AR is a critical tool for brands to capture consumer attention, better connect with people, and build consumer confidence.

AR is evolving at a rapid rate and is poised to take-off and become as significant of a technology shift as the web or mobile.

The camera is driving the adoption of AR from being a playful technology to being a ubiquitous experience that drives excitement and utility into people’s lives.

AR is already here, widely recognized as both fun and useful, and driving fast adoption and growth.

There is untapped demand for more AR content, and people are already AR creators, propelling the AR ecosystem forward.

There is an imperative to meet consumer’s AR demand, and now is the time to act for brands, platforms, and developers.

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Introduction
Key Takeaways

AR adoption is tracking with the mobile usage boom - by 2025, nearly **75% of the global population and almost all smartphone users will be frequent AR users.**

**73% of people successfully identify AR when they see it**, but when talking about it, they have a hard time defining or describing what it is.

**65% of AR consumers around the world and across generations use AR to have fun**; the majority are discovering AR through social / communications apps.

AR is generally seen as a “toy”, but **76% of people expect and desire to use it as a practical “tool”** in their everyday lives.

Interacting with products that have AR experiences leads to a **94% higher conversion rate**.
Consumers are redefining the digital experience by using AR.

Augmented Reality (AR) is the next form of mobile engagement that is exciting consumers, driving an enhanced engagement with brands, elevating consumer experiences and increasing brand revenues.

Augmented Reality refers to experiences in which the real-world environment seen through your phone, computer, app camera, or an AR headset is altered or enhanced with the addition of images, objects, text, or other digitally-added information. Augmented Reality could be applied to both visuals of the front facing (selfie) and outward facing (world) cameras.¹
There is something really unique happening right now – an incredible number of hobbyists and professionals are using AR. Downloading tools across the Snap AR platform. They’re taking time to learn, they’re curious.”

Eitan Pilipski
SVP Camera Platform
Snap Inc.

AR is growing
By 2025, nearly 75% of the global population* and almost all people who use social / communication apps will be frequent AR users.¹

Frequent AR Consumers
Based on people ages 13-69 who use social / communication apps

¹: See additional methodology details in appendix
*Global population includes people ages 13-69 (5.61B based on UN World Population Prospects 2019)
Our commitment to reinventing the camera is most evident through our advances in augmented reality. Today, more than 200 million people engage with AR on Snapchat everyday on average. We have co-developed our vision for augmented reality together with our growing community and have created cutting-edged tools and capabilities that allow creators to build increasingly advanced Lenses and distribute them to the entire Snapchat community.”

Evan Spiegel
Chief Executive Officer
Snap Inc.
Younger, more group-oriented households are driving AR growth

Age Differences

Gen Z / Millennials are both 71% more likely to use AR all the time vs. older generations.¹

Older generations are nearly 20% more likely to view AR primarily as practical.²

Household

Bigger households are 89% more likely than solo households to use AR all the time.³

---

¹: 2021 Global Deloitte Digital Study commissioned by Snap Inc.
   Base = Gen Z (2,379), Millennials (1,751), Gen X (159)
   Q: What year were you born? | Q: How familiar are you with AR? | A: I use AR all the time

²: Base = Age 45-50 agreeing AR is practical (281), Age 13-24 agreeing AR is practical (1,891)
   Q: What year were you born? | Q: Augmented Reality is for entertainment / Augmented Reality is practical | A: Agree much more with B, Agree somewhat more with B

³: Base = Solo HH (272), 5+ HH (1,403)
   Q: How many people occupy your residence (including you)? This includes related family members and all the unrelated people who live with you. Do you think AR will be a 5 years? | A: Very useful / important, Somewhat useful / important

Note: People who live with others is based on households with 5 or more individuals. Increased number of household members implies more time spent being social with friends and family, a driver of AR usage.
Compared to mobile tech adoption, AR is poised to take-off. Technology advances are driving the accelerated adoption of AR:

- AR-related patents in the US grew more than 3x over the last 10 years.\(^1\)
- 5G will accelerate AR technology adoption with benefits like increased download speeds and accessibility.\(^2\)

\(^1\) Deloitte Digital Insights, The Spatial Web and Web 3.0
\(^2\) ZDNet Article, "How 5G will affect augmented reality and virtual reality"
As AR evolves, it will revolutionize our lives and will become as significant of a technology shift as the web or mobile was to society, changing how we view and interact with the world around us.”

Allan Cook
Digital Reality Business Leader
Deloitte Digital
AR’s Impact on Brands
A lot of people are using AR to make purchase decisions and plan to keep doing so.

There are 100 million consumers shopping with AR online and in-stores.¹

94% agree they’ll use AR the same or more when shopping next year.²

¹ Gartner Press Release
² 2021 Global Deloitte Digital Study commissioned by Snap Inc.
Base = Aggregate (n=6,878)
Q: Will you use AR while browsing and/or shopping more or less than last year?
AR is the new consumer experience and cannot be ignored.

Consumers continuously expect more personalized and engaging experiences that enable them to interact with the world.

The companies that embrace change can become dominant industry players – those that don’t, fall behind competitors ...and sink.

It's not too late to be a leader and get first mover benefits.
Historically, advertising interrupted your life to get your attention. With AR a brand can create content that you can personalize with the camera and leverage to tell your own story in a way that is genuinely interesting, entertaining and relevant to your friends and followers.”
AR captures consumer attention

AR delivers almost $2\times$ the levels of visual attention compared to their non-AR equivalent, leading to improved memories and more powerful responses from consumers.$^1$

People who frequently use AR with their family and friends are 50% more likely to pay attention to a brand.$^2$

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1. Zappar, Article, “How augmented reality affects the brain”
2. 2021 Global Deloitte Digital Study commissioned by Snap Inc.

Base = Over 60% of friends and family sharing AR (n=1,330), Less than 20% of friends and family sharing AR (n=1,209)

Q: How many of your friends and family do you think use AR today? Q: Sometimes brands will create AR experiences through an app camera (e.g., a big movie company makes an AR experience where the heroes of a movie are fighting next to you, or a restaurant provides you with a lens/filter that turns you into a hamburger). What impact, if any, does interacting with that AR experience have on your perception of that brand?
Brands and people connect better with AR experiences

Brands are

41%

more likely to be considered if they have a branded AR experience.¹

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.

Base = People who use AR all the time (n=1,760)

16. Sometimes brands will create AR experiences through in-app technology. A big movie company releases an AR experience where the hero of a movie is right next to you, or a restaurant offers you a lens/filter that turns you into a hamburger. I am more likely to share a branded AR experience with friends and family.

I am more likely to share a branded AR experience with friends and family, I am more likely to consider their products.
AR builds consumer confidence

56% of shoppers agree that AR gives them more confidence about product quality.¹

Over half of people want to use AR technology to assess products, allowing for a risk-free, “try-before you buy”, experience.²

Nearly 3 in 4 consumers say they’re willing to pay more for a product that promises the total transparency that AR can provide.³

Returns are a $550 billion problem, which AR can help fix. AR-guided purchases led to a 25% decrease in returns.⁴

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Aggregate (n=8,770)
² NielsenIQ Analysis, Augmented retail: The new consumer reality
³ 2016 Label Insight Transparency ROI Study via Inc.
⁴ ARInsider Article, “Does AR Really Reduce eCommerce Returns?”
Social is driving AR adoption. People want to share their favorite Brand’s AR experiences.

33%  
Gen Z  
Rely on friends and family to discover branded AR experiences¹

35%  
Millennials

39%  
Gen X

54%  
Gen Z

64%  
Millennials

63%  
Gen X

Find it important to share branded AR easily¹

¹: 2021 Alter Agents research commissioned by Snap Inc. and Publicis Media. Notes: Letters indicate statistically significant difference at 95% confidence level.
The results are in 🎉
The conversion rates that we’ve seen have surprised us, as a result we’re doubling-down on AR experiences to drive eCommerce.”

Robert Triefus
EVP of Brand & Customer Engagement
Gucci

Interacting with products that have AR experiences leads to a 94% higher conversion rate, as individuals can better assess them and feel connected with brands.¹

¹ Harvard Business Review Article, “How AR is Redeﬁning Retail in the Pandemic”
AR is Evolving Fast
On Snapchat, there are **500 million minutes** of AR playtime per day on average.\(^2\)

Over **4.5 billion** AR photos and / or videos are taken daily by consumers.

AR use will grow with an increase in awareness and access to AR experiences and content.

**AR Photos / Videos Per Day\(^1\)**

<table>
<thead>
<tr>
<th>Year</th>
<th>Boomer</th>
<th>Gen X</th>
<th>Millennial</th>
<th>Gen Z</th>
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<td>4.6B</td>
<td>1.6B</td>
<td>2.6B</td>
<td>4.0B</td>
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<td>2023</td>
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<td>3.8B</td>
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<td>2025</td>
<td>17.6B</td>
<td>4.6B</td>
<td>6.4B</td>
<td>8.0B</td>
</tr>
</tbody>
</table>

**2021-2025 CAGR of AR Photos / Videos per Day.**\(^1\)

\(^1\) 2021-2025 CAGR of AR Photos / Videos per Day: The average annual growth rate over a 4-year period, calculated using the compound annual growth rate (CAGR) method. This rate shows the annual increase in AR Photos / Videos per day from 2021 to 2025.

\(^2\) See additional methodology details in appendix; CAGR: 4-year compounded annual growth rate that measures the annual increase in AR Photos / Videos per day from 2021 to 2025.

\(^3\) Snap Inc. internal data 01/2020
As mobile devices improve, **the phone and the camera are becoming synonymous**, allowing everyone to experience the world through each others’ eyes.

Today, we experience the world through the lens of the camera...

Consumers are 23% more likely to use the front-facing camera when they use AR to express themselves.¹

...tomorrow, the lens will become smart glasses.

The camera will...

**Be the New Search**

Pointing your camera at something will be similar to typing a term into a search bar.

“Snap’s choice of a smartphone’s camera as the interface is a familiar, comfortable tool that is almost always within reach. Snap adapted an interface that complemented users’ natural movement—leveraging sophisticated facial mapping and computer vision technology that creates 3D animations that rotate and expand.”²

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¹: 2021 Global Deloitte Digital Study commissioned by Snap Inc.

²: Deloitte Digital Insights, Intelligent interfaces: Reimagining the way humans, machines, and data interact
“In tech, there is an inner circle (now 18 months) and outer circle (18-36 months) of trends to take seriously. AR is properly in the inner circle. Nothing is more powerful than AR; it is the bridge between the 2D and the 3D world, and we’ve never had that before – we instead forced ourselves to accept the 2D world that you cannot touch or live.”

Paul McDonagh-Smith
Digital Capability Leader
Massachusetts Institute of Technology
Experiment with interesting features. Understand the benefits or utility of AR experiences. As this understanding grows, so too, do practical applications and how they might be used.

Discover and test a new capability. Interact with frictionless applications and experiences. Expectations to use AR becomes ubiquitous across platforms, providing interaction points to engage with the world in its totality.

Business as usual / the new normal: See AR’s full power as developers make more content available to use in everyday life, shifting from selfie to world and play to utility.

E.G. Using a lens to give yourself puppy ears or putting your face on a dancing rabbit.

E.G. Testing out a hair color and sharing this with friends or capturing a 3D monster.

E.G. Trying out a brand’s lipstick to see how it looks on or how a TV looks on the wall to determine which size of TV to purchase.

E.G. Shopping seamlessly across brands and platforms.
AR is Here
Today and
Here to Stay
Where in the world is AR being used?

Over 2/3 of consumers in all markets believe AR will be useful and important in 5 years.¹

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¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.

Survey: A global survey of how frequently people anticipate using or engaging with augmented reality (AR) and virtual reality (VR) at any of the following reasons: Communication, 1A. Several times each day, 1B. Once a day, Several times a week, Once a week

² Base = Aggregate (n=11,493)

Q: How useful and/or important do you think AR will be in 5 years? | A: Very useful / important, Somewhat useful / important

- Mexico: 94%
- India: 87%
- Malaysia: 87%
- Saudi Arabia: 87%
- United Arab Emirates (UAE): 84%
- Canada: 72%
- Australia: 70%
- United States: 70%
- The Netherlands: 67%
- Sweden: 67%
- Japan: 66%
- Norway: 64%
- Germany: 63%
- United Kingdom: 63%
- France: 62%

Global Average: 74%
Where do people love using AR most today?

67% of consumers use AR primarily in their homes.¹
Consumers predominantly use AR at home, and do so for a wide range of uses.

What are people using AR for at home?²

- 👤 74% Communication
- 🎬 52% Media & Entertainment
- 🎮 55% Gaming
- 🛍️ 41% Shopping

Note: Across all 15 markets, the 2021 Global Deloitte Digital Study commissioned by Snap Inc. in field from February 23, 2021 to April 5, 2021. Since the survey was conducted during the COVID-19 pandemic, primary usage of AR in consumer homes may be higher than usual.
How are people learning about AR?

Frequent AR users are more likely to have over 50% of their friends and family using AR.¹

¹: 2021 Global Deloitte Digital Study commissioned by Snap Inc.
Base = Aggregate (n=12,813)

Q: Where did you first discover AR content?
- I saw people I know using it on social media, communication, and camera apps.
- I saw it in an advertisement on a social media, communication, or camera app.
- I stumbled across it while exploring viral content on social media, communication, and camera apps.
- I saw celebrities / influencers use it on social media, communication, and camera apps.
- I read about it on a blog / forum.
- I heard about it from friends / family, in-person.

²: People who use AR all the time with 60%+ friends who share (n=1,645), People who have used AR before with 60%+ friends who share (n=1,578)
Base = People who use AR all the time with 60%+ friends who share (n=1,645), People who have used AR before with 60%+ friends who share (n=1,578)

Q: How familiar are you with AR?
- I use AR all the time.
- I have used AR before.

Q: How many of your friends and family do you think use AR today?
- 60-80%.
- Over 80%.

Why do they use AR?

- **TECH:** OSMOSIS  
  “I didn’t even realize I was using it”

- **TOY:** JOY  
  “I want to have fun and connect with friends”

- **TOOL:** UTILITY  
  “I need to and it’s useful”

- **TOTALITY:** UBIQUITY  
  “It’s everywhere and commonplace”
Why do they use AR?

Osmosis

61% of people use AR for communication.¹

People may have a hard time describing AR, but

73% successfully identify AR when they see it.²

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
² Base = Aggregate average (n=11,457)
Why do they use AR?

Joy

New products technology try

funny try gaming Pokemon

more fun

real better

more

creative

AR

New

technology

play

Snapchat

AR

friends

use like

life

time

future

cool think

creativity

world

experience

different

interesting

exciting

shopping

useful

online

express

myself

easy

product

look

different

games

exciting

pictures

something
Why do they use AR?

Joy

From the consumer perspective, they are willing to handle an AR learning curve, if they are having fun doing it along the way.”

Jason Yim,
CEO & Chief Analyst
Trigger Global

65% of consumers use AR to have fun, the biggest driver for AR use.¹

The draw of AR comes from feelings of joy. People are fascinated by themselves, and AR can be a great tool for explore those emotions.”

Adrian Mills
Creative Brand & Advertising Business Lead
Deloitte Digital

¹ Based on 2021 Global Deloitte Digital Study commissioned by Snap Inc.

Q: Why do you use AR?
Consumers list AR / VR as the top technologies they want to assist them in their daily lives.
Why do they use AR?

From Utility to Ubiquity

We are over halfway there.

Over 3 in 4 already recognize AR as useful.¹

Snapchatters are 3x more likely than Non-Snapchatters to say they are using AR to try on products more than they did last year.³

Ubiquity is achieved as consumers encounter AR everywhere, something that currently 50% of AR users experience.²

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
² Base = Aggregate (n=7,745)
³ Q: “I see Augmented Reality everywhere” | A: Agree Much more with A, Agree somewhat more with A
³ Q: Which of the following, if any, are true for you? Select all that apply.
"The more AR and visual computing becomes a natural medium for searching, learning, and viewing information in our environments, the more adoption we will see."

Shrenik Sadalgi,
Director of R&D
Wayfair
74% of consumers believe that AR will be even more important in their lives in the next 5 years.¹

Next year, consumers plan on using AR more in 4 key growth areas, showing the increase in value that they see in AR and that they are excited for future uses.

- **Media²**
  - 50% of consumers want to project their AR avatar into their favorite games, media & entertainment.

- **Shopping³**
  - 46% of consumers want to create their own interactive media plots by guiding characters through a script.

- **Gaming⁴**
  - 41% of consumers want to readily view information about an item or product as soon as it’s scanned with the phone camera.

- **Communications⁵**
  - 35% of consumers want to customize environments to their own imagination and share with others.

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¹ 2021 Global Media & Digital Study commissioned by Snap Inc.
² Base = Aggregate (n=11,493)
³ Q: How useful and/or important do you think AR will be in 4 years?¹
⁴ Q: How useful do you think AR will be in 4 years?¹
⁵ Q: How do you feel about AR on social media, communication, and camera apps? I want more ways to interact with friends and family using AR.
⁶ Q: Will you use AR while browsing and/or shopping more or less than last year?
⁷ Q: Will you use AR in gaming more or less than last year?
Utility is a primary driver for AR’s future use¹

Wellness
↑139%

Improve Productivity
↑76%

Instructions
↑55%

Navigation
↑36%

TV & Sports
↑36%

Learn Something new
↑35%

1. 2021 Global Deloitte Digital Study commissioned by Snap Inc.
   Base = Why use AR - Wellness (n=1,680), Improve Productivity (n=2,636), Instructions (n=3,517), Learn something new (n=4,903), TV & Sports (n=2,798), Navigation (n=4,156) | Desire for more AR use - Wellness (n=4,021), Improve Productivity (n=4,635), Instructions (n=5,453), Learn something new (n=6,601), TV & Sports (n=3,814), Navigation (n=5,658)

Q: Why use AR | Q: Desire for more AR use
Are You Ready for the Future?
"I regard [AR] as a big idea, like the smartphone. The smartphone is for everyone, we don’t have to think the iPhone is about a certain demographic, or country or vertical market: it’s for everyone. I think AR is that big, it’s huge. I get excited because of the things that could be done that could improve a lot of lives. And be entertaining."

Tim Cook
Chief Executive Officer
Apple Inc.
Drivers accelerating the adoption of AR

- Consumers are becoming creators
- Desire to increase utility
- Increased mobile usage through COVID-19
- Keeping things fun

Barriers slowing the adoption of AR

- Lack of content
- Industry-wide limited enablement & engagement with the developer / creator community
- Need for frictionless experience
Consumers are becoming creators

Everyday consumers have more access to technology tools that enable them to be creators of digital content.

AR is a creative vehicle

64% believe AR allows them to be more creative.

53% believe they are AR creators in their everyday lives.

Snapchatters are 1.5x as likely to be AR creators.

63% Snapchatters

43% Non-Snapchatters

have used tools to create AR.

1: 2021 Global Deloitte Digital Study commissioned by Snap Inc.
3: Snap Inc. (2021) 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Aggregate (n=10,061). Q: How much do you agree or disagree with each of the statements below? AR allows me to be more creative. | A: Agree/strongly agree

Snap Inc.
The need to increase utility

The pandemic exacerbated the demand for fun and practical content and reinforced AR’s importance.

As more retailers and brands invest in increasingly sophisticated AR-powered experiences, reaching more consumers across an ever-increasing number of touch points, consumer expectations will continue to escalate. They are demanding more utility for their time and attention. The brands and retailers who step-up to successfully meet this opportunity will stand out and be more likely to earn their business.”

James Clarke
Sr. Director Media Strategy & CRM
Frito-Lay North America

AR helps shoppers make decisions.

55% of AR shoppers believe that AR is more important for making browsing and/or shopping more rewarding / fun.¹

¹: 2021 Global Deloitte Digital Study commissioned by Snap Inc.
Survey conducted on behalf of Deloitte US by Desirone. Base = Total used AR for shopping (n=3,072) for AR helps shoppers make decisions. Q: Think about how your life has changed as a result of COVID-19 and pandemic restrictions. How, if at all, has COVID-19 changed the importance of AR in your life? (AR makes browsing and/or shopping more rewarding / fun)
COVID-19 accelerated AR adoption

Worldwide spending on augmented reality and virtual reality (AR/VR) is forecast to accelerate out of the pandemic, growing from just over $12.0 billion this year to $72.8 billion in 2024.\(^1\)

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1. International Data Corporation Worldwide Augmented and Virtual Reality Spending Guide via IDC
2. 2021 Global Deloitte Digital Study commissioned by Snap Inc.
3. Base = People who use AR all the time (n=2,405)
4. Base = People who use AR all the time (n=2,382)

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COVID-19 has reinforced AR’s importance as a bridge between the physical and the digital.

56% say COVID-19 has made AR digital experiences more rewarding and fun.\(^3\)

59% say COVID-19 has made AR tech innovations more important.\(^4\)

56% say COVID-19 has made AR more rewarding and fun.\(^3\)

59% say COVID-19 has made AR tech innovations more important.\(^4\)
E-commerce benefited the most from COVID-19 and it’s here to stay. AR has the opportunity to piggyback on this trend.”

Mike Boland
CEO
ARtillery

In the wake of COVID-19, in which retailers worldwide shut down for months, retailers using AR are enjoying a 19% spike in customer engagement…and the customer conversion rate increases by 90% for customers engaging with AR versus those that don’t.”¹

Judy Mottl
Editor
Retail Customer Experience

¹ Retail Customer Experience Article, “Why retailers should embrace augmented reality in the wake of COVID-19”
Keeping things fun

The experience of overlaying imagery onto the real world is fun.

74% of consumers say that AR has entertainment value.¹

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Aggregate (11,634)
Develop more content

Keep AR consumers engaged with new, relevant content.

Consumers want AR to simplify their lives

49% want to see more information about a product.¹

42% want to view instructional guides.¹

For brands to keep customers engaged, they need to increase the volume and relevance of content to improve customer value.

¹: 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = View information about an item or product (n=7,592), View instructional guides (n=6,587). Please note all the ways that you would be interested in using AR.
The more a consumer spends time with something, the more likely they are to buy it – there is no question that when the ad is personal / interactive, engagement rate goes up...How do you create an ad that deeply engages the consumer? That’s why we have AR. When an ad is interactive, such as AR, there’s no question the interaction & engagement rates go up.”

Dea Lawrence
CMO
Variety
Develop more content

The case for investment in AR is there – customers using AR spend more time in apps and have higher purchase rates.

According to Adi Tatarko, Houzz’s CEO, customers spend more time in apps that offer AR – **up to 2.7x more time** – and importantly, Houzz customers using AR are **11x more** likely to make a purchase.¹

Brands can create engaging content and gain access to developer networks by tapping into an ecosystem of platform businesses.*
The labor market is evolving towards jobs that demand more digital skills, not fewer. Meanwhile burgeoning technologies like Augmented Reality – in greater demand than ever due to social restrictions – are set to become more ingrained into our daily lives.“

Enable & engage developers

AR skillsets are nascent but growing.

Over 50% of AR developers have under a year of experience.¹

Consumers represent untapped potential for social and communications platforms with 63% of consumers having tried at least one social platform developer account.²

Snapchatters are AR content creators

55% of Snapchatters who have Lens Studio are Gen Z.⁵

East Asia, North America, and South Asia are hotspots for AR and VR skillsets.

68% of global AR / VR practitioners are in East Asia, North America and South Asia (31%, 23% and 14% respectively).³

Over half of AR / VR practitioners in South Asia are students.⁴

¹: SlashData Report, A closer look at AR/VR practitioners’ experience & goals
²: 2021 Global Digital Study commissioned by Snap Inc.
³: SlashData Report, A closer look at AR/VR practitioners’ experience & goals
⁴: 2021 Global Digital Study commissioned by Snap Inc.
⁵: 2021 Global Digital Study commissioned by Snap Inc.
Consumers are becoming casual AR creators

Novelty is driving this adoption.

69% create AR to experience the latest technology.¹

65% create AR to build something that hasn’t been done before.¹
Casual creators want AR to shape how they interact with the world

Thanks to companies like Snap, people are now familiar with light-touch AR. With 5G, tech is finally catching up with ambition.

Kris Soumas
Head of Gaming & Next Gen Entertainment
Verizon

Casual creators have the opportunity to shape AR’s future.

- 50% want to enhance and share the real-world footage they capture.
- 52% want to know more about products that they scan.
- 44% want to navigate to new areas of interest.

1. 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base: People who use tools to create AR frequently – to enhance real-world footage (n=2,422), People who use tools to create AR frequently – to navigate to new areas of interest (n=2,126). People who use tools to create AR frequently – to readily view information about a product they’ve scanned (n=2,518).

Q: Have you ever used tools (e.g., Snapchat Lens Studio, Facebook for Developers/Spark AR, Instagram for Developers, TikTok for Developers) to create your own AR filters/lenses/effects? | Q: Below is a list of ways you could use AR in the future. Please select all the ways that you would be interested in using AR.
A strong developer ecosystem will drive valuable content

**Fulfillment**
Platforms that enable them to deliver their creative vision, while being rewarded for their contribution via revenue sharing agreements.

“AR seems to me the best way to democratize my work – everyone can wear my creations. It can’t be the future if no one can try it on.”

Ines Alpha
Lens Creator
3D Makeup Artist

**Support**
Platform developer support for creating AR experiences, especially as developer support for non-AR mobile applications starts to decline.

“The perfect AR platform listens to and communicates with its creators.”

Clara Bacou
Lens Creator

**Developer Ecosystem Needs**

**Tools**
Significant platform-specific configuration and development support, to meet growing and uncaptured demand.

“Someone needs to provide a sandbox that everyone uses so that developers can focus on developing.”

Anwar Noriega
CEO and Co-Founder
Wabisabi Design

**Innovation**
The freedom and license to create innovative AR content, test this content with consumers, and iterate on new ideas, without the fear of scrutiny, loss of work, and / or overbearing performance metrics.

“It’s one thing to develop for people remotely connecting, but developing to enable people to interact in the same space via AR is exciting.”

Snehaal Dhruv
Founder & Lens Creator
SuperFan
Snap Inc. has over 150,000 creators, who have made over 1.5 million lenses.¹

¹ Snap Inc. internal data as of September 30, 2020

“The key is harnessing AR in a very intuitive way. Partnering with Snap allows us to bring our products to life in an exciting new way.”

Shane Horneij
Senior Director
Performance Marketing King

“Snap [Inc.] has done so many great things for adoption of AR for both consumers and developers. Snapchat filters taught the world what AR was and the art of the possible.”

Max Dawes
Managing Director
Zappar
**Reduce friction**

Educate consumers and increase hardware access to continue to propel AR’s evolution.

**Consumer Behavior**

Consumers will continue to learn about AR and how it can be used to enhance their experience.

Brands should **entertain** and **educate** consumers on the value AR can provide and **incentivize** them to partake in the AR movement.

**Hardware / Access**

As battery life, network latency, and processing continue to improve, AR devices will become slim, functional, and aesthetically pleasing.

Brands should strive to provide experiences that can **scale and adopt** to technology advancements and provide **equitable access** for Creators and consumers.

“The barriers for **creatives without a technical background** to create AR experiences is understanding the technical limitations. You have to understand these to pave over the cracks. As soon as there is a glitch or issue for user it breaks the illusion.”

Qi Pan
Director of Engineering
Computer Vision
Snap Inc.
Conclusion
Conclusion

Consumers continuously expect more personalized and engaging experiences that enable them to interact with the world. **AR is delivering that to consumers, today, but there remains untapped potential for so much more.**

Brands know the consumer appetite for AR is already here – consumers are far more likely to pay attention to brands using AR. **There is a content imperative for brands to meet consumers AR demand, and now is the time to meet this demand. Brands that meet the demand for AR experiences may be more likely to gain market share in the future.**

The convergence of use cases and the networking effects is expediting AR adoption. But to unlock AR’s potential, **brands, developers, and platforms need to work together to accelerate content development and grow the AR ecosystem.**
Thank you
Appendix
Report Methodology

Research Overview Global, Quantitative Online Survey

- 20-minute online survey among 15,000 international respondents
- Survey in field from February 23, 2021 – April 5, 2021

Alignment with Interdisciplinary Experts

- Experts within the AR industry participated in in-depth interviews to provide context for survey findings and contribute guidance on the future of AR in society.

Respondent Qualification

- n=1000 per market
  - Ages 13-50
  - 500 Snapchatters who use Snapchat at least once daily, split evenly amongst age groups 13-17, 18-24, and 25-50
  - To ensure a representative read on Snapchatters, cell weighting based on nested gender and age were applied to each country to correct for demographic imbalances due to set sampling size.
  - 500 Non-Snapchatters, who do not have Snapchat downloaded/have never heard of Snapchat, minimum of N=100 in all three age groups
- Markets: Australia, Canada, France, Germany, India, Japan, Malaysia, Mexico, The Netherlands, Norway, Saudi Arabia, Sweden, United Arab Emirates, United States, United Kingdom

Local Market Additions and Exceptions

- U.S.: Ethnicity quota (maximum 65% white respondents, maintained only for Snapchatters; Non-Snapchatters sample should be roughly nationally representative)
- KSA and UAE: Representative expat / citizen quotas (88% expat in UAE; 30% expat in KSA for both Snapchatters and Non-Snapchatters)
- Norway: Sample recruited for n=1000 to be representative of social media and communication app users in that market, with a skew on ages reflective of other markets (evenly distributed across 13-17, 18-24, and 25-50)
- Japan: Sample recruited for n=1000 to be representative of smartphone users in that market, with a skew on ages reflective of other markets (evenly distributed across 13-17, 18-24, and 25-50)
Frequent AR Users Methodology

2021 Baseline

People who use AR weekly or daily based on responses to 2021 Global Deloitte Study commissioned by Snap Inc.¹ and extrapolated to population

Frequent AR Users

\[
\frac{\text{Population Base}}{\text{AR Adoption Rate}} = \text{AR Adoption Rate of Total Population}
\]

2021 Global Population Base: People ages 13-69 = 5.61B worldwide in 2020²
2021 Social and Communications App Population Base: Global Population x Social Media Penetration Rate (48% in 2021)³ = 2.71B

Note: Assumes no increase or decrease in population. Base from 2021 stays same across five years

AR Adoption Rate of Total Population
AR Adoption Rate of Social and Comms App Population
Note: Adoption Rate capped at 100% in out years

2022-2025 Forecast

Survey Equivalent Ages: 13-24 25-44 45-50
AR Usage Frequency (2021)
Gen Z Millennial Gen X / Boomer
Several times each day 26% 19% 12%
Once a day 13% 13% 7%
Several times a week 19% 18% 15%
Once a week 8% 8% 8%
A few times a month 10% 11% 12%
Once a month 4% 5% 8%
Less than once a month 8% 13% 17%
I don’t use AR in this way 12% 14% 21%
Frequent 66% 58% 42%

2000 Growth Rate of Smartphone Users

Note: 2021 AR Users is at 1999 smartphone user’s adoption level since AR is in the Toy-phase of adoption; if we look at where this transition took place with mobile phones, one can argue that this was when games like ‘snake’ started being available (e.g., 1997: Nokia 6110 device released, 1999: emojis were invented, 2000: Nokia 3310 launched, and the first commercially available camera phone launched in Japan)

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
² Base = Gen Z (n=4,319), Millennial (n=3,584), Gen X / Baby Boomer (n=348)
³ How often do you use AR for any of the following reasons? Communication
   Note: Boomers assumed similar behavior to Gen X since Boomers were not part of survey group
4. Survey respondents were mainly young adults in Gen Z and from a mix of countries in the APAC region
5. AR Adoption Rate is defined as the percentage of people in the population who use AR
6. Note: 2021 AR Users is at 1999 smartphone user’s adoption level since AR is in the Toy-phase of adoption; if we look at where this transition took place with mobile phones, one can argue that this was when games like ‘snake’ started being available (e.g., 1997: Nokia 6110 device released, 1999: emojis were invented, 2000: Nokia 3310 launched, and the first commercially available camera phone launched in Japan)
**AR Photos / Videos per Day Methodology**

Overall: Calculations were done by age groups in the 2021 Global Deloitte Digital Study commissioned by Snap Inc. and netted up into a generational view. The following methodology was used for each age group (Ages: 13-17, Ages 18-24, Ages: 25-34, Ages: 35-44, Ages: 45-50)

### 2021 and 2022 Baselines

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Determine Global Population for ages 10-69 (5.99B)</td>
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<tr>
<td>Note</td>
<td>Survey only included Ages 13-50. Ages 10-12 were assumed to have similar behavior to Ages 13-17. Ages 51-69 were assumed to have similar behavior to Ages 45-50.</td>
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<td>2</td>
<td>Determine percent of people within crosstab of survey questions for Frequency of photos/and or videos taken daily AND % of photos/and or videos that are AR</td>
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<td>3</td>
<td>Apply percent of population from Step 2 to population to get number of people within each crosstab</td>
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### 2023-2025 Forecast

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<th>Year</th>
<th>Description</th>
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<tr>
<td>2023-2025</td>
<td>2007 Growth Rate of Smartphone Device Sales</td>
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Note: Device growth is used as a proxy for photos/videos growth. Growth rate assumes 2007 smartphone device growth. As of 2021, there are ~1.05B AR Compatible Devices: ARCore (Android) + ARKit (iOS). If this grows at global smartphone growth equivalent, there could be ~4.1B by 2025
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AR connections drive revenue

Over half of consumers view AR as social.\(^1\)

33% more likely to share brand experiences.\(^2\)

53% more likely to purchase products from the brand.\(^3\)

The Recipe for Revenue Success

\(^1\) 2021 Global Deloitte Digital Study commissioned by Snap Inc. 
\(^2\) Base = AR is a group activity – Agree much more with (n=1,194), Aggregate (n=4,945) 
\(^3\) Base = AR is a group activity – Agree much more with (n=1,143), Aggregate (n=4,109)
The VICE model is how we see people building and using AR in both their personal and professional lives. We have yet to find an AR use case that isn't about visualizing, communicating, instructing or engaging or some combination.”
Develop with consumers in mind:

Deloitte Digital’s VICE Model for Impactful, Engaging Experiences

Question: What makes a good AR app?


Based on our experience from the work we do with our clients at Deloitte and this research study, the VICE Model is a simple way to think about how AR adds significant value and can deliver maximum impact.
Develop with consumers in mind:

Deloitte Digital’s VICE Model for Impactful, Engaging Experiences

**V**
Vision & Visualize
Show environments that pique people’s interest by allowing them to see the world – real or virtual – in new ways. Very little is impossible to conceptualize; if a brand can imagine something, it can show anything to consumers.

**I**
Instruct & Inform
Give people access to ‘dummy-proof’ instructions that intuitively walk them through how to accomplish a task or assemble a product at their own pace. Bonus: Give them access to a digital expert to guide and educate them through the steps or tasks.

**C**
Communicate & Collaborate
Enable people to talk, share, and connect with each other. Anywhere. Anytime.

**E**
Entertain & Engage
Provide a fun way for people to engage with entertainment, media, and each other. Excite consumers with innovation and imagination.
"There are two focuses when leveraging AR – consumer engagement with product, such as try on technology, and consumer engagement with a company, such as using storytelling to highlight a company’s values (i.e., sustainability)."

Lara Bean
Senior Manager Operations & Digital Optimization
adidas

"[AR] needs to be useful and provide the information you need to better educate yourself to make a purchase. The more a consumer spends time with something, the more likely they are to buy it – there is no question that when the ad is personal / interactive, engagement rate goes up."

Dea Lawrence
CMO
Variety

"In the long term, multi-user interaction with AR is the stronger case."

Qi Pan
Director of Engineering
Snap Inc.

"Consumers in different countries use AR differently. Example: In Brazil, they tend to be more expressive, visual, with art-centric and music type Lens."

Kimberlee Archer
Head of AR Marketing
Snap Inc.
What are they using AR for?

Top ways that people use AR to enVision & Visualize and Instruct & Inform.

1: 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Why use AR – Feel creative (n=5,322), Improve shopping (n=4,370), Navigation (n=4,156), Learn something new (n=4,903), Product information (n=4,520), Instructions (n=3,517)
What are they using AR for?

Top ways that people use AR to Communicate & Collaborate and Entertain & Engage.

1: 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Why use AR - Improve Productivity (n=2,636), Communicate (n=4,924), Connect with others (n=3,837), TV & Sports (n=2,798), Gaming (n=6,121), Wellness (n=1,680).

Q: Why use AR
List of Markets Covered

Australia
Canada
France
Germany
India
Japan
Malaysia
Mexico
The Netherlands
Norway
Saudi Arabia
Sweden
United Arab Emirates (UAE)
United Kingdom
United States
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