ACTIVATE TECHNOLOGY & MEDIA OUTLOOK 2020

activate
consulting
www.activate.com

WSJ TECH LIVE

These are the Most Important Consumer, Industry, and Innovation Trends for the Year Ahead in Technology, Internet, Media, and Entertainment

Welcome to Activate Consulting's Technology and Media Outlook 2020

Each year, as part of the Wall Street Journal's WSJ Tech Live, our team analyzes some of the most important consumer trends, technology innovations, and industry dynamics to predict what's going to happen next — and next after that.

We've taken a deep dive into the major forces that will reshape the industry next year and for years to come in the most important businesses: social networks, eCommerce and digital marketplaces, television, digital video, sports and sports gambling, video gaming, music, podcasting, and digital financial services. In addition, we assess the connectivity technologies that will unlock the next wave of growth.

Our work begins with the most important person in technology and media: ***The User***. Understanding how people use technology and experience media is the foundation of our thinking. You'll see deep insights into consumers' time, preferences, habits, and spending based on Activate's proprietary analysis and large-scale consumer research. Most interesting is our discovery of technology and media "Super Users," who will be key to every company's strategy in the coming year.

We hope you'll find the results both insightful and provocative.

The Activate Consulting Team

CONTENTS

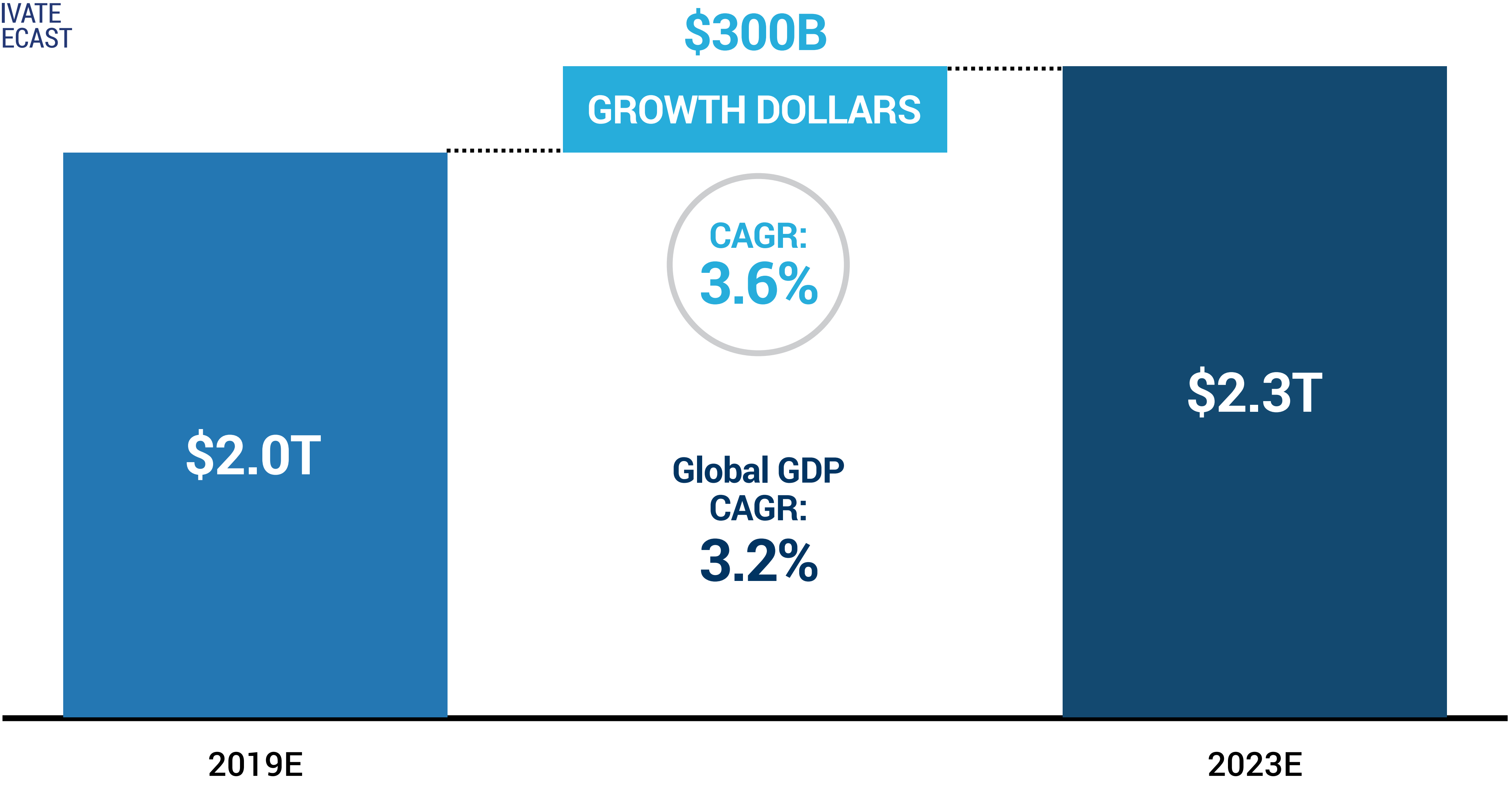
activate
consulting

CONTENTS

Significant growth ahead: on a global basis, Internet and Media Businesses will add $300B in growth dollars, growing faster than GDP

CONSUMER INTERNET AND MEDIA REVENUE[1], GLOBAL, 2019E VS. 2023E, USD

ACTIVATE FORECAST



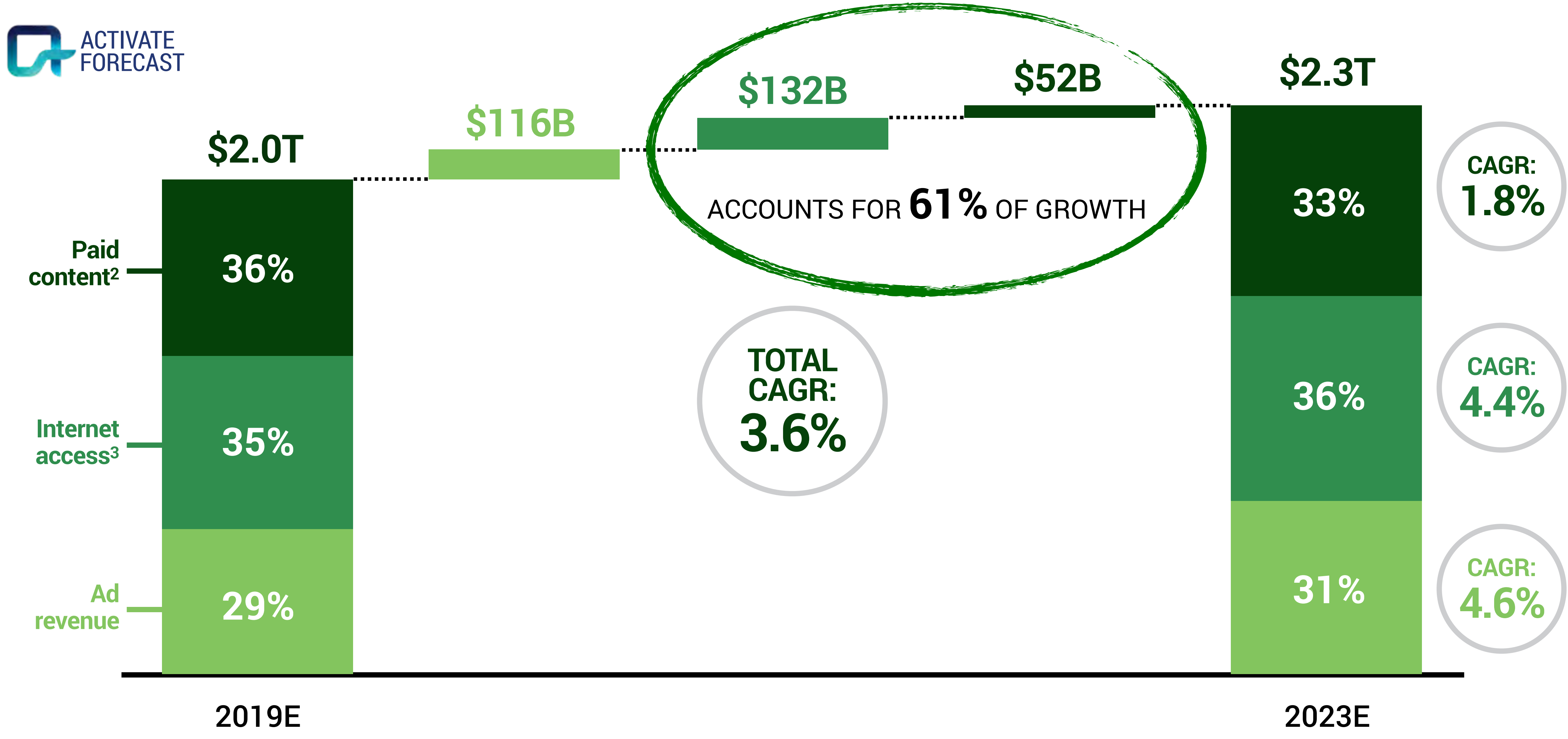
---

1. "Consumer Internet and Media revenue" includes radio, recorded music, magazine publishing, newspaper publishing, video games, filmed entertainment, book publishing, TV subscription and licensing fees, Internet access, digital advertising, and traditional advertising on these platforms.

Sources: Activate analysis, Cowen and Company, eMarketer, GroupM, IBISWorld, International Monetary Fund, Magna Global, Newzoo, Ovum, PricewaterhouseCoopers, Raymond James, Warc, ZenithOptimedia Group

Consumer spend will drive the majority of Internet and Media growth

CONSUMER INTERNET AND MEDIA REVENUE BY SEGMENT[1], GLOBAL, 2019E VS. 2023E, USD / % TOTAL REVENUE

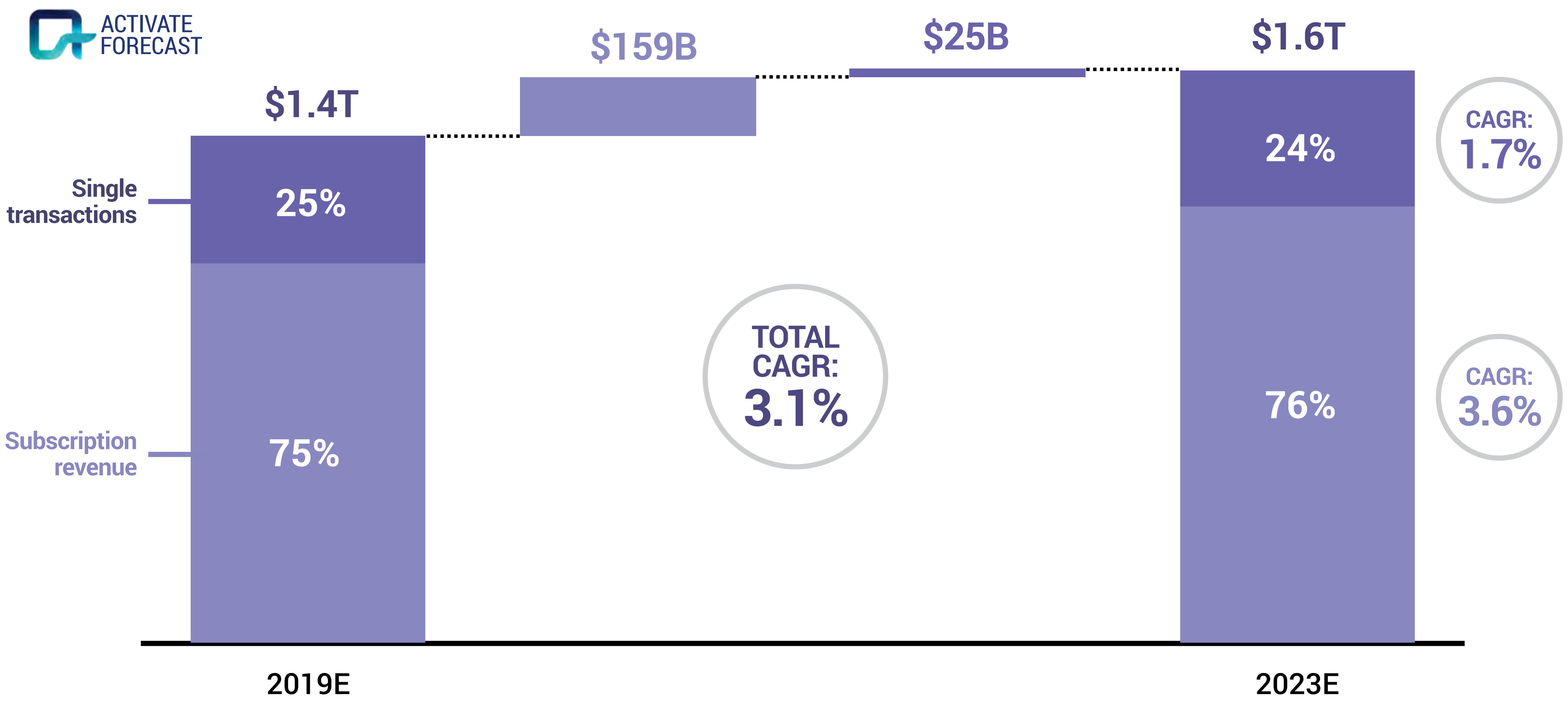


1. "Consumer Internet and Media revenue" includes radio, recorded music, magazine publishing, newspaper publishing, video games, filmed entertainment, book publishing, TV subscription and licensing fees, Internet access, digital advertising, and traditional advertising on these platforms.
2. Includes music, magazine publishing, book publishing, newspapers, video games, television, and filmed entertainment.
3. Includes fixed broadband, wireless, and mobile Internet access.

Sources: Activate analysis, Cowen and Company, eMarketer, GroupM, IBISWorld, International Monetary Fund, Magna Global, Newzoo, Ovum, PricewaterhouseCoopers, Raymond James, Warc, ZenithOptimedia Group

Subscriptions will continue to be the key growth driver for consumer spend

CONSUMER INTERNET AND MEDIA REVENUE BY MODEL[1], GLOBAL, 2019E VS. 2023E, USD / % TOTAL REVENUE



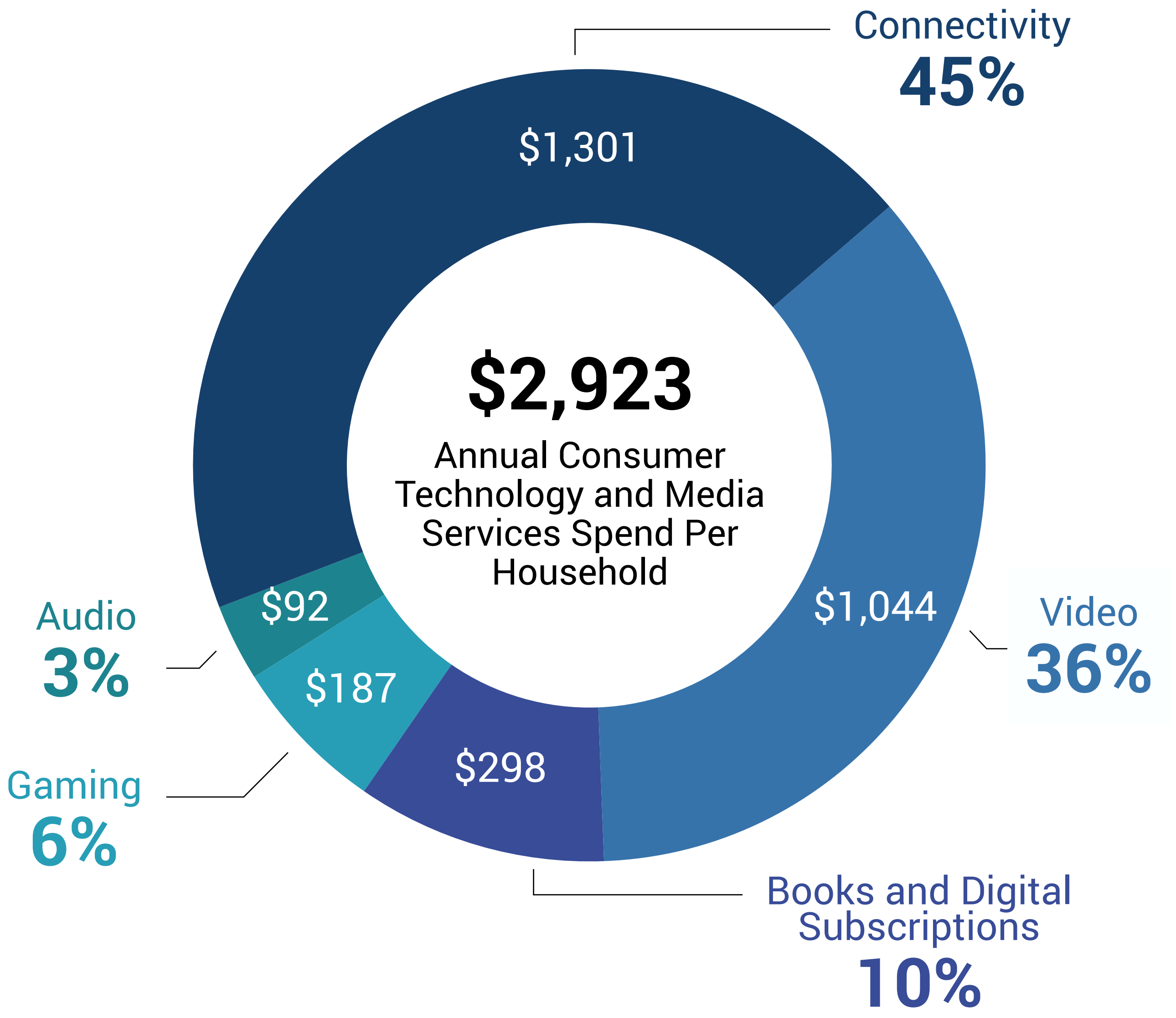
---

1. "Consumer Internet and Media revenue" includes radio, recorded music, magazine publishing, newspaper publishing, video games, filmed entertainment, book publishing, TV subscription and licensing fees, and Internet access (excluding advertising revenue).

Sources: Activate analysis, Cowen and Company, eMarketer, GroupM, IBISWorld, International Monetary Fund, Magna Global, Newzoo, Ovum, PricewaterhouseCoopers, Raymond James, Warc, ZenithOptimedia Group

In the U.S., connectivity services (e.g. mobile and broadband) and video make up the largest share of the average household's media spend

AVERAGE ANNUAL HOUSEHOLD INTERNET AND MEDIA SPEND BY SERVICE TYPE[1], U.S., 2019E, USD / % TOTAL SPEND



CATEGORY	MEDIA INCLUDED
Connectivity	Mobile and broadband connectivity services
Video	Pay TV subscriptions, SVOD, TVOD/EST
Books and Digital Subscriptions	Newspaper and magazine subscriptions (digital and print), book purchases
Gaming	Game purchases, in-game purchases, online gaming subscriptions
Audio	Streaming music subscriptions, unit sales, radio subscriptions

---

[1] Based on total number of U.S. households. Figures do not sum because of rounding.

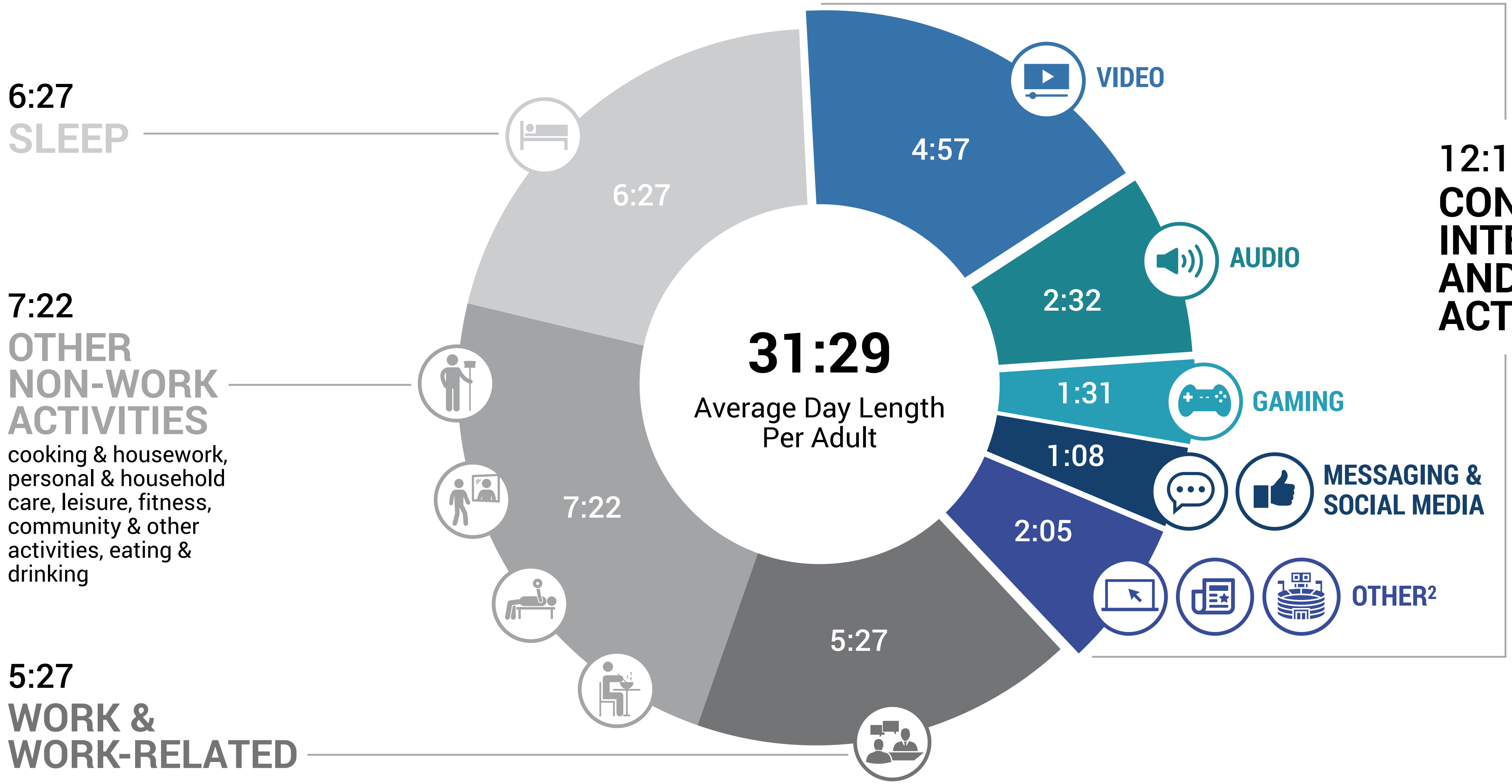
Sources: Activate analysis, Box Office Mojo, BMO Capital Markets, Digital TV Research, Morgan Stanley, Newzoo, Ovum, PricewaterhouseCoopers, Recording Industry Association of America, SNL Kagan, Statista, Strategy Analytics

CONTENTS

activate
consulting

Activate's analysis of consumer Internet and Media activities shows that multitasking leads to a 31-hour day for the average American adult, 12 of which are spent consuming technology and media

AVERAGE DAY BY ACTIVITY PER ADULT[1], U.S., 2018, HOURS:MINUTES



---

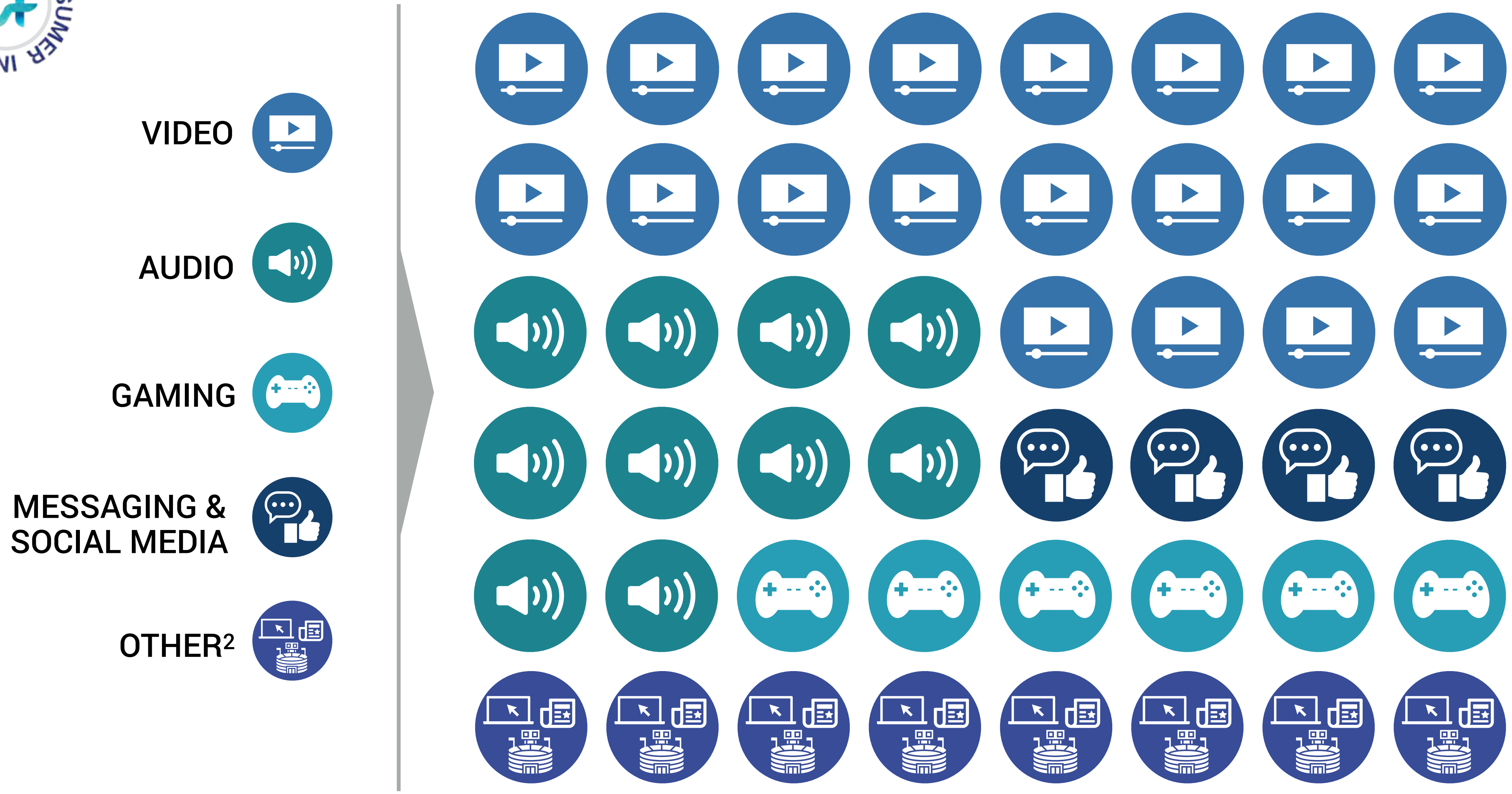
1. Behaviors averaged over 7 days.
2. "Other" includes media activities outside of listed categories, such as browsing websites, reading, cinema, live events, etc.

Sources: Activate analysis, CareerBuilder, Comscore, eMarketer, Edison Research, Fitbit, Gallup, Global Web Index, Interactive Advertising Bureau, National Sleep Foundation, Nielsen, Pew Research Center, ResMed, U.S. Bureau of Labor Statistics

At 41% on average, video captures the largest share of attention of the daily 12 hours of Internet and Media consumption

DAILY INTERNET AND MEDIA ATTENTION PER ADULT[1], U.S., 2018, 15-MINUTE INTERVALS

AN AVERAGE 12-HOUR MEDIA DAY IN 15-MINUTE INTERVALS



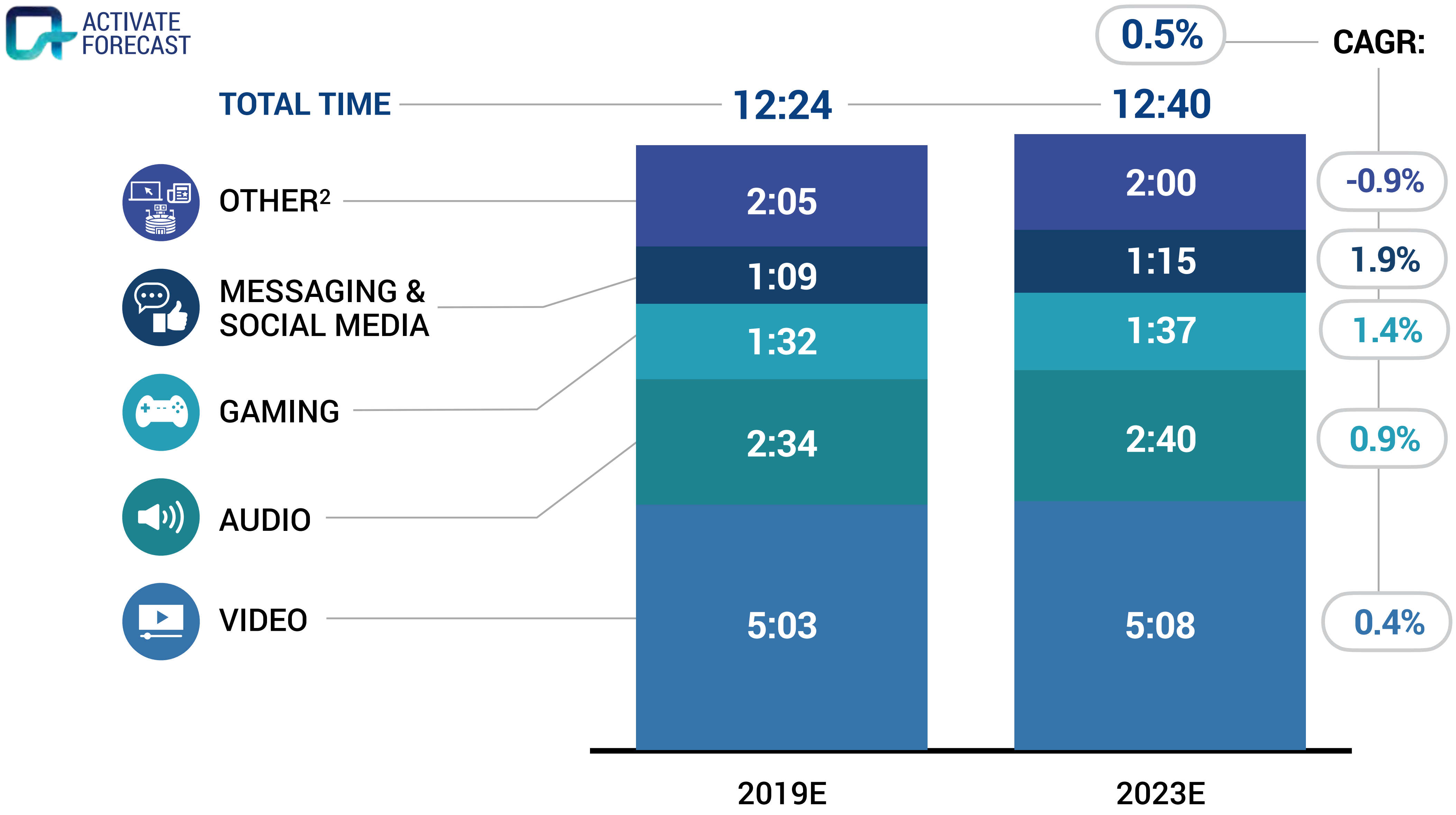
---

1. Behaviors averaged over 7 days.
2. “Other” includes media activities outside of listed categories, such as browsing websites, reading, cinema, live events, etc.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Comscore, eMarketer, Gallup, Global Web Index, Interactive Advertising Bureau, Music Biz, Nielsen, Pew Research Center, U.S. Bureau of Labor Statistics

By 2023, Americans will spend an additional 16 minutes each day with Internet and Media

DAILY INTERNET AND MEDIA ATTENTION PER ADULT[1], U.S., 2019E VS. 2023E, HOURS:MINUTES



1. Behaviors averaged over 7 days. Figures do not sum because of rounding.
2. "Other" includes media activities outside of listed categories, such as browsing websites, reading, cinema, live events, etc.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Comscore, eMarketer, Gallup, Global Web Index, Interactive Advertising Bureau, Music Biz, Nielsen, Pew Research Center, U.S. Bureau of Labor Statistics

CONTENTS

Imperative for technology and media companies: Identify and super-serve Super Users, a single group of power users whose spend, time, and influence far exceed those of other users

From the Many to the Few: technology and media companies have traditionally focused on maximizing the size of their user bases, but **there will be a shift towards prioritizing a smaller base consisting of the most valuable consumers**

We have identified these consumers — **Super Users** — who account for a **disproportionately high share of time, spend, fandom, and social amplification** across all activities, including video, gaming, music, podcasts, and eCommerce purchases

The key challenge for technology and media companies will be **identifying and targeting Super Users, and creating experiences to reach them and capture their time and spend**

Source: Activate analysis

Super Users represent only 23% of the population, but account for a disproportionately high share of spend and consumption across all major activities

SPEND

Spend

2.5x

as much every month on media services as all other users

TIME

Spend

1.4x

as much time every day consuming media as all other users

SHARING

Are

2.3x

as likely to often or always share their live event experiences as all other users

LOYALTY

Purchase celebrity-created products at

4.6x

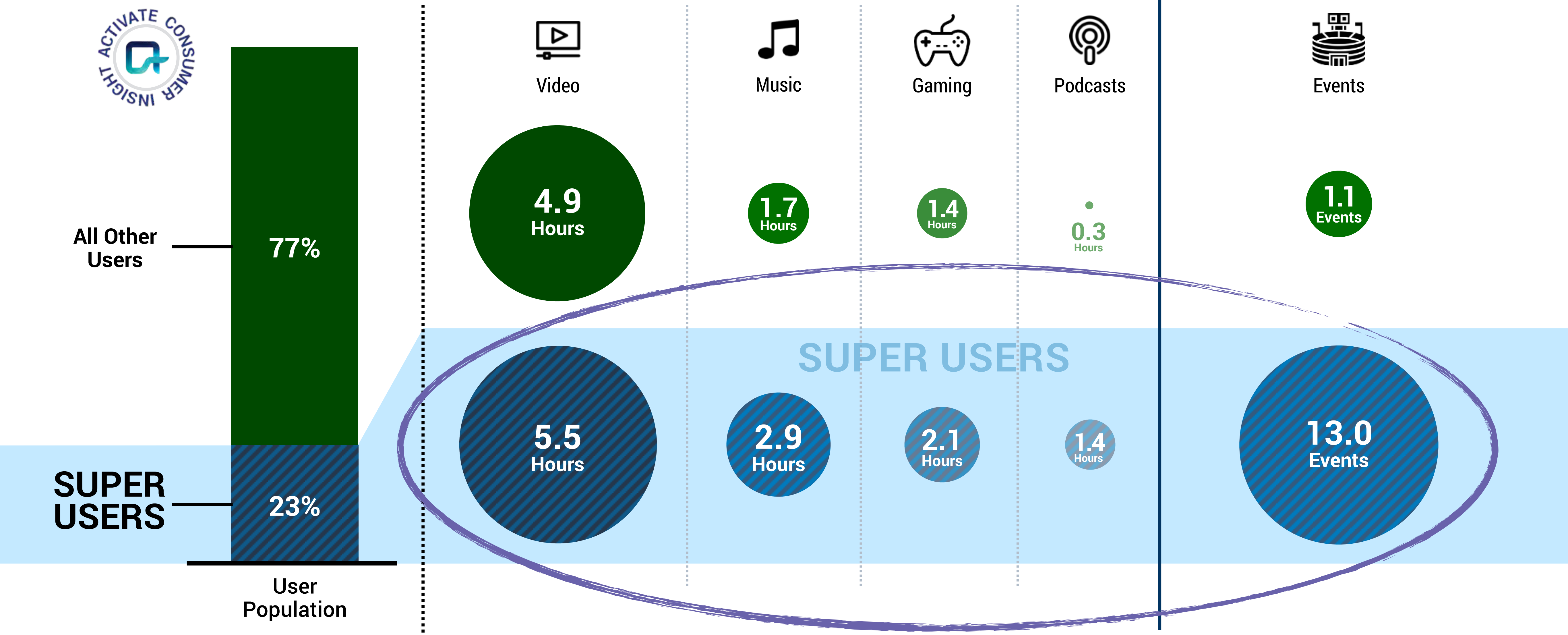
the rate of all other users

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Super Users spend significantly more time on video, gaming, music, and podcasts than all other users, and attend over ten times the number of live events

AVERAGE DAILY TIME BY MEDIA TYPE PER USER,
U.S., 2019, % ADULTS AGED 18+ / HOURS PER DAY

AVERAGE ANNUAL LIVE EVENT ATTENDANCE[1] PER USER,
U.S., 2019, EVENTS PER YEAR

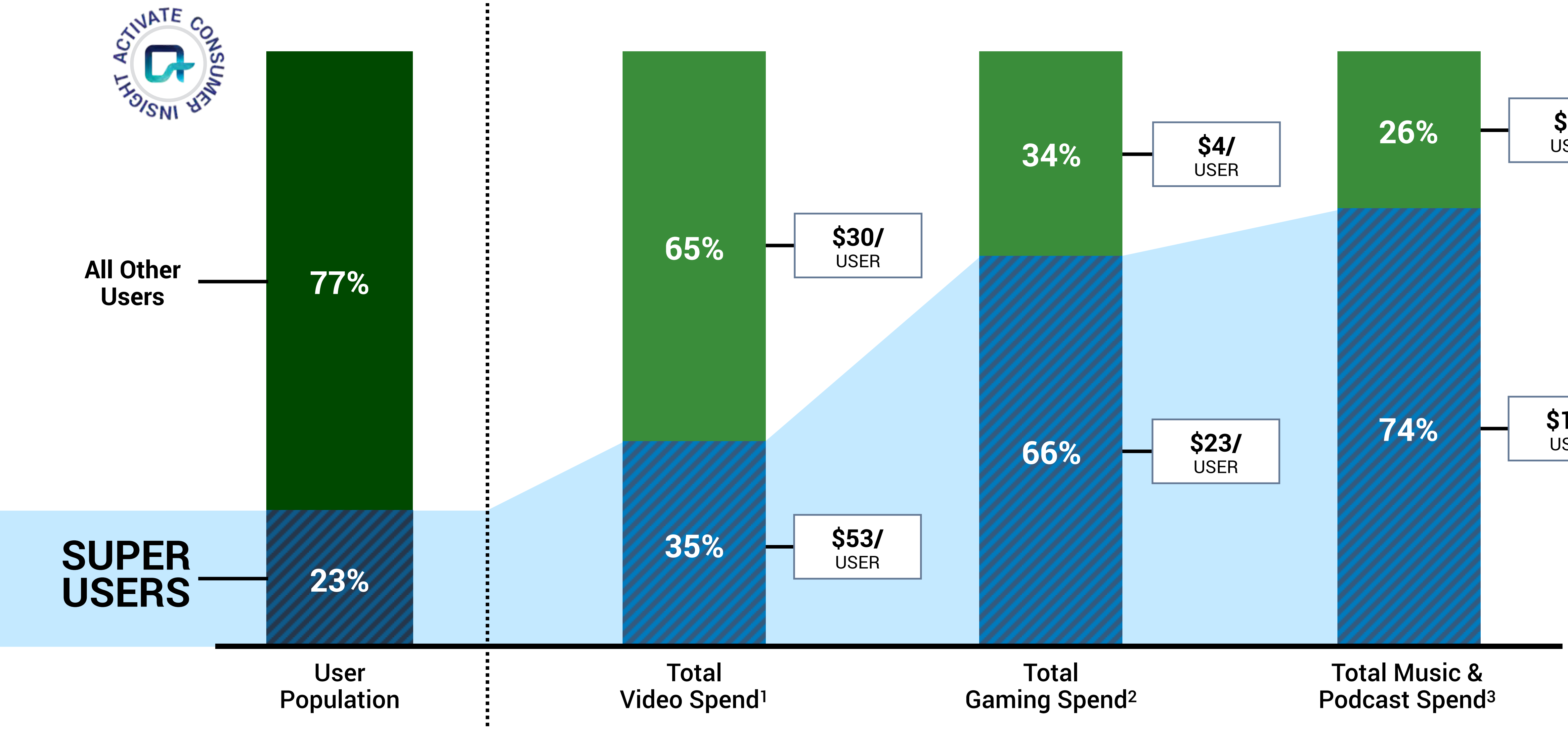


activate consulting

[1] Number of live events in large venues (e.g. theaters, stadiums, festival grounds) attended in the last year.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Super Users also drive the bulk of gaming, music, and podcast spend, although they make up less than 25% of total users

MONTHLY SPEND BY MEDIA TYPE,
U.S., 2019, % ADULTS AGED 18+ / % TOTAL SPEND WITHIN THE GIVEN MEDIA TYPE / USD PER USER



	User Population	Total Video Spend[1]	Total Gaming Spend[2]	Total Music & Podcast Spend[3]
All Other Users	77%	65% ($30/ USER)	34% ($4/ USER)	26% ($1/ USER)
SUPER USERS	23%	35% ($53/ USER)	66% ($23/ USER)	74% ($12/ USER)

1. Money spent on all video services, including Pay TV, video streaming services, and video rental services. 2. Money spent on video games and other video gaming purchases (e.g. in-app purchases) across all devices. 3. Money spent on music streaming services, satellite radio, and podcast services (excluding donations).
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Digital TV Research, PricewaterhouseCoopers, SNL Kagan, Statista

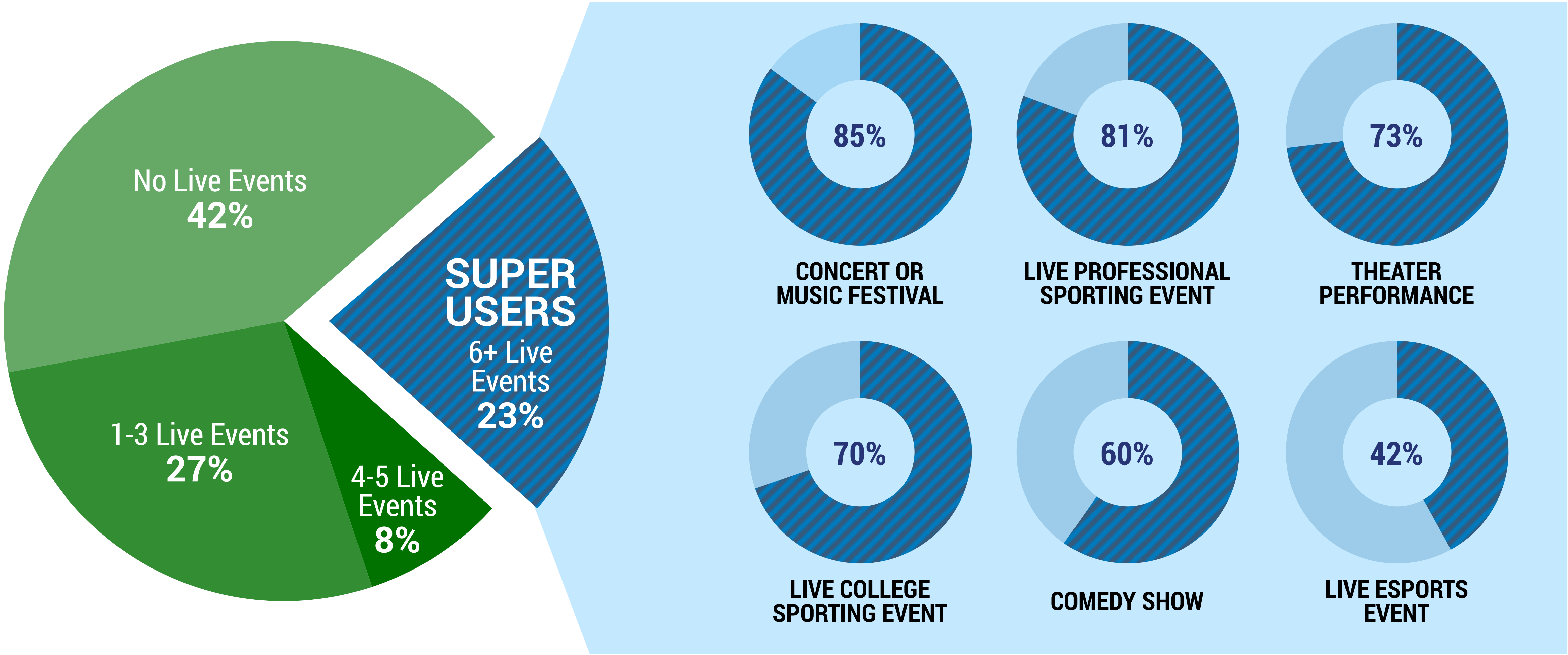
activate consulting

Super Users attend a broad set of live events, going to an average of four different types of live events in a single year

LIVE EVENT ATTENDANCE[1] IN THE LAST YEAR BY NUMBER OF EVENTS, U.S., 2019, % ADULTS AGED 18+

LIVE EVENT ATTENDANCE IN THE LAST YEAR BY EVENT TYPE[1], U.S., 2019, % SUPER USERS

ACTIVATE CONSUMER INSIGHT



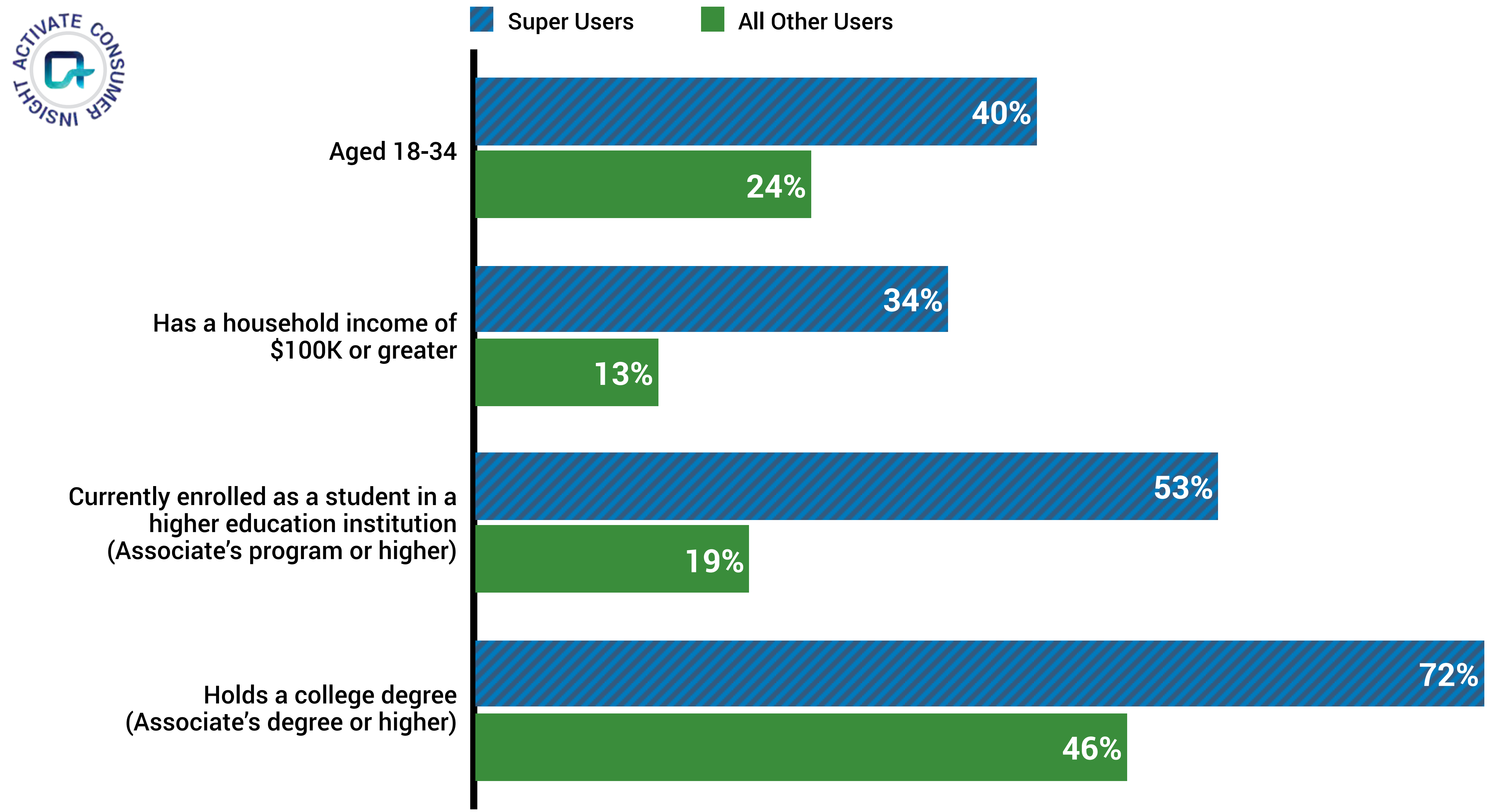
activate consulting

---

1. Number of live events in large venues (e.g. theaters, stadiums, festival grounds) attended in the last year.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Super Users are younger, more affluent, and more educated

USER DEMOGRAPHICS, U.S., 2019, % ADULTS AGED 18+



	Super Users	All Other Users
Aged 18-34	40%	24%
Has a household income of $100K or greater	34%	13%
Currently enrolled as a student in a higher education institution (Associate's program or higher)	53%	19%
Holds a college degree (Associate's degree or higher)	72%	46%

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Within Super Users there are Loyalists, a segment of highly engaged and active users who are fueled by their loyalty to particular artists and athletes

LOYALISTS
(39% of Super Users)

Early Adoption

63%

Watch new, highly-anticipated content as soon as it is released

Engagement

77%

Consume any content (across media types) created by their favorite artists and athletes

Social Sharing

48%

Often or always invite others to live events and pay for their tickets

Devotion

89%

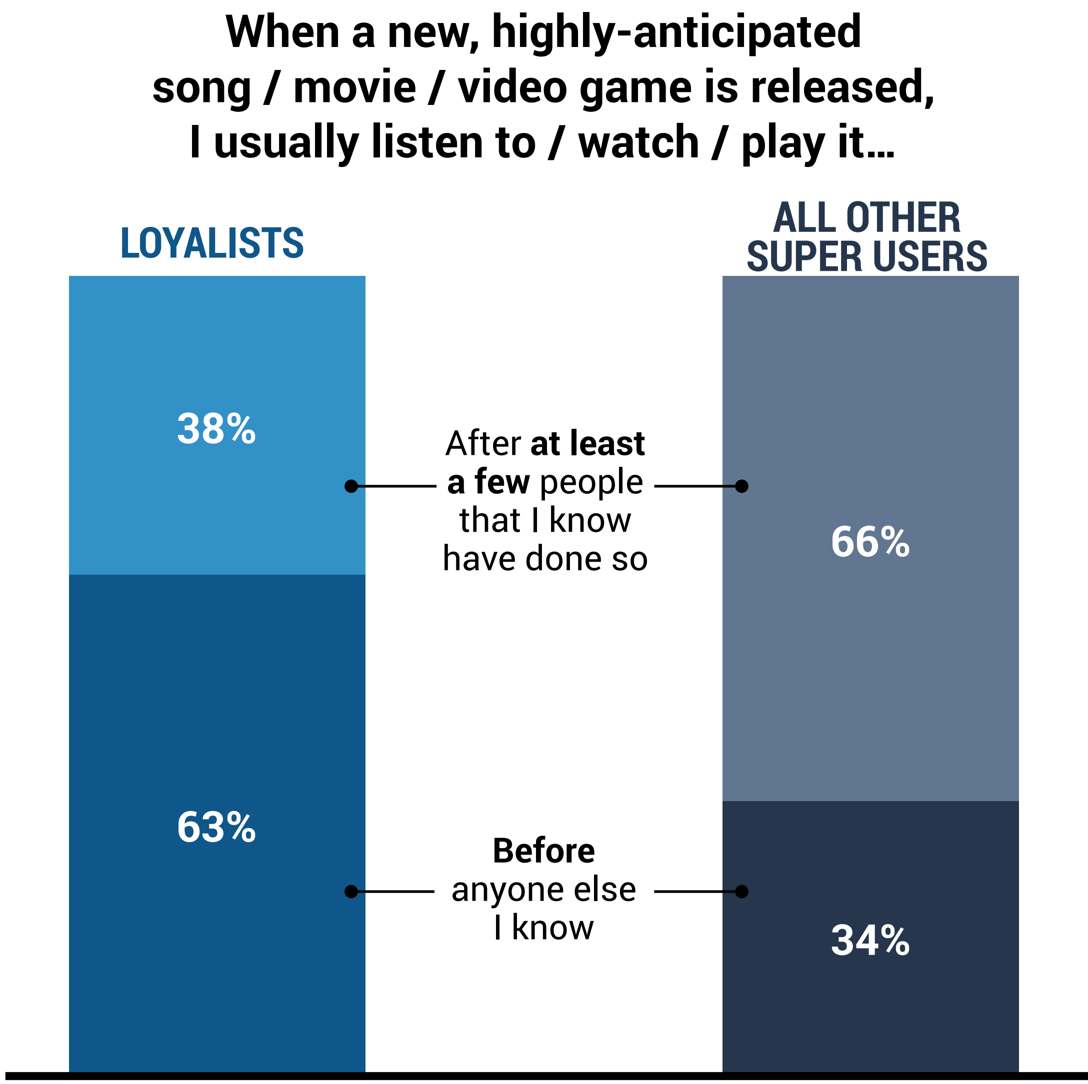
Have purchased at least one performer-created consumer product or visited a performer-created destination in the last year

activate consulting

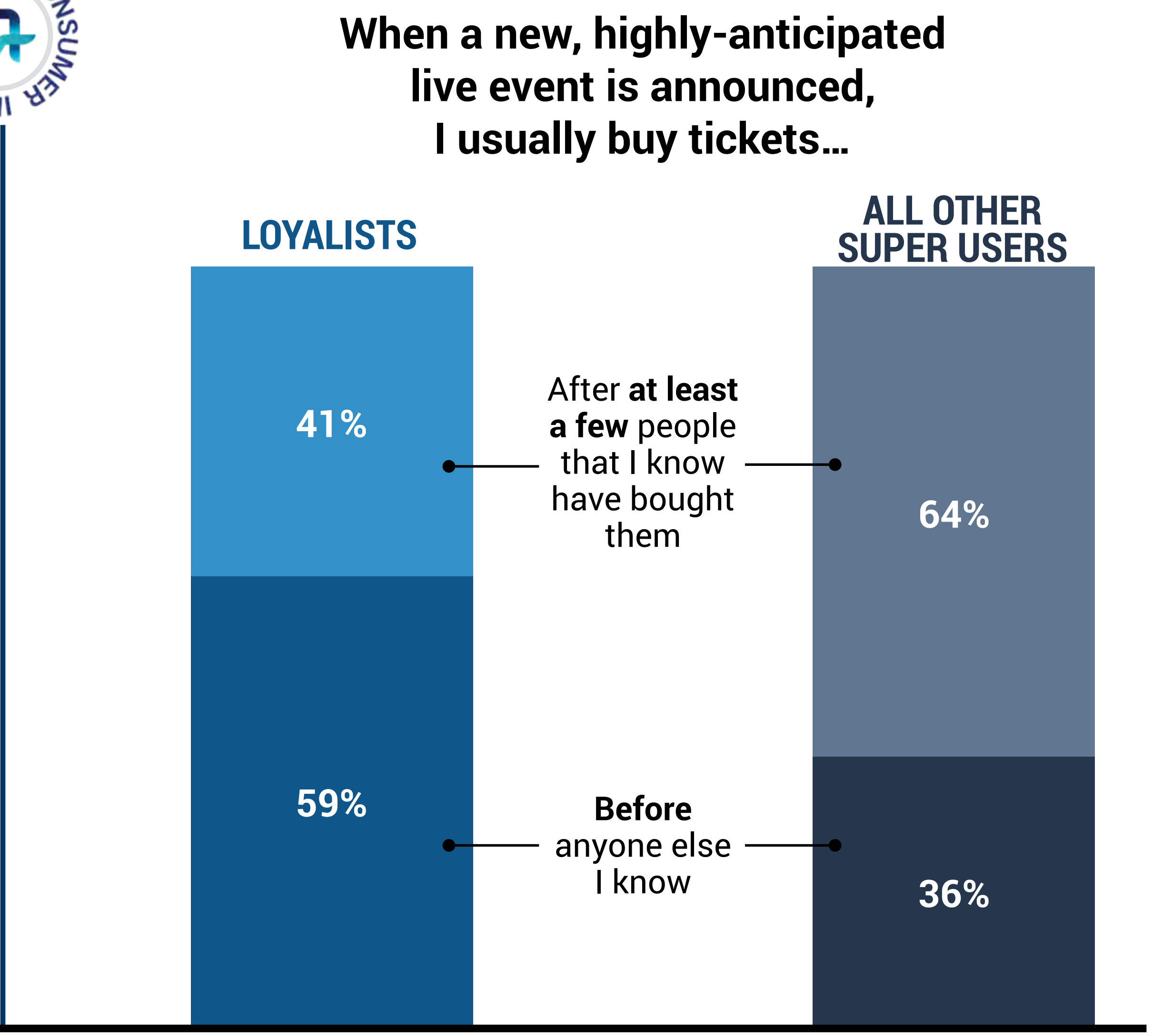
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Loyalists consume media and entertainment and buy live event tickets as soon as they're released, while other Super Users usually wait for validation from their friends

PROPENSITY TO CONSUME NEW CONTENT,
U.S., 2019, % SUPER USERS



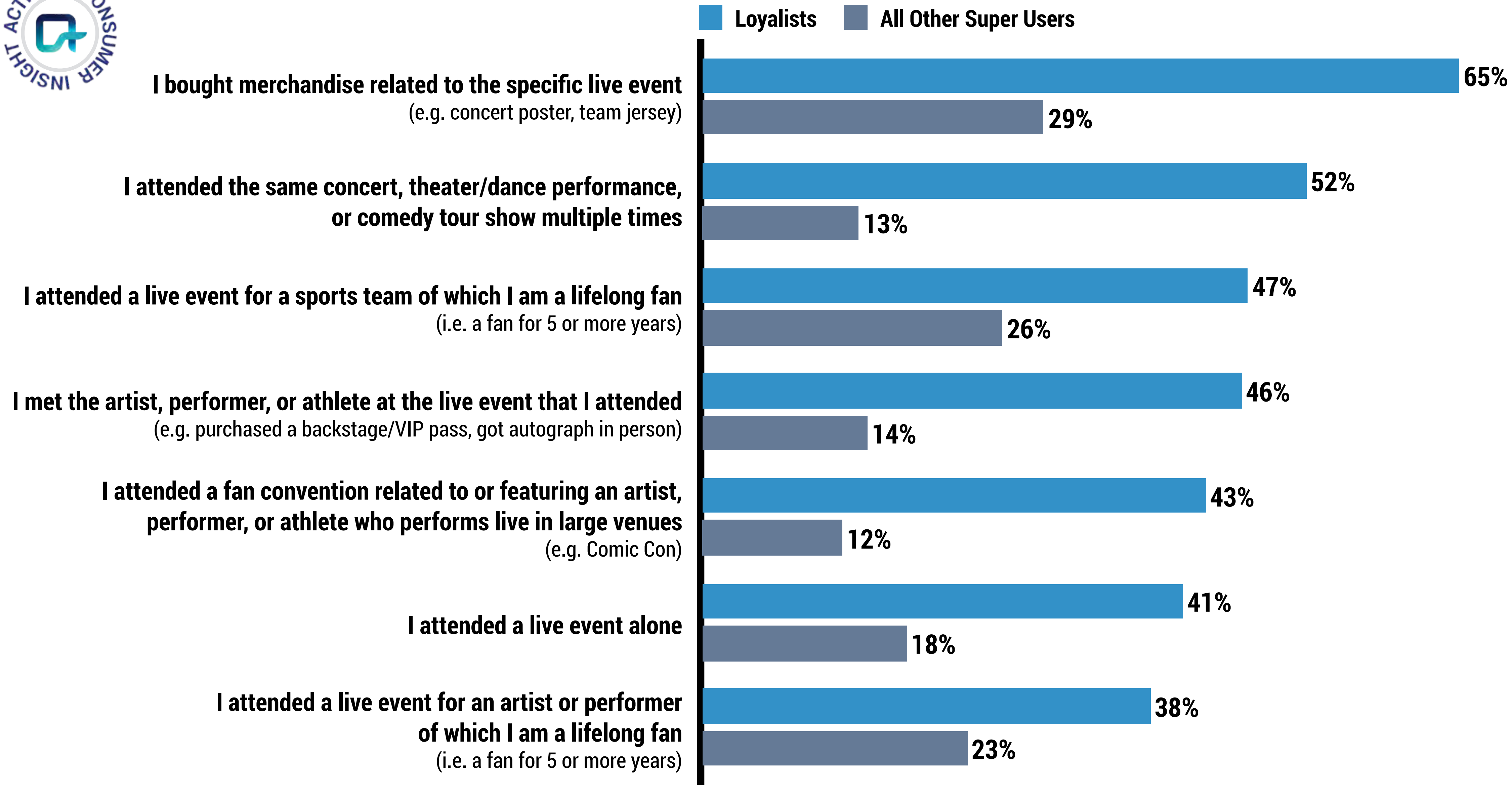
LIVE EVENT TICKET PURCHASING BEHAVIOR,
U.S., 2019, % SUPER USERS



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Loyalists are the most dedicated fans — they are significantly more likely to participate in fan-related activities than other Super Users

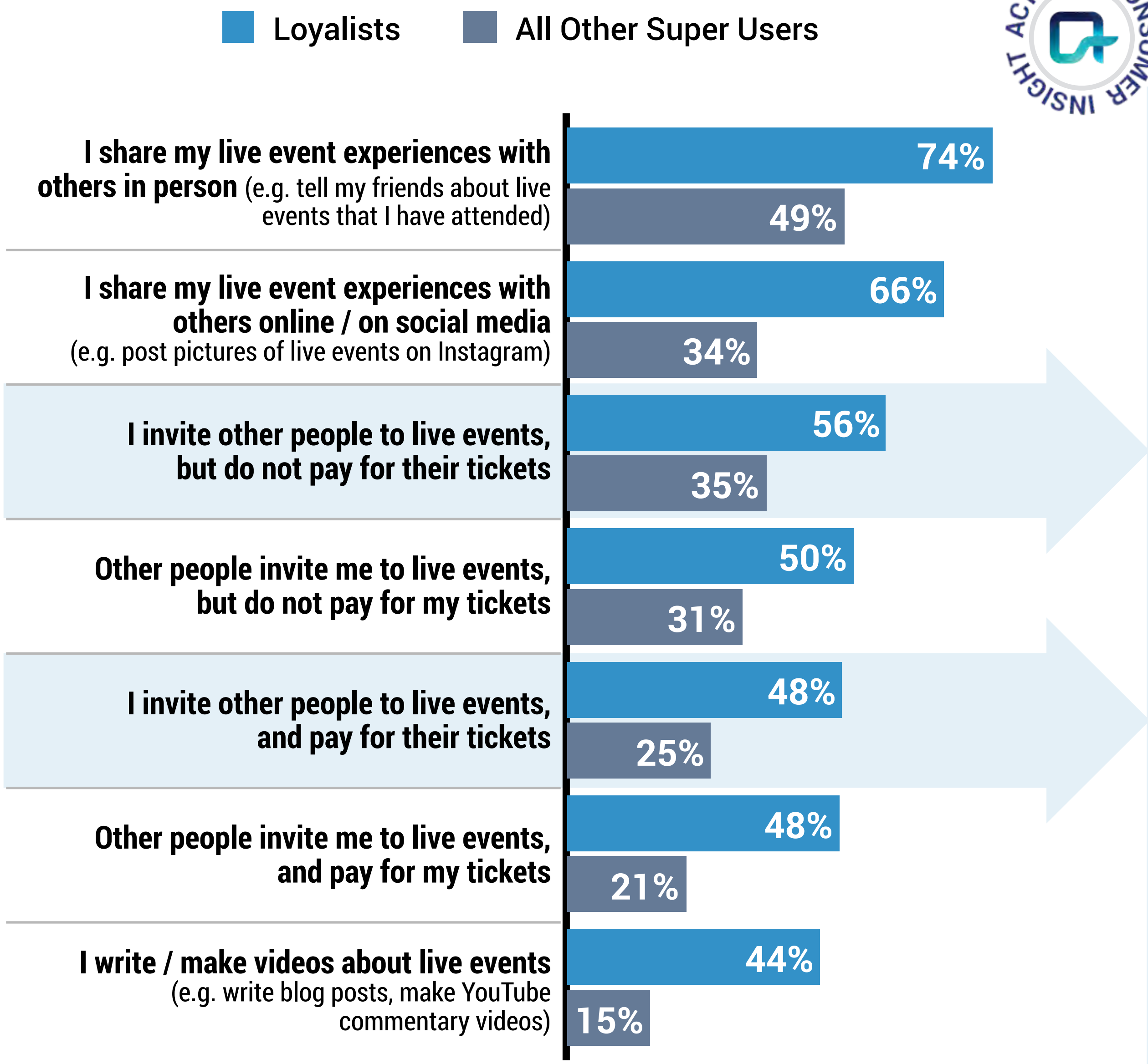
PARTICIPATION IN FAN-RELATED ACTIVITIES IN THE LAST YEAR, U.S., 2019, % SUPER USERS



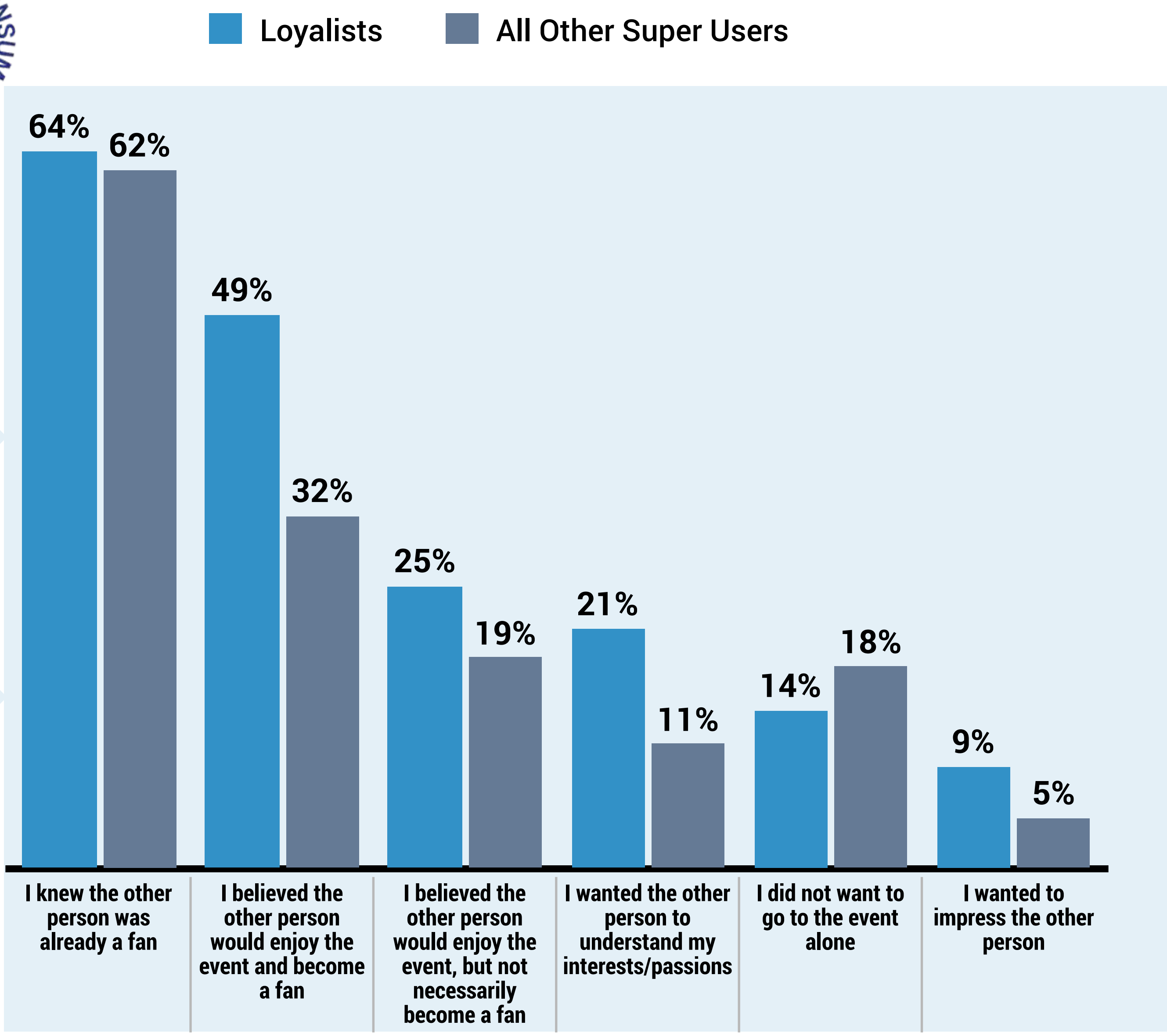
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

All Super Users, especially Loyalists, amplify live events by inviting other people and sharing their experiences with their social networks

WAYS IN WHICH SUPER USERS EXTEND EXPERIENCES TO THEIR NETWORKS[1], U.S., 2019, % SUPER USERS



REASONS WHY SUPER USERS INVITE OTHERS TO LIVE EVENTS, U.S., 2019, % SUPER USERS WHO INVITE OTHERS TO LIVE EVENTS[1]

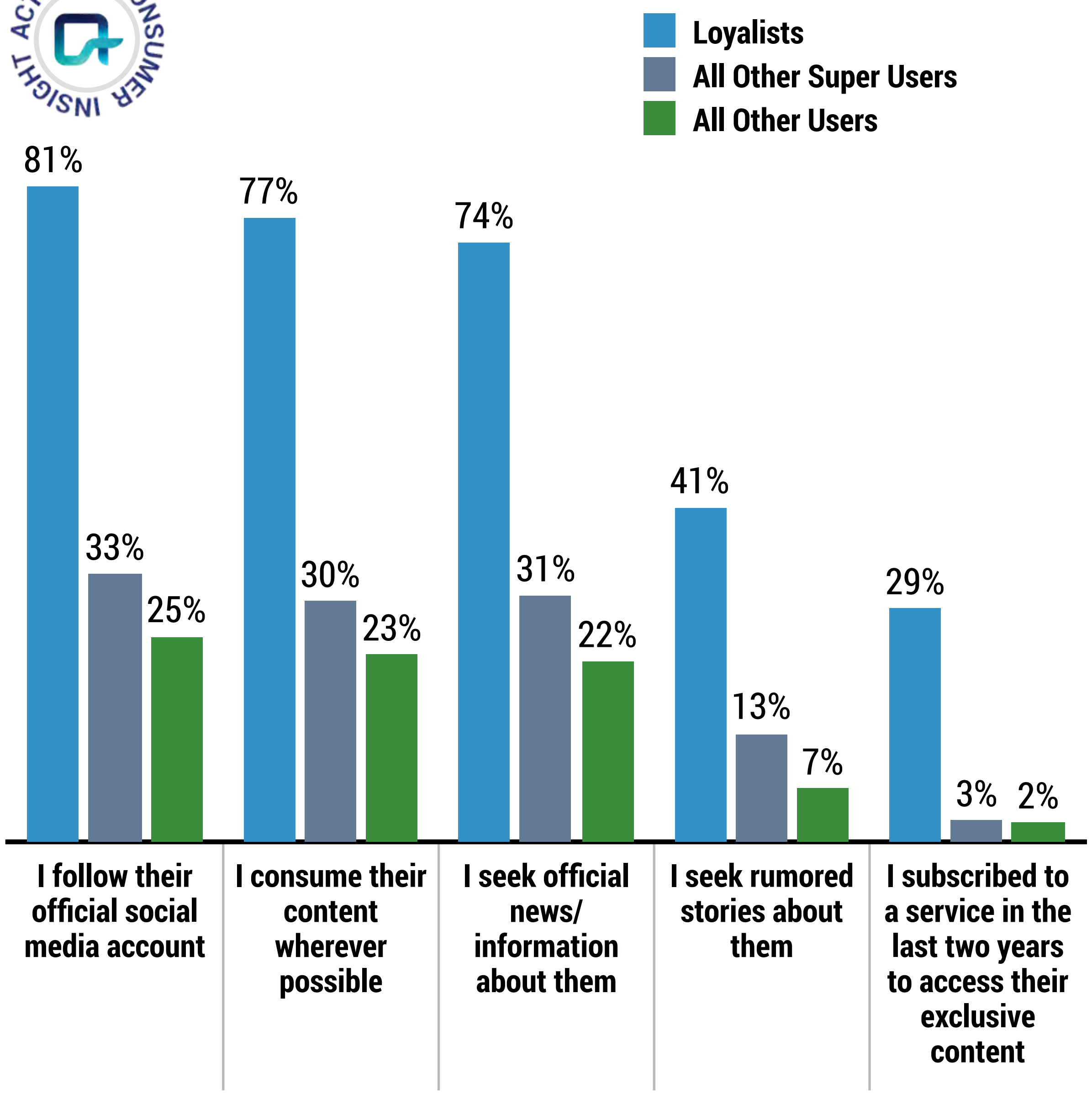


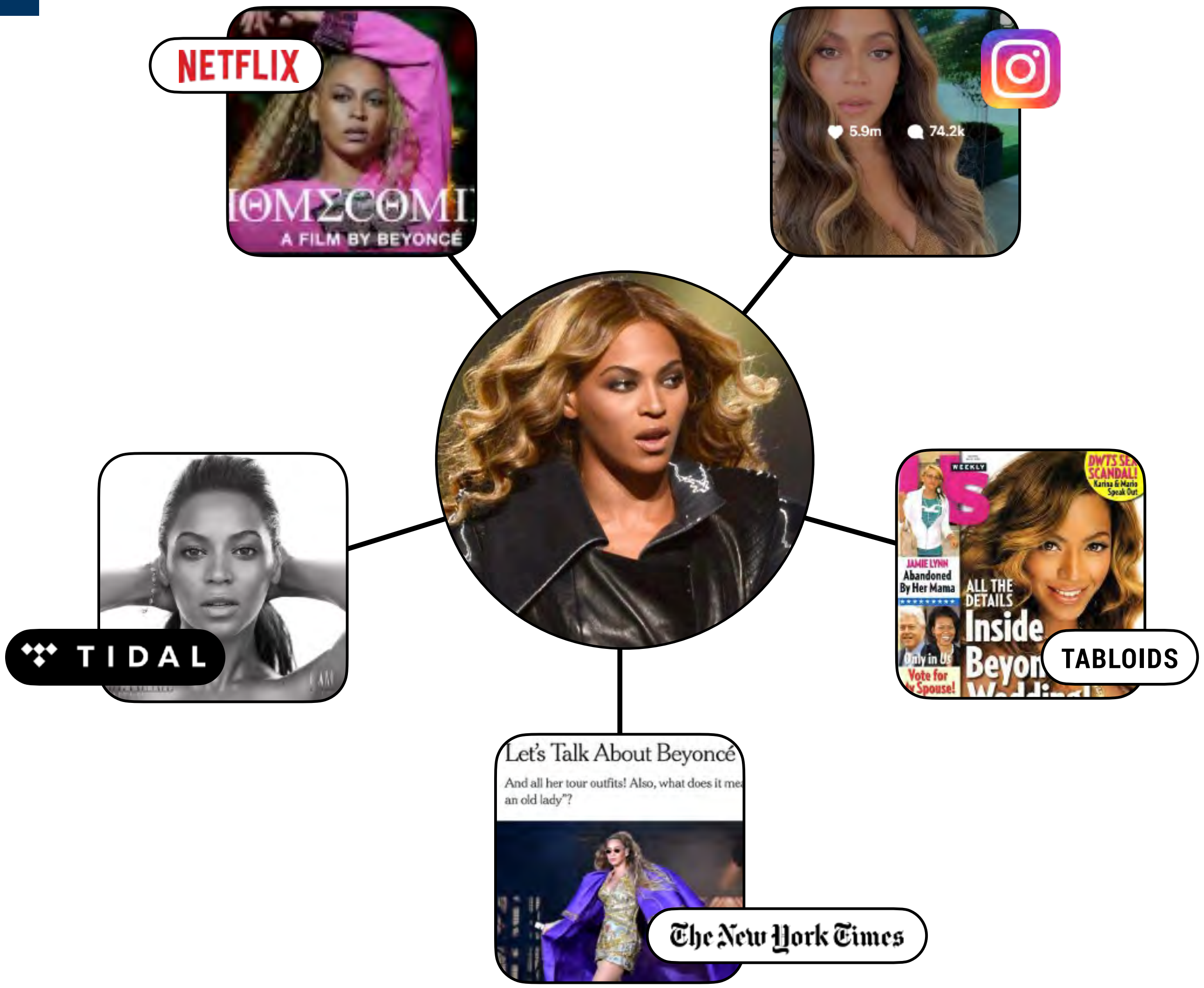
---

1. Super Users who report often or always completing the given activity.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Loyalists immerse themselves in everything created by and related to their favorite artists and athletes

METHODS USED TO FOLLOW FAVORITE ARTISTS/ATHLETES,
U.S., 2019, % ADULTS AGED 18+



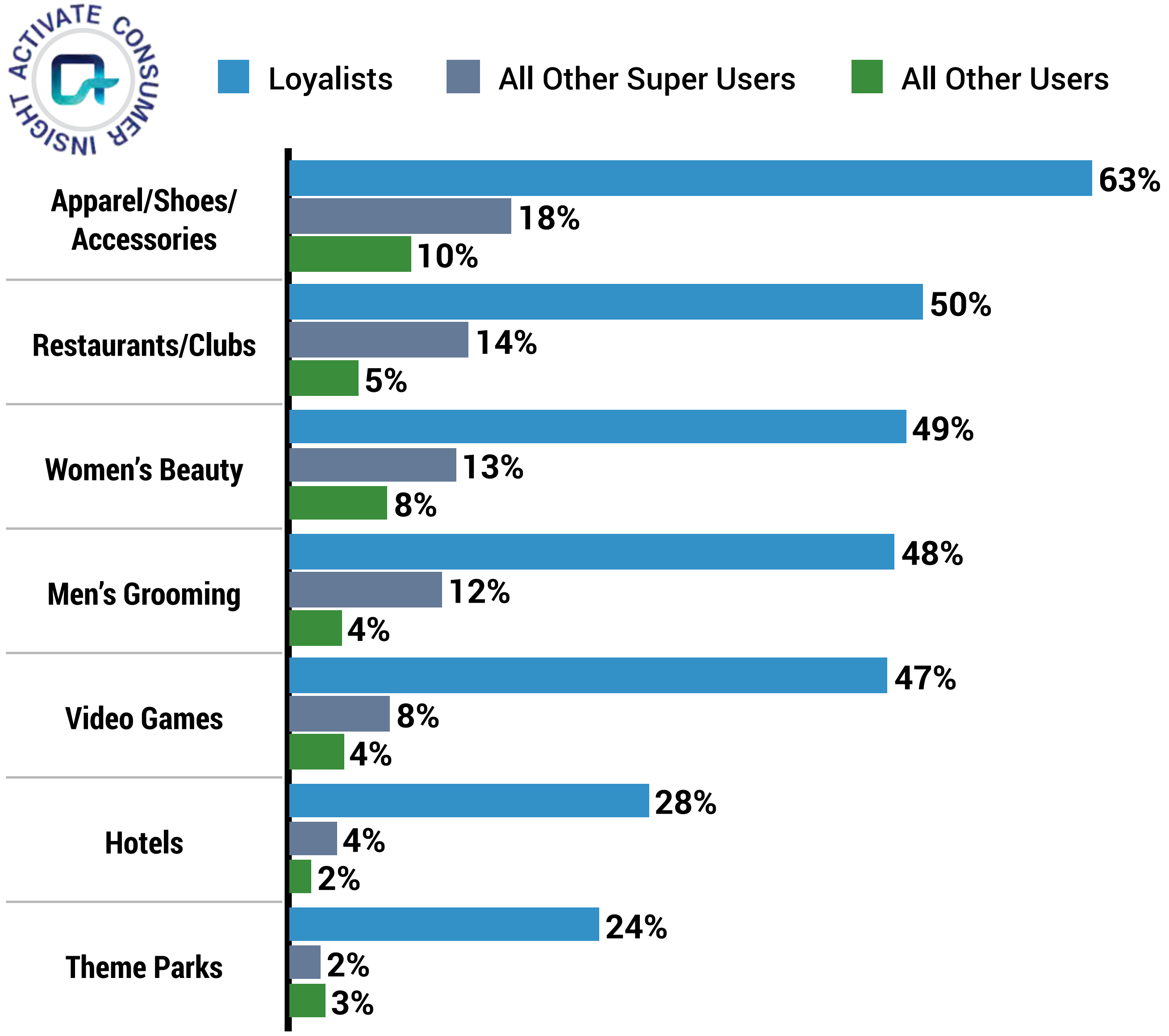


Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Loyalists seek engagement with their favorite artists and athletes off the stage and off the field; they are dramatically more likely to purchase performer-created products and experiences

PERFORMER-CREATED PRODUCTS AND DESTINATIONS THAT USERS HAVE PURCHASED OR VISITED IN THE LAST YEAR,

U.S., 2019, % ADULTS AGED 18+



ARTIST AND ATHLETE BRAND EXAMPLES

APPAREL/SHOES

YEEZY
(Kanye West)

Jessica Simpson

KATY PERRY

drew house
(Justin Bieber)

RESTAURANTS/CLUBS

MARGARITAVILLE
(Jimmy Buffet)

MICHAEL JORDAN'S STEAK HOUSE

THE JBJ SOUL FOUNDATION SOUL KITCHEN
(Jon Bon Jovi)

WOMEN'S BEAUTY

FENTY BEAUTY BY RIHANNA

HAUS LABORATORIES
(Lady Gaga)

THANK U, NEXT
(Ariana Grande)

VICTORIA BECKHAM BEAUTY

MEN'S GROOMING

DAVID BECKHAM FRAGRANCES

Sean John
(Sean Combs)

DIESEL SPIRIT OF THE BRAVE
(Neymar)

McGRAW
(Tim McGraw)

VIDEO GAMES

Demi Lovato PATH TO FAME

Britney Spears AMERICAN DREAM

EA SPORTS FIFA20

NBA2K20

HOTELS

PESTANA CR7 LIFESTYLE HOTELS
(Cristiano Ronaldo)

THEME PARKS

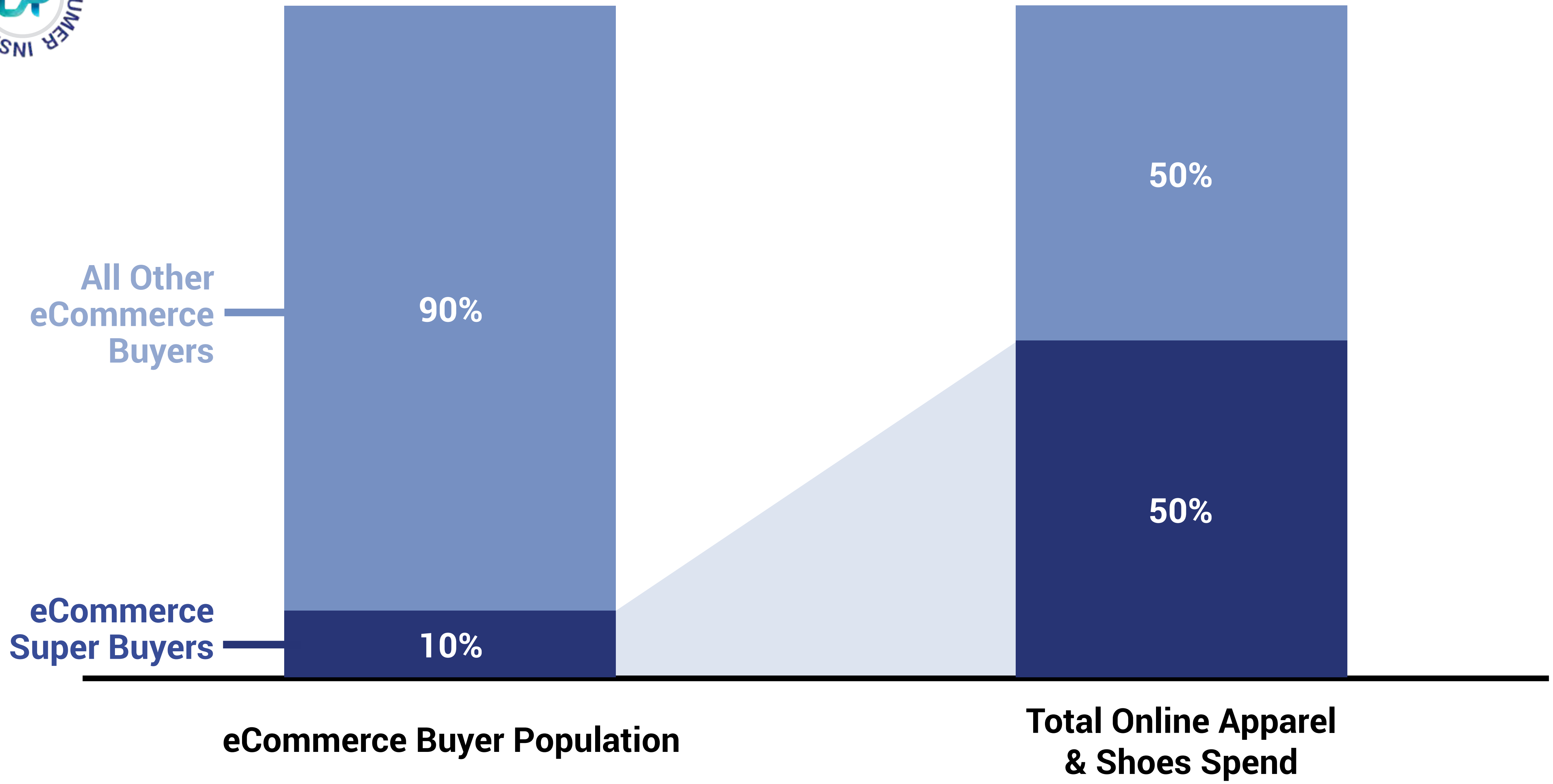
Dollywood THEME PARK
(Dolly Parton)

activate consulting

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Super Users in eCommerce follow a similar trend: A small share of eCommerce buyers accounts for a larger percentage of spend

ANNUAL ECOMMERCE SPEND[1], U.S., 2019, % ADULTS AGED 18+ / % TOTAL ECOMMERCE SPEND



---

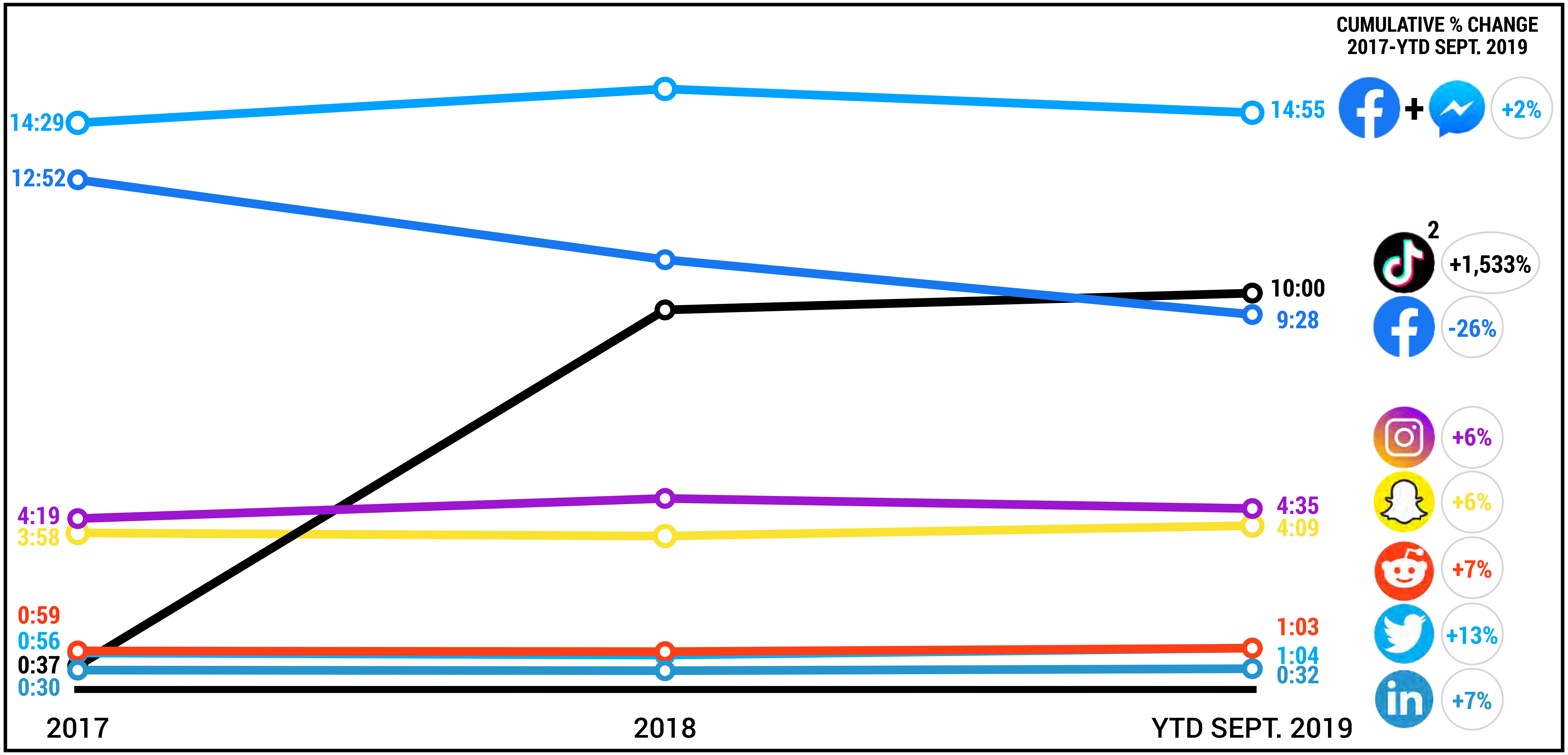
1. Money spent online on apparel and shoes.
Sources: Activate eCommerce Consumer Survey (n = 1,757)

CONTENTS

activate
consulting

Over the past two years, U.S. engagement has increased for most of the large social platforms

AVERAGE MONTHLY TIME SPENT PER USER ON DESKTOP, MOBILE WEB, AND APP BY SOCIAL PLATFORM, U.S., 2017-YTD SEPT. 2019, HOURS:MINUTES[1]

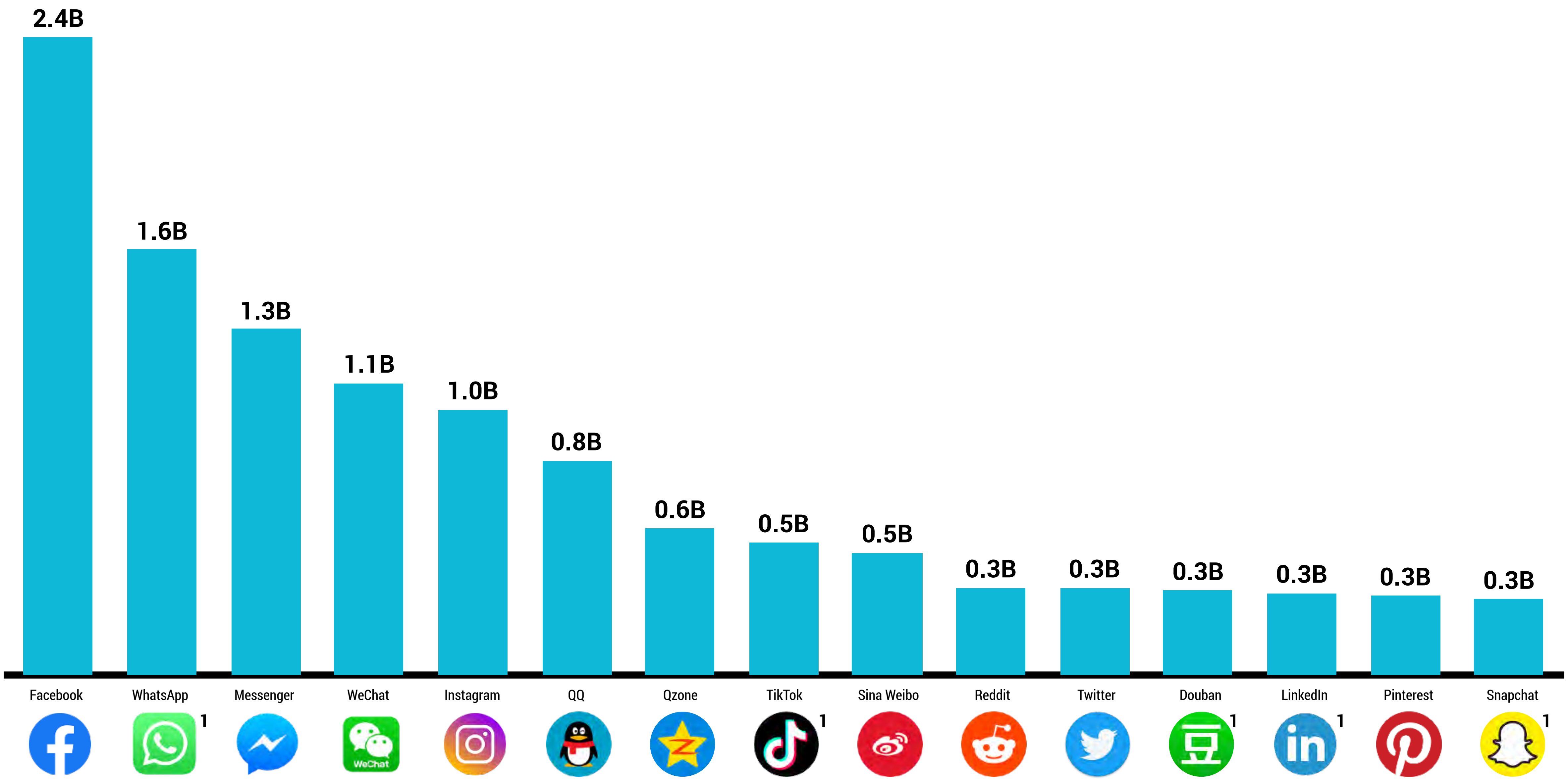


---

1. Desktop users aged 2+ and mobile users aged 13+.
2. TikTok data is through March 2019.
Sources: Activate analysis, Comscore

The social media world beyond Facebook: a significant number of social platforms at scale of 250M+ users

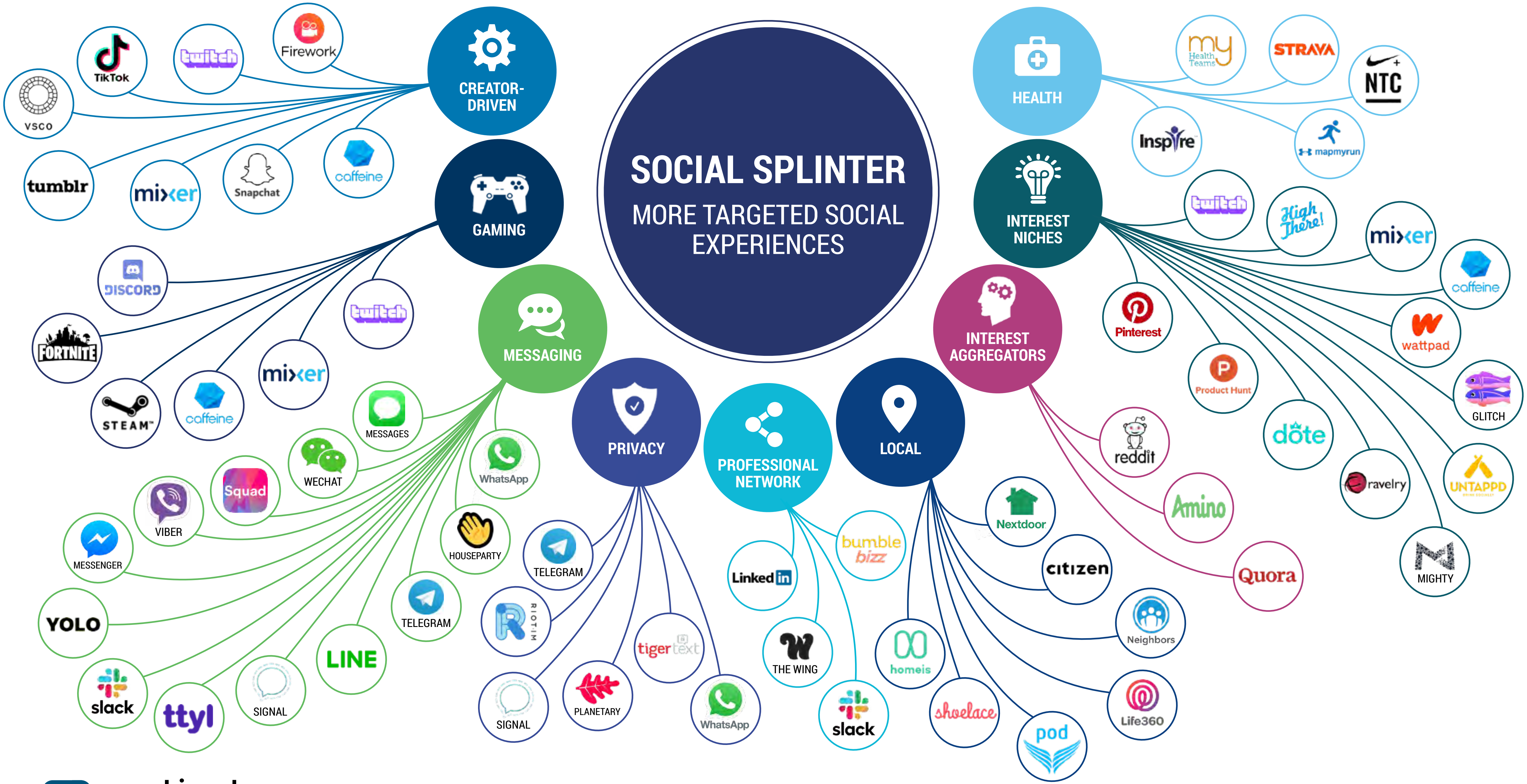
MONTHLY ACTIVE USERS BY SOCIAL PLATFORM, GLOBAL, 2019 OR MOST RECENT, BILLIONS USERS



1. Monthly active users are estimated. Data has not been officially reported in the last 12 months.
Sources: Activate analysis, Business of Apps, China Internet Watch, Company filings, Company press releases, DataReportal, eMarketer, Hootsuite, Similar Web, South China Morning Post, VentureBeat

The bigger story is Social Splinter; focused social networks will play an important role in people's lives, providing authentic communities built around people's specific interests and needs

ACTIVATE SOCIAL LANDSCAPE

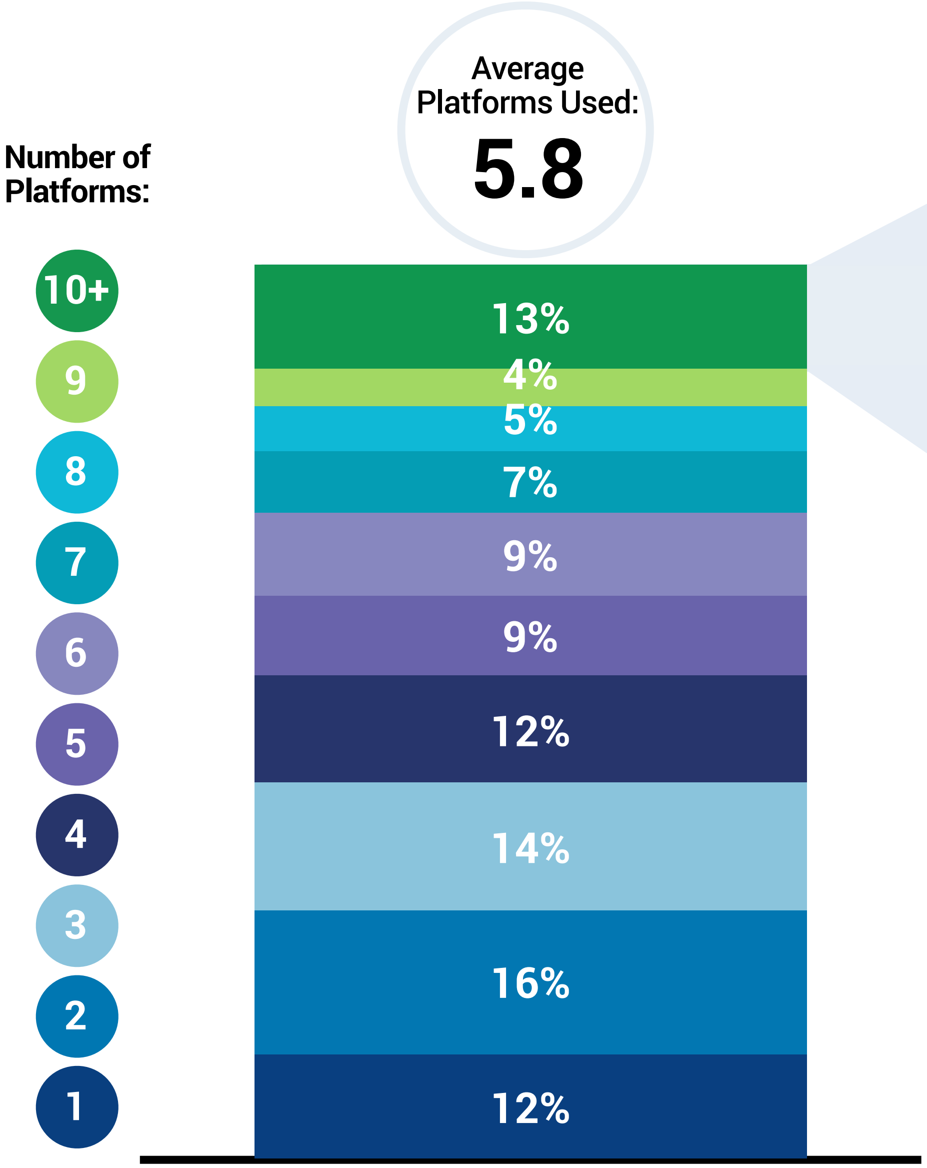


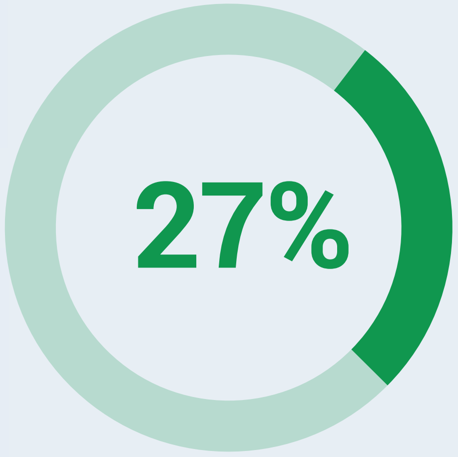
activate consulting

Note: Not exhaustive. In addition, social platforms that promote hate speech have been excluded.
Sources: Activate analysis, Company sites

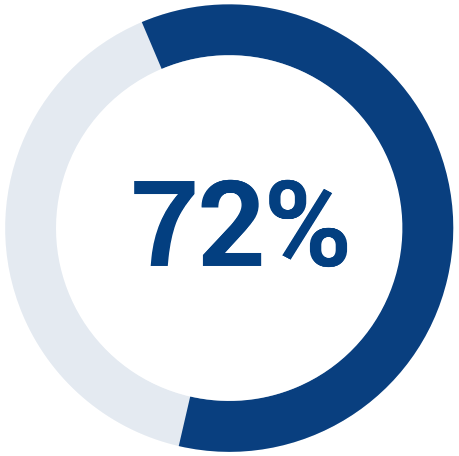
Today, 72% of people use more than two social networks

AVERAGE NUMBER OF SOCIAL PLATFORMS USED IN PAST MONTH[1], U.S., 2019, % SOCIAL PLATFORM USERS[2] AGED 18+





of adults aged 18-24 use 10 or more platforms



of adults aged 18+ use more than two social platforms

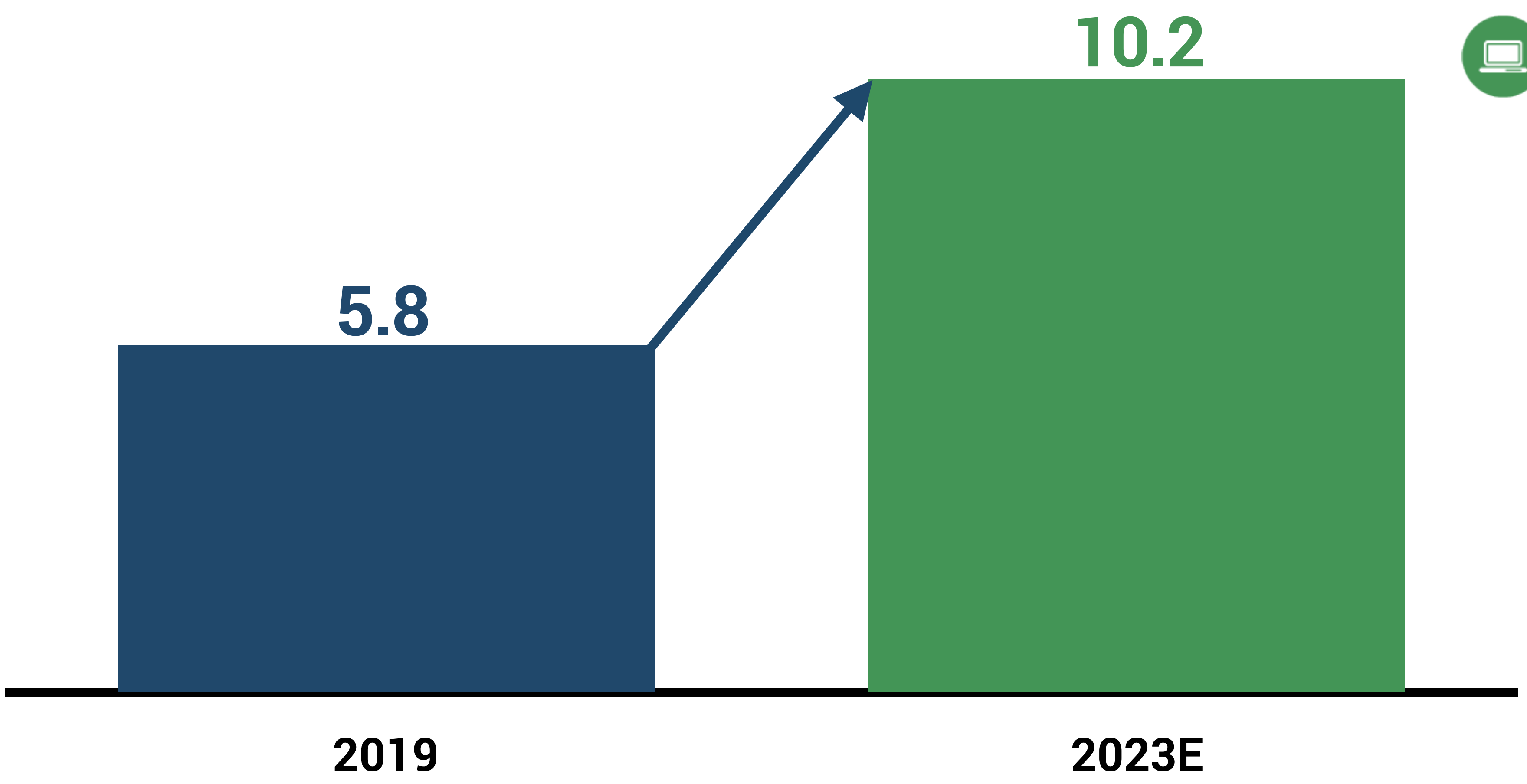
---

1. Figures do not sum to 100% because of rounding.
2. "Social platform users" defined as users of at least one social platform.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Going forward, the average number of social networks per person will increase from 5.8 today to 10.2 in 2023

AVERAGE NUMBER OF SOCIAL PLATFORMS USED, U.S., 2019 VS. 2023E, NUMBER SERVICES

ACTIVATE FORECAST

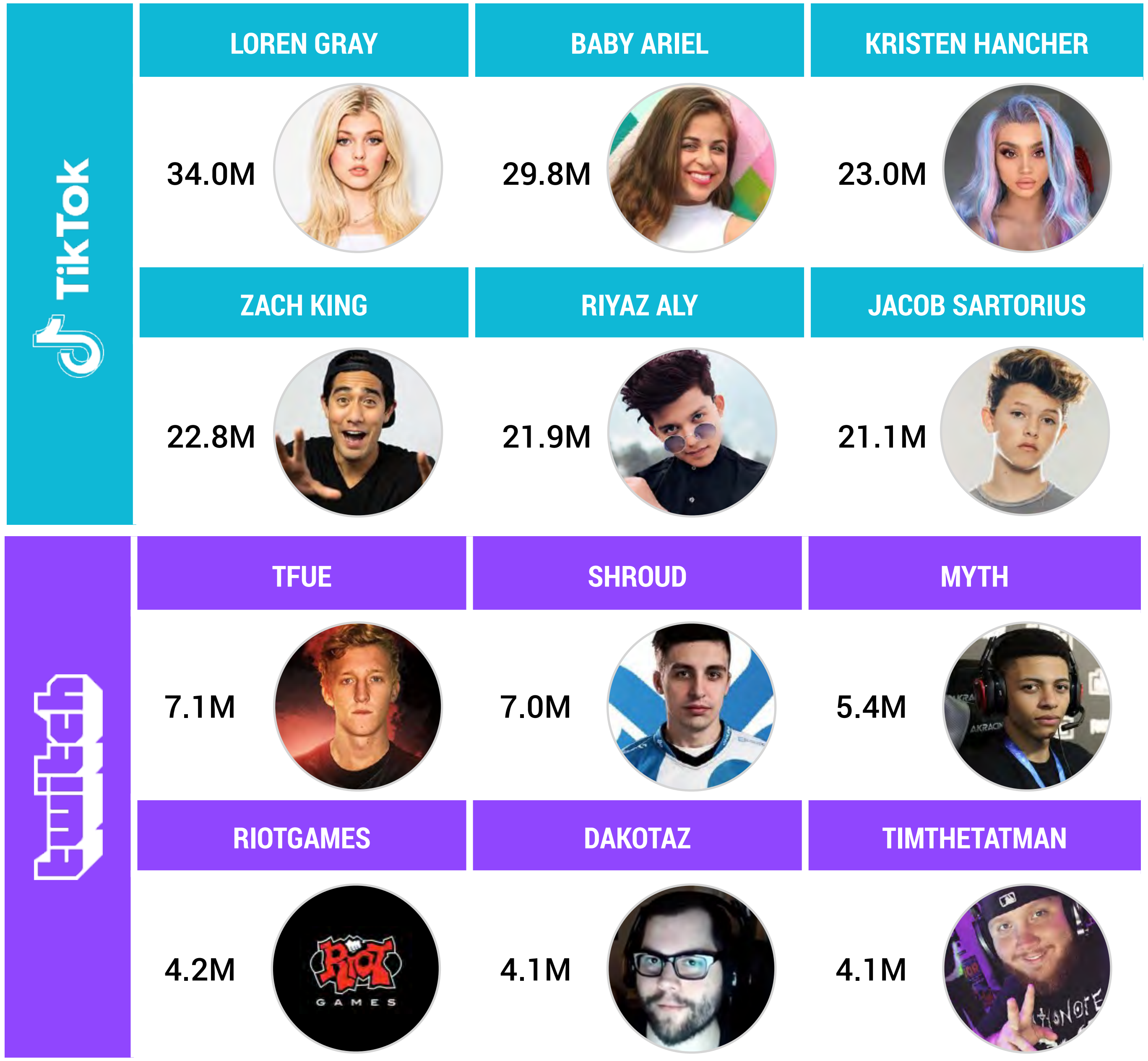


activate consulting

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n = 4,000), Activate 2017 Consumer Tech & Media Research Study (n = 4,047), Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Digital TV Research, Hulu, Netflix

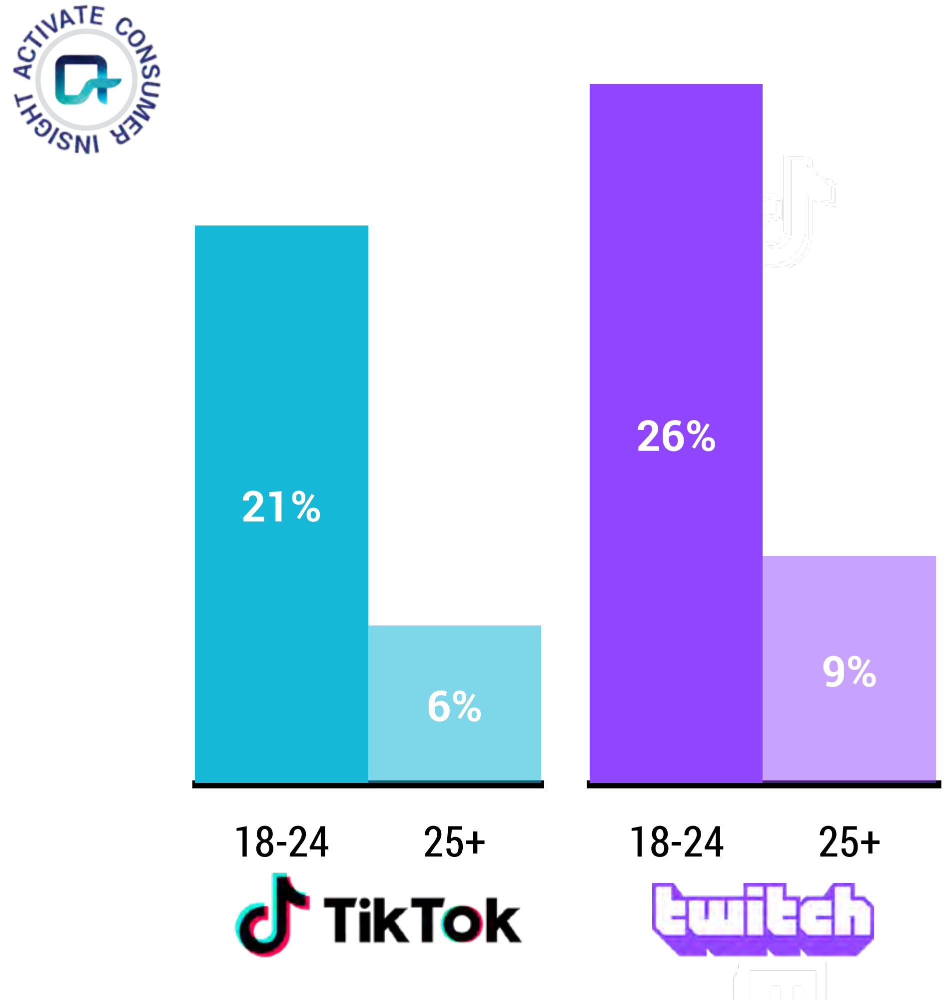
Creator-driven networks have reached scale

TOP INFLUENCERS ON TWITCH AND TIKTOK, GLOBAL, OCT. 2019, MILLIONS FOLLOWERS



TikTok	LOREN GRAY	34.0M
TikTok	BABY ARIEL	29.8M
TikTok	KRISTEN HANCHER	23.0M
TikTok	ZACH KING	22.8M
TikTok	RIYAZ ALY	21.9M
TikTok	JACOB SARTORIUS	21.1M
twitch	TFUE	7.1M
twitch	SHROUD	7.0M
twitch	MYTH	5.4M
twitch	RIOTGAMES	4.2M
twitch	DAKOTAZ	4.1M
twitch	TIMTHETATMAN	4.1M

USERS OF TWITCH AND TIKTOK, U.S., 2019, % ADULTS AGED 18+



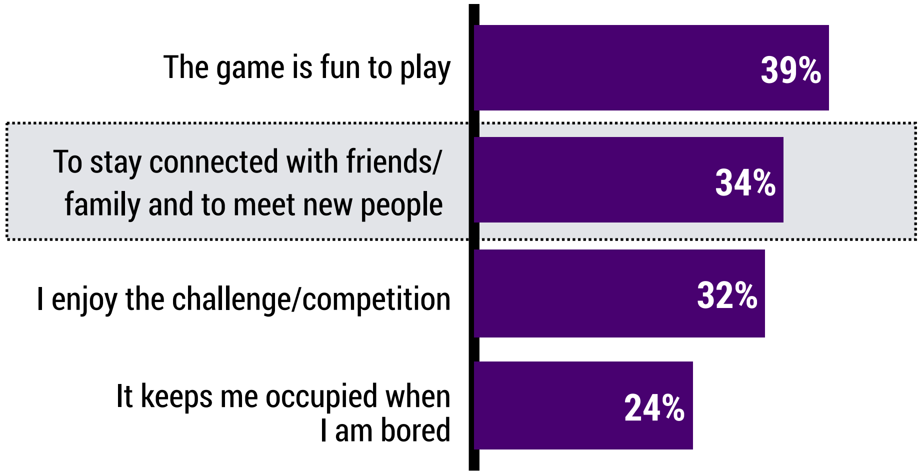
Creator-driven platforms have significant usage among Gen Z

activate consulting

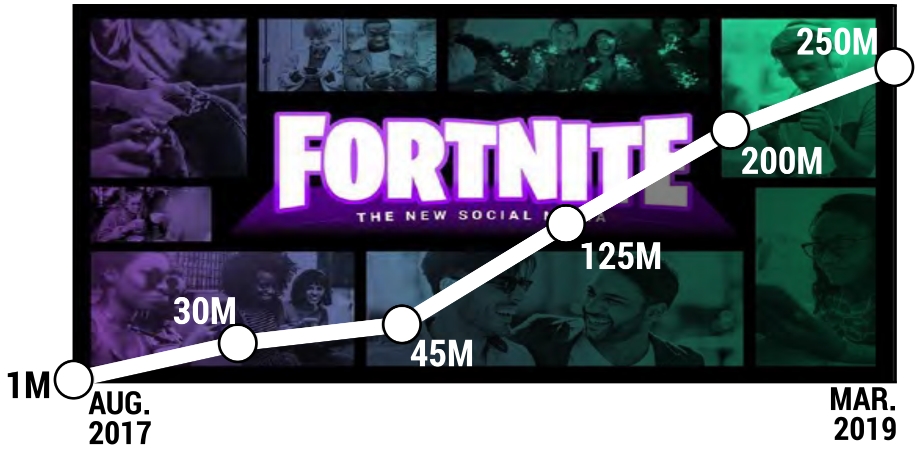
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Business Insider, Company sites, Social Blade

Video gaming increasingly provides an environment for social gathering, as people play video games for social connections; social mechanics are being built into video games

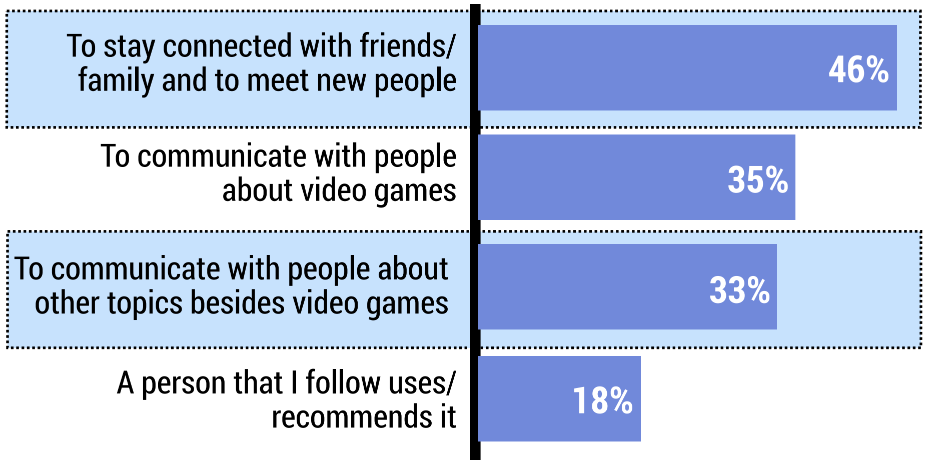
PRIMARY REASONS FOR USING FORTNITE, U.S., 2019, % USERS AGED 18+



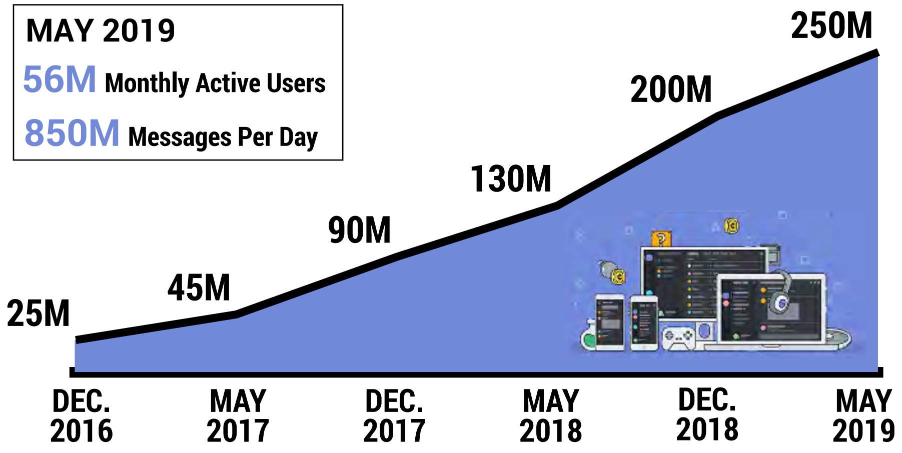
FORTNITE TOTAL REGISTERED USERS, GLOBAL, AUG. 2017-MAR. 2019, MILLIONS USERS



PRIMARY REASONS FOR USING DISCORD, U.S., 2019, % USERS AGED 18+



DISCORD TOTAL REGISTERED USERS, GLOBAL, DEC. 2016-MAY 2019, MILLIONS USERS



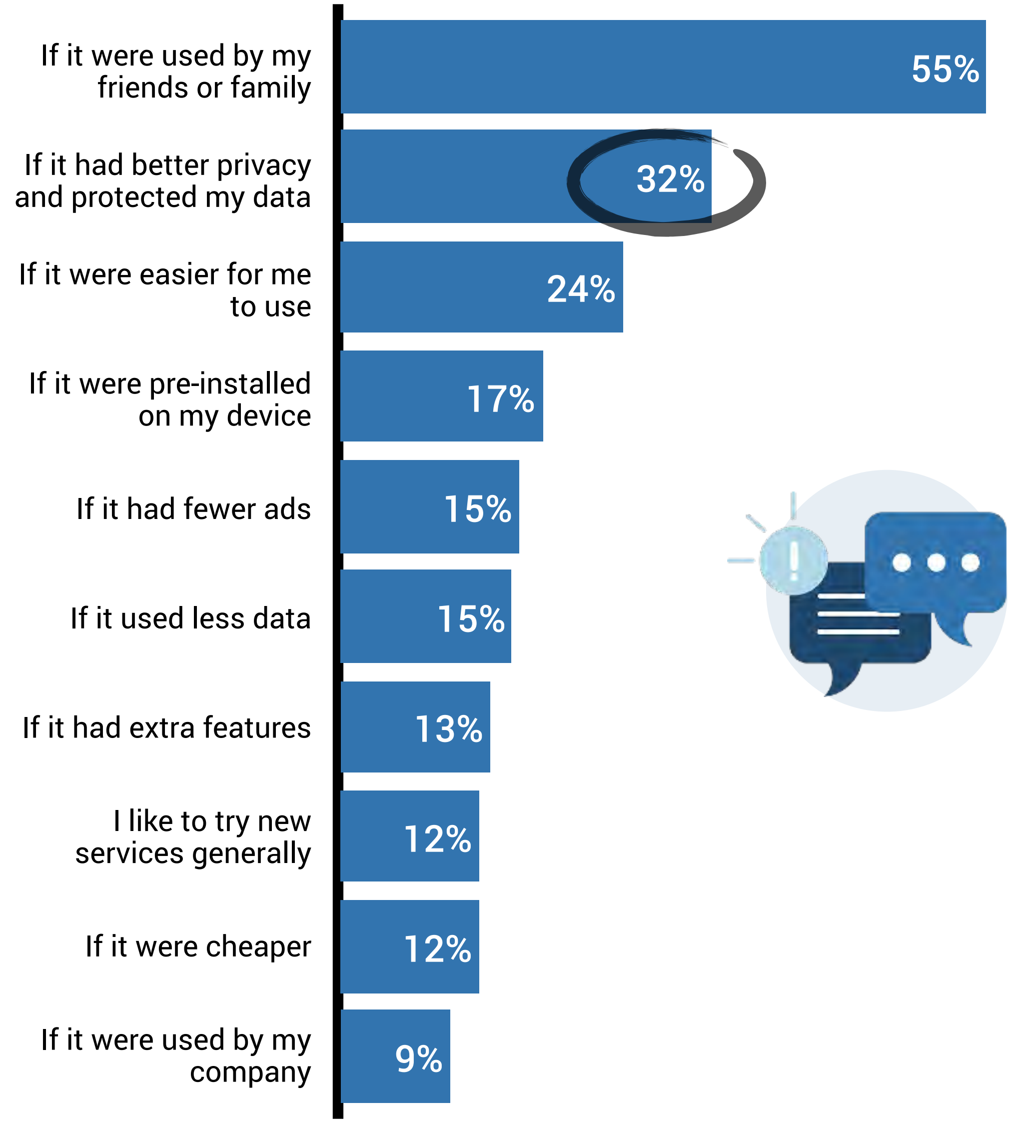
MAY 2019
56M Monthly Active Users
850M Messages Per Day

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Business Insider, Company press releases, Company sites, The Esports Observer, Statista

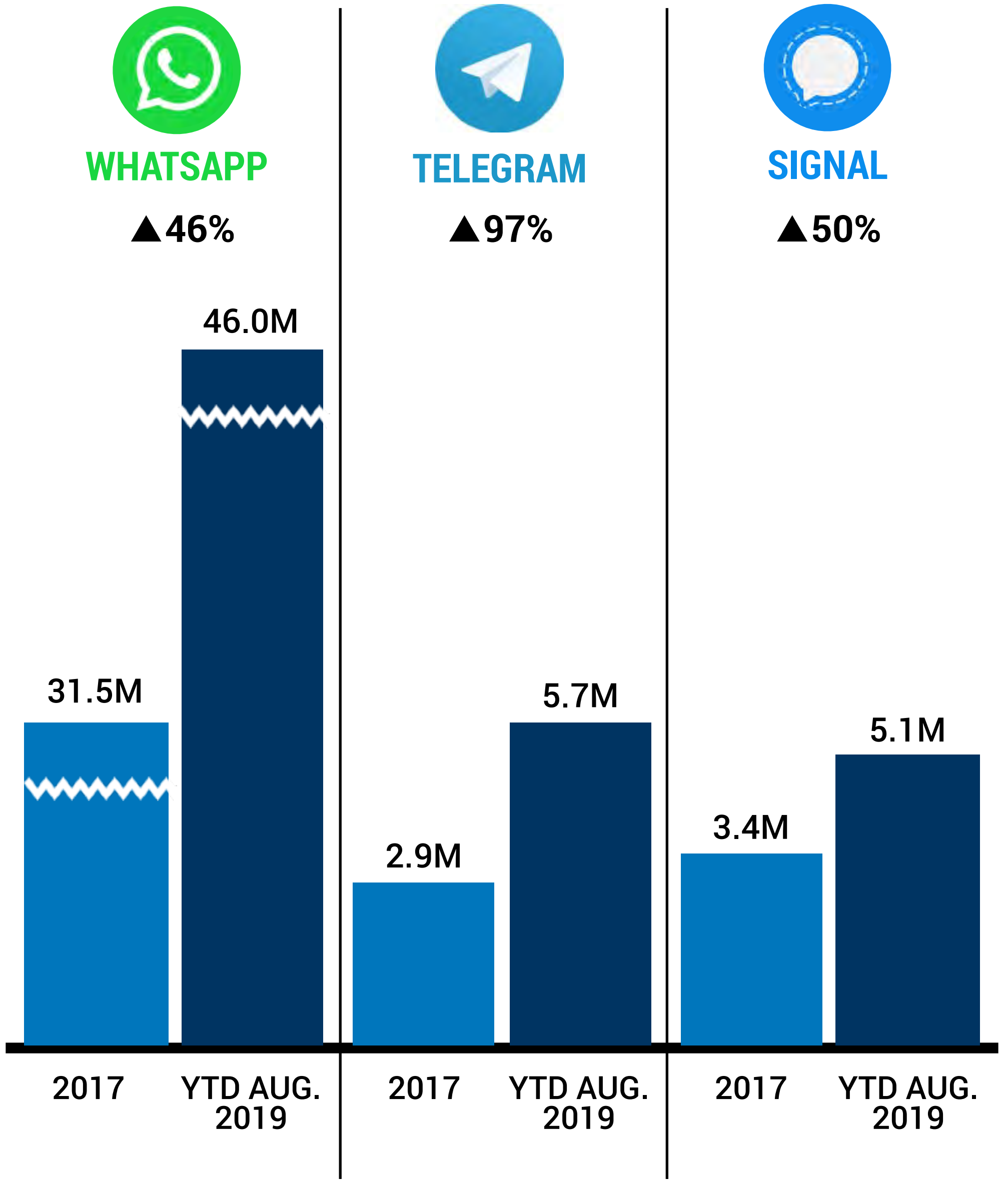
CREATOR-DRIVEN
GAMING
PRIVACY
PROFESSIONAL NETWORK
LOCAL
INTEREST AGGREGATORS
INTEREST NICHES
HEALTH

Privacy, security, and the ability to build trust-based groups of friends are driving consumer adoption and usage of encryption-enabled messaging services

TOP REASONS TO TRY A NEW MESSAGING SERVICE, U.S., 2019, % ADULTS AGED 18+ WILLING TO TRY NEW SERVICES



USERS OF SELECT ENCRYPTION-ENABLED MESSAGING APPS[1], U.S., 2017 VS. YTD AUG. 2019, MILLIONS MONTHLY ACTIVE USERS



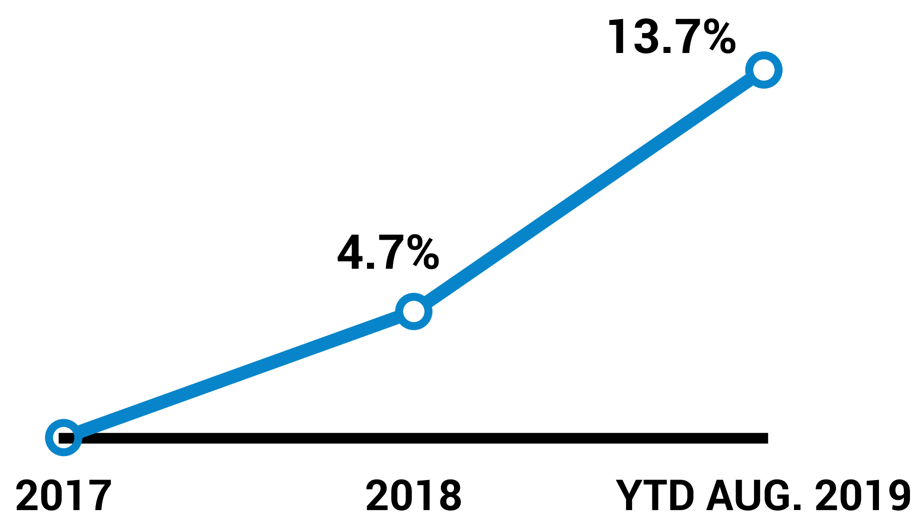
---

1. Monthly active users are averaged across the year. Includes iOS and Android users.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), App Annie

We expect to see increased usage of professional social networks

GROWTH IN MONTHLY TIME SPENT ON LINKEDIN APP PER USER[1], U.S., 2017-YTD AUG. 2019, % GROWTH INDEXED TO 2017

Monthly engagement up 14% last two years

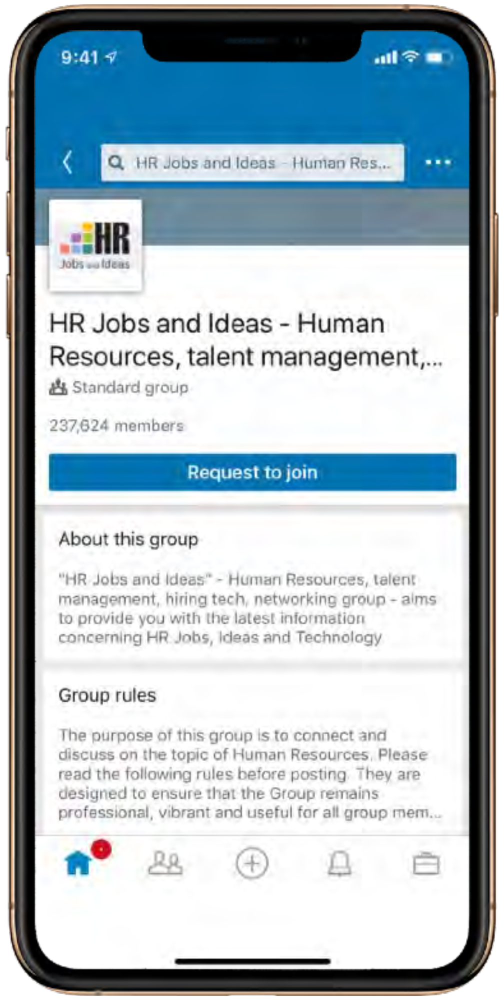


645M+ REGISTERED MEMBERS GLOBALLY[2]

+20% YEAR-OVER-YEAR SESSION GROWTH EVERY QUARTER SINCE Q2 2017

LINKEDIN

Allows specific groups of users to connect around focused interests and affinities


9:41

HR Jobs and Ideas - Human Res...

HR Jobs and Ideas

HR Jobs and Ideas - Human Resources, talent management,...

Standard group

237,624 members

Request to join

About this group

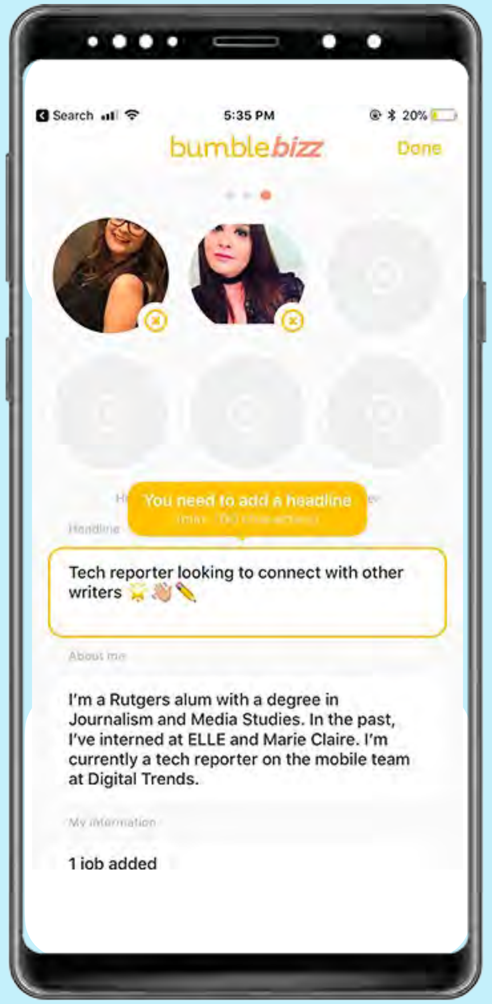
"HR Jobs and Ideas" - Human Resources, talent management, hiring tech, networking group - aims to provide you with the latest information concerning HR Jobs, Ideas and Technology

Group rules

The purpose of this group is to connect and discuss on the topic of Human Resources. Please read the following rules before posting. They are designed to ensure that the Group remains professional, vibrant and useful for all group mem...

Bumble Bizz is a mode in Bumble's dating app that is designed for users to professionally network and mentor each other

bumble bizz


Search 5:35 PM 20%

bumblebizz Done

You need to add a headline

Headline

Tech reporter looking to connect with other writers

About me

I'm a Rutgers alum with a degree in Journalism and Media Studies. In the past, I've interned at ELLE and Marie Claire. I'm currently a tech reporter on the mobile team at Digital Trends.

My information

1 iob added

ORIGINALLY LAUNCHED IN **2017**

CREATES **17M** MATCHES PER WEEK, WITH **64K** NEW USERS JOINING DAILY[3]

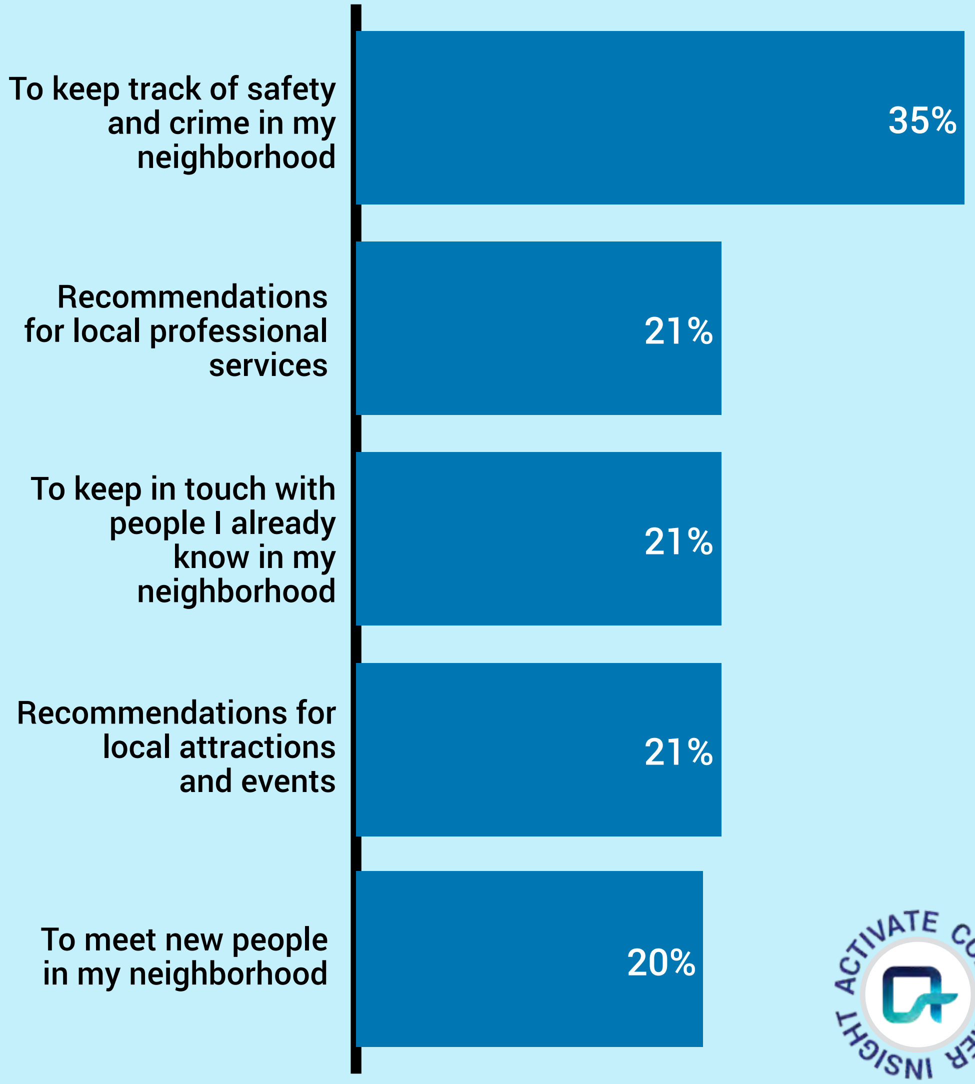
LAUNCHED "WOMEN IN BIZZ" A FEMALE-ONLY NETWORKING FEATURE

---

1. Based on Android users only. Mobile app "time spent" defined as active session time.
2. As of October 2019. 3. As of August 2018.
Sources: Activate analysis, App Annie, Business of Apps, Company filings, Company press releases, Company sites

65% of people are interested in a local social network; the most popular reason is to track safety and crime

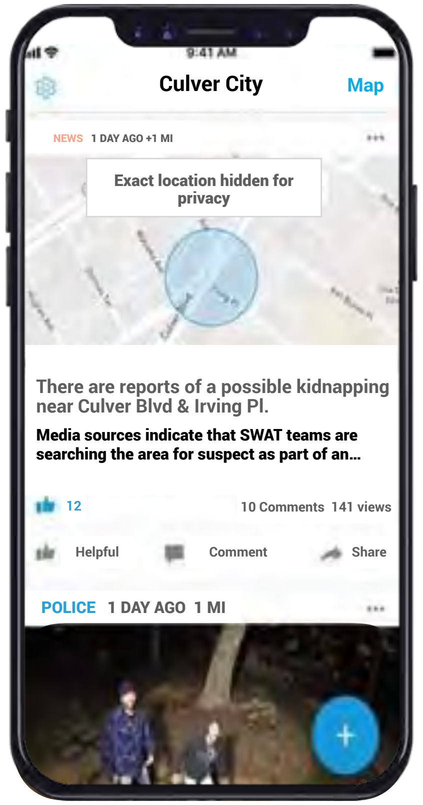
MOST USEFUL FEATURES OF A LOCAL SOCIAL NETWORK, U.S., 2019, % INTERESTED IN PLATFORM AGED 18+[1]



LOCAL SOCIAL NETWORKS

NEIGHBORS

Real-time crime and safety alerts powered by Ring



There are reports of a possible kidnapping near Culver Blvd & Irving Pl.

Media sources indicate that SWAT teams are searching the area for suspect as part of an...

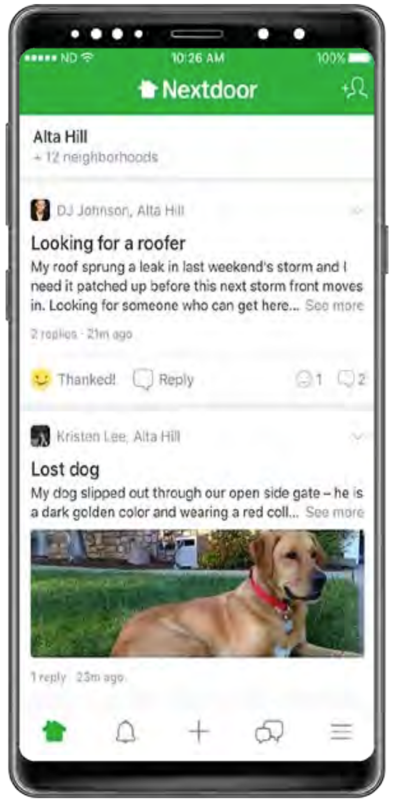
CITIZEN

Real-time crime and safety alerts

Citizen user Maester shows officers and firefighters in the area.

NEXTDOOR

Private social network for neighborhood residents



Looking for a roofer

My roof sprung a leak in last weekend's storm and I need it patched up before this next storm front moves in. Looking for someone who can get here... See more

Lost dog

My dog slipped out through our open side gate – he is a dark golden color and wearing a red coll... See more

---

1. 65% of U.S. adults surveyed are interested in a local social platform.

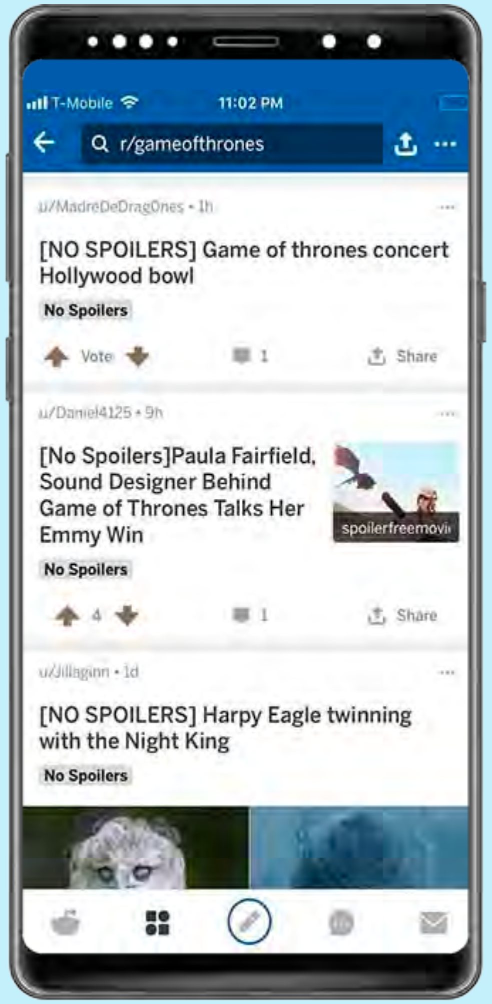
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company press releases, Company sites

Reddit and Amino bring together growing communities around specific topics of interest

Reddit community members post 1.2B+ comments annually

SELECT SUBREDDITS BY SUBSCRIBERS

GAME OF THRONES	2.3M
NFL	1.5M
GUITAR	485K
BAKING	294K
THE BACHELOR	82K
BERKELEY	27K



T-Mobile 11:02 PM

r/gameofthrones

u/MadreDeDragOnes • 1h

[NO SPOILERS] Game of thrones concert Hollywood bowl

No Spoilers

Vote 1 Share

u/Daniel4125 • 9h

[No Spoilers]Paula Fairfield, Sound Designer Behind Game of Thrones Talks Her Emmy Win

spoilerfreemovi

No Spoilers

4 1 Share

u/Jillaginn • 1d

[NO SPOILERS] Harpy Eagle twinning with the Night King

No Spoilers

Amino targets Gen Z with 2.5M unique Micro-Communities

Kpop

FOLLOWING FRONT PAGE PUBLIC CHAT

Check this out!

94 63

Participate in this poll! If enough people participate, maybe the

Welcome! Introduce yourselves and share wh brought you here and

SELECT AMINO COMMUNITIES BY MEMBERS

ANIME	2.2M
ARMY'S	2.0M
POKÉMON	1.0M
MARVEL	225K
DOKI DOKI LITERATURE CLUB	165K
SMASH	151K
HARDWOOD	127K

activate consulting

Sources: Activate analysis, App Annie, Company press releases, Company sites, TechCrunch

We expect significantly increased usage of social networks created for each deep community of interest and the need for people to connect and meet each other

SELECT NICHE INTEREST SOCIAL PLATFORMS

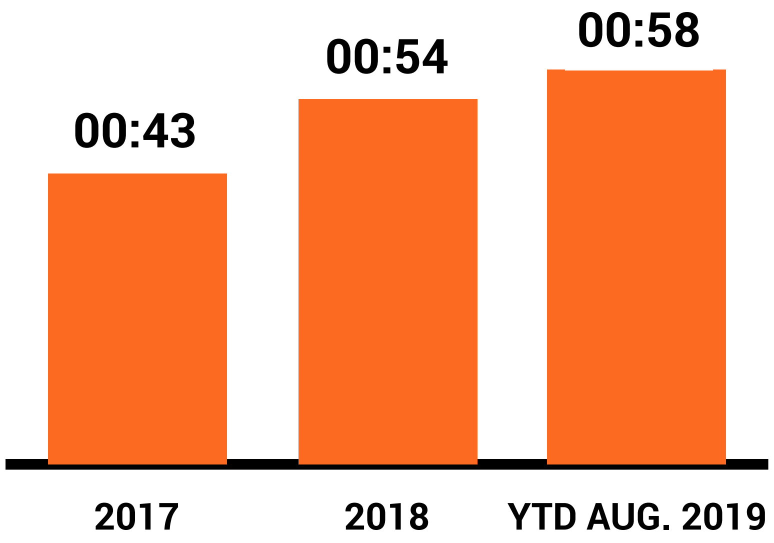
ravelry	KNITTING AND CROCHET
Product Hunt	TECHNOLOGY
caffeine	LIVE STREAMING
dote	SHOPPING
High There!	CANNABIS
BakeSpace	FOOD AND BAKING
UNTAPPD DRINK SOCIALLY	BEER
MyAnimeList	ANIME AND MANGA
wattpad	READING
purseforum	FASHION
mathoverflow	MATH
ECHO	CHRISTIANITY

Source: Activate analysis

Fitness-focused networks are a key component of the networked body, while health-focused networks are communities for those facing health issues

AVERAGE MONTHLY TIME SPENT ON STRAVA APP PER USER[1], U.S., 2017-YTD AUG. 2019, HOURS:MINUTES

Monthly engagement up 35% over the last two years



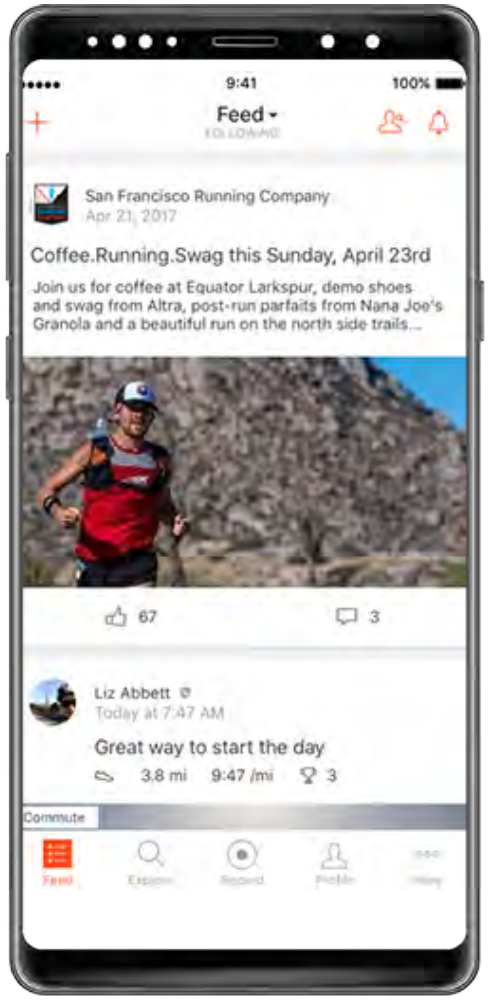
SELECT STRAVA STATISTICS

2B+ ACTIVITIES LOGGED

42M REGISTERED ACCOUNTS[2]

1M USERS ADDED MONTHLY[2]

STRAVA



San Francisco Running Company
Apr 21, 2017

Coffee.Running.Swag this Sunday, April 23rd

Join us for coffee at Equator Larkspur, demo shoes and swag from Altra, post-run parfaits from Nana Joe's Granola and a beautiful run on the north side trails...

Liz Abbett
Today at 7:47 AM

Great way to start the day

3.8 mi 9:47 /mi 3

Belong.Life and MyHealthTeams bring together people facing health issues

200K Users[2]

BELONG.LIFE

Connects cancer patients to one another and doctors

2M Members[3]

MYHEALTHTEAMS

Brings together people suffering from chronic conditions

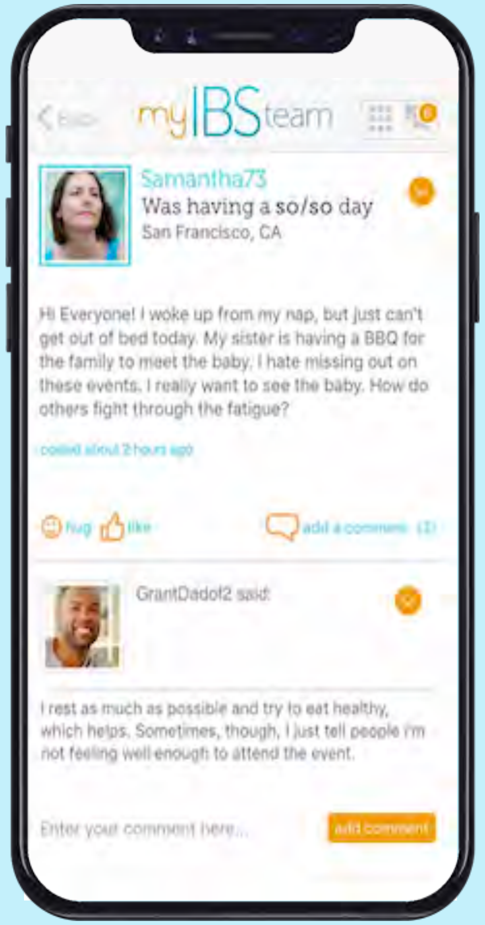
[redacted]
Jun 17, 2016 17:50

Hello, anyone here with ovarian cancer?
I am on chemo (after surgery) and I find myself tired and nervous all the time. Is that normal?

Hi [redacted] I have ovarian cancer stage 3 :found Sep 2015.I'm on chemo yes I'm tired,nervous,dizzy well good luck to us [redacted] (63)from Florida

Thank you [redacted]. I'm 50 and nice to know I'm normal. Good luck and god bless

Hi [redacted] how U doing?I began second Row chemos



Samantha73
Was having a so/so day
San Francisco, CA

Hi Everyone! I woke up from my nap, but just can't get out of bed today. My sister is having a BBQ for the family to meet the baby. I hate missing out on these events. I really want to see the baby. How do others fight through the fatigue?

posted about 2 hours ago

GrantDadof2 said:

I rest as much as possible and try to eat healthy, which helps. Sometimes, though, I just tell people I'm not feeling well enough to attend the event.

Enter your comment here...

1. Based on Android users only. Mobile app "time spent" defined as active session time. 2. As of July 2019. 3. As of August 2019.
Source: Activate analysis, App Annie, Company press releases, Company sites, Inc., VentureBeat

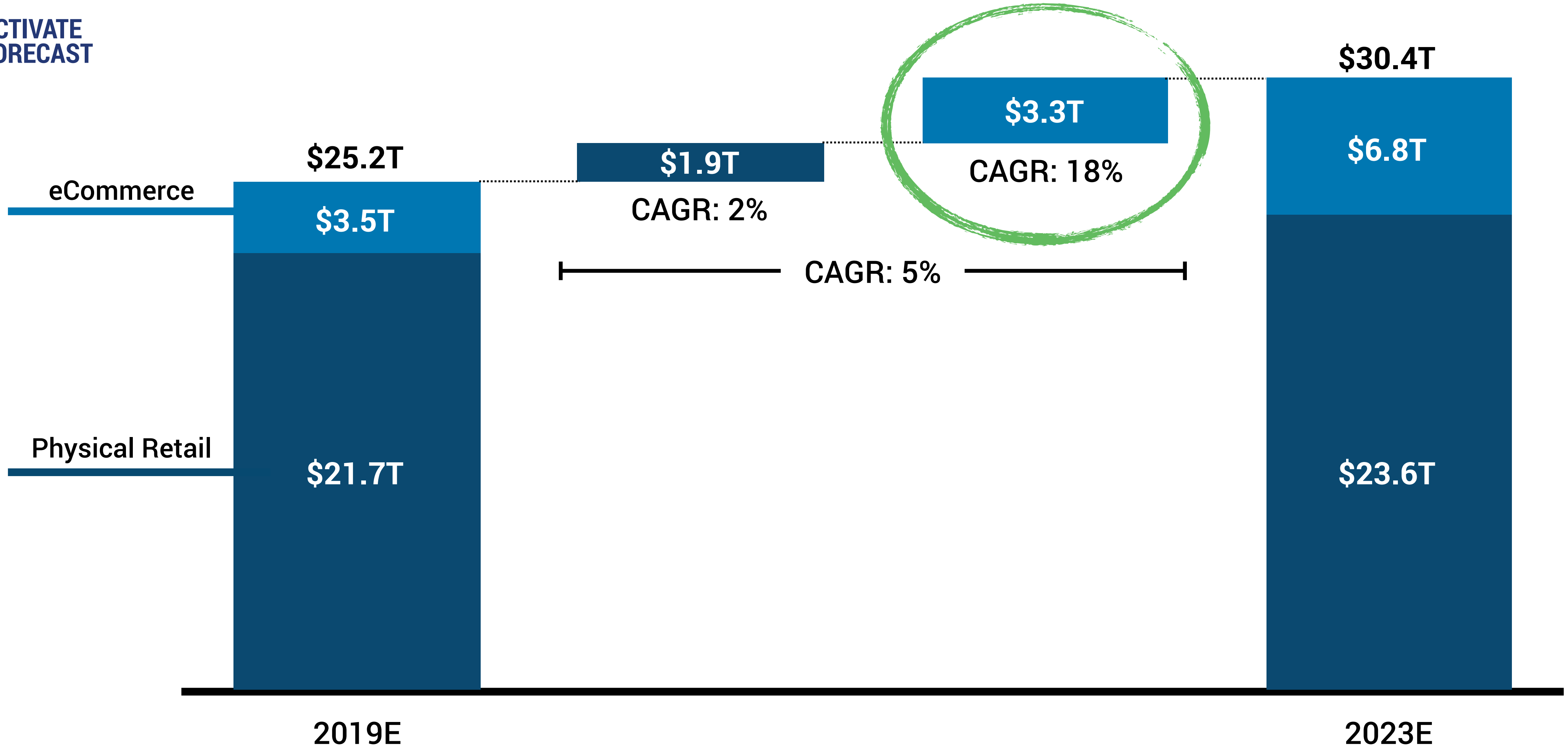
activate
consulting

CONTENTS

eCommerce sales will double by 2023, driving global retail growth

RETAIL[1] SALES BY CHANNEL, GLOBAL, 2019E VS. 2023E, TRILLIONS USD

ACTIVATE FORECAST



	2019E	2023E
eCommerce Share of Total Retail Sales	14%	22%

activate consulting

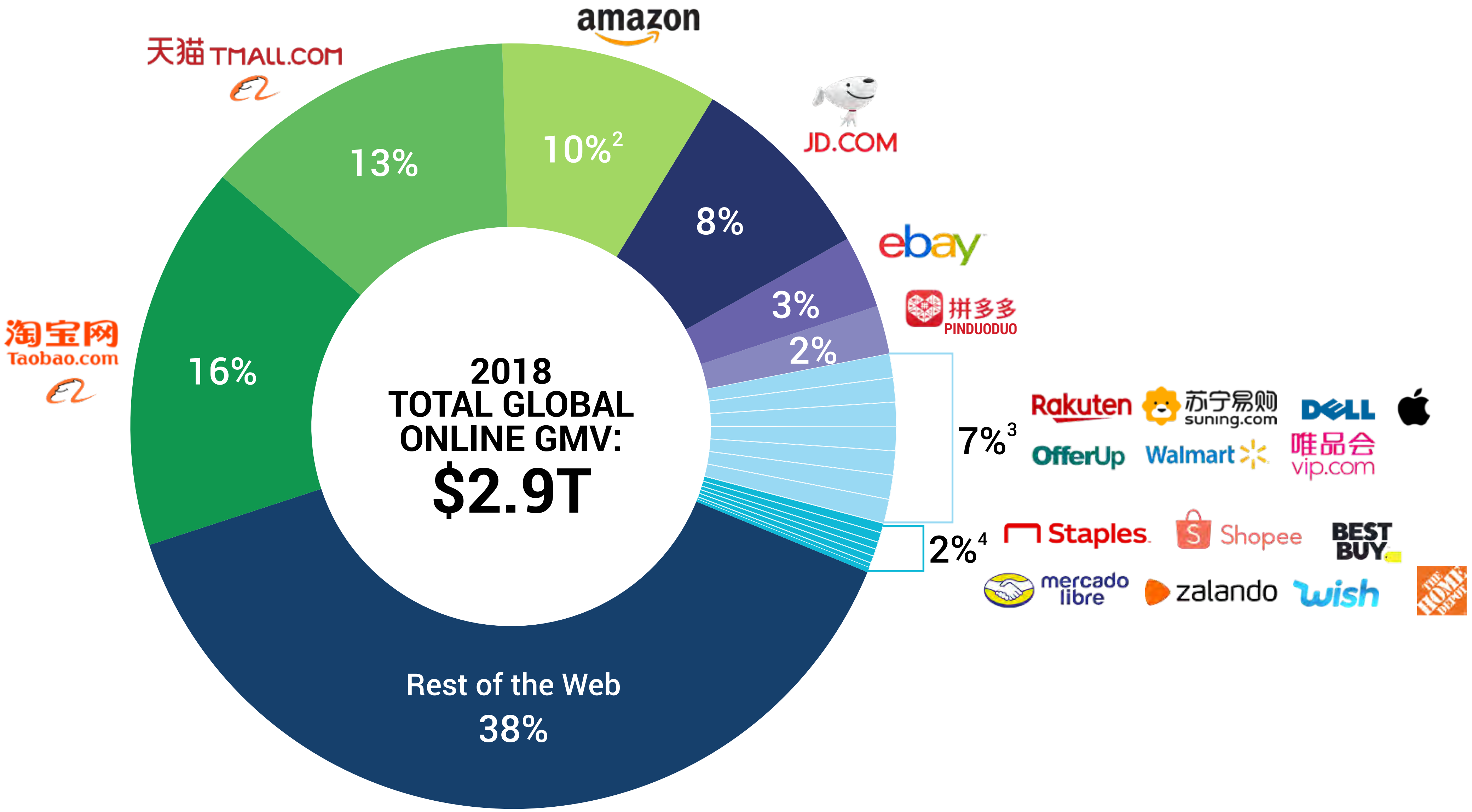
---

1. Excluding travel and tickets.

Sources: Activate analysis, 451 Research, eMarketer

Today, the bulk of online global transaction volume is concentrated across the top 20 eCommerce companies

ONLINE GROSS MERCHANDISE VOLUME (GMV)[1], GLOBAL, 2018, % TOTAL GMV



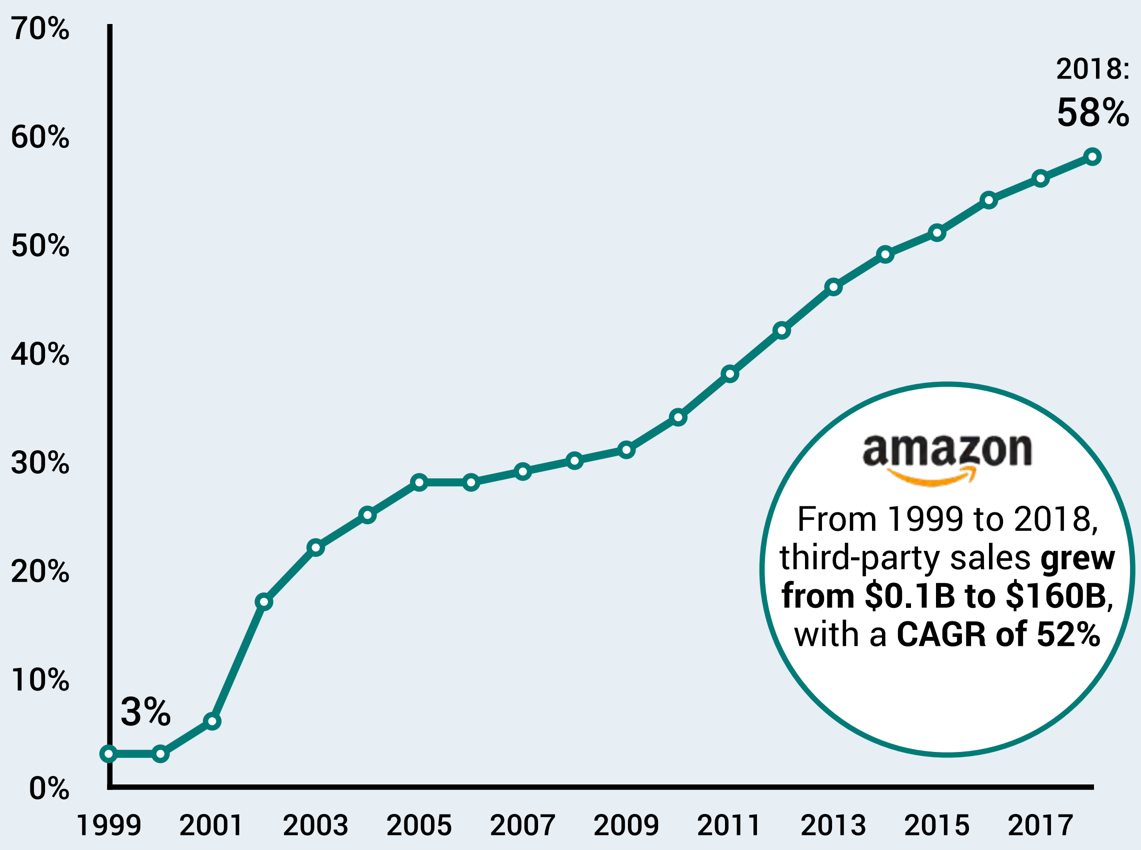
1. Figures do not sum to 100% because of rounding. 2. Updated from 2017 estimate to reflect the company's reported financial results. 3. Each company accounts for approximately 1%. 4. Each company accounts for less than 1%.
Sources: Activate analysis, China Internet Watch, Company filings, Company press releases, Company sites, Digital Commerce 360, eMarketer, Forbes, GeekWire, Internet Retailer, Marketplace Pulse, Retail Dive, TechCrunch, UBS

eCommerce is a marketplace business; 80% of online sales for the top 20 eCommerce companies are generated by third-party sellers

ONLINE GROSS MERCHANDISE VOLUME (GMV) OF TOP 20 ECOMMERCE COMPANIES BY SALES TYPE, GLOBAL, 2018, % TOTAL GMV

2018 TOTAL GLOBAL ONLINE GMV OF TOP 20 ECOMMERCE COMPANIES = $1.8T

PHYSICAL GROSS MERCHANDISE SALES ON AMAZON BY INDEPENDENT THIRD-PARTY SELLERS, GLOBAL, 1999-2018, % TOTAL GROSS MERCHANDISE SALES



From 1999 to 2018, third-party sales **grew from $0.1B to $160B**, with a **CAGR of 52%**

Sources: Activate analysis, China Internet Watch, Company filings, Company press releases, Company sites, Digital Commerce 360, eMarketer, Forbes, GeekWire, Internet Retailer, Marketplace Pulse, Retail Dive, TechCrunch, UBS

Going forward, eCommerce will grow beyond marketplace platforms, shrinking the divide between physical and digital shopping

Forces Shaping the Future of eCommerce

1
DELIVERY

Winners in eCommerce will be companies that can meet consumer delivery demands — fast shipping options with the ability to choose where and when they receive their items (e.g. in-store pickup, self-service lockers, in-home delivery)

2
SELLER DEMOCRATIZATION

A growing class of technology companies is evening the eCommerce playing field — providing a suite of accessible products and services that enables brands of all sizes to create digital storefronts

3
RE-COMMERCE

Buying and selling used products online will be an established consumer behavior and renting is set to follow — younger customers will propel adoption

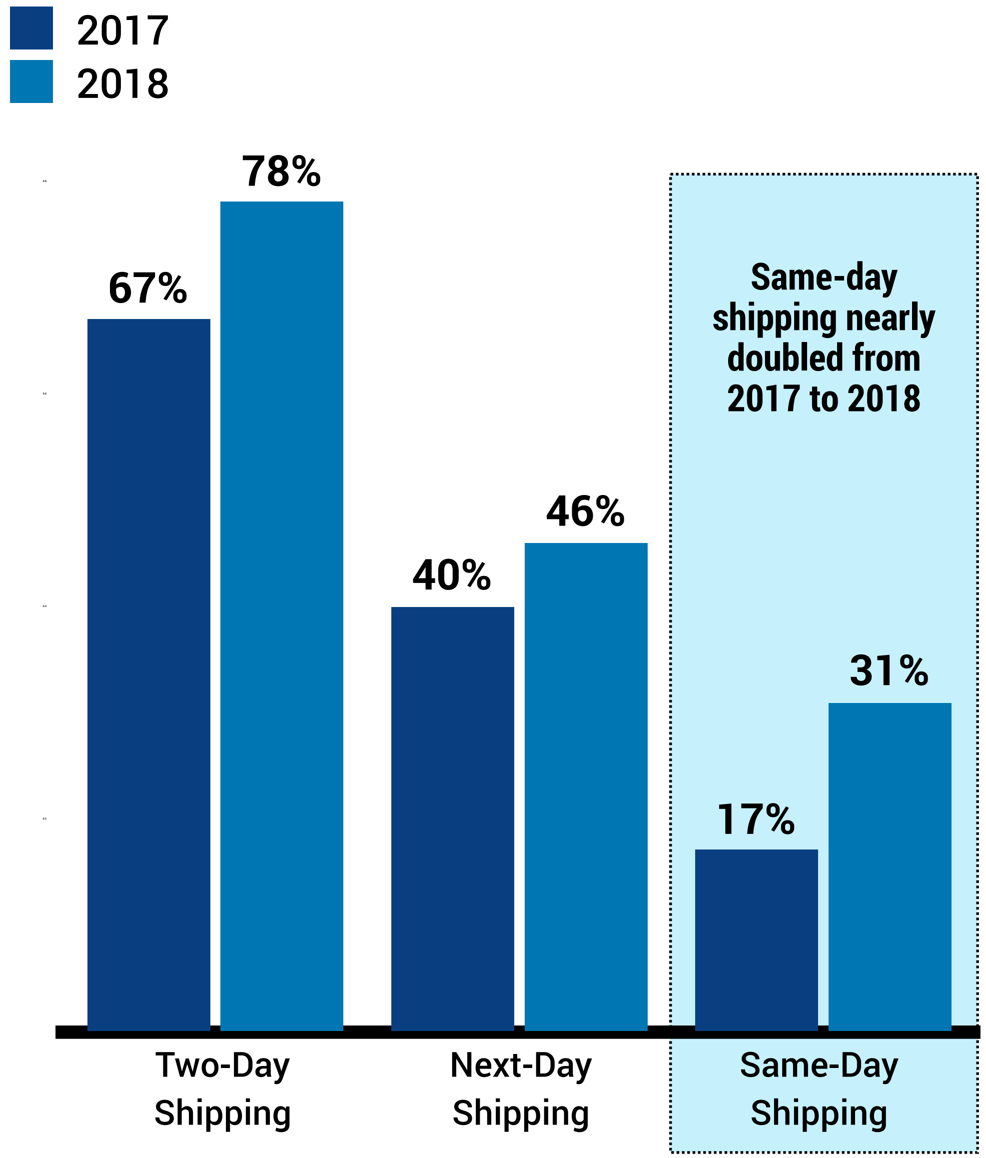
4
SOCIAL COMMERCE

Social media platforms are evolving from sources of inspiration to online storefronts — through shoppable ads, shoppable posts, and in-app checkout features

Source: Activate analysis

Online consumers demand faster shipping; same-day options will be critical for eCommerce companies to remain competitive

USAGE OF FAST SHIPPING OPTIONS FOR ONLINE PURCHASES, U.S., 2017 VS. 2018, % ONLINE SHOPPERS AGED 18+



Same-day shipping nearly doubled from 2017 to 2018

RESPONSE TO CONSUMER DEMAND FOR FAST SHIPPING BY SELECT MAJOR U.S. ECOMMERCE COMPANIES IN 2019

Macy's debuted a pilot program offering free **same-day delivery** with a $75 minimum

Walmart announced roll out of a $98 annual membership for **same-day grocery delivery**

Target extended its **same-day delivery** option to all customers (previously only available to Shipt subscribers)

Walmart launched free **next-day delivery** with a $35 minimum

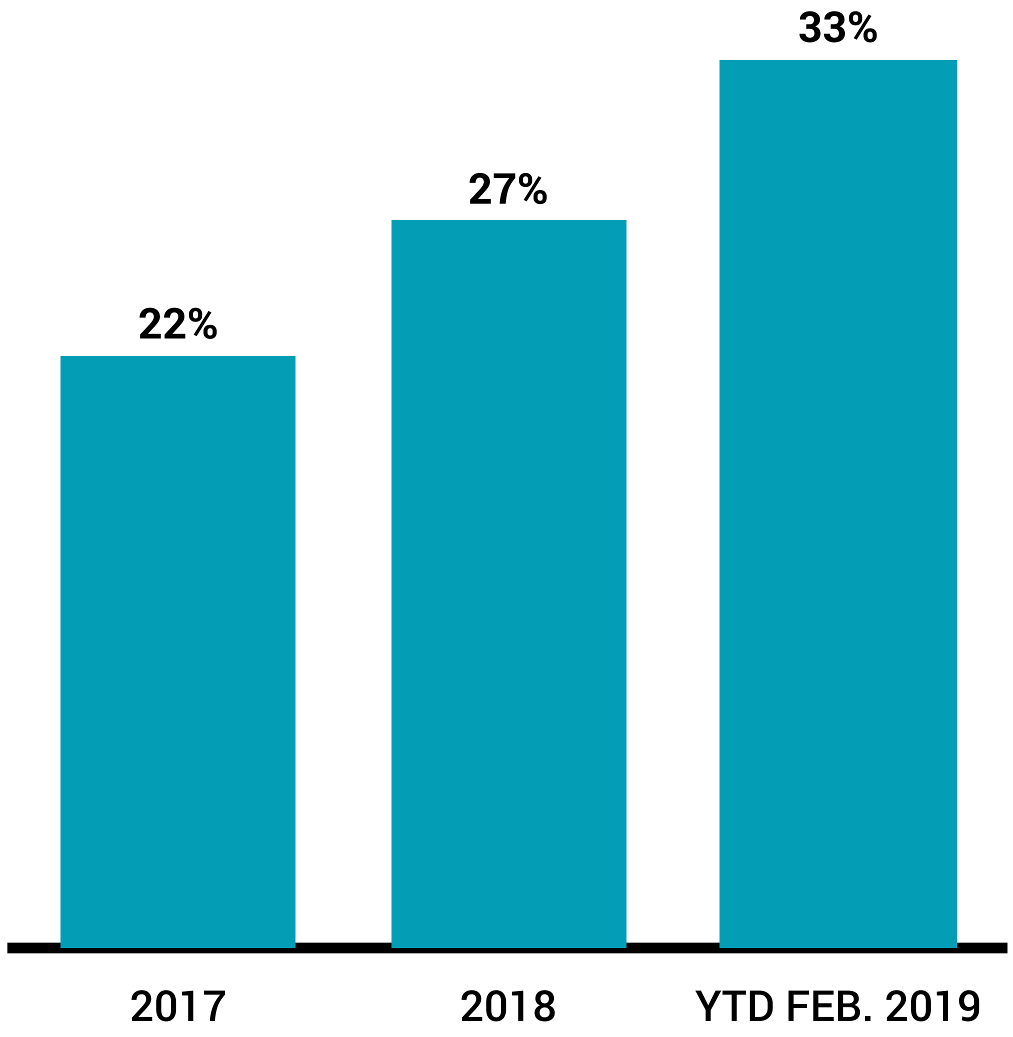
Amazon announced standard Prime shipping update from **two-day to next-day delivery**

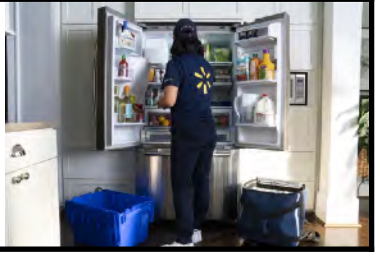
activate consulting

Sources: Activate analysis, Company filings, Company press releases, Company sites, Dropoff, Retail Dive, The Verge

Alternative delivery and pick-up options will expand to meet shoppers' needs

BUY ONLINE, PICK UP IN-STORE SALES AMONG SELECT MAJOR ECOMMERCE COMPANIES[1], U.S., 2017-YTD FEB. 2019, % TOTAL ONLINE SALES



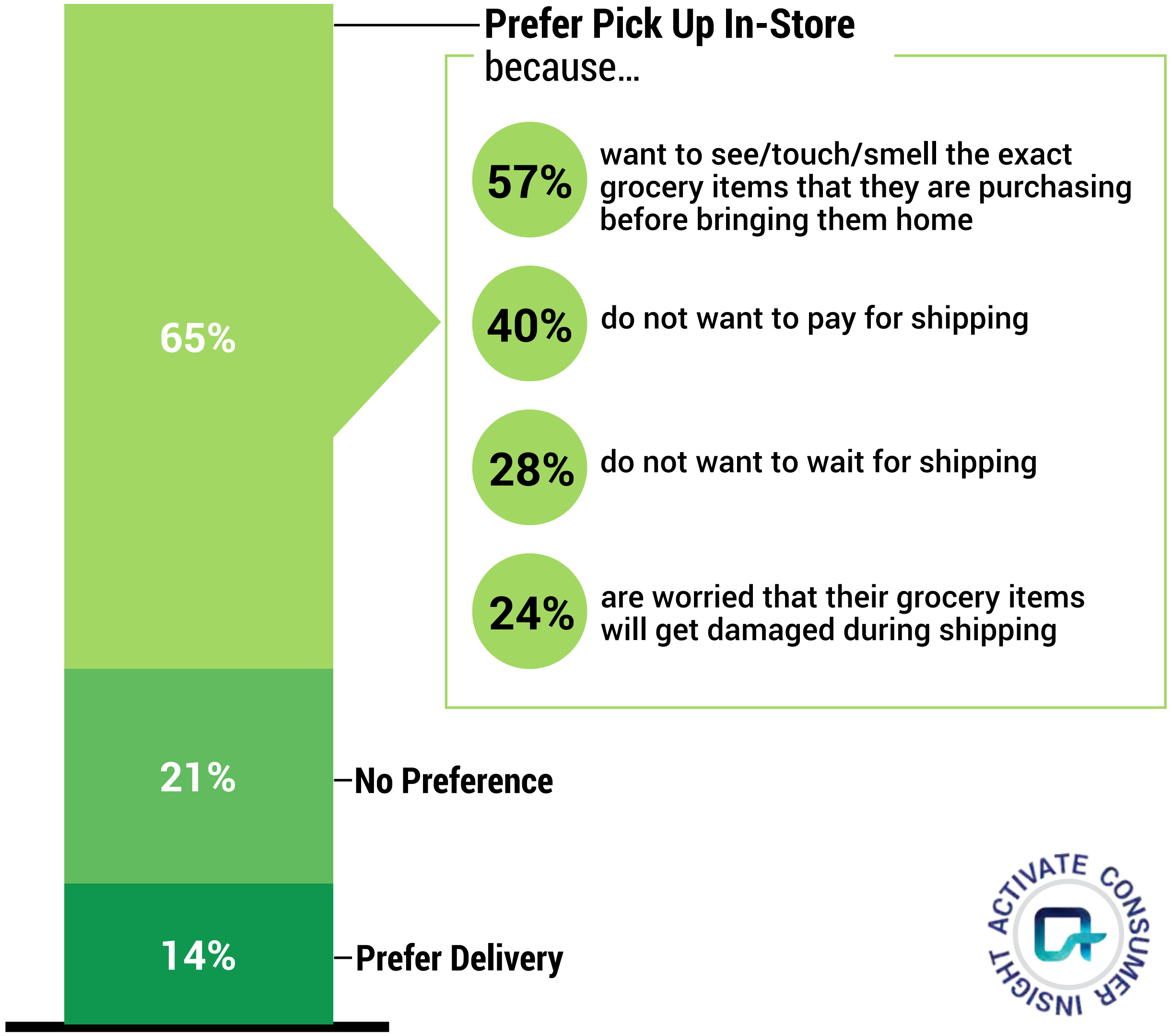
PICK-UP AND DELIVERY OPTIONS AT SELECT MAJOR U.S. ECOMMERCE COMPANIES		
In-Store Designated Pick-Up Counter	BEST BUY introduced in 2010	
In-Store Locker	THE HOME DEPOT rolled out in 2018	
Curbside Pick-Up	TARGET debuted in 2017	
Self-Service Locker at Third-Party Location (e.g. convenience store, mall, apartment complex lobby)	amazon launched in 2011	
In-Home/In-Fridge Delivery	Walmart is currently piloting in select cities	

---

[1] Includes Apple, Best Buy, Costco, The Home Depot, Kohl's, Macy's, Nordstrom, Old Navy, Target, and Walmart.
Sources: Activate analysis, Business Insider, Company press releases, Company sites, Rakuten Intelligence, Retail Dive

Buy online, pick up in-store offerings will drive the continued growth of eCommerce grocery sales

PREFERRED METHOD FOR RECEIVING GROCERY PURCHASES, U.S., 2019, % ADULTS AGED 18+



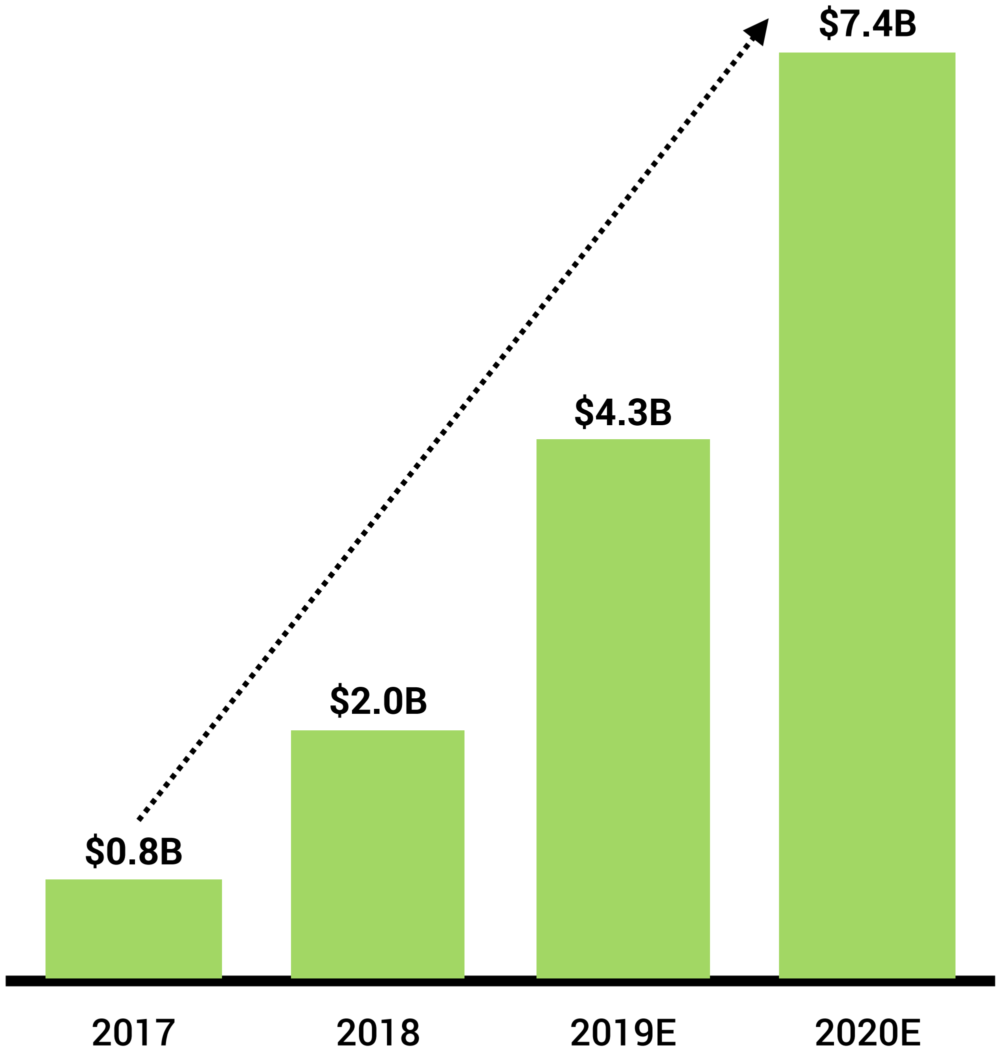
57% want to see/touch/smell the exact grocery items that they are purchasing before bringing them home

40% do not want to pay for shipping

28% do not want to wait for shipping

24% are worried that their grocery items will get damaged during shipping

BUY ONLINE, PICK UP IN-STORE GROCERY SALES, U.S., 2017-2020E, BILLIONS USD



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Cowen and Company, eMarketer

eCommerce solutions providers will lower the barriers for brands to sell directly to consumers, enabling these brands to launch and maintain digital storefronts

EXAMPLE PLATFORMS

shopify

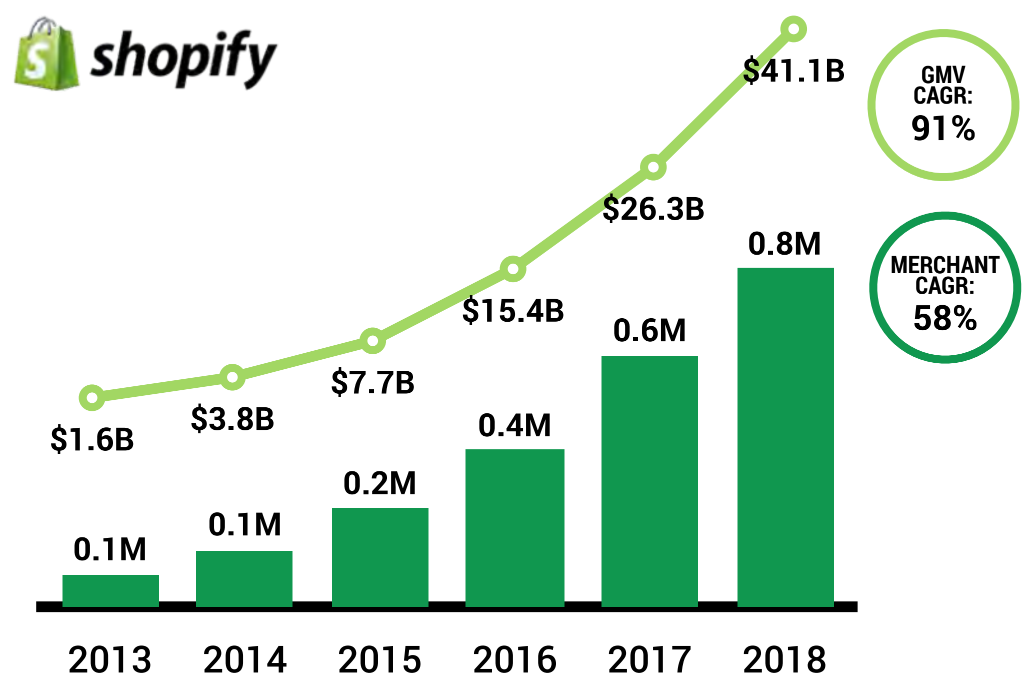
Magento An Adobe Company

BIGCOMMERCE

PROVIDE MERCHANTS WITH CAPABILITIES AND RESOURCES ACROSS THE ECOMMERCE STACK, INCLUDING:

STORE CREATION	• eCommerce website creation, including free and paid website themes • Website hosting (provided by Shopify and BigCommerce) • Ability to plug into additional channels: ebay amazon facebook
ANALYTICS	Access to customer data (e.g. acquisition, spend, search, cart abandonment) and financial performance metrics
MARKETING	Built-in tools and apps to assist with marketing campaigns
POINT OF SALE	Point of sale mobile apps and hardware integration (e.g. barcode scanners)
PAYMENTS	Ability to connect with first-party and/or third-party payment gateways (e.g. Shopify Payments, PayPal)
FULFILLMENT	• Capability to integrate dropshipping fulfillment • Connection to ShipBob, Shipwire, ShipStation, and other fulfillment partners

SHOPIFY GROSS MERCHANDISE VOLUME (GMV) AND NUMBER OF MERCHANTS USING THE SHOPIFY PLATFORM, GLOBAL, 2013-2018, BILLIONS USD / MILLIONS MERCHANTS



EXAMPLE MERCHANTS USING THE SHOPIFY PLATFORM

DIRECT-TO-CONSUMER (D2C) BRANDS	LEGACY BRANDS / PUBLISHERS
leesa allbirds BOMBAS RHONE Tommy John KYLIE COSMETICS BULLETPROOF	The Store (The New York Times) Unilever Nestlé PEPSICO SHOP BUZZFEED K-SWISS The Economist Store

Sources: Activate analysis, Company filings, Company sites, Digiday

SELLER DEMOCRATIZATION

The lower barriers to entry will continue to expand the growth of online-native direct-to-consumer (D2C) brands in every major product category

DIRECT-TO-CONSUMER BRAND LANDSCAPE

PRODUCT CATEGORY WITH HIGHER ECOMMERCE PENETRATION

PRODUCT CATEGORY WITH LOWER ECOMMERCE PENETRATION

GROCERY

- soylent
- DIRTYLEMON
- BULLETPROOF
- Recess
- ALOHA
- LIFEAID Beverage Co.
- EMPATHY
- Haus
- MAGIC SPOON
- Kettle & Fire
- dō
- CHOMPS
- RXBAR
- Misfits Market
- NUGGS
- YUMI
- Blue Apron
- HUNGRYROOT
- MOINK
- DAILY HARVEST

BEAUTY AND PERSONAL CARE

- Glossier.
- COLOURPOP
- KYLIE COSMETICS
- BEAUTYCOUNTER
- Curology
- CONTEXT
- Hawthorne
- THE HONEST CO.
- PINROSE
- MADISONREED
- function of beauty
- quip
- DOLLAR SHAVE CLUB
- billie
- CANDID
- HUBBLE
- NATIVE
- LOLA
- hers
- hims

FURNITURE AND HOME

- Casper
- HELIX
- leesa
- saatva
- brooklinen
- BOLL & BRANCH
- Buffy
- PARACHUTE
- SNOWE
- dormify
- YEAR & DAY
- made.in
- GIR GET IT RIGHT
- INTERIOR DEFINE
- BURROW
- ARTICLE.
- THE INSIDE
- FRAMEBRIDGE
- CLARE
- bloomscape

JEWELRY

- MEJURI
- AURATE NEW YORK
- THE LAST LINE
- ARIEL GORDON
- VRAI
- bagatiba
- NOÉMIE
- MENĒ
- BAUBLEBAR
- blue nile
- Kinn
- BRILLIANT EARTH
- CEREMONY
- HOLDEN
- COUPLE
- LINJER
- MVMT
- HALIOS
- DANIEL WELLINGTON
- AUTODROMO

APPAREL, SHOES, AND ACCESSORIES

- allbirds
- M.GEMI
- ROTHY'S
- GREATS
- EVERLANE
- ROCKETS OF AWESOME
- cotopaxi
- Outdoor Voices
- Reformation
- NAADAM
- M.M.LAFLEUR
- INDOCHINO
- MACK WELDON
- chubbies
- THIRDLOVE
- Andie
- STANCE
- AWAY
- DAGNE DOVER
- WARBY PARKER

activate consulting

Source: Activate analysis

By building a direct connection with consumers, these D2C brands gain valuable customer data, which they will leverage to optimize every area of their business

PRODUCT DEVELOPMENT

- **Co-develop products with customers** by using direct conversation channels to crowdsource and mine ideas for new products as well as enhancements to existing products
- **Respond quickly to the changing needs and preferences of the consumer**

PERSONALIZATION OF RECOMMENDATIONS

- **Provide customers with a personalized, guided shopping experience** through individualized recommendations (e.g. size, style) and custom-made product (e.g. based on customer quiz data)
- **Incorporate consumer behavior and feedback to facilitate continuous improvement of recommendations**

DEMAND PLANNING / INVENTORY MANAGEMENT

- **Improve the accuracy of demand forecasts** and adjust production accordingly
- **Decide which inventory to stock at each physical store** (e.g. stock with top online performers for both the overall customer base as well as the customers in that specific location)

CHANNEL MANAGEMENT

- **Pinpoint prime locations for brick & mortar stores**
- **Identify ideal distribution partners and secure partnerships** by providing proof of demand

PRICING

- **Probe customer demand and willingness to pay**
- **Determine the driving factors of willingness to pay** (e.g. quality, scarcity, warranty, try-before-you-buy policy) through direct communication lines with consumers
- **Learn how customers prefer to pay** (e.g. à la carte, subscription, bundle) **and how they view pricing promotions**

	PRODUCT DEVELOPMENT	PERSONALIZATION OF RECOMMENDATIONS	DEMAND PLANNING / INVENTORY MANAGEMENT	CHANNEL MANAGEMENT	PRICING
EXAMPLE D2C BRANDS	Glossier. brooklinen allbirds	THIRDLOVE function of beauty HELIX	M.GEMI ARTICLE. ROTHY'S	soylent WARBY PARKER saatva	BAUBLEBAR EVERLANE MeUndies

Sources: Activate analysis, Adweek, Business of Fashion, Company sites, Digiday, Digital Commerce 360, Elle, Fast Company, FoodNavigator-USA, Forbes, Glossy, Inc., MediaPost, Modern Retail, Quartz, Retail Dive, TechCrunch

SELLER DEMOCRATIZATION

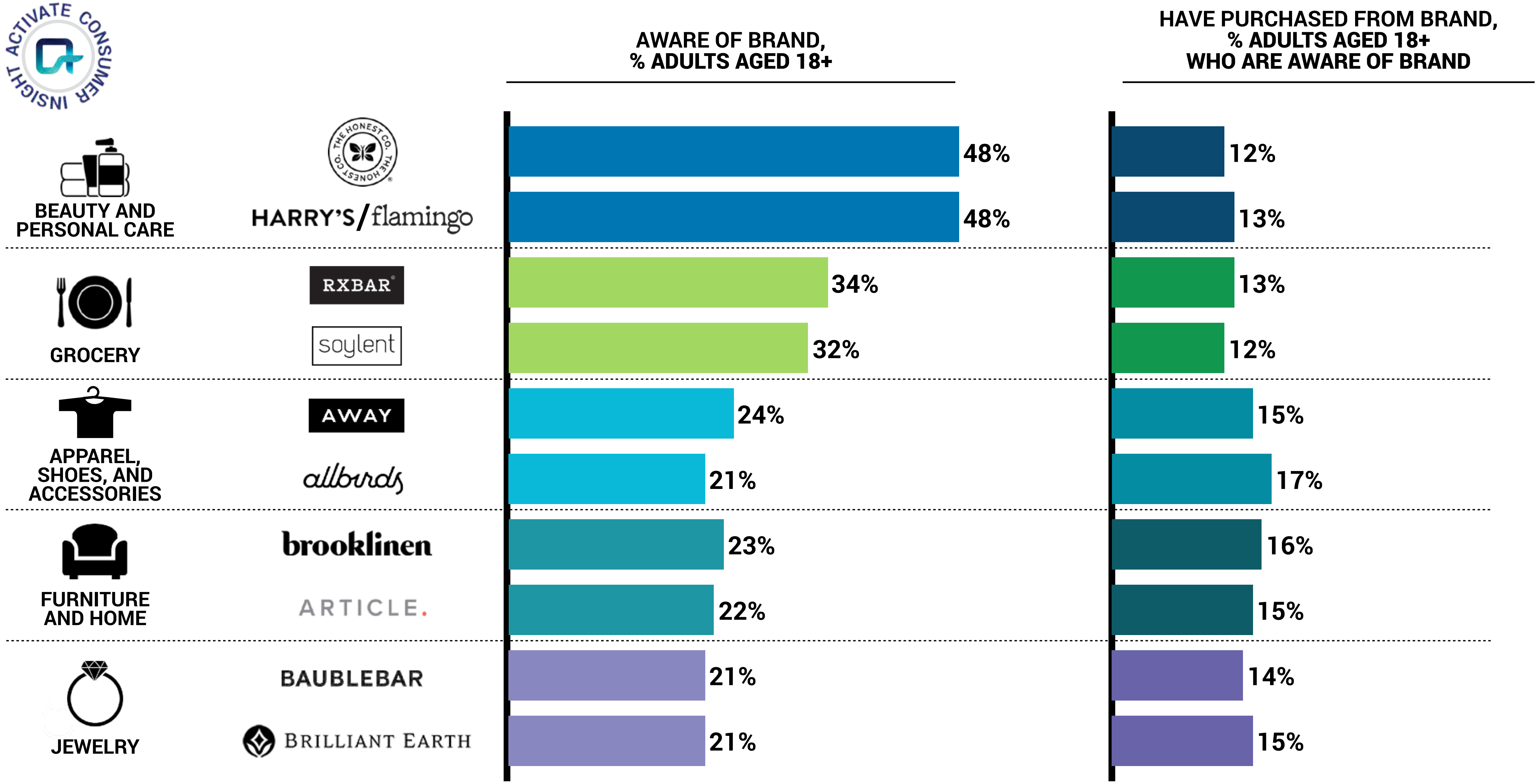
Legacy brands will follow the D2C playbook to strengthen their direct relationship with customers

	OFFER EXCLUSIVE AND CUSTOMIZED PRODUCTS	CREATE INCENTIVE AND PLATFORM FOR CUSTOMER INTERACTION	REMOVE INTERMEDIARIES	PROVIDE PERSONALIZED RECOMMENDATIONS
STRATEGY	Encourages native site traffic and sales, and delivers insight into customer preferences	Enables access to consumer shopping interests and habits	Facilitates direct relationship with customer, control over brand positioning, and access to physical performance metrics	Prompts purchase through native platforms and informs understanding of consumer needs and demands
EXAMPLES	VANS Allows consumers to **design their own custom shoes** through its native website	NIKE Created mobile app that **provides members with style advice, exclusive access to products, and the ability to set up a profile that tracks personal interests and purchase history**	ALEX AND ANI **Halted wholesale relationships** with select retailers and **launched company-operated physical storefronts**	OlAY Designed AI-enabled feature that gives customers **individualized product suggestions**
	BEN&JERRY'S Sells **exclusive flavors and personalized gift baskets** through its online storefront	H&M Launched H&M Club loyalty program through which **members gain points for reviewing purchases**	Levi's **Pulled brand from off-price retailers and opened self-owned brick & mortar stores**	Serta Offers online quiz to **recommend the optimal mattress** (e.g. based on factors such as temperature and sleep position)

Sources: Activate analysis, Company filings, Company sites, Digiday, Retail Dive

New customer acquisition will be one of the greatest challenges for D2C brands and for large retailers following their playbooks

AWARENESS AND PURCHASING BEHAVIOR FOR SELECT D2C BRANDS, U.S., 2019, % ADULTS AGED 18+



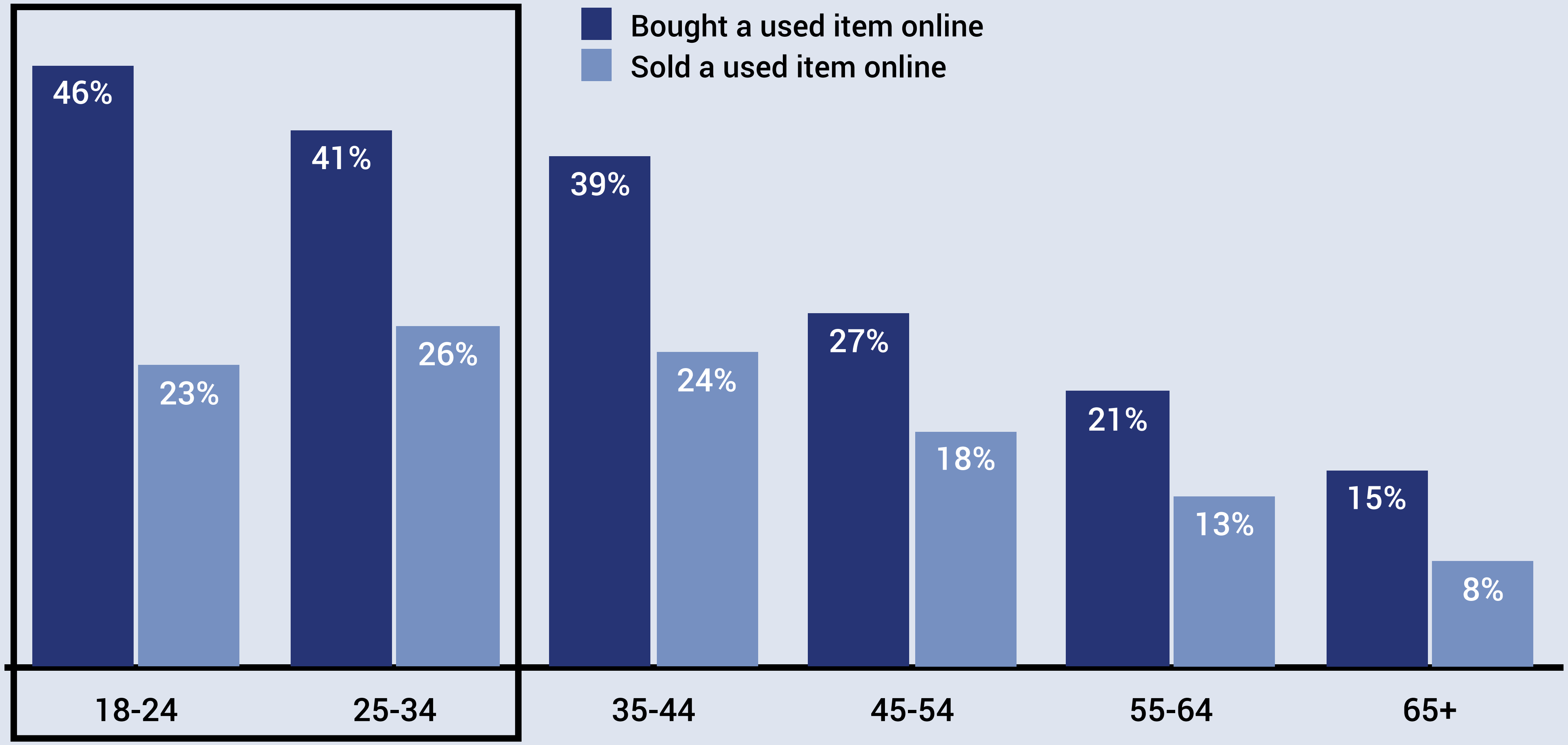
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Re-commerce: Online resale will be a mainstream behavior – younger consumers will drive adoption

RE-COMMERCE

ONLINE RESALE ACTIVITY OVER THE PAST YEAR BY AGE GROUP, U.S., 2019, % ADULTS AGED 18+

ACTIVATE CONSUMER INSIGHT



	Bought a used item online	Sold a used item online
18-24	46%	23%
25-34	41%	26%
35-44	39%	24%
45-54	27%	18%
55-64	21%	13%
65+	15%	8%

EXAMPLE ONLINE RESALE PLATFORMS

ebay, Facebook Marketplace, Etsy, OfferUp, AptDeco, POSHMARK, TheRealReal, FASHIONPHILE, FARFETCH, stockX, TRUEFACET, amazon, craigslist, Chairish, TRADESY, THREDUP, KARDASHIAN KLOSET, patagonia WORN WEAR, GLAMBOT, STADIUM GOODS, WORTHY

activate consulting

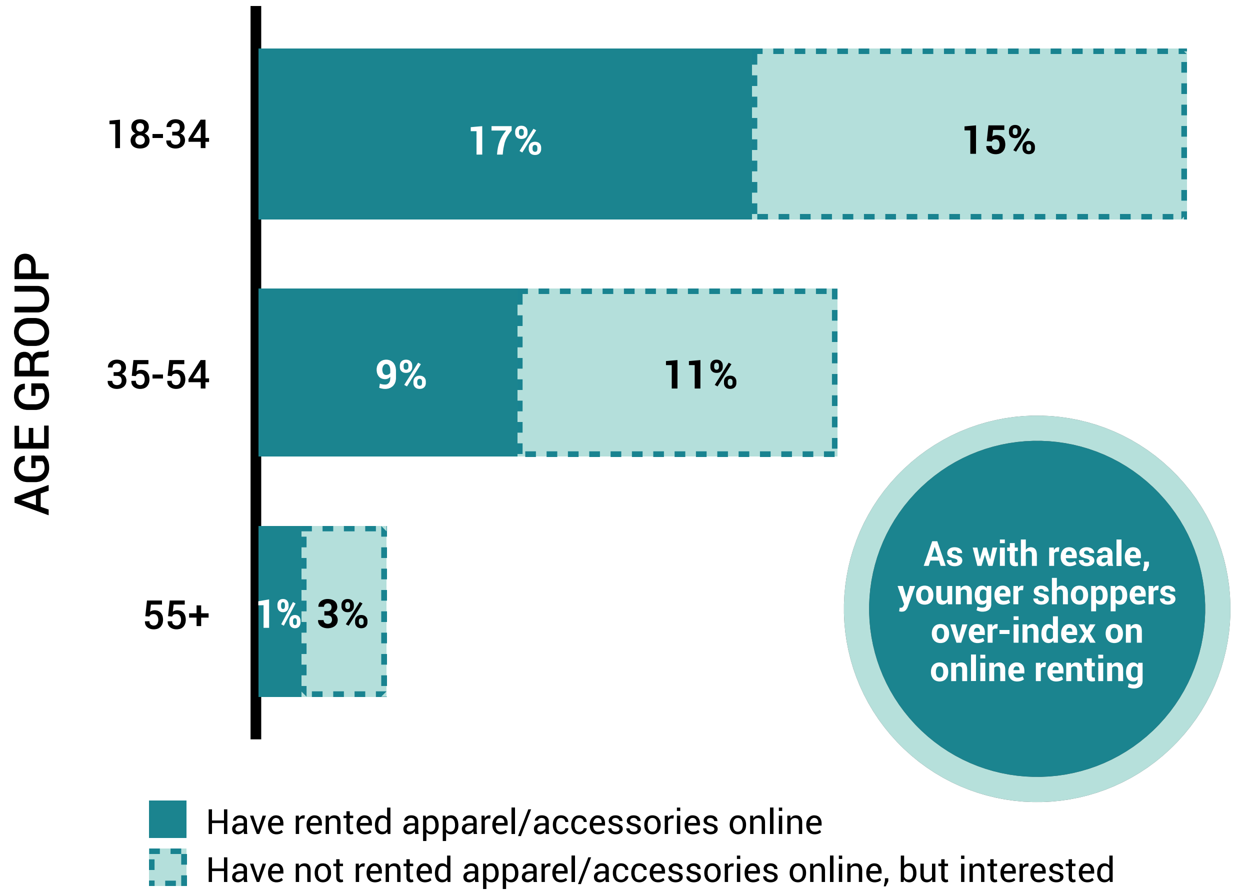
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company press releases, Company sites

RE-COMMERCE

Re-commerce: Renting online will follow – a growing set of legacy and emerging players will launch clothing rental services

CLOTHING AS A SERVICE

ONLINE APPAREL/ACCESSORY RENTAL ACTIVITY BY AGE GROUP, U.S., 2019, % ADULTS AGED 18+



As with resale, younger shoppers over-index on online renting

EXAMPLE ONLINE COMPANIES OFFERING APPAREL/ACCESSORY RENTAL SERVICES

Digital-Native Rental Services

- ARMARIUM
- RENT THE RUNWAY
- ARMOIRE
- HAVERDASH
- LE TOTE
- gwynnie bee
- FASHIONPASS™
- THE MR. & MS. COLLECTION
- nuuly
- Rainey's Closet

Traditional Brands

- AMERICAN EAGLE
- ANN TAYLOR
- BANANA REPUBLIC
- EXPRESS
- FASHION TO FIGURE
- LOFT
- NEW YORK & COMPANY
- REBECCA TAYLOR
- SCOTCH & SODA
- VINCE.

Traditional Multi-Brand Retailer

- bloomingdale's

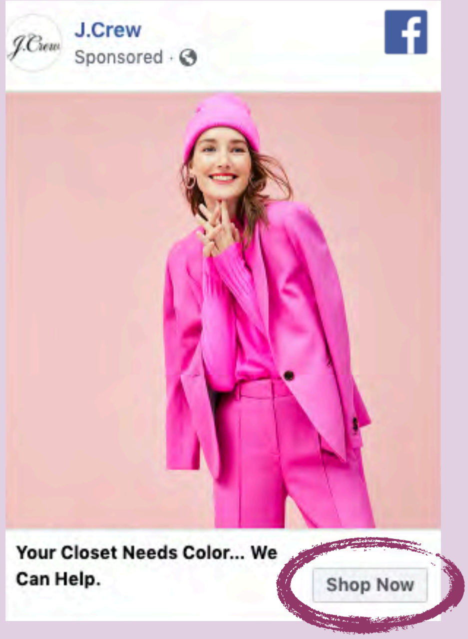
activate consulting

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company press releases, Company sites

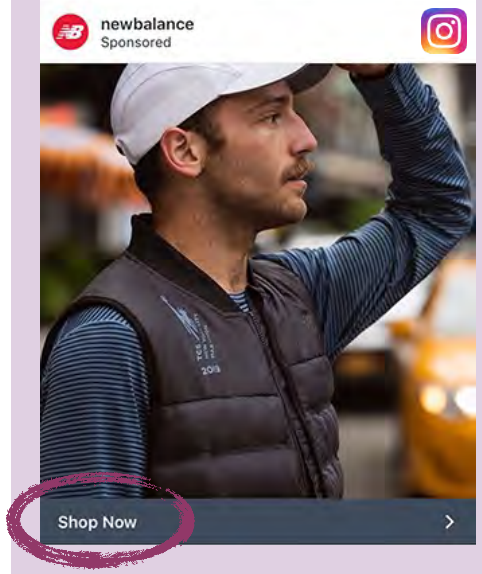
SOCIAL COMMERCE

In social commerce, referral through social media will continue to expand as platforms improve on the shoppable experience

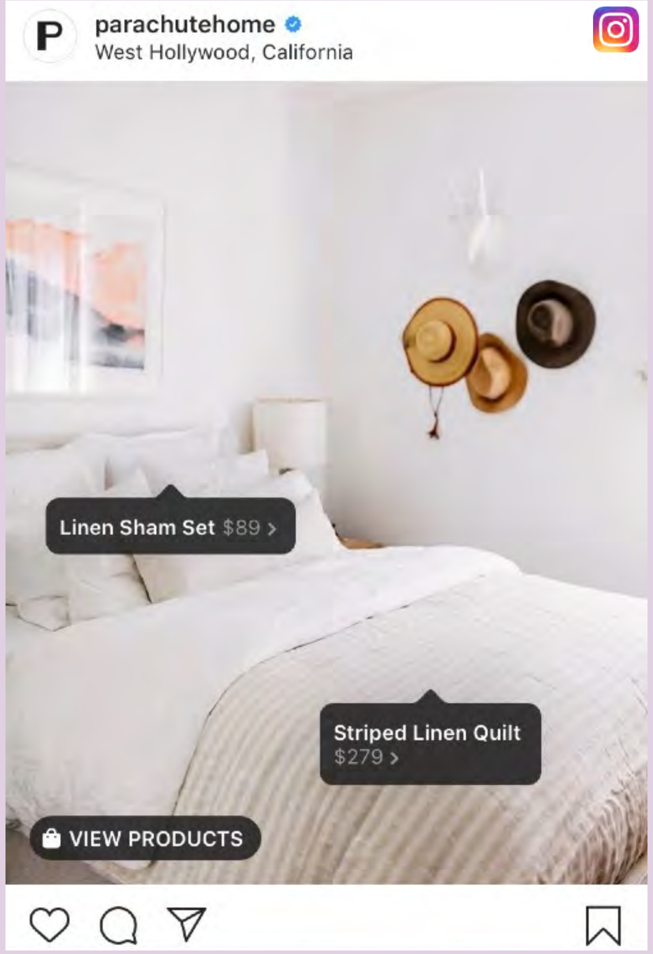
SHOPPABLE ADS



Your Closet Needs Color... We Can Help.

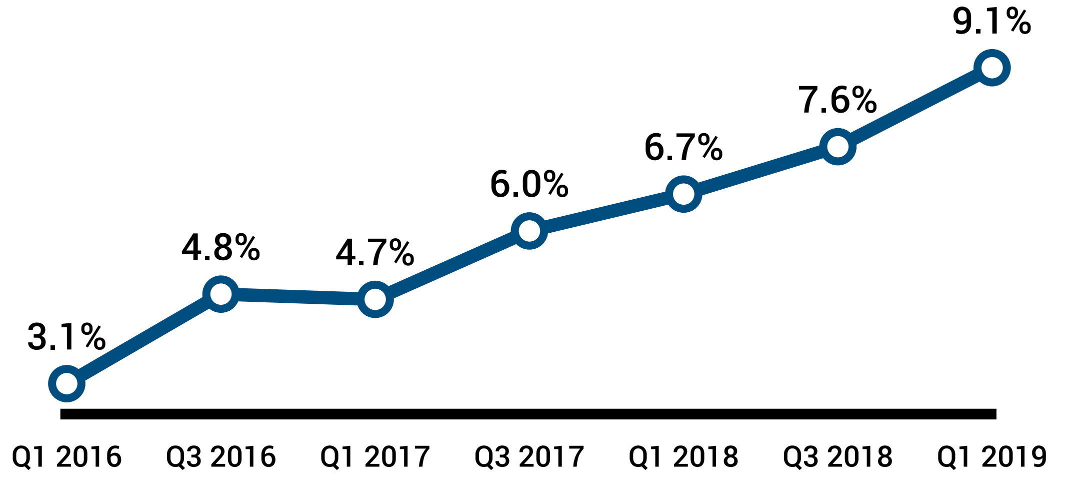


SHOPPABLE POSTS

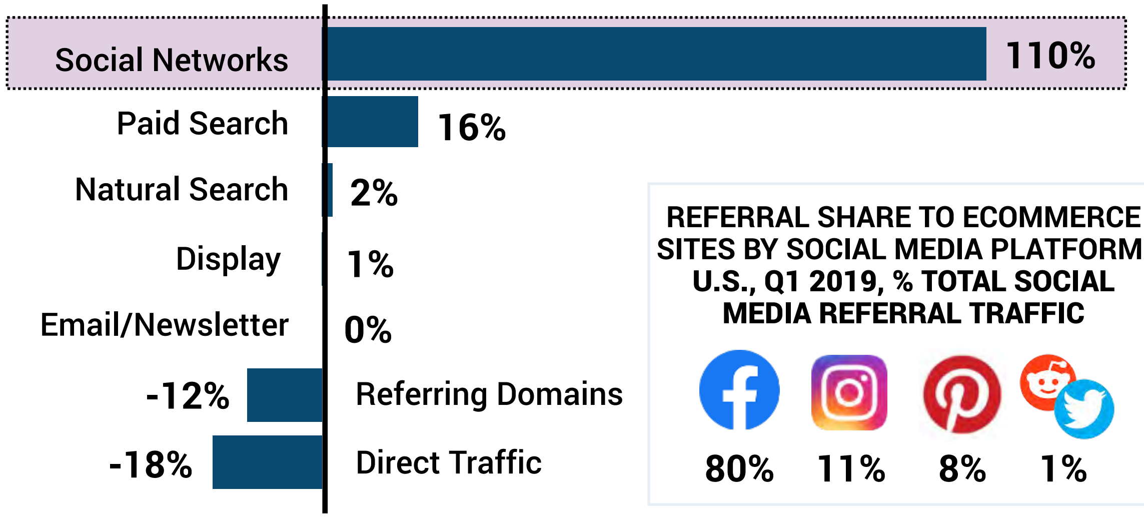


Selecting the product tag leads users to a **product page**, through which they can opt to visit the brand's native website or – if Instagram Checkout is enabled – purchase directly through the social media platform

SHARE OF TOTAL REFERRAL TRAFFIC TO ECOMMERCE SITES FROM SOCIAL MEDIA PLATFORMS, U.S., Q1 2016-Q1 2019, % TOTAL REFERRAL TRAFFIC



GROWTH IN VISIT SHARE TO RETAIL SITES BY LAST TOUCH CHANNEL, U.S., Q3 2016 VS. Q3 2018, % GROWTH



REFERRAL SHARE TO ECOMMERCE SITES BY SOCIAL MEDIA PLATFORM, U.S., Q1 2019, % TOTAL SOCIAL MEDIA REFERRAL TRAFFIC

Facebook	Instagram	Pinterest	Reddit / Twitter
80%	11%	8%	1%

activate consulting

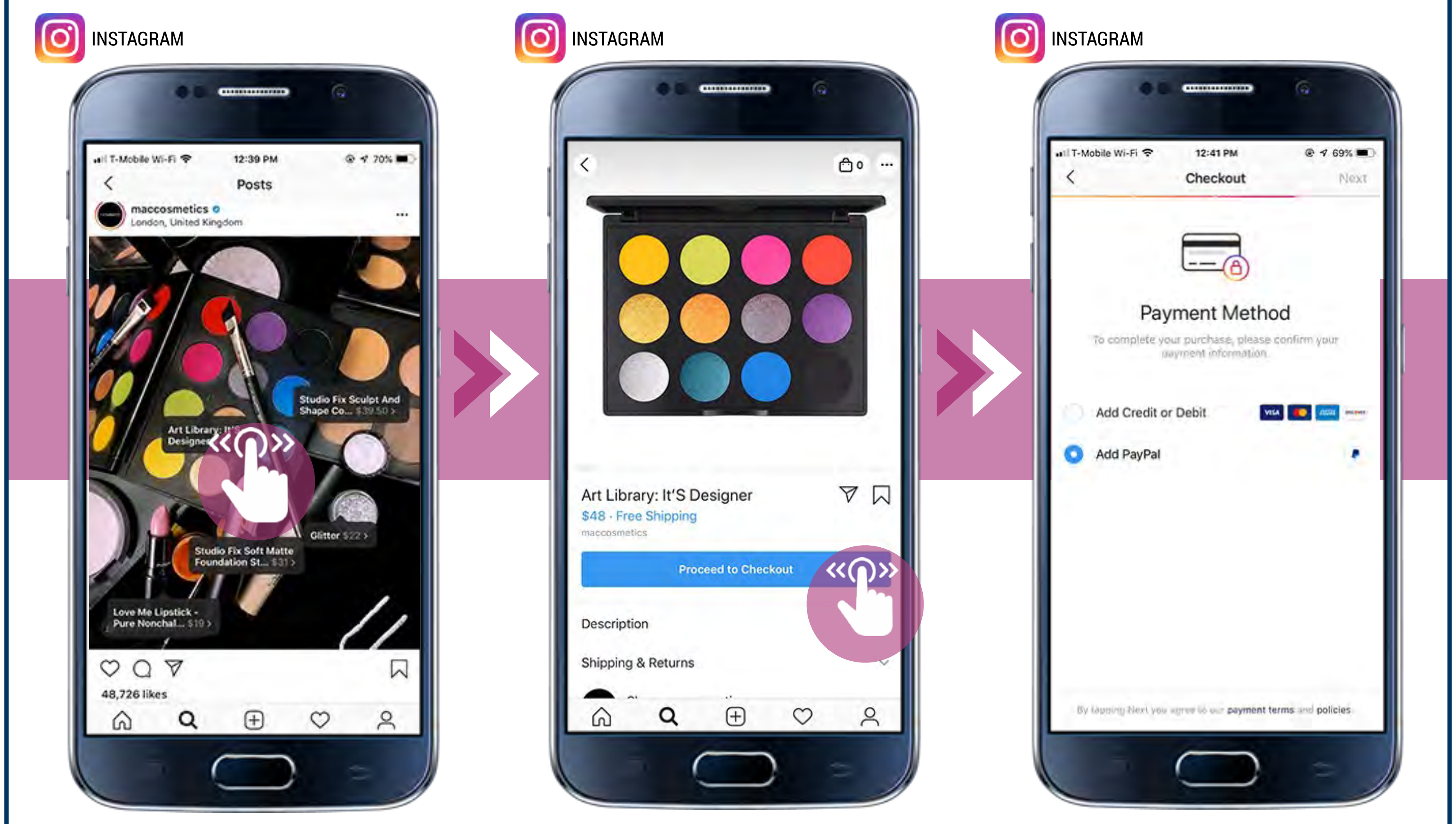
Sources: Activate analysis, Adobe Digital Insights, Company social media accounts, eMarketer

Direct checkout through social networks is the new frontier; we expect the functionality will be available on all major platforms

Instagram CHECKOUT

Launched March 2019

Users can **view** an item, **select** the specifications (e.g. size, color), and **check out** within the Instagram app



To complete your purchase, please confirm your payment information.

By tapping Next you agree to our payment terms and policies

EXAMPLE BRANDS USING INSTAGRAM CHECKOUT

LEGACY BRANDS

ZARA
HUDABEAUTY
MAC
DR. BARBARA STURM
adidas
NYX PROFESSIONAL MAKEUP
REVOLVE
MK MICHAEL KORS
Oscar de la Renta

D2C BRANDS

KKW BEAUTY
COLOURPOP
Outdoor Voices
OUAI HAIRCARE
WARBY PARKER

Sources: Activate Analysis, Business Insider, Company sites, Company social media accounts, Forbes, Marketing Land

Above all trends, physical will be key to building a sustainable retail model – even online-native D2C brands are expanding into brick & mortar through a broad variety of models

EXAMPLE D2C BRAND EXPANSION INTO PHYSICAL

		PRODUCT CATEGORY				
MODEL	**DESCRIPTION**	**GROCERY**	**BEAUTY AND PERSONAL CARE**	**FURNITURE AND HOME**	**JEWELRY**	**APPAREL, SHOES, AND ACCESSORIES**
PERMANENT BRICK & MORTAR	Long-term standalone physical store	DIRTYLEMON®	CANDID™	PARACHUTE	BRILLIANT EARTH	INDOCHINO
TEMPORARY BRICK & MORTAR (POP-UPS)	Short-term standalone physical store used to: • test potential for brick & mortar • capitalize on a specific trend or event (e.g. holiday, new product launch)	Recess	BEAUTYCOUNTER®	dormify®	THE LAST LINE	ROCKETS OF AWESOME
TEMPORARY SHOP-IN-SHOP	Short-term physical store within another retailer's physical store (e.g. Pop-In@Nordstrom)	kencko	goop	Casper	STONE AND STRAND	AWAY
WHOLESALE BRICK & MORTAR PARTNERSHIP	Partnership in which brand sells inventory to another retailer who then distributes the product via their physical stores	RXBAR®	KKW BEAUTY	leesa™	DANIEL WELLINGTON	Reformation

Sources: Activate analysis, Adweek, Business of Fashion, CNBC, Company press releases, Company sites, Company social media accounts, Digital Commerce 360

As eCommerce evolves, physical will evolve with it, creating new retail concepts and technology to enhance the in-store experience

NEXT GENERATION RETAIL MODEL

The new wave of retail concepts will include a set of **brick & mortar stores hosting an ever-rotating curation of primarily online-native D2C brands**

These retailers provide emerging brands with a **low-risk avenue to test physical**, offering:

- Short-term leases
- Swift shop launch
- Shop design and staffing teams
- Complete and transparent access to performance metrics
- Collaborative event space (e.g. for classes, art exhibits, launch parties, speaker series)

EXAMPLES

Showfields features an **immersive theater and art experience** through which shoppers are invited to test and interact with all products

Neighborhood Goods has a **restaurant and social space that hosts events** (e.g. panels, workshops) to build community

EXAMPLE RETAILERS LEVERAGING TECHNOLOGY TO ENHANCE IN-STORE EXPERIENCE

Electronic Shelf Labels	BEST BUY THE HOME DEPOT	• Best Buy has installed electronic shelf labels to **synchronize pricing across digital and physical channels** • The Home Depot uses electronic shelf labels in its appliance department to **incorporate customer reviews and item specifications**
Mobile Integration	Kroger NIKE	• The Kroger app enables shoppers to **create shopping lists, view purchase history, and locate items in-store** • The Nike app's In-Store Mode allows customers to **book fitting rooms, request items to try on,** and scan QR codes on mannequins to **identify the modeled products**
Scanning Robots	Walmart Stop&Shop	• Walmart has rolled out shelf-scanning robots to **identify low stock levels, incorrect price listings, missing labels, and misplaced items** • Stop & Shop has debuted robotic assistants to **monitor for potential hazards** (e.g. broken or spilled item), **stockouts, and pricing issues**
Augmented Reality / Virtual Reality	SEPHORA Neiman Marcus	• Sephora has launched Virtual Artists, an **augmented reality trial tool** • Neiman Marcus has installed **smart mirrors** for customers to **virtually try on items**

activate consulting

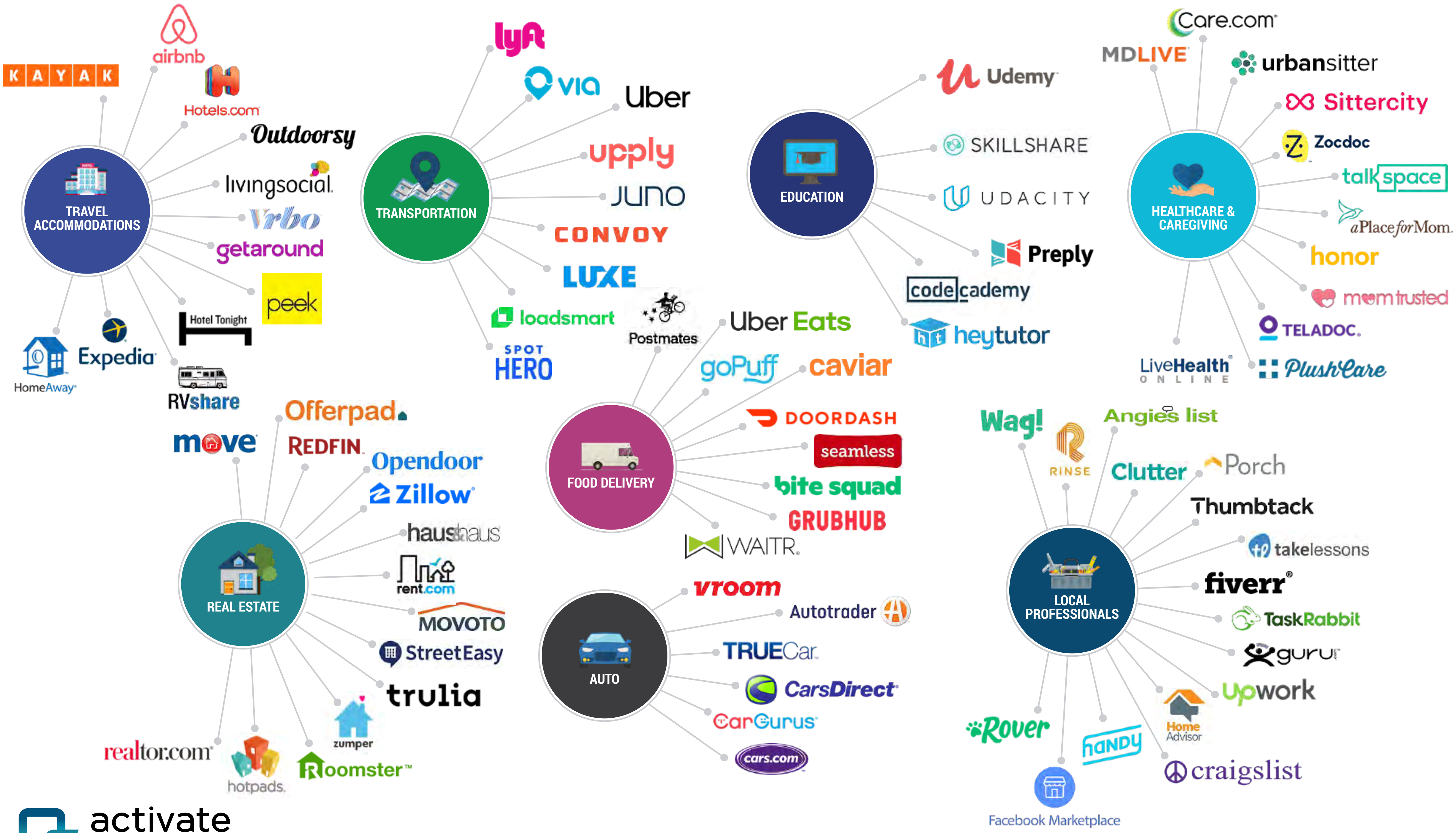
Sources: Activate analysis, Company filings, Company press releases, Company sites, Digiday, Essential Retail, Fast Company, Glossy, The New Food Economy, TechCrunch

CONTENTS

activate consulting

Digital marketplaces are changing the dynamics in practically every major services industry

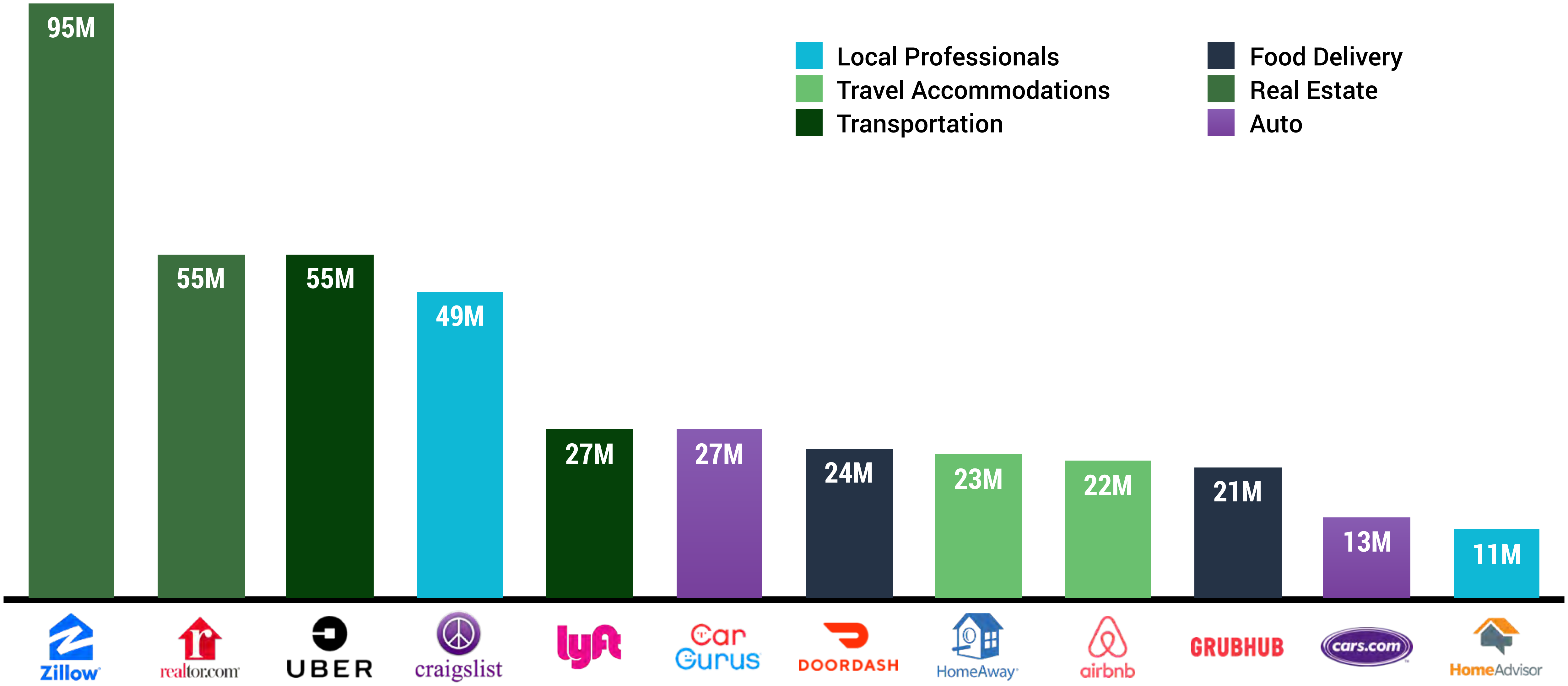
DIGITAL MARKETPLACE LANDSCAPE



Sources: Activate analysis, Company sites

The major digital marketplaces have reached significant scale

PEAK MONTHLY ACTIVE USERS BY DIGITAL MARKETPLACE[1], U.S., SEPT. 2018-AUG. 2019, MILLIONS USERS

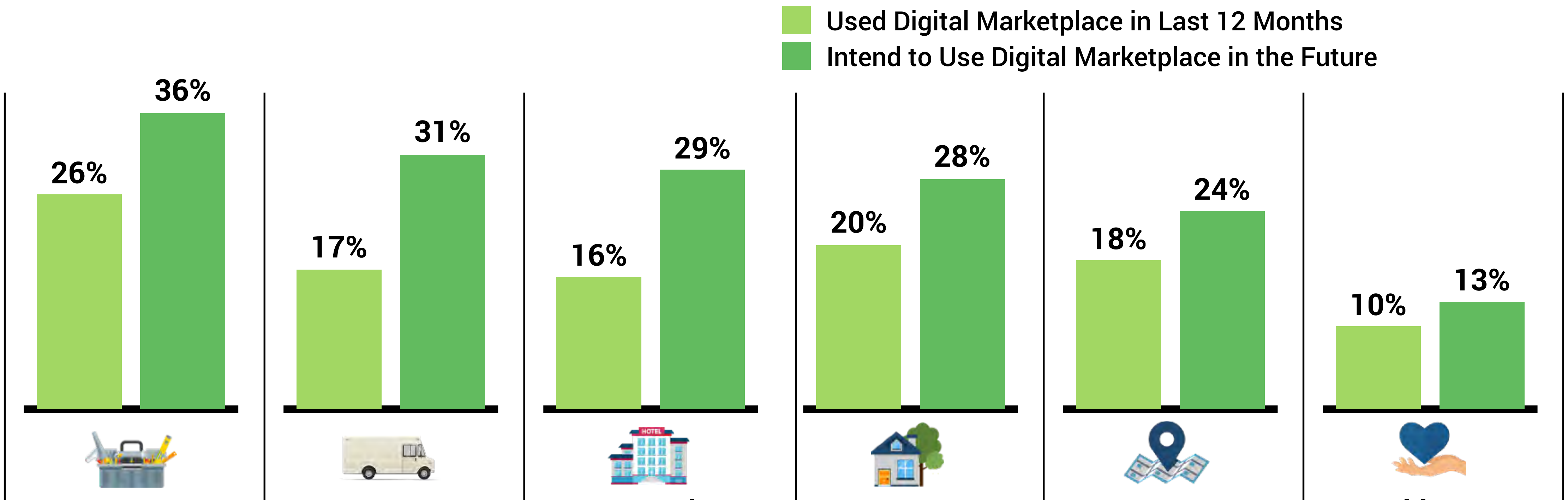


activate consulting

1. Numbers reflect maximum MUV in the trailing 12 months. Measured across app, desktop, and mobile web.
Sources: Activate analysis, Comscore

Digital marketplace adoption will grow as an increasing share of consumers report future intent to use top offerings

USAGE[1] OF TOP DIGITAL MARKETPLACES BY VERTICAL AND TIME FRAME, U.S., 2019, % ADULTS AGED 18+



	Local Professionals	**Food Delivery**	**Travel Accommodations**	**Real Estate**	**Transportation**	**Healthcare & Caregiving**
Example Services Offered	Find/book freelancers for creative, technical, and/or professional services	Order food on-demand for immediate/ same-day delivery	Find/book lodging, vehicle rental, and/or vacation activities	Find home/apartment to buy/rent for at least 1 year	Find/book black cars and/or rideshares	Find/book visits with medical professionals and/or caregivers
Major Marketplaces	craigslist Angie's list fiverr Thumbtack	Uber Eats GRUBHUB DOORDASH Postmates	airbnb RVshare TURO HomeAway	Zillow Opendoor REDFIN trulia	Uber lyft via	Care.com honor Zocdoc

---

1. Usage asked for targeted set of major marketplaces in each vertical, including the major marketplaces listed and others. Marketplaces defined as major if they ranked highly in either monthly website traffic or app downloads within their segments.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Digital marketplaces are driving faster growth than the service industries they serve

SERVICE MARKETPLACE MODEL

Connecting individual buyers with sellers, eliminating the need for intermediaries

TRAVEL ACCOMMODATIONS	Global 2018 Revenue	Global 2017-2018 Growth	VERTICAL GROWTH[1]
airbnb	$3.6B	▲40%	▲4%
HomeAway	$1.2B	▲29%	
Expedia[2]	$8.8B	▲11%	
Booking.com	$14.5B	▲15%	

FOOD DELIVERY	U.S. 2018 Revenue	U.S. 2017-2018 Growth	VERTICAL GROWTH[3]
Uber Eats	$780M	▲150%	▲6%
GRUBHUB	$1.0B[4]	▲47%	
WAITR	$69.3M	▲202%	

REAL ESTATE	U.S. 2018 Revenue	U.S. 2017-2018 Growth	VERTICAL GROWTH[5]
Zillow	$1.3B	▲24%	▲4%
REDFIN	$487M	▲32%	

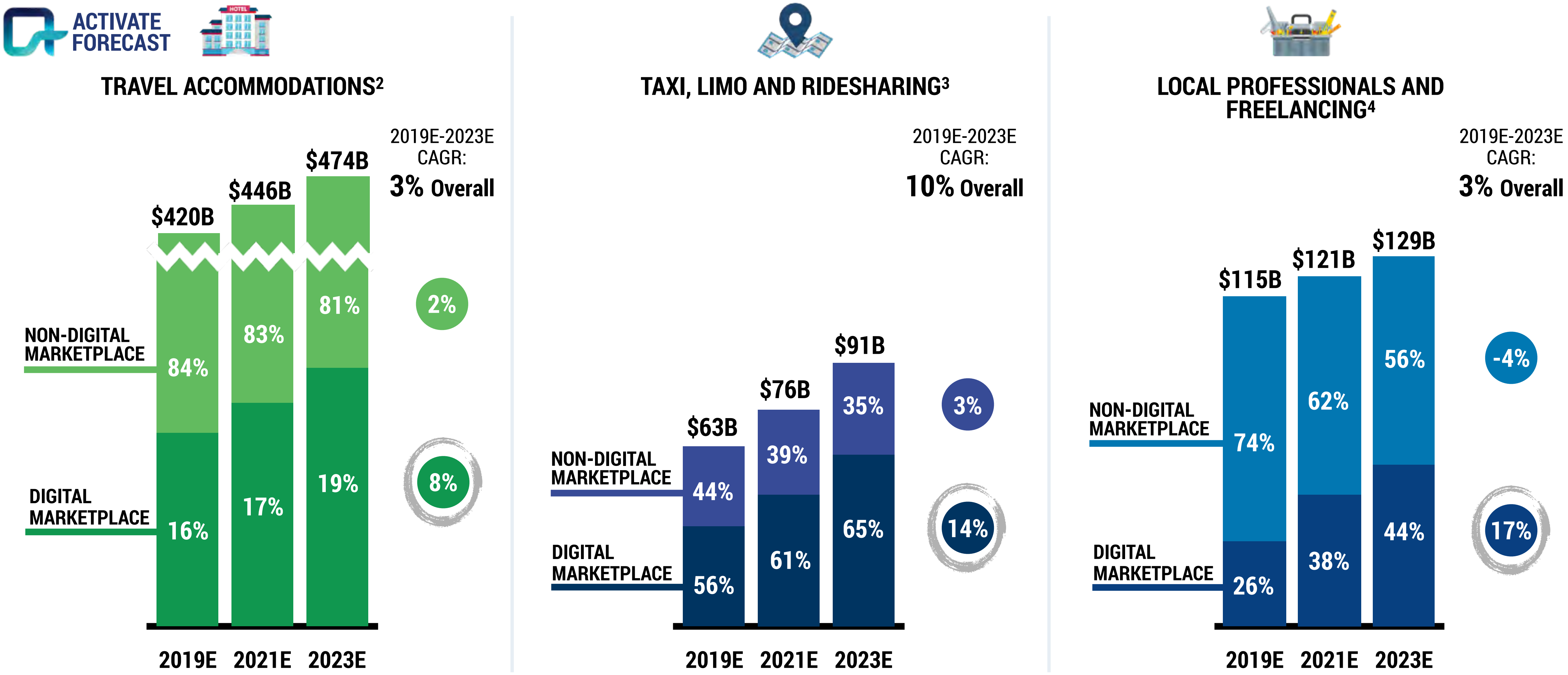
TRANSPORTATION	U.S. 2018 Revenue	U.S. 2017-2018 Growth	VERTICAL GROWTH[6]
Uber	$5.1B	▲34%	▲3%
lyft	$2.2B[7]	▲100%	

HEALTHCARE & CAREGIVING	U.S. 2018 Revenue	U.S. 2017-2018 Growth	VERTICAL GROWTH[8]
Care.com	$173M	▲10%	▲3%

1. 2018 growth for the global Travel and Tourism Sector as defined by the World Travel and Tourism Council. 2. Only includes Expedia online travel agency revenue. 3. 2015-2018 CAGR for combined Couriers, Messengers, and Local Delivery U.S. Census Bureau Sector and U.S. restaurant delivery sales. 4. Also includes London revenue. 5. 2013-2018 CAGR for the Real Estate and Rental and Leasing U.S. Census Bureau Sector. 6. 2013-2018 CAGR for the Taxi and Limousine U.S. Census Bureau Sector. 7. Also includes Canada revenue. 8. 2013-2018 CAGR for the Healthcare and Social Assistance U.S. Census Bureau Sector.
Sources: Activate analysis, Company filings, IBISWorld, Morgan Stanley, U.S. Census Bureau, World Travel and Tourism Council

Even digital marketplaces within highly penetrated industries will continue to grow

ANNUAL GROSS TRANSACTION VOLUME DRIVEN BY MARKETPLACES BY VERTICAL[1], U.S., 2019E-2023E, USD BILLIONS

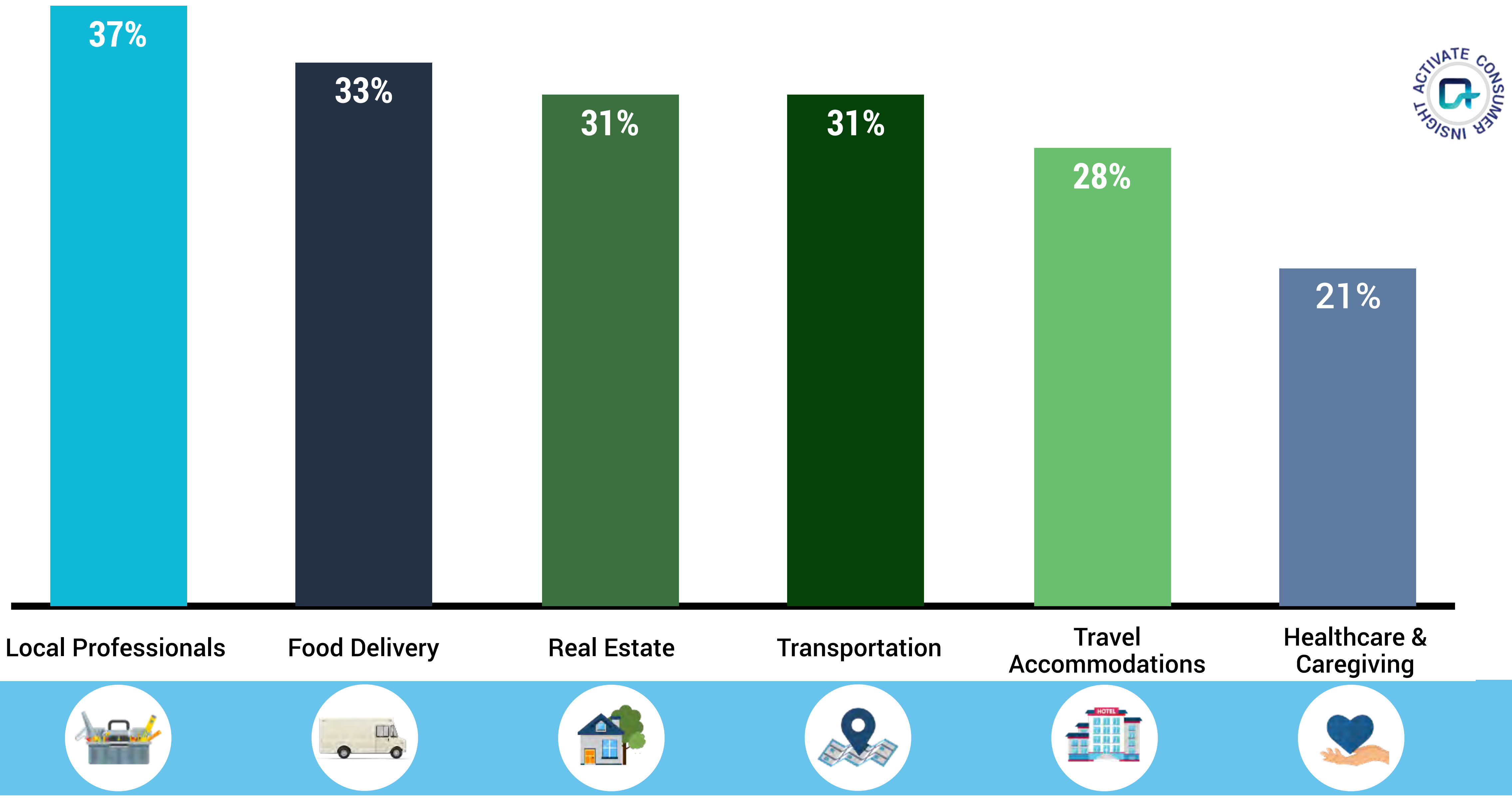


1. Transactions initiated by digital marketplace. Actual payment exchange may take place on or off the platform. 2. Overall vertical includes Traveler Accommodations, Passenger Air Transportation, and Travel Arrangement and Reservation Services U.S. Census Bureau Sectors. Digital segment includes hotel, flights, private accommodations (e.g. Airbnb), package holidays, tour operators, and travel agencies. Includes both consumer and business travel. 3. Includes Taxi and Limousine U.S. Census Bureau Sector and ride-hailing services. 4. Includes any income earned by freelancers in creative, technical, or professional services.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company filings, Company press releases, Comscore, eMarketer, Euromonitor, Forbes, Hostfully, International Air Transportation Association, IBIS, Morgan Stanley, National Restaurant Association, Second Measure, Skift Research, Statista, Trekksoft, UBS, U.S. Bureau of Economic Analysis, U.S. Bureau of Labor and Statistics, U.S. Census Bureau, Wells Fargo

Younger consumers will consistently drive the usage of digital marketplaces

SHARE OF ADULTS AGED 18-34 WHO HAVE USED MAJOR DIGITAL MARKETPLACES IN THE LAST YEAR BY VERTICAL[1], U.S., 2019, % ADULTS AGED 18-34



Local Professionals	37%
Food Delivery	33%
Real Estate	31%
Transportation	31%
Travel Accommodations	28%
Healthcare & Caregiving	21%

ACTIVATE CONSUMER INSIGHT

activate consulting

1. Usage asked for targeted set of major marketplaces in each vertical. Marketplaces defined as major if they ranked highly in either monthly website traffic or app downloads.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Digital marketplaces meet fundamental consumer needs by centering their platforms on price transparency, trusted inventory, and simplicity

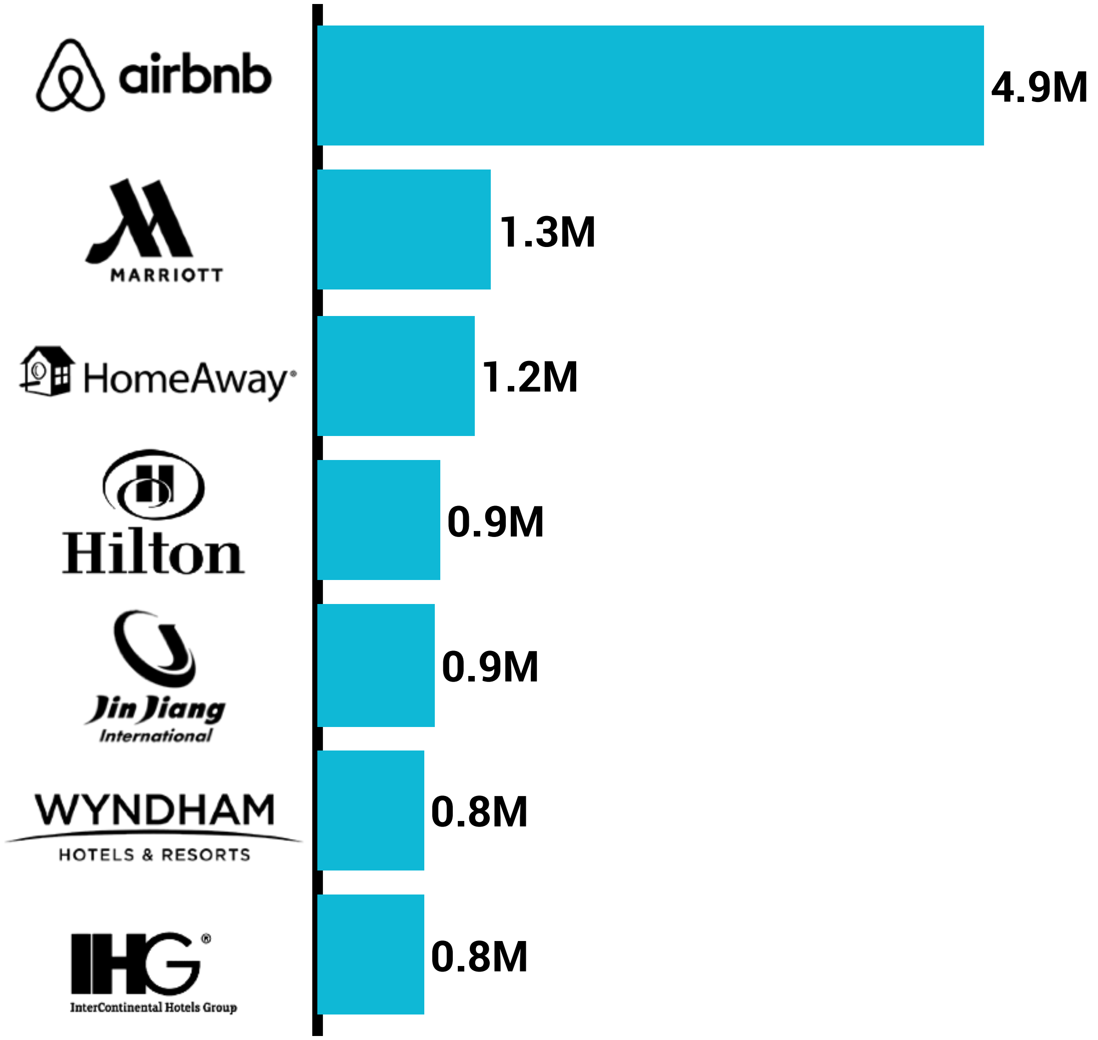
TOP REASONS TO USE A DIGITAL MARKETPLACE AMONG MARKETPLACE USERS BY VERTICAL, U.S., 2019

	1	2	3
FOOD DELIVERY	TIMELINESS	EASY SCHEDULING	FIND BEST PRICE
HEALTHCARE & CAREGIVING	TRUSTED PROVIDER	EASY SCHEDULING	HIGHEST QUALITY
LOCAL PROFESSIONALS	RATINGS & REVIEWS	FIND BEST PRICE	DISCOVERY
REAL ESTATE	RATINGS & REVIEWS	COMPARE OPTIONS	DISCOVERY
TRANSPORTATION	EASY SCHEDULING	FIND BEST PRICE	TRUSTED PROVIDER
TRAVEL ACCOMMODATIONS	FIND BEST PRICE	RATINGS & REVIEWS	EASY SCHEDULING

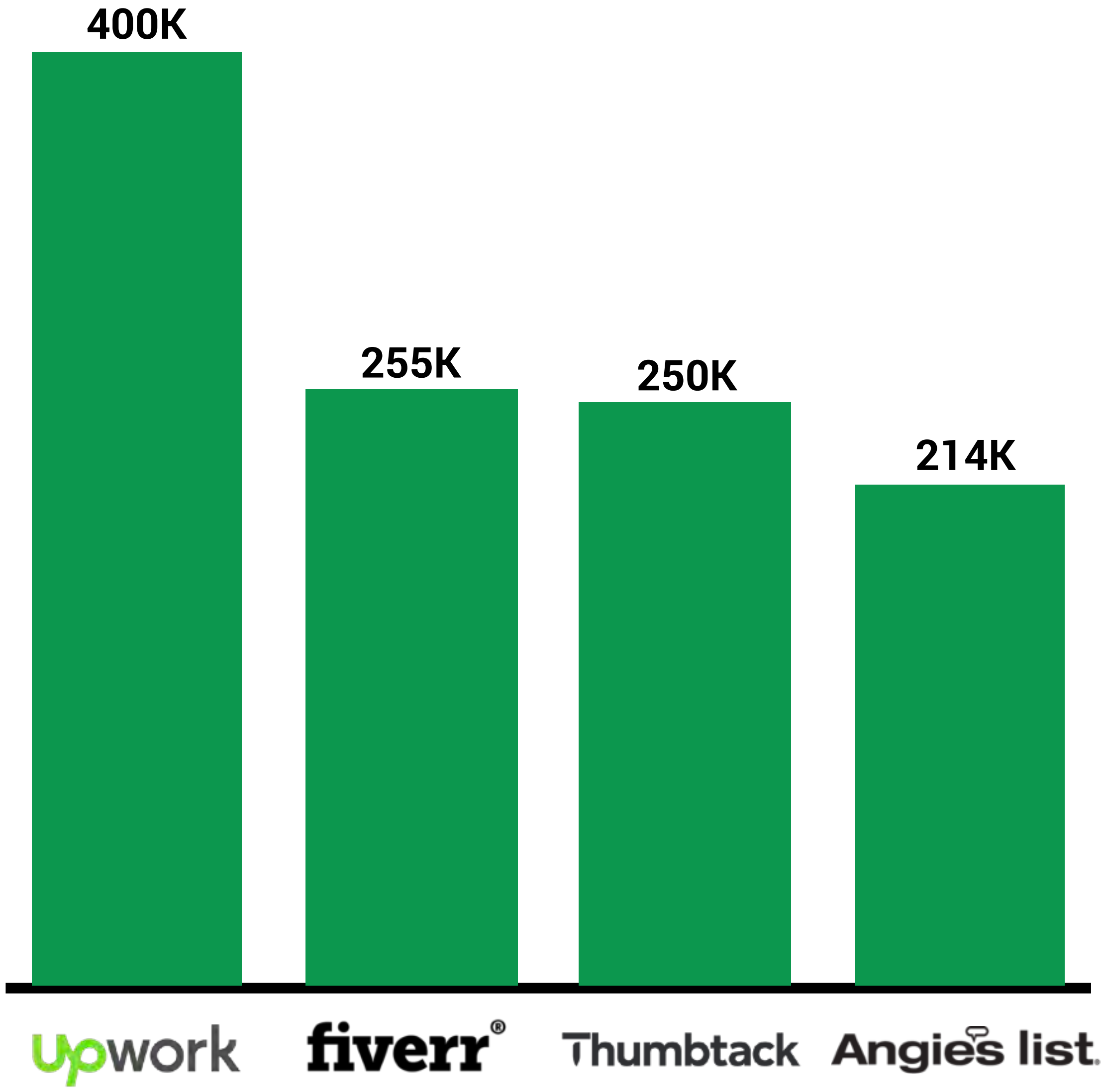
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Digital marketplaces are expanding their markets by creating entirely new inventory to rival the scale of incumbents

ROOM LISTINGS BY COMPANY, GLOBAL, Q1 2019[1], MILLIONS LISTINGS



ACTIVE SERVICE PROFESSIONALS BY COMPANY, GLOBAL, 2018[2], THOUSANDS PROFESSIONALS

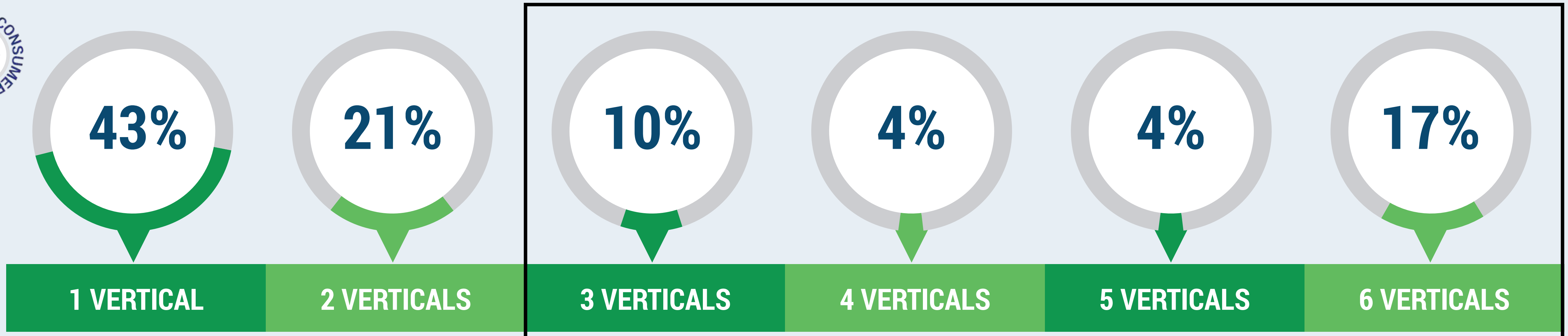


---

1. Airbnb figures are reported for the year end 2018.
2. Thumbtack figures are reported for the year end 2017.
Sources: Activate analysis, AirDNA, Company press releases, CBRE Hotels, STR, The Wall Street Journal

Once consumers use a digital marketplace in one vertical, they will use marketplaces in other verticals as well

NUMBER OF VERTICALS IN WHICH DIGITAL MARKETPLACES USED, U.S., 2019, % MARKETPLACE USERS AGED 18+[1]



1 out of 3

MARKETPLACE USERS USE MARKETPLACE BUSINESSES IN 3+ VERTICALS

VERTICALS EVALUATED »

- FOOD DELIVERY
- HEALTHCARE & CAREGIVING
- LOCAL PROFESSIONALS
- REAL ESTATE
- TRANSPORTATION
- TRAVEL ACCOMMODATIONS

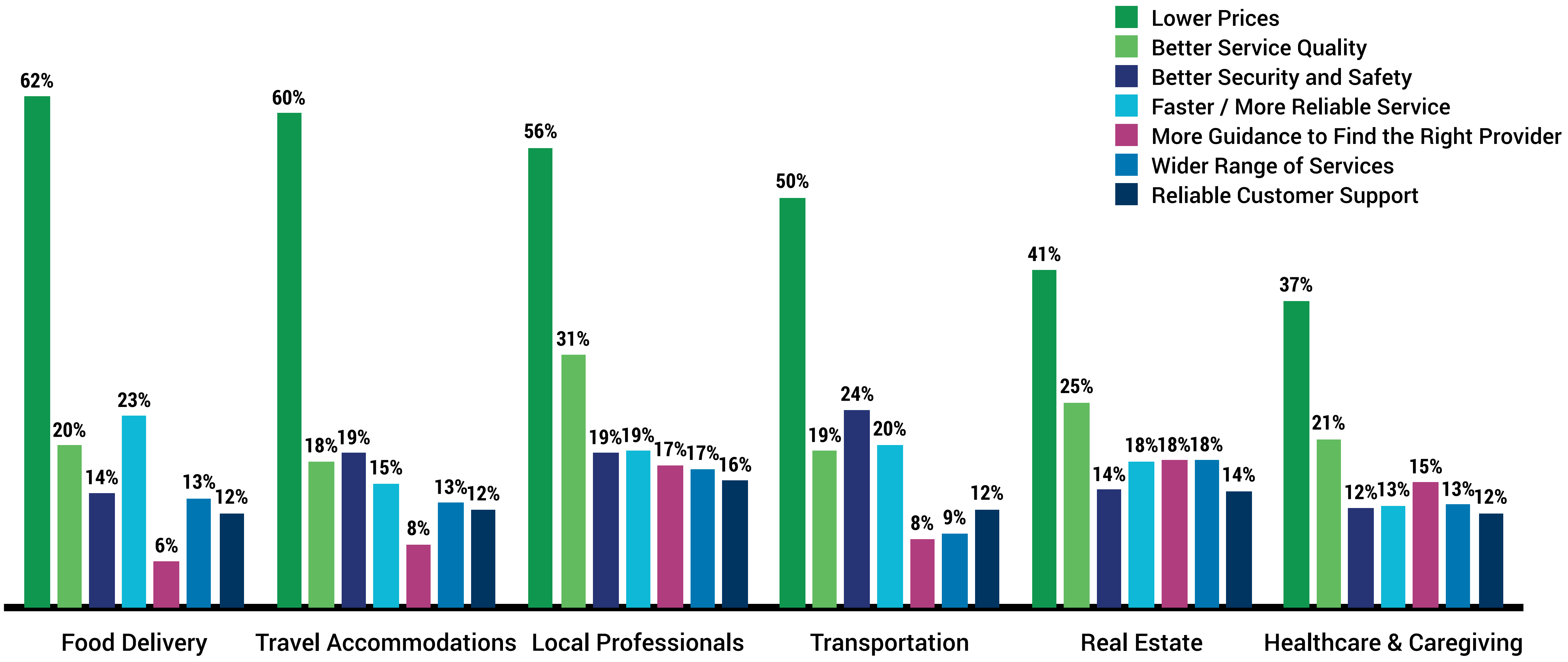
---

1. "Marketplace user" defined as individual who has used a digital marketplace within last 12 months. Figures do not sum because of rounding.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Digital marketplaces have room to grow by addressing consumer concerns around safety and other service-specific complexities

FACTORS THAT WOULD ENCOURAGE USAGE OF DIGITAL MARKETPLACE AMONG NON-ACTIVE USERS BY VERTICAL, U.S., 2019, % ADULTS AGED 18+ WHO CONSUME SERVICES WITHIN THE GIVEN VERTICAL[1]



TOP NON-PRICE-RELATED DRIVERS	Faster / More Reliable Service	Better Security and Safety	Better Service Quality	Better Security and Safety	Better Service Quality	Better Service Quality

---

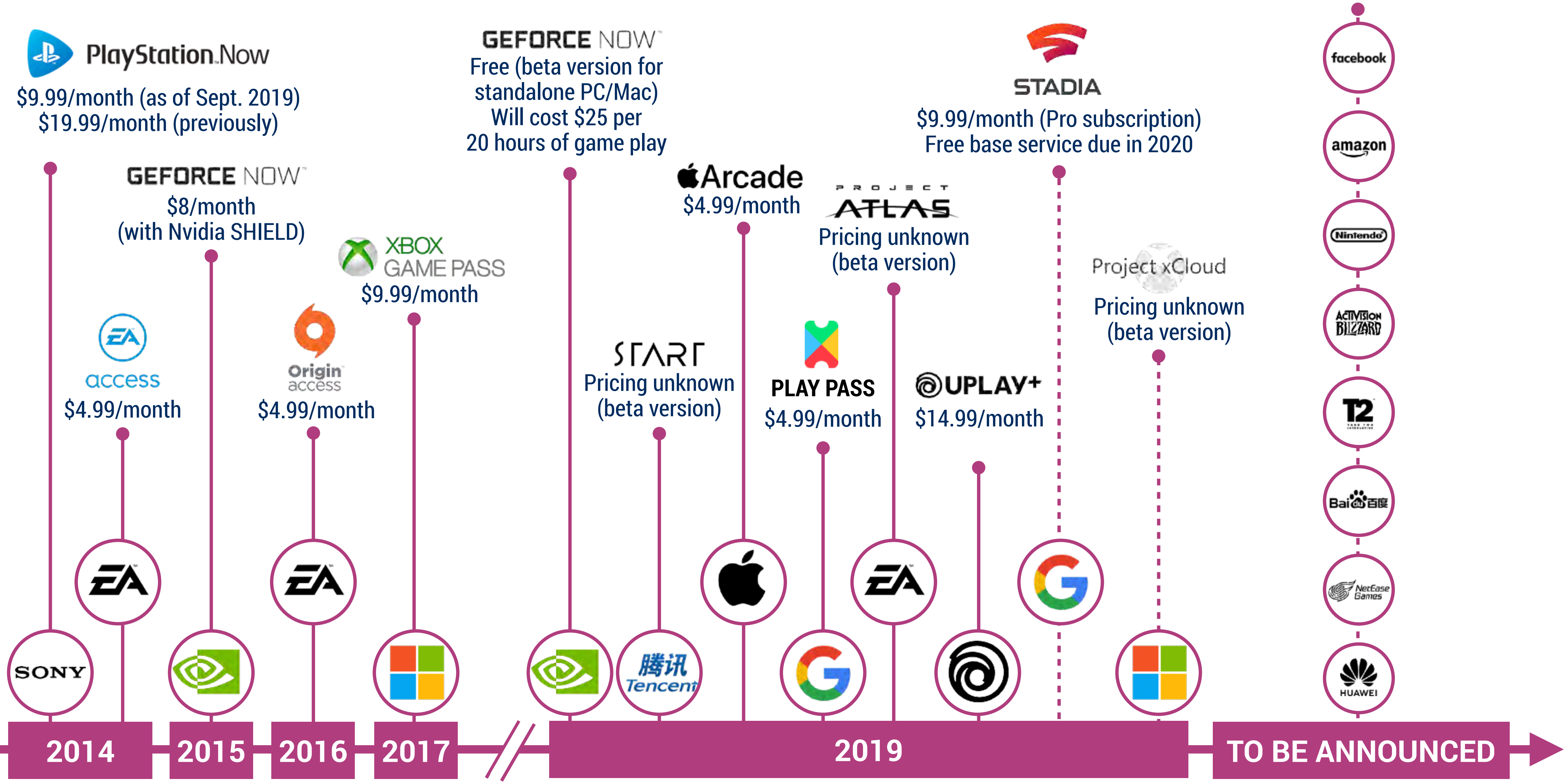
1. Among those who have not used a marketplace in the vertical in the last 12 months. Excludes those who are not familiar with the marketplaces in that vertical. Excludes those who do not use a service in this vertical. Easier ability to schedule and ability to communicate more with provider excluded because of lack of consumer interest.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

CONTENTS

The cloud video gaming wars have begun – every major gaming and technology company will race to develop their own cloud service to own the future of gaming

TIMELINE OF SUBSCRIPTION AND CLOUD GAMING SERVICE RELEASES[1], GLOBAL, 2014 ONWARDS



2014

SONY – **PlayStation Now**
$9.99/month (as of Sept. 2019)
$19.99/month (previously)

EA – **access**
$4.99/month

2015

GEFORCE NOW
$8/month
(with Nvidia SHIELD)

2016

EA – **Origin access**
$4.99/month

2017

XBOX GAME PASS
$9.99/month

2019

GEFORCE NOW
Free (beta version for standalone PC/Mac)
Will cost $25 per 20 hours of game play

腾讯 Tencent – **START**
Pricing unknown
(beta version)

Arcade
$4.99/month

PLAY PASS
$4.99/month

EA – **PROJECT ATLAS**
Pricing unknown
(beta version)

UPLAY+
$14.99/month

STADIA
$9.99/month (Pro subscription)
Free base service due in 2020

Project xCloud
Pricing unknown
(beta version)

TO BE ANNOUNCED

facebook
amazon
Nintendo
Activision Blizzard
T2
Baidu 百度
NetEase Games
HUAWEI

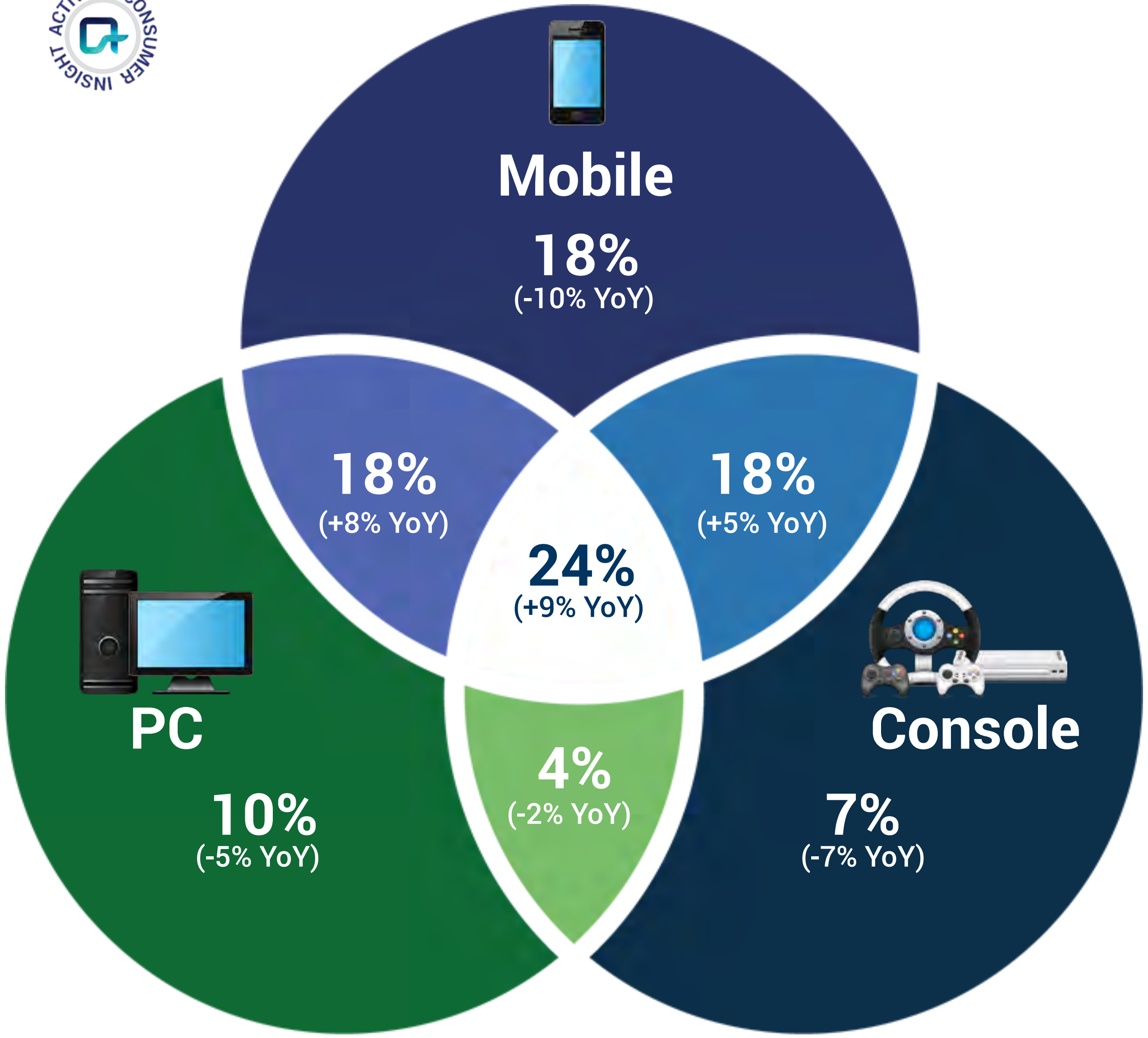
activate consulting

---

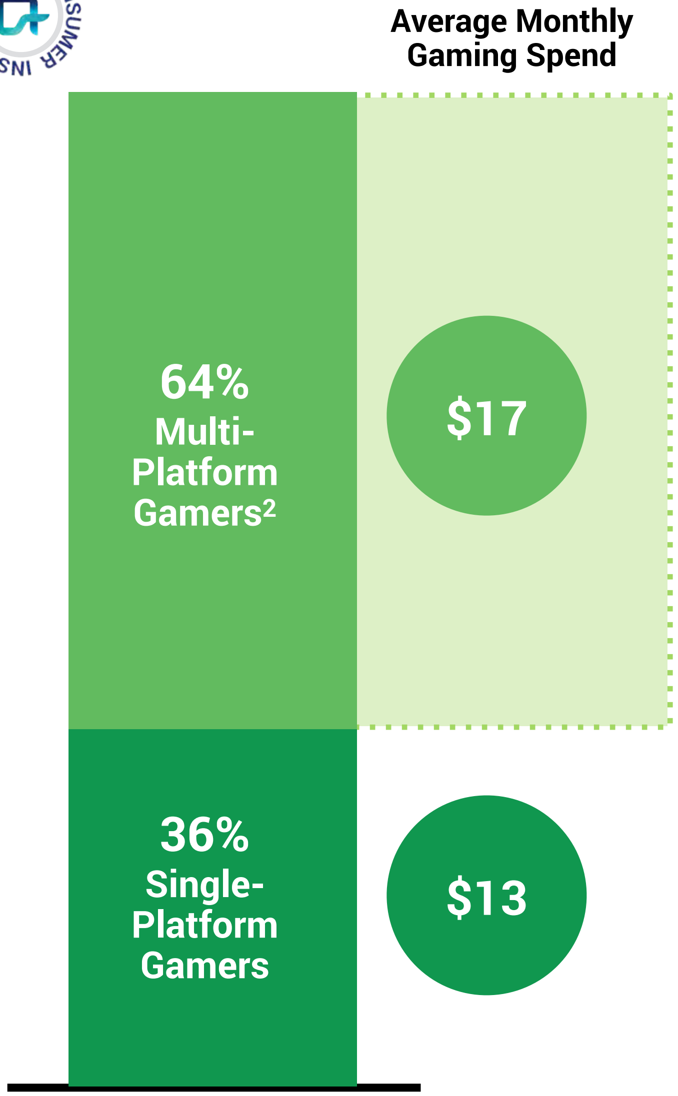
1. Positioning represents either product announcement or launch date.
Sources: Activate analysis, Company press releases, Company sites

Gaming will increasingly shift to multi-platform playing – a platform-convergent experience will cultivate Super User behaviors and drive growth

GAMER OVERLAP BY GAMING DEVICES USED[1], U.S., 2019, % GAMERS AGED 18+



GAMER BREAKDOWN BY MULTI-PLATFORM BEHAVIOR, U.S., 2019, % GAMERS AGED 18+ / USD



Multi-platform gamers spend **50%** more time watching gaming video content compared to single-platform gamers

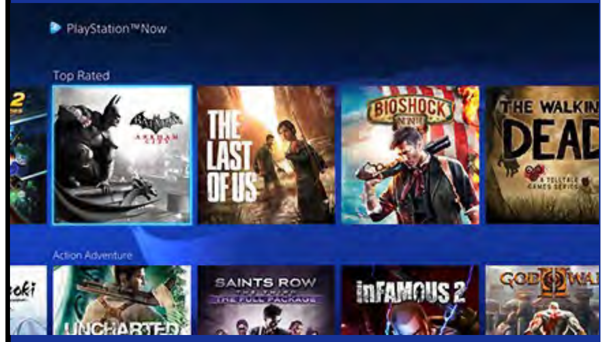
---

1. Values do not sum to 100% because of rounding. Analysis examines console (excluding handheld consoles), PC, and mobile (including tablets). 2. Includes any gamers that play across 2 or more devices.

Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

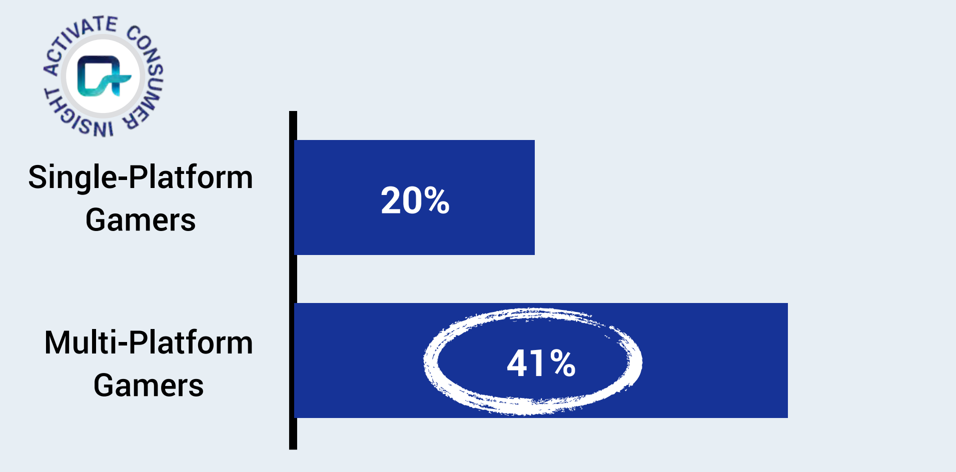
Top gaming companies will build subscription and console casting services to serve multi-platform gamers and Super Users

SUBSCRIPTION SERVICES



Pay monthly for unlimited access to a library of video game content

CURRENT USAGE OF GAME SUBSCRIPTION SERVICES BY GAMER TYPE, U.S., 2019, % GAMERS AGED 18+



MAJOR SERVICES

- PS NOW
- GAME PASS
- ACCESS
- UPLAY+
- PLAY PASS
- ARCADE

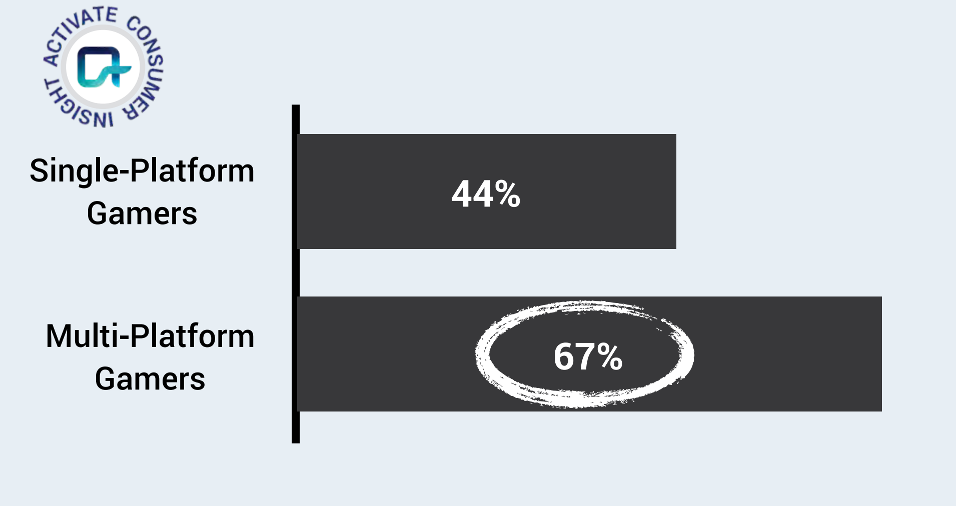
INDIE SERVICES

- UTOMIK
- HUMBLE MONTHLY

CONSOLE STREAMING (CASTING)[1]

Stream gameplay from host device (e.g. console) to another device (e.g. smartphone, PC)

PAST OR CURRENT USAGE OF CASTING SERVICES BY GAMER TYPE, U.S., 2019, % GAMERS AGED 18+



CURRENTLY AVAILABLE

- REMOTE PLAY
- STEAM LINK
- CONSOLE COMPANION
- GAMESTREAM
- RAINWAY
- REMOTR

ANNOUNCED

- XCLOUD
- STADIA
- ATLAS

Via Cloud Gaming Platform

---

1. Services that allow users to wirelessly stream game video feeds from a host device for display and use on other devices.

Sources: Activate analysis, Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870)

The winning cloud gaming services will be enabled by subscription access, improved connectivity, and cloud technology

ENABLER	IMPACT	RATIONALE
SUBSCRIPTION SERVICES 	**Centralized discovery and lower cost of switching between titles**	• Services from console providers, technology companies, and gaming publishers will create a single point of discovery and encourage gamers to play more titles • Gaming time spend will increase relative to other media formats
CONNECTIVITY 	**Premium titles and multiplayer gameplay available across all devices at high quality**	• Increased availability of high-speed networks provides the ability for gameplay to be streamed at high-quality from any location • Gamers will be able to compete across platforms, a model that the Battle Royale genre has already pioneered
CLOUD COMPUTING TECHNOLOGY 	**Controller hardware that can support gameplay without need for high-performance console or PC**	• Streaming technology will bring gaming PCs and consoles into the cloud, distributing games through low-cost hardware (e.g. streaming devices)

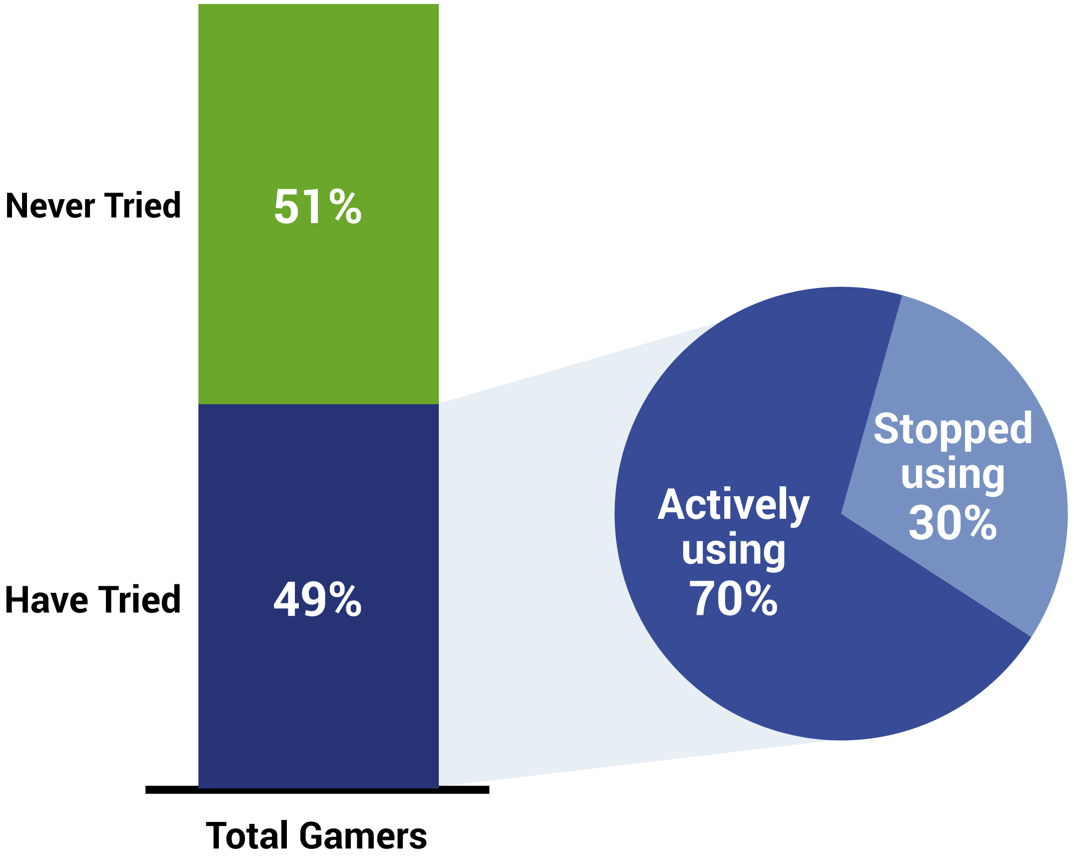
Source: Activate analysis

We expect massive growth ahead for cloud gaming and subscription services that provide access to a broad selection of top content

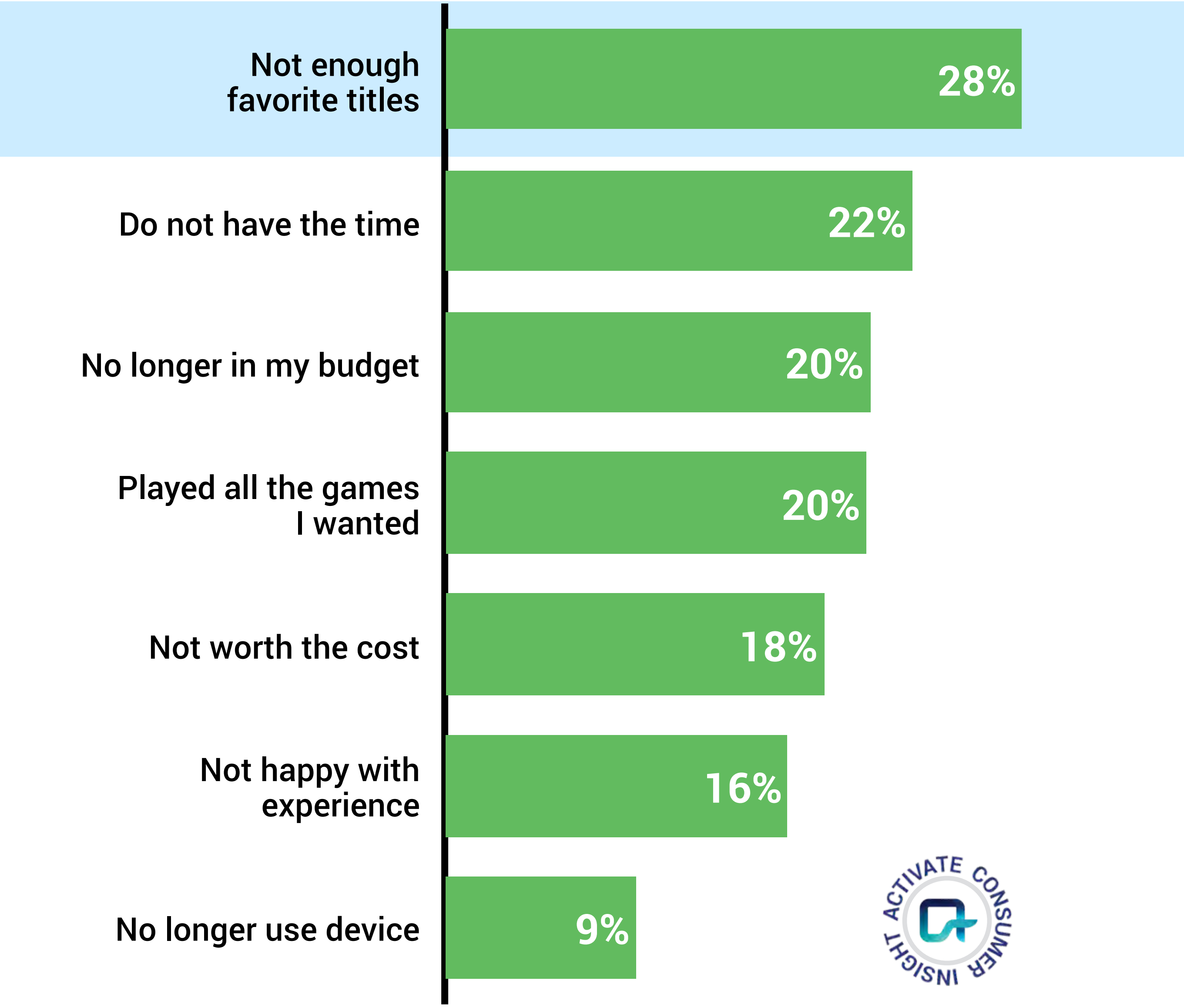
BREAKDOWN OF GAMERS BY USAGE ACROSS TOP GAME SUBSCRIPTION SERVICES, U.S., 2019, % GAMERS AGED 18+

TOP SUBSCRIPTION SERVICES:

PlayStation Now, XBOX GAME PASS, ONLINE, Origin access, EA access



PRIMARY REASONS FOR STOPPING GAME SUBSCRIPTION SERVICE USAGE[1], U.S., 2019, % GAMERS AGED 18+



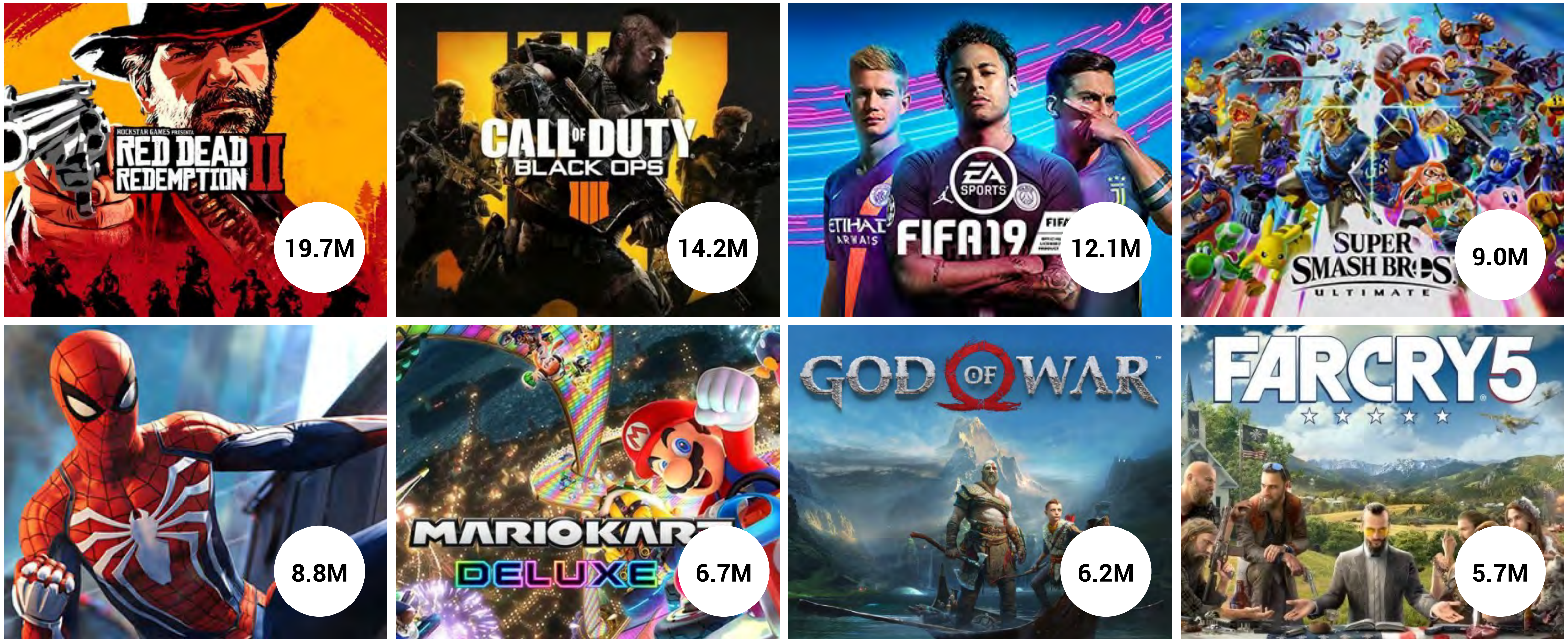
---

1. Primary reasons analyzed as weighted average across the top gaming subscription services.
Sources: Activate analysis, Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870)

Cloud gaming services will battle to offer the top titles and franchises that largely drive the industry

TOP SELLING CONSOLE VIDEO GAME TITLES[1], GLOBAL, 2018, MILLIONS UNIT SALES

THE 8 BEST SELLING TITLES IN 2018 MAKE UP OVER 40% OF SALES FROM THE TOP 100 TITLES[1]

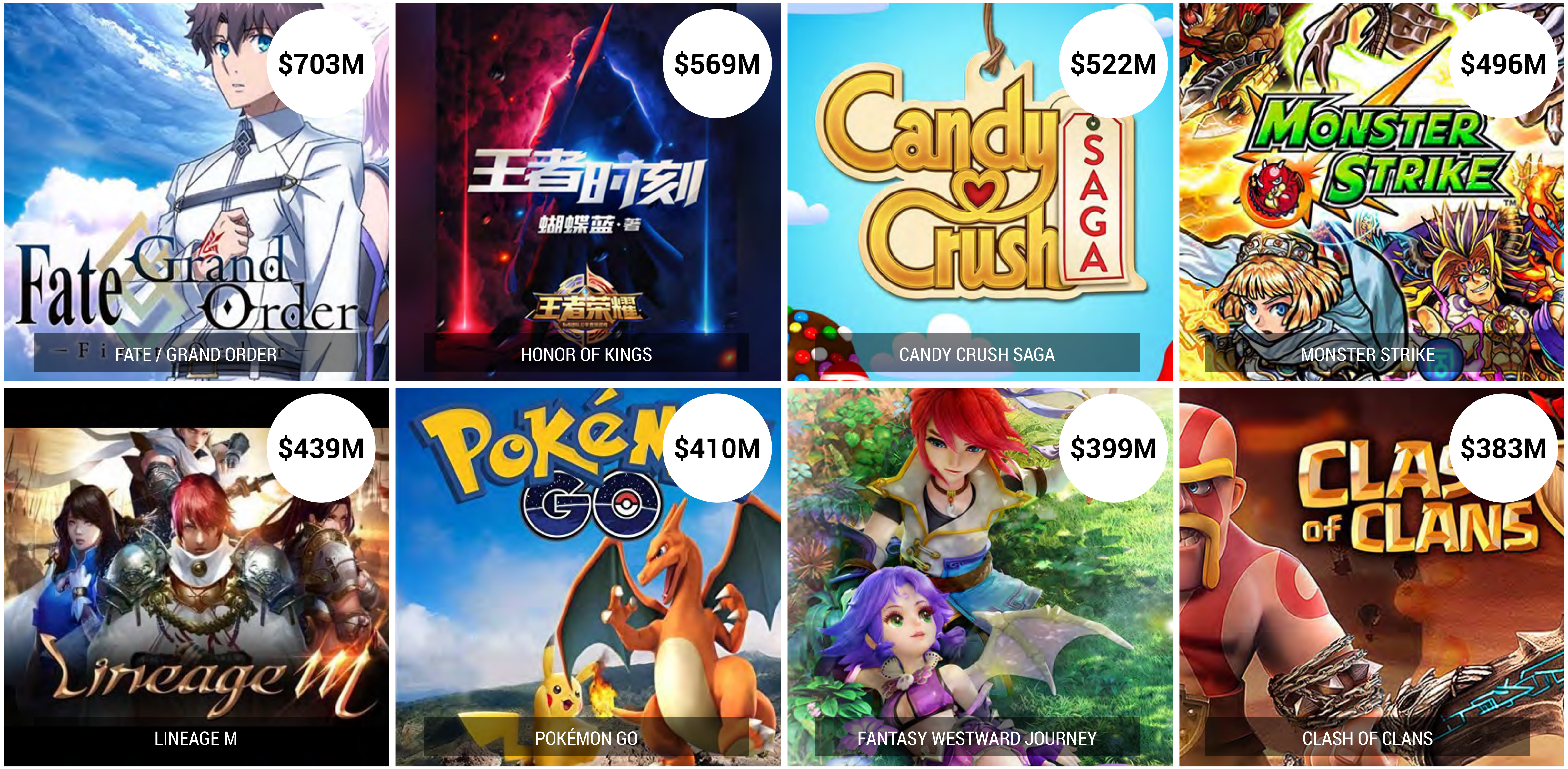


---

[1] Top titles based on unit sales, according to VGChartz. VGChartz data treats different SKUs of the same title as separate line items, so consolidated list contains only 78 distinct titles.
Sources: Activate analysis, VGChartz

Even on mobile formats, hit franchises prevail – these will also need to be included in cloud offerings

TOP EARNING MOBILE GAMES[1], GLOBAL, JAN.-AUG. 2019, MILLIONS USD

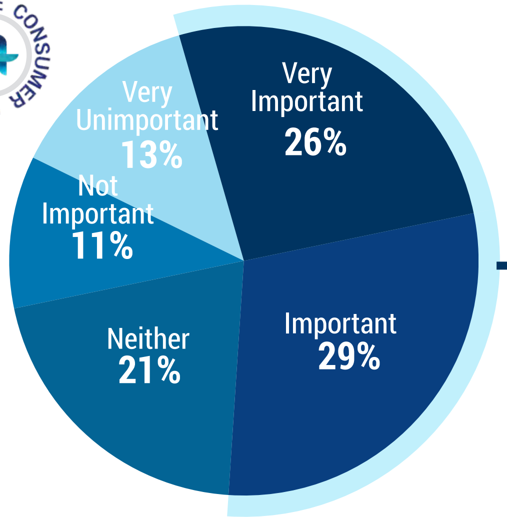


---

1. App stores analyzed include Google Play and App Store (iOS), and do not include third-party app stores.
Sources: Activate analysis, App Annie

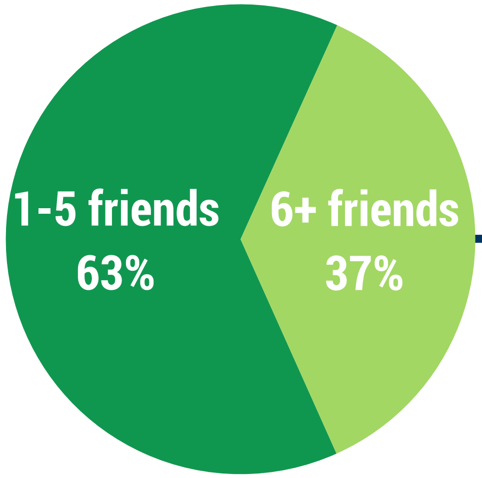
Gaming will be more connected than ever – Fortnite and other top cross-platform games have grown in popularity through their social elements and network effects

IMPORTANCE OF SOCIAL EXPERIENCE TO GAMERS[1], U.S., 2019, % GAMERS AGED 18+



More than half
of gamers find social elements important in their gaming experience

SHARE OF SOCIAL GAMERS[2] BY NUMBER OF FRIENDSHIPS MADE THROUGH ONLINE GAMING, GLOBAL, 2018, % GAMERS AGED 18+



Nearly 40%
of social gamers[2] report that they have made over 5 friends through gaming

TOP GAMES BASED ON PEAK CONCURRENT USERS, GLOBAL, JAN. 2019, MILLIONS PEAK CONCURRENT USERS

PC/Console/Mobile

PC/Console/Mobile

PC

PC/Console

3 out of 4
of the top titles are multi-platform

---

1. Social experience includes the ability to meet/interact with new people online and/or connect with friends/family.
2. "Social gamers" defined as gamers who have made at least one friend through online gaming.

Sources: Activate analysis, Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), Company filings, Company press releases, GitHyp, Qutee, Steam Charts, Twinfinite

activate consulting

As gaming becomes more social, the gaming community will be at the center of a connected and multi-media experience

GAMER COMMUNITY AT THE CENTER

All gamer community extensions drive engagement back to core gaming

LEAGUE OF LEGENDS LOUIS VUITTON MERCHANDISE

TEAM LIQUID / MARVEL MERCHANDISE

FOOT LOCKER X CHAMPION ESPORTS LINE

MOSCHINO X SIMS LINE

INTEL WORLD CUP

OVERWATCH WORLD CUP

LEAGUE OF LEGENDS CHAMPIONSHIP SERIES

ECOMMERCE

LIVE EVENTS

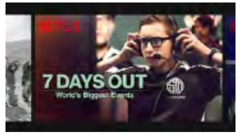
GAMER COMMUNITY

ESPORTS

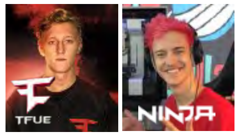
VIDEO

TENCENT-SCRIPTED SERIES ON HONOR OF KINGS ESPORTS

TRUE SIGHT SERIES: THE INTERNATIONAL (DOTA 2)



LOL ON NETFLIX'S "7 DAYS OUT"

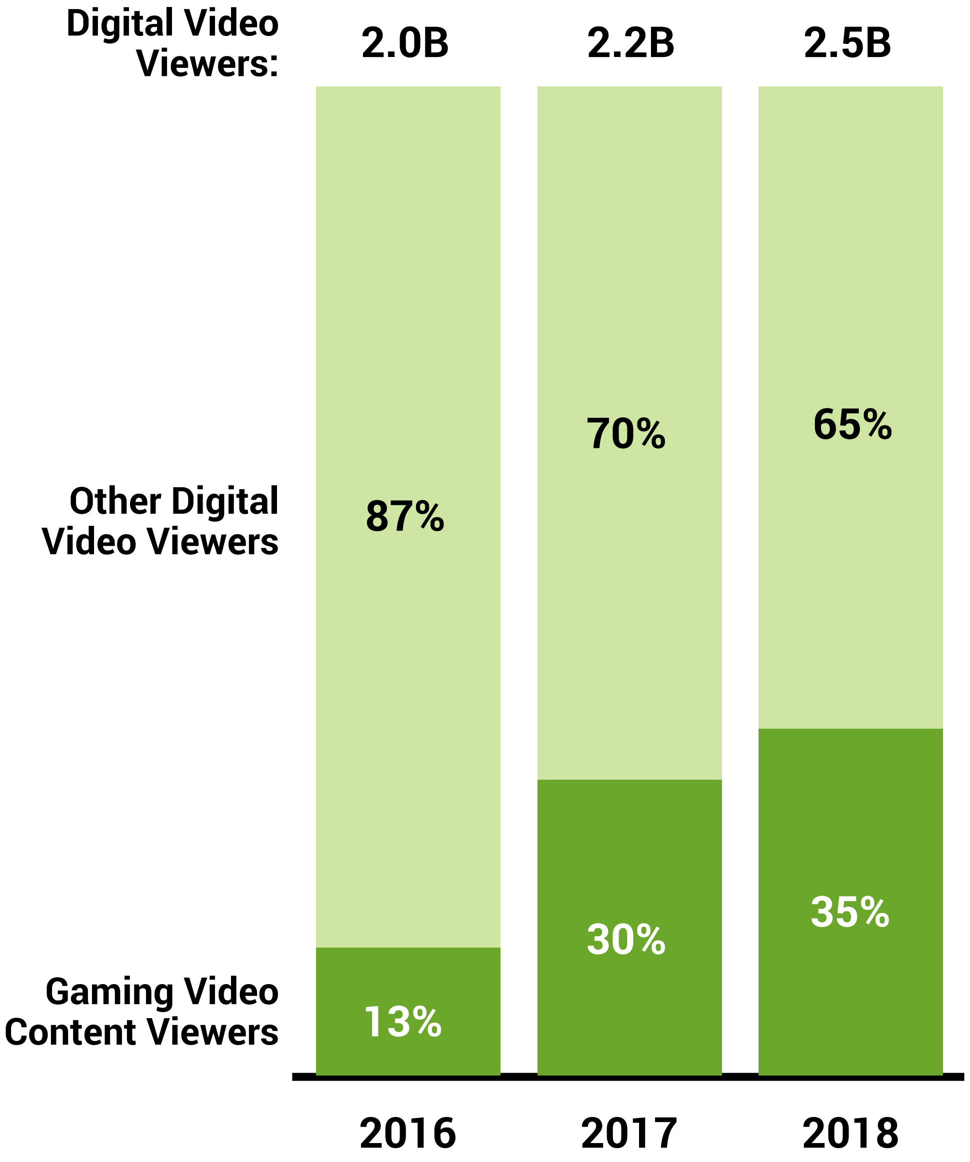


INFLUENCER STREAMS

Sources: Activate analysis, Company press releases, Company sites, The Esports Observer, Forbes, Fox Business, Niko Partners, Refinery29

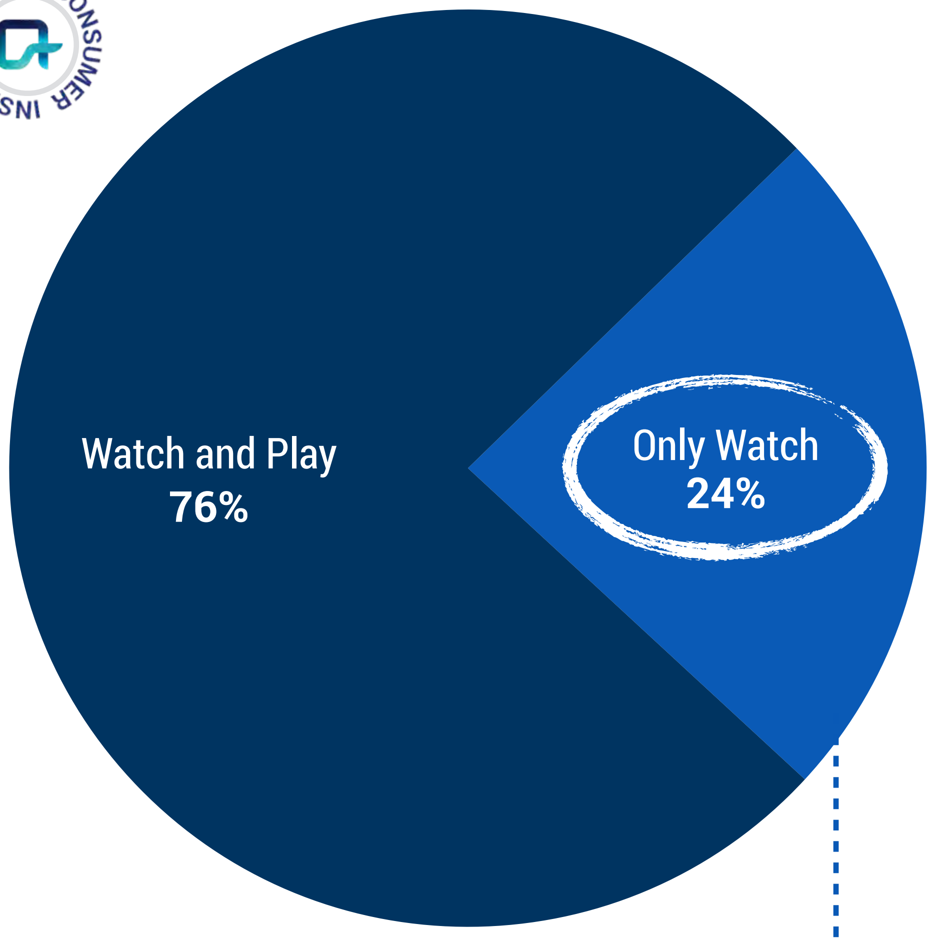
Gaming communities already extend beyond just gamers – this audience is growing rapidly, and there is potential to convert viewers to gamers

SHARE OF DIGITAL VIDEO VIEWERS BY VIEWER TYPE, GLOBAL, 2016-2018, % DIGITAL VIDEO VIEWERS AGED 18+



Nearly half of gamers report that watching online videos influences the games they play

BREAKDOWN OF GAMING VIDEO CONTENT VIEWERS BY GAMING BEHAVIORS, U.S., 2019, % GVC[1] VIEWERS AGED 18+



There is an opportunity to convert this segment to players – the opportunity is likely greater globally, where more significant connectivity and technology constraints exist

---

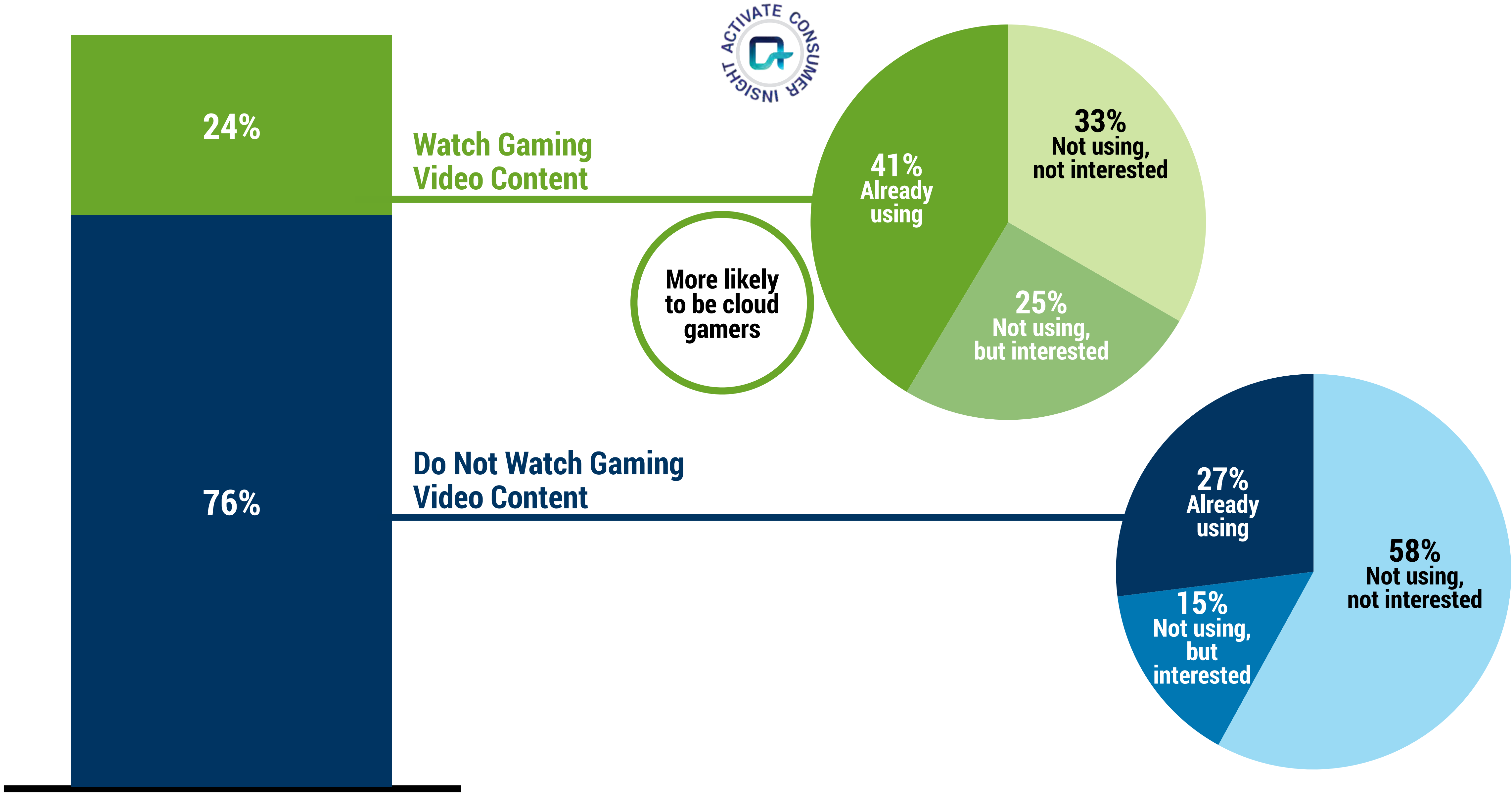
1. Gaming video content.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), eMarketer, SuperData

In fact, gaming video viewers who play are even more likely to use or try cloud gaming services than all other gamers

VIDEO GAMER BREAKDOWN BY GAMING VIDEO CONTENT VIEWERSHIP, U.S., 2019, % GAMERS AGED 18+

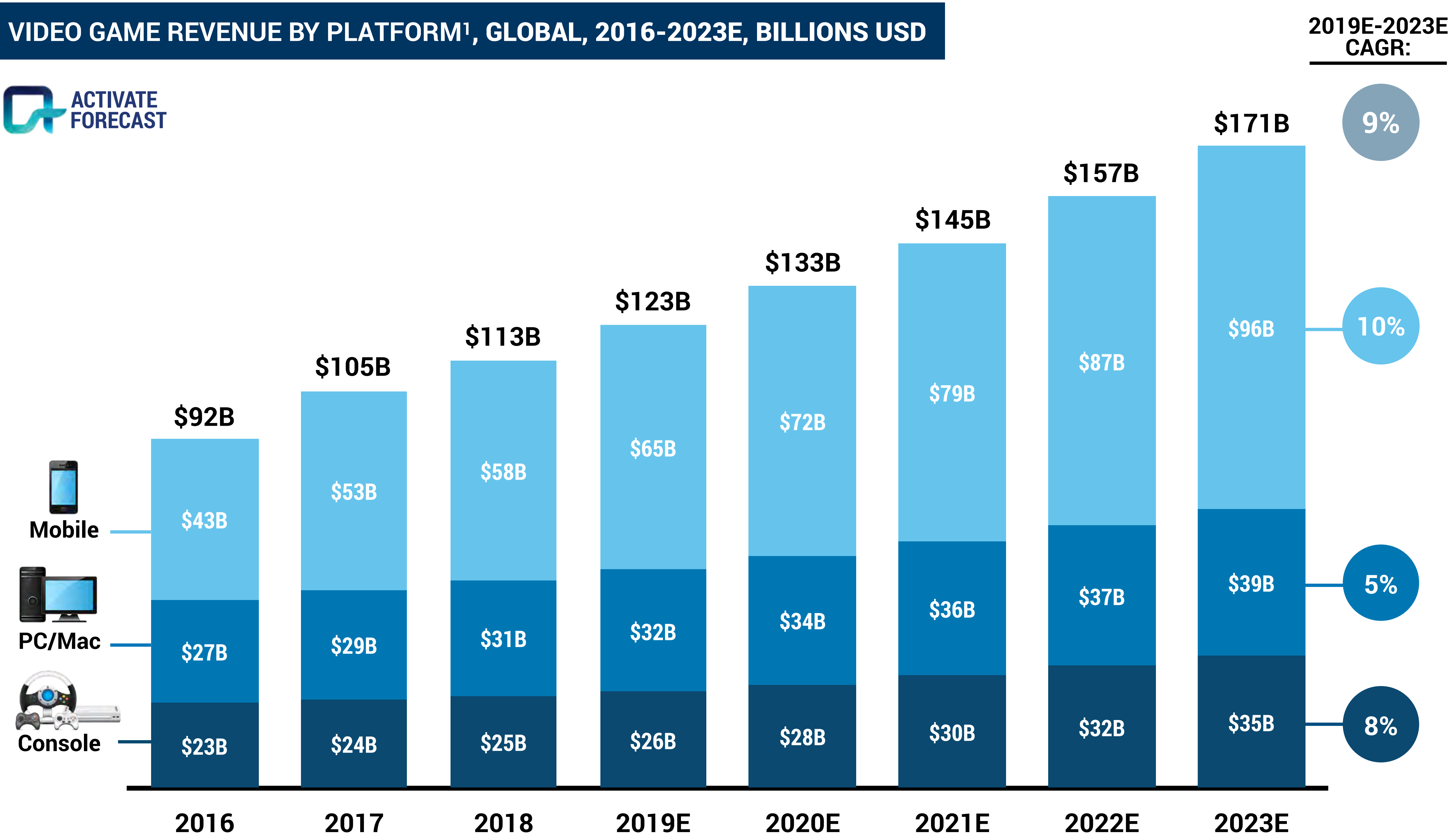
VIDEO GAMER BREAKDOWN BY USAGE AND INTEREST IN CLOUD GAMING¹, U.S., 2019, % GAMERS AGED 18+



1. Cloud gaming platforms include Google Stadia, Microsoft Project xCloud, EA Atlas, Tencent Start, Shadow, Vortex, GeForce Now, PlayStation Now, Parsec, Playkey, LiquidSky, and Hatch.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

We project significant growth ahead for the video game industry across all major platforms

VIDEO GAME REVENUE BY PLATFORM[1], GLOBAL, 2016-2023E, BILLIONS USD



	2016	2017	2018	2019E	2020E	2021E	2022E	2023E	2019E-2023E CAGR:
Mobile	$43B	$53B	$58B	$65B	$72B	$79B	$87B	$96B	10%
PC/Mac	$27B	$29B	$31B	$32B	$34B	$36B	$37B	$39B	5%
Console	$23B	$24B	$25B	$26B	$28B	$30B	$32B	$35B	8%
	$92B	$105B	$113B	$123B	$133B	$145B	$157B	$171B	9%

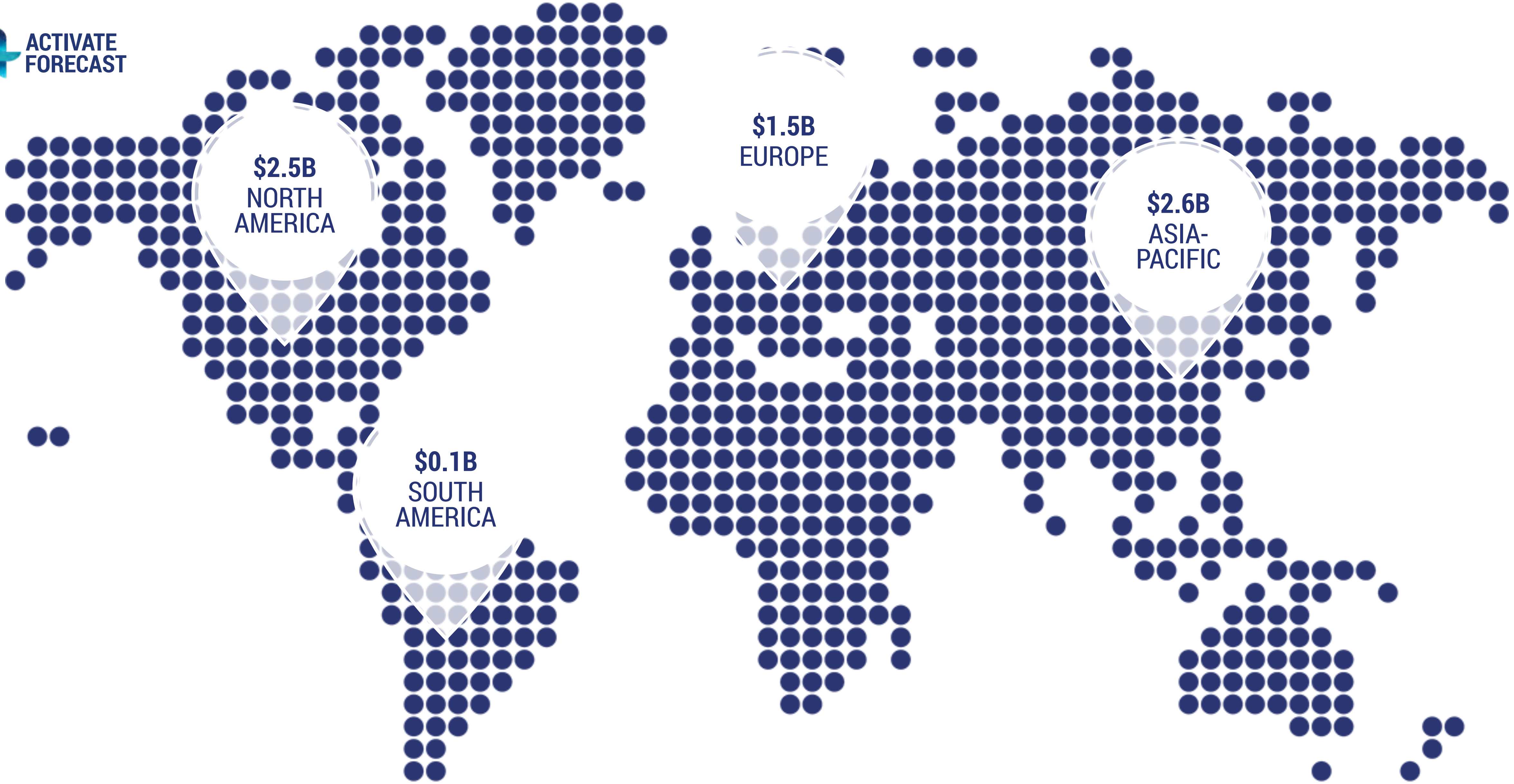
1. Excludes hardware and device sales. Excludes VR/AR. Figures do not sum because of rounding.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Newzoo, PricewaterhouseCoopers

CONTENTS

We forecast that global esports revenues will approach $7B and global viewership will reach 700M by 2023

ESPORTS REVENUE[1], GLOBAL, 2023E, BILLIONS USD

ACTIVATE FORECAST



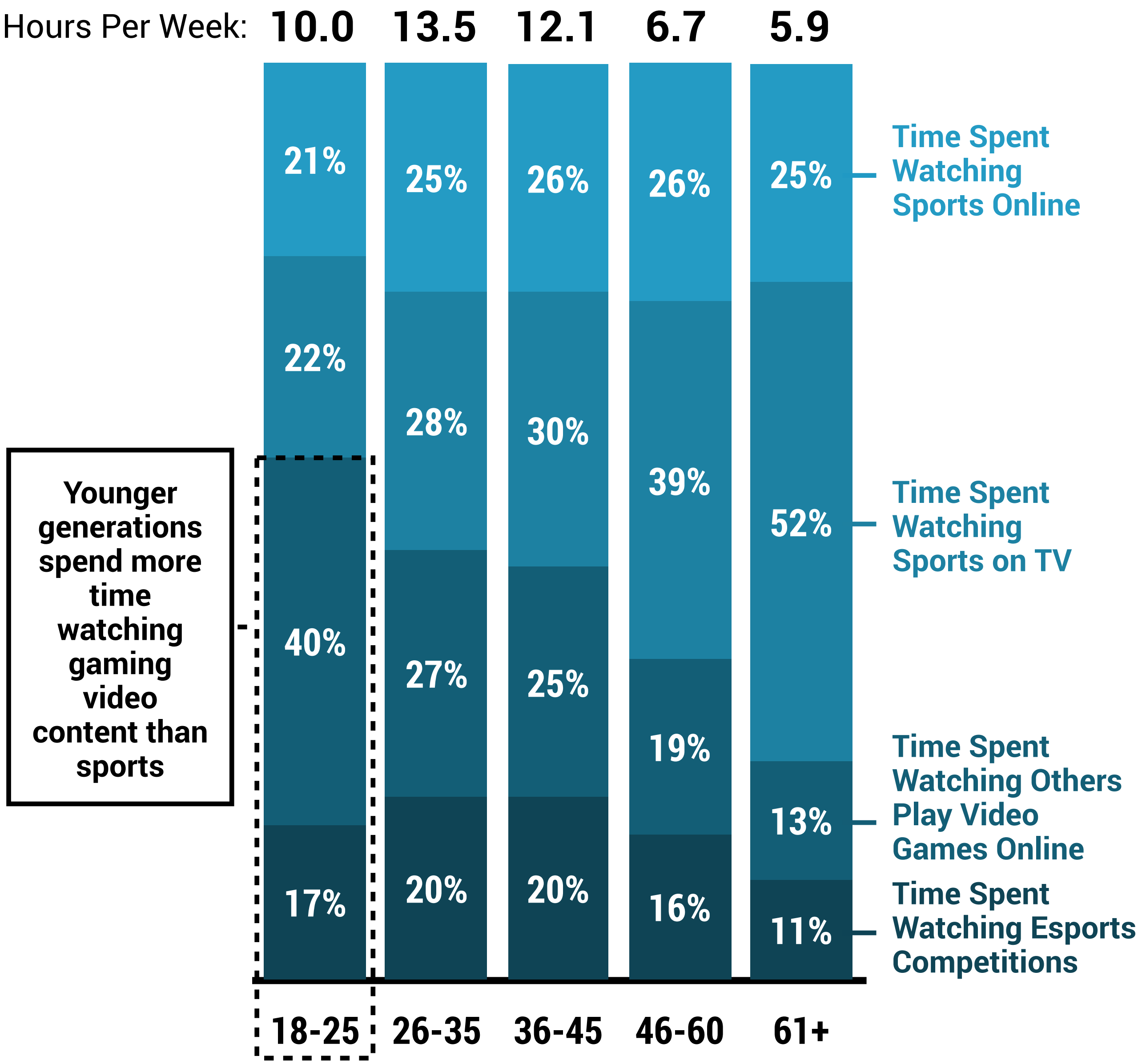
---

1. Esports revenue includes sponsorship, advertising, publisher fees, prize pools, betting, ticketing, merchandise, and media rights.

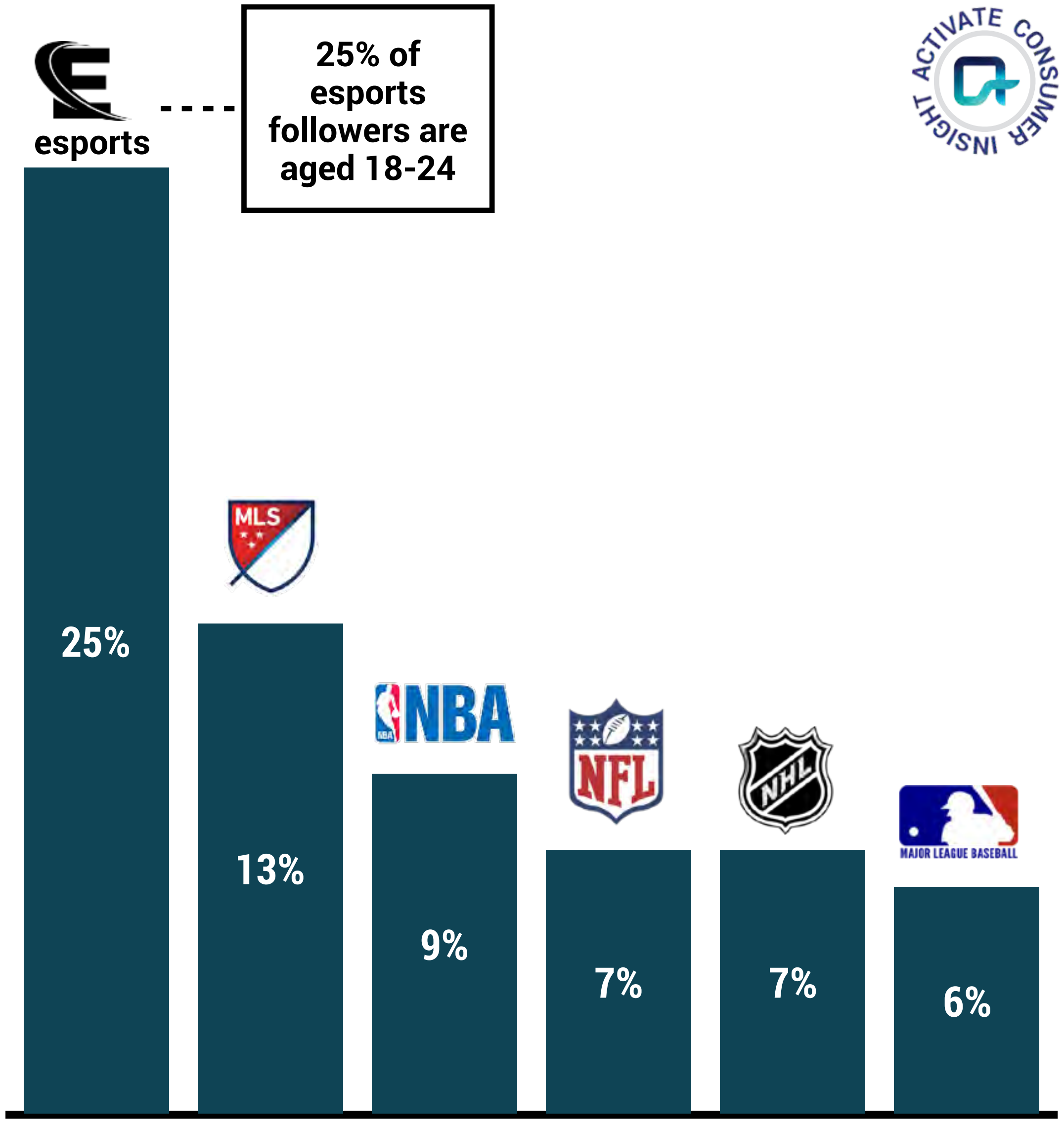
Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Esports Earnings, Esports Insider, Informa Telecoms & Media, Narus Advisors / Eilers & Krejcik Gaming, Newzoo, Ovum, PricewaterhouseCoopers, Statista, SuperData

Esports is a sport of the future — younger viewers are leading the charge

AVERAGE WEEKLY HOURS SPENT WATCHING SPORTS AND ESPORTS BY AGE GROUP[1], GLOBAL, 2019, % HOURS



SHARE OF FOLLOWERS AGED 18-24 BY SPORT, U.S., 2019, % FOLLOWERS AGED 18+



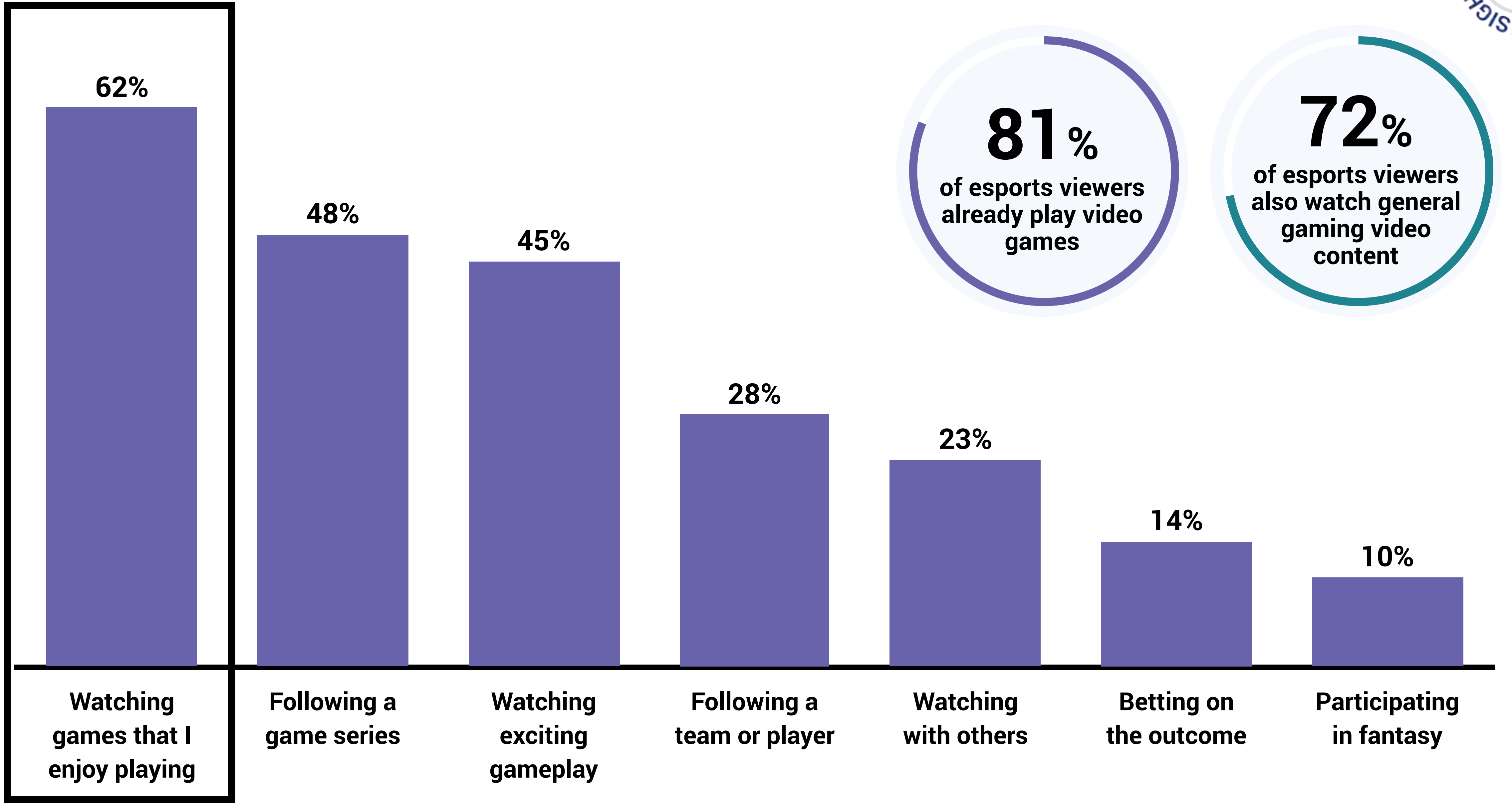
---

1. Figures do not sum to 100% because of rounding.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Limelight Networks

Esports fans are highly likely to also play video games and watch general gaming video content

PRIMARY REASONS FOR WATCHING ESPORTS, U.S., 2019, % ESPORTS VIEWERS AGED 18+



81% of esports viewers already play video games

72% of esports viewers also watch general gaming video content

Sources: Activate analysis, Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Because of the participatory nature of esports, betting is the fastest growing segment – sports-related titles and games with highly complex gameplay will be well positioned for betting success

COMPOUNDED ANNUALIZED REVENUE GROWTH BY ESPORTS MARKET SEGMENT, U.S., 2019E-2023E, %

TOP TITLES BASED ON PRIMARY REASON TO WATCH ESPORTS[2], U.S., 2019, % ESPORTS VIEWERS AGED 18+

	EXCITING GAMEPLAY	FAN OF TEAM OR PLAYER
1	FORTNITE	LEAGUE OF LEGENDS
2	MORTAL KOMBAT II	CS GO
3	STREET FIGHTER 5	DOTA 2

	BETTING ON THE OUTCOME	PARTICIPATING IN FANTASY
1	LEAGUE OF LEGENDS	HALO
2	NBA 2K	LEAGUE OF LEGENDS
3	NHL GAMING WORLD CHAMPIONSHIP	EA SPORTS MADDEN NFL

---

1. Includes daily and season-long fantasy esports. 2. Top games based on games that most highly over-index in viewership among individuals that consider element important.

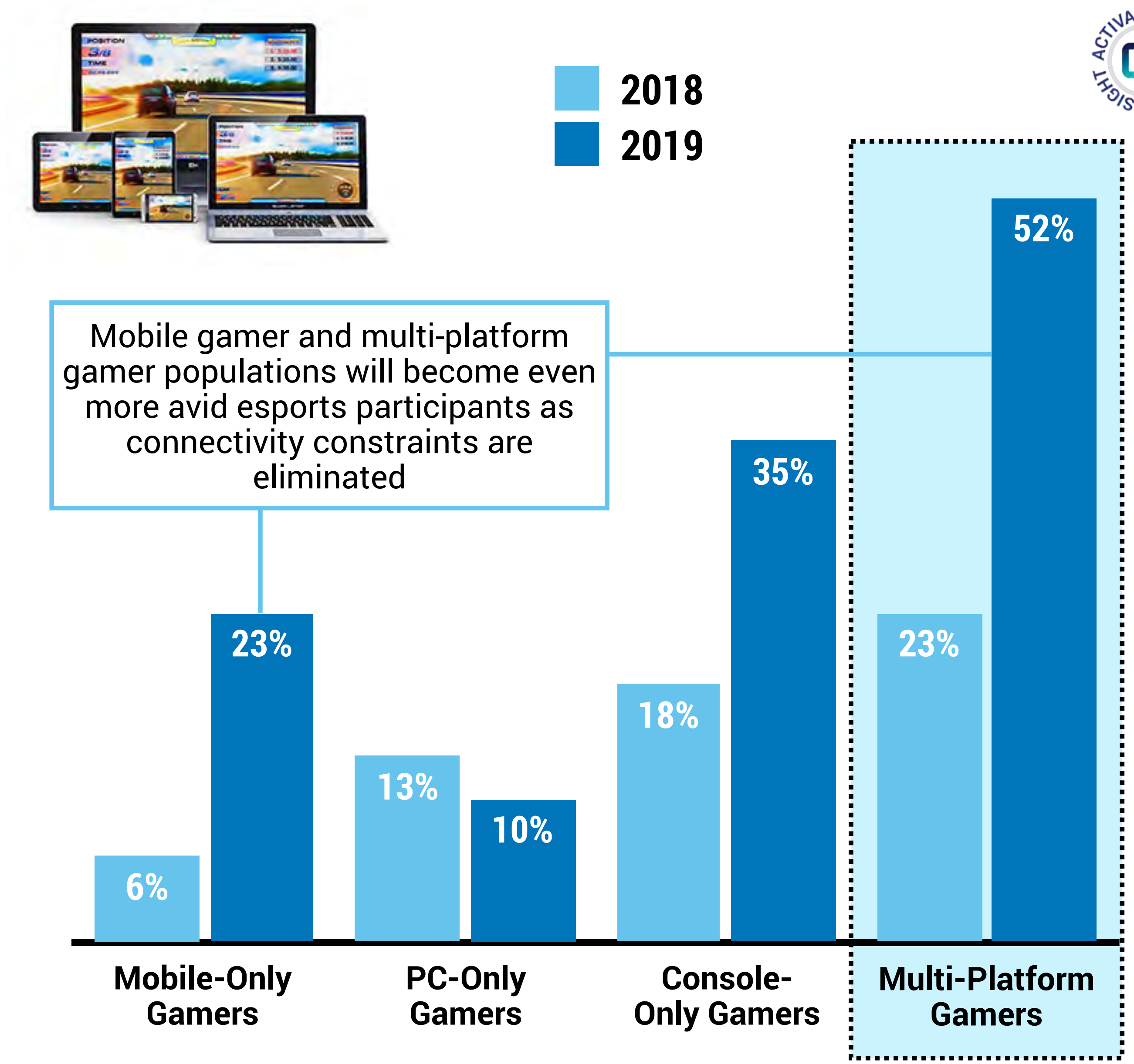
Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Esports Earnings, Esports Insider, Informa Telecoms & Media, Narus Advisors / Eilers & Krejcik Gaming, Newzoo, Ovum, PricewaterhouseCoopers, Statista, SuperData

Cloud technology and improved connectivity will further accelerate esports industry growth

OPPORTUNITIES FOR ESPORTS FROM IMPROVED CONNECTIVITY AND CLOUD TECHNOLOGY

Connected Communities	Esports viewers and gamers will be able to better connect across devices – mobile participants will benefit the most as connectivity is the major inhibitor for mobile esports growth
Broader Gamer Base	Cloud solutions will enable venues to handle much larger virtual arenas and establish tentpole gaming events throughout the year at a large scale
Enhanced Live Events	Live esports events will be able to handle VR/AR integrations, holographic stages, and video streaming connected to seats
Increased Playtime	Features that enable progress to instantly transfer to any device at any time (i.e. starting a game on PC and resuming on mobile) will encourage users to play more often

SHARE OF GAMING DEVICE PLAYERS THAT FOLLOW ESPORTS, U.S., 2018 VS. 2019, % DEVICE GAMERS AGED 18+

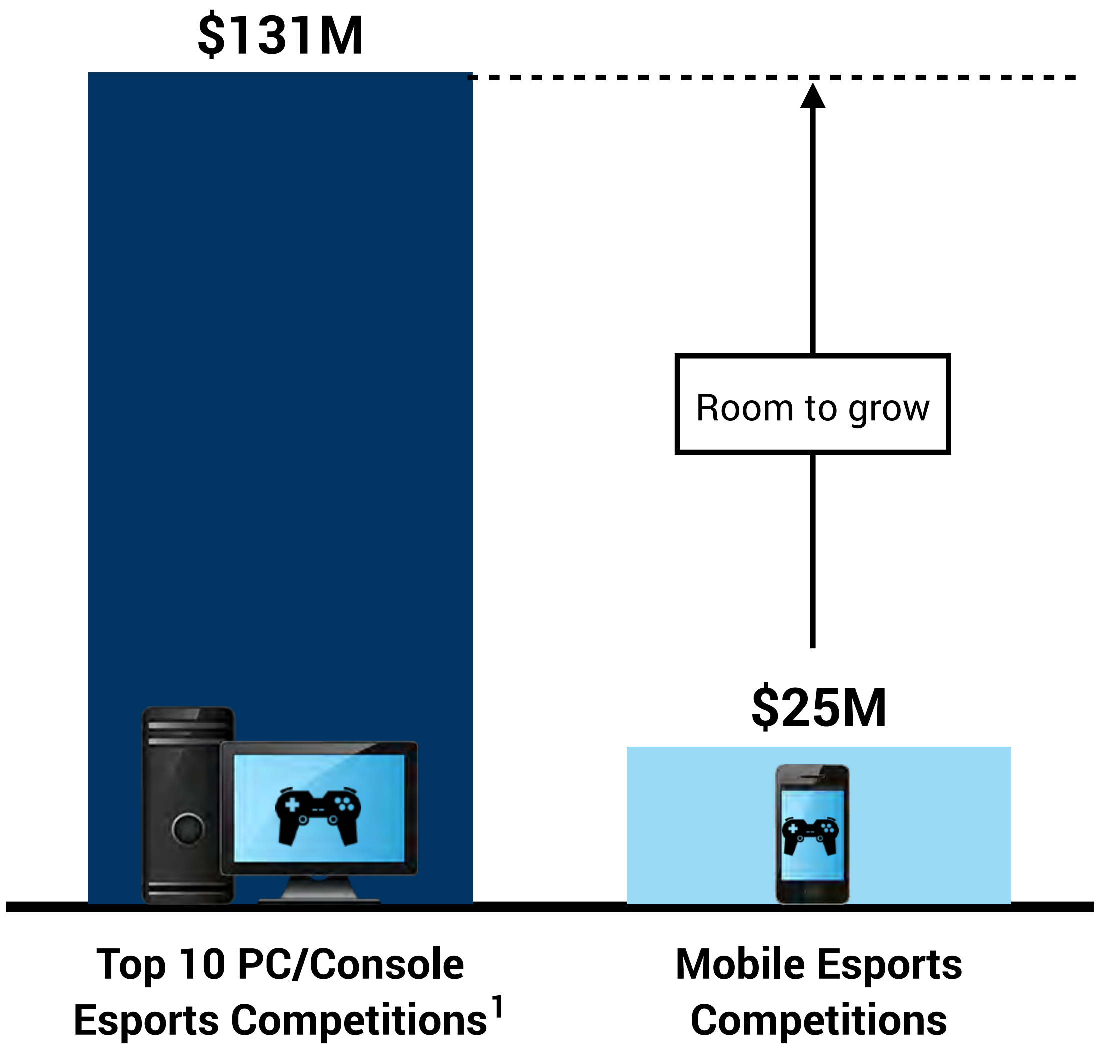


Mobile gamer and multi-platform gamer populations will become even more avid esports participants as connectivity constraints are eliminated

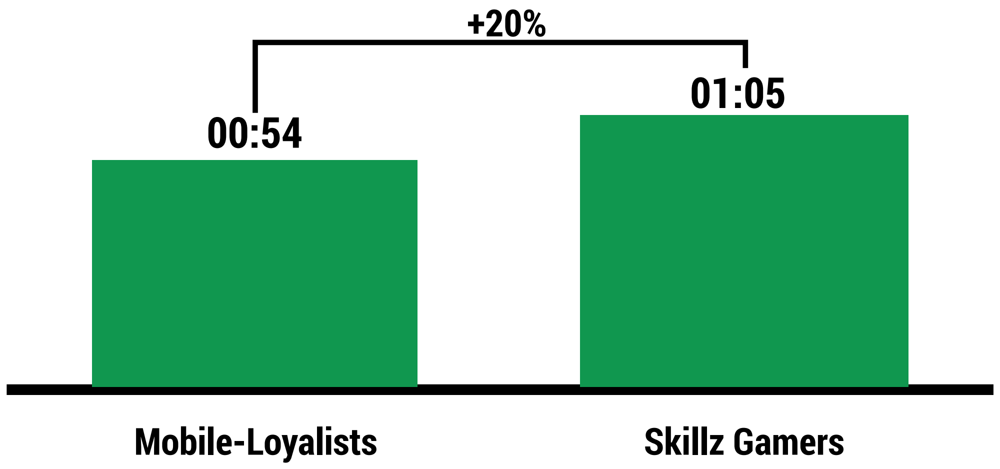
Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870)

Mobile esports will grow exponentially, especially in the U.S. – as this esports format takes off, top mobile titles will see even more growth in engagement and spend

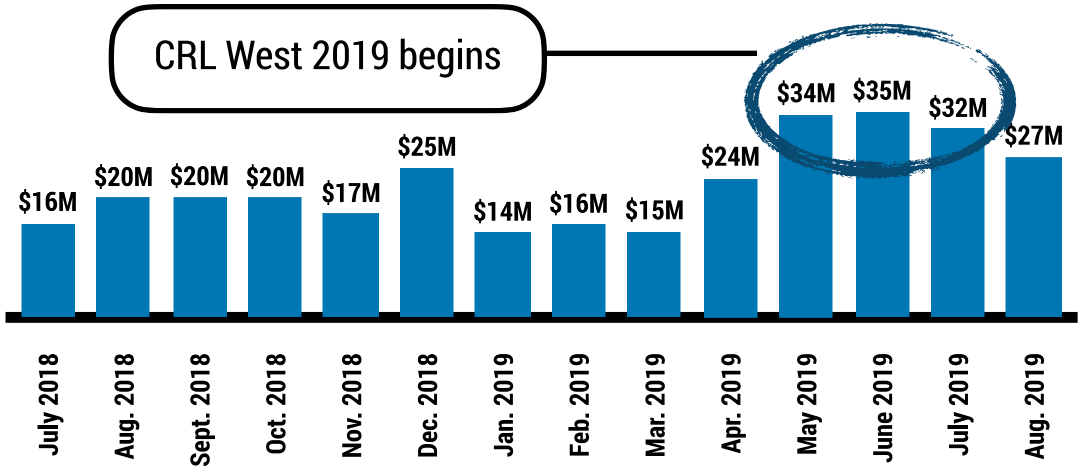
TOTAL ESPORTS COMPETITION PRIZE POOL BY SEGMENT, GLOBAL, 2018, MILLIONS USD



AVERAGE DAILY TIME SPENT PLAYING PER GAMER BY SEGMENT, U.S., 2018, HOURS:MINUTES[2]



TOTAL CLASH ROYALE IN-GAME REVENUE[3], NORTH AMERICA, JULY 2018-AUG. 2019, MILLIONS USD

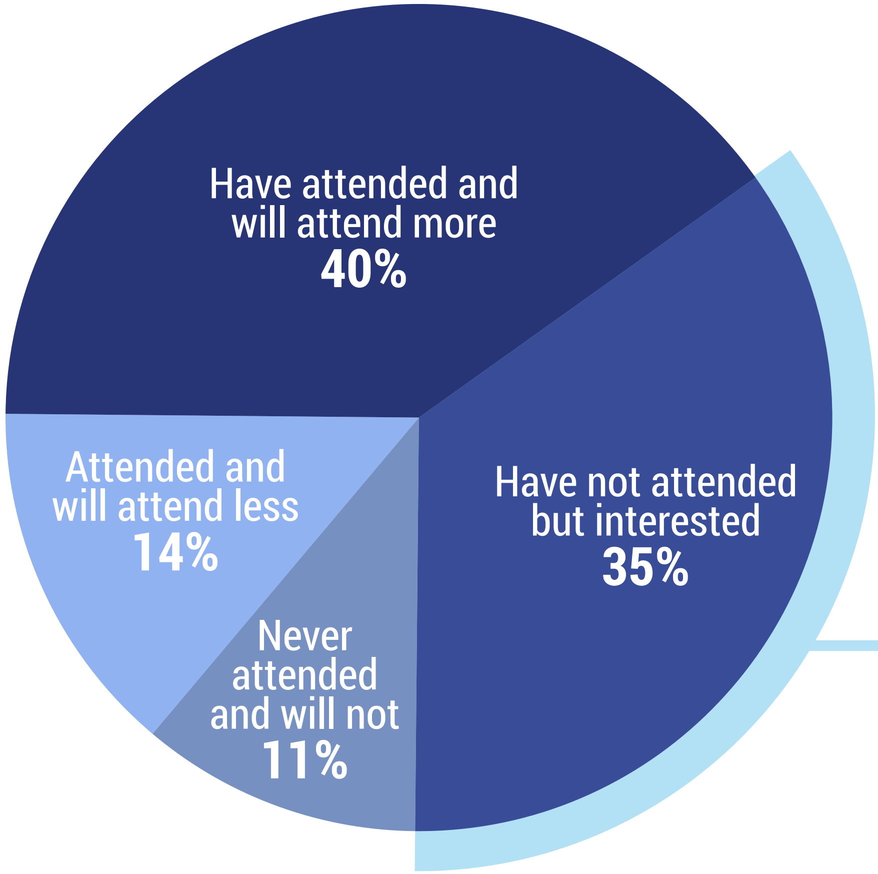


1. Includes DOTA 2, Counter-Strike: Global Offensive, Fortnite, League of Legends, PlayerUnknown's Battlegrounds, Overwatch, Heroes of the Storm, Hearthstone, StarCraft II, Call of Duty: WWII. Hearthstone included because primarily PC competitions.
2. Skillz data reported for company overall. However, the company primarily operates in the U.S.
3. Spike in revenues does not coincide with any major updates.

Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), CNBC, Company press releases, The Esports Observer, Niko Partners, SuperData

The live esports experience will become more established as cities build dedicated venues – nearly 70% of people aware of esports would be more likely to follow if a team represented their city

ATTENDANCE AND INTEREST IN LIVE ESPORTS EVENTS, U.S., 2019, % ESPORTS FANS AGED 18+

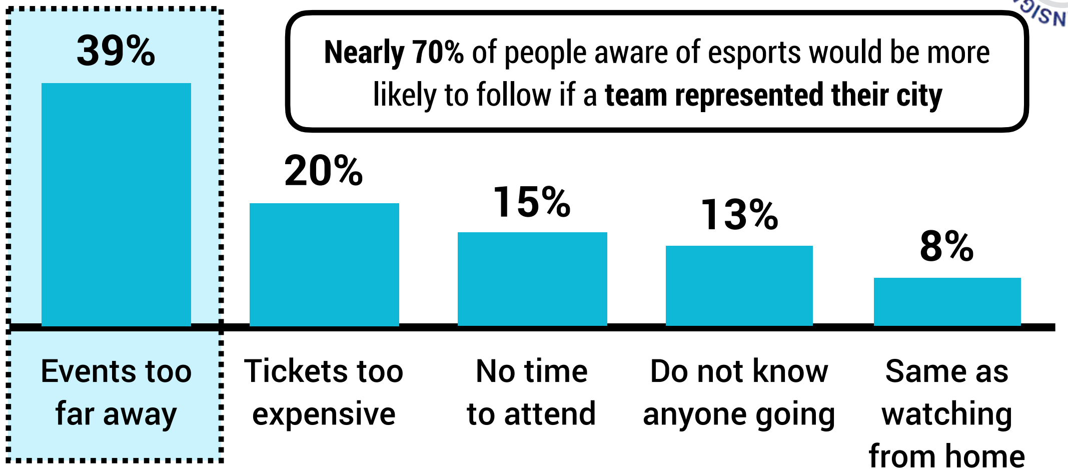


A significant share of esports viewers have not attended a live competition, but want to attend in the future

LARGEST U.S. ESPORTS ARENAS

Arena Name	Location	Year Opened	Size (sq. ft)
Esports Stadium Arlington	Arlington, VA	2018	100K
Unnamed Comcast Arena	Philadelphia, PA	2019-2020 (anticipated)	60K
HyperX Esports Arena Las Vegas	Las Vegas, NV	2018	30K

REASONS FOR NOT ATTENDING A LIVE ESPORTS EVENT, U.S., 2019, % ESPORTS FANS AWARE OF EVENTS

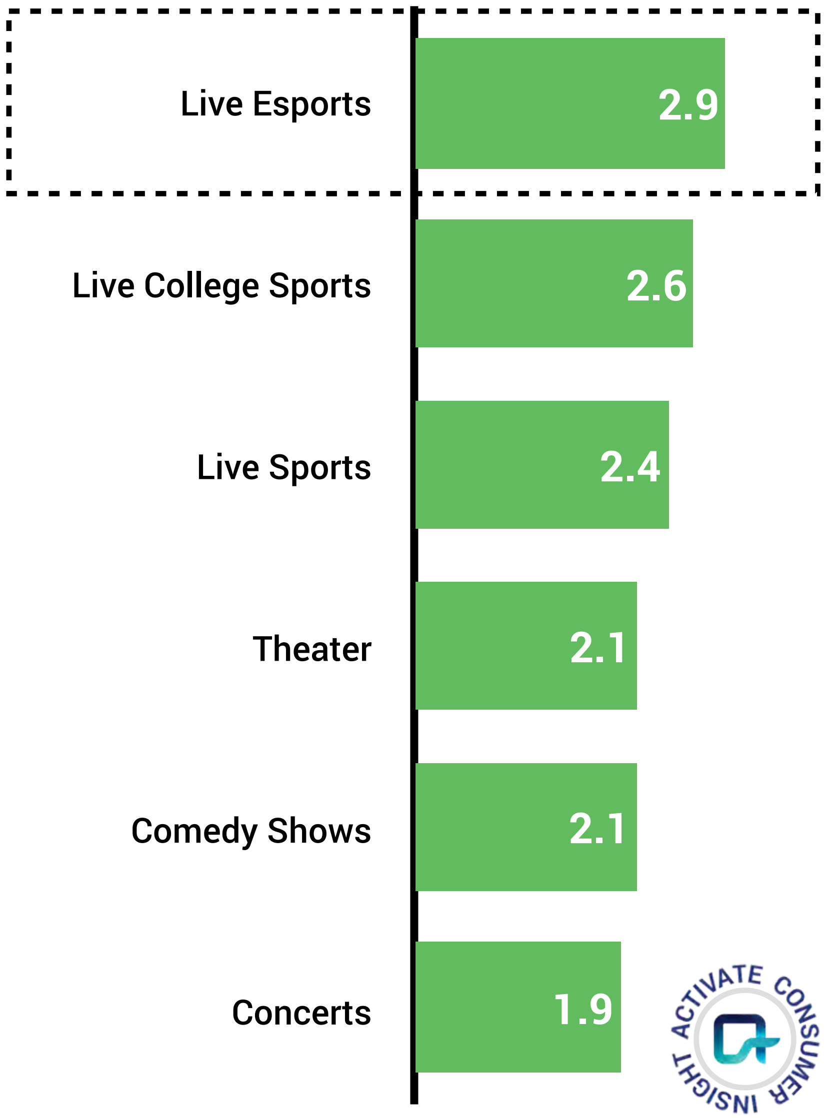


Nearly 70% of people aware of esports would be more likely to follow if a **team represented their city**

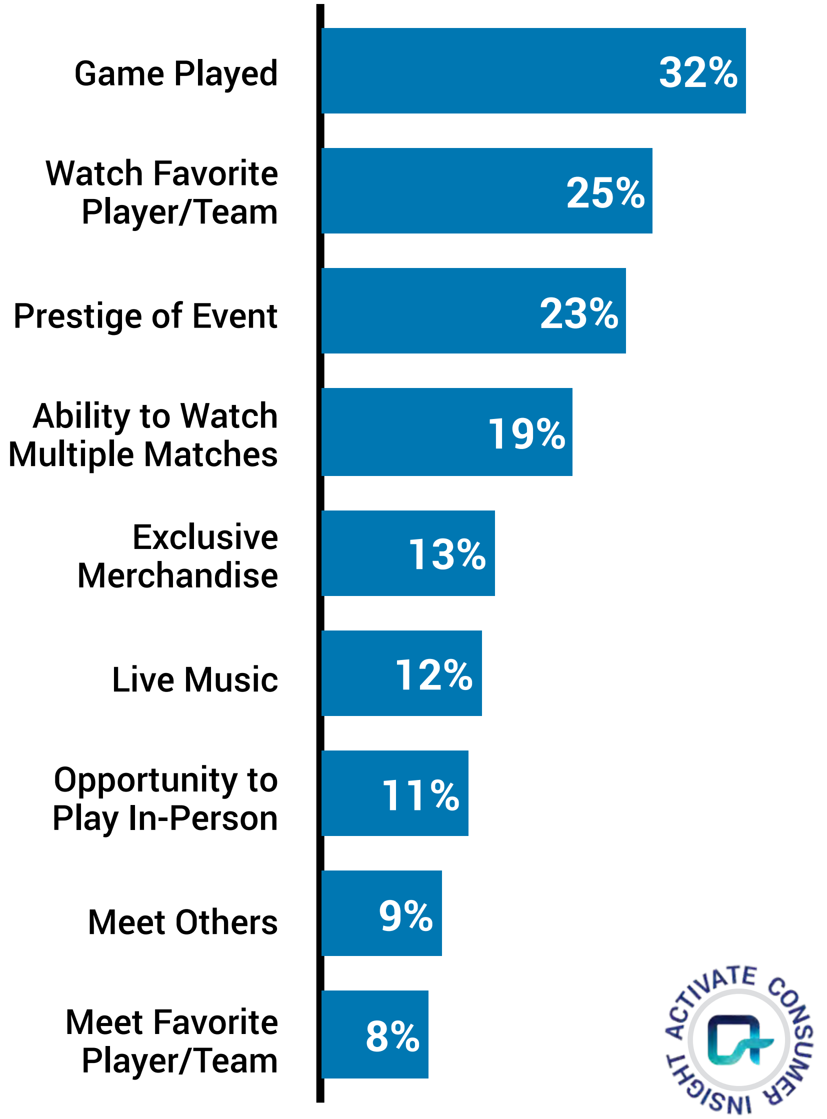
Sources: Activate analysis, Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), BDC Network, Company press releases, The Esports Observer, Esports.net, Forbes, VentureBeat, The Verge

Improvements in technology – VR, bandwidth, dynamic seating – will enable growth for many of the most valued live elements

AVERAGE NUMBER OF EVENTS ATTENDED IN THE LAST YEAR AMONG ATTENDEES, U.S., 2019, EVENTS ATTENDED



MOST IMPORTANT ELEMENTS OF LIVE ESPORTS EVENTS[1], U.S., 2019, % ESPORTS ATTENDEES AGED 18+



NEW ESPORTS ARENA EXPERIENCES

TECHNOLOGY	EXPERIENCE
Immersive VR	Intel Extreme Masters event places fans in the middle of battle – viewers can watch live stats
Training Stations	Millennial Esports is building an arena in Miami that will train both esports and real-world racing enthusiasts
AR Stages	Riot Games opened its LoL world championships with a K-pop AR performance
Dynamic Seating	HOK and SAP are exploring lighting modules that link with stadium seating to identify fan groups

---

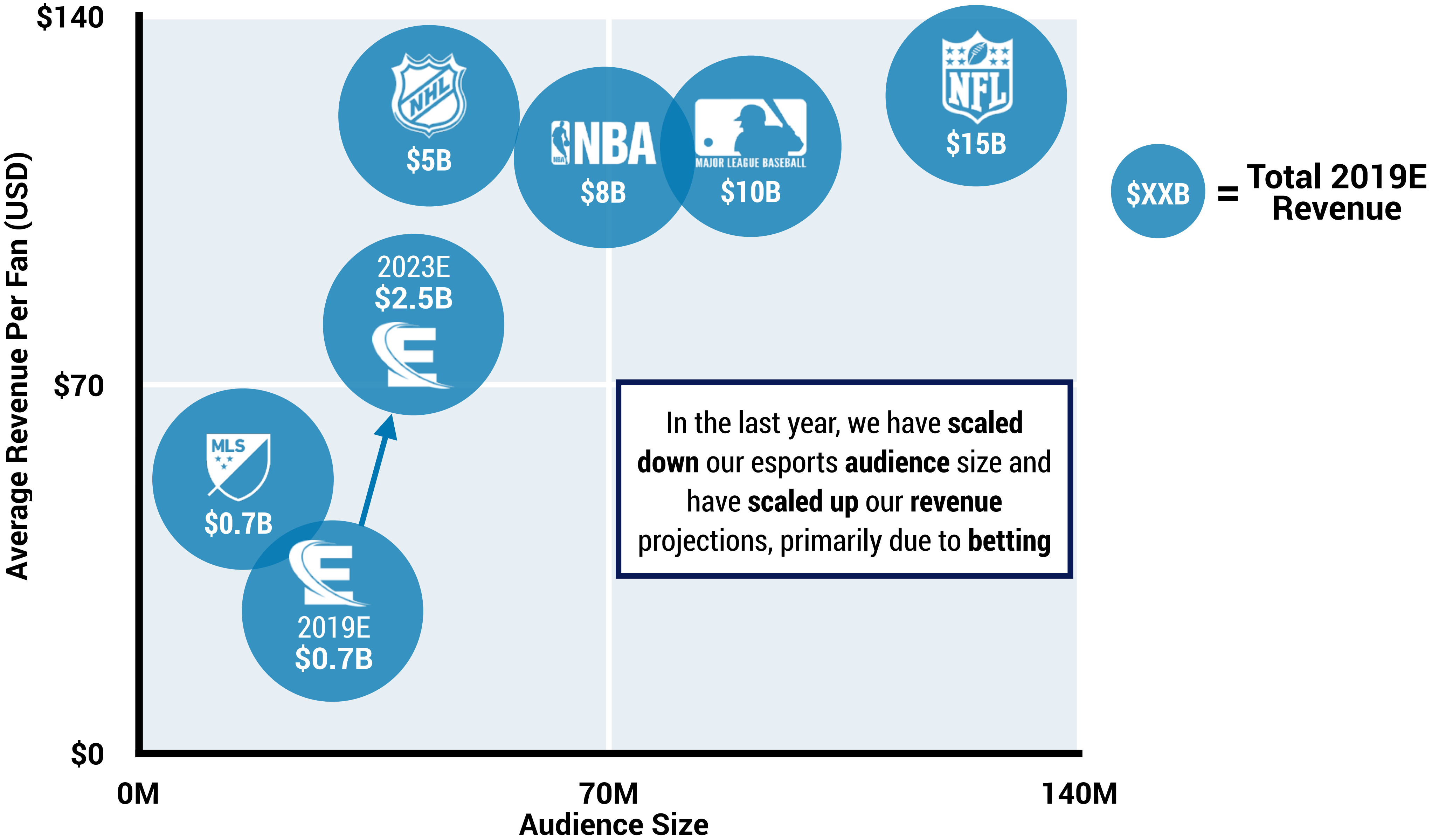
1. Prestige of venue and cosplay excluded due to low responses.

Sources: Activate analysis, Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

We forecast that esports revenue generated per fan will rival that of the major traditional sports in the U.S.

ESPORTS AND SPORTS AUDIENCE SIZE VS. AVERAGE REVENUE PER FAN[1], U.S., 2019E, BILLIONS USD

ACTIVATE FORECAST



In the last year, we have **scaled down** our esports **audience** size and have **scaled up** our **revenue** projections, primarily due to **betting**

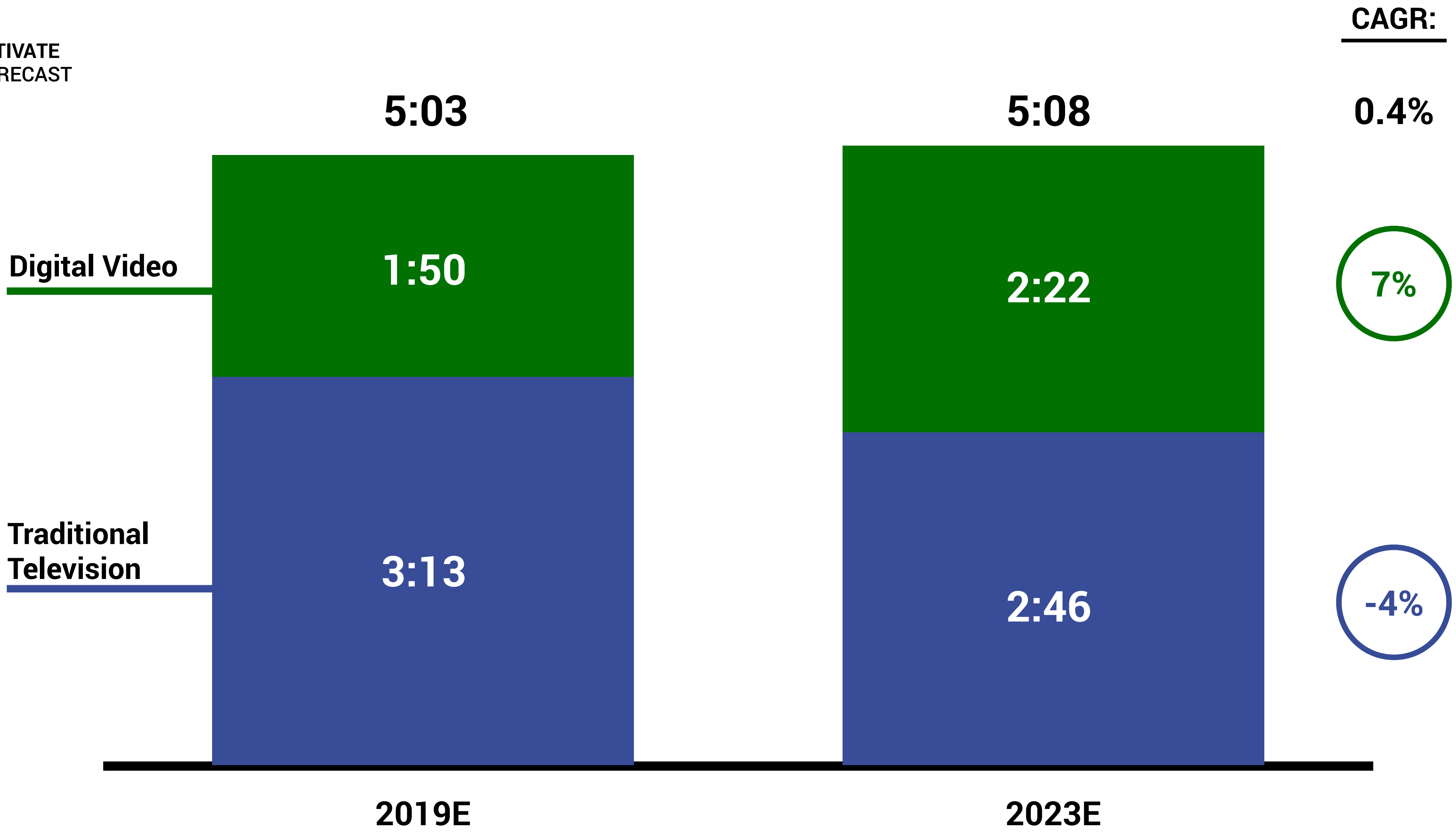
1. Esports revenues include sponsorship and advertising, prize pools, esports betting, ticketing, merchandise, and media rights.
Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Gaming & Esports Research Study (n = 1,870), Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Esports Earnings, Esports Insider, Informa Telecoms & Media, Narus Advisors / Eilers & Krejcik Gaming, Newzoo, Ovum, PricewaterhouseCoopers, Statista, SuperData

CONTENTS

Video consumption is over 5 hours per day and will be flat, as growth in digital video fully offsets the decline in traditional television

AVERAGE DAILY VIDEO TIME PER PERSON BY TYPE, U.S., 2019E VS. 2023E, HOURS:MINUTES

ACTIVATE FORECAST

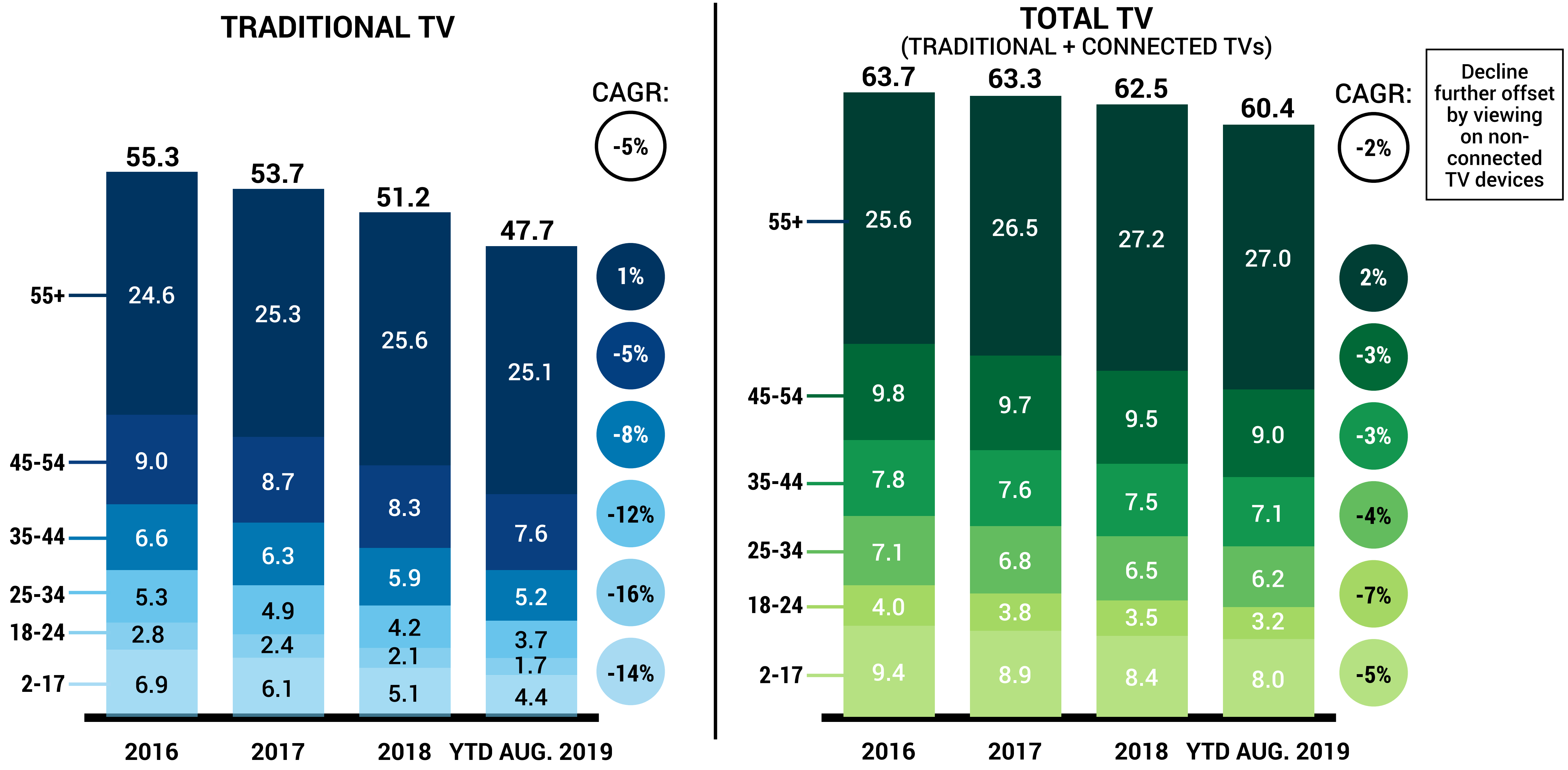


activate consulting

Sources: Activate analysis, eMarketer, Facebook, Nielsen, Parks Associates, Sandvine, SNL Kagan, Statista, YouTube, ZenithOptimedia Group

Traditional TV ratings have declined, especially at younger age groups, but total TV is more stable with connected TV viewing

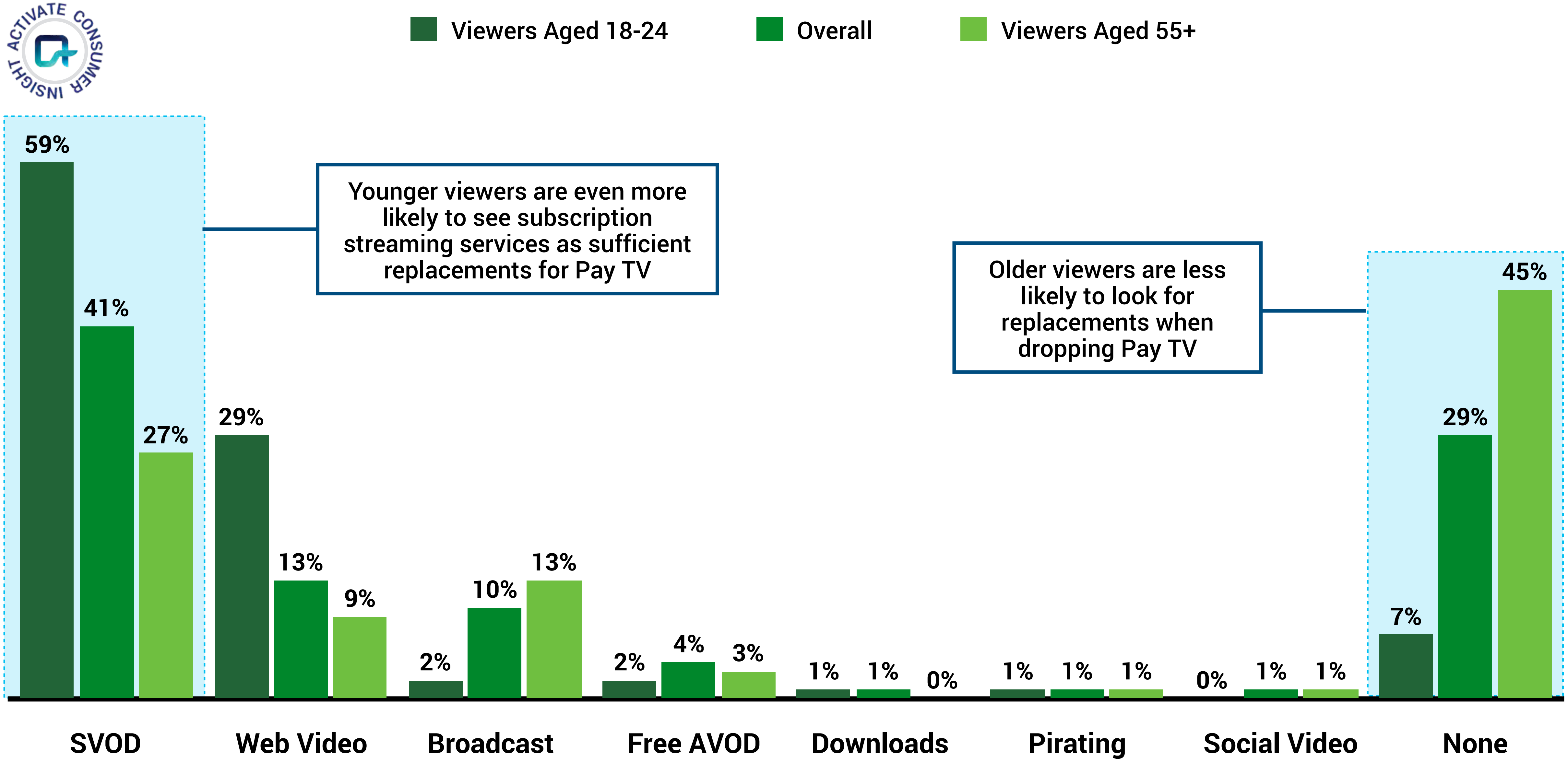
AUDIENCE RATINGS FOR TRADITIONAL TV & TOTAL TV BY AGE GROUP[1], U.S., 2016-YTD AUG. 2019, MILLIONS AA[2]



1. Figures do not sum because of rounding. 2. Average Audience (AA) ratings are individuals based on Nielsen panel measurement. Traditional TV includes linear and time-shifted viewing. Total TV includes total video watched on TV screens, including linear, time-shifted, streaming devices, smart TVs, gaming consoles, and DVD/Blu-Ray viewing.
Sources: Activate analysis, Nielsen

Younger viewers see streaming as a one-to-one replacement for Pay TV, while older viewers are still tied to traditional TV

PRIMARY PAY TV REPLACEMENT AMONG CORD CUTTERS/NEVERS BY AGE GROUP, U.S., 2019, % CORD CUTTERS/NEVERS



Younger viewers are even more likely to see subscription streaming services as sufficient replacements for Pay TV

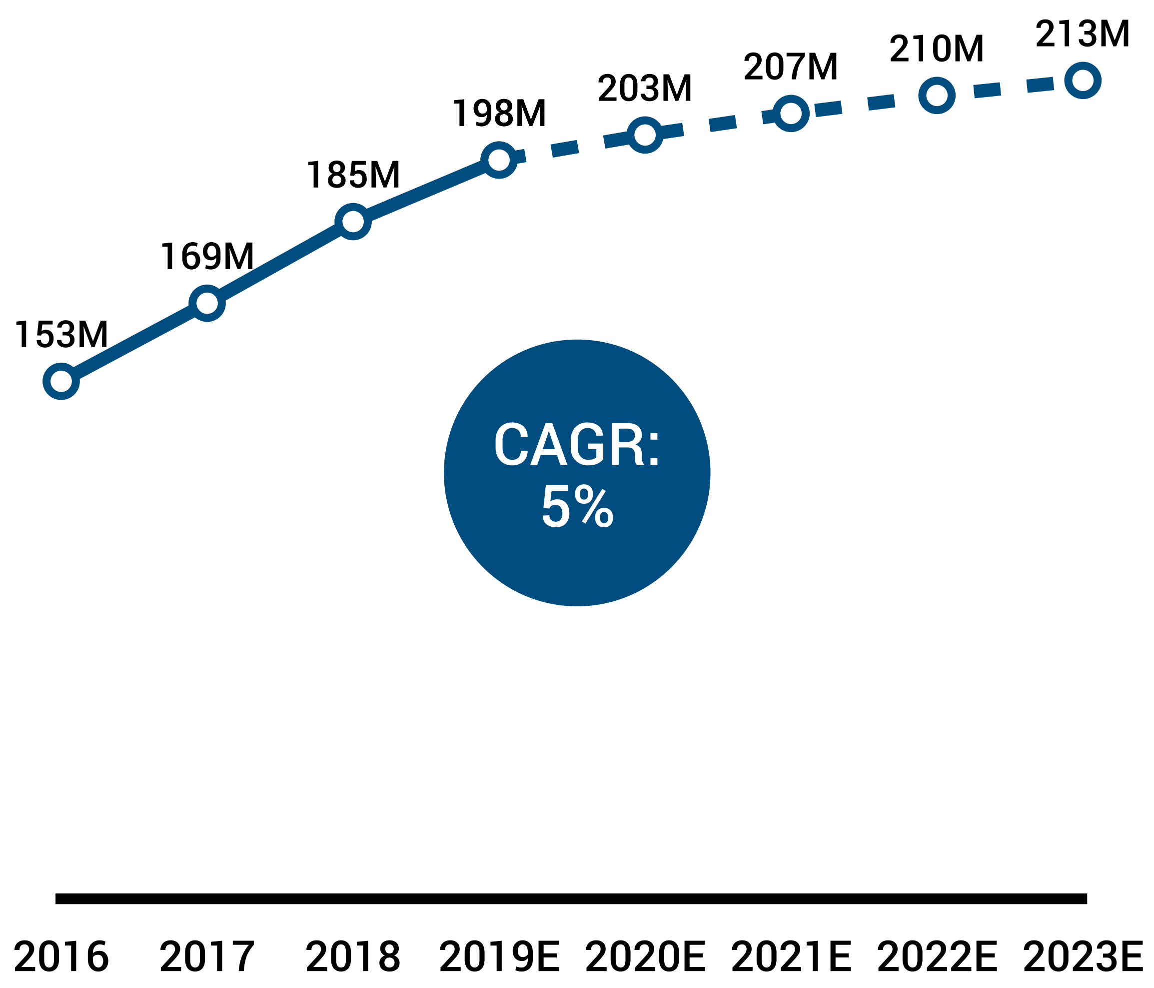
Older viewers are less likely to look for replacements when dropping Pay TV

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

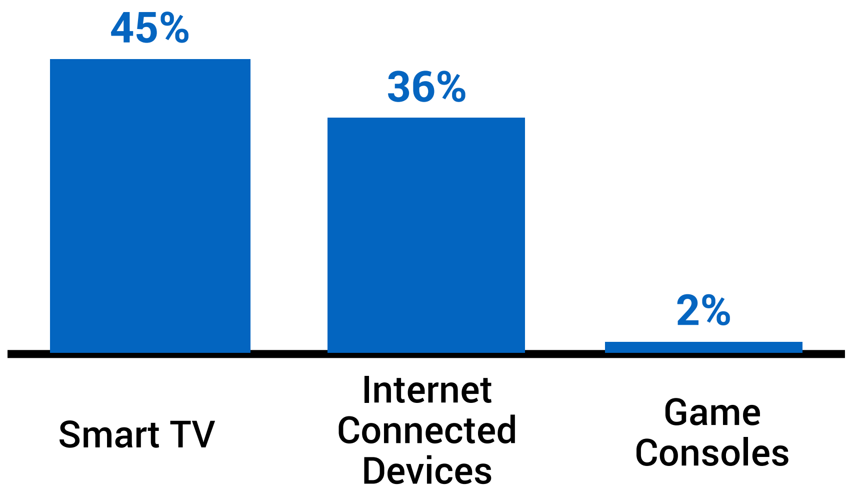
Connected TV usage will increase as a result of smart TV, game console, and streaming device adoption

CONNECTED TV USERS, U.S. 2016-2023E, MILLIONS

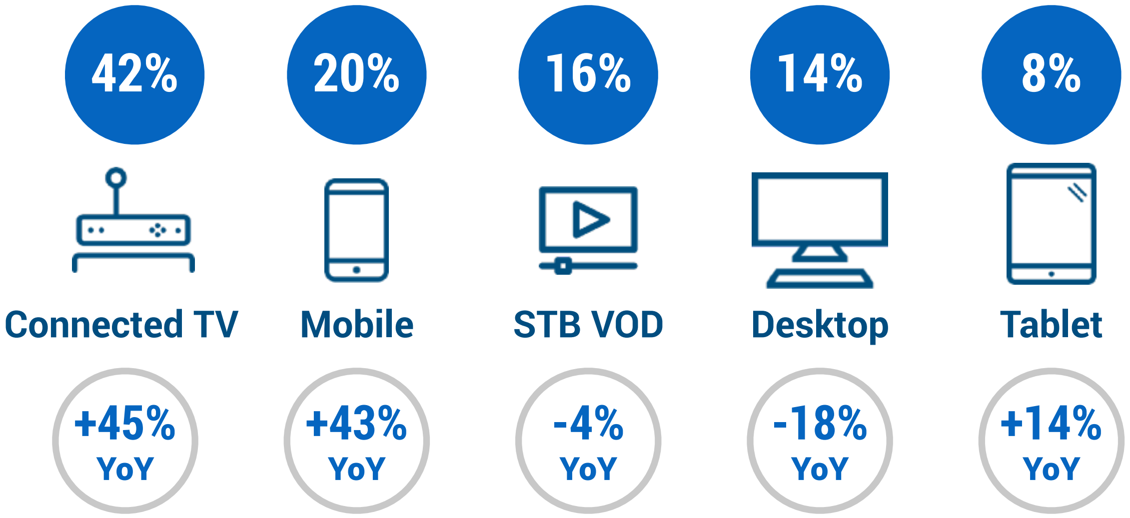
ACTIVATE FORECAST



INCREASE IN TIME SPENT USING TV CONNECTED DEVICES, U.S., JAN. 2018 VS. JAN. 2019, % INCREASE



AD VIEW COMPOSITION AND GROWTH BY DEVICE, U.S., Q4 2018, % AD VIEWS

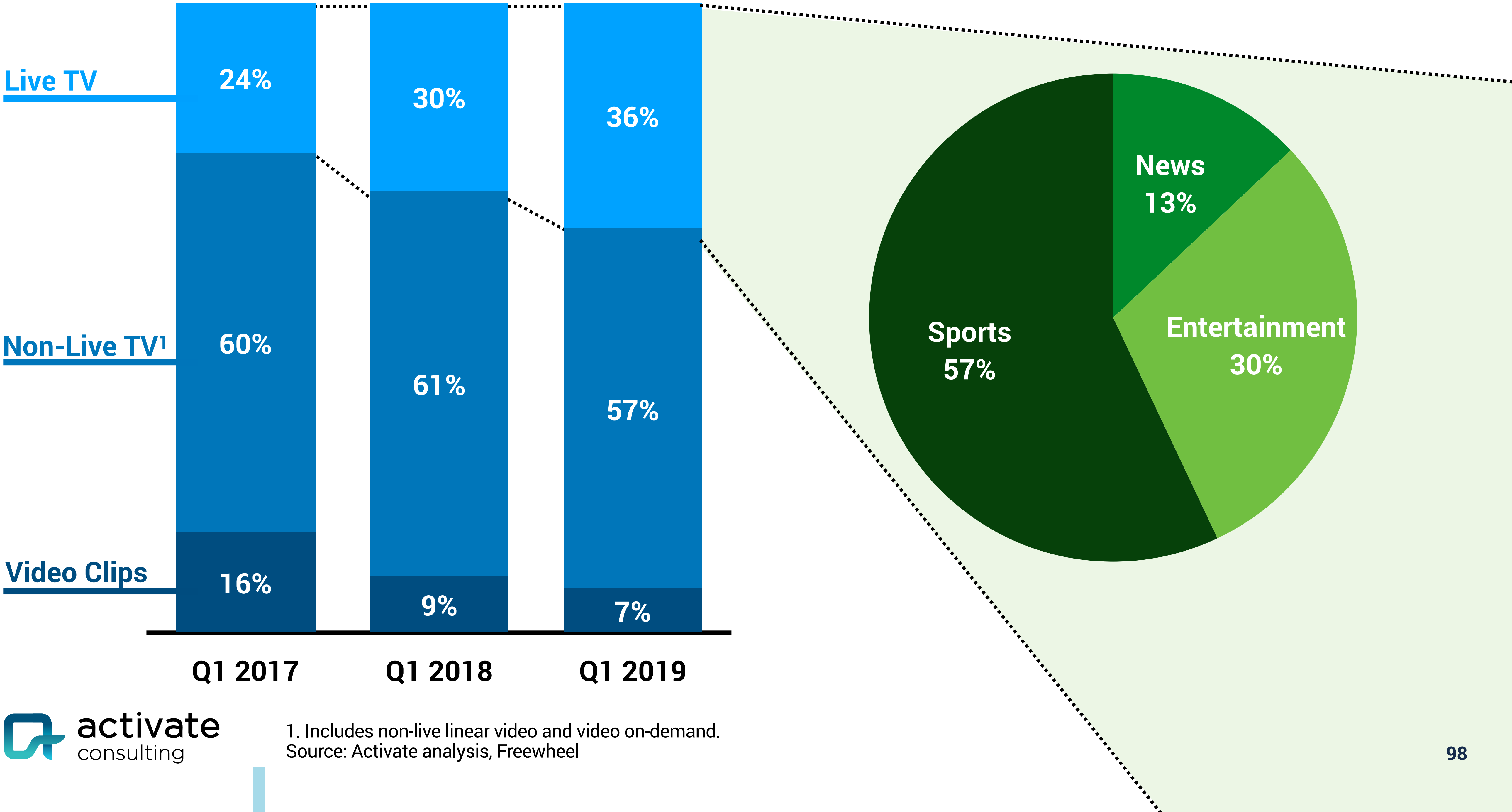


Sources: Activate analysis, Consumer Technology Association, eMarketer, Freewheel, Leichtman Research Group, Nielsen

Live television viewership, as measured by ad views, has grown faster than non-live television, with sports driving the growth

AD VIEWS BY CONTENT FORMAT,
U.S., Q1 2017-Q1 2019, % AD VIEWS

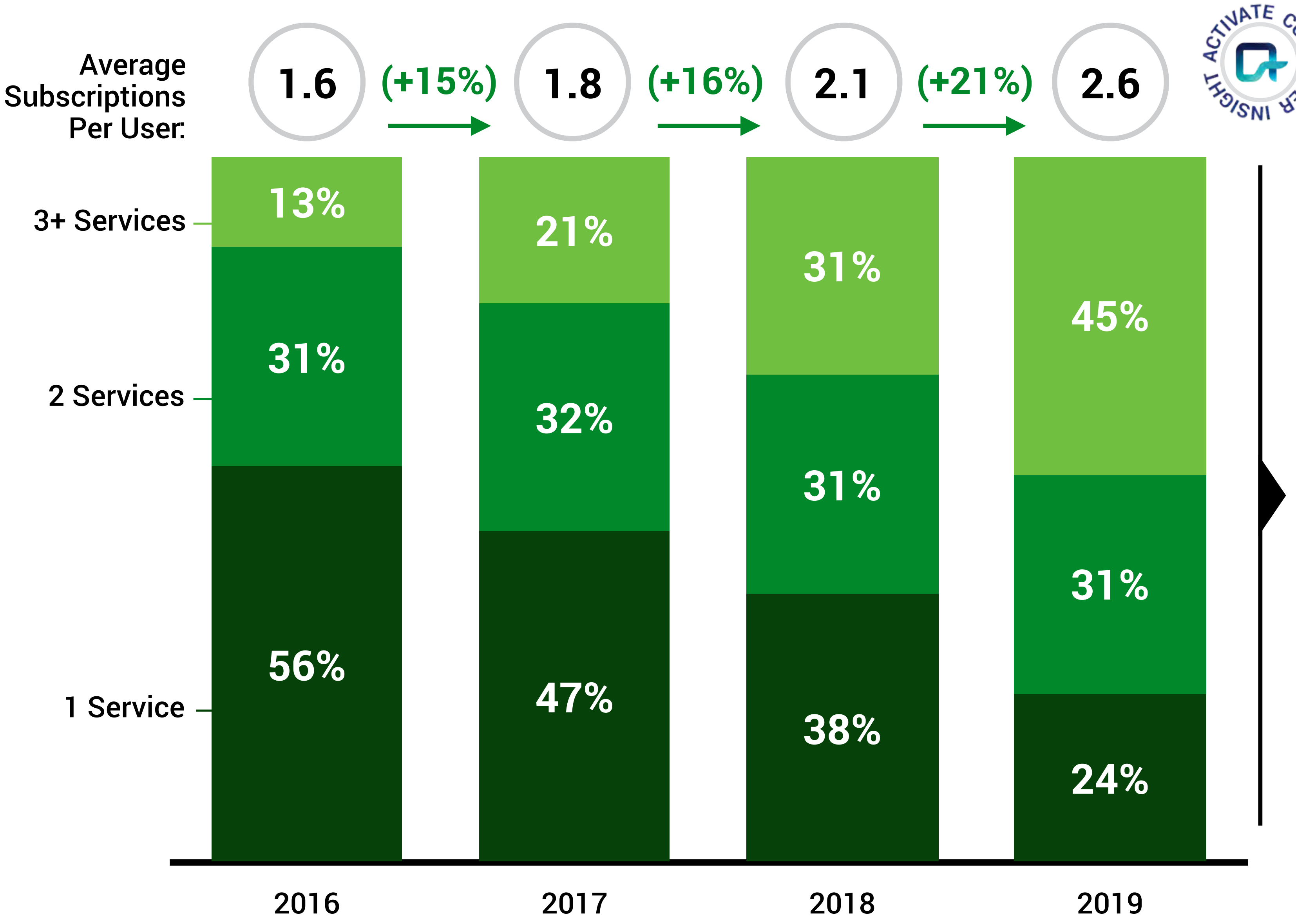
LIVE TV AD VIEWS BY GENRE,
U.S., Q4 2018, % AD VIEWS



1. Includes non-live linear video and video on-demand.
Source: Activate analysis, Freewheel

We forecast that the average streaming subscriber will have 4.9 services by 2023; we have been tracking subscription stacking since 2016 and have seen the steady increase

NUMBER OF PAID VIDEO STREAMING SERVICES PER USER, U.S., 2016-2019, % SUBSCRIBERS



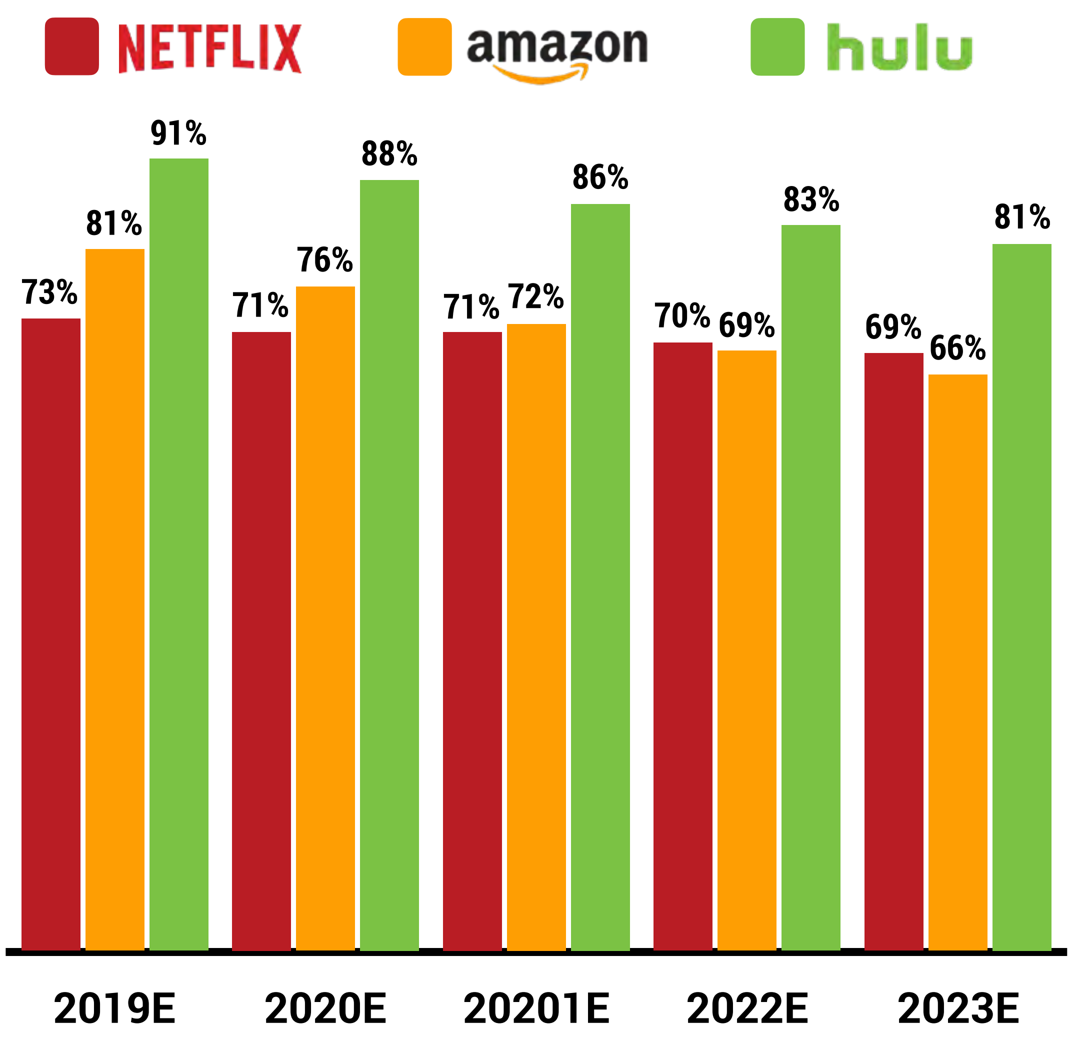
	2016	2017	2018	2019
Average Subscriptions Per User:	1.6	1.8	2.1	2.6
3+ Services	13%	21%	31%	45%
2 Services	31%	32%	31%	31%
1 Service	56%	47%	38%	24%

We forecast that the average streaming subscriber will have **4.9** **services by 2023**

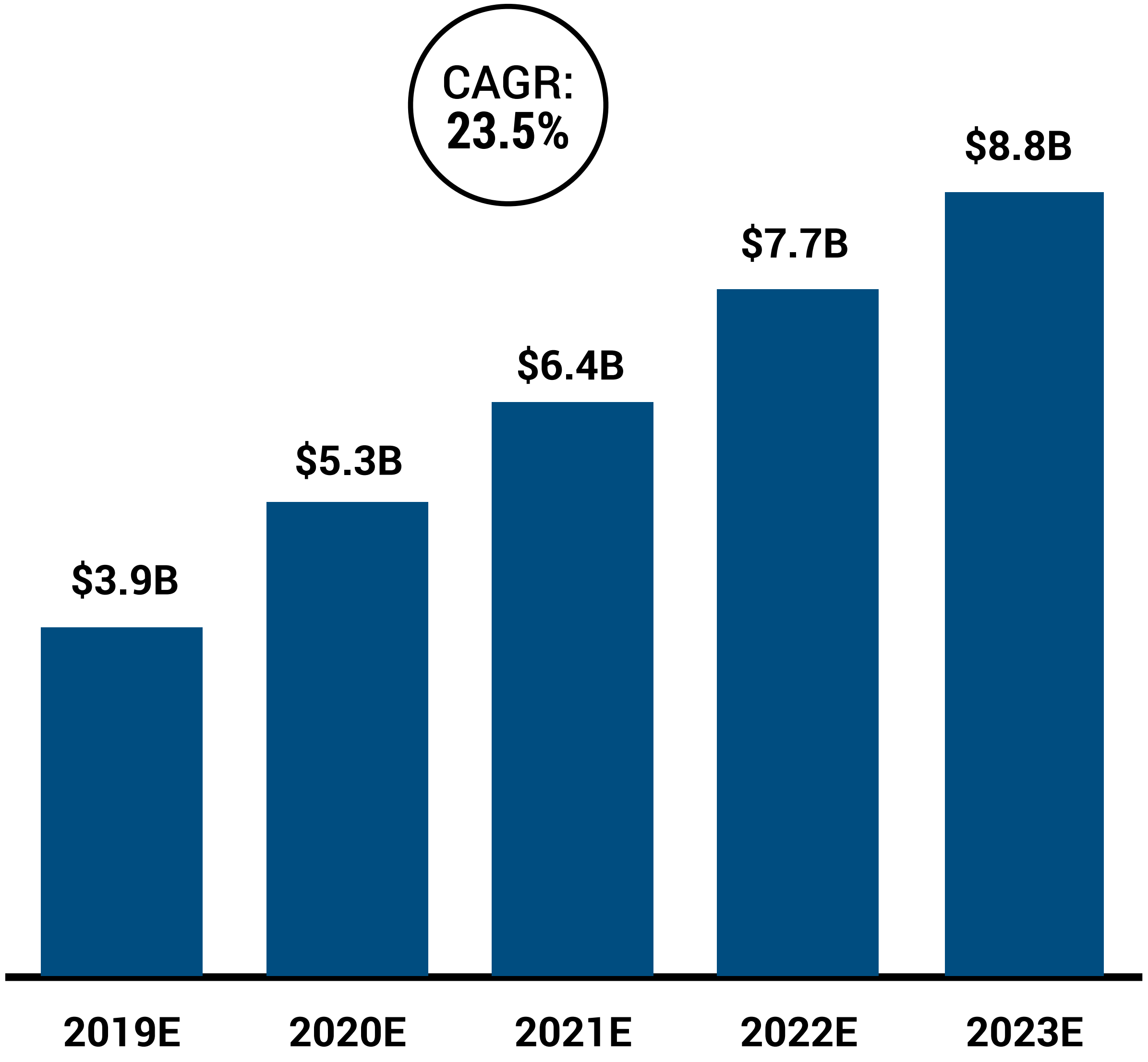
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n = 4,000), Activate 2017 Consumer Tech & Media Research Study (n = 4,047), Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Digital TV Research, Hulu, Netflix

Streaming services will continue to spend most of their budgets on licensed content, even as investment in originals grows

LICENSED CONTENT AS SHARE OF TOTAL CONTENT SPEND[1,2] BY SERVICE, GLOBAL, 2019E-2023E, % SPEND



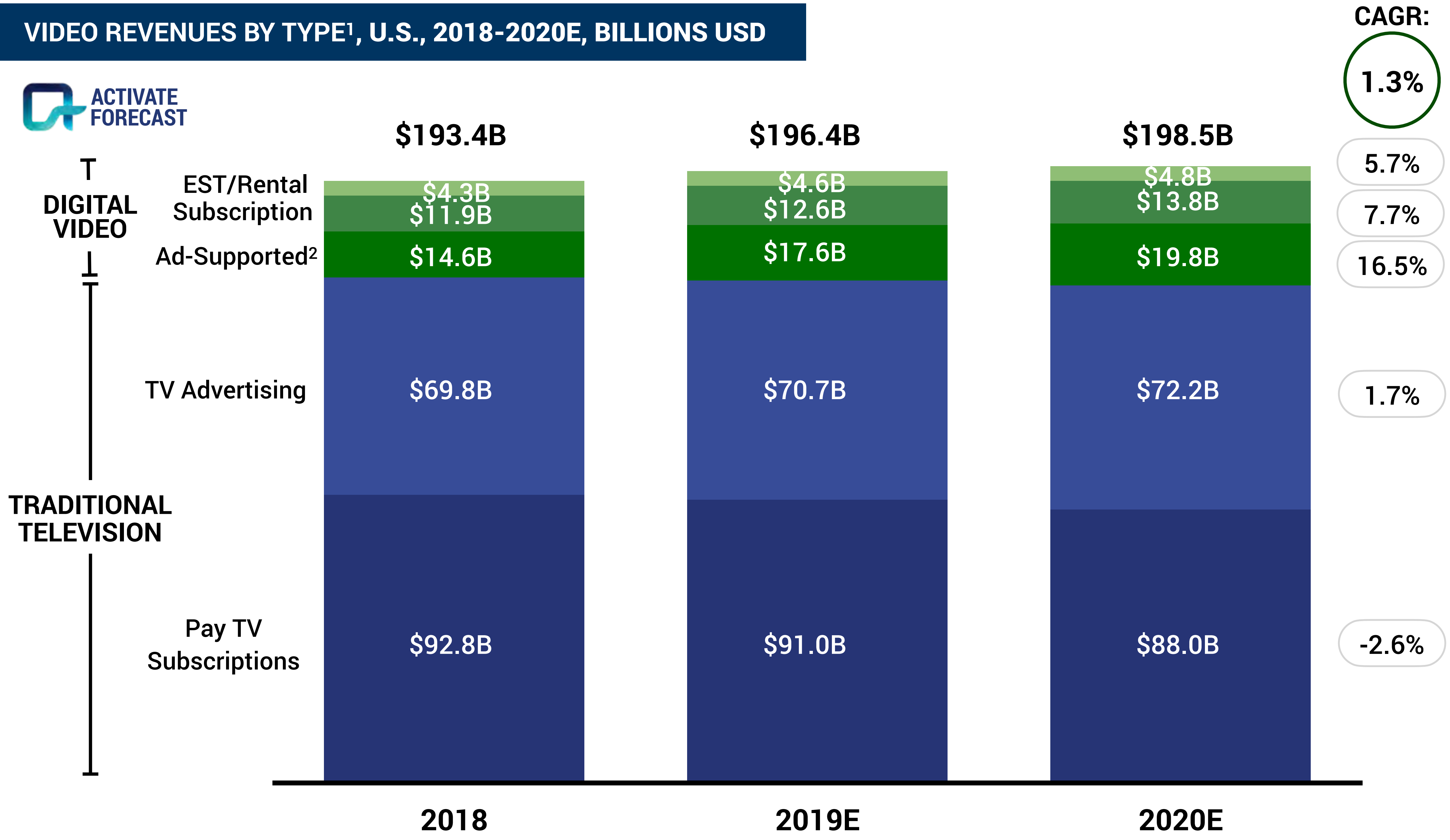
ORIGINAL CONTENT SPEND[2] BY "BIG THREE" SERVICES, GLOBAL, 2019E-2023E, BILLIONS USD



1. Total content spend includes originals and acquisitions.
2. Reflects amortized programming costs for Netflix and Amazon.
Sources: Activate analysis, Company filings, Company press releases, CNBC, Nielsen, SNL Kagan, Variety, The Wall Street Journal

While SVOD draws significant consumer attention and spend, most of the money in video is still in traditional television

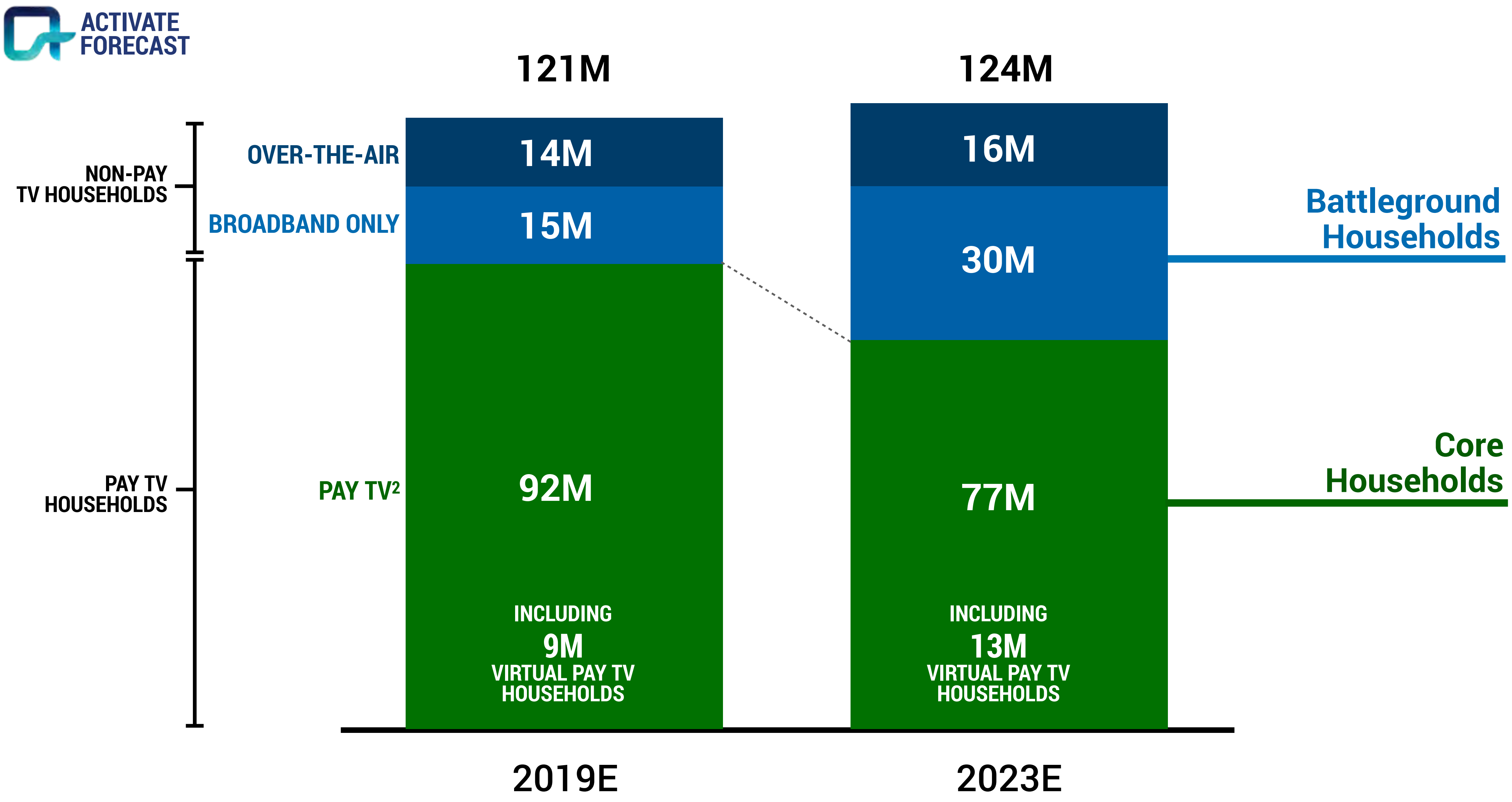
VIDEO REVENUES BY TYPE[1], U.S., 2018-2020E, BILLIONS USD



1. Figures do not sum because of rounding.
2. Only includes in-stream advertising.
Sources: Activate analysis, Digital TV Research, eMarketer, PricewaterhouseCoopers, SNL Kagan, Statista

Pay TV households will decline over the next several years, but they will still make up the largest share of TV households

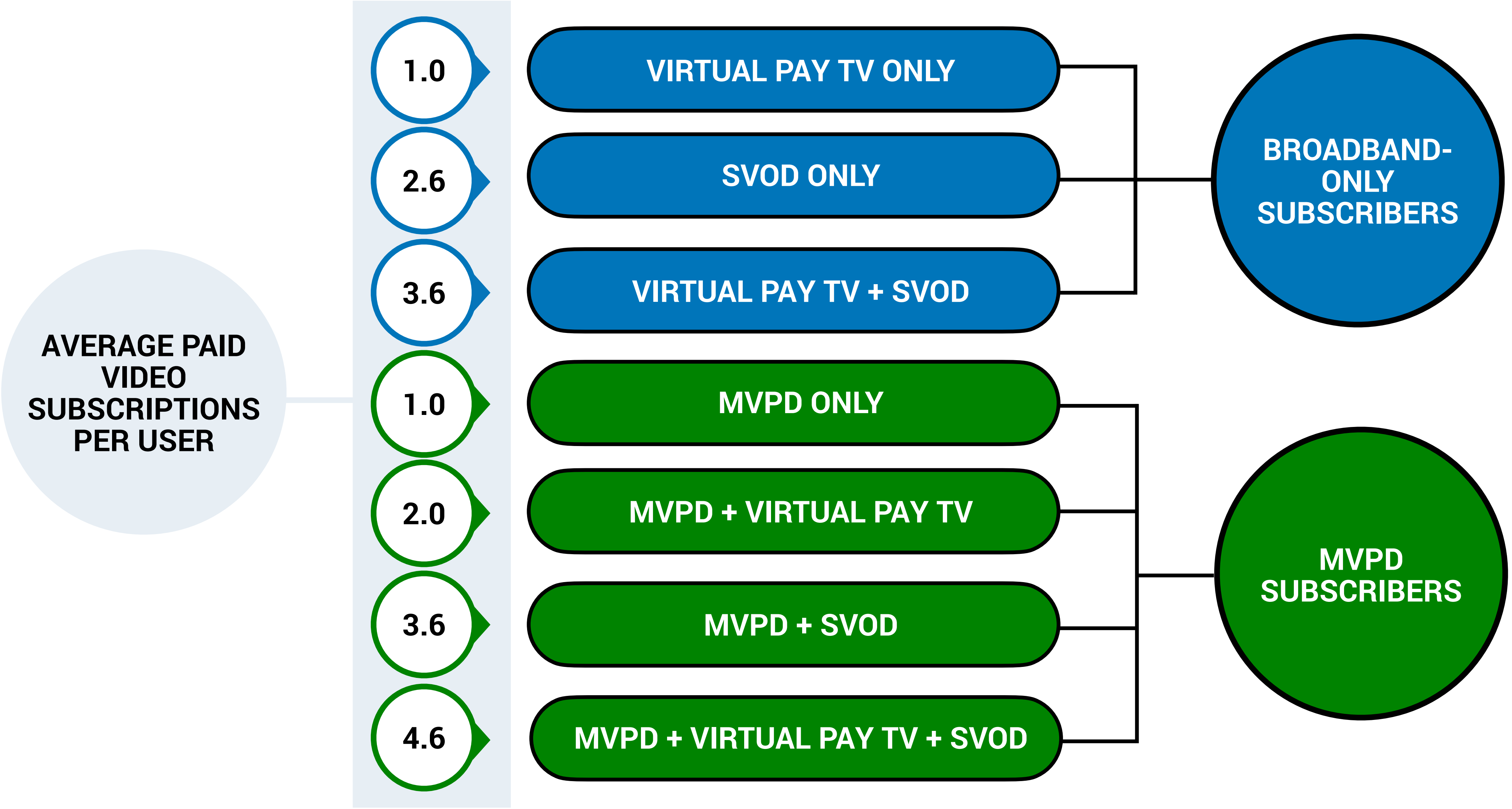
TELEVISION HOUSEHOLD BREAKDOWN[1], U.S., 2019E VS. 2023E, MILLIONS HOUSEHOLDS



1. Figure do not sum because of rounding.
2. Includes traditional Pay TV households (i.e. cable, satellite, telco) and Virtual Pay TV households.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), The Diffusion Group, Leichtman Research Group, MoffettNathanson, Nielsen, NScreenMedia, Parks Associates, REDEF, U.S. Census Bureau, Video Advertising Bureau

Many people subscribe to more than one type of video service or package

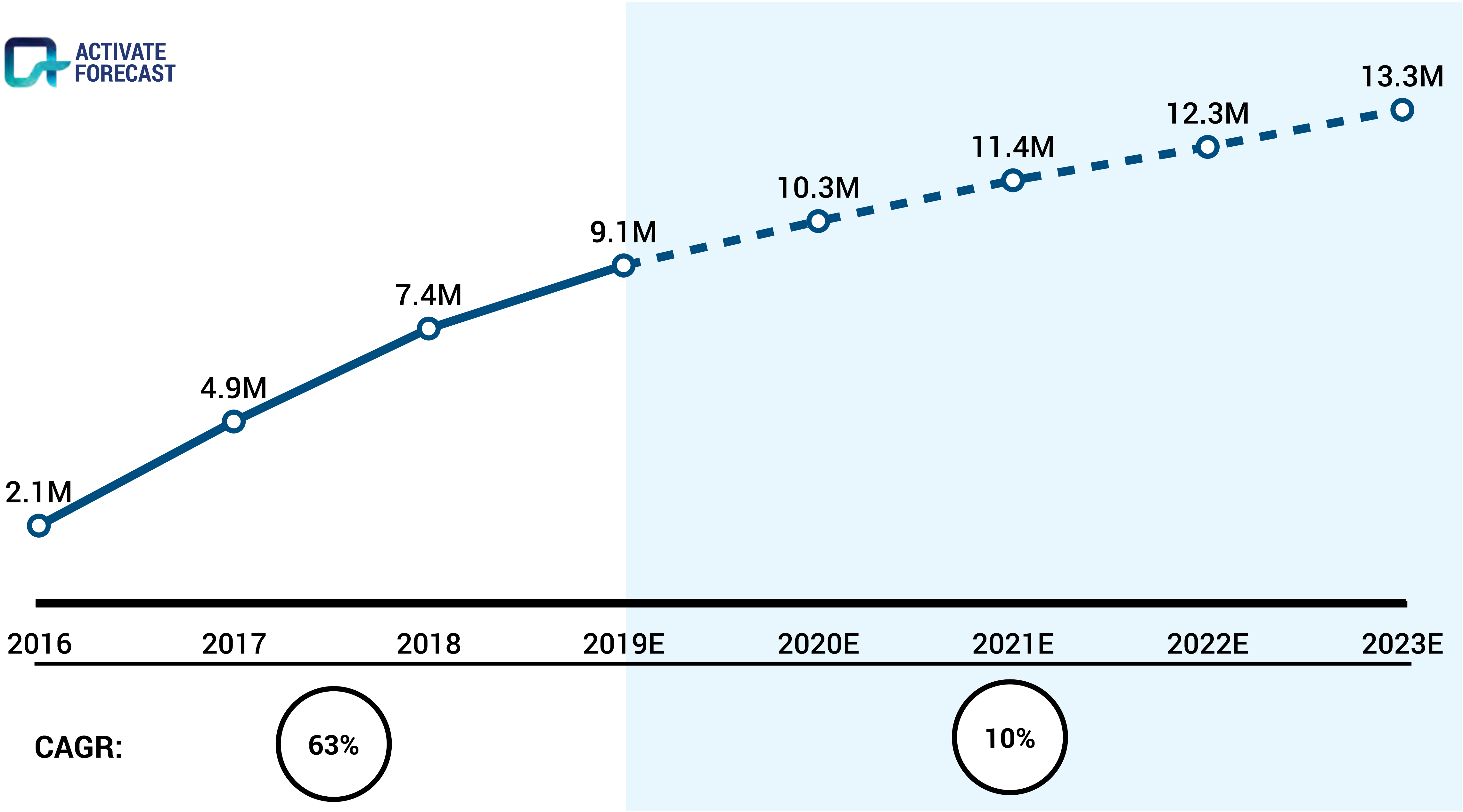
PAID VIDEO SUBSCRIPTIONS PER USER BY SUBSCRIBER SEGMENT, U.S., 2019, AVERAGE NUMBER SUBSCRIPTIONS



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Virtual Pay TV will continue to grow as an alternative to traditional Pay TV, albeit at a slower pace than it has historically

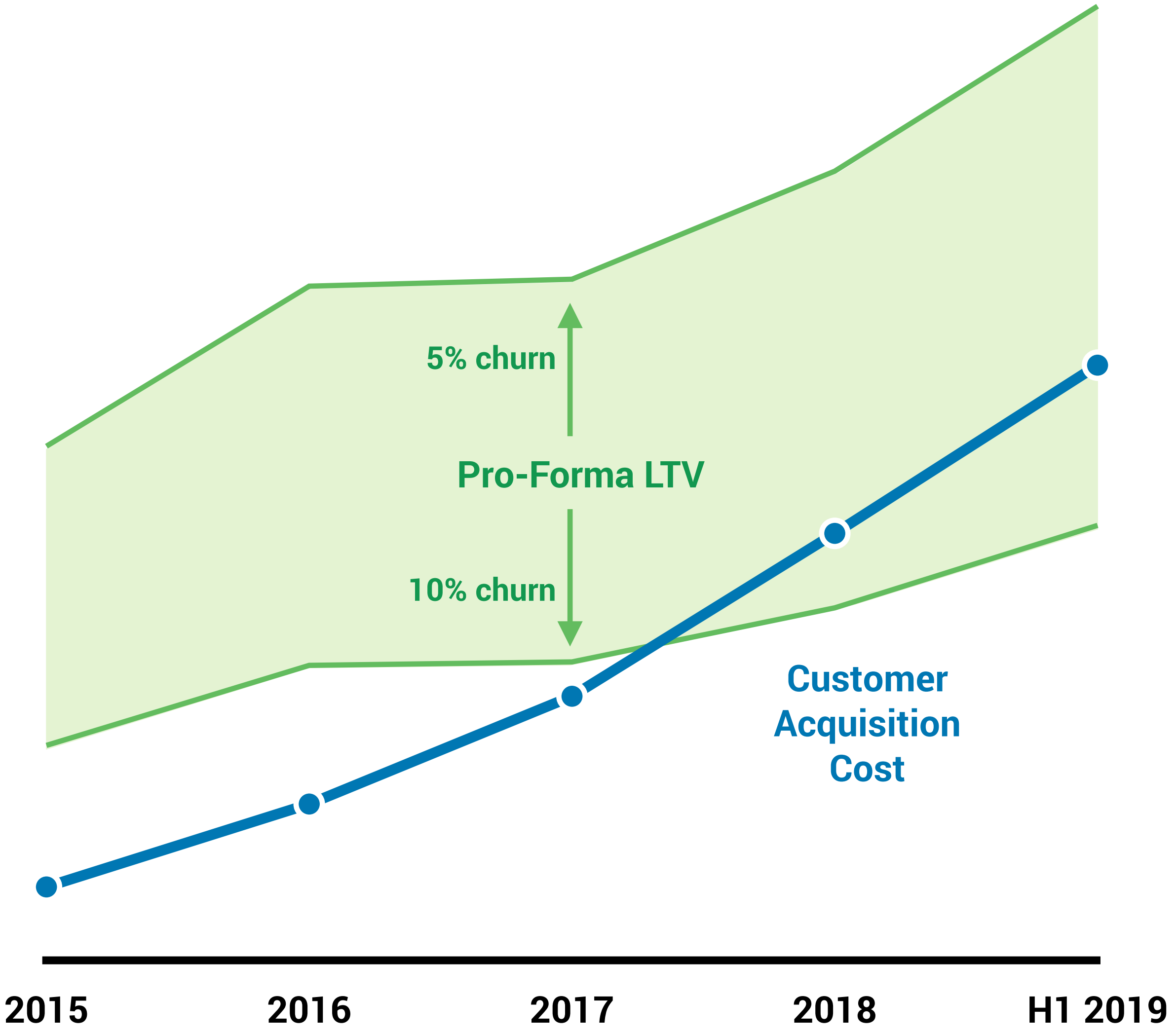
ACTUAL AND PROJECTED VIRTUAL PAY TV HOUSEHOLDS, U.S., 2016-2023E, MILLIONS HOUSEHOLDS



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), The Diffusion Group, MediaRedef, MoffettNathanson, SNL Kagan, U.S. Census Bureau

Digital streaming services have rising customer acquisition costs while spend on new content consistently exceeds EBITDA

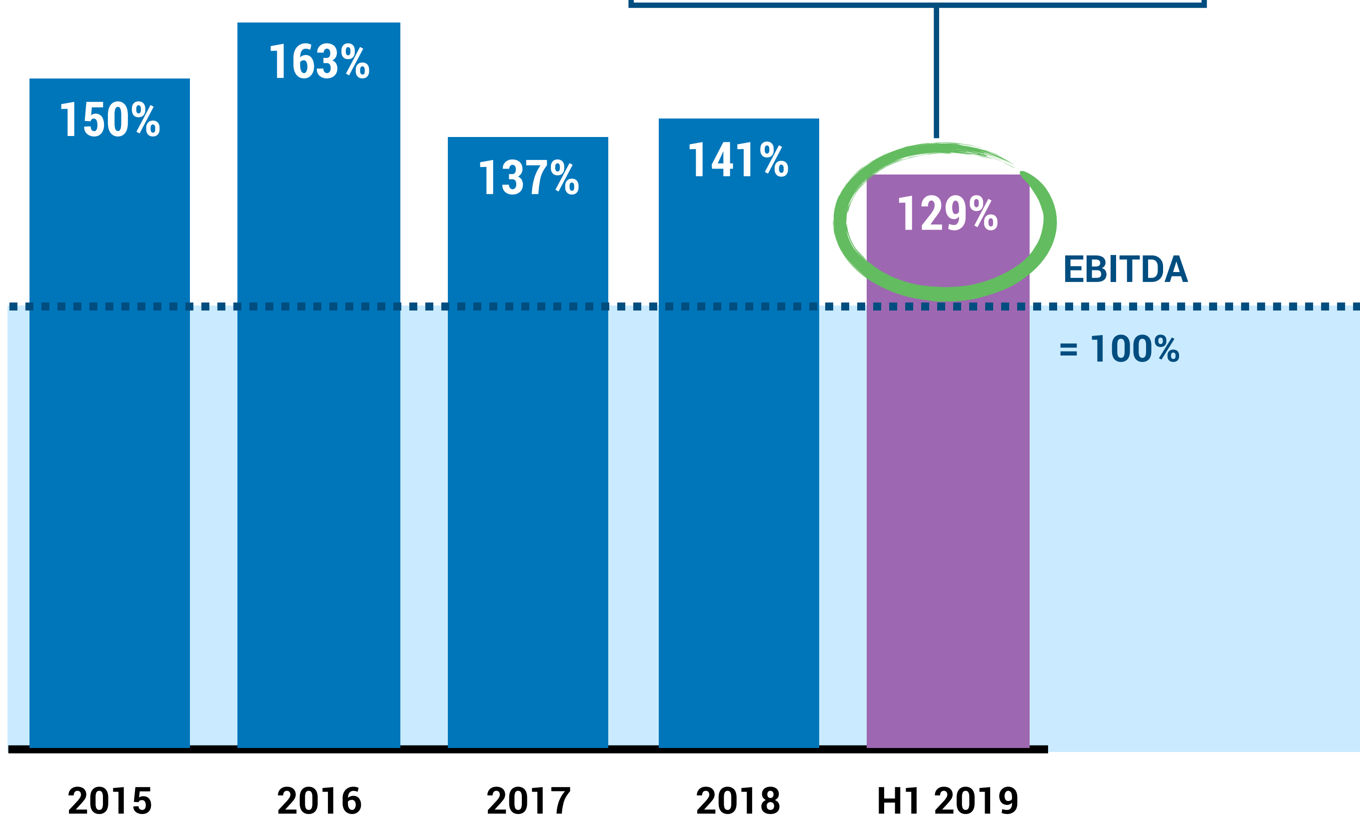
STREAMING SERVICE U.S. PRO-FORMA LTV AND CAC[1],
GLOBAL, 2015-H1 2019, USD PER CUSTOMER



STREAMING SERVICE PROGRAMMING COSTS[2],
GLOBAL, 2015-H1 2019, % RELATIVE TO EBITDA

NEW CONTENT REDUCES CHURN, BUT LOWERS CASHFLOW

Even at increased scale, content spend is **29% higher** than EBITDA



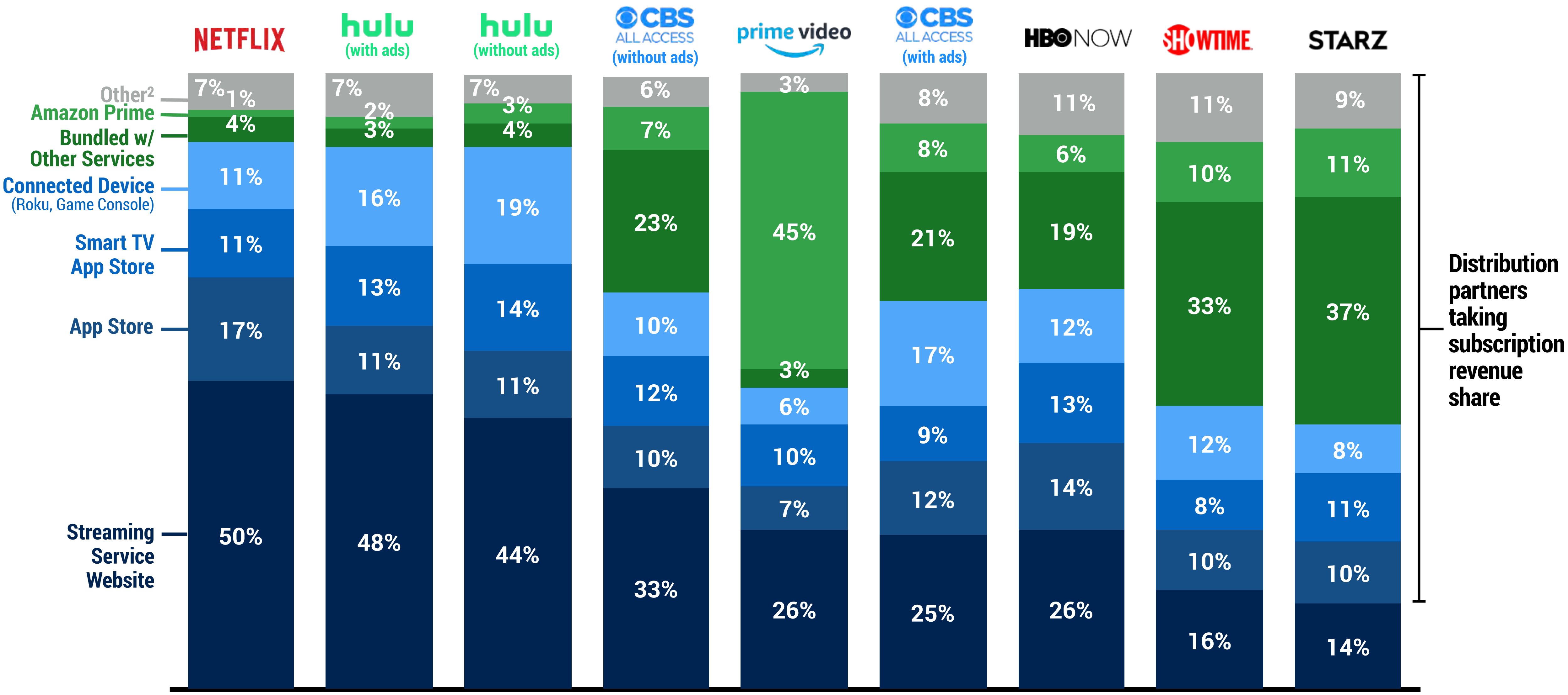
---

1. "CAC" (Customer acquisition cost) defined as trailing 12 month total marketing spend divided by total net paid member additions. "LTV" (Lifetime value) of the customer defined as revenue less cost of revenue per end-of-period paid member divided by pro-forma churn.
2. Programming costs as a 12-month rolling average streaming content assets cashflow impact as a percent of EBITDA.

Sources: Activate analysis, Company filings, Company press releases, Company sites, SNL Kagan

Streaming services will need to partner with distributors for subscriber acquisition

SUBSCRIBER ACQUISITION SOURCE BY STREAMING SERVICE[1], U.S., 2019, % SUBSCRIBERS



1. Figures do not sum to 100% because of rounding.
2. "Other" includes both respondents who reported "other" and "not sure."
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

New bundles will fight to both acquire and retain

PLAYER	EXAMPLE BUNDLES AND ADD-ON SERVICES	DESCRIPTION
CABLE & TELECOM OPERATORS	xfinity mobile Spectrum mobile altice mobile	Cable operators have built mobile offerings for their existing clients through MVNO[1] agreements with telecom providers
	T + NETFLIX xfinity + NETFLIX	Cable operators and telecom providers provide Netflix in their bundles to drive higher consumer engagement and maintain direct distribution relationships with customers
	T + T | VISION	T-Mobile offers its video service at a 10% discount to phone customers[2]
TRADITIONAL PROGRAMMERS	Disney+ + hulu + ESPN+	Disney is pursuing a strategy of penetration pricing with its standalone service at $6.99 and its bundle at $12.99 — the same price as Netflix
TECH PLATFORMS	Hardware + tv+	Apple is seeking to capture more value from its user base, pricing at $4.99 and offering a year of free TV+ service with the purchase of select hardware products
MUSIC STREAMING SERVICES	Spotify + hulu	Spotify offers a free Hulu subscription for paid customers through strategic partnership[3]

---

1. Mobile Virtual Network Operator.
2. As of August 2019.
3. Signups only available to students as of May 2019.

Sources: Activate analysis, Company filings, Company press releases, Company sites

Services from programmers will compete for exclusive content deals

SERVICE	PRICING	MAJOR CONTENT ASSETS	LAUNCH DATE
Disney+	• $6.99 per month • $12.99 per month to add Hulu, ESPN+	MARVEL PIXAR Animation Studios STAR WARS 20th Century Fox	Nov. 2019
HBO max	• $16-17 per month (anticipated)	WB DC HBO The CW	Late 2019 (anticipated)
peacock	• Free (ad-supported)	UNIVERSAL NBC DreamWorks TELEMUNDO	Apr. 2020

ESTIMATED ANNUALIZED COST OF MAJOR EXCLUSIVE CONTENT DEALS BY PROGRAMMER, GLOBAL, 2019, MILLIONS USD[1]

EXAMPLE DIGITAL EXCLUSIVES AND REBOOTS

BATTLESTAR GALACTICA

SAVED BY THE BELL

STAR TREK DISCOVERY

Lizzie McGUIRE

DR. DEATH

gossip girl

activate consulting

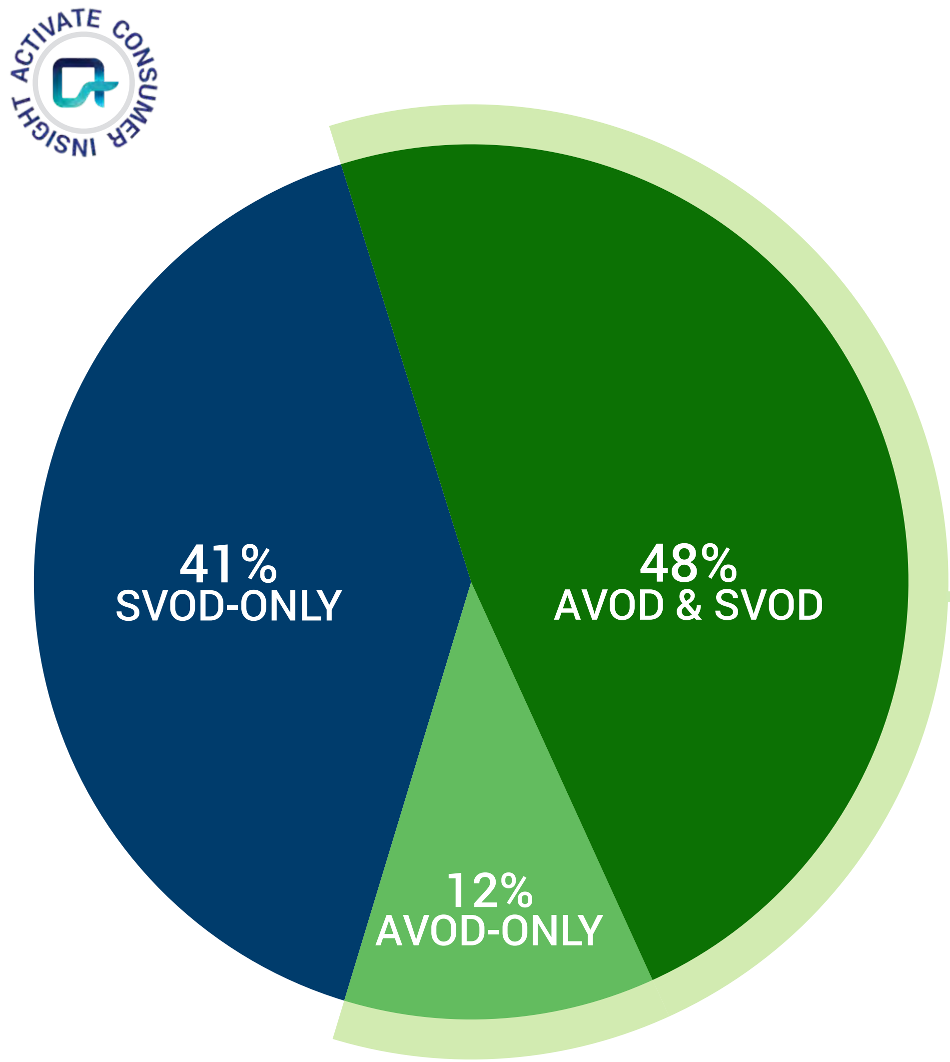
---

1. Deal values reflect annualized programming costs of multi-year agreements signed in 2019.
2. Estimated value of Friends deal is $85M per year. Estimated value of Big Bang Theory deal is $120M per year.

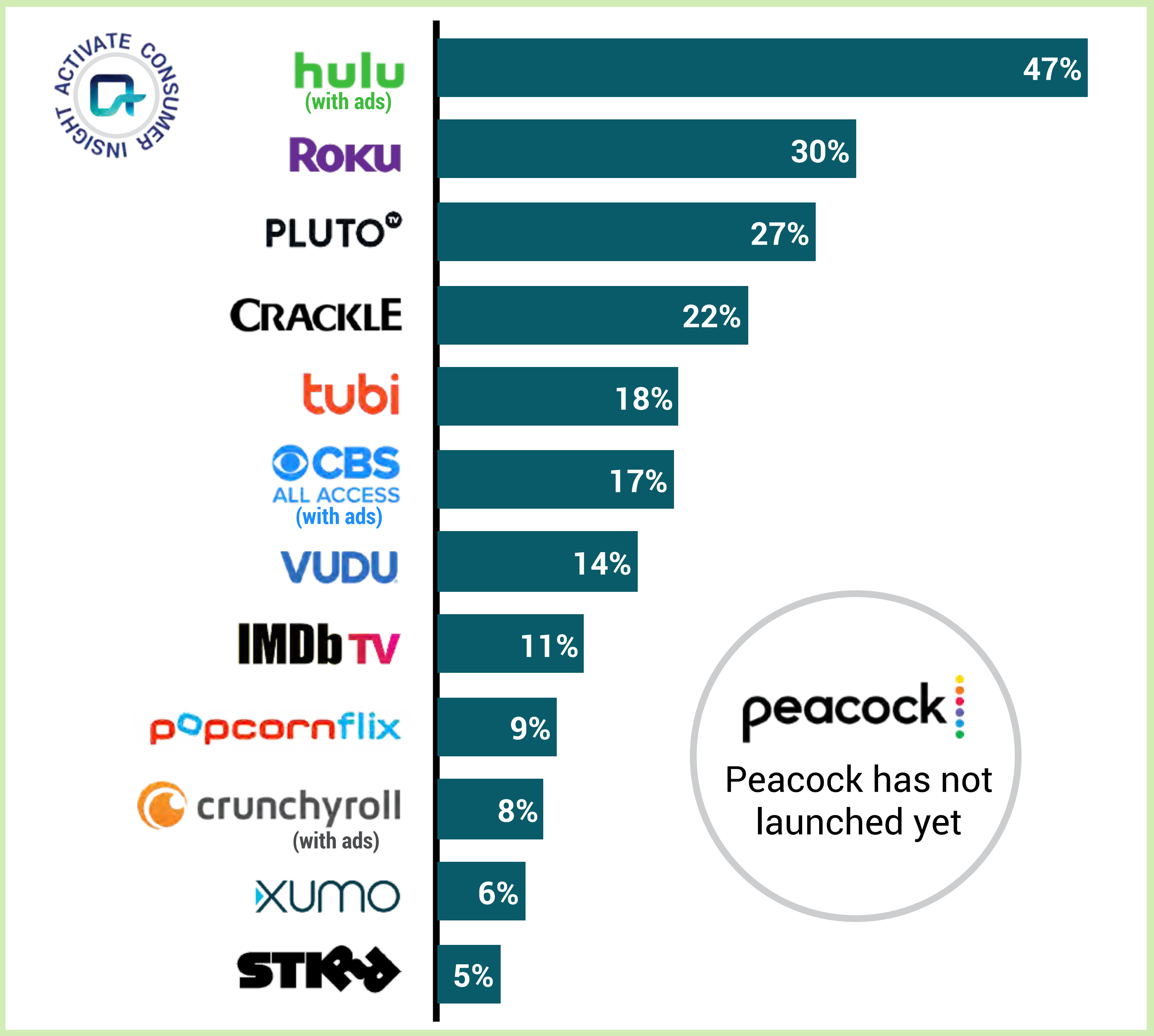
Sources: Activate analysis, CNBC, Company press releases, Company sites, Hollywood Reporter, Variety, The Wall Street Journal

In addition, more viewers will add free AVOD services on top of their subscriptions

AVOD & SVOD USERS, U.S., 2019, % TOTAL USERS[1]



USAGE OF AVOD SERVICES, U.S., 2019, % AVOD USERS



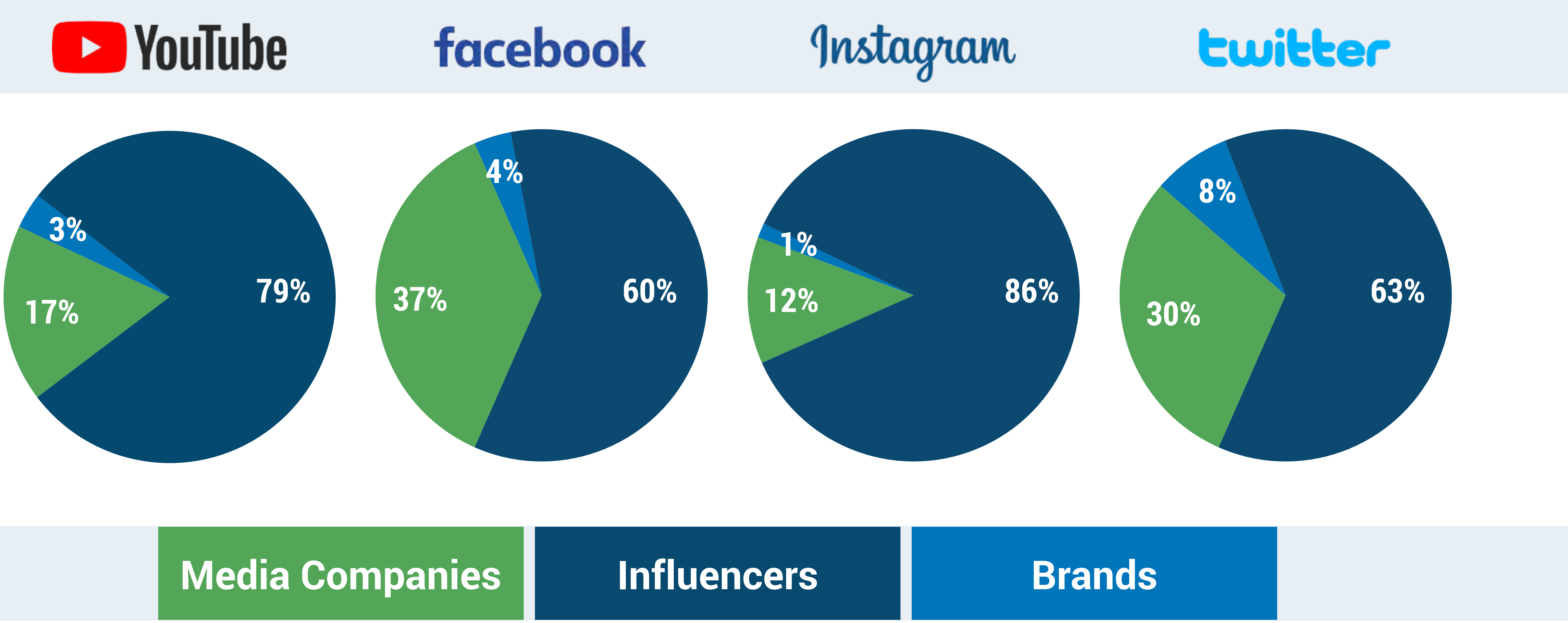
Peacock has not launched yet

---

1. Figures do not sum to 100% because of rounding.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

In web video, established media companies account for a significant share of views

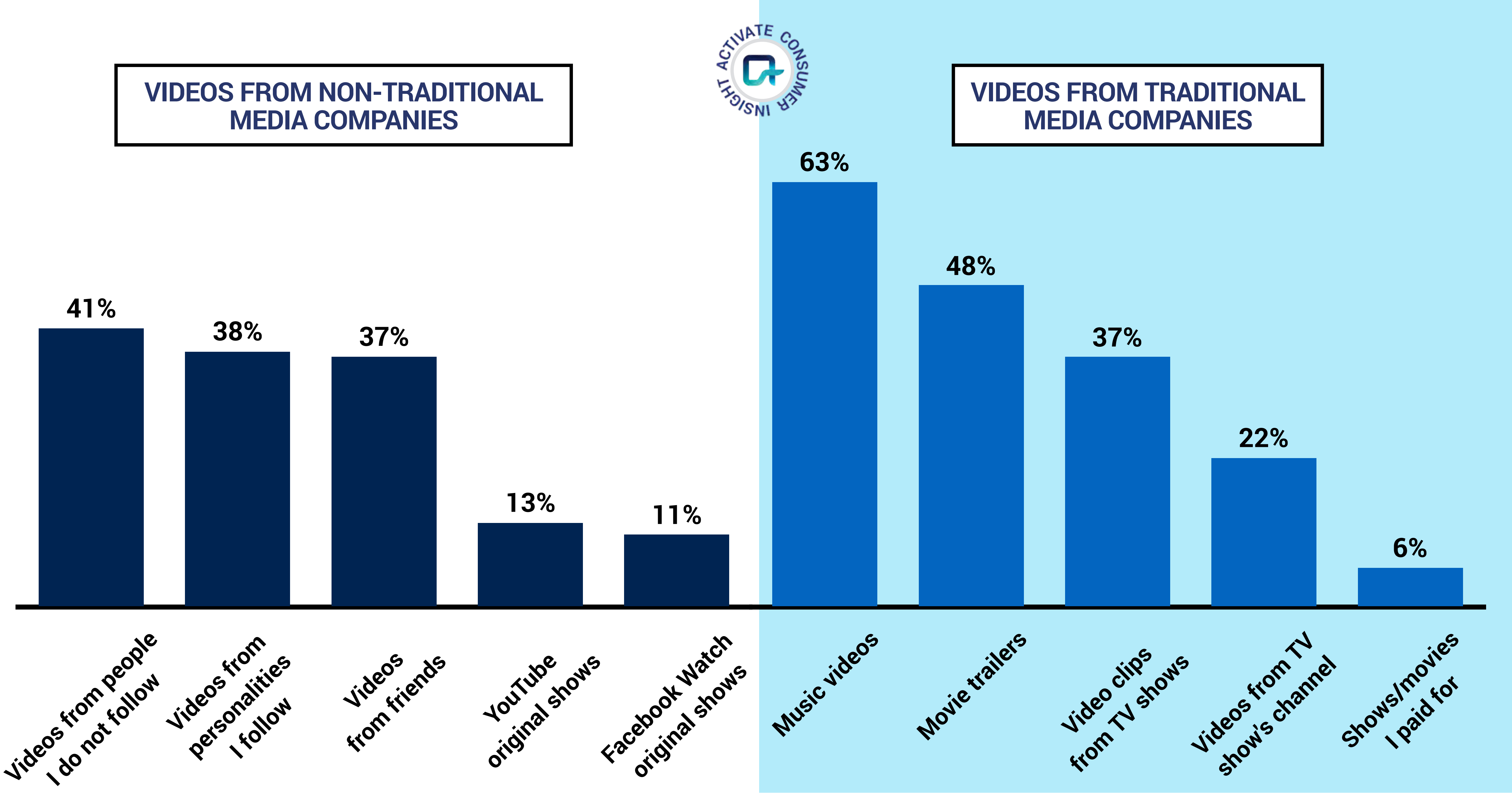
SHARE OF VIDEO VIEWS BY PLATFORM BY PRODUCER[1], GLOBAL, Q4 2018-Q3 2019, % TOTAL VIEWS[2]



[1] Only includes creators for each quarter that have at least 2M views for that given quarter. Media companies are organizations whose primary business model is the production or distribution of content. Influencers are personalities, celebrities, or public figures with significant social presence. Brands are organizations that primarily sell non-media.
[2] Figures do not sum to 100% because of rounding.
Sources: Activate analysis, Tubular Labs

On Facebook and YouTube, users are more likely to view content uploaded by traditional media companies vs. content from non-traditional media companies

VIDEO CONSUMPTION AMONG YOUTUBE AND FACEBOOK USERS, U.S., 2019, % USERS

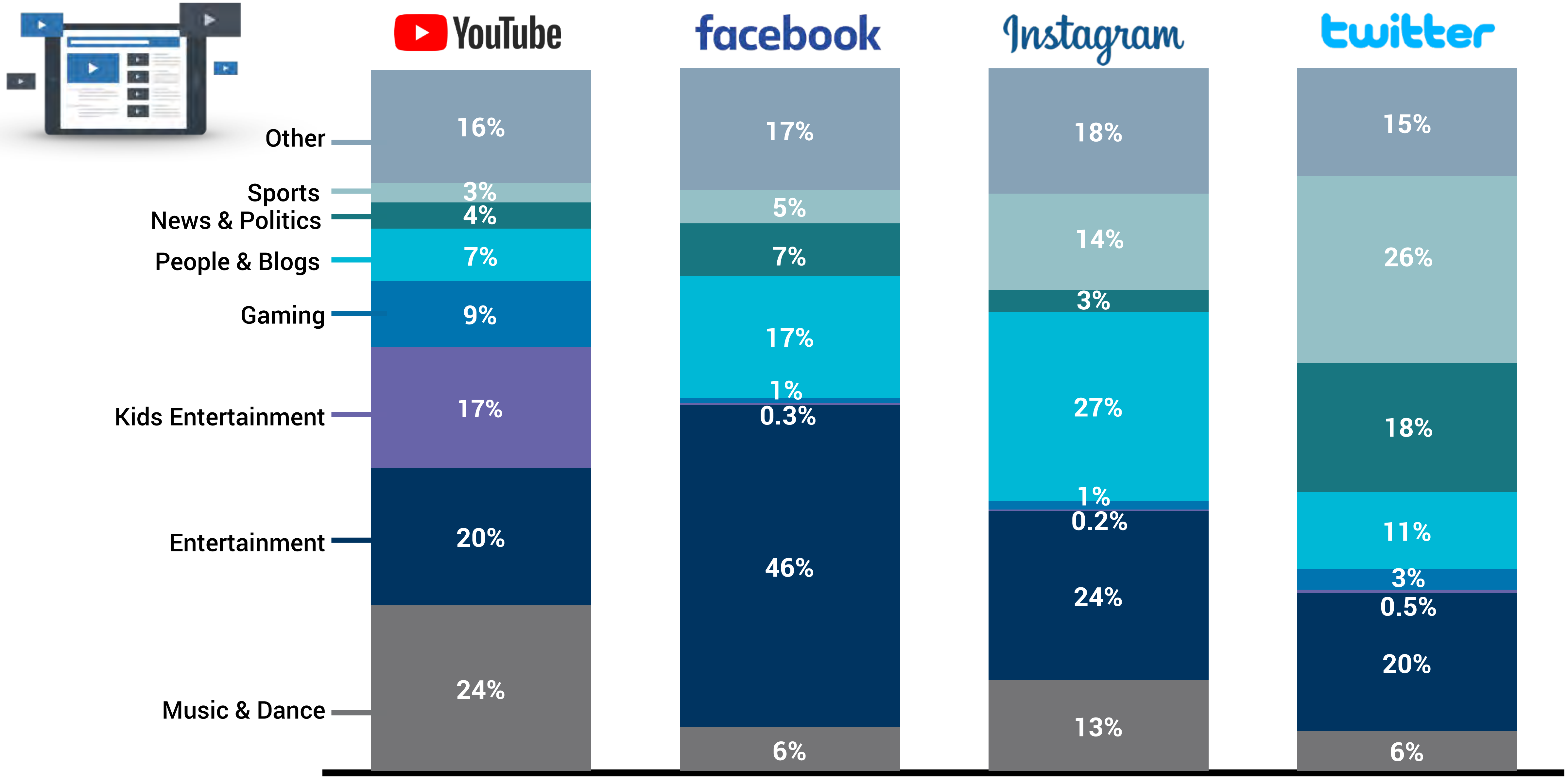


Videos from people I do not follow	41%
Videos from personalities I follow	38%
Videos from friends	37%
YouTube original shows	13%
Facebook Watch original shows	11%
Music videos	63%
Movie trailers	48%
Video clips from TV shows	37%
Videos from TV show's channel	22%
Shows/movies I paid for	6%

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Genre viewing varies significantly by web video platform

MOST VIEWED GENRES BY PLATFORM, GLOBAL, Q4 2018-Q3 2019, % TOTAL VIEWS[1]



	YouTube	facebook	Instagram	twitter
Other	16%	17%	18%	15%
Sports	3%	5%	14%	26%
News & Politics	4%	7%	3%	18%
People & Blogs	7%	17%	27%	11%
Gaming	9%	1%	1%	3%
Kids Entertainment	17%	0.3%	0.2%	0.5%
Entertainment	20%	46%	24%	20%
Music & Dance	24%	6%	13%	6%

---

1. Excludes general interest and live streaming. Figures do not sum to 100% because of rounding.
Sources: Activate analysis, Tubular Labs

Multi-platform success is rare among influencers – no top 10 creator is in another platform's top 10

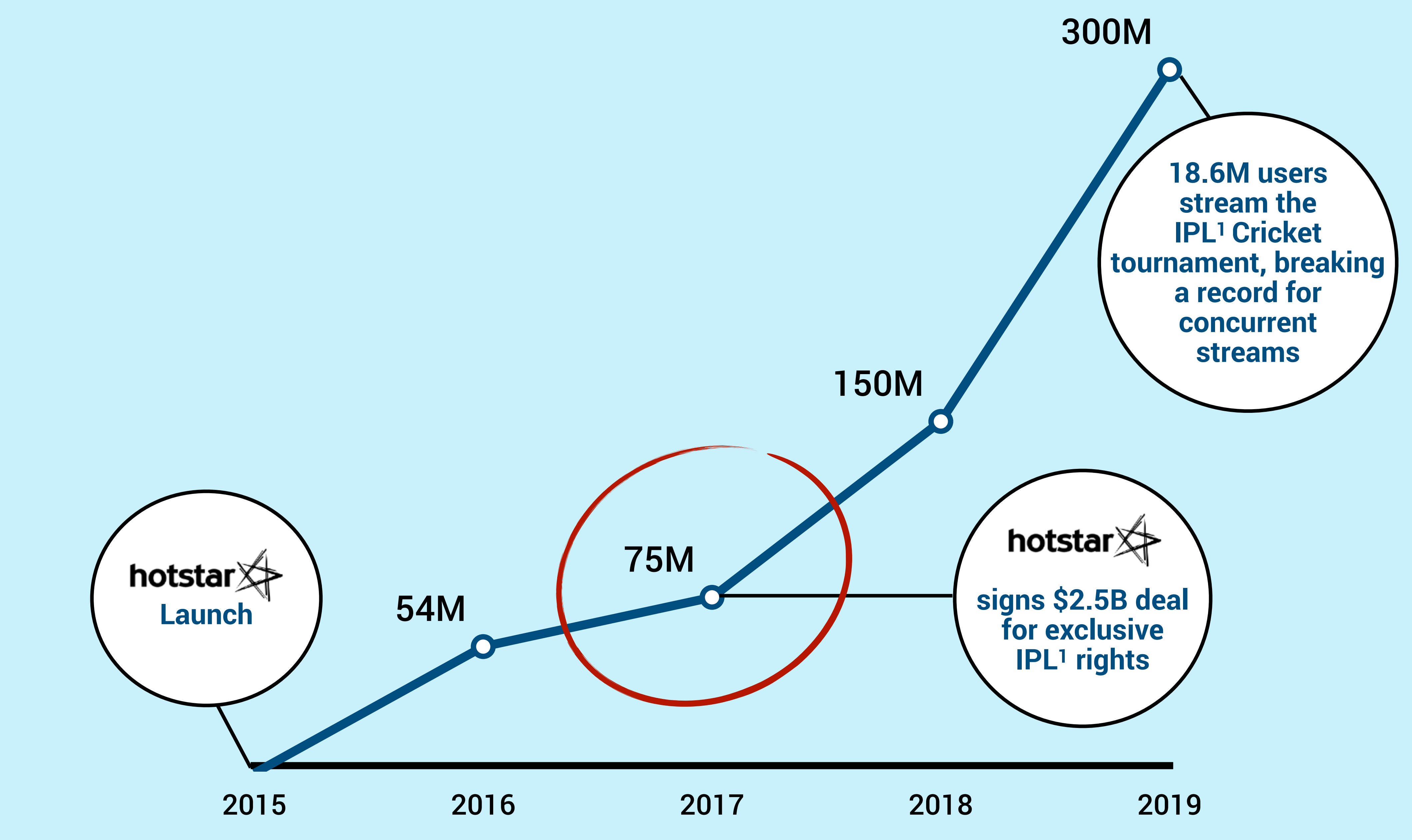
TOP 10 INFLUENCERS BY PLATFORM, U.S., OCT. 2017-SEPT. 2019, MILLIONS TOTAL VIEWS

RANK	YouTube		facebook		Instagram		🐦	
1	Like Nastya Vlog	12,603	Marcelo Tinelli	3,578	Cardi B	3,226	BANGTANTV	927
2	Vlad and Nikita	9,976	Jay Shetty	3,511	BestVines BVIRAL	2,506	Donald J. Trump	735
3	Kids Diana Show	9,974	Voompla	3,083	therock	2,305	Free Memes Kids	546
4	Ryan ToysReview	7,712	Platano	3,070	Lele Pons	1,896	Quenlin Blackwell	523
5	Toys and Colors	7,473	Love Is Part Of Life	2,928	Huda Beauty	1,831	Lil Nas X	444
6	Canal KondZilla	7,000	Công Lý	2,801	Will Smith	1,759	UnusualVideos	416
7	Boram Tube Vlog	6,649	BigDawsTv	2,545	@DOG	1,646	Aaron Rupar	393
8	Shemaroo Filmi Gaane	6,312	Ben Phillips	2,379	Lambe Turah	1,644	Brother Nature	377
9	Luccas Neto - Luccas Toon	5,297	Gãy TV	2,079	snoopdogg	1,643	Physics & Astronomy Zone	374
10	Stacy Toys	5,038	Nas Daily	2,022	Couples!	1,617	Red Dead 2	367

Sources: Activate analysis, Tubular Labs

Sports rights will drive audiences; cricket made Hotstar the biggest service in India

HOTSTAR MONTHLY ACTIVE USERS, 2015-2019, GLOBAL, MILLIONS



signs $2.5B deal for exclusive IPL[1] rights

18.6M users stream the IPL[1] Cricket tournament, breaking a record for concurrent streams

Facebook ICC EXCLUSIVE DEAL

- In September 2019, Facebook secured a five-year deal for exclusive digital rights to ICC events in India[2]
- Facebook competed with Hotstar in 2017 for the exclusive IPL[1] rights, bidding an estimated $600 million, but lost

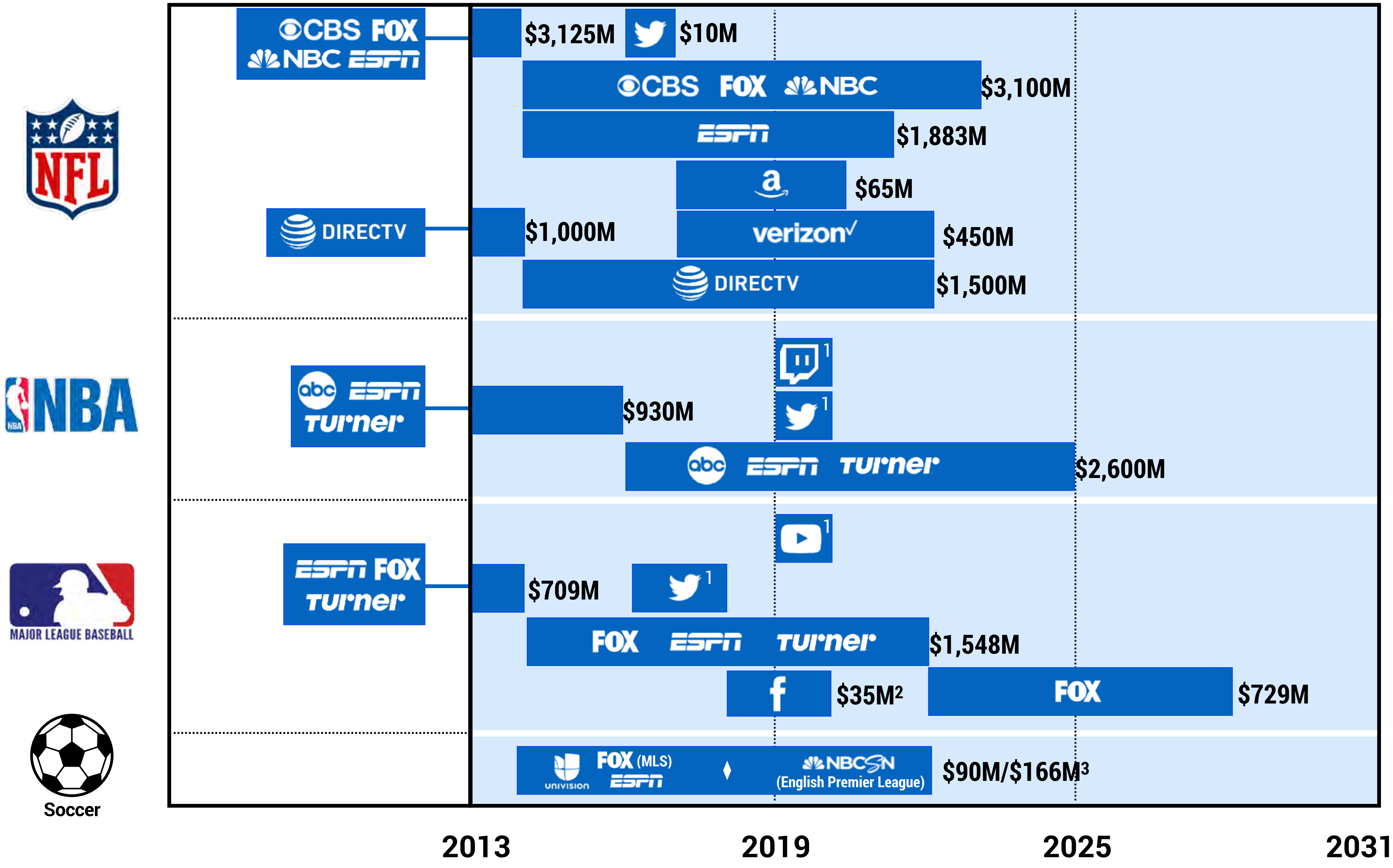
---

1. Indian Premier League.
2. Financial terms of Facebook deal are undisclosed.

Sources: Activate analysis, CNN, Company filings, Company press releases, Financial Express, TechCrunch

Sports rights are critical in this new streaming world — a healthy share of meaningful rights are available in the next three years

MAJOR RIGHTS PACKAGES BY SPORT, CONTRACT LENGTH, AND ANNUAL VALUE, GLOBAL, 2013-2028, MILLIONS USD



Alibaba has the rights to air college sports (e.g. Pac-12) in China through 2024

1. Financial terms of deal undisclosed 2. Value reflects first year deal. Second year extension undisclosed.
3. First value refers to estimated value of MLS deal, and second to estimated value of EPL deal.
Sources: Activate analysis, Company press releases, The New York Times, Quartz, SNL Kagan, Reuters, TechCrunch, Variety, The Wall Street Journal, Yahoo

CONTENTS

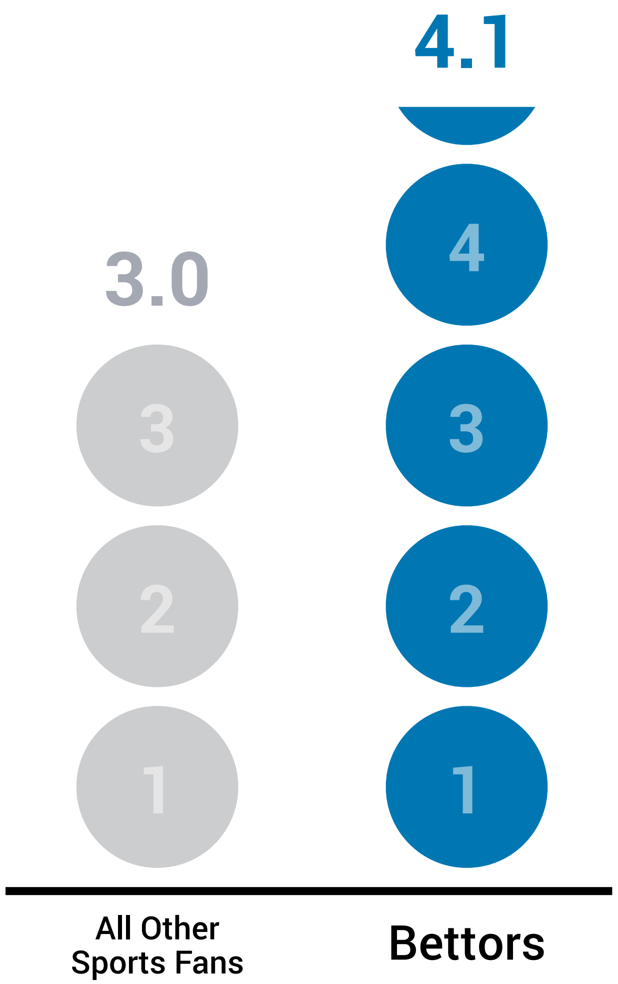
The Sports betting experience will begin to resemble financial trading

Source: Activate analysis

Wagering drives sports viewership — as legal betting proliferates, we expect to see much more live engagement

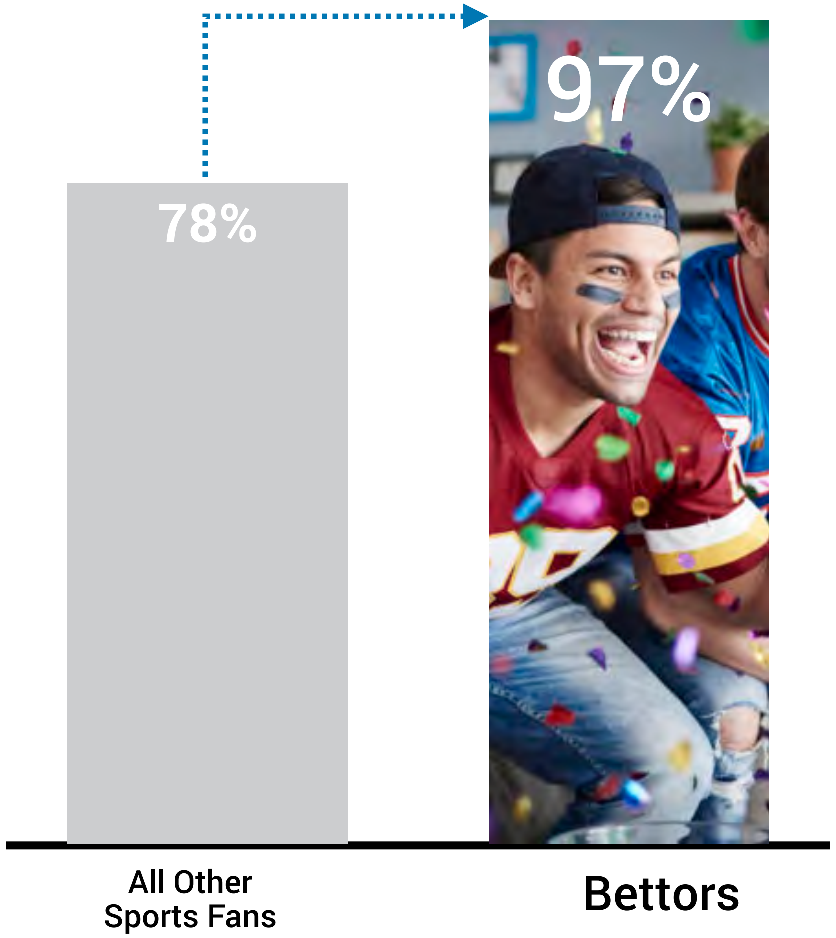
NUMBER OF SPORTS FOLLOWED, U.S., 2019,
% SPORTS FANS[1] AGED 18+

The average bettor follows one more sport than the average non-bettor



LIVE SPORTS VIEWERSHIP, U.S., 2019,
% SPORTS FANS[1] AGED 18+

Bettors are more likely to watch live sports[2]



---

1. "Sports fans" defined as followers of at least one sport.
2. On all media formats and through live game attendance.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Sports betting is already becoming an immersive multimedia experience with touchpoints beyond core betting actions

MEDIA

ESPN DAILY WAGER | THE ACTION NETWORK

News/info about upcoming lines | Bet tracking

Second Spectrum | NFL NEXT GEN STATS

Live game with betting/statistics overlays

VSiN | PARDON MY TAKE

Postgame podcast | Commentary | Bet tracking

BEFORE GAME → DURING GAME → POSTGAME

BETTING

Picks based on proprietary algorithms or betting expert recommendations

THE ACTION NETWORK | Sportspicker AI | TQE THE QUANT EDGE

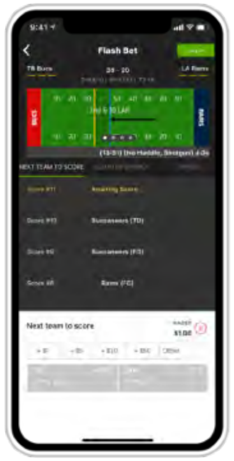
Bets placed before and during the game

Money line bets (bets on the outcome of the game)	Point spread	Over/ under

Indianapolis Colts
Money Line (Incl. OT)
Indianapolis Colts @ Kansas City Chiefs
100 @ +425
Returns: $525.00

FOXBET | BETMGM

Live, in-play bets



- Next team to score
- Player to score next
- Length of next run/pass

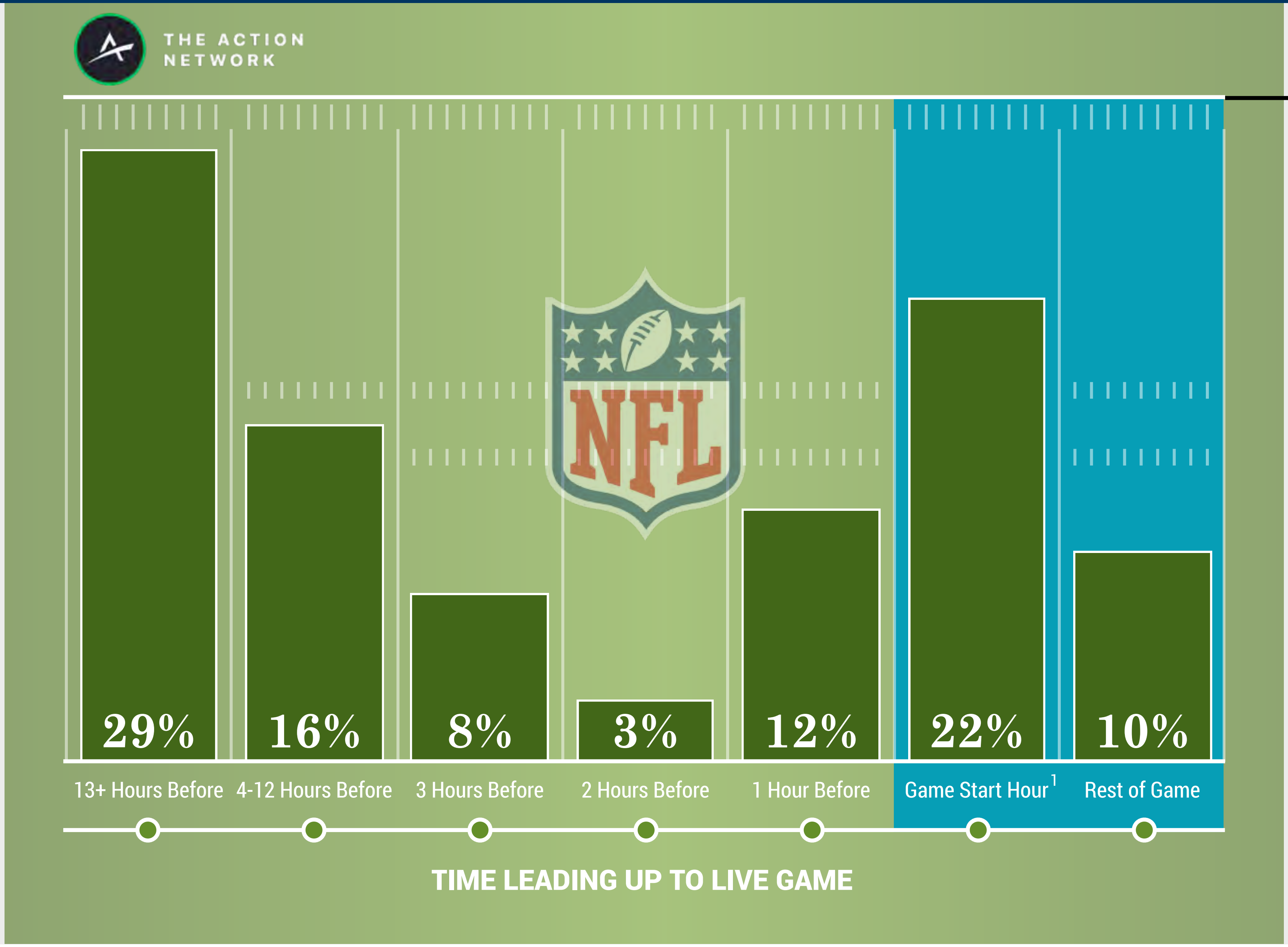
DRAFTKINGS | FANDUEL

activate consulting

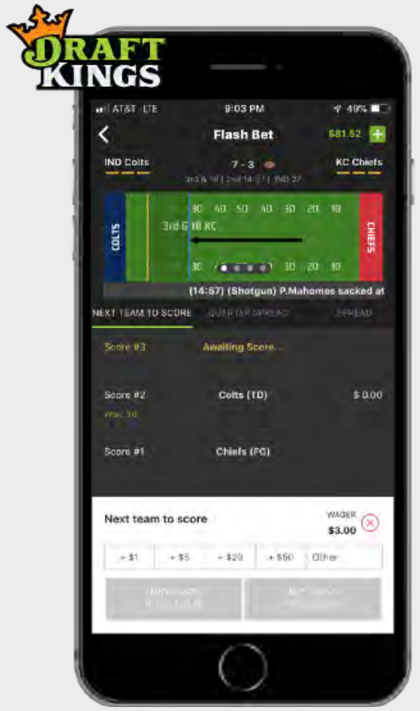
Sources: Activate analysis, Company sites

Wagering activity during and in the hour leading up to a game accounts for a significant portion of all bets and generates excitement and engagement with the live event

NFL BETS TRACKED BY HOUR, U.S., 2019, % TOTAL BETS TRACKED



In-game/in-play wagering: odds change after every play; bettors can wager on the game until the final whistle



EXAMPLES OF IN-PLAY BETS

- Next team to score
- Type of next play
- Length of the next pass/run

The percent of bets placed in-game will increase; currently, only 4 states allow legal remote mobile betting

---

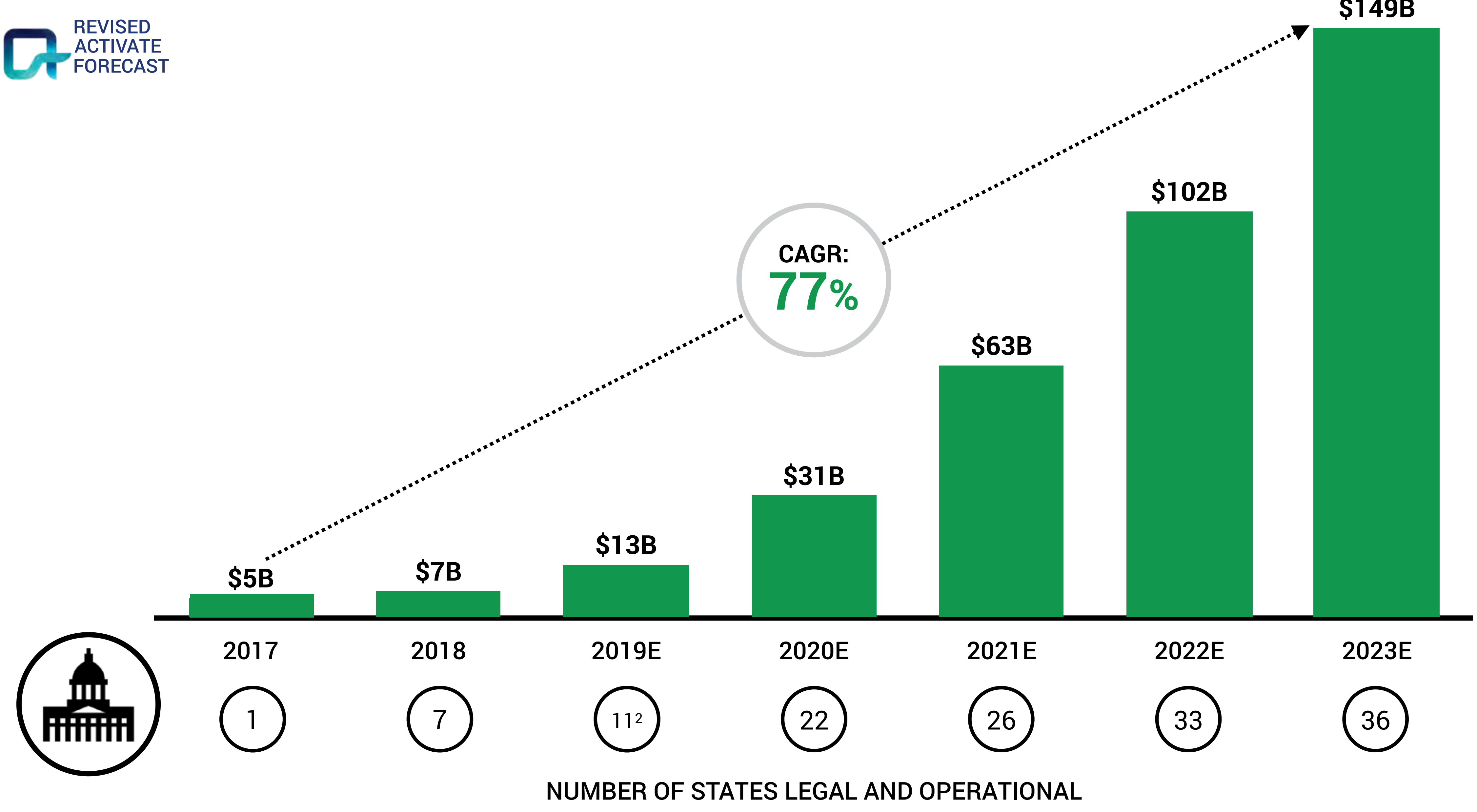
1. Game start hour includes any bet tracked during the hour the game starts (e.g. if the game starts at 8:20, this includes all bets tracked between 8pm-9pm, inclusive).

Sources: Activate analysis, The Action Network

Driven by strong legislative tailwinds, we forecast that the total sports betting amount wagered will reach nearly $150B per year by 2023

TOTAL AMOUNT WAGERED[1], U.S., 2017-2023E, BILLIONS USD

REVISED ACTIVATE FORECAST



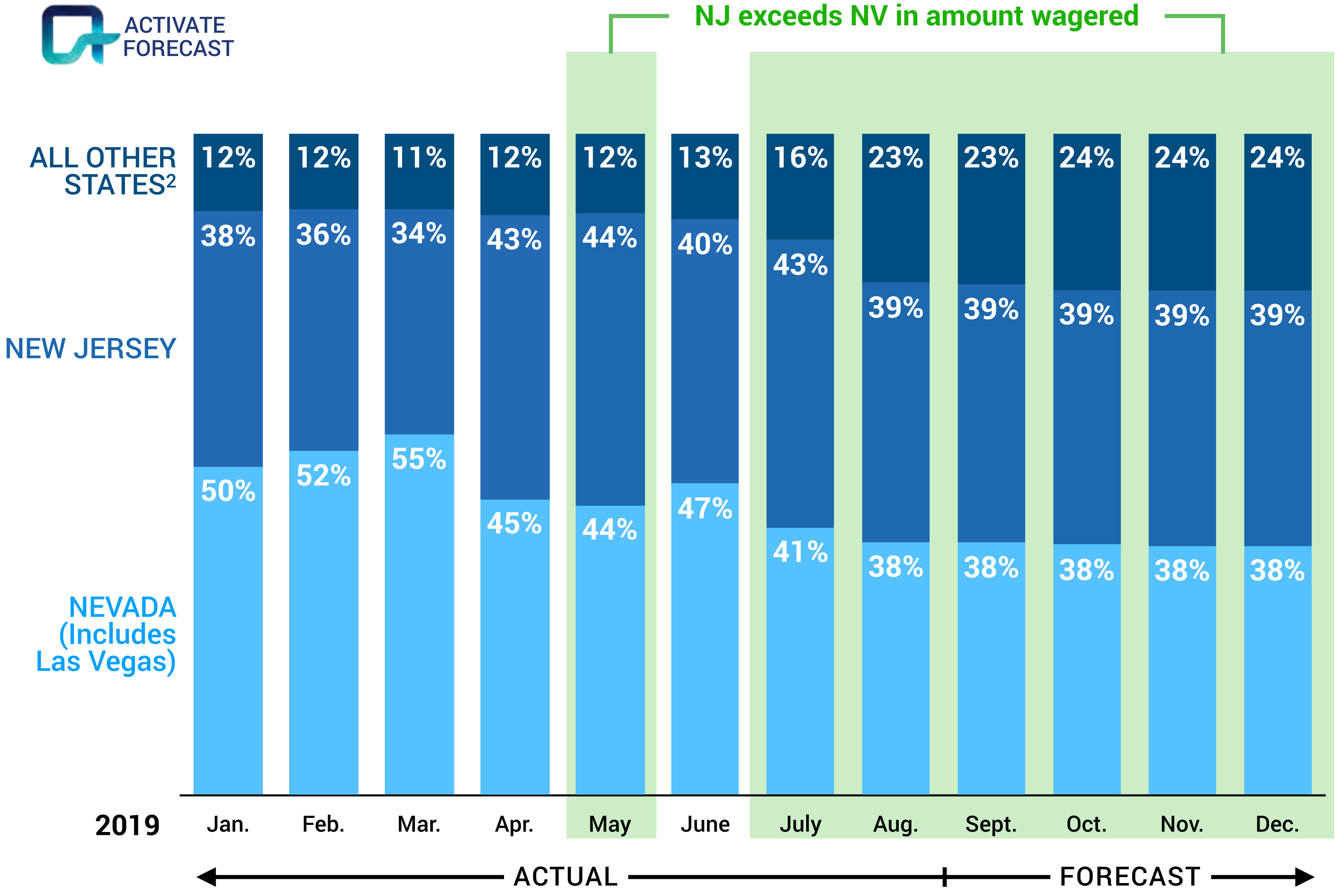
	2017	2018	2019E	2020E	2021E	2022E	2023E
Total amount wagered	$5B	$7B	$13B	$31B	$63B	$102B	$149B
Number of states legal and operational	1	7	11[2]	22	26	33	36

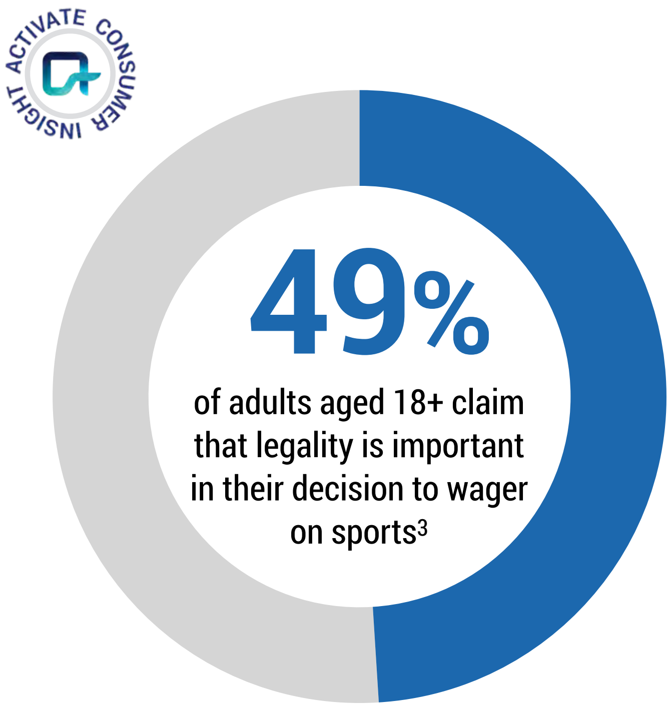
activate consulting

1. Projection assumes 76% legalization of the U.S. betting economy by 2023. U.S. betting economy consists of the cumulative GDP in states that have legalized sports betting. 2. In 2019 19 states are legal, but only 11 with recognized revenue.
Sources: Activate analysis, Bureau of Economic Analysis, Legal Sports Report, Nevada Gaming Control Board

The amount legally wagered on sports in New Jersey will surpass that of Nevada – other states will reach a quarter of all wagers by the end of 2019

AMOUNT WAGERED ON SPORTS BY STATE, U.S., 2019E, % ALL WAGERS[1]





49% of adults aged 18+ claim that legality is important in their decision to wager on sports[3]

---

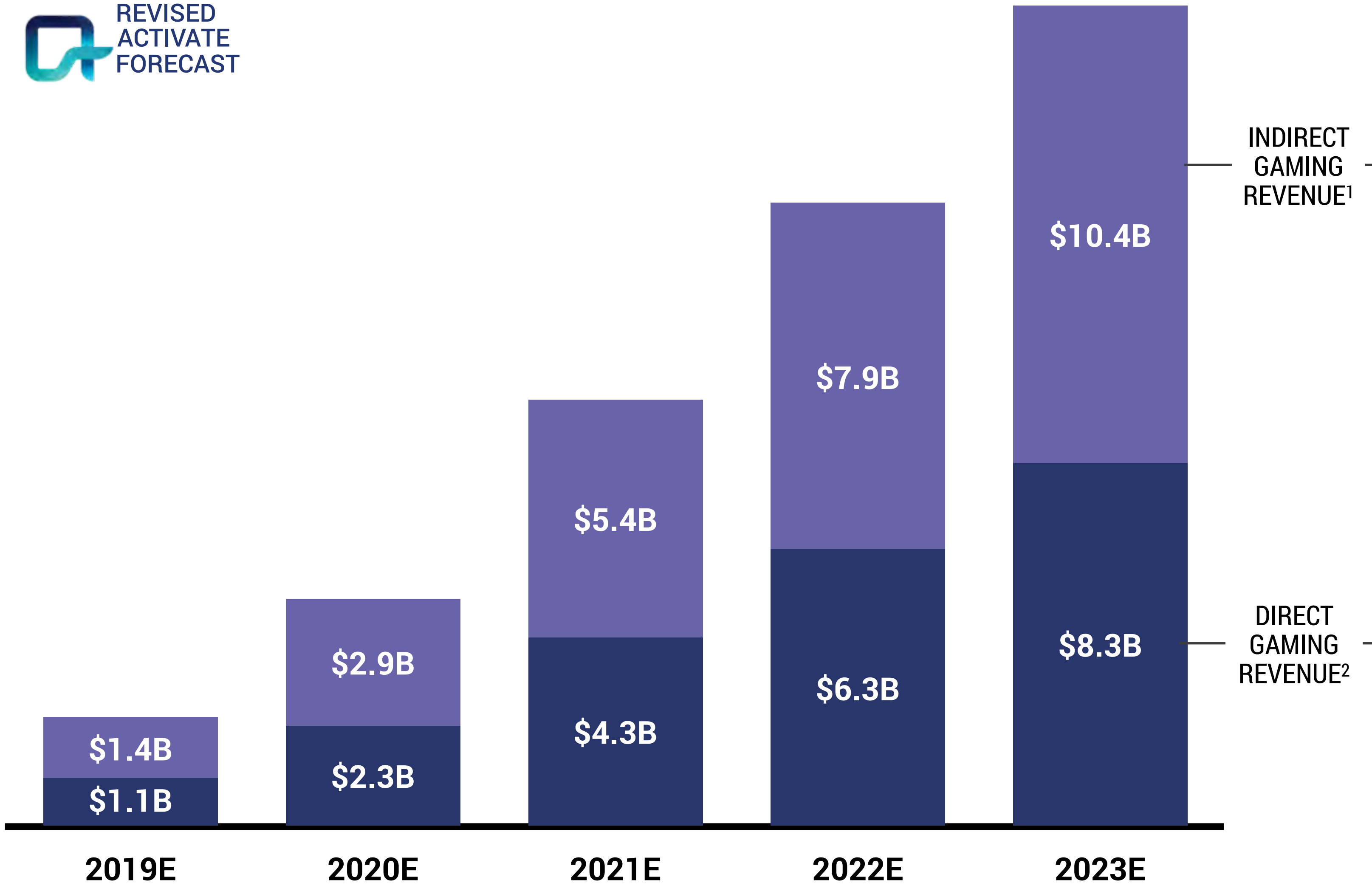
1. Numbers do not sum to 100% because of rounding.
2. All other states: Delaware, Mississippi, West Virginia, Rhode Island, Pennsylvania, New York, Iowa, Arkansas, and Indiana.
3. Includes respondents for whom legalization is somewhat, quite, or significantly important.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Legal Sports Report, The Lines, Nevada Gaming Control Board

Revenues from sports betting will exceed $18B in 2023

SPORTS BETTING REVENUE BY TYPE, U.S., 2019E-2023E, BILLIONS USD

REVISED
ACTIVATE
FORECAST



INDIRECT GAMING REVENUE

LEAGUES/TEAMS
MLS
PGA TOUR
NFL

TECH COMPANIES
amazon
Google

SPORTS TECH COMPANIES
SBTech We Know Sports
sportradar
betgenius

MEDIA COMPANIES
FOX
ESPN
THE ACTION NETWORK

VENUES
Capital One Arena
MSG
STAPLES Center

DIRECT GAMING REVENUE

SPORTSBOOKS
FANDUEL
William HILL
DRAFT KINGS

CASINOS
MGM GRAND LAS VEGAS
CAESARS ENTERTAINMENT

STATES[3]

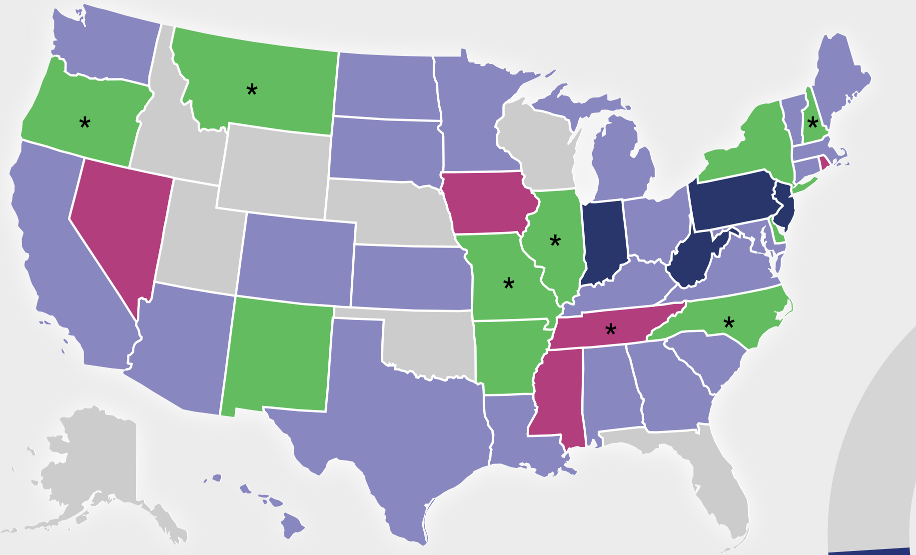
---

1. Determined as a ratio of direct gaming revenue comprised of media rights, advertising, sponsorships, and data rights.
2. Share of the total amount wagered and depends on odds, type of wager, and individual sportsbooks. The betting provider's take rate ranges from 4-36% of total amount wagered.
3. State taxes are assessed as a share of the total amount wagered, a share of gross gaming revenue (ranges from 7-51% depending on the state and type of betting), and gaming licensing fees.

Sources: Activate analysis, Bureau of Economic Analysis, Eilers & Krejcik Gaming, Legal Sports Report, The Lines, Nevada Gaming Control Board

Our projections rely on the eventual ubiquity of remote mobile online sports betting in legalized states, which will increase the number of in-game wagers

SPORTS BETTING LEGALIZATION STATUS, U.S., 2019, BY STATE

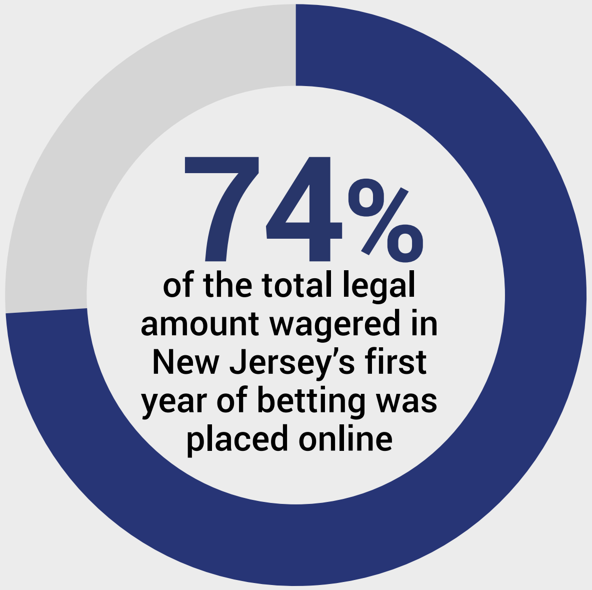


24 states[1]
Current/Pending Legislation

10 states
Legal, No Mobile[2]

5 states
On-Premise Mobile[2]

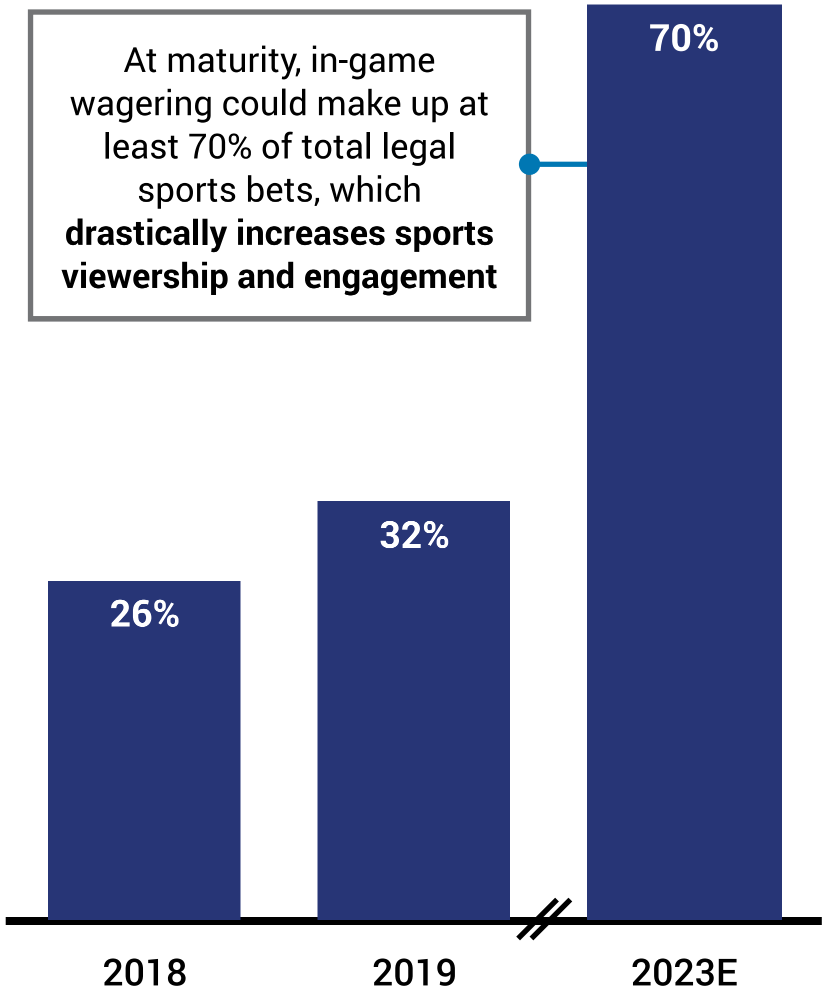
4 states
Remote Mobile



74% of the total legal amount wagered in New Jersey's first year of betting was placed online

IN-GAME WAGERING[3], U.S., 2018-2023E, % TOTAL BETS

ACTIVATE FORECAST THE ACTION NETWORK



At maturity, in-game wagering could make up at least 70% of total legal sports bets, which **drastically increases sports viewership and engagement**

---

1. Including Washington, D.C. 2. States with asterisks are legal but have not yet launched. 3. "In-game wagering" defined here as bets placed in and after the game start hour, including in-play wagers.
Sources: Activate analysis, The Action Network, American Gaming Association, Eilers & Krejcik Gaming, Las Vegas Review Journal, Legal Sports Report, PlayUSA, The Wall Street Journal

In the last year, major media companies, leagues, and tech players have made moves to take advantage of the sports betting opportunity

MEDIA PLAYERS

Launched **full-service sports betting platform and app** with The Stars Group

Integrated in-game sports betting information and **interactive prediction element** for select Washington Wizard games

Added **24/7 sports betting news** on ESPNEWS which complements The Daily Wager betting show

Introduced **full-service online sportsbook**, Barstool Bets, in addition to existing content and podcasts

SPORTS LEAGUES

Announced partnership with William Hill to be an **authorized sports betting operator**, joining other sportsbooks Fanduel, MGM, and Stars

Gained the **exclusive right to sell NFL data to casinos** and sportsbooks worldwide

Signed deal to become **authorized MLB gaming operator**, promoting more efficient in-game odds

Changed policy to become the first major league to permit **jersey and arena naming sponsorship** from sports gambling companies

TECH PLAYERS

Lifted its long-held ban on gambling service advertising and **made Google and YouTube ad formats available to betting providers**

Announced a merger that creates the **world's largest online betting and gaming company** for a combined value of about $12B

Launched new **programmatic advertising offering** that allows sports betting advertisers enhanced access to sports bettors

Signed deal with Sportradar to become first U.S. sportsbook to offer **live match streaming within the sportsbook app**[1]

---

[1] Currently limited to select soccer and tennis matches.

Sources: Activate analysis, Company press releases

Wagering on sports will take the shape of financial trading markets

- EXTRAORDINARY NUMBER OF POSSIBLE WAGERS, INCLUDING IN-GAME, PROP-BETS, AND PARLAYS
- REAL-TIME ODDS CHANGE WITH EACH PLAY
- DRAMATIC EXPANSION IN THE DATA SETS AND ANALYTICS TO INFORM DECISIONS
- WHEN LEGAL, INSTITUTIONAL INVESTORS WILL POOL ASSETS AND BEGIN TO PARTICIPATE IN THE MARKET

What still needs to happen for sports betting to achieve its full potential?

Federal regulation to permit interstate mobile gaming

Network performance and reliability to enable real-time betting

Sufficiently low tax rates or revenue sharing agreements to incentivize sportsbook operators to participate

Global standards around sports wagering across nations to enable a global market

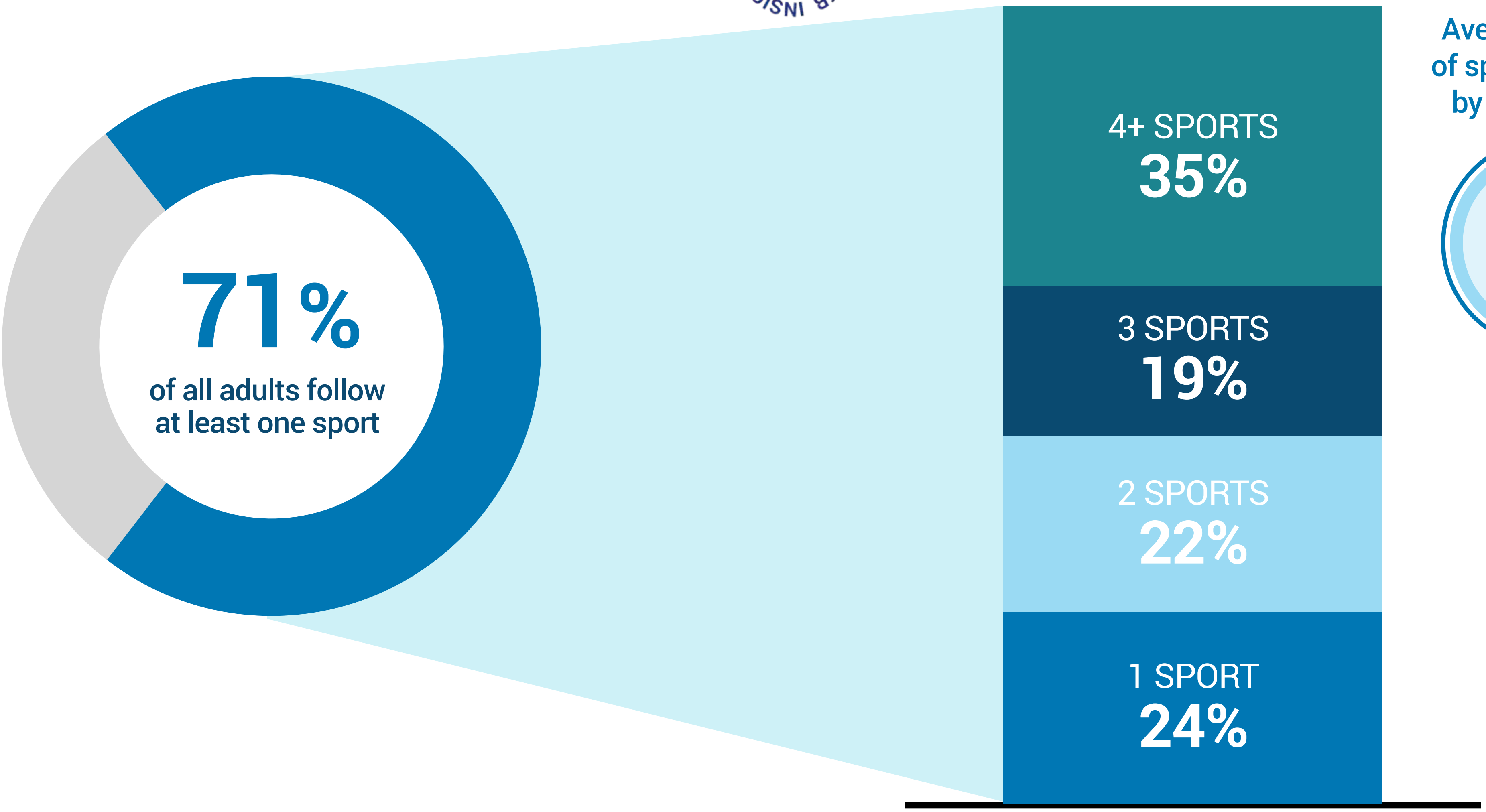
Accurate and officially sanctioned sports data to allow leagues and teams to profit

CONTENTS

Overall, interest in sports remains high – more than 2/3 of the U.S. population follow at least one sport

SPORTS FANDOM, U.S., 2019, % ADULTS AGED 18+

NUMBER OF SPORTS FOLLOWED,
U.S., 2019, % SPORTS FANS[1] AGED 18+



Average number of sports followed by sports fans:

3.1

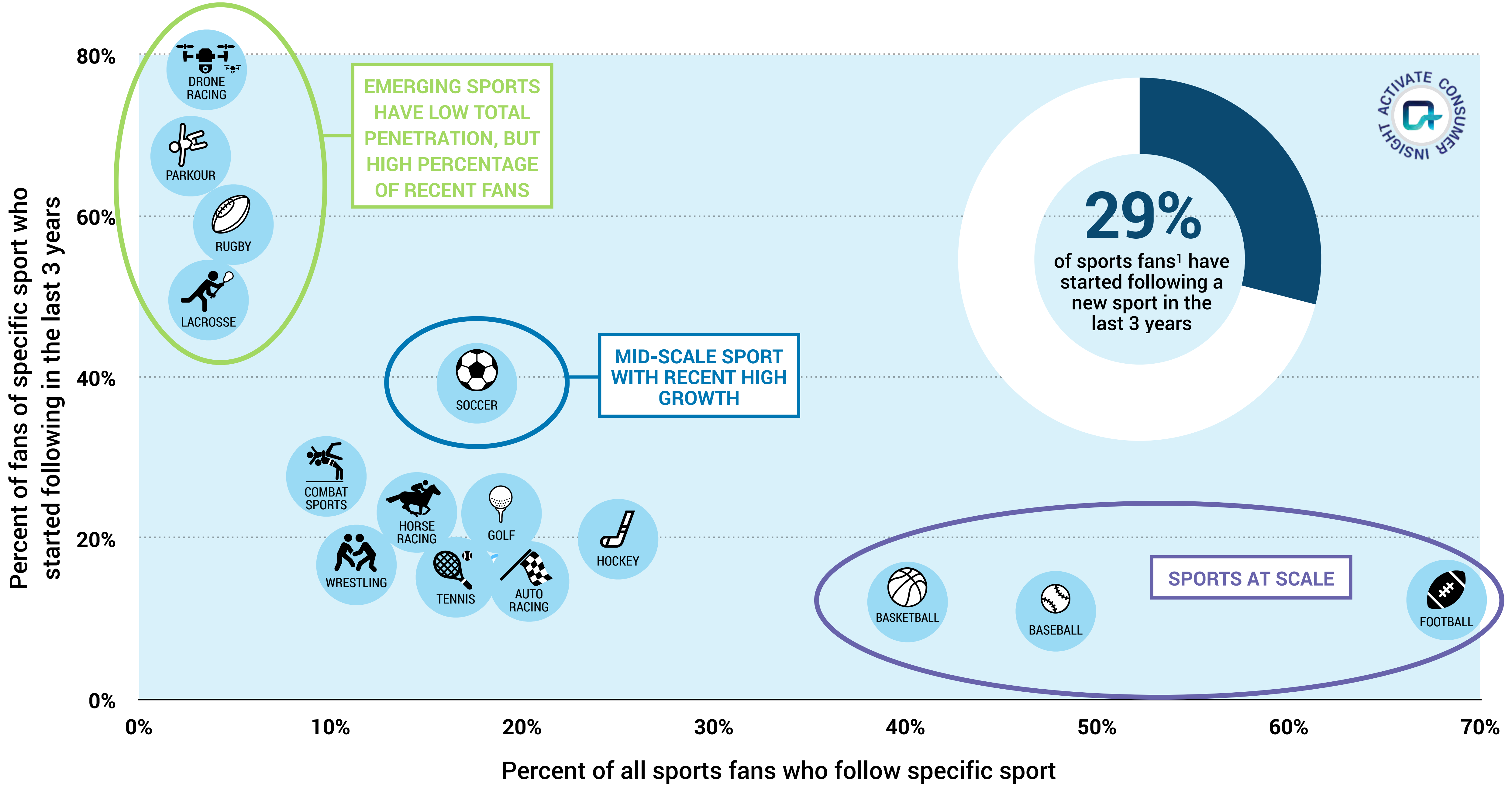
---

1. "Sports fans" defined as followers of at least one sport.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

There is significant appetite to follow an emerging sport – 29% of sports fans have started following a new sport in the last 3 years

SPORTS FOLLOWED AND DURATION OF FANDOM, U.S., 2019, % SPORTS FANS[1] AGED 18+



EMERGING SPORTS HAVE LOW TOTAL PENETRATION, BUT HIGH PERCENTAGE OF RECENT FANS

MID-SCALE SPORT WITH RECENT HIGH GROWTH

SPORTS AT SCALE

29% of sports fans[1] have started following a new sport in the last 3 years

---

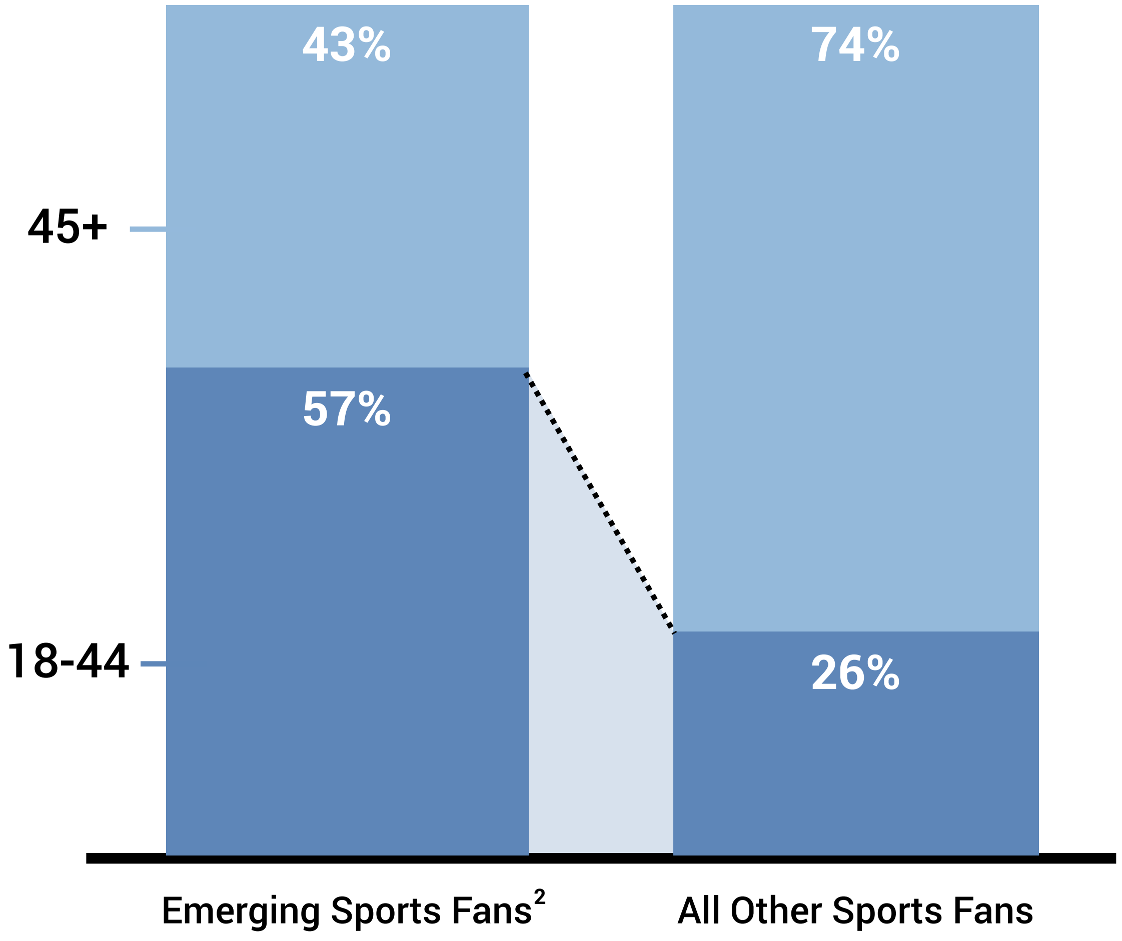
[1] "Sports fans" defined as followers of at least one sport.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

The most popular emerging sports are driven primarily by younger fans

AGE OF SPORTS FANS[1], U.S., 2019, % SPORTS FANS AGED 18+

Fans of emerging sports[2] are more than twice as likely to be under the age of 44 than fans of all other sports



SELECT EMERGING SPORTS

Drone Racing

The racing of unmanned vehicles through obstacle courses – established in 2015 and has had 57M total viewers across ESPN and NBC

Parkour

Also known as freerunning – an athletic activity that involves agile movements through physical environments (e.g. jumping and climbing)

Rugby

Traditionally an international sport – has grown in the U.S. market with two leagues – MLR is adding 3 teams in 2020 for a total of 12

Lacrosse

Has a growing national audience – the Professional Lacrosse League was established in 2018

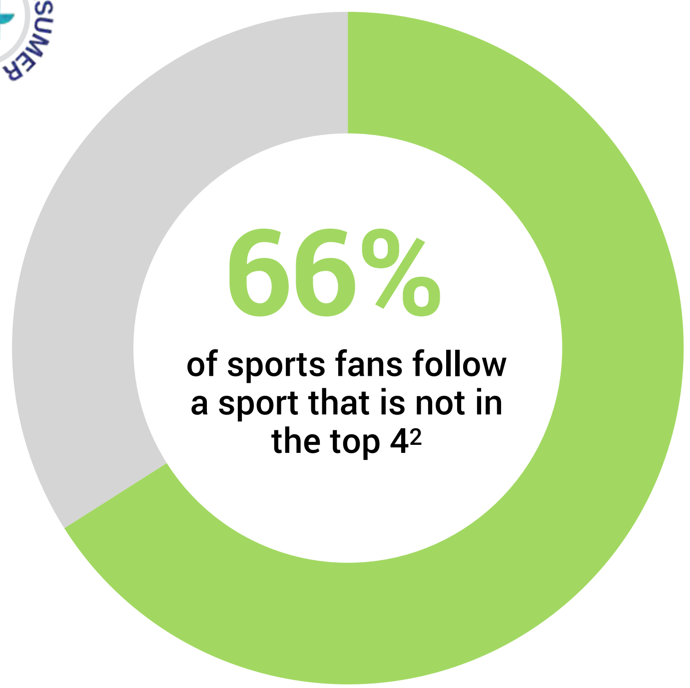
---

1. "Sports fans" defined as followers of at least one sport.
2. "Emerging sports fans" defined as fans who follow at least one of the following: drone racing, parkour, rugby, or lacrosse.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company sites

To reach this younger audience, major media channels are carrying emerging sports, and in many cases have secured brand sponsorships

FOLLOWING OF NON-TOP 4 U.S. SPORTS, U.S., 2019, % SPORTS FANS[1] AGED 18+



EMERGING SPORTS	LEAGUE / GOVERNING BODIES	MEDIA COVERAGE	MAJOR SPONSORS/PARTNERS
Bull Riding	PBR	CBS SPORTS 2012 – 2028	Jack Daniel's Coors CAT BOOT BARN
Climbing	USA CLIMBING	ESPN 2019 2020	THE NORTH FACE CLIF RISE NITRO BREWING CO.
Cornhole	ACL American Cornhole League	ESPN 2017 – 2020	Johnsonville hims Harrah's CHEROKEE CASINO RESORT
Drone Racing	DRL THE DRONE RACING LEAGUE	2019 NBC Sports 2019 ESPN 2016	BMW COX Allianz swatch U.S. AIR FORCE
Lacrosse	PLL MLL	NBC Sports 2019 (PLL)	vineyard vines adidas GATORADE Capital One
Parkour	FIG WFPF	2024E	N/A
Rugby	USARL USA RUGBY LEAGUE MLR MAJOR LEAGUE RUGBY	ESPN 2018 CBS SPORTS 2017	TORONTO WOLFPACK MINELAB PALADIN
Spikeball	SPIKEBALL ROUNDNET ASSOCIATION	ESPN 2018	RHOBACK CRAVE ACTIVITY KRA DRINKS FOR ATHLETES

---

1. "Sports fans" defined as followers of at least one sport.
2. Top 4 traditional sports are football, basketball, baseball, and hockey.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company sites

Atlanta United FC has achieved tremendous success – MLS will see continued growth with expansion teams in the next 3 years

MOST VALUABLE MLS TEAMS, U.S., 2018, MILLIONS USD

MLS EXPANSION TEAMS[2]

Inter Miami CF	Nashville SC	Austin FC	St. Louis
2020	2020	2021	2022

In just 5 years, Atlanta has become the most valuable team in the MLS, largely driven by its innovative fan approach

ATLANTA PROVIDES COMMUNITIES FOR ALL TYPES OF FANS

RESURGENCE
The most outwardly passionate fans creating a raucous in-game experience

FOOTIE MOB
Dedicated blend of Southern tailgating culture for casual followers

TERMINUS
Passionate about building support for the greater soccer community

FACTION
Family-centric group of fans

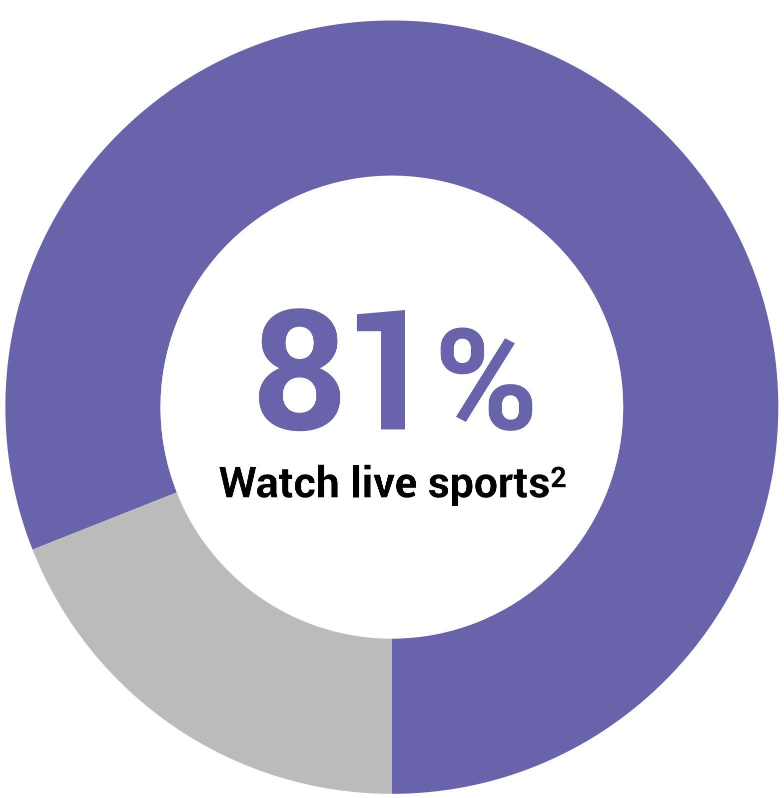
---

1. Los Angeles Football Club played first game in 2018.
2. Rumored expansion teams: Sacramento, Las Vegas, Charlotte, Phoenix, Raleigh, Detroit, San Diego, Tampa, and Indianapolis.

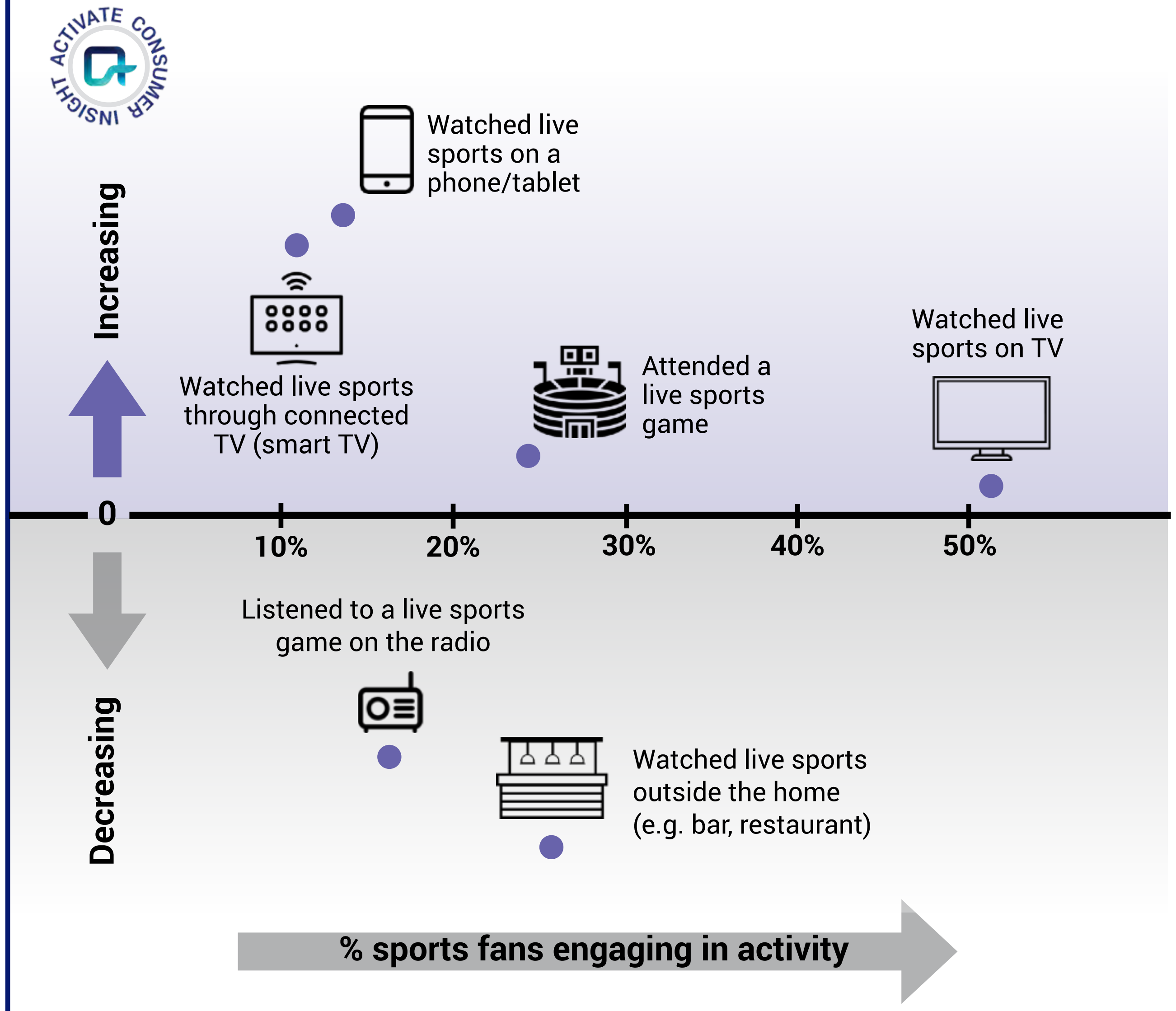
Sources: Activate analysis, Company sites, Forbes, Sports Illustrated

Live sports viewership, across many platforms, has largely increased in the past year

OVERALL LIVE SPORTS VIEWERSHIP,
U.S., 2019, % SPORTS FANS[1] AGED 18+



YEAR-OVER-YEAR LIVE SPORTS CONSUMPTION BY TYPE,
U.S., 2019, % SPORTS FANS[1] AGED 18+



---

1. "Sports fans" defined as followers of at least one sport.
2. Including those who watch live sports broadcast on all media formats, and live game attendance.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

As more viewers migrate to digital platforms, multicasts will serve diverse audiences who differ in their motivations for viewing sports

A **multicast** is the simultaneous airing of a sports game over different media channels (TV, digital, social) with separate announcers, personalities, and themes, **to broaden reach and offer a customized viewing experience**

EXAMPLES:

FEATURES OF MULTICAST EXPERIENCE

Specific broadcasts focused on sports wagering with expert betting announcers

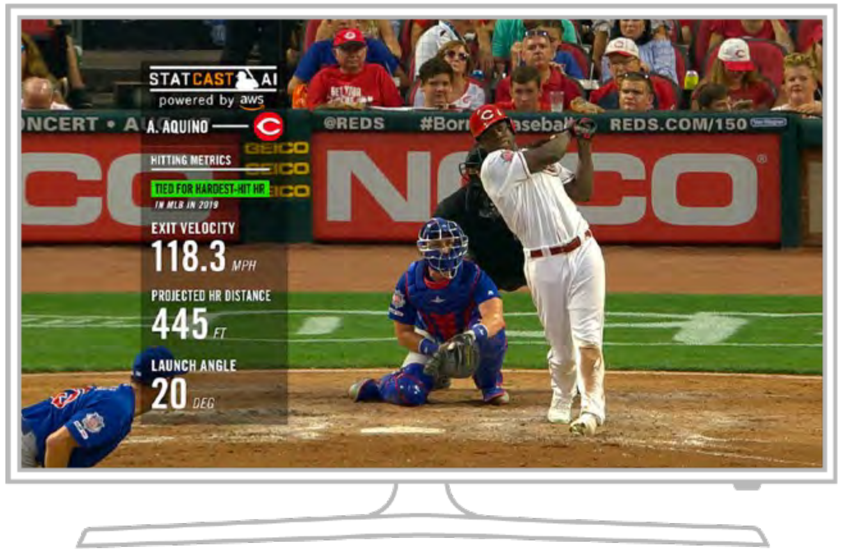
Dedicated broadcasts with different language options, especially around global sports like soccer and basketball

Broadcasts across social and digital platforms (e.g. Amazon Prime, Facebook Watch) to gain access to younger audiences

Player-specific broadcasts to follow players in-game and track their movements – bettors will use this feature to place player-specific wagers

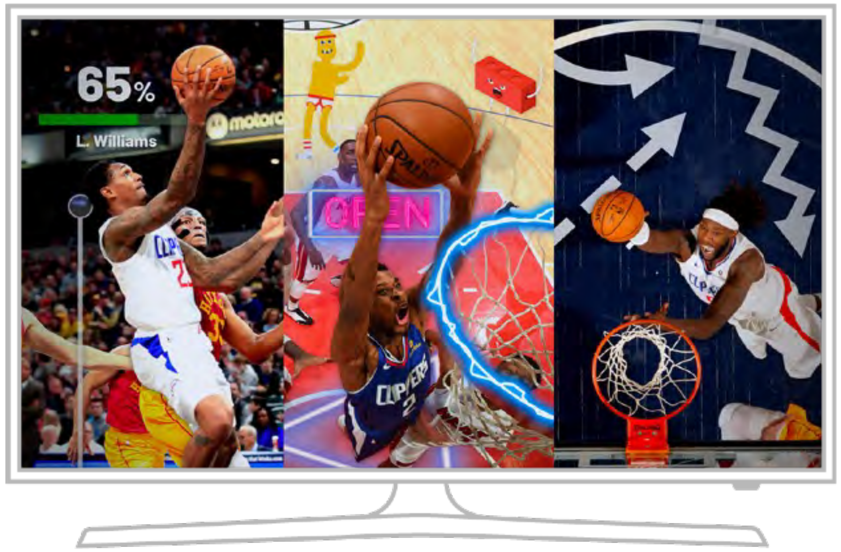
Sources: Activate analysis, Axios, Multichannel News, The Washington Post

Statistics will improve team decision-making, enhance the fan experience, and enable in-game wagering



Statistics offered through Stat Cast[1]:

- Arm strength
- Catch probability
- Distance needed
- Sprint speed
- Exit velocity



Second Spectrum enabled capabilities:

- Statistics data overlays
- Data visualization
- Streaming video interactive apps
- Augmented reality

Next Gen Stats[1] uses chips embedded into player jerseys/equipment and historic data to capture:

- Expected catch rate
- Expected yards after catch
- Completion probability
- Fastest sacks

TAKEAWAYS

Teams and Player Decision-Making

Improved game day decision-making through enhanced performance data

Fan Experience

Personalized games and higher viewer engagement through data visualization and augmented reality

In-Game Wagering

Informed in-play wagering through superior stats and data insights[2]

---

[1] Powered by AWS.

[2] Leagues are asking sports betting operators to pay up to 1.5% of net profits for official league data and feeds.

Sources: Activate analysis, Company sites, Harvard Business Review

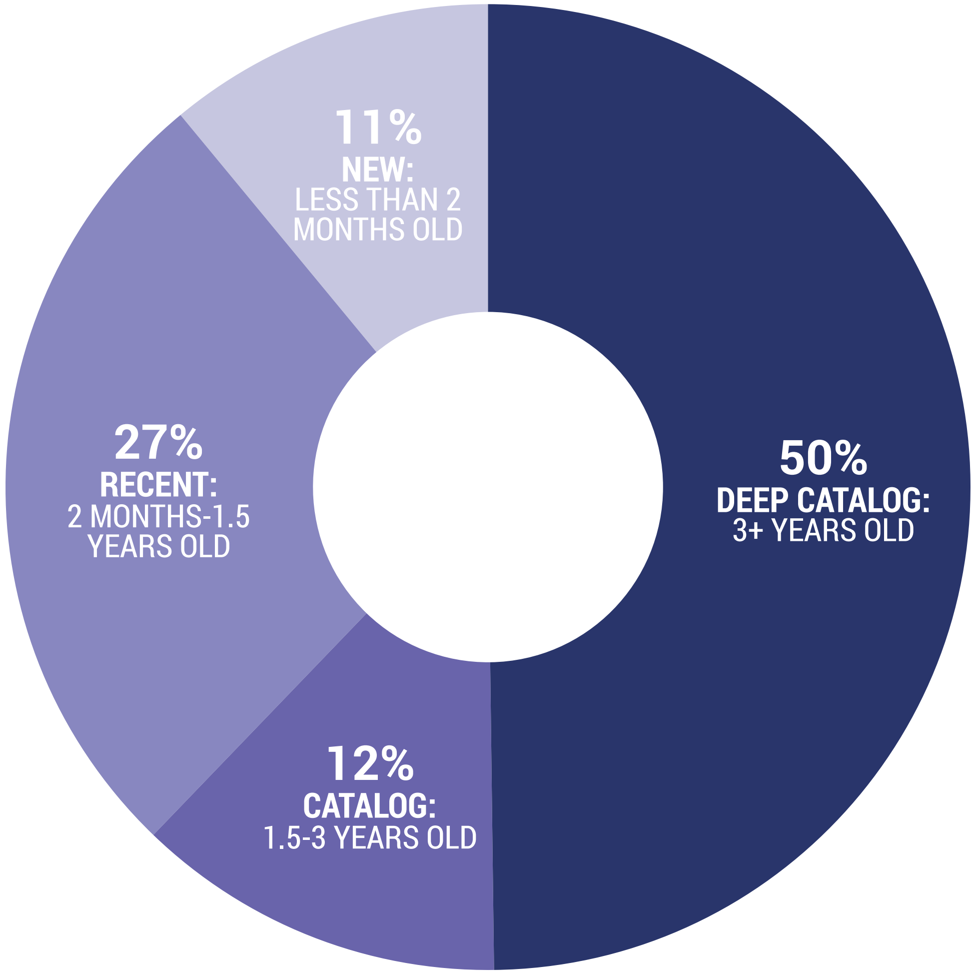
CONTENTS

Despite access to tens of millions of music tracks on streaming services, consumers only listen to a small percentage of songs – songs that are 3+ years old account for 50% of total music streams

MUSIC CONSUMPTION BY SONG POPULARITY, U.S., 2018, % TOTAL SONGS / % TOTAL MUSIC STREAMS

Top 1% of songs account for 92% of music streams

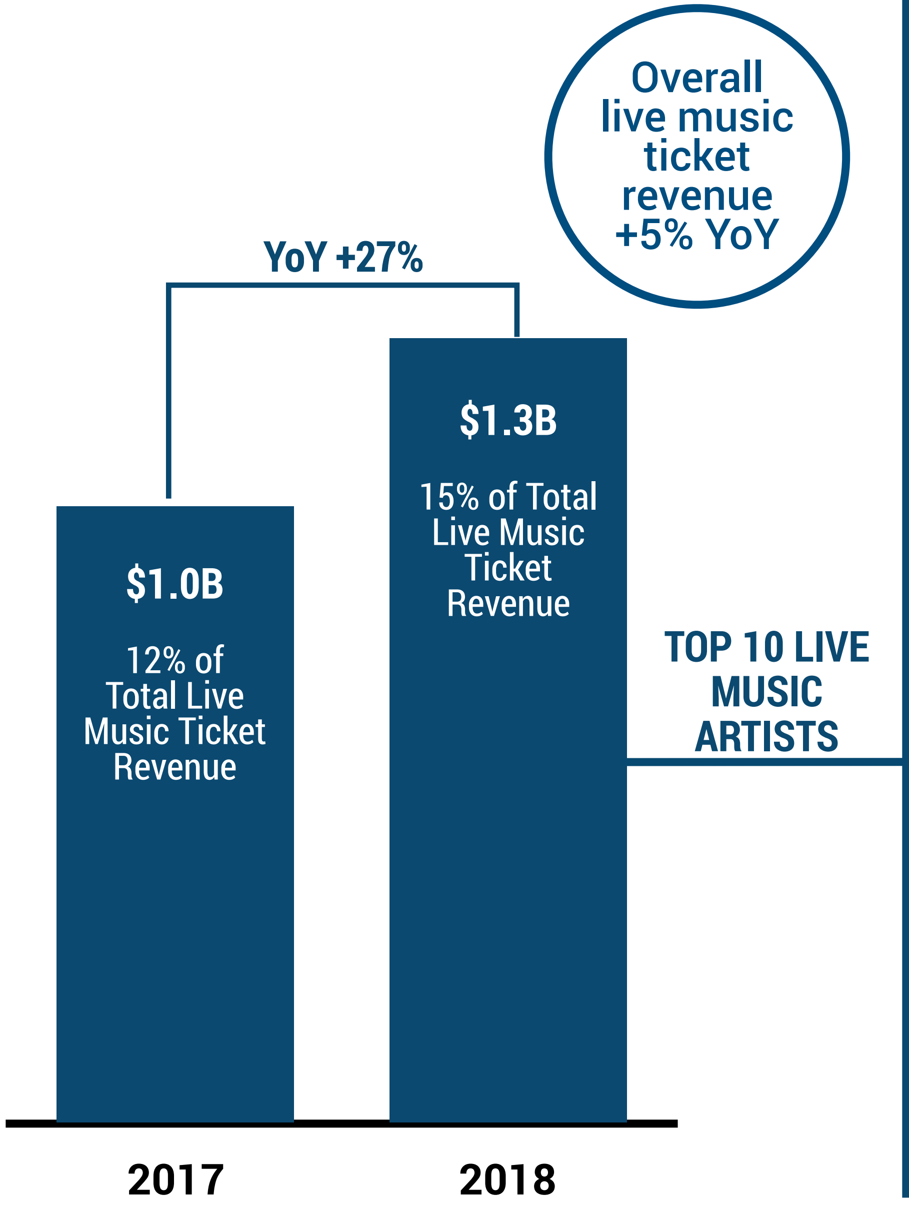
MUSIC STREAM CONSUMPTION BY RELEASE DATE, U.S., 2018, % TOTAL MUSIC STREAMS



Sources: Activate analysis, Billboard, BuzzAngle Music, Nielsen

The top stars capture a bigger share of live music revenue

TICKET REVENUE OF TOP 10 MUSIC ARTISTS[1], NORTH AMERICA, 2018, BILLIONS USD



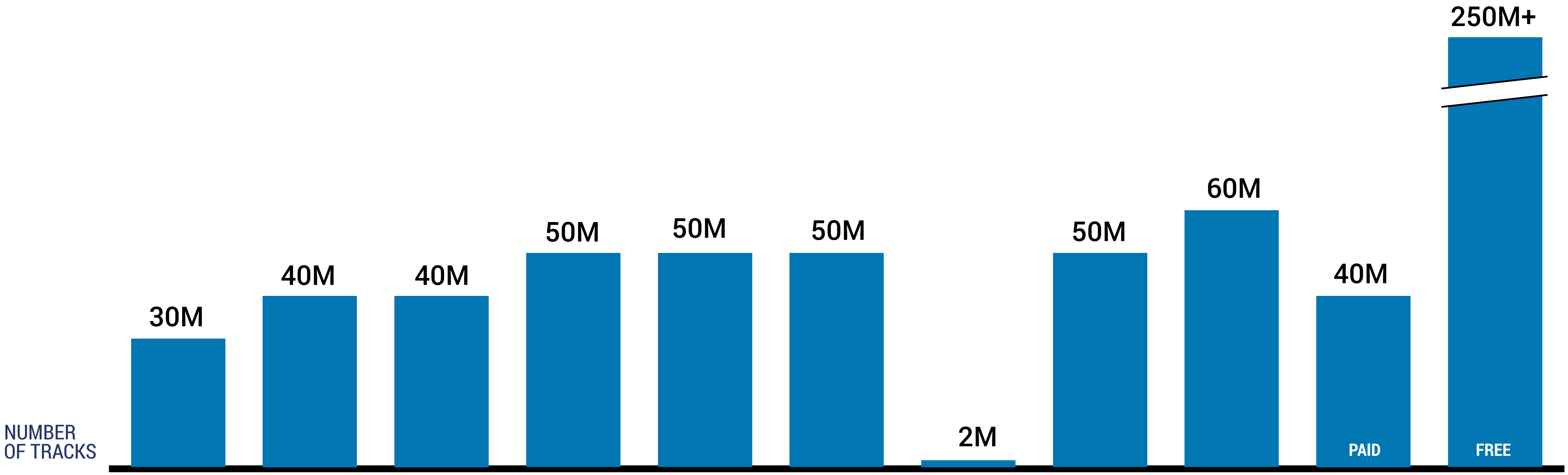
TOP ARTISTS BY LIVE MUSIC TICKET REVENUE, NORTH AMERICA, 2018, MILLIONS USD

		FIRST ALBUM RELEASED
TAYLOR SWIFT	$277M	2006
JAY-Z/BEYONCÉ	$166M	1996/2003
EAGLES	$166M	1972
KENNY CHESNEY	$114M	1994
JUSTIN TIMBERLAKE	$110M	2002
ED SHEERAN	$105M	2011
JOURNEY / DEF LEPPARD	$98M	1975/1980
PINK	$95M	2000
BRUCE SPRINGSTEEN[2]	$88M	1973
DRAKE	$79M	2010

1. Top artists based on top live music acts. 2. Reflects revenue from “Springsteen on Broadway.”
Sources: Activate analysis, Billboard, Nielsen, Pollstar, PricewaterhouseCoopers

YouTube has the most expansive library compared to the other major streaming services; gray music (remixes, compilations, live performances) accounts for a great deal of the difference

MUSIC STREAMING TRACKS/SUBSCRIBERS BY SERVICE, GLOBAL, 2019, MILLIONS TRACKS / SUBSCRIBERS



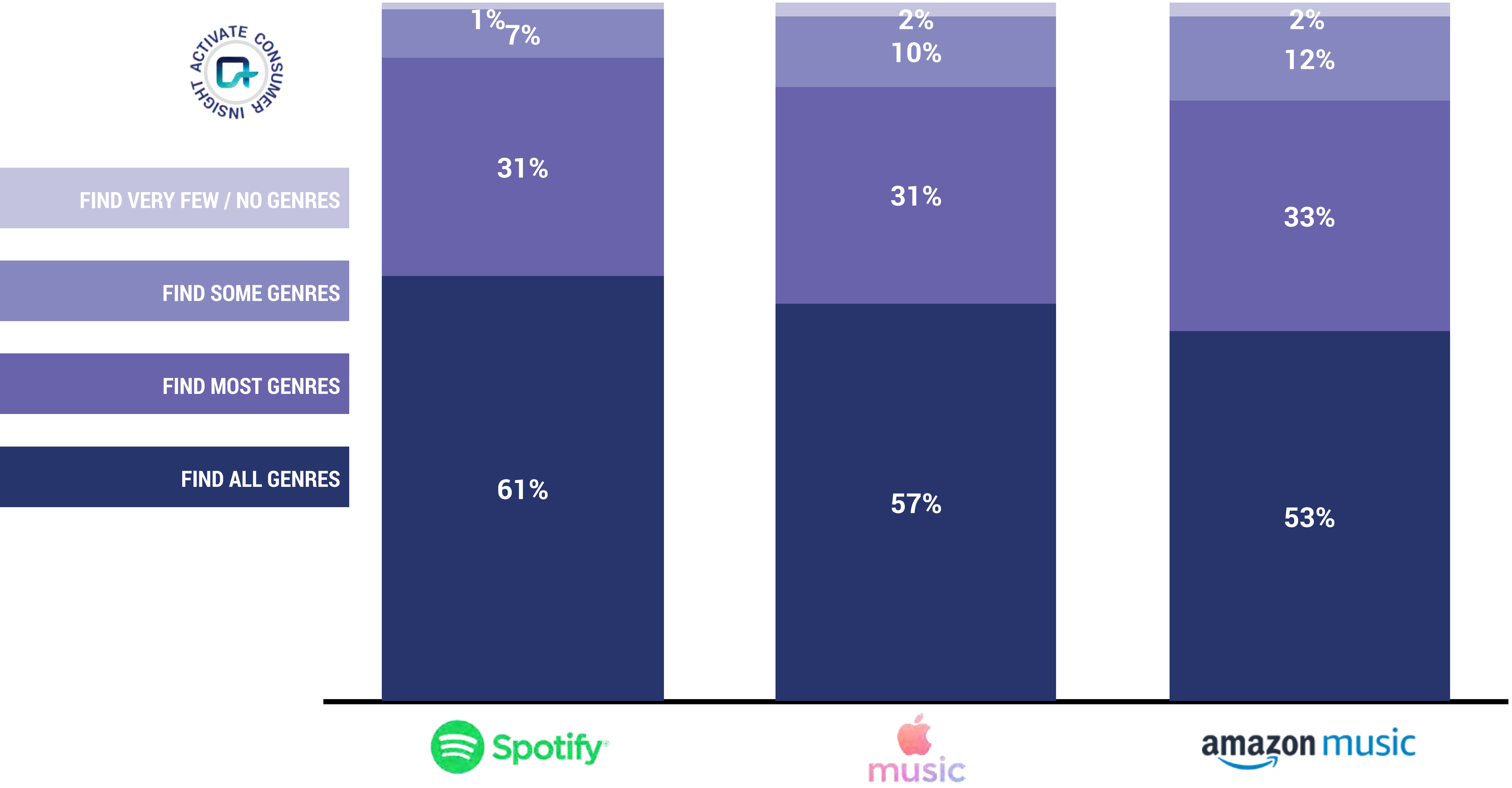
	IHEART	NAPSTER	PANDORA	DEEZER	APPLE	SPOTIFY	AMAZON PRIME	AMAZON MUSIC UNLIMITED	TIDAL	GOOGLE PLAY / YOUTUBE MUSIC	YOUTUBE
PAID SUBSCRIBERS	N/A	5M	6M	7M	60M	108M	32M[3]	32M[3]	1M	14M	N/A
FREE USERS	275M[1]	N/A	65M	14M[2]	N/A	129M	N/A	N/A	N/A	N/A	2,000M[2]

1. iHeartRadio has a paid tier, but no subscriber data is available.
2. Numbers represent total monthly active users.
3. Amazon includes Prime Music users and Music Unlimited subscribers.
4. Numbers represent free global monthly reach.

Sources: Activate analysis, Billboard, Company sites, Digital Music News, Forbes, The Independent, MIDiA Research, Music Business Worldwide, Music Industry Blog, Musically, Reuters, TechCrunch, Variety

Despite the major services' large libraries, consumers still struggle to find all music they are looking for

AVAILABILITY OF MUSIC CONTENT, U.S., 2019, % MUSIC LISTENERS AGED 18+

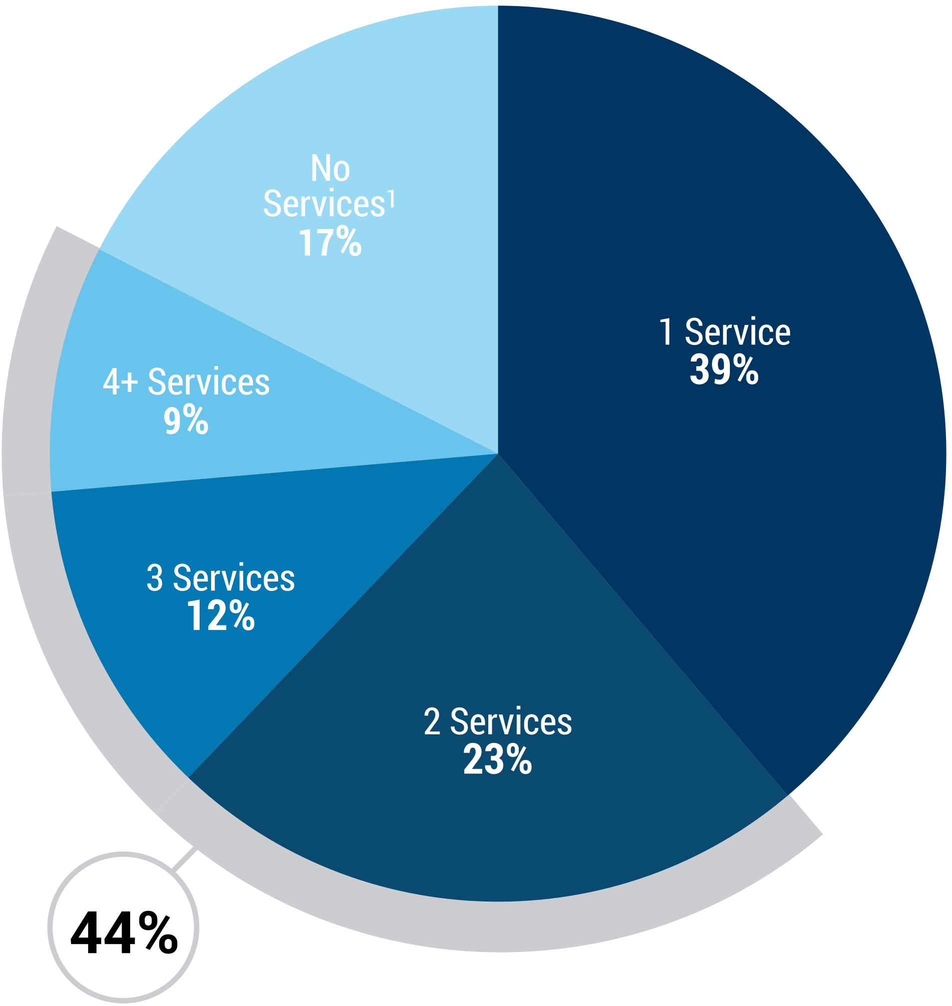


Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

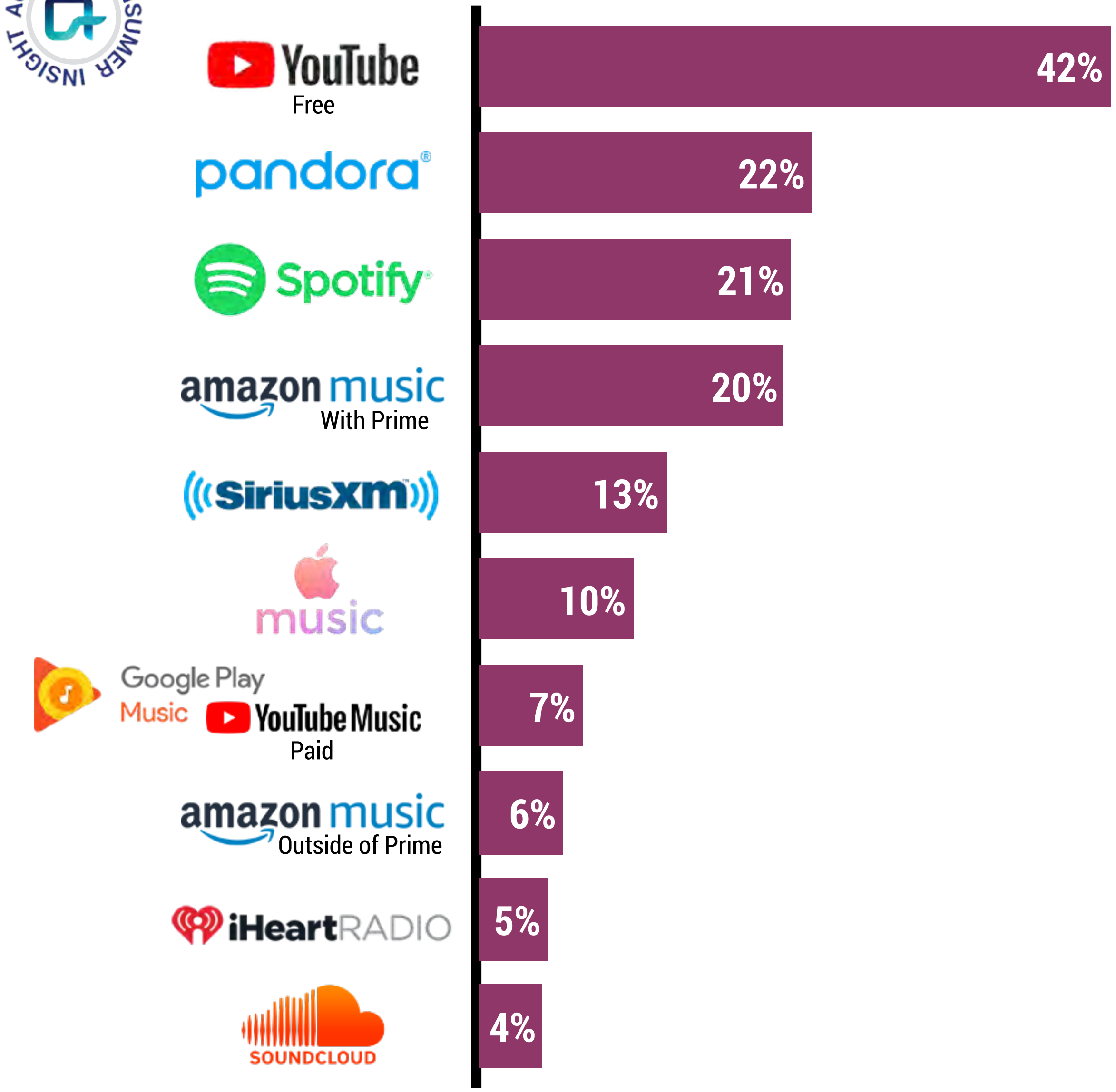
Consumers are putting together their own music bundles to meet their needs – YouTube is the most used service

NUMBER OF SERVICES USED TO LISTEN TO MUSIC,
U.S., 2019, % MUSIC LISTENERS AGED 18+

2 MUSIC SERVICES ON AVERAGE PER LISTENER



TOP 10 MUSIC SERVICES USED,
U.S., 2019, % MUSIC LISTENERS AGED 18+



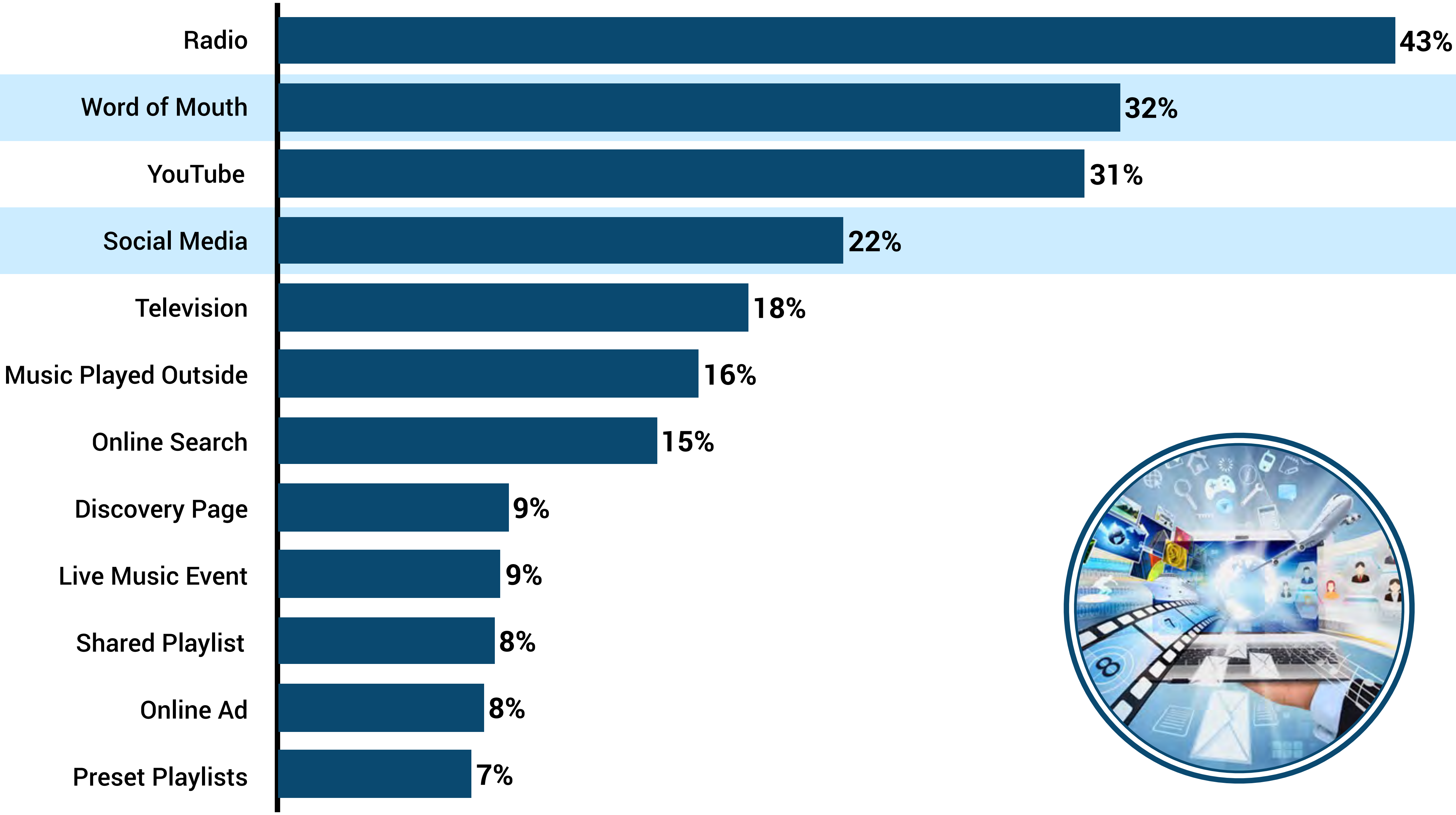
---

1. "No services" includes those who only listen through terrestrial radio, CDs, vinyl, etc.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

A large share of consumers find music through friends and social media

SOURCES OF MUSIC DISCOVERY, U.S., 2019, % MUSIC LISTENERS AGED 18+



Radio	43%
Word of Mouth	32%
YouTube	31%
Social Media	22%
Television	18%
Music Played Outside	16%
Online Search	15%
Discovery Page	9%
Live Music Event	9%
Shared Playlist	8%
Online Ad	8%
Preset Playlists	7%

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

New music discovery features offered by the streaming services will drive higher engagement

USAGE AND ENGAGEMENT LIFT BY DISCOVERY FEATURE[1], U.S., 2019, % MUSIC LISTENERS AGED 18+

	Discovery Page	Preset Playlist	Shared Playlist	Social Sharing
PERCENT THAT HAVE USED FEATURE	9%	7%	8%	22%
PERCENT DIFFERENCE IN TIME SPENT FOR FEATURE USERS VS. ALL OTHERS	+29%	+25%	+20%	+13%

---

1. Engagement is based on average time spent listening to music by segment.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

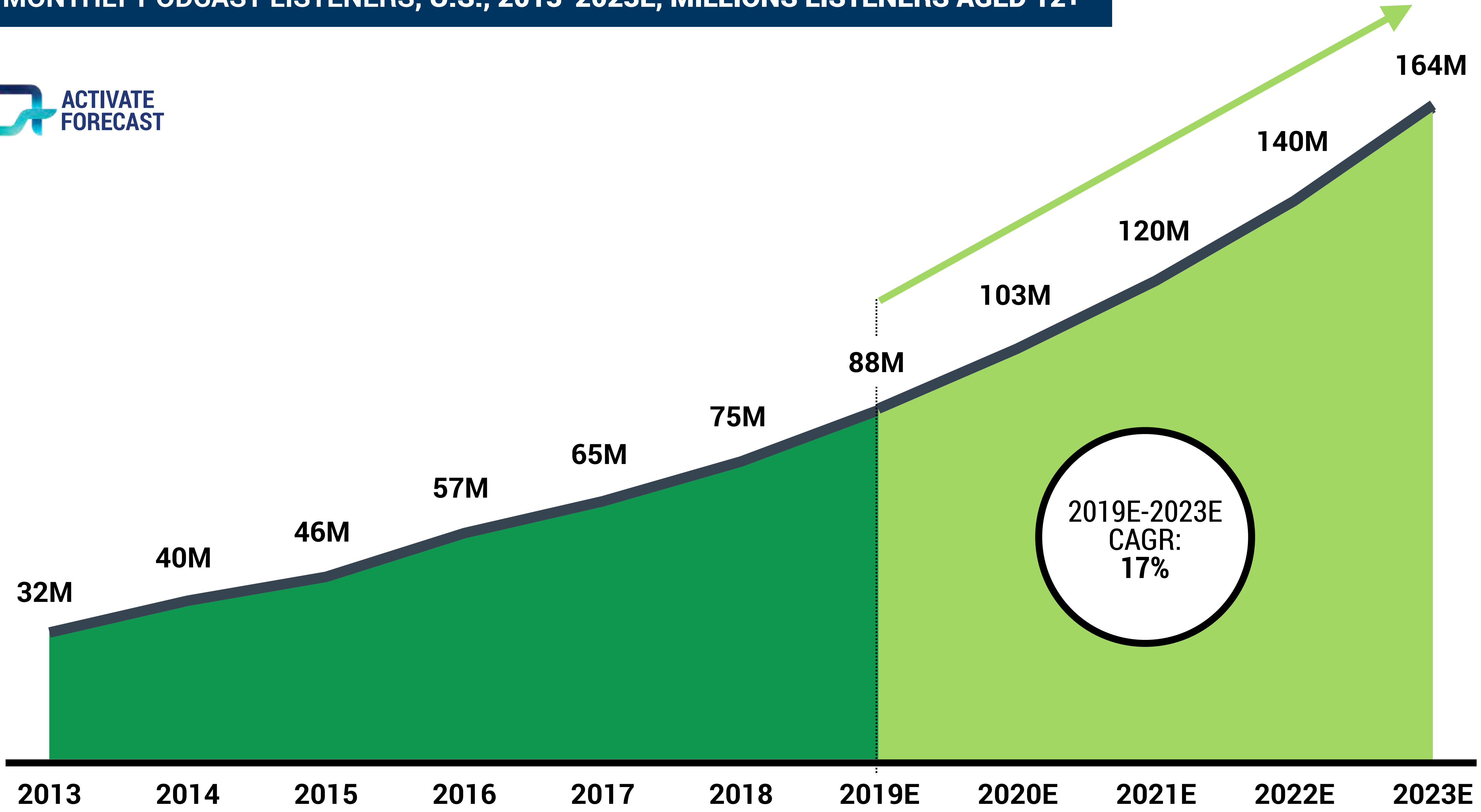
CONTENTS

activate
consulting

Podcast listening has become an increasingly prevalent consumer behavior – we forecast that listeners will almost double

MONTHLY PODCAST LISTENERS, U.S., 2013-2023E, MILLIONS LISTENERS AGED 12+

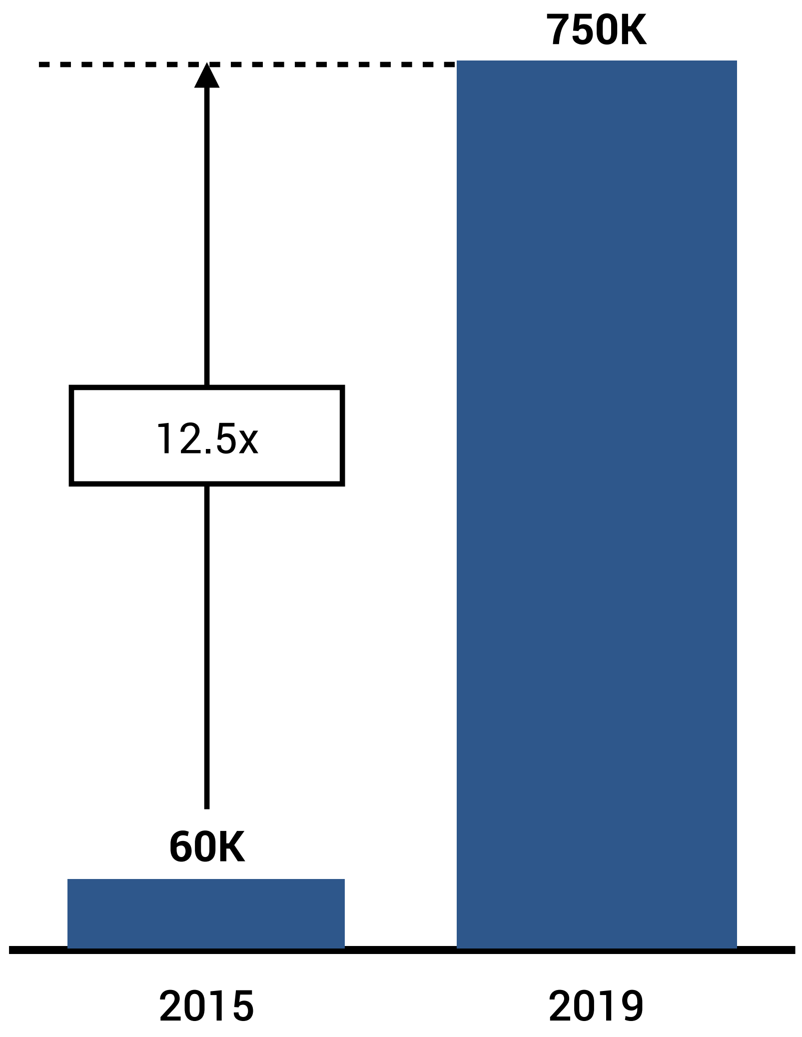
ACTIVATE FORECAST



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Apple World Today, Apple Worldwide Developers Conference 2018, Automotive News, Bureau of Economic Analysis, Car & Driver, Cox Automotive, Digital Trends, Edison Research, Nielsen, Pew Research Center, Scarborough Research, U.S. Census Bureau

There is an explosion of podcasts from a broad set of creators, both media professionals and amateurs

ACTIVE PODCASTS AVAILABLE ON ITUNES,
GLOBAL, 2015 VS. 2019[1], THOUSANDS



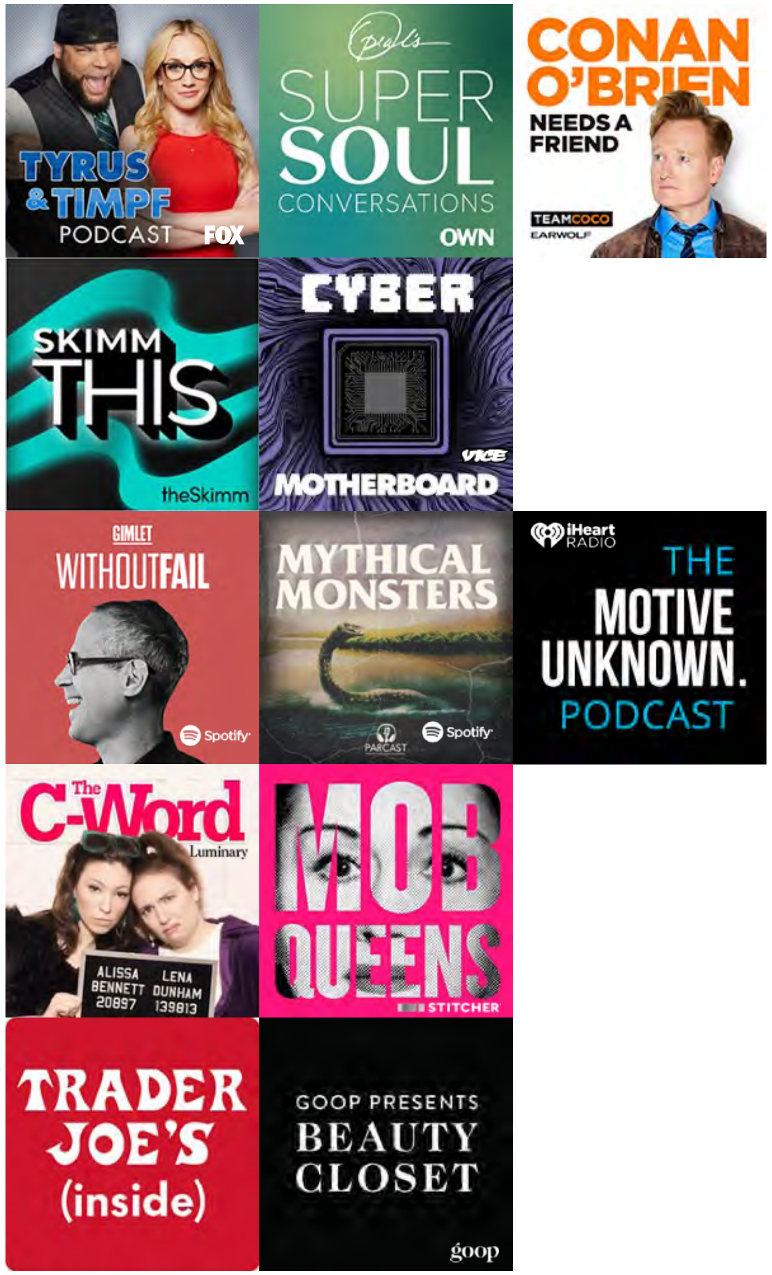
TRADITIONAL MEDIA COMPANIES EXTENDING THEIR REACH AND TESTING NEW FORMATS

DIGITAL-FIRST MEDIA COMPANIES RUNNING PODCAST-FOCUSED DIVISION

AUDIO-NATIVE PLATFORMS TARGETING NICHE MARKETS

PODCAST-NATIVE PLATFORMS LOOKING TO EXPAND COVERAGE

NON-MEDIA COMPANIES AIMING TO DRIVE ENGAGEMENT WITH THEIR CUSTOMERS



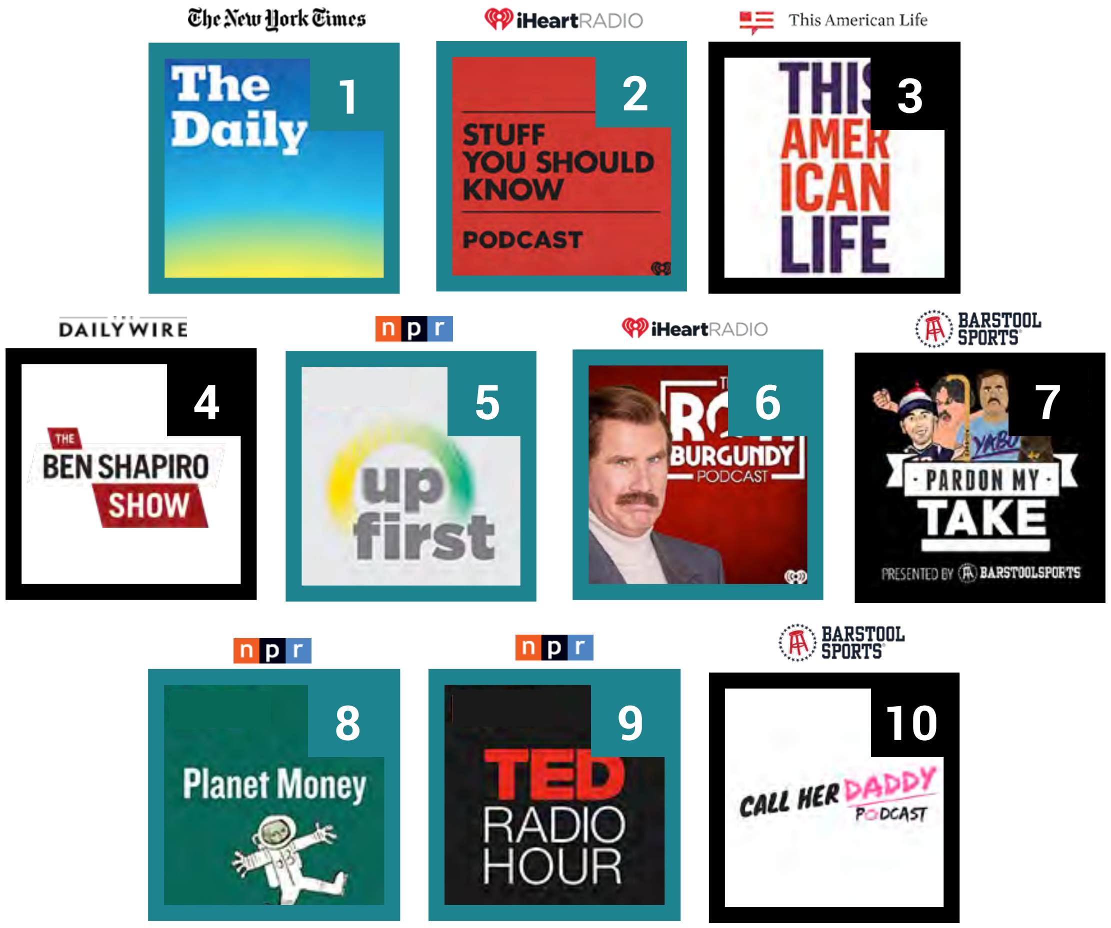
---

1. As of June 2019.

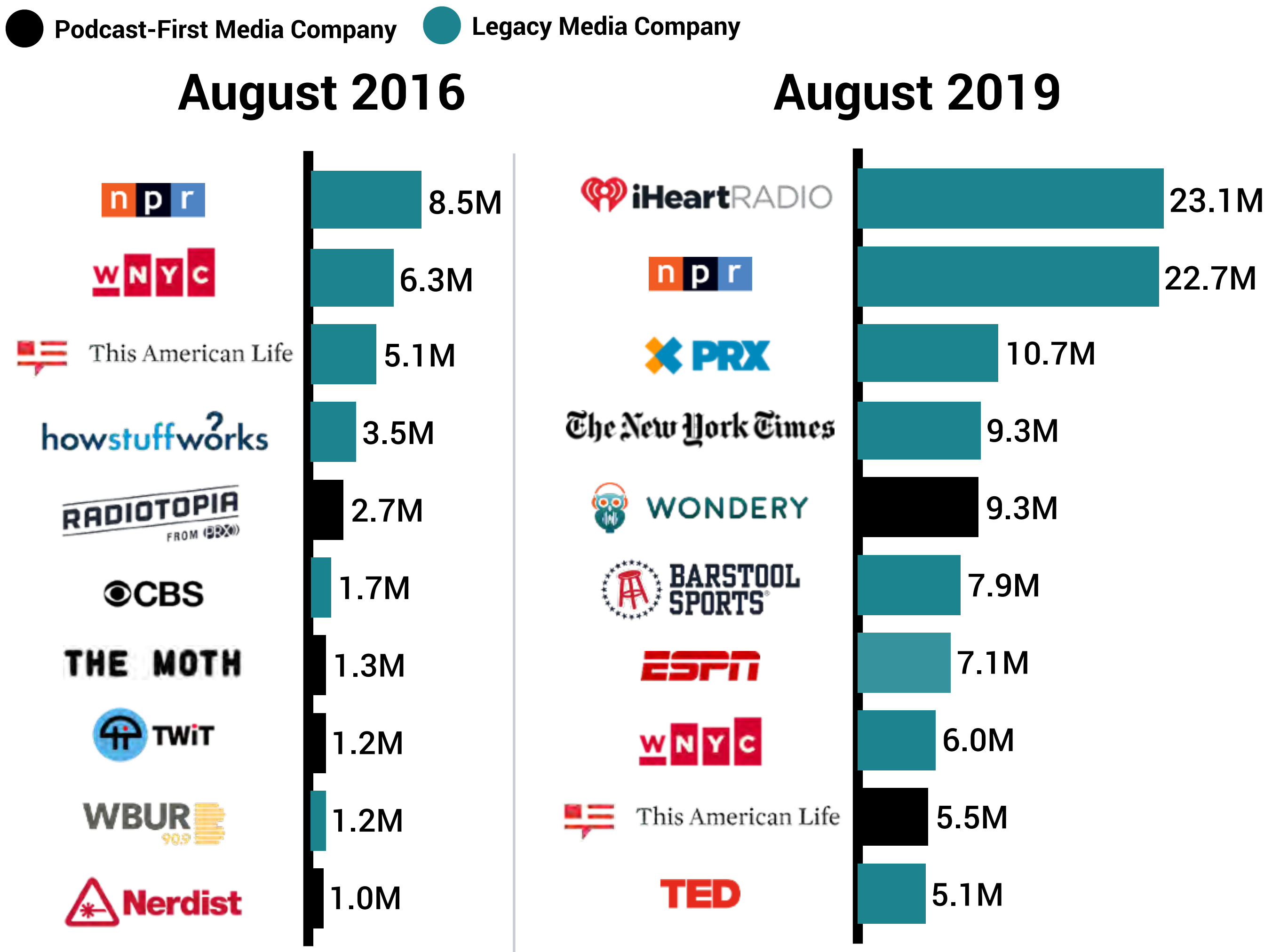
Sources: Activate analysis, Apple Worldwide Developers Conference 2018, Chartable, Edison Research, Foundation Digital, Podcast Insights

We expect that the traditional media companies, which capture a significant share of listening, will continue to dominate engagement

TOP PODCASTS BY UNIQUE MONTHLY AUDIENCE, AUG. 2019, U.S., RANKING



TOP PODCAST PUBLISHERS BY UNIQUE AUDIENCE, AUG. 2016 VS. AUG. 2019, U.S., MILLIONS LISTENERS

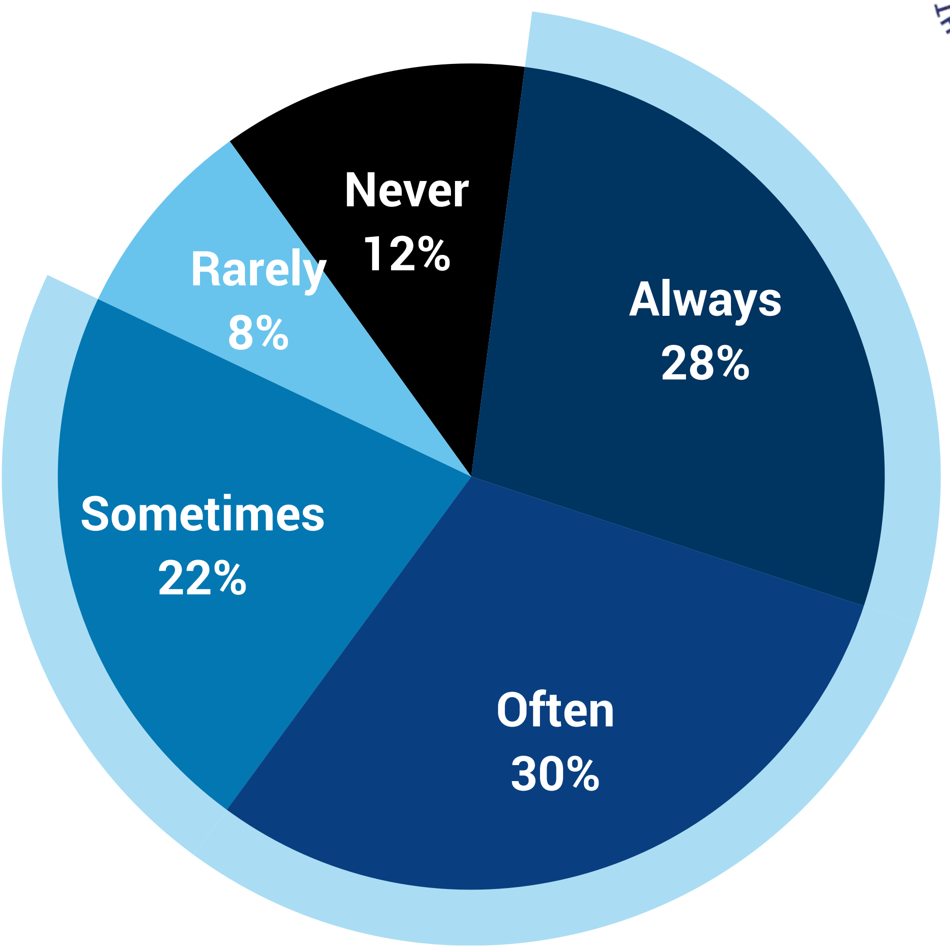


Legacy media companies represent more than half of top publishers and top podcasts

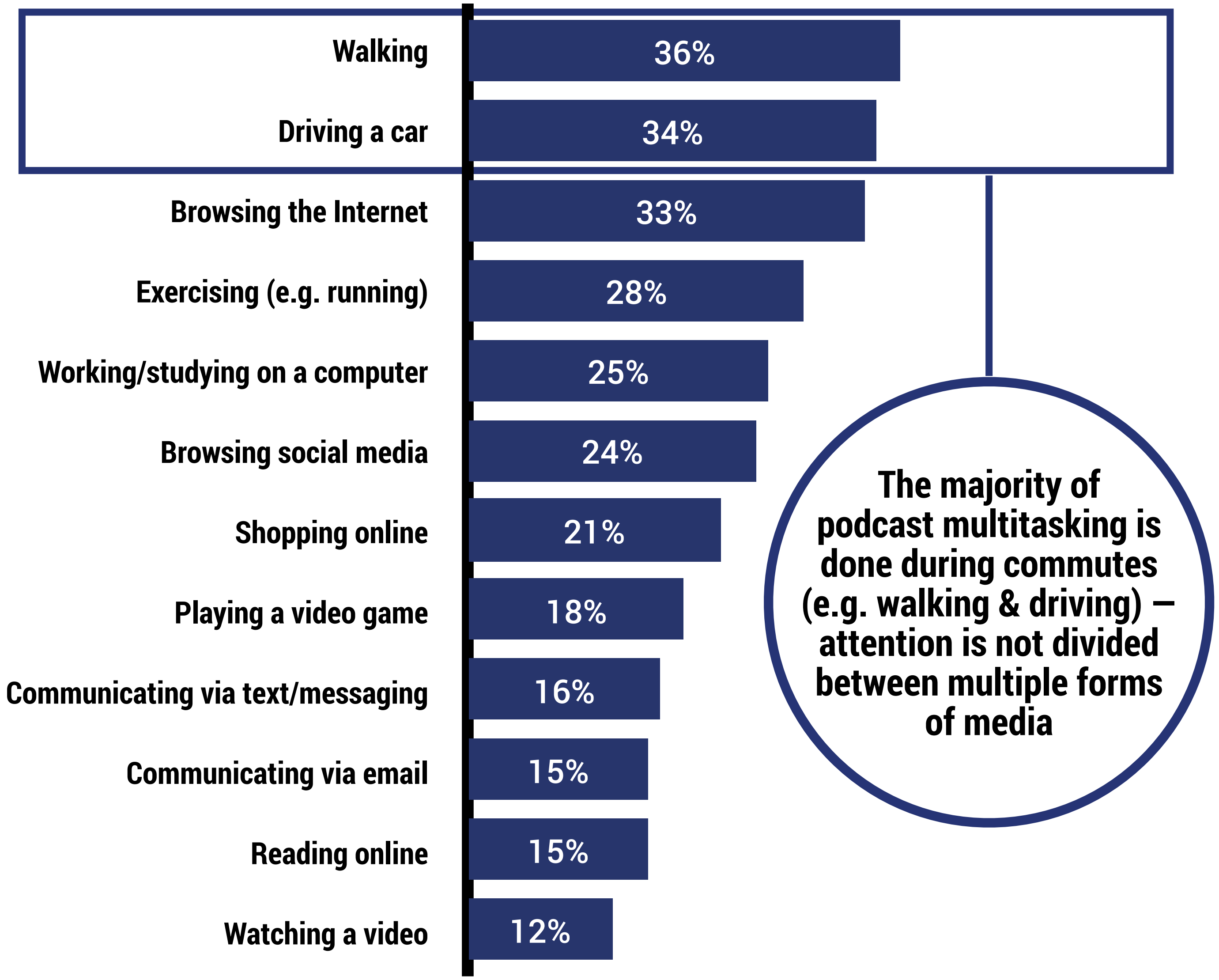
Sources: Activate analysis, Podtrac

Multitasking is common among podcast listeners — engagement will be strong as the top multitasking activities allow for focused listening

FREQUENCY OF MULTITASKING WHILE LISTENING TO PODCASTS, U.S., 2019, % PODCAST LISTENERS AGED 18+



TOP MULTITASKING ACTIVITIES WHILE LISTENING TO PODCASTS, U.S., 2019, % MULTITASKING PODCAST LISTENERS AGED 18+



The majority of podcast multitasking is done during commutes (e.g. walking & driving) – attention is not divided between multiple forms of media

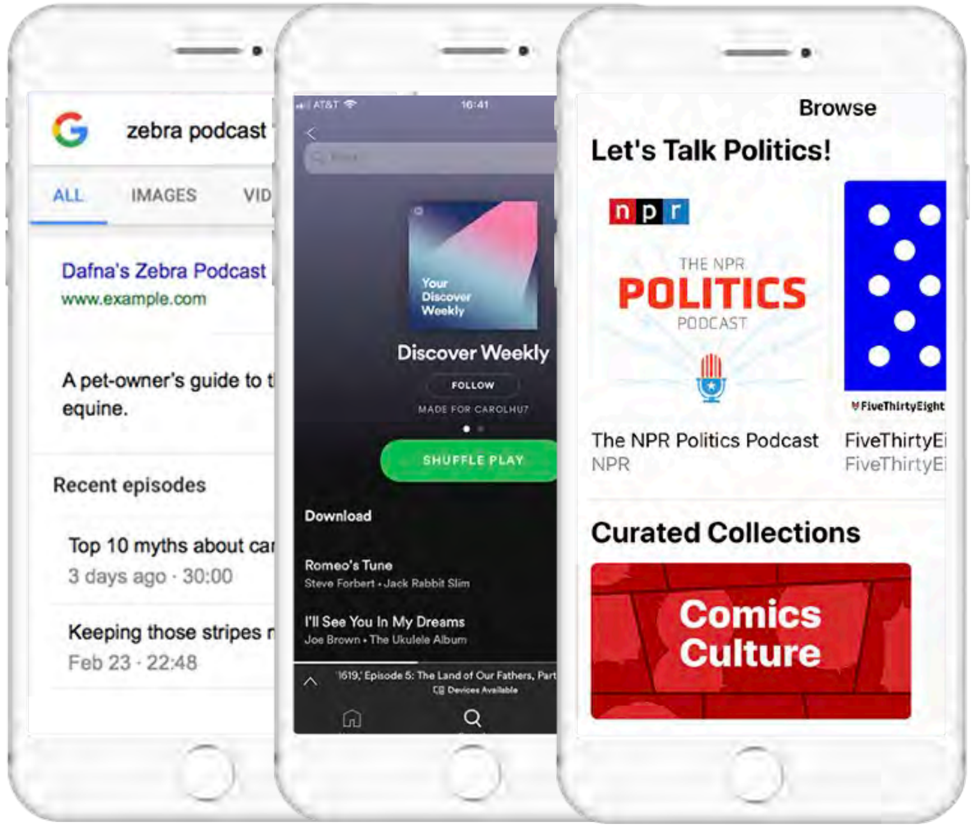
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

New listening experiences and improved discovery features fuel audience growth and engagement

BETTER DISCOVERY TOOLS

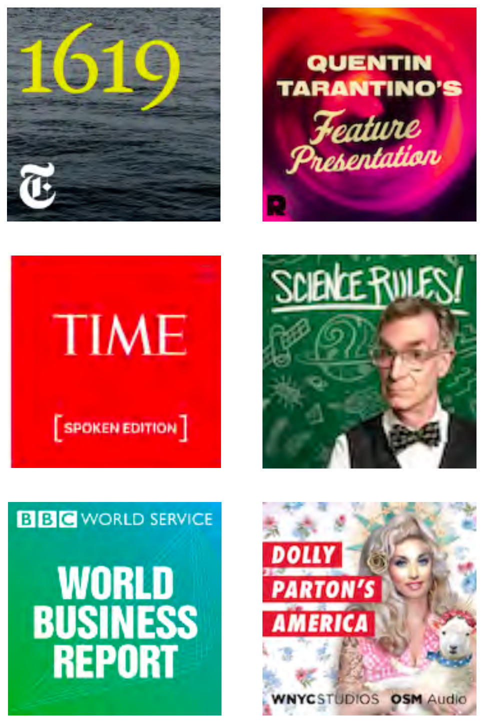
Podcast integration into Google search results, Apple recommendations, and Spotify playlists will increase listening by helping listeners find new and relevant content

SEARCH RESULTS **RECOMMENDATIONS**



Established media companies and celebrities are bringing new content and formats to podcasts (e.g. daily news digest, entertainment news)

MEDIA & CELEBRITIES



IMPROVED TECHNOLOGY

A great deal of listening happens on smart speakers – improved functionality and integration will increase it even more

Further integration of CarPlay and Android Auto will enable more in-car podcast listening

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

The podcast experience will continue to shift to streaming, transforming the listening experience

DOWNLOADED EXPERIENCE

Podcast app comes pre-installed on iPhones

Podcast app is separate from other Apple media apps

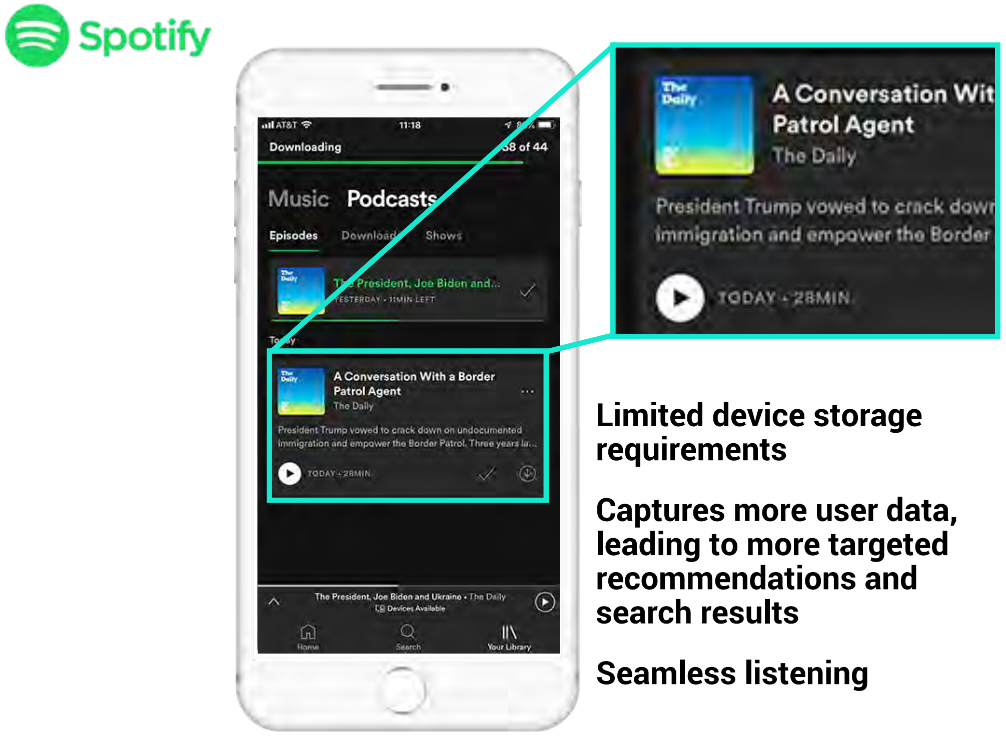
Expending device storage space

Unauthenticated listening

Limited tracking on:
- Whether or not the podcast is listened to
- Ad skipping
- Audience insights

CHALLENGES WITH DOWNLOAD
- Poor podcast search and discovery experience
- No personalization
- Measurement challenges (downloads only)
- Limited listener data (only captured through surveys)
- No ad refresh (i.e. ads are baked into the podcast)

STREAMED EXPERIENCE



Limited device storage requirements

Captures more user data, leading to more targeted recommendations and search results

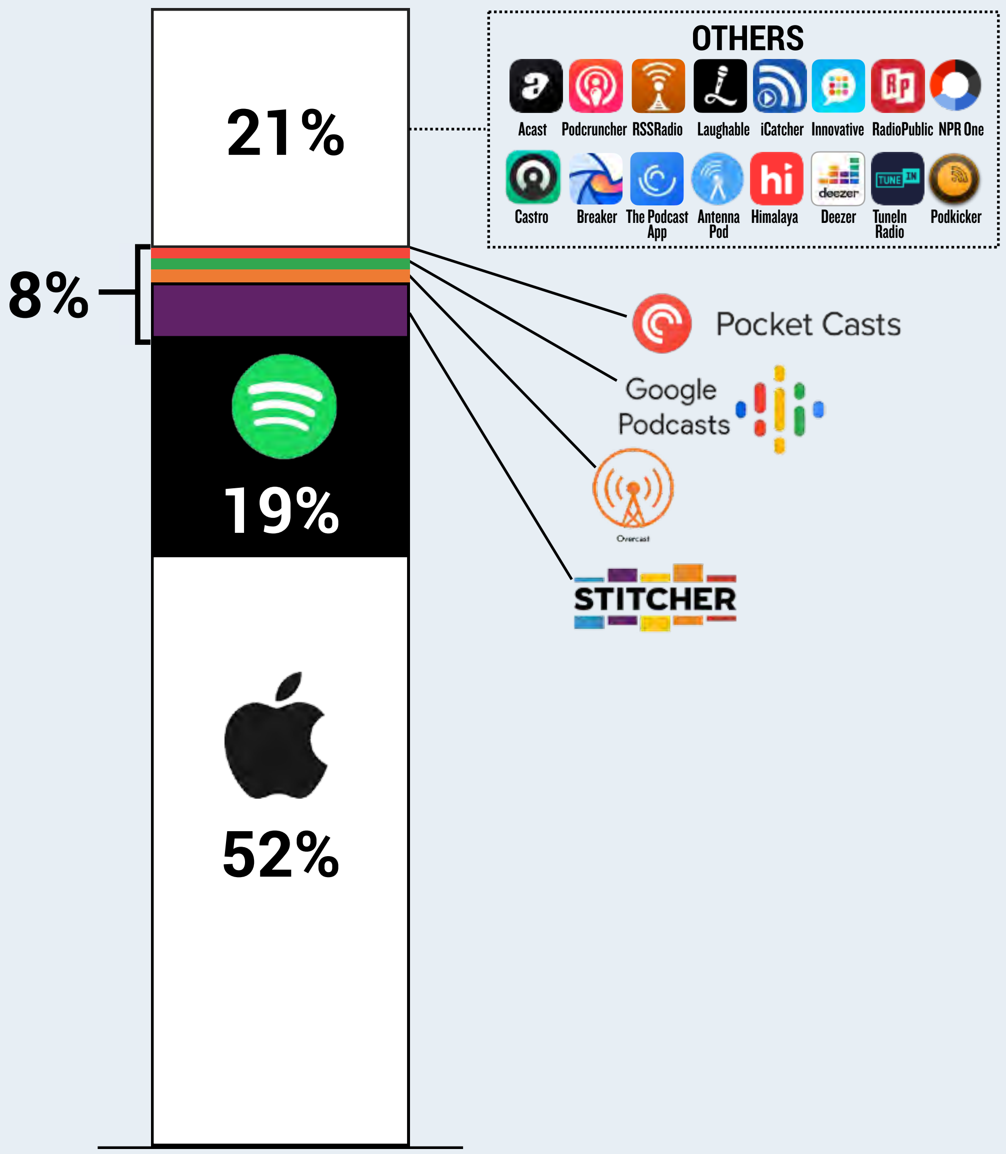
Seamless listening

IMPLICATIONS OF STREAMING
- Integration of music and podcasts
- Improved podcast discovery by applying streaming music features (e.g. personalized recommendations)
- Real-time engagement measurement
- Additional listener data from authenticated listening
- Dynamic insertion and ongoing ad refresh and targeting

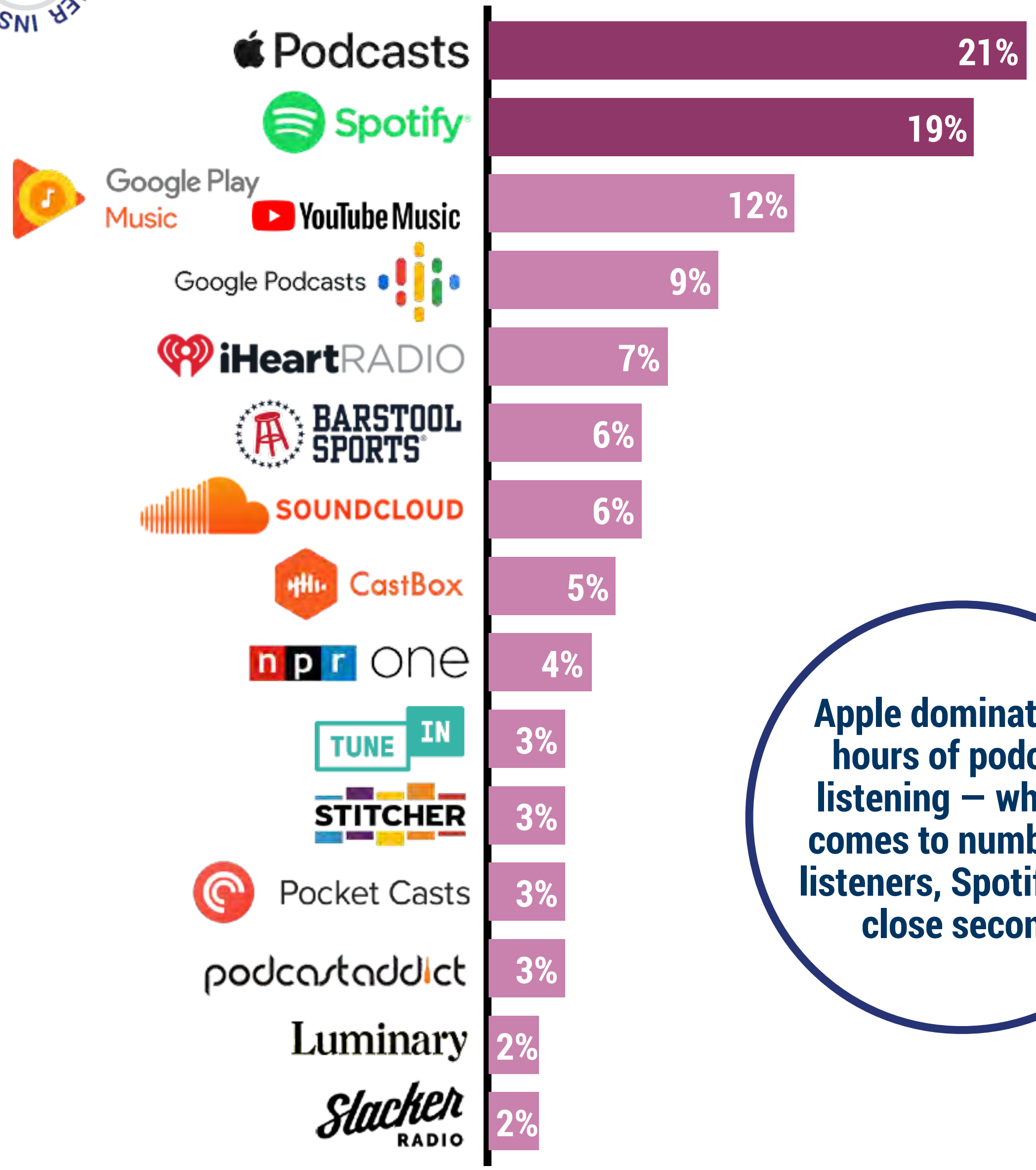
Source: Activate analysis

While hosting platforms indicate that Apple Podcasts accounts for the majority of listening, our consumer research points to significant tailwinds for other apps, including Spotify

CONSUMPTION OF ANCHOR-DISTRIBUTED PODCASTS BY PLATFORM, GLOBAL, SEPT. 2018, % CONSUMPTION



TOP SERVICES USED BY PODCAST LISTENERS, U.S., 2019, % PODCAST LISTENERS AGED 18+

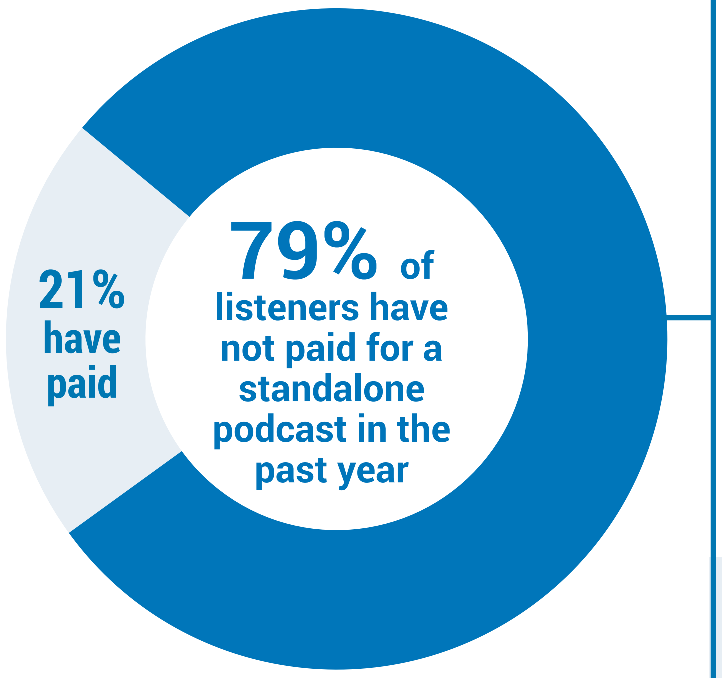


Apple dominates in hours of podcast listening – when it comes to number of listeners, Spotify is a close second

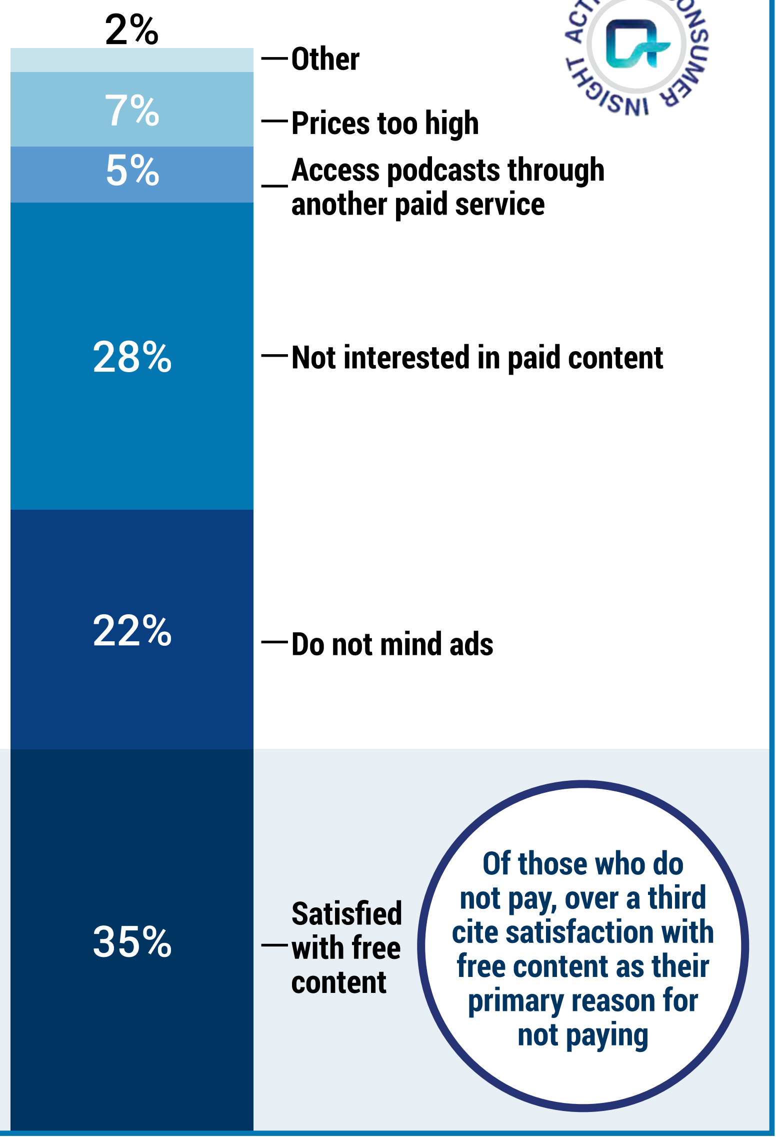
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Anchor

Free experiences will continue to lead podcasts, since listeners demonstrate high acceptance of ads, especially host-read

PAYMENT FOR STANDALONE PODCAST SERVICE IN PAST YEAR, U.S., 2019, % MONTHLY PODCAST LISTENERS AGED 18+



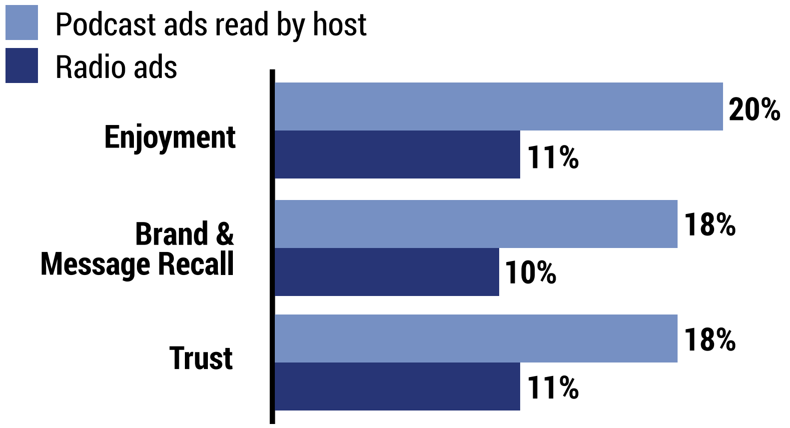
REASONS CONSUMERS DO NOT PAY FOR STANDALONE PODCAST SERVICE, U.S., 2019, % MONTHLY PODCAST LISTENERS AGED 18+



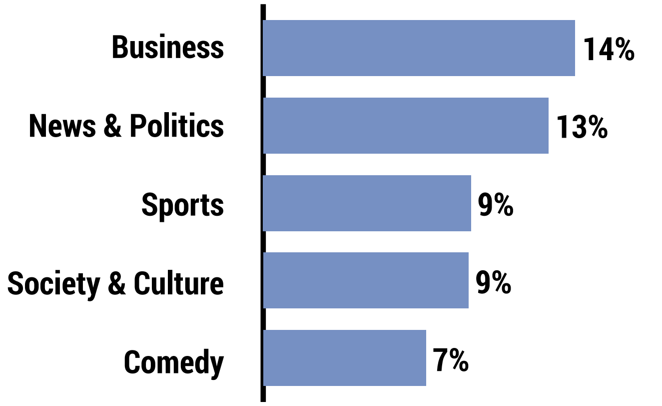
Of those who do not pay, over a third cite satisfaction with free content as their primary reason for not paying

CONSUMER REACTION TO PODCAST ADS AND LIFT IN PURCHASE

INTERNET USERS' REACTIONS TO PODCAST ADS READ BY HOST VS. RADIO ADS, U.S., DEC. 2017, % INTERNET USERS



LIFT IN PURCHASE INTENT FOR BRANDS AFTER HEARING A PODCAST AD AMONG PODCAST LISTENERS BY CATEGORY, U.S., 2017, % LIFT



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Acast, Nielsen

Recent and future initiatives will lead to new advertising units, measurement tools, and improved listener data availability, driving podcast advertising growth

MOST COMMON FORM OF PODCAST ADVERTISING TO DATE

Host-Read Ads

- Sold directly (i.e. not automated)
- Relatively high CPMs
- Primarily mid-roll

EMERGING FORM OF PODCAST ADVERTISING

Pre-Recorded Ads and Radio Style Ads

- Increased ad sales and ad serving automation, enabled by increased availability of listener data and platforms

KEY ENABLERS OF PODCAST AD MARKET GROWTH

Measurement Tools

Streamlined measurement standards will allow an industry currency to emerge

MEASUREMENT STANDARDS & THIRD PARTY VALIDATION

npr RAD · nielsen · iab. TECH LAB

Improved listening measurement will meet the requirements of more advertisers

AUDIENCE MEASUREMENT & PODCAST RANKINGS

Poddindex · PODTRAC · Magellan

Ad agencies will improve ad ROI tracking capabilities

ROI DATA

AD RESULTS MEDIA · VERITONE · OXFORd · havas edge

Listener Data

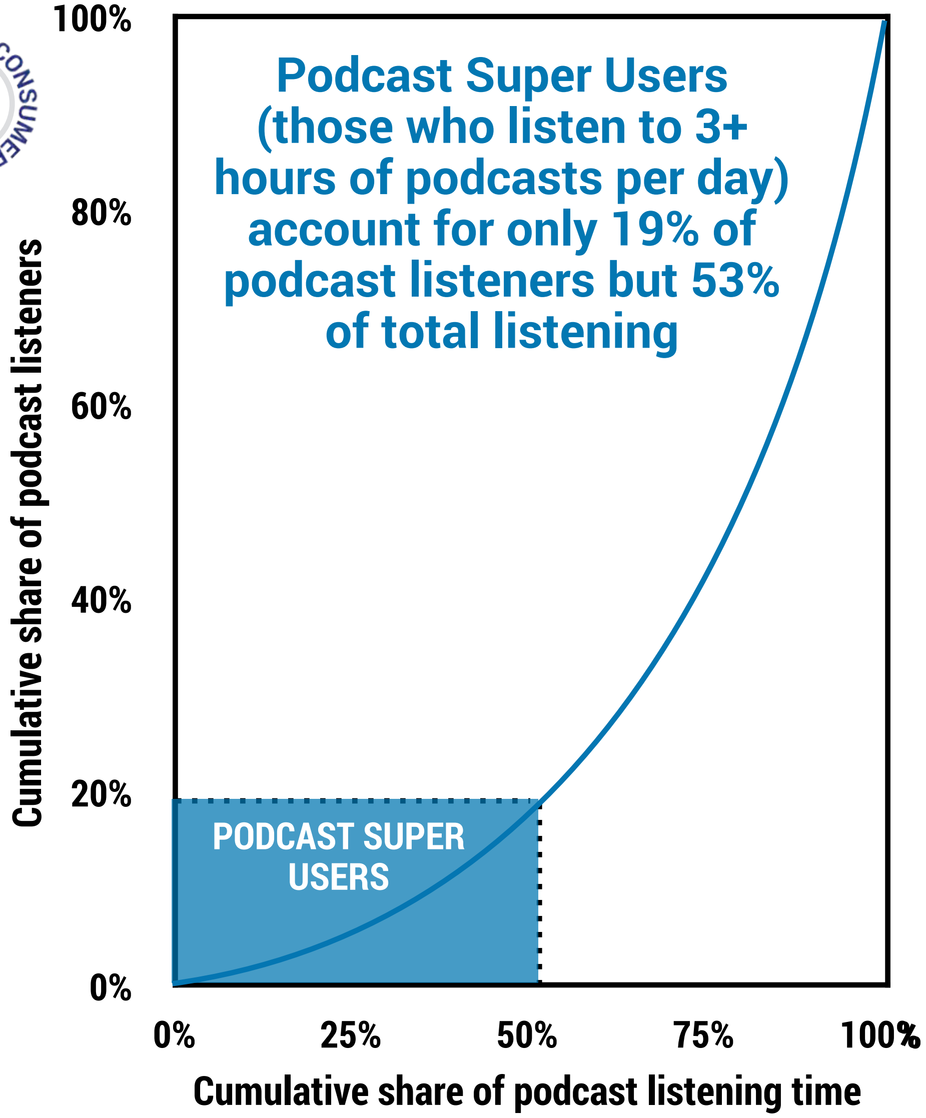
REAL-TIME STREAMING APP LISTENER DATA (AUTHENTICATED LISTENING)

Spotify · iHeartRADIO · pandora · TUNE IN

Source: Activate analysis

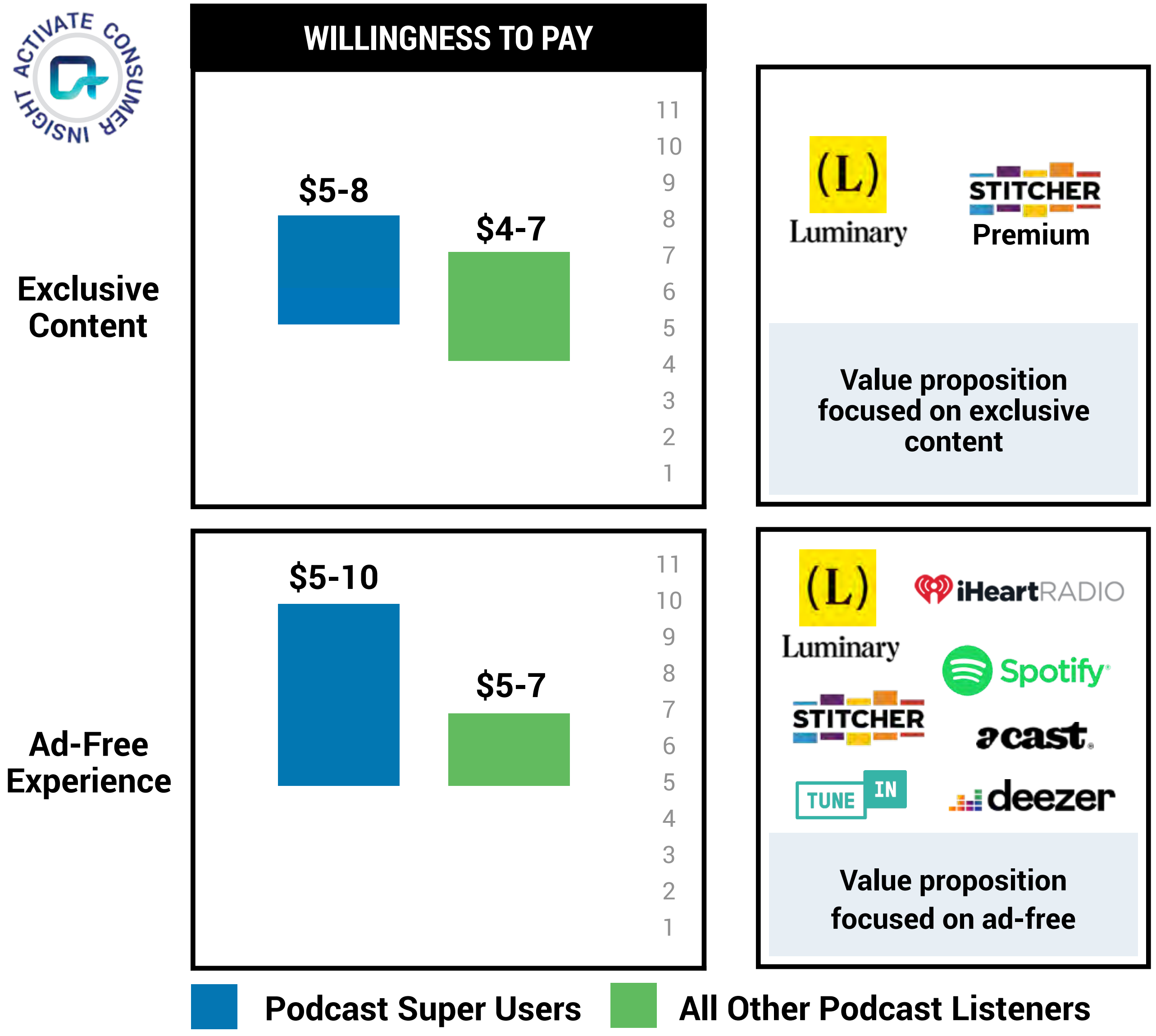
Beyond advertising, other sources of revenue, such as subscriptions and live events, will drive podcasts, super-serving Podcast Super Users

DISTRIBUTION OF PODCAST LISTENING BASED ON TIME SPENT, U.S., 2019, % SHARE LISTENING VS. % SHARE LISTENERS AGED 18+



Podcast Super Users (those who listen to 3+ hours of podcasts per day) account for only 19% of podcast listeners but 53% of total listening

MONTHLY WILLINGNESS TO PAY FOR PODCAST SUBSCRIPTION SERVICES, U.S., 2019, PODCAST LISTENERS AGED 18+



Value proposition focused on exclusive content

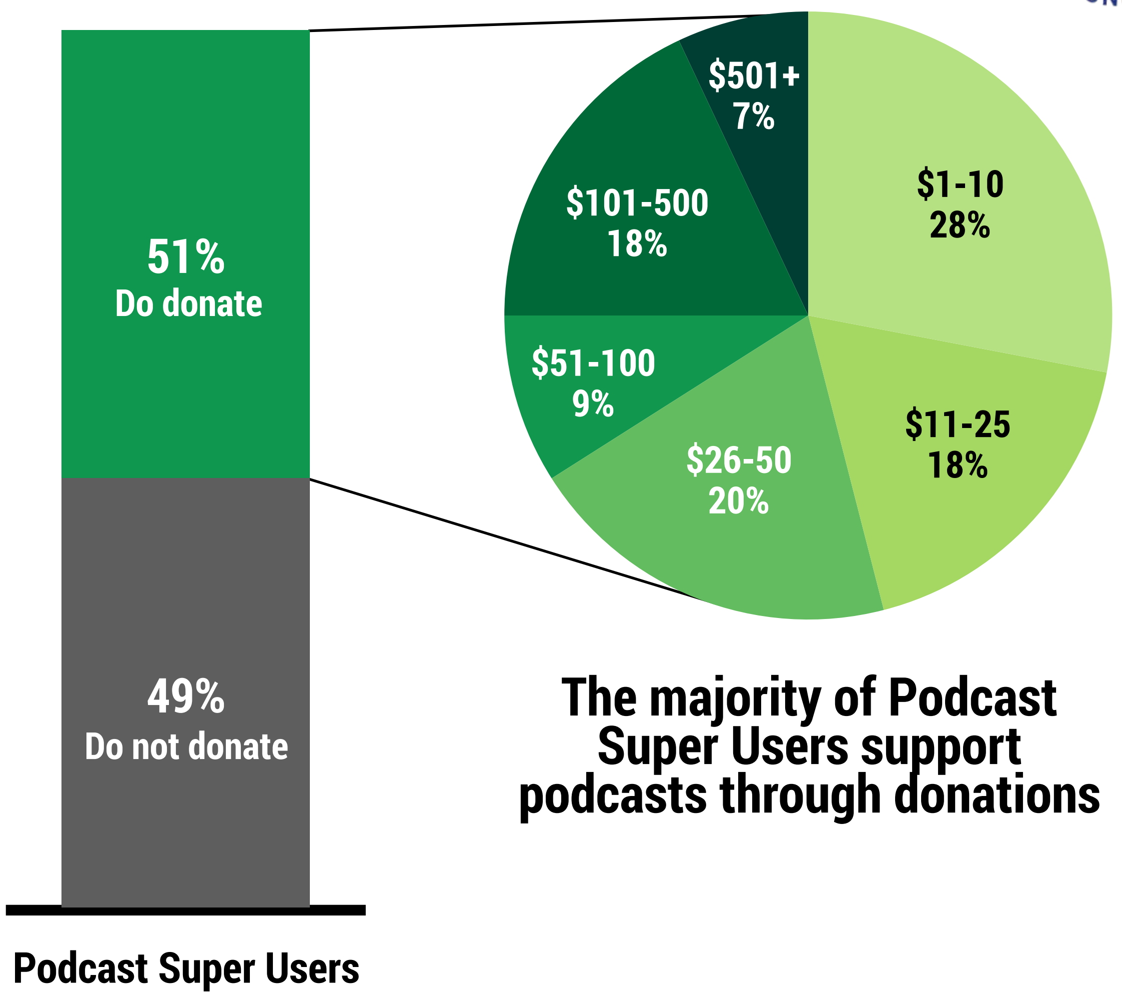
Value proposition focused on ad-free

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

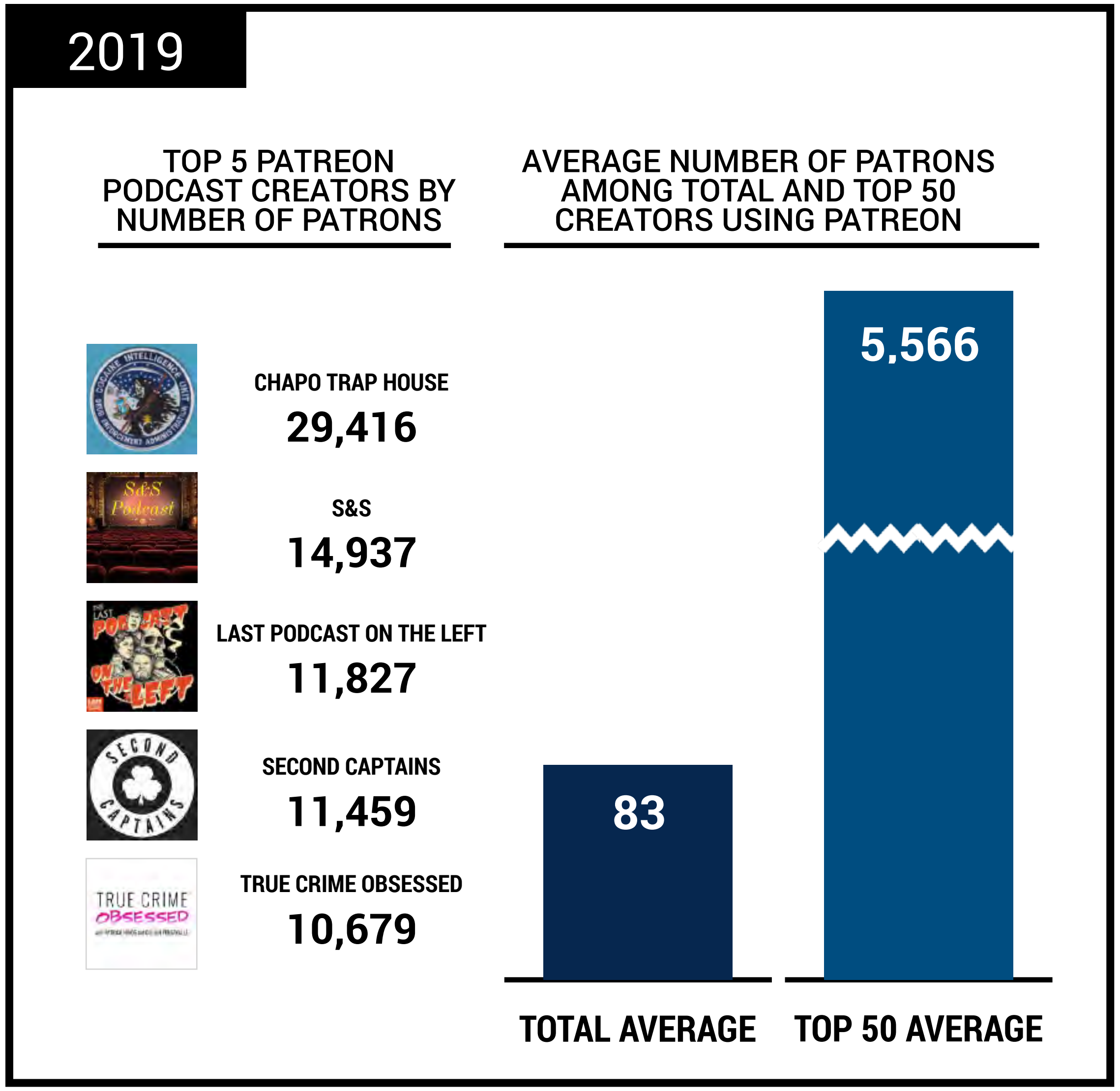
Over half of Podcast Super Users support creators through donations, enabling non-professional podcasters to emerge

PODCAST SUPER USERS WHO DONATE, U.S., 2019, % PODCAST SUPER USERS

AMOUNT DONATED MONTHLY BY USD RANGE, U.S., 2019, % PODCAST SUPER USERS WHO DONATE



The majority of Podcast Super Users support podcasts through donations

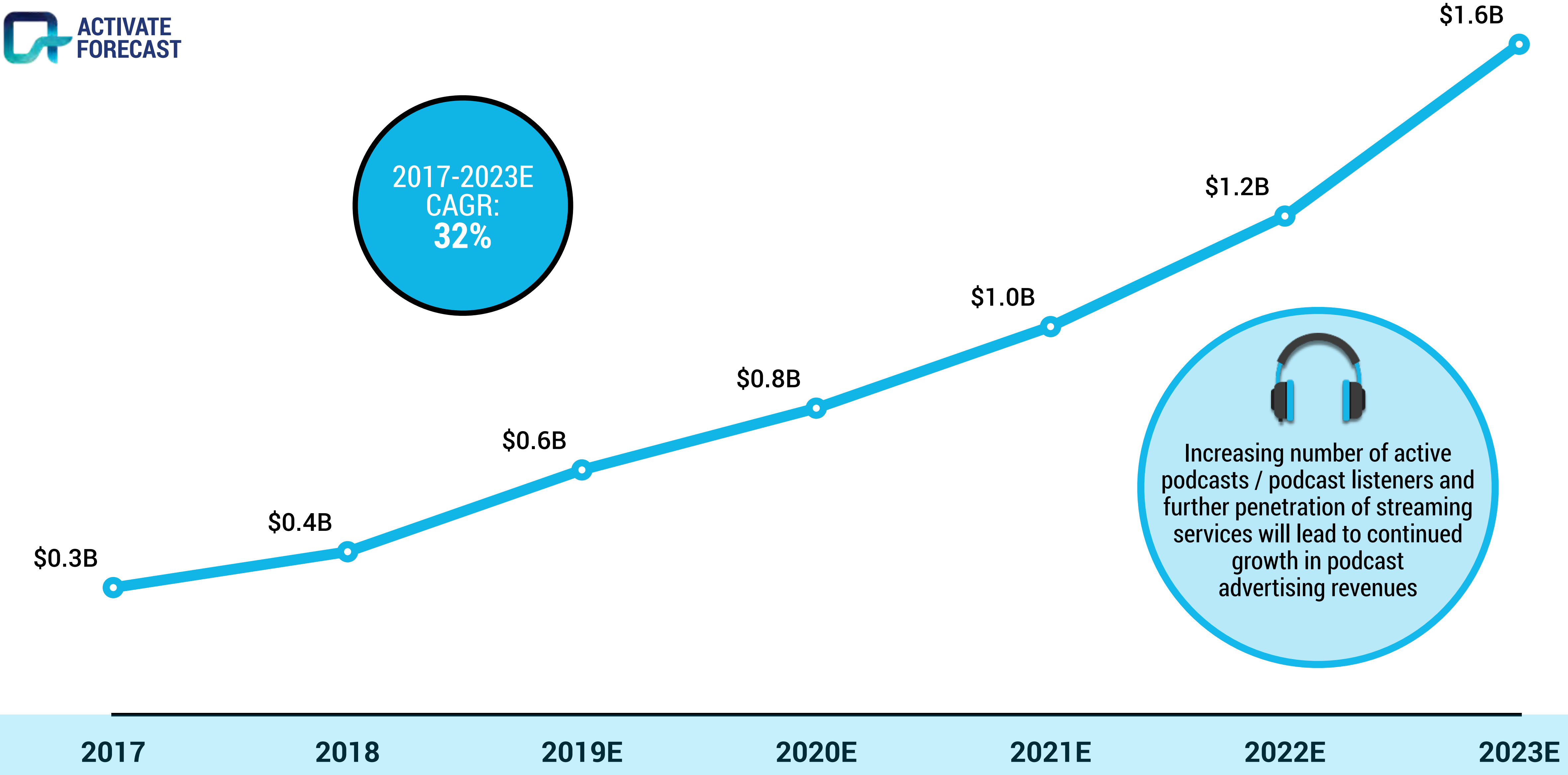


Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Graphtreon, Patreon

We forecast that the podcast market will almost triple by 2023

PODCAST TOTAL AD REVENUE FORECAST, U.S., 2017-2023E, BILLIONS USD

ACTIVATE FORECAST



Increasing number of active podcasts / podcast listeners and further penetration of streaming services will lead to continued growth in podcast advertising revenues

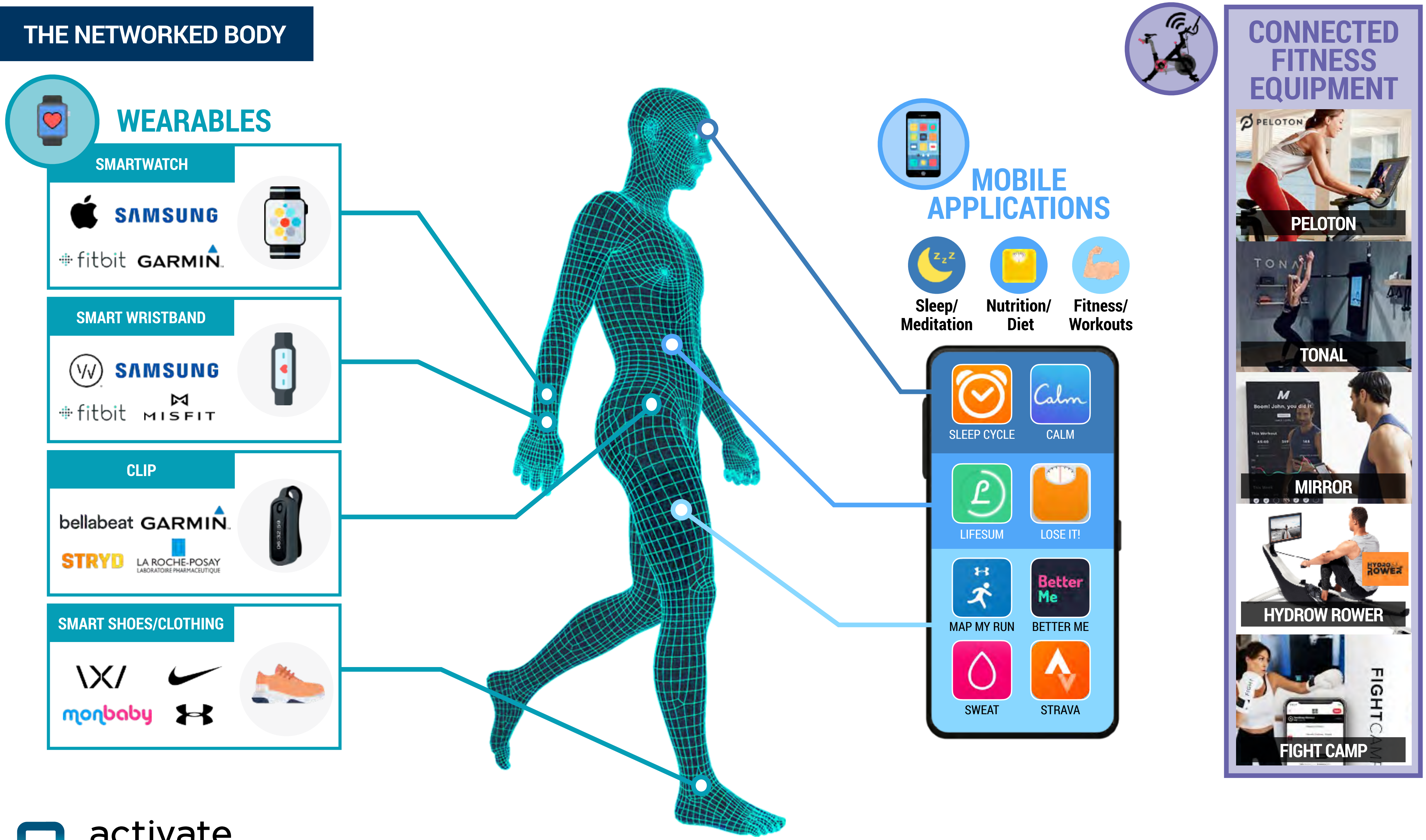
activate consulting

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Apple World Today, Apple Worldwide Developers Conference 2018, Automotive News, Bureau of Economic Analysis, Car & Driver, Cox Automotive, Digital Trends, Edison Research, Nielsen, Pew Research Group, PricewaterhouseCoopers, Scarborough Research, U.S. Census Bureau

CONTENTS

The age of the Networked Body is beginning; as a result of advanced functionality and consumer interest, we see an explosion in health and fitness technology becoming an integral part of people's lives

THE NETWORKED BODY



WEARABLES

SMARTWATCH

SAMSUNG
fitbit
GARMIN

SMART WRISTBAND

SAMSUNG
fitbit
MISFIT

CLIP

bellabeat
GARMIN
STRYD
LA ROCHE-POSAY LABORATOIRE PHARMACEUTIQUE

SMART SHOES/CLOTHING

\X/
monbaby

MOBILE APPLICATIONS

- Sleep/ Meditation
- Nutrition/ Diet
- Fitness/ Workouts

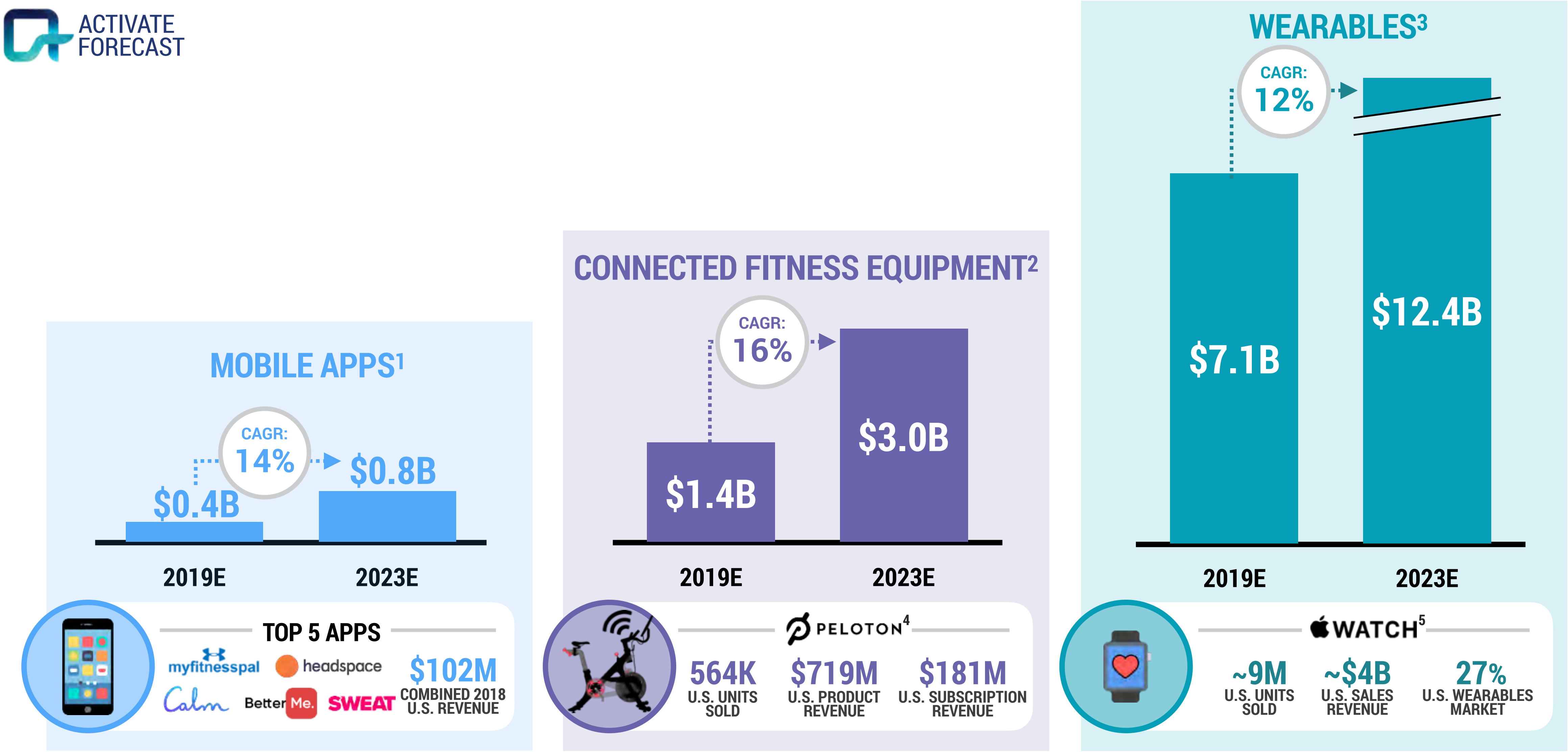
- SLEEP CYCLE
- CALM
- LIFESUM
- LOSE IT!
- MAP MY RUN
- BETTER ME
- SWEAT
- STRAVA

CONNECTED FITNESS EQUIPMENT

- PELOTON
- TONAL
- MIRROR
- HYDROW ROWER
- FIGHT CAMP

Increased interest in healthier lifestyles will fuel the growth of these products and services, creating a combined $16B U.S. market by 2023

HEALTH AND FITNESS MOBILE APPS, WEARABLES, AND CONNECTED FITNESS EQUIPMENT REVENUE,
U.S., 2019E VS. 2023E, BILLIONS USD



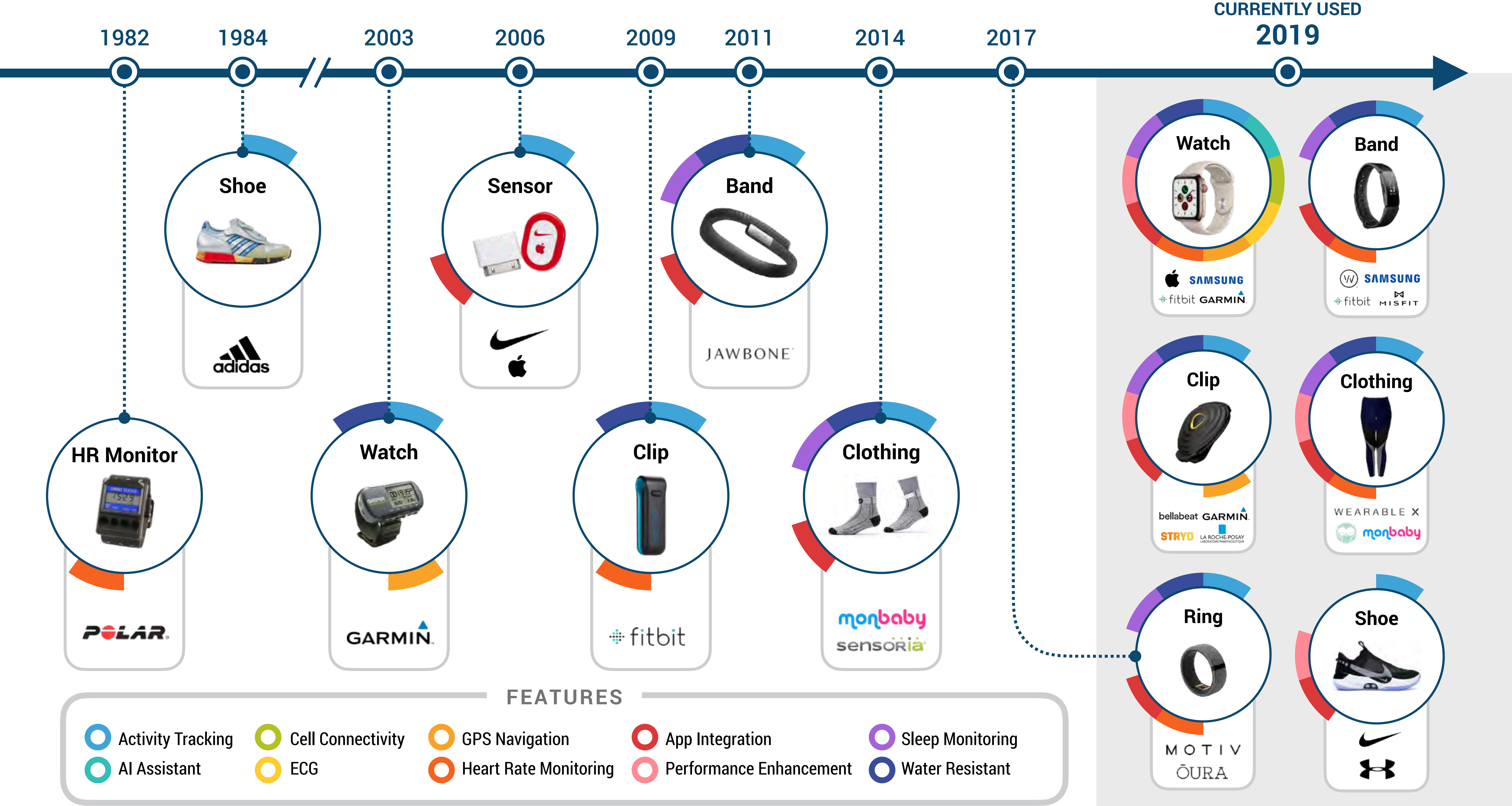
1. Includes Activity & Diet Tracking, Fitness & Workouts, Mindfulness/Meditation & Sleep applications for iOS and Android. Top 5 apps ranked by highest grossing revenue from 2018. 2. Defined as Internet connected exercise equipment with social/live class capabilities. 3. Defined as accessories or clothing embedded with electronics, software, or sensors and excludes visual and audio smart devices. 4. As of FYE June 2019 from company 10K. 5. Estimated 2018 U.S. unit sales and revenue.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), App Annie, CDC (Center for Disease Control and Prevention), Census Bureau, Cisco, Crunchbase, Euromonitor, Gallup, Gartner, HHS (U.S. Department of Health & Human Services), IDC, NTIA (National Telecommunications and Information Administration)

New consumer-facing digital solutions are revolutionizing how we track, manage, and improve our physical health and fitness, allowing users to create ‘The Networked Body’

	THEN	NOW: THE NETWORKED BODY
CONTENT	Limited number of gyms, workout classes, personal trainers and videos, based on location and availability	Remote on-demand access to personal trainers and classes
TECH	Limited functionality and use cases of early tracking devices	Sophistication in hardware and software leading to better performance and accuracy
COST	High cost per use case / tracking function	Multi-functional devices at affordable and decreasing prices
SOCIAL	Difficult to share performance with others	Built-in social sharing functionality and social norms pushing wellness trends
BUSINESS MODELS	In-person health and nutritional consultations and membership-based/pay-per-class workout locations	On-demand health and wellness support, and subscription-based home workout solutions with social elements

Health-focused wearables will continue to make incremental advancements and adopt newer, more familiar forms



1982 – HR Monitor – POLAR

1984 – Shoe – adidas

2003 – Watch – GARMIN

2006 – Sensor

2009 – Clip – fitbit

2011 – Band – JAWBONE

2014 – Clothing – monbaby, sensoria

2017

CURRENTLY USED 2019

Watch – SAMSUNG, fitbit, GARMIN

Band – SAMSUNG, fitbit, MISFIT

Clip – bellabeat, GARMIN, STRYD, LA ROCHE-POSAY

Clothing – WEARABLE X, monbaby

Ring – MOTIV, ŌURA

Shoe

FEATURES

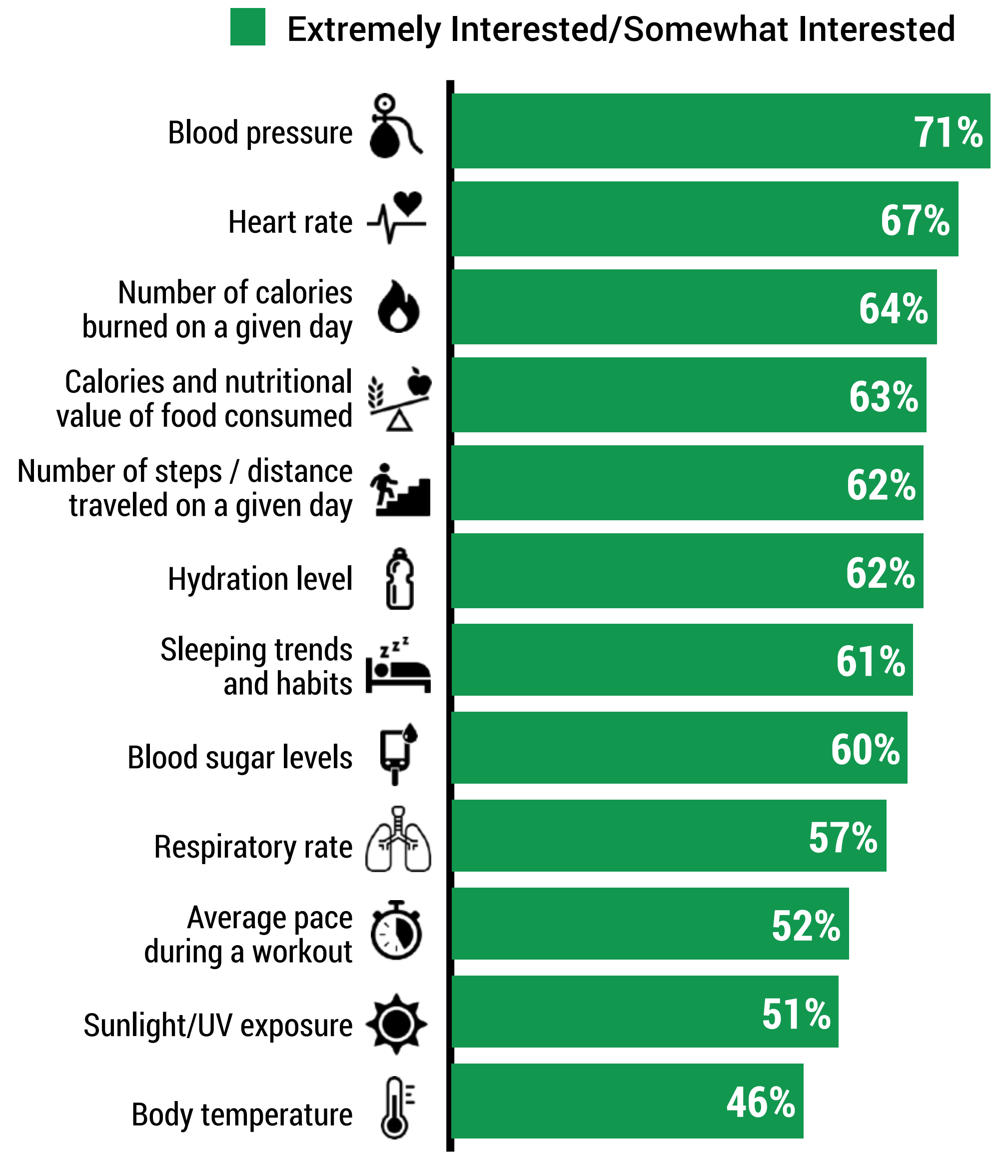
○ Activity Tracking
○ AI Assistant
○ Cell Connectivity
○ ECG
○ GPS Navigation
○ Heart Rate Monitoring
○ App Integration
○ Performance Enhancement
○ Sleep Monitoring
○ Water Resistant

activate consulting

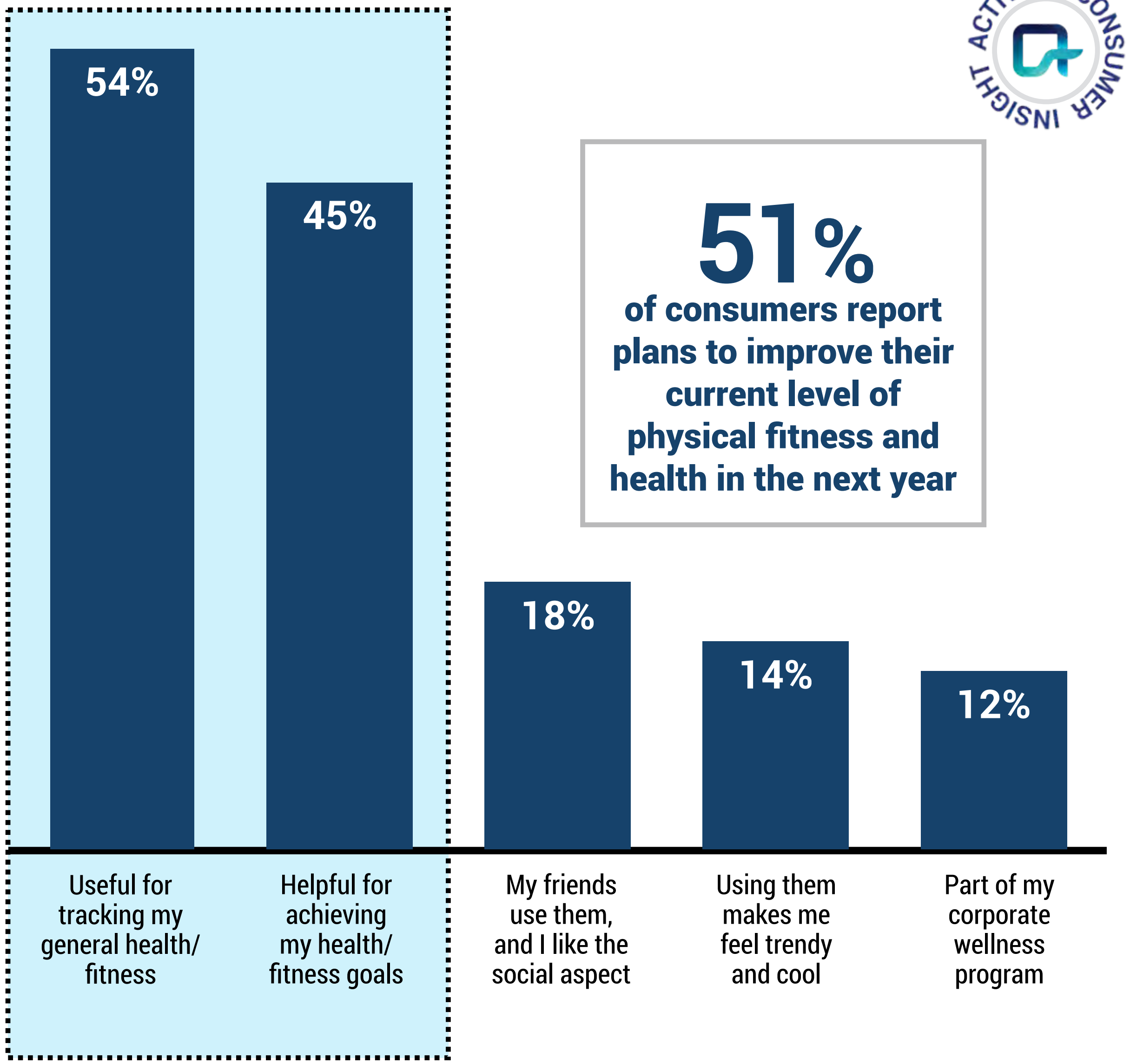
1. Timeline (prior to 2019) corresponds to the first release of each form from brands with the highest market share and/or consumer awareness.
Sources: Activate analysis, Company sites

Consumers want more information and a greater ability to monitor and track key areas of their health and fitness

INTEREST IN HEALTH AND FITNESS TRACKING BY TYPE, U.S., 2019, % ADULTS AGED 18+



REASONS FOR LIKING WEARABLE TECHNOLOGY DEVICES, CONNECTED FITNESS EQUIPMENT, AND MOBILE HEALTH/ FITNESS APPS, U.S., 2019, % ADULTS AGED 18+

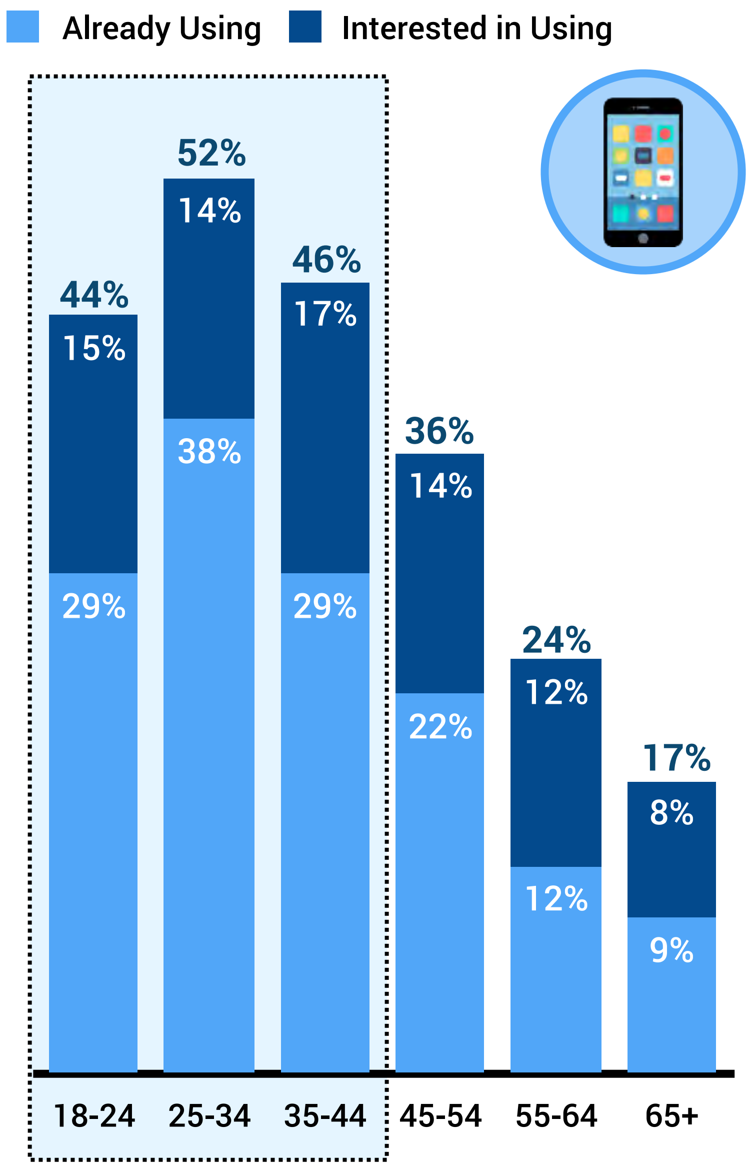


51% of consumers report plans to improve their current level of physical fitness and health in the next year

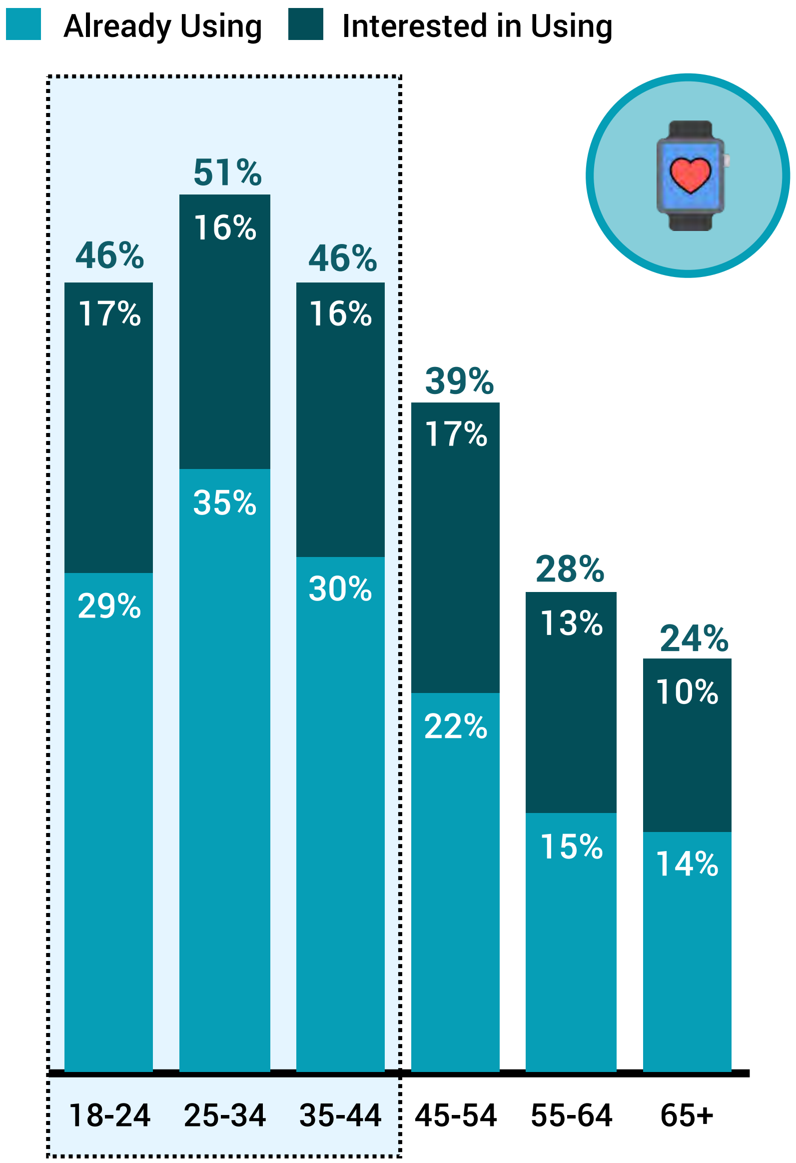
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Interest in and adoption of health and fitness mobile apps and wearables is already highly driven by younger consumers

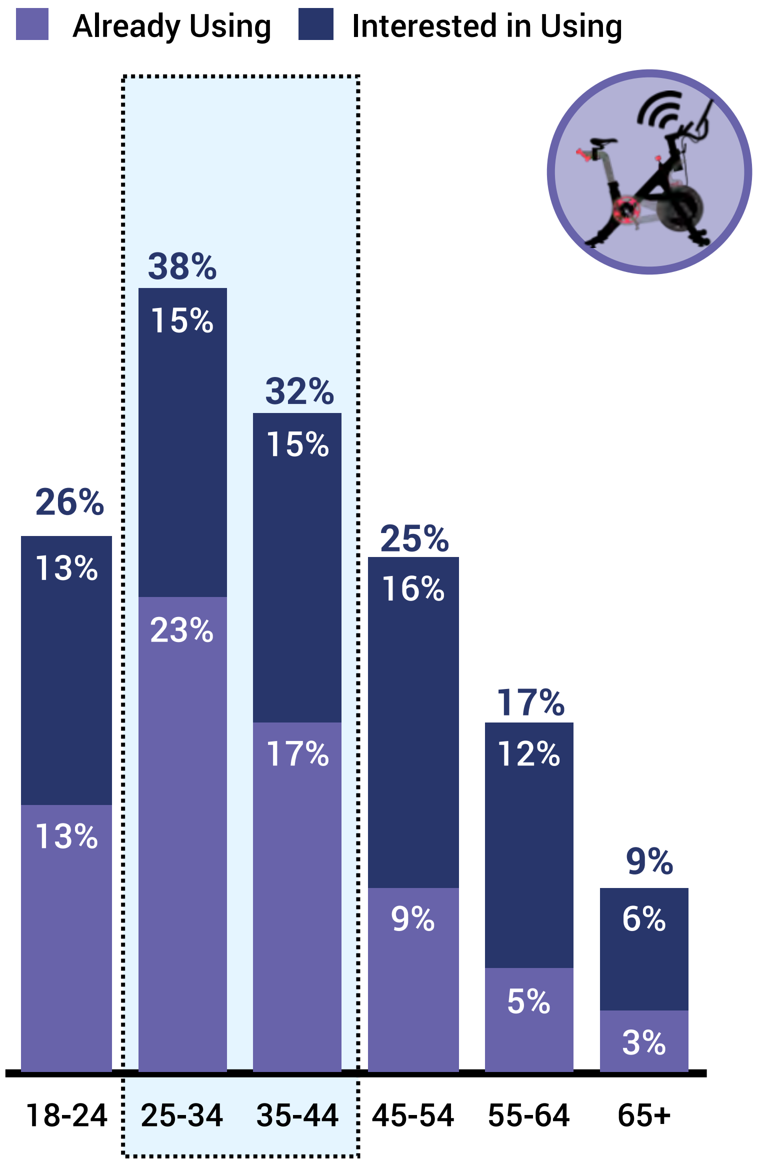
USAGE AND INTEREST IN HEALTH AND FITNESS MOBILE APPS BY AGE GROUP, U.S., 2019, % ADULTS AGED 18+



USAGE AND INTEREST IN WEARABLES BY AGE GROUP, U.S., 2019, % ADULTS AGED 18+

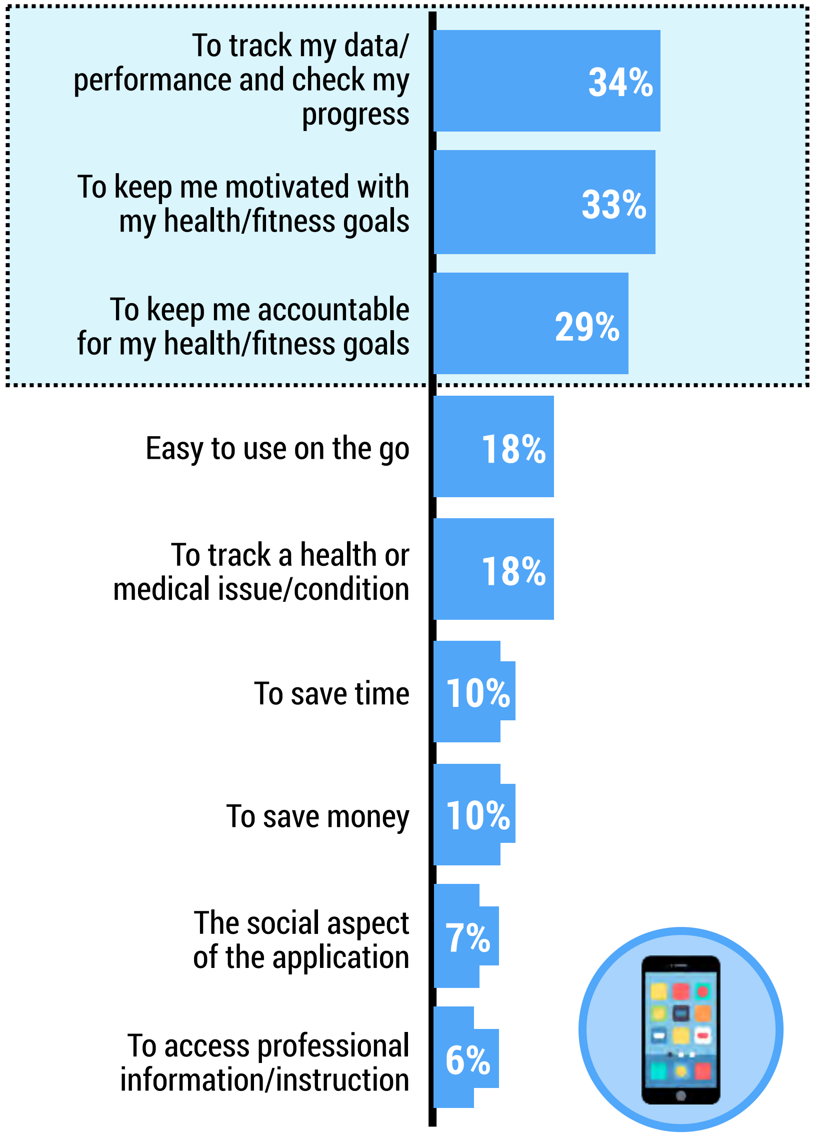


USAGE AND INTEREST IN CONNECTED FITNESS EQUIPMENT BY AGE GROUP, U.S., 2019, % ADULTS AGED 18+

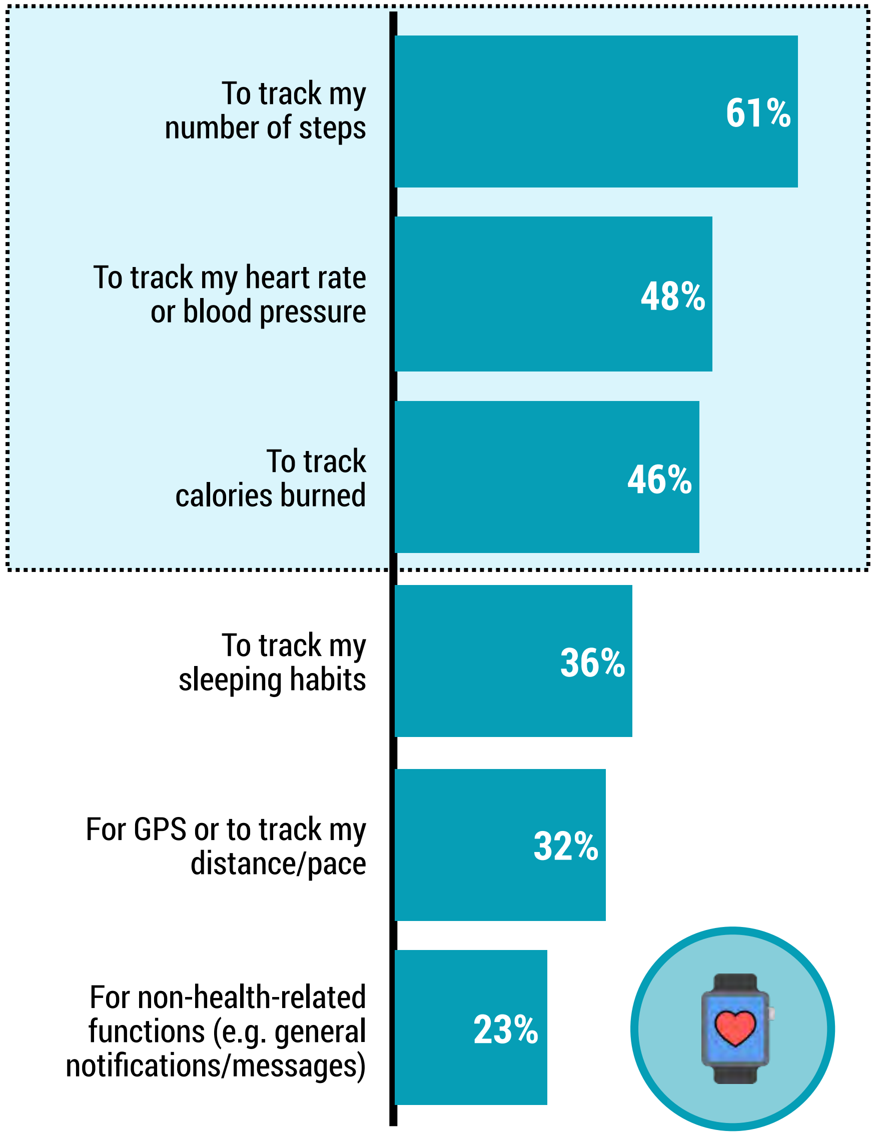


Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

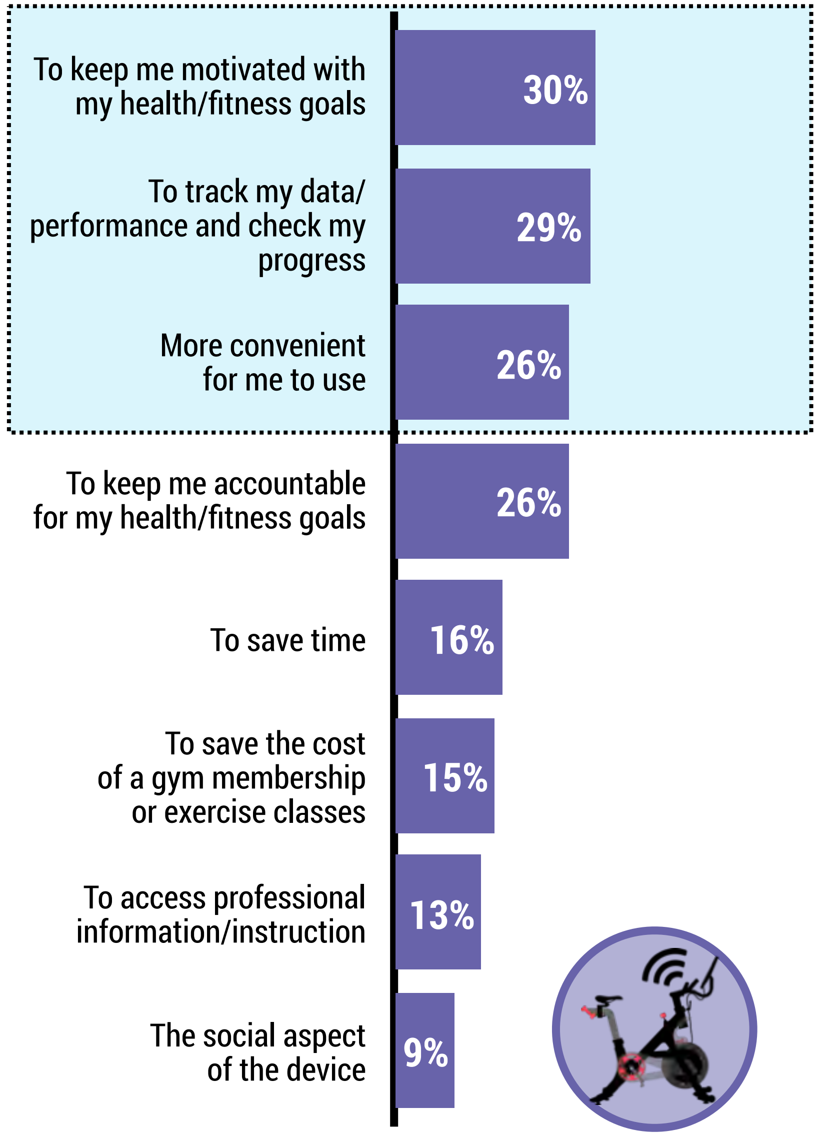
Health and fitness data tracking and accountability are the top use cases across all these devices



TOP REASONS FOR USING HEALTH AND FITNESS MOBILE APPS,
U.S., 2019, % ADULTS AGED 18+



TOP REASONS FOR USING WEARABLES,
U.S., 2019, % ADULTS AGED 18+

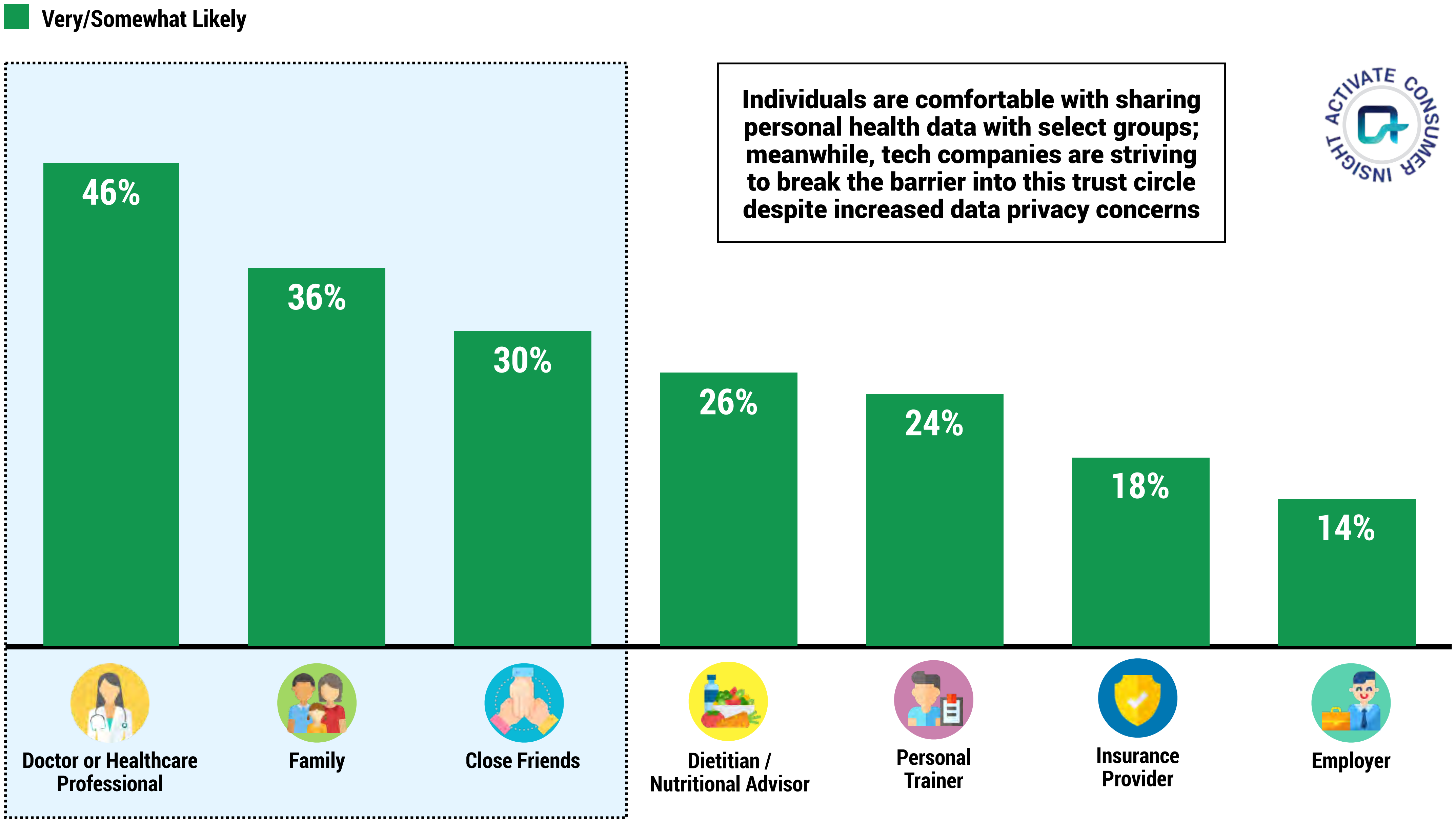


TOP REASONS FOR USING CONNECTED FITNESS EQUIPMENT,
U.S., 2019, % ADULTS AGED 18+

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Consumers are more willing to trust healthcare professionals, family, and close friends with their personal data from wearables, mobile apps, and connected fitness equipment

LIKELIHOOD TO SHARE PERSONAL DATA FROM HEALTH AND FITNESS MOBILE APPS, WEARABLES, AND CONNECTED FITNESS EQUIPMENT BY CATEGORY, U.S., 2019, % ADULTS AGED 18+



Individuals are comfortable with sharing personal health data with select groups; meanwhile, tech companies are striving to break the barrier into this trust circle despite increased data privacy concerns

ACTIVATE CONSUMER INSIGHT

activate consulting

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

The next set of enablers will allow for a more complex quantification of the self – measuring health, performance, and happiness more holistically

THE FUTURE WILL BRING DEEPER DATA COLLECTION AND MORE COMPREHENSIVE MEASUREMENT

OVERALL HEALTH	e.g. Muscle Activity, Blood Tests
MENTAL WELLBEING	e.g. Emotions, Mood, Stress
PERFORMANCE & PRODUCTIVITY MONITORING	e.g. Focus, Cognition, Time Efficiency

ENABLERS

TECHNOLOGY

- Battery life improvements
- Lower technology costs
- Connected appliances / IoT (e.g. connected fridge to monitor nutrient intake)
- Miniaturized (invasive) sensors
- Braintech
- AI interpretation of biosignals

BUSINESS MODEL

- Trusted and secure data platforms
- Always-on monitoring
- Cross-platform data collection and analysis
- Predictive health analytics
- Hyper-personalized health and fitness programs

CONTENTS

Our digital consumer finance predictions from last year are already playing out

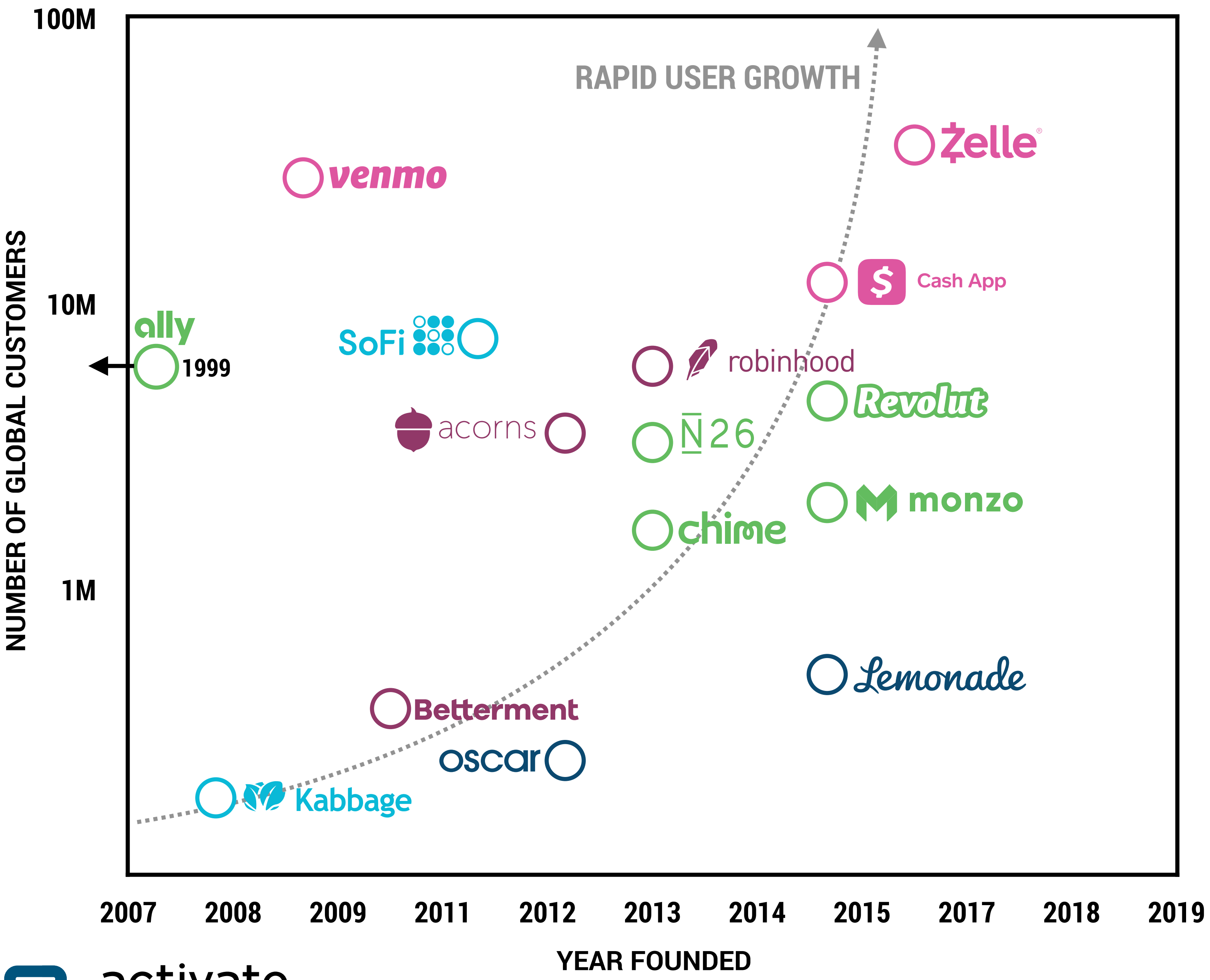
LAST YEAR'S PREDICTIONS	PROGRESS		
Next generation services would launch in the U.S.	monzo Q2 2019	N26 Q3 2019	Revolut Q4 2019 planned launch
Incumbents would attempt to respond	Clarity Money	Clarity Money	
Mobile carriers would launch consumer financial services	 T··Mobile·	Apr. 2019: T-Mobile launched T-Mobile Money Service, which includes payments as well as traditional banking services	
The largest tech platforms would attempt to further integrate digital finance to their roadmaps	 T··Mobile·	T··Mobile·	libra
Alternative data sets would fuel more credit	Revolut $2B in loans made in 2018	Kabbage $6.5B in total loans made	PROSPER $2.8B in total loans made

activate consulting

Sources: Activate analysis, Company filings, Pitchbook, TechCrunch

Digital-first consumer financial services have acquired millions of customers in a very short time

GROWTH OF DIGITAL FINANCE INNOVATORS,
GLOBAL, 2019, YEAR FOUNDED / MILLIONS CUSTOMERS



Financial Sector

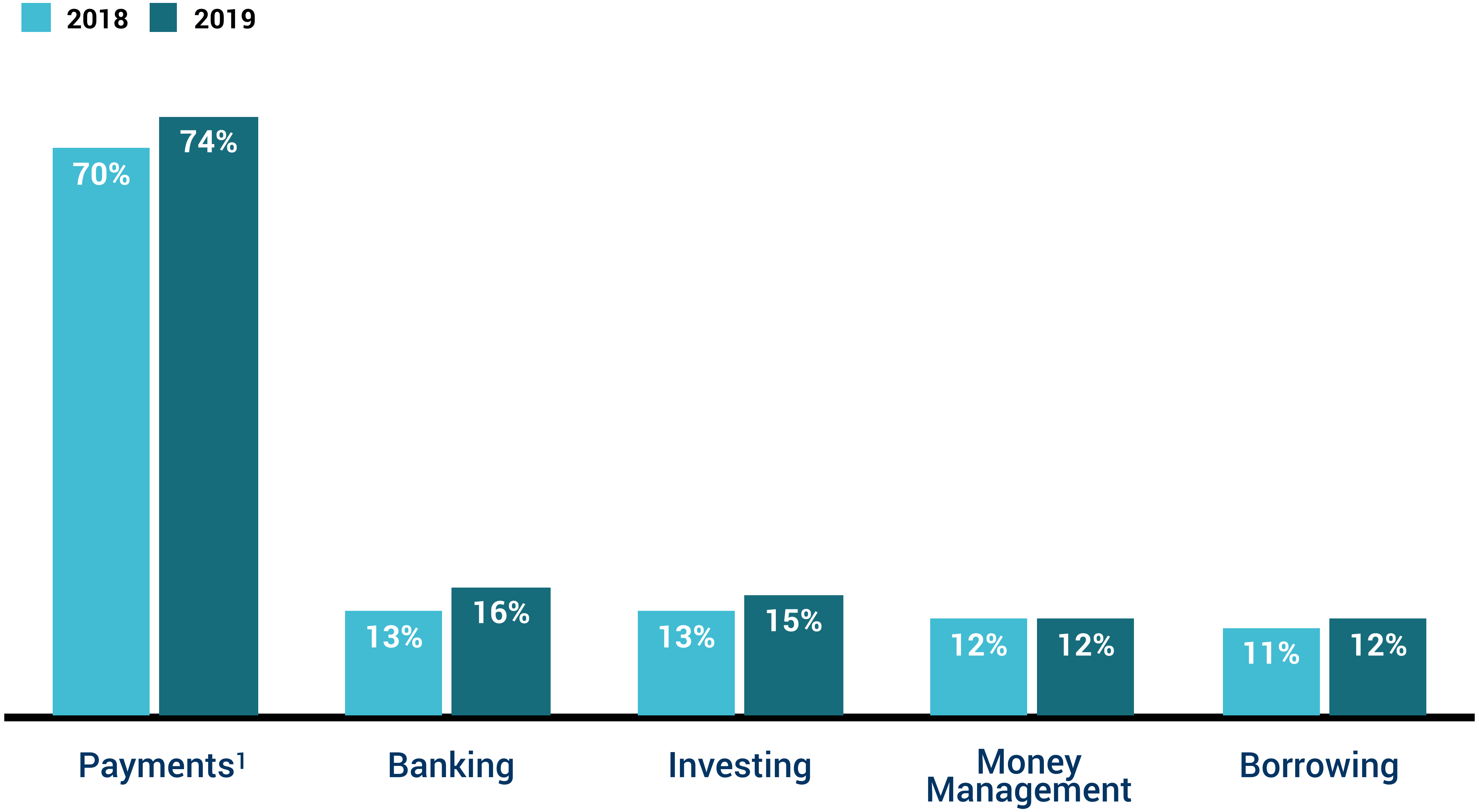
- Payments
- Investing
- Digital Banks
- Borrowing
- Insurance

While all sectors have gained traction with users relatively quickly, European digital banks have performed especially well

Sources: Activate analysis, Business Insider, CNBC, CNN, eMarketer, Finextra, Statista, The Street, TechCrunch, WalletHub

Our research shows that adoption of all types of digital-first financial services has grown over the last year

ADOPTION OF DIGITAL FINANCE PRODUCTS BY PRODUCT TYPE, U.S., 2018 VS. 2019, % ADULTS AGED 18+

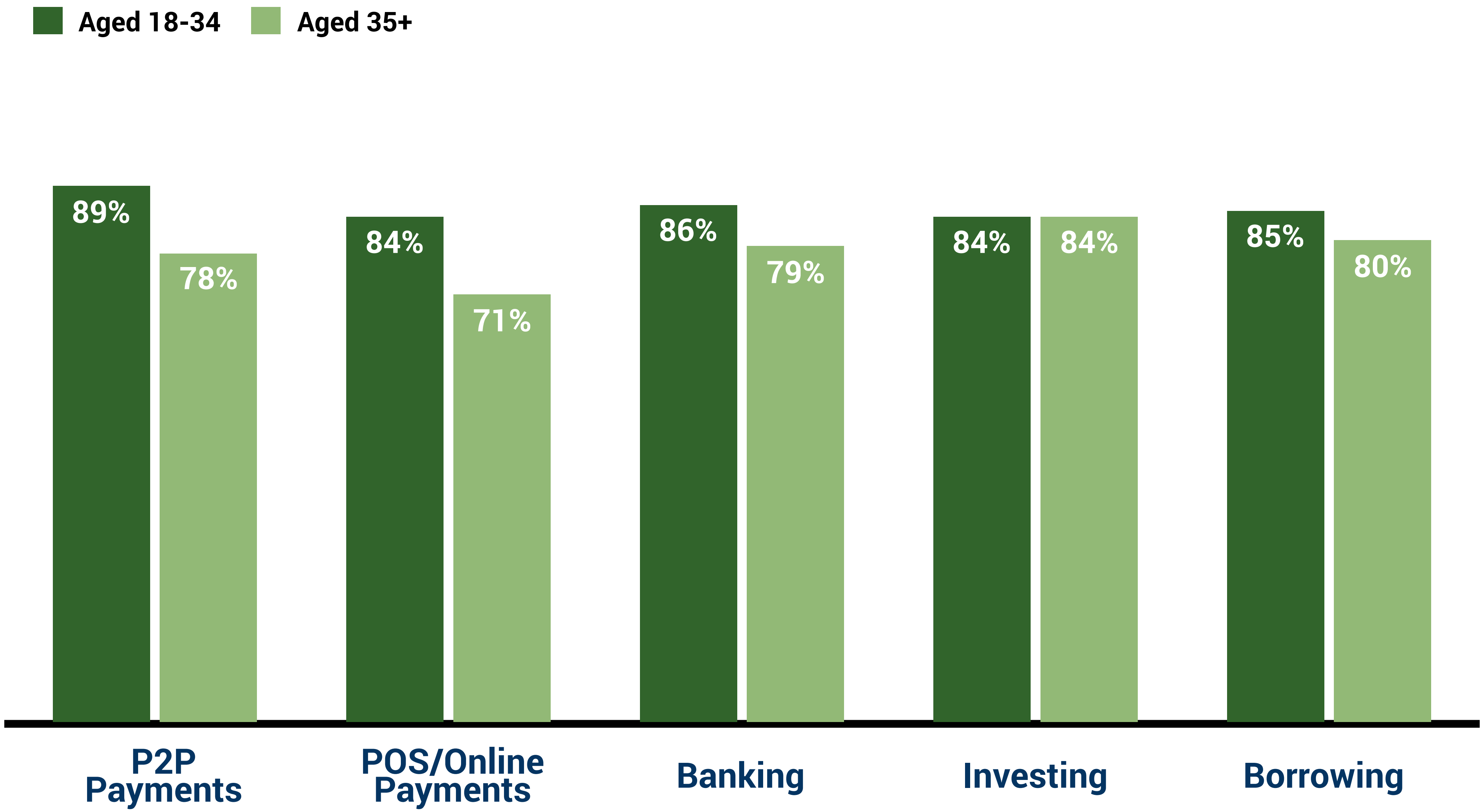


[1] "Payments" includes people who use peer-to-peer payment products, point-of-sale payment products, online payment products, and any combination thereof.

Sources: Activate analysis, Activate 2018 Consumer Tech & Media Research Study (n = 4,000), Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

The majority of digital finance product users have adopted these services as their primary

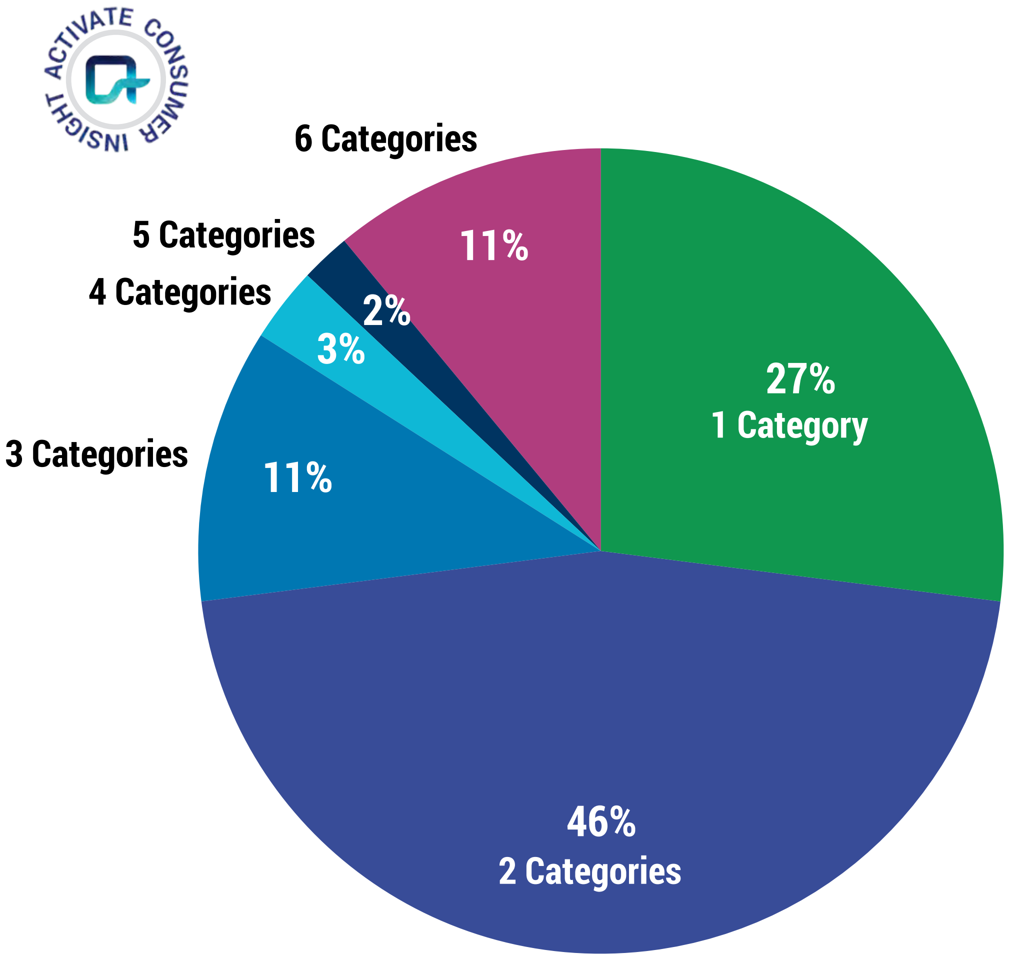
USAGE OF DIGITAL FINANCE PRODUCT AS PRIMARY PRODUCT BY SERVICE TYPE,
U.S., 2019, % USERS OF DIGITAL SERVICES BY SERVICE TYPE AGED 18-34 VS. 35+



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

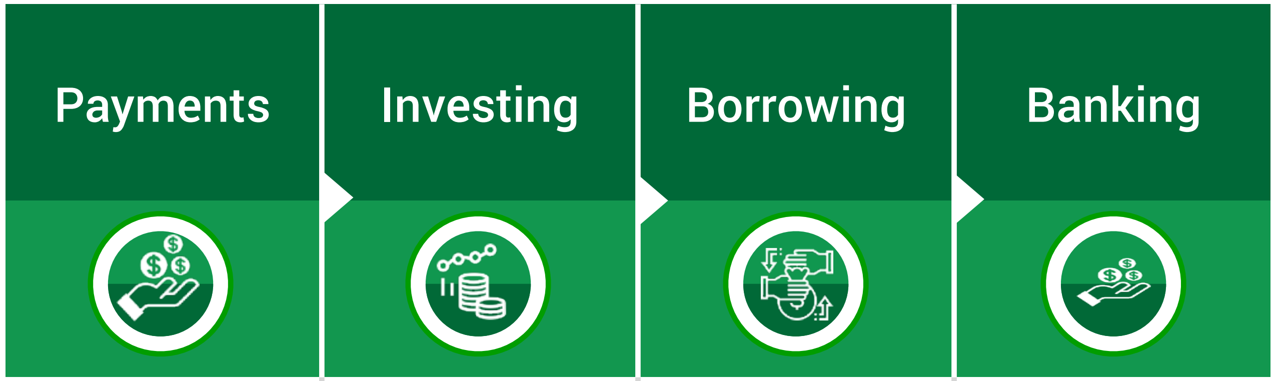
Once consumers start using a digital service for a given financial activity, they tend to adopt others across the spectrum of financial services

NUMBER OF SERVICE CATEGORIES USED, U.S., 2019, % DIGITAL FINANCE PRODUCT USERS AGED 18+



Over 70% of digital finance product consumers use products in more than one category

STEPS OF THE CONSUMER DIGITAL FINANCE JOURNEY

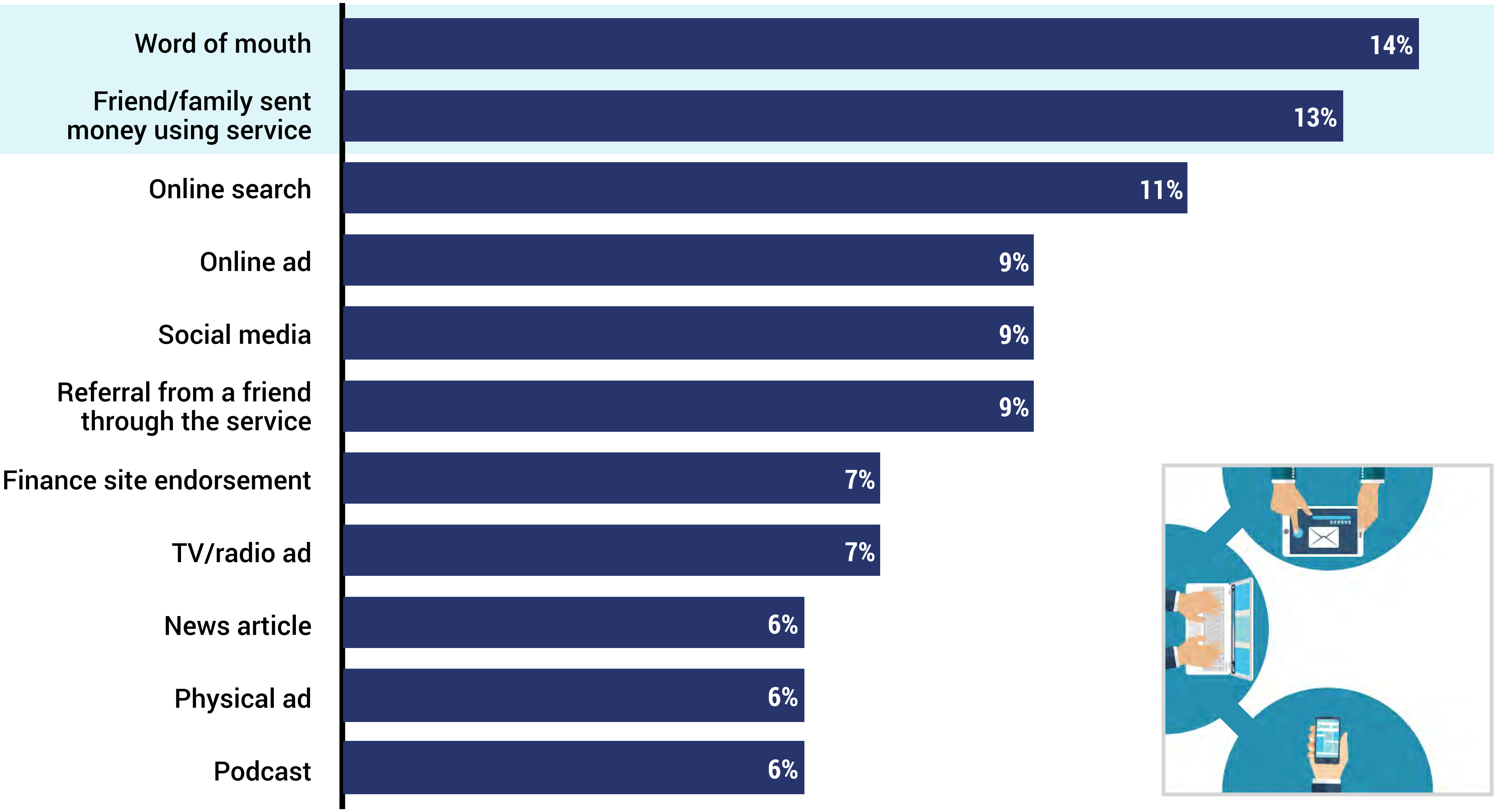


Payments	Investing	Borrowing	Banking
• Peer-to-peer • Point-of-sale • Online payments	• Stocks, bonds, ETFs, CDs, etc. • Robo-advising	• Consumer loans • Student loans • Small business loans • Mortgages	• Checking accounts • Savings accounts

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Consumers discover new digital finance products through a number of channels, including the network effects of existing users

CHANNEL THROUGH WHICH USERS FIRST HEARD ABOUT THEIR CURRENT DIGITAL FINANCE PRODUCTS,
U.S., 2019, % USERS OF DIGITAL FINANCE PRODUCTS AGED 18+



Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

Our research indicates that consumer adoption of next generation services is primarily driven by superior ease of use and, to a lesser extent, low cost and attractive terms

REASONS FOR ADOPTION OF DIGITAL FINANCE PRODUCTS,
U.S., 2019, TOP 3

1. Ease of use
2. Low cost/fees
3. Attractive terms

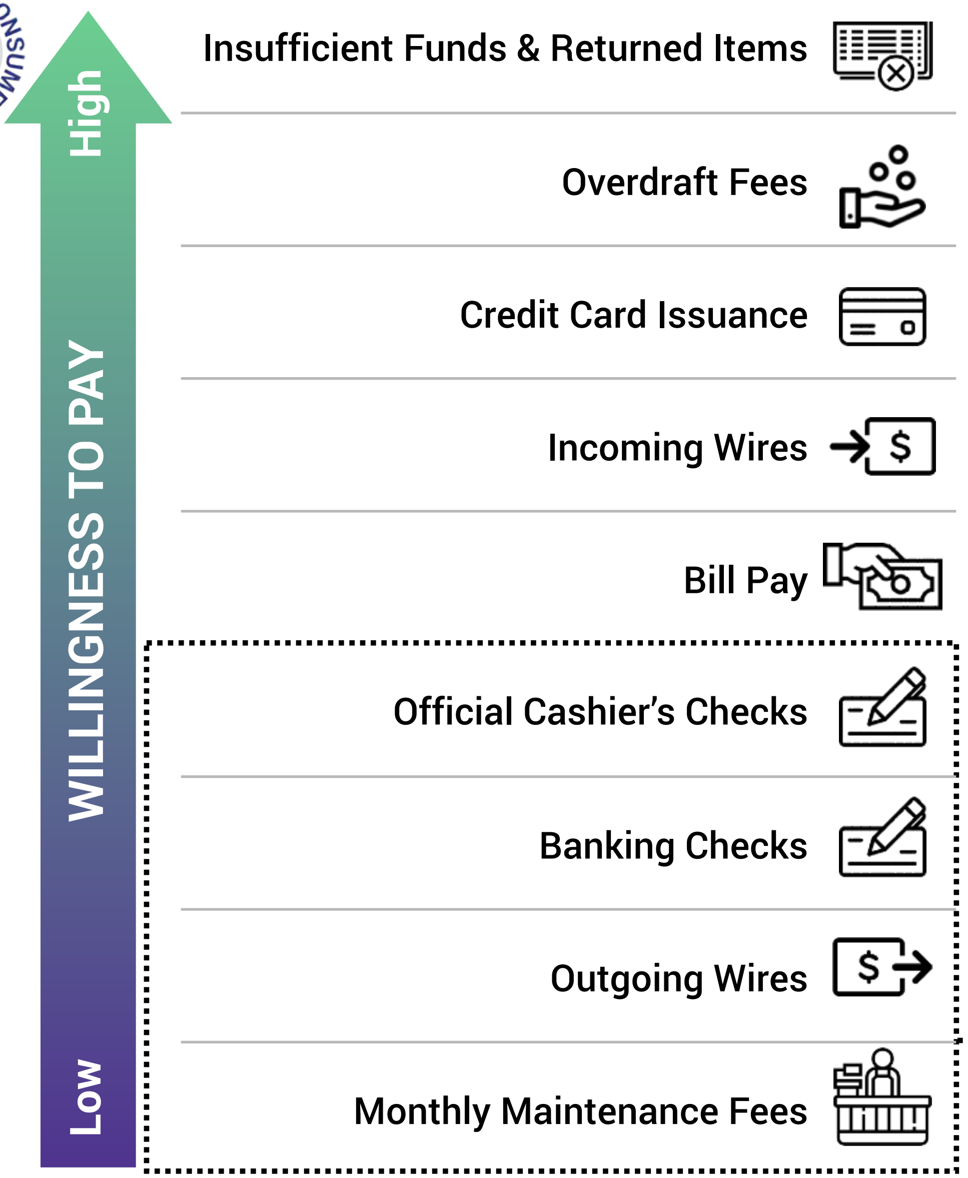
BORROW	BANK (E.G. HOLD/SAVE MONEY)	INVEST	PAY	MANAGE MONEY
Kabbage	monzo	robinhood	PayPal	intuit mint
PROSPER	chime	acorns	G Pay	tally
affirm	N26	wealthfront	Pay	honeydue
SoFi	Revolut	Betterment	PayPal	Wally

For the banking and payments categories, "transparency on terms" and "referral from a friend" are also highly cited reasons, respectively

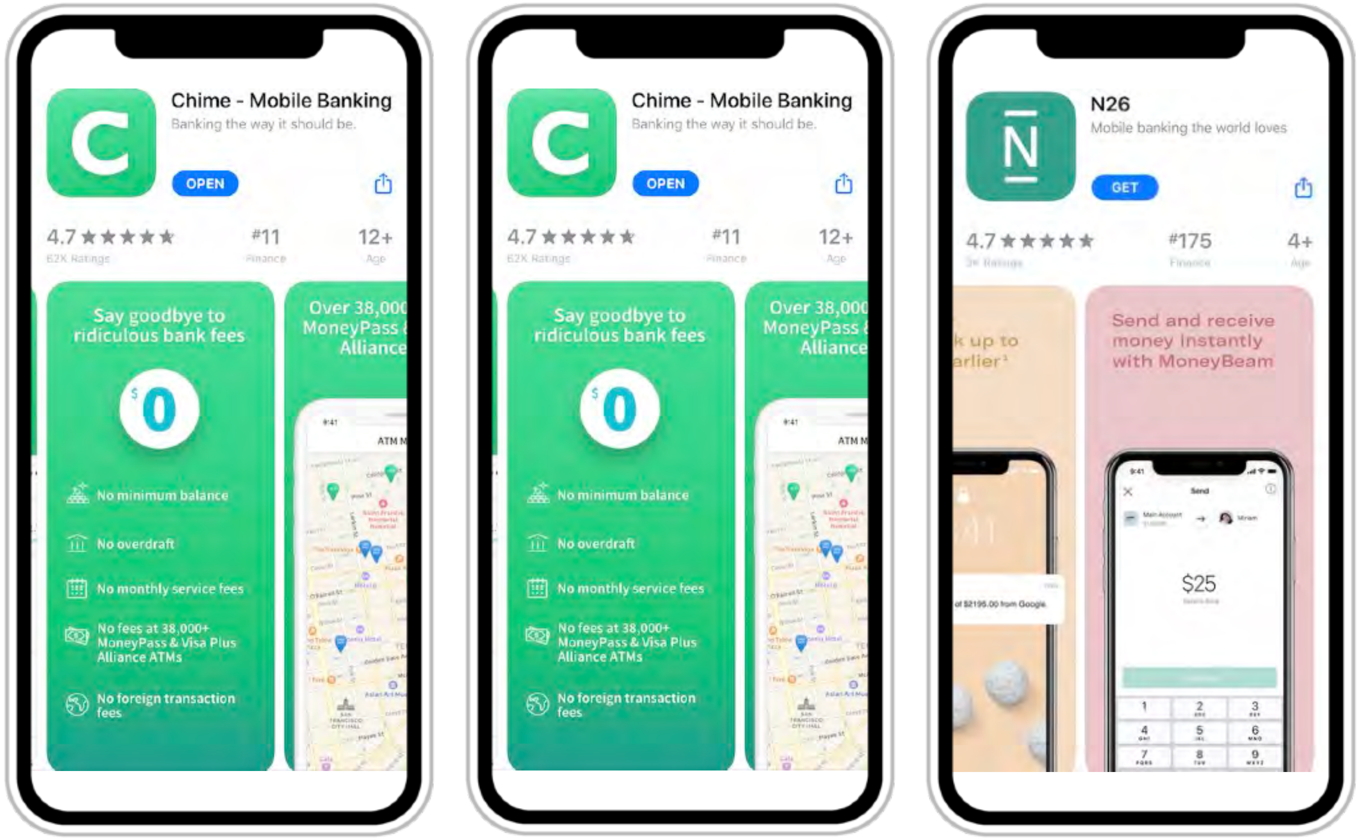
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

New financial companies are upending banking, using "skinny bundles" focused on the services customers care about most

WILLINGNESS TO PAY FOR PRODUCT FEATURES BY ADULTS,
U.S., 2019, RANKED 1-9 BY ADULTS AGED 18-34



- Insufficient Funds & Returned Items
- Overdraft Fees
- Credit Card Issuance
- Incoming Wires
- Bill Pay
- Official Cashier's Checks
- Banking Checks
- Outgoing Wires
- Monthly Maintenance Fees


Chime - Mobile Banking
Banking the way it should be.

Say goodbye to ridiculous bank fees
$0
No minimum balance
No overdraft
No monthly service fees
No fees at 38,000+ MoneyPass & Visa Plus Alliance ATMs
No foreign transaction fees
Over 38,000 MoneyPass & Alliance

Chime - Mobile Banking
Banking the way it should be.
Say goodbye to ridiculous bank fees
$0
No minimum balance
No overdraft
No monthly service fees
No fees at 38,000+ MoneyPass & Visa Plus Alliance ATMs
No foreign transaction fees
Over 38,000 MoneyPass & Alliance

N26
Mobile banking the world loves

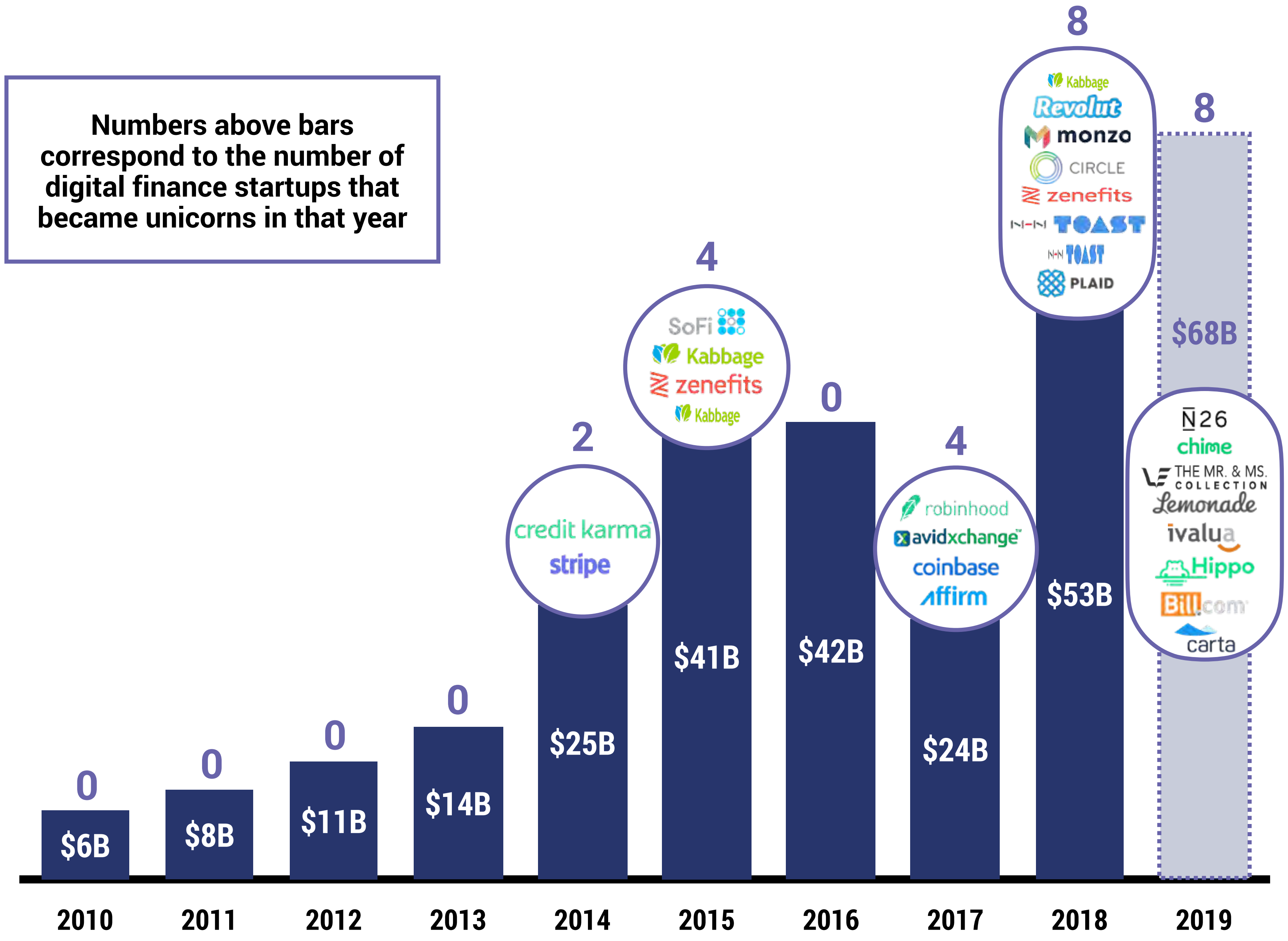
Send and receive money instantly with MoneyBeam

Services with the lowest willingness to pay coincide with those not offered/charged for by new challenger banks

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

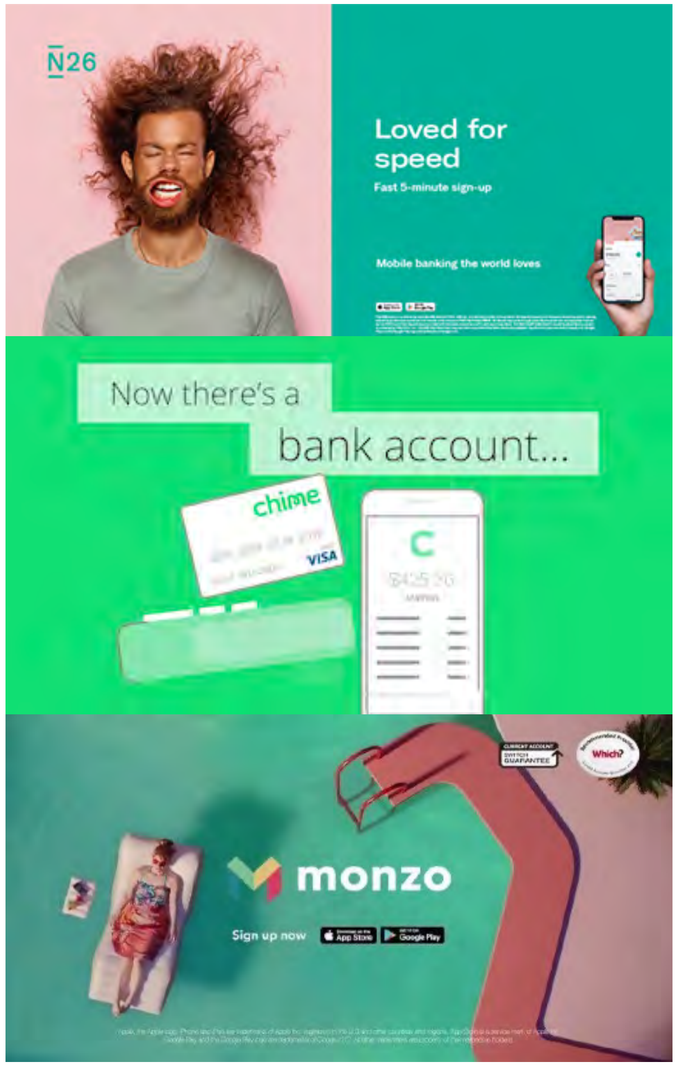
Investment money flowing into digital finance services will fuel their growth, and allow them to target large pools of consumers beyond HENRYs

NUMBER OF FINTECH UNICORNS AGAINST ALL DOLLARS INVESTED IN DIGITAL FINANCE STARTUPS ACROSS VC, PE, & M&A,
U.S., 2010-2019, BILLIONS USD / NUMBER OF FINTECH UNICORNS



Numbers above bars correspond to the number of digital finance startups that became unicorns in that year

EARLY EXAMPLES OF CAMPAIGN / CUSTOMER ACQUISITION



Note: "HENRY" is an acronym for High Earners, Not Rich Yet.
Sources: Activate analysis, CB Insights, Crunchbase

U.S. legacy financial institutions are reacting to next generation services by investing in new products and lowering prices – they have not yet found the same success as their European peers

U.S. LEGACY BANK STRATEGIES TO ADDRESS DIGITAL-FIRST COMPETITORS

Product Launches and Overhauls

- Pay
- greenhouse by WELLS FARGO
- Marcus: BY GOLDMAN SACHS
- finn by CHASE
- citi
- Life Plan

Acquisitions

- wepay
- united income
- MCX MERCHANT CUSTOMER EXCHANGE
- FINAL
- Financeit
- gradifi
- LAYER 6 AI
- HonestDollar BY GOLDMAN SACHS
- ClearFactr

Investments

- visible alpha
- cogito
- Prodigy Finance
- EVERLEDGER
- LAYER 6 AI
- motif
- Betterment
- iCapital NETWORK

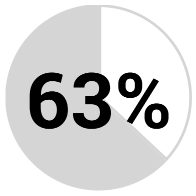
Price Wars

- Fidelity INVESTMENTS
- E*TRADE
- TD Ameritrade
- TD Ameritrade

Legacy brokerages who have recently eliminated their fees

CONSUMER SENTIMENT ON DIGITAL BANKS, E.U.[1], 2019, % ADULTS AGED 18+

LEGACY BANK PRODUCTS

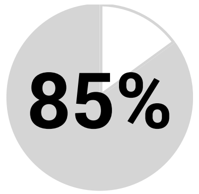


use mobile banking apps from traditional banks

DIGITAL-ONLY BANK PRODUCTS

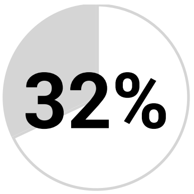
use mobile banking apps from digital-only banks

USAGE FREQUENCY



use a digital banking service monthly

BENEFITS OF DIGITAL



cite ease of use as benefit they look for in digital bank products

EXAMPLE EUROPEAN LEGACY BANK DIGITAL PRODUCTS

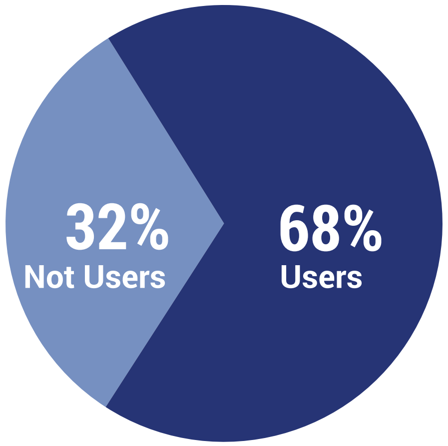
- B FOR BANK
- eko
- ING DIRECT
- YOLT
- ING DIRECT
- ING DIRECT

---

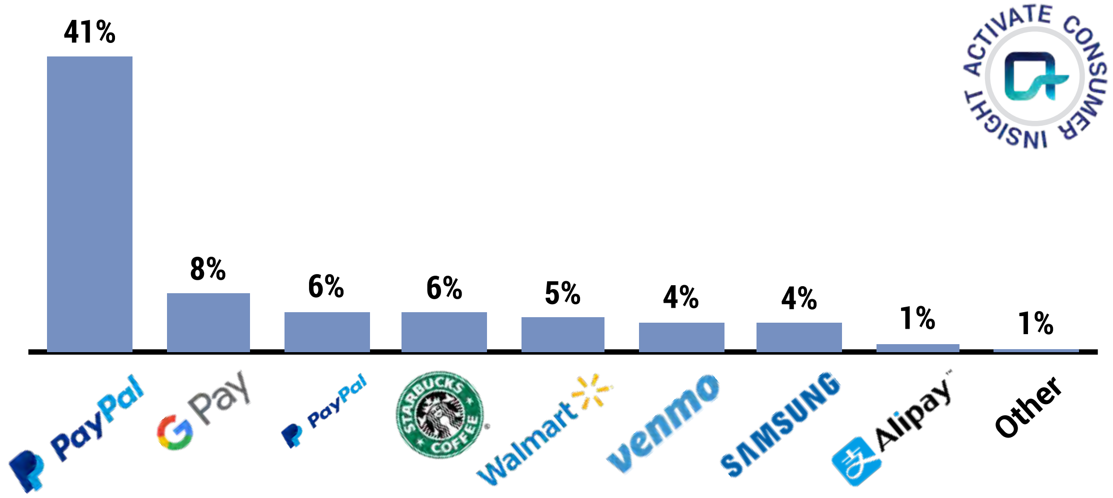
1. Countries surveyed: Germany, Netherlands, France, Italy, Spain, Switzerland, United Kingdom, Poland, Hungary, Bulgaria, Russia.
Sources: Activate analysis, CB Insights, Crunchbase, Mastercard

Payment services, which reached scale early, are now aggressively moving into credit to fuel their growth

USAGE OF DIGITAL SERVICES FOR PEER-TO-PEER MONEY TRANSFERS, U.S., 2019, % ADULTS AGED 18+



RECENTLY USED[1] DIGITAL IN-STORE AND ONLINE PAYMENT SERVICES, U.S., 2019, % ADULTS AGED 18+



NEXT MOVES IN DIGITAL FINANCE FOR MAJOR PAYMENT PLATFORMS

LENDING

venmo
stripe
PayPal

- Partner lending
- Approval based on merchant account
- Repayment pulled directly from transactions processed

CREDIT CARDS

PayPal

stripe (Beta)

Goldman Sachs

Apple has partnered with Goldman Sachs to issue a credit card that seamlessly integrates with the rest of Apple's ecosystem

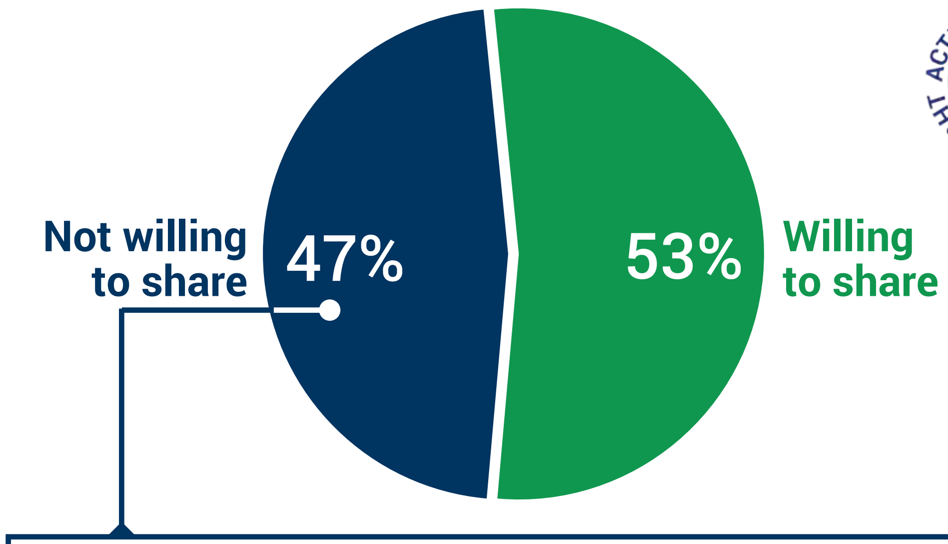
---

[1] "Recently used" defined as usage within the last three months.

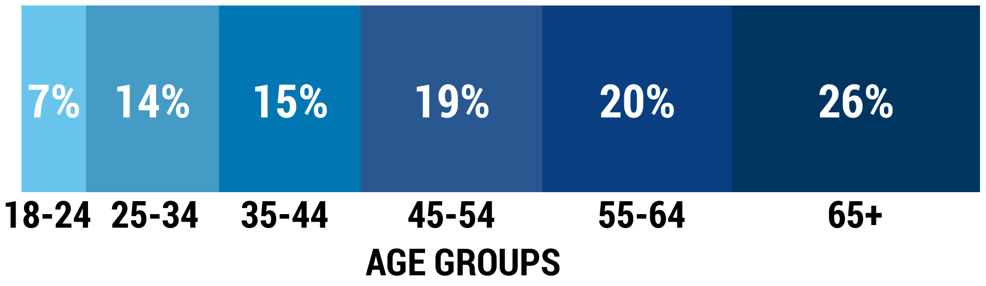
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

In the U.S., consumers show interest in sharing some of their data, in exchange for financial benefits

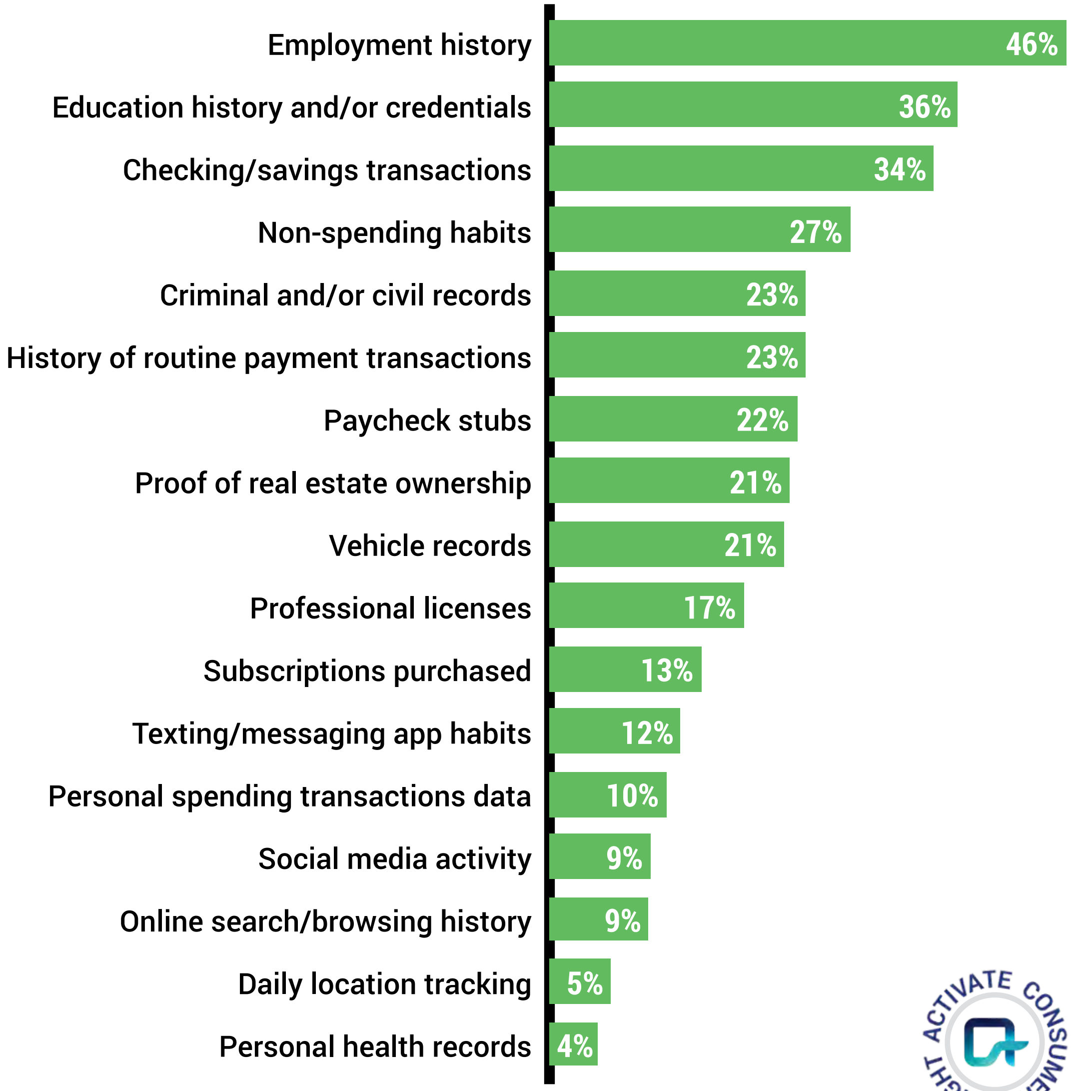
WILLINGNESS TO SHARE PERSONAL DATA FOR BENEFITS[1], U.S., 2019, % ADULTS AGED 18+



CONSUMERS UNWILLING TO SHARE BY AGE GROUP,
U.S., 2019, % ADULTS AGED 18+



DATA ADULTS ARE WILLING TO SHARE FOR BENEFITS[1], U.S. 2019, % ADULTS AGED 18+



1. Benefits such as preferential interest rates and lower fees.
Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006)

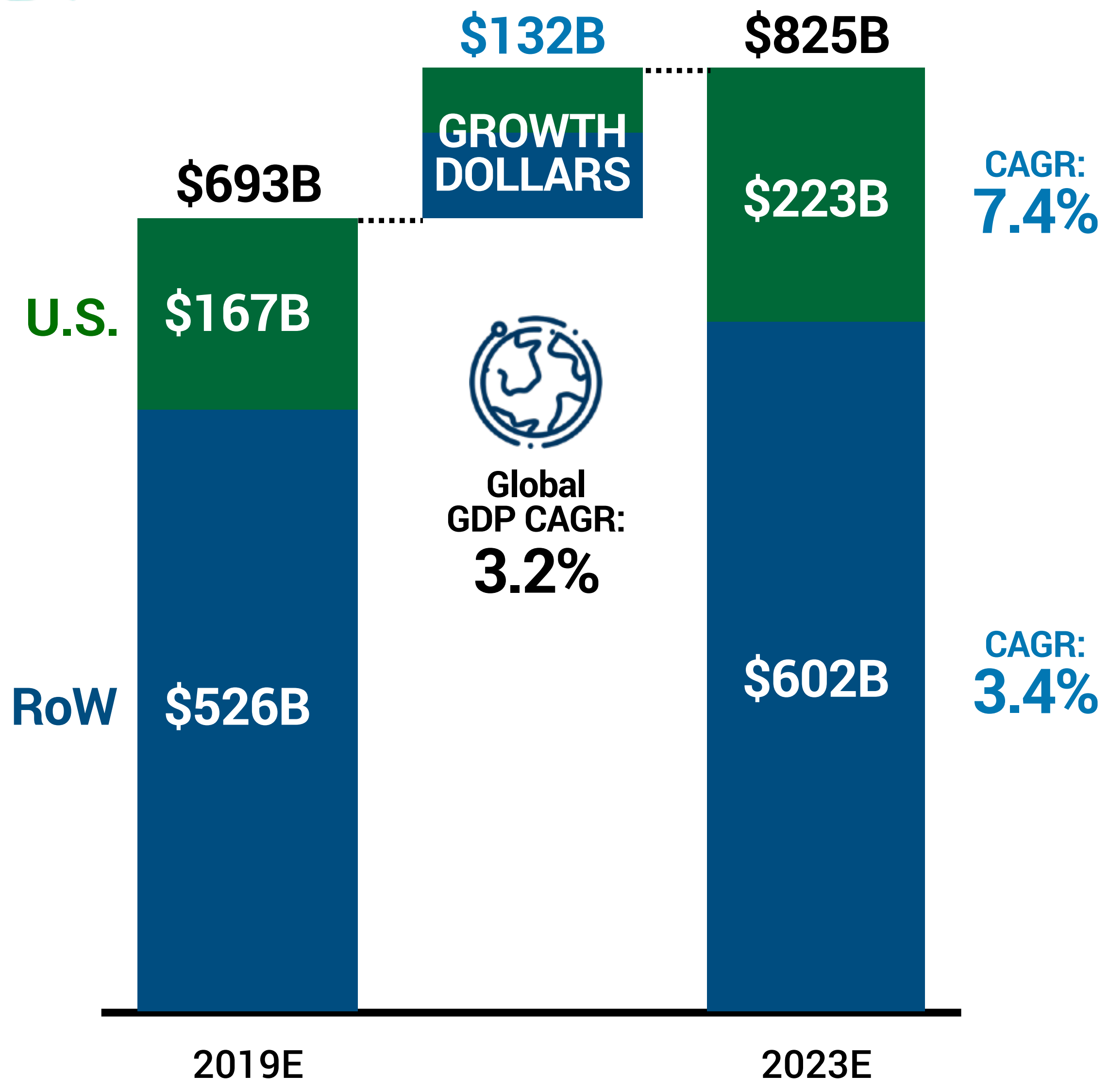
CONTENTS

activate consulting

Consumers will continue to spend more on connectivity; the market is nearly $700B globally and we project it to grow even further, particularly in the U.S. with a 7.4% CAGR

B2C CONNECTIVITY REVENUES, GLOBAL, 2019E VS. 2023E, USD

ACTIVATE FORECAST



GROWING MEDIA DATA NEEDS

- More high-definition media consumption (HD requires roughly 4x more bandwidth than SD, and share of mobile video has increased by 45% from 2014-2019)
- Cross-device usage/synchronization

MORE COMPUTING VIA CLOUD/HYBRID

- 48% of U.S. consumers have used cloud storage solutions in the past year
- Cloud gaming is becoming more popular — Fortnite, which runs on AWS, has nearly 250M players globally

INCREASED USAGE OF AI WITH LARGE DATA REQUIREMENTS

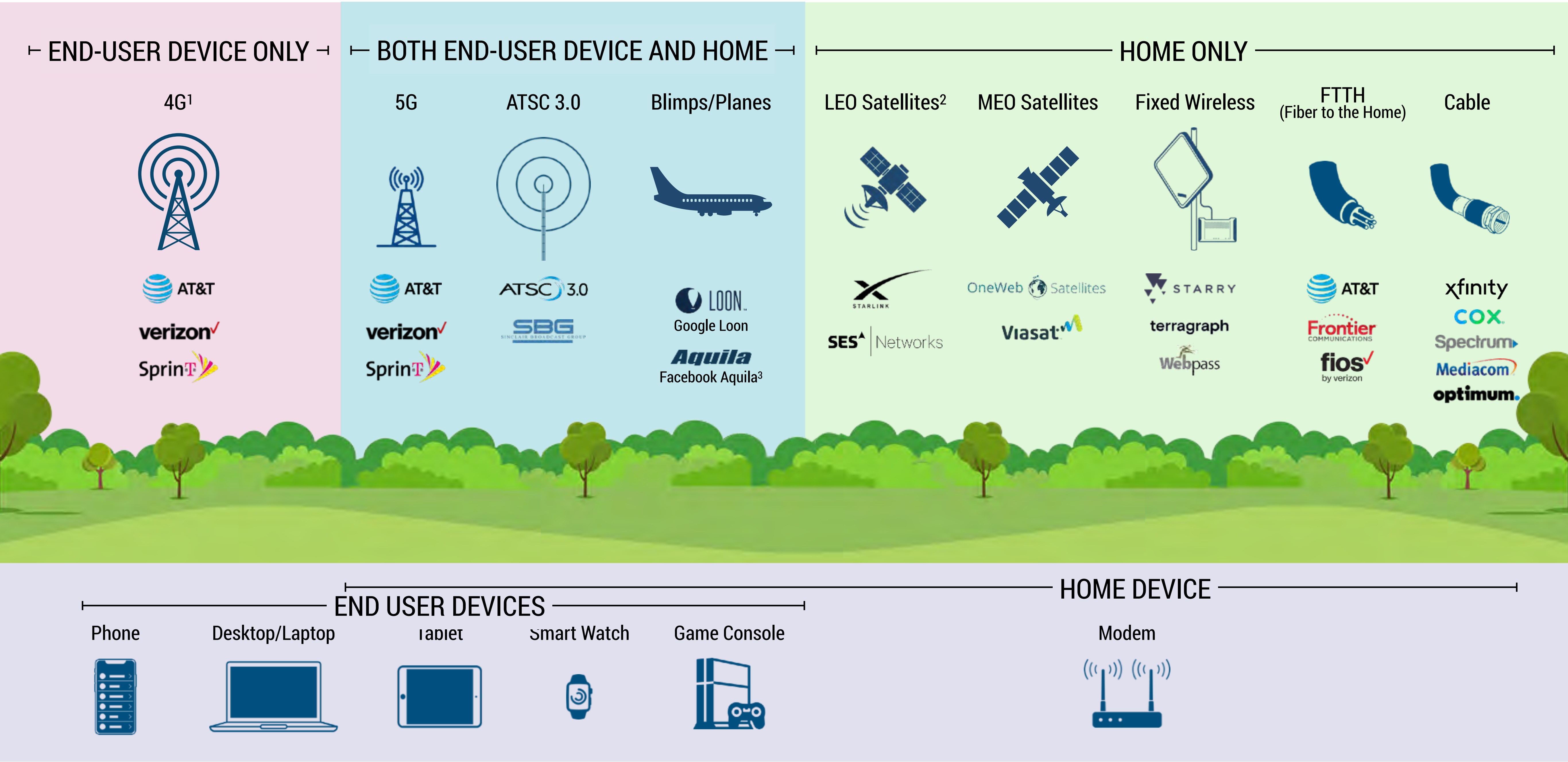
- 112M people use voice assistants (such as Alexa and Siri) in the U.S.

MORE PEOPLE BROUGHT ONLINE GLOBALLY

- Roughly 4.4B people (57% of global population) are now connected to the Internet, up by 367M (9.1%) from 2018, with more growth expected

Sources: Activate analysis, eMarketer, Forbes, IBISWorld, Openwave Mobility ("Mobile Video Index Report," February 2019), PricewaterhouseCoopers, Statista, We Are Social, World Bank

A variety of existing and new technologies will lead to improvements in connectivity in the home and mobile devices



END-USER DEVICE ONLY

- 4G[1]: AT&T, verizon, Sprint

BOTH END-USER DEVICE AND HOME

- 5G: AT&T, verizon, Sprint
- ATSC 3.0: ATSC 3.0, SBG Sinclair Broadcast Group
- Blimps/Planes: LOON, Google Loon; Aquila, Facebook Aquila[3]

HOME ONLY

- LEO Satellites[2]: Starlink, SES Networks
- MEO Satellites: OneWeb Satellites, Viasat
- Fixed Wireless: Starry, terragraph, Webpass
- FTTH (Fiber to the Home): AT&T, Frontier Communications, fios by verizon
- Cable: xfinity, cox, Spectrum, Mediacom, optimum.

END USER DEVICES

- Phone
- Desktop/Laptop
- Tablet
- Smart Watch
- Game Console

HOME DEVICE

- Modem

---

1. Including LTE-A and LTE-A Pro. 2. Low Earth Orbit Satellites will likely function as an intermediary for cell towers before transmitting directly to homes. 3. Facebook Aquila project has been discontinued. Facebook is working on HAPS connectivity with partners such as Airbus.

Note: excluding dial-up, DSL, LiDAR, ATSC 1.0, and GPS.

Sources: Activate analysis, Ars Technica, Bloomberg, Company press releases, Company sites, Digital Trends, Ericsson, The New York Times, Space News, TechCrunch, The Wall Street Journal

These emerging connectivity technologies will accelerate a number of nascent use cases for consumers and businesses

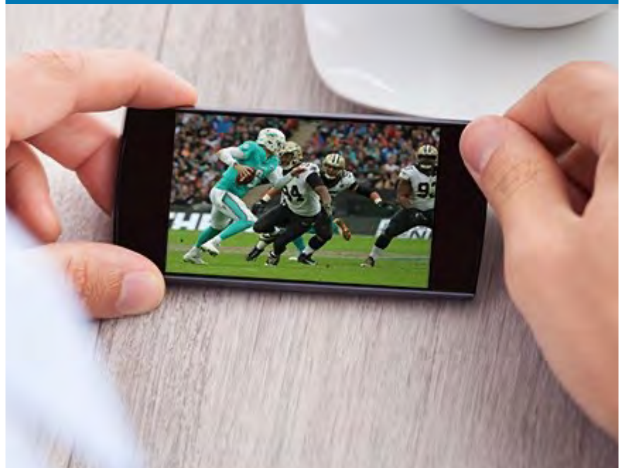
CONSUMER APPLICATIONS

AR/VR GAMES

IN-FLIGHT CONNECTIVITY

CLOUD MULTIPLAYER GAMING

LIVE/HD MOBILE TV STREAMING



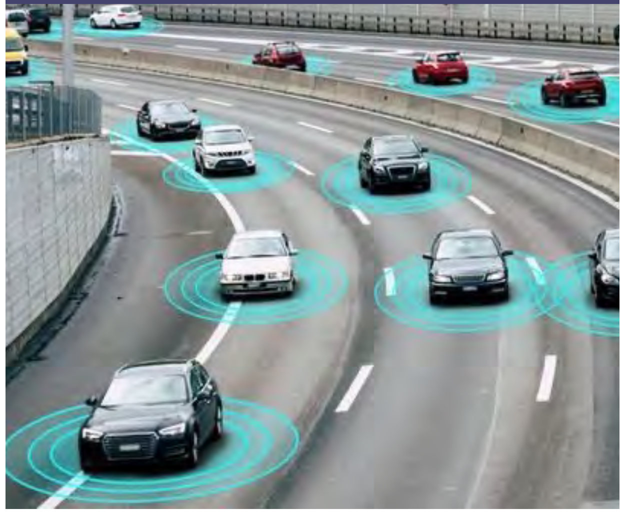
BUSINESS APPLICATIONS

IOT MONITORING

REMOTE ROBOTS

HIGH FREQUENCY TRADING[1]

AUTONOMOUS VEHICLES



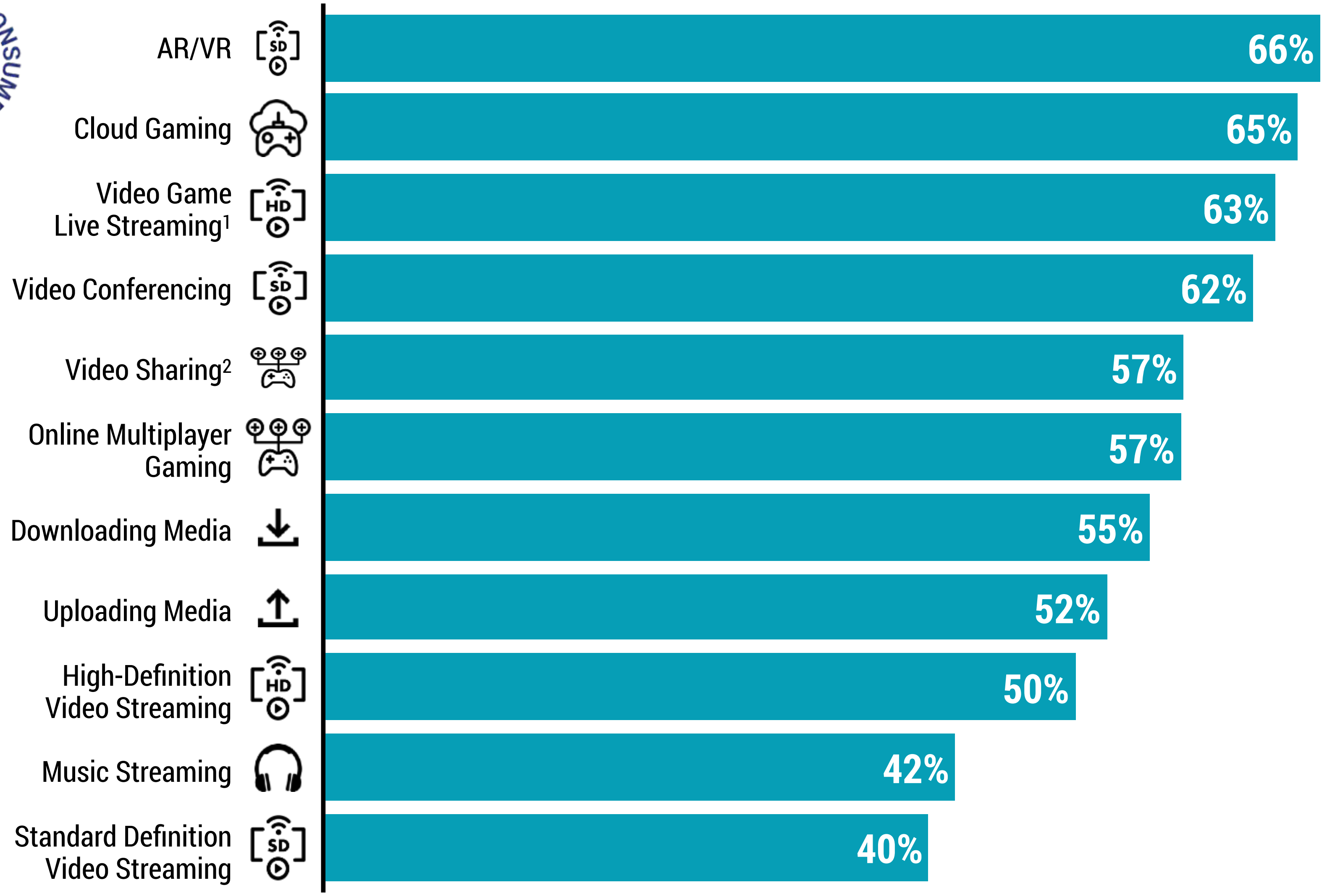
---

[1] LEO satellites will likely be faster for high frequency trading than deep-sea cables once in full constellations for longer distances (e.g. New York City to London).

Sources: Activate analysis

Users report connectivity as a significant limitation – holding back widespread adoption of cloud gaming and AR/VR, as well as slowing adoption of more common use cases such as video streaming

PERCEPTION OF CONNECTIVITY AS A LIMITATION BY ACTIVITY, U.S., 2019, % ADULTS AGED 18+



~45%
OF U.S. POPULATION
HAS ACCESS TO
ONLY 1 PROVIDER
WITH 25/3 MBPS
ADVERTISED SPEEDS[3]

NEARLY
1 OUT OF 5
CONSUMERS HAVE
A MEAN INTERNET SPEED
AT LEAST 20%
SLOWER THAN
ADVERTISED SPEEDS[4]

1. Recording and broadcasting a live video stream of gaming content via YouTube, Twitch, Mixer, etc.
2. Live video streaming (e.g. Facebook Live, Instagram Live, Periscope), excluding video game live streaming.
3. Analysis includes Cable, Fiber, Fixed Wireless, and Other (not including Satellite or ADSL). Data from June 2018.
4. Evaluating the average results for the 13 ISPs tested in the FCC's "Eighth Measuring Broadband America Fixed Broadband Report," which together account for more than 80% of U.S. residential broadband connections.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Ars Technica, Federal Communications Commission

Requirements for reliability, bandwidth, and latency will determine which technologies are applicable to different use cases

		CONNECTIVITY REQUIREMENTS			NEXT GENERATION TECH	
	USE CASES	RELIABILITY[1]	BANDWIDTH[2]	LATENCY[3]	FIXED	MOBILE
CONSUMER USE CASES	Autonomous Cars	HIGH	MED	LOW	N/A	5G, LEO[4]
	Inflight Connectivity	MED	HIGH	HIGH-MED	N/A	
	AR/VR Games	LOW	HIGH	LOW	5G, LEO[4], FTTH	
	Mobile Multiplayer Video Games					
	Cloud-Based Gaming					
	Live Television Streaming		MED	MED		
	HD Mobile Broadcast Television				N/A	5G, LEO[4], ATSC 3.0
ENTERPRISE USE CASES	Autonomous Public Transportation	HIGH	MED	LOW	N/A	5G, LEO[4]
	Remote Control Robots				5G, LEO[4], FTTH	
	IoT Monitoring Applications		LOW			
	VR Video Conferencing	MED	HIGH	LOW		
	Wireless Collaboration Workspaces			HIGH		
	Mobile High-Frequency Trading		LOW	LOW		5G, LEO[4,5]
	Localized And Personalized Content/Ads In Broadcast Television	LOW	LOW	HIGH		5G, LEO[4], ATSC 3.0

1. Reliability determined as importance of uninterrupted Internet connection for seamless business operations or daily activities.
2. Bandwidth: High: >100 Mbps; Medium: 1-99 Mbps; Low: <1 Mbps.
3. Latency: High: 1000 ms-100 ms; Medium: 99 ms-10 ms; Low: 9 ms-1 ms.
4. At least initially, LEO will help enable connectivity, but will not be consumer-facing (e.g. will transmit directly to cell towers).
5. Applicable only for long distances (e.g. New York City to London).

Sources: Activate analysis, The Economist, GSMA Intelligence, OneWeb, The Washington Post

activate consulting

Companies are investing in infrastructure and operational requirements to enable 5G, LEO satellites, and FTTH

	5G	LEO SATELLITES	FIBER TO THE HOME
CURRENT STATE	**5G coverage by company:** • Verizon: 9 U.S. cities • AT&T: 20 U.S. cities • T-Mobile: 6 U.S. cities • Sprint: 5 U.S. cities	• OneWeb's launch of 6 LEO satellites (down from the initially planned 10) took place on Feb. 28, 2019 • SpaceX launched the first 60 satellites of its Starlink LEO satellite constellation	• Currently about 25% of consumers have access to FTTH • Percent of population per state covered by a fiber network in the U.S. ranges from 2.9% in Connecticut to 84% in Rhode Island
CAPEX DRIVERS	• Local cells/towers (denser than 4G LTE) CAPEX is $2-3K per tower • Backhaul fiber required to connect small cell towers to network infrastructure	• Manufacturing and launch costs are roughly $1.6M per satellite, resulting in an estimated total cost of about $19B for SpaceX's 12K Starlink satellite constellation	• Hardware and physical installation costs are $3K-$8K per household
OPEX DRIVERS	• 5G will not demand significantly higher OPEX compared to 4G but will depend on higher skilled employees to maintain and operate	• OPEX per satellite is expected at roughly $6K per year – for a 12K constellation, this translates to about $75M	• FTTH will not demand significantly higher OPEX compared to non-fiber networks
REGULATORY CONSIDERATIONS	• The FCC launched the 5G FAST Plan to speed up spectrum allocation, infrastructure development, and regulatory changes	• Constellation placement and spectrum allocation regulated by the FCC	• Municipal, state, and federal construction regulations/laws (e.g. laying fiber under streets)
MAIN PLAYERS	verizon NOKIA AT&T ERICSSON T-Mobile HUAWEI Sprint	amazon iridium Telesat Oneweb STARLINK	AT&T FRONTIER TECHNOLOGIES verizon CROWN CASTLE

Sources: Activate analysis, BroadbandNow, CNET, Company sites, Crown Castle, Federal Communications Commission, LightReading, RCRwireless, TechCrunch

As 5G and LEO satellites roll out, we will see additional developments bridge the gap to continue improving connectivity

IMPROVEMENT DRIVERS	BRIDGING TECHNOLOGY	IMPLICATIONS	MAJOR PLAYERS
INVESTING MORE IN INFRASTRUCTURE	Backhaul — set of fiber/cables between cell towers and the Internet backbone	• Backhaul fibers are often the weakest link in the connectivity chain, and further growth could improve speeds to up to about 1/5th of 5G, or roughly 300 Mbps	verizon AT&T Sprint
	Deep fiber — replacing coaxial cables with faster fiber optics	• Fiber is faster than coax by between 10-100x • Large cable companies are already implementing this	CenturyLink AT&T CISCO CISCO COX CenturyLink
UNLOCKING EXISTING BANDWIDTH	Channel bonding[1] — channels are essentially lanes on a coaxial cable, and bonding unlocks additional bandwidth	• While the latest channel bonding[1] has already been updated with the shift to digital signals, many cable companies have yet to roll out these faster speeds (about 2x faster) • Cable companies will increase speeds for many consumers soon after it becomes advantageous	COMCAST Spectrum COX CenturyLink
LAUNCHING SMALL INNOVATORS	Unlicensed spectrum — smaller companies will use parts of the 5G spectrum to offer alternatives to consumers to the largest players	• While they will likely remain small, these companies will help cover the underserved and offer cheaper alternatives (barring regulatory threats)	Monkeybrains.net (Bay Area-based) common_ (N. California-based) STARRY (Licensed to cover 25M households)
ROLLING OUT NEW TECHNOLOGIES	The Wi-Fi 6[2] standards have been finalized, improving speeds by decreasing congestion/lag from multiple devices	• 4x improvement in throughput in dense environments • More secure with WPA3 • Requires Wi-Fi 6-enabled routers and support from end-devices (phones[3], computers), including those of neighbors in range	Google SAMSUNG CenturyLink CenturyLink CISCO

---

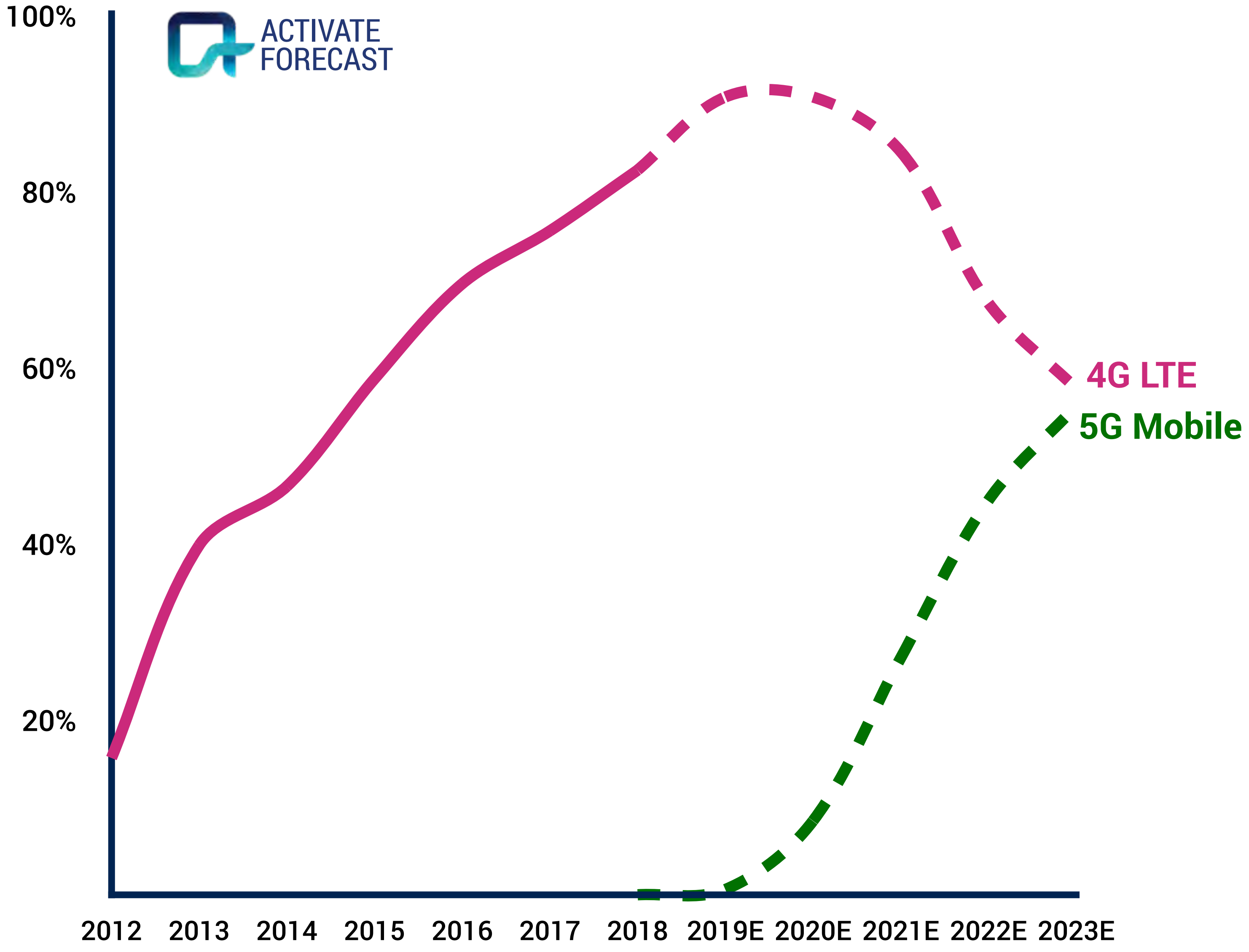
1. Specifically DOCSIS 3.0 (D3) vs. 2.0 (D2).
2. Also known as 802.11ax.
3. iPhone 11 and Galaxy 10 already support Wi-Fi 6.

Sources: Activate analysis, Ars Technica, Expert Interviews, Intel

activate consulting

Once available, these technologies will see widespread consumer adoption – we project 5G mobile adoption of 55% in the United States by 2023

CONSUMER ADOPTION OF CONNECTIVITY STANDARDS[1], U.S., 2012-2023E, % TOTAL POPULATION



WHAT WOULD YOU HAVE TO BELIEVE?

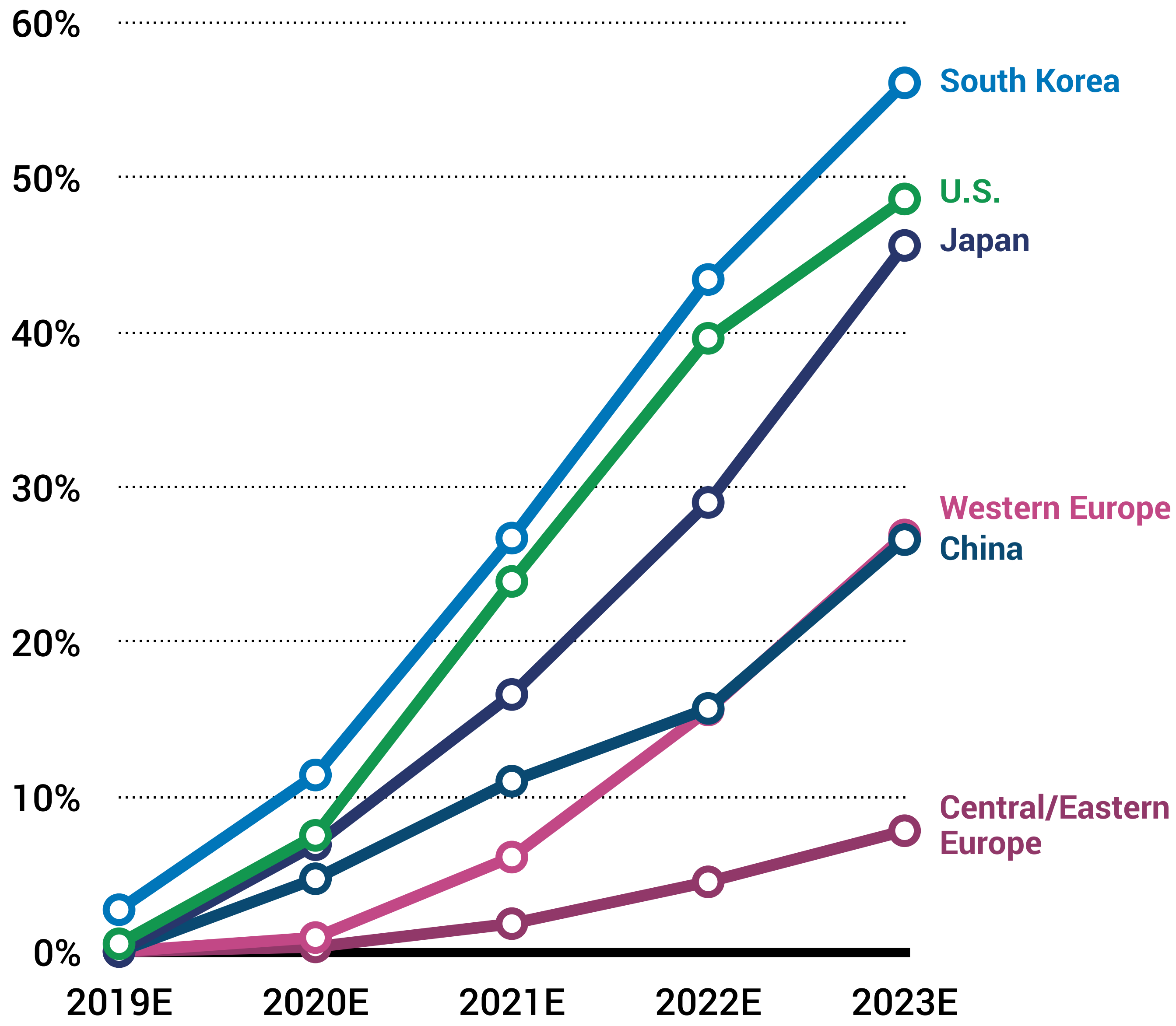
- **5G will largely replace 4G, but some 4G will remain as a result of network improvements (e.g. 4G-LTE Pro/A) and will continue to be used in places with lower population density**
- **A high percentage of 2G/3G subscribers will migrate to 4G as carriers drop support for older standards**
- **5G will initially have a slower roll-out due to greater infrastructure density requirements than prior generations of mobile connectivity**
- **Consumers will replace their 4G-enabled phones with 5G-enabled phones, while carriers push 5G over existing 4G LTE networks**

1. 5G Mobile and 4G LTE percentages sum to more than 100% because of people with multiple connections (e.g. personal and work phones).

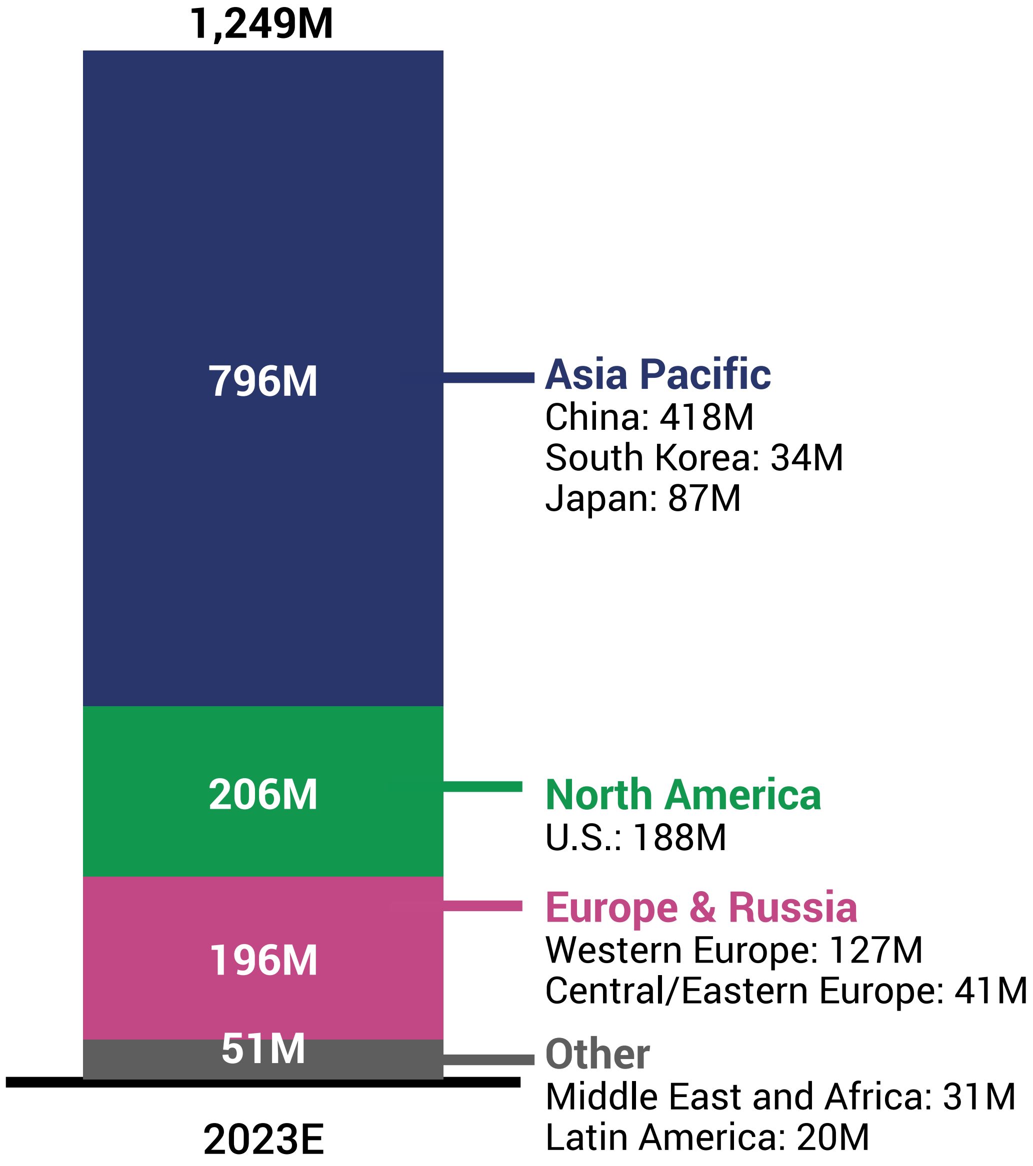
Sources: Activate analysis, Ars Technica, Expert interviews, Intel

The United States will neither be the fastest adopter nor the largest market – by 2023 we expect China to have roughly the same number of 5G mobile connections as the U.S. and Europe combined

5G CONSUMER MOBILE CONNECTIONS[1] BY GEOGRAPHY, GLOBAL, 2019E-2023E, % TOTAL MOBILE CONNECTIONS



5G CONSUMER MOBILE CONNECTIONS[1] BY GEOGRAPHY, GLOBAL, 2023E, MILLIONS CONNECTIONS

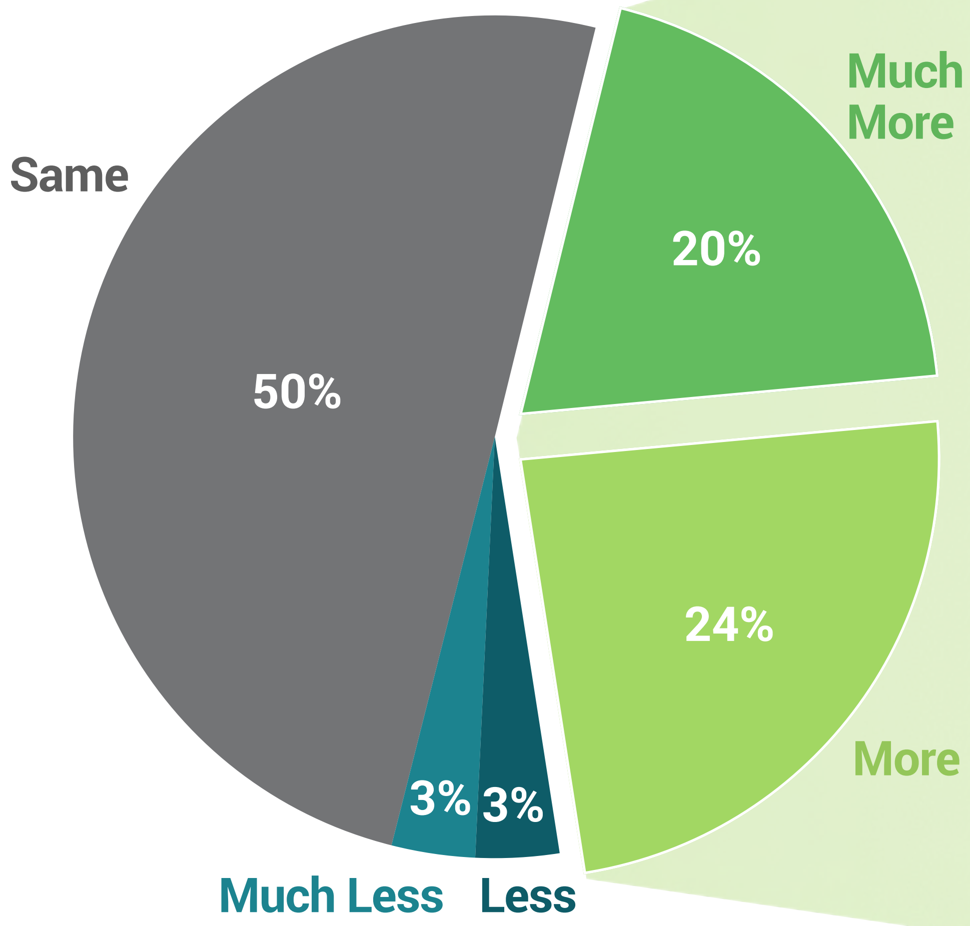


---

1. SIM connections, excluding IoT.
Sources: Activate analysis, eMarketer, Ericsson, GSMA Intelligence

Consumers and businesses are increasingly concerned about security risks, which will only increase with greater complexity in connectivity — we expect to see security companies gain more scale

CONCERN FOR DIGITAL SECURITY RELATIVE TO LAST YEAR, U.S., 2019, % ADULTS AGED 18+



THE VULNERABILITIES WILL BE THE SAME, BUT MORE NUMEROUS

- More access points for hackers to target
- Additional hand-off points between different connections
- More standards to maintain to eliminate exploits

ENTERPRISE SECURITY COMPANIES HAVE RAISED SIGNIFICANT FUNDS

CLOUDFLARE	(IPO with ~**$4.7B** Market Cap[1])
CROWDSTRIKE	(Raised **$481M**)
hackerone	(Raised >**$110M**)
CYLANCE	(Raised ~**$300M**)

SELECT COMPANIES HAVE ENTERED CONSUMER AND ENTERPRISE MARKETS

Bitdefender	(Raised **$187M**)
Lookout	(Raised ~**$280M**)
Lookout	(IPO with ~**$3.7B** Market Cap[1])
Malwarebytes	(Raised **$80M**)

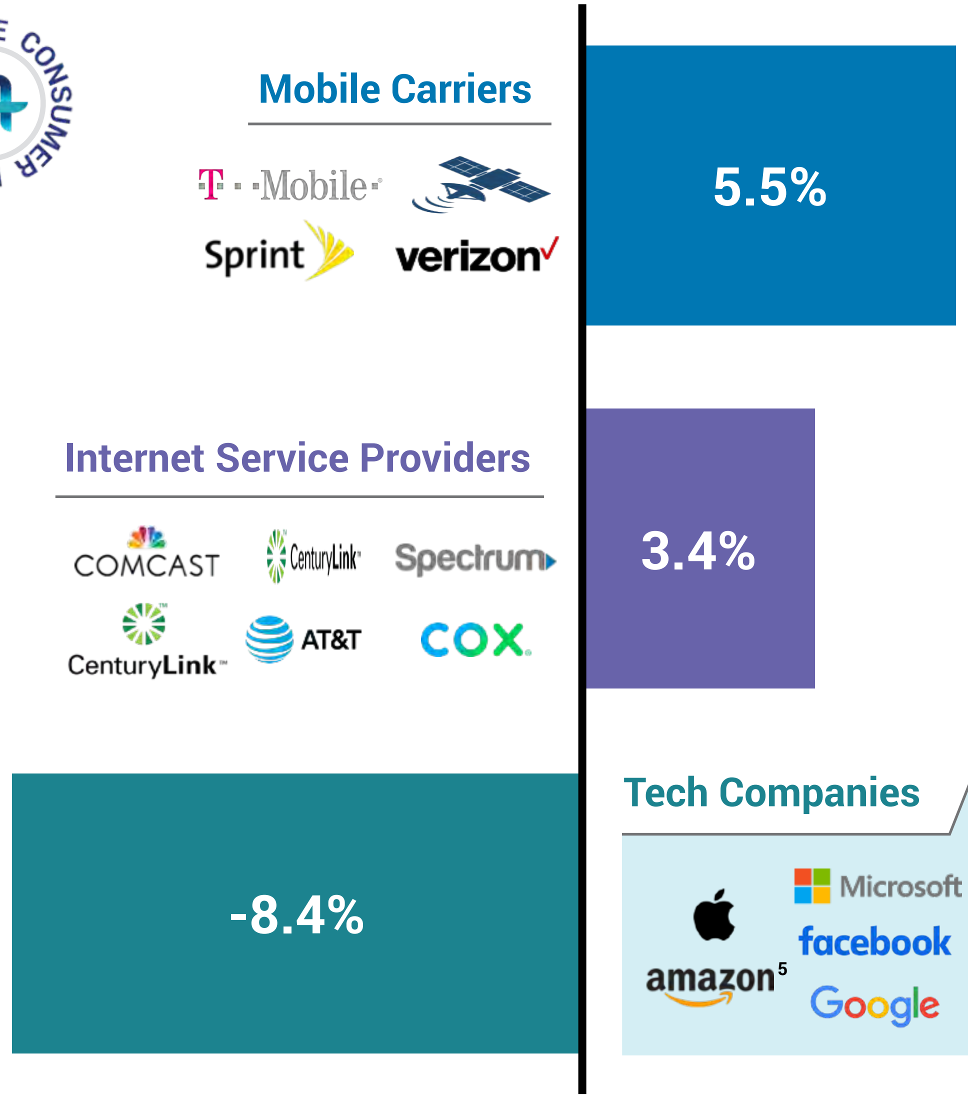
---

1. As of 10/14/2019.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Crunchbase

The major tech companies are starting to enter the B2C connectivity market – consumers may factor in privacy as part of their choices in how they meet their connectivity requirements

CONSUMER PERCEIVED TRUST IN PRIVACY PROTECTION[1] BY COMPANY TYPE, U.S., 2019, % RELATIVE TO AVERAGE[2]



PRIVACY CONCERNS

38% of U.S. adults are "more" or "much more" concerned about digital privacy compared to last year

Microsoft Airband

Rural connectivity improvements in the U.S. and globally

Mix of rural connectivity, faster speeds, and more, in the U.S. and globally

facebook connectivity[3]

Google Fi[4]

Google Loon

Rural connectivity improvements, in the U.S. and globally

1. Consumer confidence in company not sharing user data without personal consent rated on a 1-5 scale.
2. Unweighted average of companies listed.
3. Includes Terragraph, Magma, OpenCellular, and others.
4. Mobile Virtual Network Operator (MVNO).
5. Excluding AWS Ground Station, as it is purely B2B.

Sources: Activate analysis, Activate 2019 Consumer Tech & Media Research Study (n = 4,006), Company sites

Activate Data Partners for Technology & Media Outlook 2020

ACTIVATE DATA PARTNERS

nielsen

comscore

tubular

FREEWHEEL
A COMCAST COMPANY

THE ACTION NETWORK

spiketrap

7PARK DATA

CREATED BY
THE ACTIVATE CONSULTING TEAM:

Michael J. Wolf
Seref Turkmenoglu
Chris Walters
Sri Narasimhan
Samuel Studnia
Edward Doueihi
Donovan Rose
Ellis Bowen
David Howard
Allison Flanders
Joshua Marksberry
Mitch Gainer
Cigdem Binal
Rohun Reddy
Marlee Melendy
Mark Manley
Brian Flaxman

Zach Remsen
Yuxiao Zhang
Devang Bhatt
Daniel Reshef
Kyle Kroeger
Lily Silva
Kyler Meehan
Tyler Davis
Karinya Ghiara
Phoebe Gould
Joe Sileo
Cory Goldenthal
Annik Wolf
Frank Noto
Denise Shea
Stephen Corsello
Al Rotches

Activate Technology & Media
Outlook 2020

activate
consulting