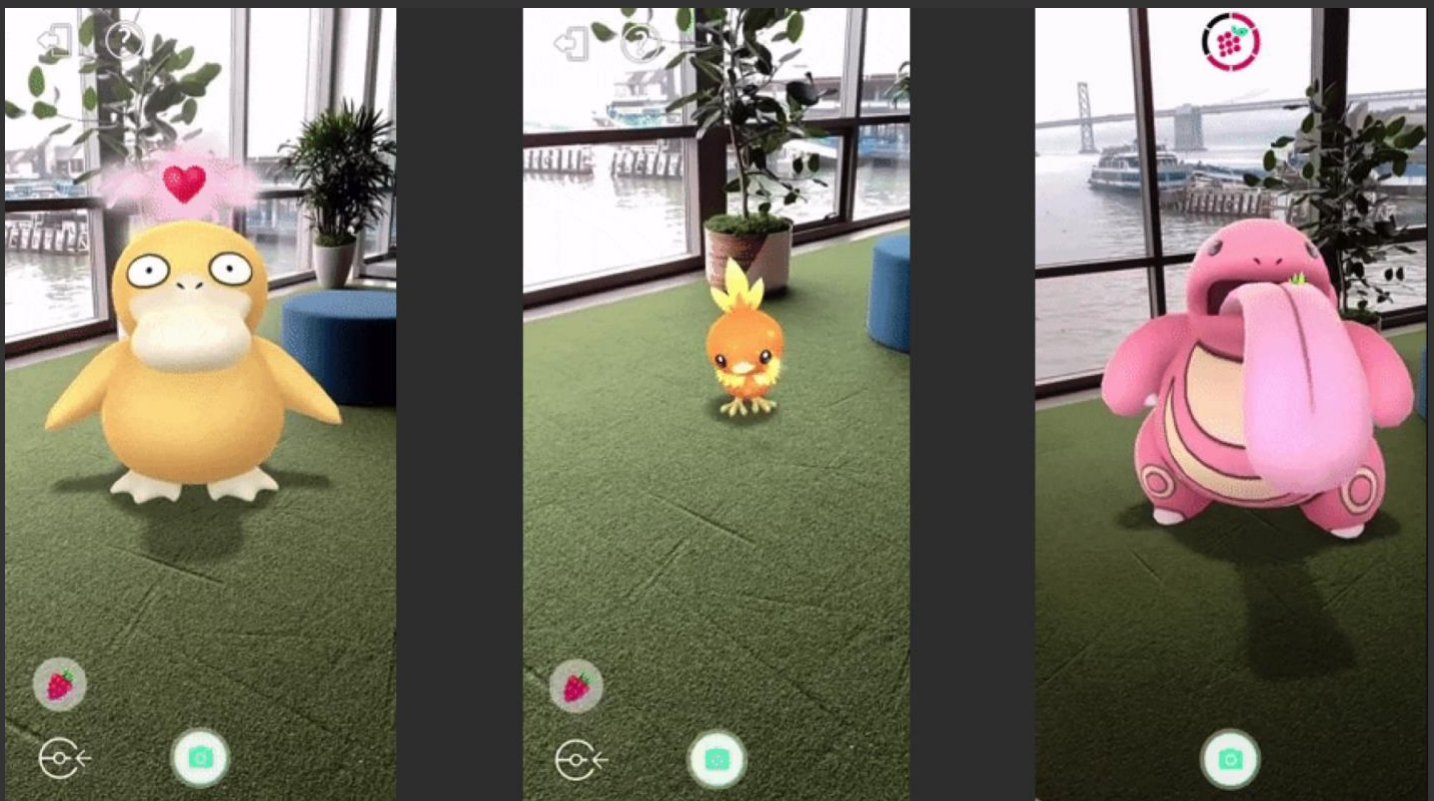

Image Source: VentureBeat

Think Native (kind of)

Along these lines, AR is most successful when it (borrowing from XR thought leader Charlie Fink) takes what we're already doing and makes it better. This is aligned with the "training wheels" analogy introduced earlier to develop AR experiences that don't deviate from users' comfort and cognition.

This can be seen in successful apps of the smartphone era. Finman invokes Uber, which wasn't that much different than a taxi service in terms of fulfilling a need and getting you to a destination. But it did it much better and eliminated pain points like hailing cabs, fraud and paying with cash.

This notably pulls back from an earlier rally cry from some pundits (including us) that AR should be "native" in terms of creating new

apps that are completely unique to the technology's capabilities. The concept is valid but baby steps need to be taken towards that goal, à la training wheels.

"Starting with an AR-first approach, I'm not sure is going to be the most successful start," said Finman on the AR Show. "The mobile phone started as a phone, then it grew into becoming much more a part of our everyday lives [...] The initial iPhone release: Everyone's like… 'It's a phone, yes. It's a music player, yes. An internet-enabled device? I don't know what to do that.' So start off with what people already do, and make that easier and better. There's a small group of the population that will try out new technology for the sake of it. But it's more for the novelty. You need to solve a need — either emotionally or in use."

Making Users Smile

Another tactic that aligns with this thinking is to focus on the end experience versus tech specs. This approach has vaulted PSVR, Nintendo Switch and Oculus Quest in their respective device classes; and is a lesson explored in Part III of this series with Tilt Five.

Finman similarly espouses the principle that the best technology recedes into the background, rather than creating abstraction layers for the user. And in that respect, the key performance indicator that makes the most difference to him isn't typical usage analytics, but rather *smiles*.

"AR, when it works perfectly, should be invisible and no one should be able to see it and recognize it," he said on the AR Show. "And it's more about the experience and the people. So with Pokémon Go — speaking as a technologist who spent many, many years in the computer vision space — what is most impressive is that hundreds of millions of

people smiled. They enjoyed it. They caught their first Pikachu or Charmander or Squirtle in the real world […] That's the emotional state, or it solves a problem for them. Augmented reality is a pure technology, which is interesting. But it doesn't solve a problem by itself. It enables problems to be solved."

Speaking of emotion and utility, Finman segments AR's biggest value into three main categories. The first is as an instructional tool (think: assembling IKEA Furniture). The second is for visualization (think: furniture placement). And the third is to fulfill a fantasy, à la Pokémon Go.

These use cases importantly trace back to human needs and goals. The first two are utilities for productivity or saving time. The third is for entertainment and emotion, hence the smile KPI. Apps will evolve along with the hardware, like AR glasses, but these humanistic end goals will persist.

Business Model Innovation

Beyond product and design principles Pokémon Go's in-app purchases (IAP) revenue model is noteworthy. IAP is inherited from the mobile gaming world, where it approaches $70 billion in annual revenue on the behavioral economics of microtransactions. This can be seen in hits like Fortnite.
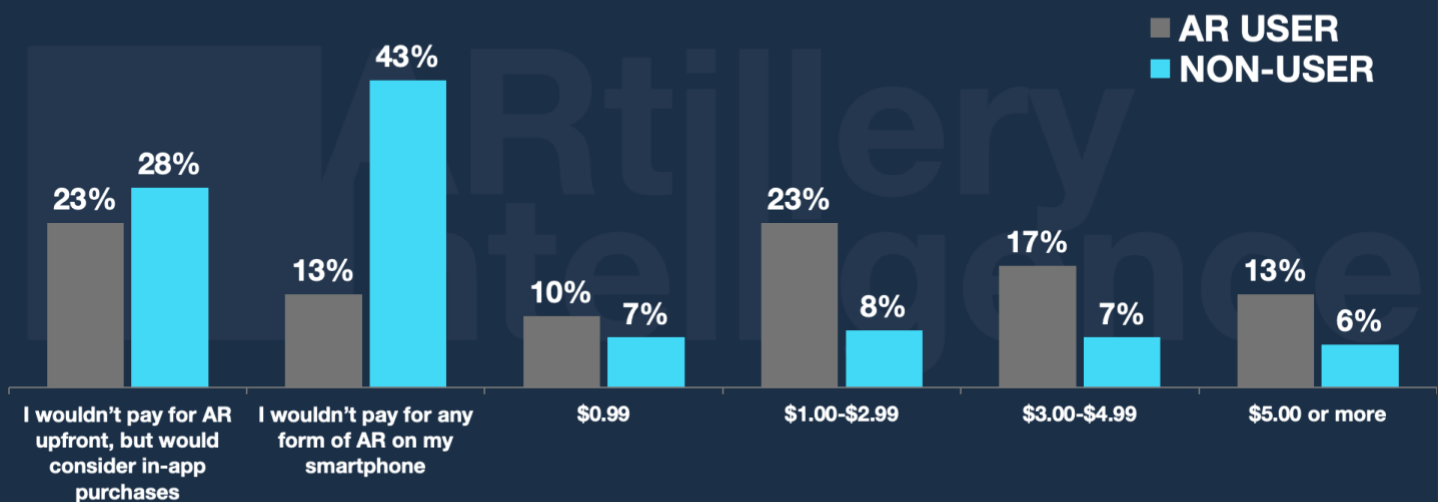
Not only is IAP validated in mobile gaming but it's fitting to AR's early stages when users hesitate to pay upfront for premium apps. This is supported by ARtillery Intelligence consumer survey datav with Thrive Analytics (see below) and its recent report on top AR business models.vi

Specifically, 43 percent of survey respondents report that they won't pay upfront for AR apps but would consider IAP. This is the most popular answer of any paid option in the survey. The takeaway is that AR is too early and unproven to get users to pay upfront for apps.

Based on these and other signals, ARtillery Intelligence has an optimistic outlook for IAP in its market sizing. In its *Global AR Revenue Forecast 2018-2023,*vii IAP is a leading revenue source among AR sub-sectors. Specifically, it's projected to grow from $863 million in 2018 to $4.9 billion by 2023.

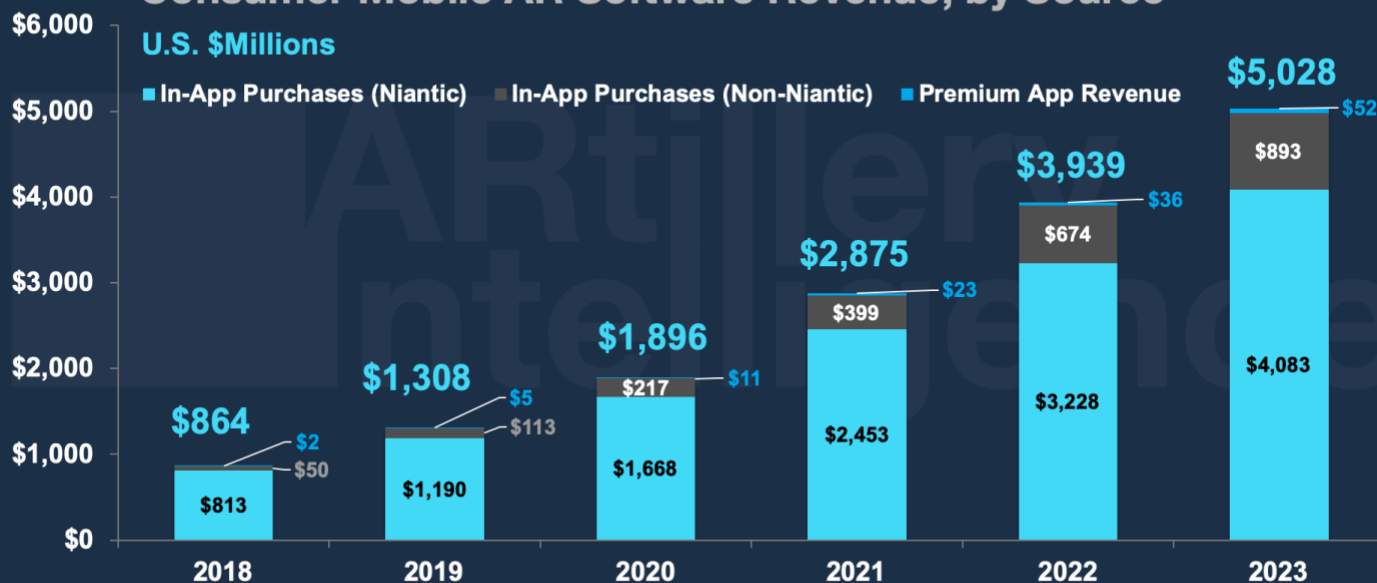## Mobile AR Price Sensitivity
What's the most you'd pay for a mobile AR experience?

AR USER
NON-USER

	AR USER	NON-USER
I wouldn't pay for AR upfront, but would consider in-app purchases	23%	28%
I wouldn't pay for any form of AR on my smartphone	13%	43%
$0.99	10%	7%
$1.00-$2.99	23%	8%
$3.00-$4.99	17%	7%
$5.00 or more	13%	6%

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Thrive Analytics
smart decisions that drive success

Base = 3,118 US online adults (18+).

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Mobile AR Revenue
Consumer Mobile AR Software Revenue, by Source*

U.S. $Millions

- In-App Purchases (Niantic) ■ In-App Purchases (Non-Niantic) ■ Premium App Revenue

	2018	2019	2020	2021	2022	2023
Total	$864	$1,308	$1,896	$2,875	$3,939	$5,028
Premium App Revenue	$2	$5	$11	$23	$36	$52
In-App Purchases (Non-Niantic)	$50	$113	$217	$399	$674	$893
In-App Purchases (Niantic)	$813	$1,190	$1,668	$2,453	$3,228	$4,083

*Does not include hearables (see separate drilldown)

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Maintaining Growth

A remaining question is how Pokémon Go will sustain growth and leading IAP revenue share. Growth rates naturally diminish as revenue escalates and period-over-period growth is calculated from a larger base. So the name of the game for maturing companies is to get creative with adjacent revenue streams.

To do this, Niantic is already exercising some business model innovations to diversify revenue and maintain growth. These measures are related to, but different than, the in-game updates examined earlier to sustain player engagement. They include new revenue streams from existing player activity.

For example, Niantic's Real World Platform will add software and platform-based revenue streams to its existing mix of player and business/advertiser spending. As explored later, this platform is built from all of the experiences, game architecture and best practices that flow from Pokémon Go.

Niantic can also grow IAP through geographic expansion. The U.S. leads in 2019 annual revenue ($335 million) followed by Japan ($286 million) and Germany ($54 million). This leaves greenfield opportunities in areas that haven't been traversed by Pokémon Go's roaming legions.

The Long Tail

Another way to grow revenue is through adjacent products, such as Niantic's existing in-game brand sponsorship program. Previously available to multi-location brands like McDonald's and Starbucks, it recently expanded it to tap the long-tail small-business (SMB) market for self-serve campaigns to drive foot traffic.

This program allows local businesses to have their physical locations designated as official in-game waypoints. These are the Pokéstops and Gyms where players descend in large numbers. This is done on a per-location basis and integrated in-game in similar ways to mobile/online ad economies.

This essentially happens as an offshoot of a new program called Wayfarer, which lets players vote on locations for Pokéstops and Gyms. SMBs can select locations in a more on-demand fashion and for a price. That price is $30 per month for a Pokéstop and $60 per month for a Gym.

The lower tier lets SMBs change Pokéstop images and descriptions monthly. The higher tier lets them schedule raids monthly and change a Gym's image and description bi-weekly. To prevent sponsorship overload, SMBs can have one stop or gym per location and 30 per chain.

Image Source: Niantic

Image Source: Niantic

These sponsorship options essentially offer levels of in-game promotion and foot traffic. For example, the raids offered at the higher tier often involve 5-10 players working together, meaning more footfalls. And SMBs can schedule these raids strategically during slow business hours.

Options also include the ability for SMBs to include deals/coupons in-app. And beyond getting players to a location, additional promotions can help keep them there. Niantic claims that it will roll out more such features, like letting SMBs host "mini-games" to further boost dwell times.

For players, this can be organic as they work up a hunger through the game's physical play. And for multi-location brands, it can be more effective than traditional marketing when it comes to driving tangible foot traffic. It's particularly fitting to fast food, coffee and convenience stores.

At a press event, Niantic CEO John Hanke characterized the move as additive to gameplay and supportive to local businesses. Niantic has a penchant for altruism in its mission to get kids out of the house, as mentioned earlier. This adds fuel in simultaneously supporting local economies.

"It's the anti-Amazon," said Hanke.
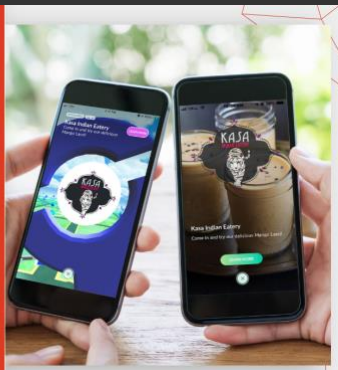
Take Two: Wizards Unite

Niantic's follow-up title to Pokémon Go, Harry Potter Wizards Unite (HPWU), was hotly anticipated due to its precursor's success. Its performance so far involves bad news and good news. It's tracking far behind Pokémon Go in usage and revenue... but it's still a strong contender in its own right.

For example, it's on pace to be the second highest-grossing location-based game of all time with $12 million in its first month, according to Sensor Tower. And though it's pacing behind Pokémon Go, it exceeds other strong-IP titles in location-based AR such as Jurassic World Alive and Ghostbusters World.

"In terms of the market, Niantic has the number one and number two games," said Finman on stage at AWE Europe. "So it's a fortunate spot to be in. I hope more of you are in that race because we want to have a smaller slice of a bigger pie. It's not good that we're such a large percentage of the market."

As far as financial metrics, per-player spending (ARPU) during HPWU's first month is $.46. That trails Pokémon Go's $1.50 during the same period. But Pokémon Go's lifetime ARPU rose over time to $5.60 in a cumulative timeframe, which indicates potential growth for HPWU as its momentum grows.

This begs the question of how other impending AR games will fare. Minecraft Go (examined in Part III of this series) has potential, given a massive engaged base of gen-Z Minecraft players that demographically align with the camera-forward AR version of the game. It's a mobile and camera-native generation.

Meanwhile, an enabling factor will be Niantic itself. After building and scaling Pokémon Go, it's packaging up all the learnings, best practices and technical architecture into an open developer platform. Known as Real World Platform, it will accelerate the path to market for subsequent location-based AR apps.

Image Source: Niantic

Real World Platform

One of AR's key accelerants examined in ARtillery Intelligence's recent report[viii] on spatial computing business models was "building blocks." These work towards democratizing advanced AR capability for developers. Examples include Unity, Amazon Sumerian, Adobe Aero and 8th Wall.

Niantic is the latest company to go down this road, but in a slightly different way. The Pokémon Go creator has turned its AR architecture into a platform on which others can build apps. This represents a possibly-opportune model we're calling "AR as a Service."[ix]

"Our mission is about getting people outside and exploring the world," said Niantic CTO Phil Keslin at the AWE conference. "To achieve this requires the creation of a plethora of experiences, not just our own. And that requires many contributors which means a platform is needed to make it a reality."

Known as Real World Platform, it productizes the underlying code base for Niantic's popular AR games. This not only achieves democratization but does so in a way that's similar to one of the biggest democratization tools the tech world has ever seen: Amazon Web Services (AWS).

In other words, just like AWS, Niantic built its engine primarily to power its own product. But then it realized that it can be its own platform. And like AWS, it could be a highly scalable revenue stream, making it opportunistic for Niantic and a valuable utility for the industry.

"AWS and [Google Cloud] weren't built as compute platforms for everybody," said Niantic CTO Phil Keslin at the AWE conference. "They were built to support the applications of Amazon and Google. Then they decided 'we have excess capacity, let's turn it into something that our users can use'."

This could be a valuable toolset given that it will enable app developers to build experiences on top of the infrastructure that Niantic spent years building the hard way. That includes things like scaling up to surges in user behavior and creating the compelling game mechanics examined earlier.
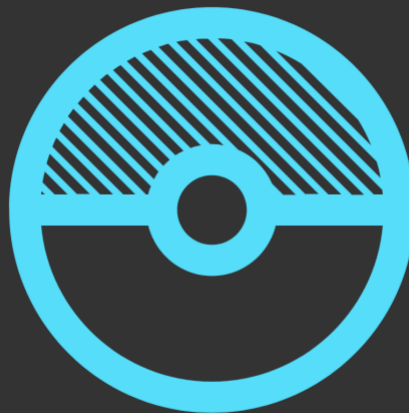
Planet-Scale AR

This all sounds great, but the real proof will be in the platform's execution and functionality. This includes the baseline architecture of Pokémon Go, elevated by recent technology acquisitions such as Escher Reality (multi-player & social AR) and Matrix Mill (occlusion and computer vision).

Mapping is also an area where Niantic has developed aptitude. That's obviously core to location-oriented apps. And based on its ongoing IP development and acquisitions, plus crowdsourced world-mapping from Pokémon Go players, Niantic gains even firmer grasp of a proprietary AR Cloud.$_x$

"Pokémon are spawned because we know generally what's at a particular location," said Keslin. "There's a map that describes that for us. That's just one instance of the maps that you have to use to create these types of apps. It's an understanding of the world around you."

So there are many moving parts — network capacity, mapping and game mechanics. Now that Niantic has gotten proficient in these areas, it's logical to productize the whole thing as a platform. That way, developers can run with it and build apps that take AR to the next level.

Altogether, this will contribute to Niantic's vision for "Planet Scale AR." The idea is to have robust computer vision and machine learning to contextualize real-world items. Then, scene mapping from Matrix Mill and social capabilities from Escher Reality can infuse the necessary experience and magic.

Niantic is in a strong position with momentum, brand equity and lots of cash. It's now using that to double down on IP and positioning as an AR tech leader. The platform approach also lets it diversify as noted earlier – adding Saas or platform-based revenue streams to ads and in-app purchases.
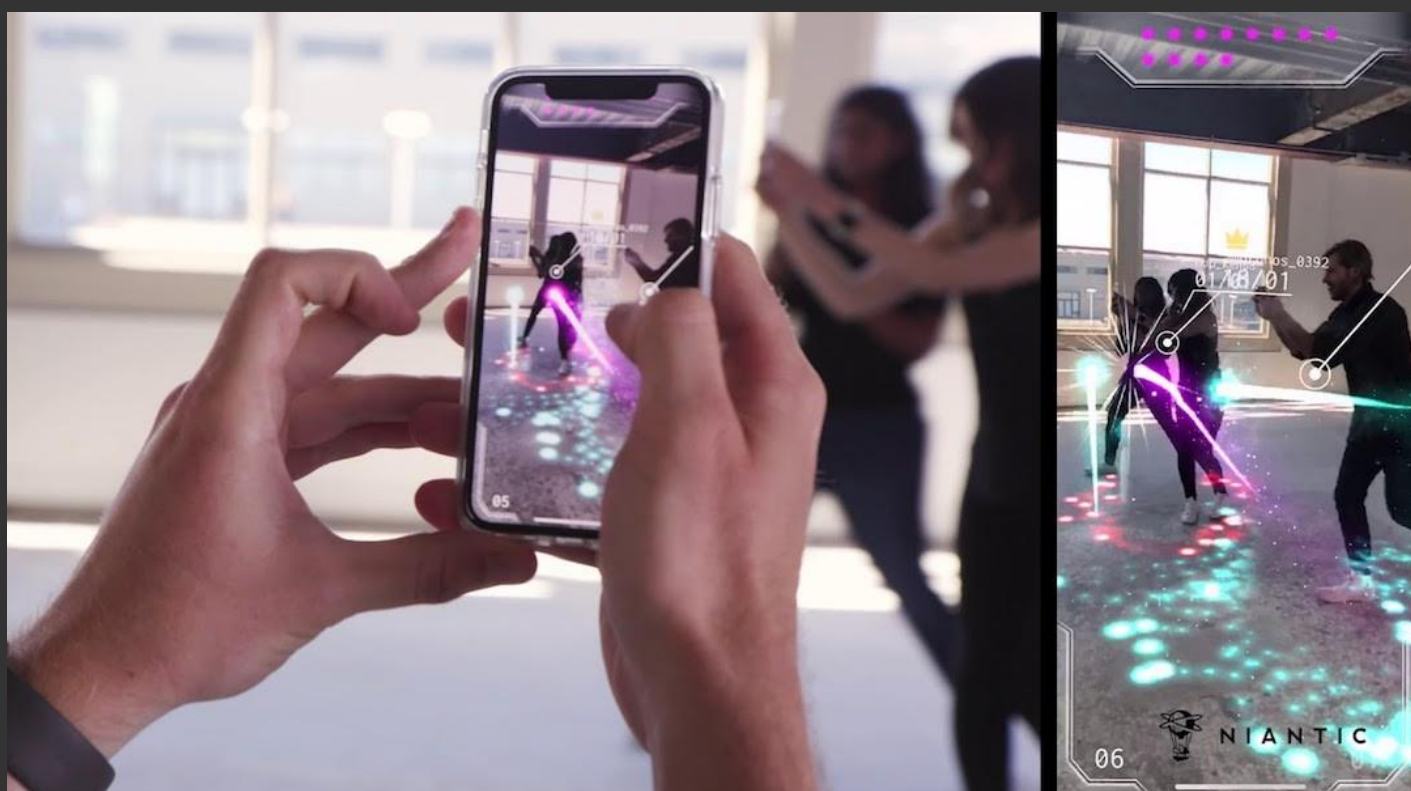
AR's Path Forward

Looking forward, Niantic will continue to innovate on the baseline and the momentum it has. This includes more development and deployment of Real World Platform. To accelerate that, it continues to foster innovation in developer challenges and in funding startups that build on the platform.

A lot of this will carry the company's core fundamentals and founding principles to get more kids (and adults) outside in physical activity. It also goes back to some of Ross Finman's earlier design principles. AR should be seen and used as a tool in a toolbox... not an endpoint or a product in itself.

"I'll say something controversial here but AR by itself is not valuable," he said at the DICE conference. "We all need to remember that AR is a technology, it is not an application. People don't care about a mobile device, they care about making calls with it. They care about checking email."

The lesson to other AR players is to know consumer desires and pain points; and how the technology can address those. That's a challenge for AR because marketplace experimentation is still underway. We have some signals, such as currently-popular AR apps, but more are needed.

"It's about figuring out what is different about AR. Why do you need an experience in AR?" Finman said at the TC Sessions AR/VR Conference. "When ARkit came, out there were tic-tac-toe [apps] for AR…. You don't need AR to play tic-tac-toe."

Image Source: Niantic

The Real World is the Content

As for the types of apps that will best translate AR tech to AR products, Finman has a fresh take on physical-digital convergence. As explored earlier, this expands AR definitions beyond digital objects on physical scenes. Flipping that, the physical world should rather integrate with and influence digital play.

This boils down to a key Finman concept which is that the real world is the content. So instead of creating animations that are primary game elements that interact with the real world as secondary game elements, things are flipped. The real world should have more of a leading role.

For example, could game mechanics be built around real-world elements such as shapes and colors? Finman poses a gamified experience from "mining" the colors of the world around us. This would apply computer vision to intake visual signals and process them into fun experiences.

"The world is full of colors, so you can make experiences where you can mine colors out of the world," said Finman. "So the resources of your games can be just the color makeup of your room… The strategies that you would use change based off of the colors of the environment."

Image Source: Niantic

AR's Innovators

Finman also asserts that the biggest common mistake is to develop technology that's cool or challenging to developers, but without enough insight or evidence of consumers' real needs or desires. This is the classic "hammer searching for a nail," affliction in many early-stage tech sectors.

"There's a growing problem in the AR community where it's a bunch of tech people who make cool tech that geeks like me can really appreciate, but the general consumer is still a ways away," said Finman. "The tech race is a couple of generations ahead of the application space."

Speaking of tech personas what skill sets are primed to succeed in AR? Finman believes that gaming is fundamental. The skills and mindsets of game developers will translate well into AR experience building. And that's not just for AR games, but enterprise applications such as training simulations.

"As augmented reality begins to grow — and the AR market in the gaming market, or in this interconnected web — the game developers who understand this medium faster and newer than other people are going to actually have an immense amount of impact," said Finman.

But it doesn't end there. AR will be multi-disciplinary. That includes computer vision, machine learning, user experience & design and even robotics. True to Charlie Fink's book Convergence,[xi] AR won't be one technology but the confluence of many. So there will be many points of entry.

"You need to understand reality in order to augment it," Finman said. "If you want to put a Pikachu on the table or have a robot put a cup on the table, you still need to understand the table in the same way… so a lot of the people we hire come from fields like robotics, self-driving cars, and drones."

Confidence Signals

As the AR industry – and its practitioners – evolve with the medium, the bad news is that things are so early and undefined. But the good news is likewise that things are so early and undefined. There will be lots of value creation as AR – and its revenue models – continue to grow into their own skin.

Lastly, a macro factor that provides confidence for this forward march of AR is the level of investment from tech giants. As we've examined,xii this is a good confidence signal given that they believe in the technology. Many tens of billions in investment will also be a good accelerant.

"They're coming at it from many different directions but they're all trying to solve the same problem," said Finman. "These are companies with some of the biggest financial reserves we've ever seen. This leads to what I consider to be an obvious conclusion: AR is inevitable."

Part III Preview

Though Snapchat and Niantic lead the way in many aspects of AR engagement and monetization, they're' not the only players with extractable lessons. As mentioned in the introduction to this report, there are best practices likewise being demonstrated by a handful of others.

We'll be back next month in the third and final installment of this report series to dive deep on the moves and takeaways from these players. That will include emerging players that so far carry the marks of potential success, that we've examined in Parts I & II. These include Instagram, Houzz, Minecraft Earth and Tilt Five, among others.

Stay tuned for that report next month… and ongoing narrative insights about what's working (and not working) in these early and impressionable stages of consumer AR's life cycle. There's still much evolution to happen, and many lessons to learn. We'll continue tracking it, and reporting what we see.

Image Source: Tilt Five

▌▌▌ Key Takeaways

▐AR During consumer AR's early stages, success stories are scarce but critical for extractable lessons.
  ▐AR This includes product models (UX design) and business models (when/how/whom to charge).

▐AR After examining Snapchat through this lens in Part I of this report series, we now examine Niantic.
  ▐AR Like Snapchat, Pokémon Go has popularized AR in mainstream culture (usually without calling it "AR").
  ▐AR There's an ongoing debate over whether or not the game is indeed AR. We believe it is.
  ▐AR Though it's arguably not AR on a *pixel-level*, it is AR on an *experiential level*.
  ▐AR The game successfully augments reality by altering gameplay based on situational relevance.

▐AR Pokémon Go's credibility as an AR benchmark and strategic exemplar lies in its performance.
  ▐AR It has derived $3 billion in lifetime revenue, including its highest annual revenues to date in 2019.
  ▐AR Last year, it grossed $894 million in player spending and 55 million downloads (Sensor Tower).
  ▐AR 2019 contained its 4th and 5th highest revenue months to date: August ($116M) and Sept. ($126M).

▐AR The game's biggest achievements not only include traction and revenue, but sustainability over time
  ▐AR Longevity is rare for mobile games, which often lose novelty and player engagement over time.
  ▐AR Pokémon Go has bucked this trend with a combination of IP, game mechanics and frequent updates.
  ▐AR Updates include the incorporation of Team Rocket, AR+ Mode, Snapshot and Buddy Adventure.
  ▐AR Upcoming features include multiplayer environment syncing to pose with several players and Pokémon.

▐AR Broader success factors come down to a combination of design principles and Niantic's core values.
  ▐AR The game applies AR sparingly, averaging 2-3 minutes per session and usually to pose with Pokémon.
  ▐AR This takes into account impracticalities of upheld phone orientation during the game's migratory play.
  ▐AR Niantic has also observed natural user behavior and leaned into it, resulting in the Snapshot feature.
  ▐AR Ultimately, AR is a technology that can enhance an experience, not yet a product in itself.

▐AR Beyond product design and game mechanics, Niantic should be examined for business model innovation.
  ▐AR In-app purchases (IAP) are successful in AR as the tech isn't yet proven enough for upfront payments.
  ▐AR IAP builds on the behavioral economics of microtransactions, proven in the broader gaming world.
  ▐AR Consumers are acclimated to this payment scheme as demonstrated by Fortnite and Candy Crush.
  ▐AR ARtillery Intelligence survey data further validate consumers' comfort with IAP as an AR revenue model.

▐AR Further business growth will come as the maturing Niantic finds adjacent revenue streams.
  ▐AR Pokémon Go's secondary revenue stream of advertising has lots of growth potential.
  ▐AR This organic ad format utilizes in-game components to drive measurable foot traffic to businesses.
  ▐AR Used by large brands like McDonald's, Niantic recently opened it up to the long-tail SMB market.
  ▐AR Another revenue stream will include the Real World Platform to enable other location-based AR apps.

▐AR Real World Platform could end up being Niantic's primary product in the long term.
  ▐AR Applying the best practices, scaling capacity and architecture from Pokémon Go, it's a valuable tool.
  ▐AR Enablers like this (a.k.a. AR "building blocks") represent a top area of opportunity in AR's next era.
  ▐AR The platform itself will continue to evolve towards Niantic's "planet-scale AR" ambitions.
  ▐AR It will get stronger with use, as apps built on the platform will feed into its data and spatial maps.

▐AR We will return in Part III of this series to examine success factors for AR's emerging players.
  ▐AR These will include Minecraft Earth, Instagram, Tilt Five and others.

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

i See ARtillery Intelligence Report: Industrial AR Benefits and Barriers (sign-in required)
ii See AR Insider Article: Pokémon Go Passes the $3 Billion Mark
iii See AR Insider Article: VR is a Meal, AR is a Snack
iv See ARtillery Intelligence Report: Hearables: Broadening the Definition of AR (sign-in required)
v See ARtillery Intelligence Report: Mobile AR Usage & Consumer Attitudes (sign-in required)
vi See ARtillery Intelligence Report: Mobile AR Strategies & Business Models (sign-in required)
vii See ARtillery Intelligence Report: Global AR Revenue Forecast, 2018-2023 (sign-in required)
viii See ARtillery Intelligence Report: Mobile AR Strategies & Business Models (sign-in required)
ix See ARtillery Intelligence Report: Mobile AR Strategies & Business Models (sign-in required)
x See ARtillery Intelligence Report: AR Cloud and the Internet of Places (sign-in required)
xi See AR Insider Article: Fink's Convergence Connects the Dots on an Augmented Future
xii See ARtillery Intelligence Report: AR: The Top of the Food Chain, Part I & Part II (sign-in required)