The following report is a deep dive into how Snapchatters are using AR in Saudi Arabia based on the Snap Consumer AR Global Report. For a more comprehensive market view, please read the Snap Consumer AR Global Report.
AR is a critical tool for brands to stand out and deliver customer value and confidence.

Introduction
AR is the next form of mobile engagement, elevating the consumer experience and setting new expectations for digital engagement.

AR's Impact on Brands
AR is a critical tool for brands to stand out and deliver customer value and confidence.

AR is Evolving Fast
AR cannot be ignored as the new, rapidly-growing consumer experience that will soon be everywhere, all the time.

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

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

AR adoption is tracking with the mobile usage boom - by 2025, almost all of the Gen Z and Millennial population in Saudi Arabia will be frequent AR users.¹

78% of people successfully identify AR when they see it², but when talking about it, they have a hard time defining or describing what it is.

56% of Snapchatters in Saudi Arabia and across generations use AR to have fun; the majority are discovering AR through social / communications apps.³

AR is generally seen as a “toy”, but 81% of people expect and desire to use it as a practical “tool” in their everyday lives.⁴

Interacting with products that have AR experiences leads to a 94% higher conversion rate.⁵

1. See additional methodology details in appendix.
2. 2021 Global Deloitte Digital Study commissioned by Snap Inc.
3. Base = Aggregate average (n=808)
4. Base = Aggregate average (n=840)

56% of Snapchatters in Saudi Arabia and across generations use AR to have fun; the majority are discovering AR through social / communications apps.

78% 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.

AR is generally seen as a “toy”, but 81% 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.
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.”

AR is growing

By 2025, almost all of the Gen Z and Millennial population* in Saudi Arabia will be frequent AR users.¹

Frequent AR Users

Based on people ages 13-44 who use social / communication apps

¹ Additional methodology details in appendix

Note: 2021 AR Consumers based on people who use AR weekly or daily from 2021 Global Deloitte Study commissioned by Snap Inc.
2022 to 2025 forecasted in line with 2000-2003 growth rate of smartphone users as AR is in the Toy phase of adoption (if we look at when 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).

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.

Eitan Pilipski
SVP Camera Platform
Snap Inc.
Younger generations and Snapchatters are driving AR growth

Age Differences

Younger people are **28% more** likely to believe AR is important in their lives.¹

But, AR is not just for Gen Z; **Millennials and Gen X show the highest affinity for AR.**²

**77%** of Snapchatters believe AR is important to their lives.³

**88%** of Snapchatters believe AR will be important in 5 years.⁴

---

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Age 13-24 (n=349), Age 35-44 (n=166)
² Publicis Groupe & Snap Inc. Study Base: Gen Z (n=1,261), Millennials (n=1,632), Gen X (n=1,107)
³ QP7A: Thinking about your expected use of AR technology post-COVID, do you expect to start using AR? Please select one response.
⁴ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Snapchatters (n=455)
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.”
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

96% of Snapchatters 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 = Snapchatters (n=249)
Q: Will you use AR while browsing and/or shopping more or less than last year?
AR captures consumer attention

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

Snapchatters who frequently use AR with their family and friends are **23% more likely** to pay attention to a brand.²

---

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

Base = Snapchatters with over 60% of friends and family sharing AR (n=51), Snapchatters with less than 40% of friends and family sharing AR (n=67)

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 a lens/filter/effect that turns you into a hamburger). What impact, if any, have these experiences had on your perception of that brand?
Brands and people connect better with AR experiences

**34%**

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

Snapchatters are 20% more likely than Non-Snapchatters to feel AR gives them a reason to share a photo or video.²

---

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
² Base = Snapchatters (n=104), Non-Snapchatters (n=86)
AR builds consumer confidence

68% of Snapchatter 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
The results are in 🎉
AR interactions drive conversion

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

Snapchatters who have interacted with a brand’s AR experience are 38% more likely to purchase products through the brand’s website.²

¹ Harvard Business Review, "How AR is Redefining Retail in the Pandemic" ² 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Snapchatters (n=195)

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 a lens/filter/effect that turns you into a hamburger). What impact, if any, does interacting with that AR experience have on your perception of the brand? (e.g., I am more likely to purchase their products through the brand’s website)

A: Snapchatters who have interacted with a brand’s AR experience are 38% more likely to purchase their products through the brand’s website.
AR connections drive revenue

Consumers who interact with a brand’s AR experience are...

41% more likely to share the experience with family and friends

43% more likely to purchase products from the brand

• Snapchatters are 45% more likely than Non-Snapchatters to use AR to connect with others.

• 59% of Snapchatters share AR photos and videos with friends and/or family every day.
AR is Evolving Fast
Almost **25 Million** 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.

On Snapchat, there are **500 million minutes** of AR playtime per day on average.

---

**AR Photos / Videos Per Day**

Generational Breakout of Daily AR Photos / Videos Created

<table>
<thead>
<tr>
<th>Year</th>
<th>AR Photos / Videos Created</th>
</tr>
</thead>
<tbody>
<tr>
<td>2021</td>
<td>24.9M (Millennial: 14.9M, Gen Z: 10.0M)</td>
</tr>
<tr>
<td>2022</td>
<td>28.9M (Millennial: 15.9M, Gen Z: 13.0M)</td>
</tr>
<tr>
<td>2023</td>
<td>35.8M (Millennial: 20.8M, Gen Z: 15.0M)</td>
</tr>
<tr>
<td>2024</td>
<td>61.6M (Millennial: 31.6M, Gen Z: 30.0M)</td>
</tr>
<tr>
<td>2025</td>
<td>97.9M (Millennial: 47.9M, Gen Z: 50.0M)</td>
</tr>
</tbody>
</table>

**2021-2025 CAGR of AR Photos / Videos per Day:** **+40%**

---

1. See additional methodology details in appendix.
2. Snap Inc. internal data Q1 2020.
AR is Here Today and Here to Stay
Where do Snapchatters use AR most today?

52% of Snapchatters use AR primarily in their homes.¹

Snapchatters predominantly use AR at home and do so for a wide range of uses.

What are Snapchatters using AR for at home?²

92% Communication

79% Media & Entertainment

82% Gaming

73% Shopping

Today’s use cases most align with activities you would do at home, and 61% of Snapchatters say they will use AR at home more than last year.³

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Snapchatters in 15 markets. 72% of consumers said they would use AR at home. 1. At Home Rank 1

² Base = Snapchatters at home - Communication (n=240), M&E (n=206), Gaming (n=213), Shopping (n=192)

³ How often do you use AR for any of the following reasons? | A: Several times each day, Once a day, Several times a week, Once a week, A few times a month, Once a month

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 consumers’ homes may be higher than normal.

Today’s use cases most align with activities you would do at home, and 61% of Snapchatters say they will use AR at home more than last year.³
How are Snapchatters learning about AR?

87%

learn about AR from social / communication channels and networking.¹

Snapchatters who use AR frequently are more likely to have over 50% of their friends and family using AR.²

Snapchatters are 21% more likely to discover AR through celebrities or influencers using AR on social and communication apps.³

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
   2 Base = Snapchatters (n=451)
   3 Q: Where did you first discover AR content? | A: I saw people I know using it on social media, communication, or camera apps | I stumbled across it while exploring viral content on social media, communication, or camera apps | I saw it in an advertisement on a social media, communication, or camera app | I saw celebrities/influencers use it on social media, communication, or camera apps | I read about it on a blog / forum | I heard about it from friends / family, in-person

   2 Base = Snapchatters who use AR all the time (n=64), Snapchatters who have used AR before (n=70)
   3 Base = Snapchatters (n=106), Non-Snapchatters (n=87)
   4 Q: How familiar are you with AR? | A: 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? | A: 60-80%, Over 80%

   5 Q: Where did you first discover AR content?
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”
What are Snapchatters using AR for, today?

Communication
84% frequently use

Gaming
75% frequently use

Media
75% frequently use

Shopping
59% frequently use

45% to be more creative

50% to make gameplay more interactive

~50% to make what they are watching more enjoyable

42% to try products out

Snapchatters are about 30% more likely to use AR for Shopping to see how products look around them and to get information about a product than Non-Snapchatters.

---

1: 2021 Global Deloitte Digital Study commissioned by Snap Inc.
2: Base = Snapchatters (n=388)
3: Base = Snapchatters (n=388)
4: Base = Snapchatters (n=388)
5: Base = Snapchatters (n=90)
6: Base = Snapchatters (n=133)
7: Base = Snapchatters (n=156)
8: Base = Snapchatters – Try Out (n=113), Non-Snapchatters – Try Out (n=164), Snapchatters – Product Info (n=201), Non-Snapchatters – Product Info (n=150)

Q: Frequency of Use by Reason: Communication
A: Several times each day, Once a day, Several times a week, Once a week

Q: Frequency of Use by Reason: Gaming
A: Several times each day, Once a day, Several times a week, Once a week

Q: Frequency of Use by Reason: Media
A: Several times each day, Once a day, Several times a week, Once a week

Q: Frequency of Use by Reason: Shopping
A: Several times each day, Once a day, Several times a week, Once a week

Q: How does AR impact your communication experience?

Q: How does AR impact your gaming experience?

Q: How does AR impact your entertainment experience?

Q: How does AR impact your browsing and/or shopping experience?

---

Base = Snapchatters (n=90)

Q: Below is a list of many specific ways you can use AR. Please select any of the ways that you have tried AR. Please select all that apply.
A: Trying out new products to see how they look in the space around me and to get a better sense of the details (e.g., new appliance, home decor, paint)
A: Viewing information about an item or product as soon as I scan it with my phone camera (e.g., by scanning a pair of shoes that I see someone wearing, I can learn where to purchase the same pair, or learn about an art exhibit at a museum)
What are Snapchatter shoppers using AR for, today?¹

- **Retail**: 87%
- **Household goods**: 79%
- **Telecommunications**: 85%
- **Automotive**: 79%
- **Entertainment**: 82%
- **Travel**: 79%
- **Home Décor**: 82%
- **Restaurant & Food Delivery**: 77%
- **Beauty and Wellness**: 79%

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Snapchatters – Retail (n=226), Beauty and wellness (n=204), Household goods (n=205), Telecommunications (n=219), Restaurants / food delivery (n=199), Entertainment (n=219), Home décor (n=213), Automotive (n=205), Travel (n=205)
What are Snapchatter shoppers using AR for, today?¹

AR is a natural extension of the shopping experience, aiding in decision making

- **46%** discovered it as part of browsing or shopping¹
- **90%** of shoppers are likely to use AR when they come across it²
- **40%** help shoppers decide what to buy³

---

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
² Base = Snapchatters (n=234)
³ Base = Snapchatters (n=234)
88% of Snapchatters believe that AR will be more important in their lives in the next 5 years.¹

Next year, Snapchatters plan on using AR more in 4 key growth areas.

- **Media**
  - 68% of Snapchatters believe AR will be more important in their lives in the next 5 years.

- **Shopping**
  - 66% want to create their own interactive media plots by guiding characters through a script.⁴

- **Gaming**
  - 61% want to readily view information about an item or product as soon as it’s scanned with the phone camera.⁴

- **Communications**
  - 50% want to project their AR avatar into their favorite games, media & entertainment.⁴

44% want to create their own interactive media plots by guiding characters through a script.⁴

56% want to readily view information about an item or product as soon as it’s scanned with the phone camera.⁴

47% want to project their AR avatar into their favorite games, media & entertainment.⁴

45% want to customize environments to their own imagination and share with others.⁶

---

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc. Base = Snapchatters (n=455)
² Q: How useful do you think AR will be in 5 years? | A: Very useful / important, Somewhat useful / important
³ Q: How useful do you think AR will be in 5 years? | A: Very useful / important, Somewhat useful / important
⁴ 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.
⁵ Q: Will you use AR in shopping more or less than last year?
⁶ Q: Will you use AR while browsing and/or shopping more or less than last year?
Utility is a primary driver for Snapchatters’ future AR usage¹

<table>
<thead>
<tr>
<th>Activity</th>
<th>Usage Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve Productivity</td>
<td>28%</td>
</tr>
<tr>
<td>TV &amp; Sports</td>
<td>33%</td>
</tr>
<tr>
<td>Communicate</td>
<td>18%</td>
</tr>
<tr>
<td>Navigation</td>
<td>19%</td>
</tr>
<tr>
<td>Learn Something New</td>
<td>12%</td>
</tr>
<tr>
<td>Instructions</td>
<td>19%</td>
</tr>
</tbody>
</table>

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.

Base = Snapchatters, Why use AR (n=97), Improve Productivity (n=161), Instructions (n=220), Learn something new (n=258), TV & Sports (n=175), Navigation (n=189), Communicate (n=225). Desire for more AR use - Wellness (n=156), Improve Productivity (n=207), Instructions (n=262), Learn something new (n=288), TV & Sports (n=233), Navigation (n=225), Communicate (n=266).
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

73% believe AR allows them to be more creative.¹

81% believe they are AR creators in their everyday lives.²

Snapchatters see themselves as AR creators.³

82% have used tools to create AR.

¹: 2021 Global Deloitte Digital Study commissioned by Snap Inc.
²: Base = Aggregate (n=758)
³: Base = Aggregate (n=843)
⁴: 82% of Non-Snapchatters have used tools to create AR.
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.**
Appendix
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

¹ 2021 Global Deloitte Digital Study commissioned by Snap Inc.
Research Overview

Saudi Arabia Report, 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

- US: 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
**Frequent AR Users**

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

### Population Base

2021 Global Population Base: People ages 13-69 = 5.61B worldwide in 2020\(^2\)

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

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

**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.
\(^2\) 2021 Global Population Base: People ages 13-69 = 5.61B worldwide in 2020
\(^3\) 2021 Social and Communications App Population Base: Global Population x Social Media Penetration Rate (48% in 2021)
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)

**AR Photos / Videos per Day Methodology**

### 2021 and 2022 Baselines

<table>
<thead>
<tr>
<th>Number of People</th>
<th>Number of Photos/Videos Taken Daily</th>
<th>% of Photos/Videos that are AR</th>
<th>Daily AR Photos and/or Videos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Determine Global Population for ages 10-69 (5.99B)¹</td>
<td>Step 1: Identify scenarios for number of photos and or videos taken daily</td>
<td>Note: Since the survey had ranges (few than 5, 5-10, 10 or more), to determine the number of photos, we developed a low, mid, high case.</td>
<td>Step 1: Take annual AR photos and or videos and divide by 365 to get daily AR photos and or videos</td>
</tr>
<tr>
<td>Note: 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>
<td>Low: assumes lowest quantity in each range (1,5,10)</td>
<td>Note: Since the survey had ranges (less than 20%, 20-40%, 40-60%, 60-80%, Over 80%), to determine number of photos taken daily that were AR, we developed a low, mid, high case.</td>
<td>Step 2: Add all age groups to get total daily AR photos and or videos</td>
</tr>
<tr>
<td>Step 2: 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. 2021 based on responses to behaviors today. 2022 based on responses to behaviors next year.</td>
<td>Mid: assumes average of low and high case (2.5, 7, 12)</td>
<td>Low: assumes lowest quantity in each range (0%, 20%, 20%, 60%, 80%)</td>
<td></td>
</tr>
<tr>
<td>Step 3: Apply percent of population from Step 2 to population to get number of people within each crosstab</td>
<td>High: assumes highest quantity in each range (5, 10, 14)</td>
<td>Mid: assumes average of low and high case (10%, 30%, 50%, 70%, 90%)</td>
<td></td>
</tr>
</tbody>
</table>

### 2023-2025 Forecast

<table>
<thead>
<tr>
<th>2022 Baseline</th>
<th>2007 Growth Rate of Smartphone Device Sales</th>
<th>Daily AR Photos and/or Videos</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Identify scenarios for percent of photos and or videos taken that are AR</td>
<td>Note: Since the survey had ranges (less than 20%, 20-40%, 40-60%, 60-80%, Over 80%), to determine number of photos taken daily that were AR, we developed a low, mid, high case.</td>
<td>Step 1: Take annual AR photos and or videos and divide by 365 to get daily AR photos and or videos</td>
</tr>
<tr>
<td>Note: High case was chosen based on input from Snap Inc.</td>
<td>Low: assumes lowest quantity in each range (0%, 20%, 20%, 60%, 80%)</td>
<td>Step 2: Add all age groups to get total daily AR photos and or videos</td>
</tr>
<tr>
<td>Step 2: Select case to apply to analysis</td>
<td>Mid: assumes average of low and high case (10%, 30%, 50%, 70%, 90%)</td>
<td></td>
</tr>
<tr>
<td>Note: High case was chosen based on input from Snap Inc.</td>
<td>High: assumes highest quantity in each range (20%, 40%, 60%, 80%, 100%)</td>
<td></td>
</tr>
<tr>
<td>Step 3: Apply adjustment factor to correct for people who are using AR but may not realize it</td>
<td>Note: Based on 2021 Global Deloitte Digital Study commissioned by Snap inc., it was discovered that ~13% of respondents who use AR could not successfully identify AR &gt;50% of the time.²</td>
<td></td>
</tr>
</tbody>
</table>

### 2023-2025 Forecast

| 2023-2025 | 2022 Baseline | 2007 Growth Rate of Smartphone Device Sales | Daily AR Photos and/or Videos |
|------------------|---------------------------------------------|------------------------------|
| 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)³ + ARKit (iOS)⁴. If this grows at global smartphone growth equivalent, there could be ~4.1B by 2025 |

---

² AR Insider Article, “ARCore Reaches 400 Million Devices”
³ Statista Research, “Augmented reality (AR) and virtual reality (VR) headset shipments worldwide 2020-2025”
⁴ Snap Inc.
<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Country</th>
<th>Company</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glen</td>
<td>Gainor</td>
<td>United States</td>
<td>Amazon Studios</td>
<td>2/13/2021</td>
</tr>
<tr>
<td>Raimon</td>
<td>Homs</td>
<td>Spain</td>
<td>Deloitte</td>
<td>2/16/2021</td>
</tr>
<tr>
<td>Bryan</td>
<td>Rokoszak</td>
<td>United States</td>
<td>Deloitte Digital</td>
<td>2/16/2021</td>
</tr>
<tr>
<td>Alan</td>
<td>Smithson</td>
<td>Canada</td>
<td>MetaVRse</td>
<td>2/16/2021</td>
</tr>
<tr>
<td>Ed</td>
<td>Grieg</td>
<td>United Kingdom</td>
<td>Deloitte</td>
<td>2/17/2021</td>
</tr>
<tr>
<td>Adrian</td>
<td>Mills</td>
<td>Australia</td>
<td>Deloitte Digital</td>
<td>2/17/2021</td>
</tr>
<tr>
<td>Bill</td>
<td>Briggs</td>
<td>United States</td>
<td>Deloitte</td>
<td>2/18/2021</td>
</tr>
<tr>
<td>Yagna</td>
<td>Akuluri</td>
<td>India</td>
<td>Deloitte</td>
<td>2/22/2021</td>
</tr>
<tr>
<td>Joanna</td>
<td>Popper</td>
<td>United States</td>
<td>HP</td>
<td>2/22/2021</td>
</tr>
<tr>
<td>Jason</td>
<td>Williamson</td>
<td>United States</td>
<td>Deloitte</td>
<td>2/22/2021</td>
</tr>
<tr>
<td>Donald</td>
<td>Brady</td>
<td>United States</td>
<td>Deloitte Digital</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Shashi</td>
<td>Deethi</td>
<td>India</td>
<td>Deloitte</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Ram</td>
<td>Chandel</td>
<td>United States</td>
<td>Deloitte</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Lokesh</td>
<td>Ohri</td>
<td>United States</td>
<td>Deloitte</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Steven</td>
<td>Bailey</td>
<td>United States</td>
<td>Deloitte</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Jean-Emmanuel</td>
<td>Biondi</td>
<td>United States</td>
<td>Deloitte</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Dea</td>
<td>Lawrence</td>
<td>United States</td>
<td>Variety</td>
<td>2/23/2021</td>
</tr>
<tr>
<td>Shrenik</td>
<td>Sadalgi</td>
<td>United States</td>
<td>Wayfair</td>
<td>2/24/2021</td>
</tr>
<tr>
<td>Mike</td>
<td>Boland</td>
<td>United States</td>
<td>ARtillery</td>
<td>2/24/2021</td>
</tr>
<tr>
<td>Jason</td>
<td>Yim</td>
<td>United States</td>
<td>Trigger Global</td>
<td>2/25/2021</td>
</tr>
<tr>
<td>Paul</td>
<td>McDonagh-Smith</td>
<td>United Kingdom</td>
<td>MIT</td>
<td>2/26/2021</td>
</tr>
<tr>
<td>Kaitlyn</td>
<td>Kuczer</td>
<td>United States</td>
<td>Deloitte Digital</td>
<td>2/26/2021</td>
</tr>
<tr>
<td>Max</td>
<td>Dawes</td>
<td>United Kingdom</td>
<td>Zappar</td>
<td>2/26/2021</td>
</tr>
<tr>
<td>Alex</td>
<td>Sanger</td>
<td>United States</td>
<td>Universal Pictures</td>
<td>2/26/2021</td>
</tr>
<tr>
<td>Walter</td>
<td>Delph</td>
<td>United States</td>
<td>Magic Leap</td>
<td>3/1/2021</td>
</tr>
<tr>
<td>Snehaal</td>
<td>Dhruv</td>
<td>India</td>
<td>SuperFan</td>
<td>3/1/2021</td>
</tr>
</tbody>
</table>
## Expert Interviews

<table>
<thead>
<tr>
<th>First Name</th>
<th>Last Name</th>
<th>Company</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tony</td>
<td>Parisi</td>
<td>Unity</td>
<td>3/3/2021</td>
</tr>
<tr>
<td>Anwar</td>
<td>Noriega</td>
<td></td>
<td>3/4/2021</td>
</tr>
<tr>
<td>Ines</td>
<td>Alpha</td>
<td>3D Makeup Artist</td>
<td>3/5/2021</td>
</tr>
<tr>
<td>Alice</td>
<td>Bezirard-Fischer</td>
<td>Wella Company</td>
<td>Write-in</td>
</tr>
<tr>
<td>Kirsten</td>
<td>Soumas</td>
<td>Verizon</td>
<td>3/8/2021</td>
</tr>
<tr>
<td>Shane</td>
<td>Horneij</td>
<td>Performance Marketing King</td>
<td>3/9/2021</td>
</tr>
<tr>
<td>Qi</td>
<td>Pan</td>
<td>Snap</td>
<td>3/9/2021</td>
</tr>
<tr>
<td>Kimberlee</td>
<td>Archer</td>
<td>Snap</td>
<td>3/9/2021</td>
</tr>
<tr>
<td>Carolina</td>
<td>Arguelles</td>
<td>Gucci</td>
<td>3/12/2021</td>
</tr>
<tr>
<td>Robert</td>
<td>Triefus</td>
<td>Lens Creator</td>
<td>3/11/2021</td>
</tr>
<tr>
<td>Clara</td>
<td>Bacou</td>
<td>Unity</td>
<td>3/16/2021</td>
</tr>
<tr>
<td>Timoni</td>
<td>West</td>
<td>adidas</td>
<td>3/16/2021</td>
</tr>
<tr>
<td>Lara</td>
<td>Bean</td>
<td>Magic Leap</td>
<td>3/19/2021</td>
</tr>
<tr>
<td>Peggy</td>
<td>Johnson</td>
<td>Seek XR</td>
<td>3/17/2021</td>
</tr>
<tr>
<td>Jon</td>
<td>Cheney</td>
<td>Frito-Lay North America</td>
<td>Write-in</td>
</tr>
<tr>
<td>James</td>
<td>Clarke</td>
<td>Snap</td>
<td>3/17/2021</td>
</tr>
<tr>
<td>Andrew</td>
<td>McPhee</td>
<td>Snap</td>
<td>3/17/2021</td>
</tr>
<tr>
<td>Eitan</td>
<td>Pilipski</td>
<td>Deloitte Digital</td>
<td>3/18/2021</td>
</tr>
<tr>
<td>Allan</td>
<td>Cook</td>
<td></td>
<td>3/18/2021</td>
</tr>
</tbody>
</table>
About Deloitte

Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee (“DTTL”), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as “Deloitte Global”) does not provide services to clients. In the United States, Deloitte refers to one or more of the US member firms of DTTL, their related entities that operate using the “Deloitte” name in the United States and their respective affiliates. Certain services may not be available to attest clients under the rules and regulations of public accounting. Please see www.deloitte.com/about to learn more about our global network of member firms.

This publication contains general information only and Deloitte is not, by means of this publication, rendering accounting, business, financial, investment, legal, tax, or other professional advice or services. This publication is not a substitute for such professional advice or services, nor should it be used as a basis for any decision or action that may affect your business. Before making any decision or taking any action that may affect your business, you should consult a qualified professional advisor. Deloitte shall not be responsible for any loss sustained by any person who relies on this publication.