ACTIVATE CONSULTING TECHNOLOGY & MEDIA OUTLOOK 2025

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15 Takeaways from the Activate Technology & Media Outlook 2025

Growth Dollars: Internet, Media, B2B Technology, and Software: We forecast $1.1T incremental technology and media global growth dollars over the next four years. The global consumer internet and media business will grow from $2.6T in 2024 to $3.0T in 2028, adding over $400B. B2B technology and software revenues will increase from $2.5T to $3.2T, adding $729B in revenues.

Consumer Time and Attention: The average American is spending over 13:08 hours of multi-tasked time each day using technology and media. By 2028, this will increase to 13:17, adding over $10B annually to U.S. consumer internet and media revenues.

Super Users: It will be critical for technology and media companies to identify, target, and super-serve Super Users – 24% of all adults who spend twice as much time with technology and media than all other users. This group of people punch above their weight on dollar spend on eCommerce, video gaming, music, and video. As importantly, Super Users are the first to try and the first to buy new technology applications and devices.

Discovery and Generative AI: Generative AI is rapidly transforming search and discovery, already addressing 60% of search activity today. Our research shows that 15M U.S. adults now start their searches using a dedicated generative AI platform, which we forecast will grow to 36M by 2028. While legacy search engines have integrated AI into their results in response, these efforts are unlikely to fully counter the growing usage of dedicated AI tools.

eCommerce: Global eCommerce will add over $3T growth dollars over the next four years. Although the top 10 eCommerce companies generate over 60% of all global online GMV, there is still over $2T up for grabs for other online retailers. Consumers across age cohorts have become multi-channel shoppers, using a broad range of online channels for inspiration, research, and purchase, including generative AI-powered platforms. Retailers are becoming media companies as they will take in over $100B in advertising revenue by 2028.

Video Gaming: We forecast that the global gamer population will reach over 3.5B by 2028. In addition, global video game revenues will reach over $200B by 2028, with mobile gaming making up half of revenues and driving the most growth going forward. Super Gamers (34% of U.S. Gamers, who spend nearly four hours/day playing across platforms) will be a growth driver for the industry. Moreover, Generative AI will lower the barriers to game creation for both users and developers.

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Spatial Computing: Spatial Computing's iPhone moment is within sight, as much of the required device, AI, and data ecosystem is already in the pipeline. As a baseline, we forecast that dedicated spatial device shipments will reach 50M units by 2027. However, there is significantly more upside once there is a see-through headset, integrating artificial intelligence and spatial intelligence, and supported by a large ecosystem of networked data.

Social Video: We forecast that people will continue to watch more social video over the next four years, reaching almost one hour a day per average user. Revenue growth for the top social video platforms – Instagram, TikTok, YouTube, and Facebook – will accelerate. Creators will continue to drive the majority of social video engagement on each platform.

Video: Today, there are a large number of streaming services at scale. We expect to see mergers of services within the next few years. Streaming services are all raising prices for ad-free subscriptions and driving subscribers to lower priced advertising tiers, which provide greater average revenue per user for the streamers. At the same time, free streaming services are winning and will continue to grow. The U.S. television market will be reshaped as "battleground households" (broadband only) will exceed core cable households by 2028.

Sports Media and Betting: Sports has long dominated television viewership. As a result, video streaming services are enhancing their value proposition by acquiring rights for major sports leagues and events. We forecast that this will hasten the migration of sports away from television to paid streaming. Sports betting will be a significant driver of sports fan engagement. We forecast that the total amount wagered on sports in the U.S. will reach almost $200B by 2028. Women's sports have exploded in popularity, with a 100M strong fan base. Private equity investments in sports teams will soar.

Live Events, Experiences, and Exhibitions: Global consumer spend on live events and experiences will grow to almost $160B by 2028, driven by increased consumer demand for live professional sports and live music. To accommodate growing demand, and enhance the fan experience, we will see a wave of investment in new stadiums and arenas. The B2B exhibition industry in the U.S. will rebound to pre-COVID levels, reaching $15B by 2028.

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15 Takeaways from the Activate Technology & Media Outlook 2025

Audio: As daily time with music reaches an average of 2:49 hours per average user, the majority of audio listeners are listening to multiple audio formats, including music, podcasts, and audiobooks. An increasing number of music listeners are also becoming music creators, using AI-supported creation and distribution tools. AI may have made music creation too easy, enabling new forms of piracy. We see expanded investment in music by private equity firms.

B2B Technology and Software: In the next four years, we expect spend on B2B technology (software, devices, and services) to increase by $800B. To capture this spend, technology and software sellers will need to develop tailored customer targeting approaches addressing the needs of a broad set of stakeholders, adapt to shorter sales cycles and contract lengths, showcase the product features that buyers prioritize most, and offer AI solutions that move past the hype cycle and demonstrate tangible ROI. The investments in the space will continue to grow and are likely to reach new heights.

Data and Advertising: Advertising will account for more than half of the global growth in internet and media revenues between 2024 and 2028. Platforms leveraging consumer data most effectively, such as connected TV and retail media, will be the main drivers of advertising growth. Major retailers around the world are expanding into connected TV, as a way of integrating their retail experiences with an extended set of media assets. Going forward, the advertising space will be powered by a broad ecosystem of data to inform audiences, attribution, and outcomes, reshaping how advertising is bought and sold.

User Generations: There is a substantial digital divide between generations. While technology and media behaviors are becoming more mainstream, Gen Z (aged 18-27) and Millennials (aged 28-43) are significantly more immersed in the digital world than Gen X (aged 44-59) and Baby Boomers (aged 60-78). Each generation has distinct preferences for the media activities they engage in as well as the specific services they use. There is an opportunity for companies to both super-serve the younger generations, who are the earliest adopters of new technology, and close the digital divide through tailored experiences that address the needs of older generations.

CONTENTS

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GROWTH DOLLARS

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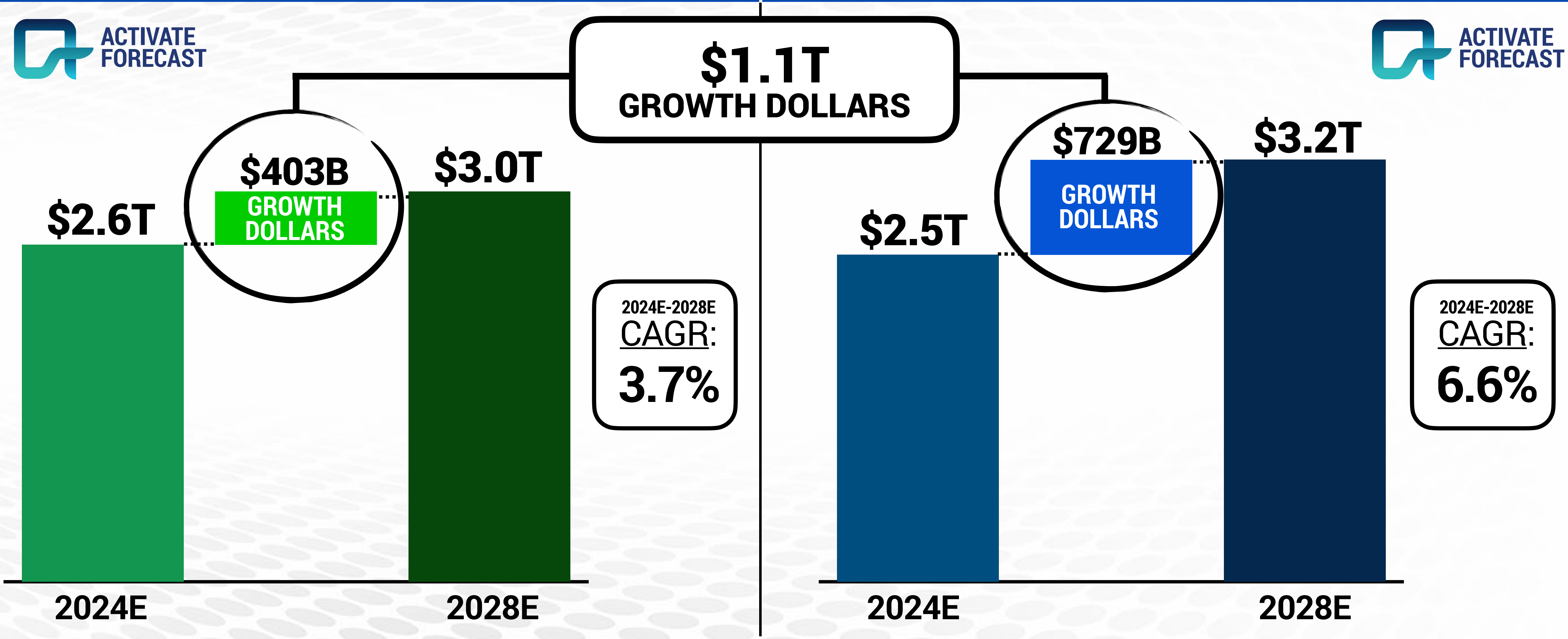
We forecast that consumer internet and media revenues combined with B2B technology and software revenues will add $1.1T growth dollars over the next four years

CONSUMER INTERNET AND MEDIA REVENUES[1], GLOBAL, 2024E VS. 2028E, USD

B2B TECHNOLOGY AND SOFTWARE REVENUES[2], GLOBAL, 2024E VS. 2028E, USD



1. "Consumer internet and media revenues" include revenues from radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, internet access, digital advertising, and traditional advertising on these platforms. 2. "B2B technology and software revenues" include revenues from cloud-native applications & services (i.e. software, data storage, and compute hosted on a public cloud platform or remote data center), on-premise applications & services (i.e. software, data storage, and compute hosted on-site, including servers and enterprise network equipment), and third-party IT services (i.e. any service offering that assists enterprises in implementing, managing, and operating systems, software, and equipment used in modern IT environments).

Sources: Activate analysis, Alliance for Audited Media, Analysys Mason, Company filings, Dentsu International, eMarketer, Fortune Business, Gartner, GroupM, HG Insights, IBISWorld, International Data Corporation, Newzoo, Omdia, Pew Research Center, Precedence Research, PricewaterhouseCoopers, Synergy Research Group, Zenith Media

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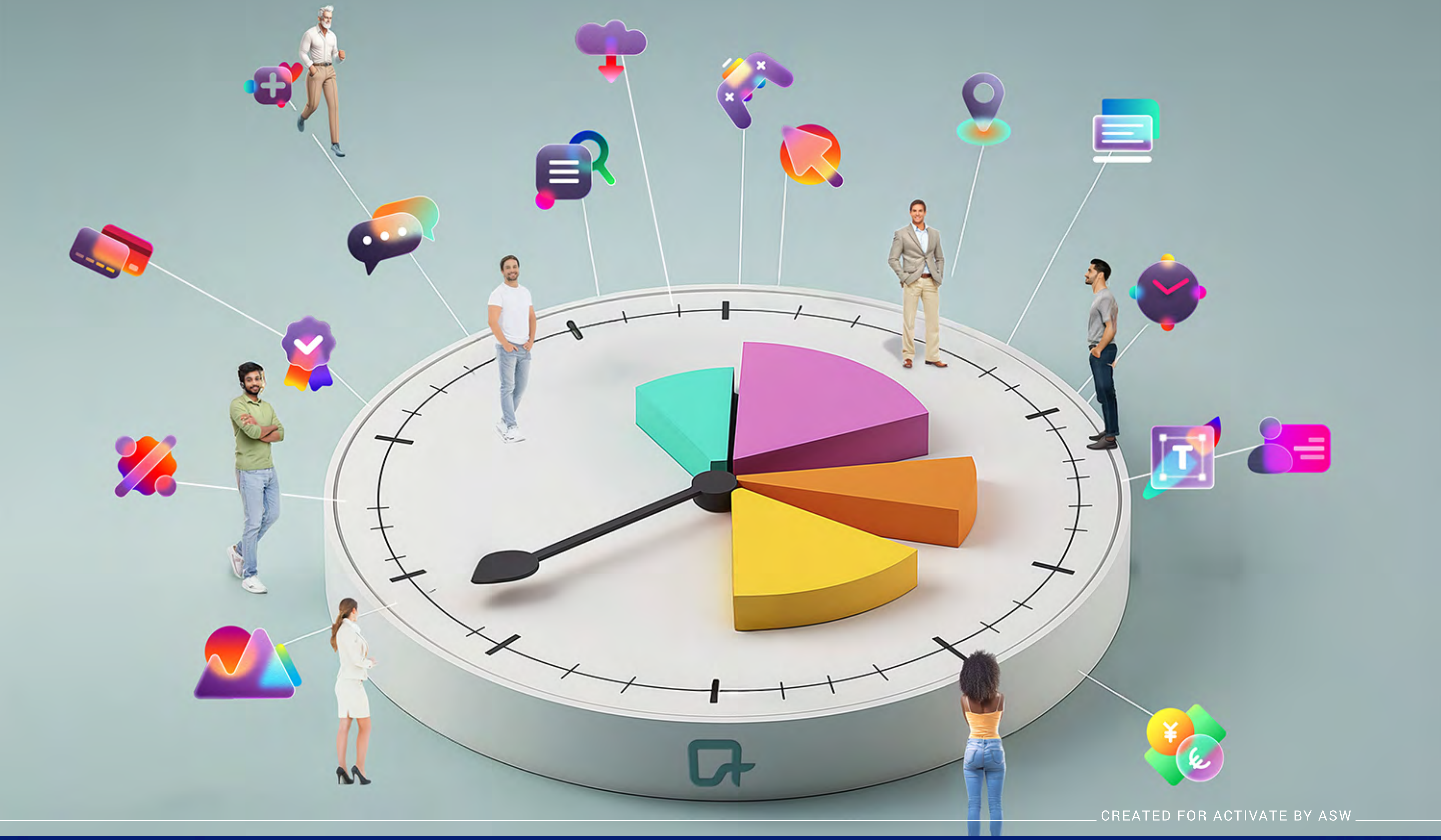

CONSUMER TIME AND ATTENTION

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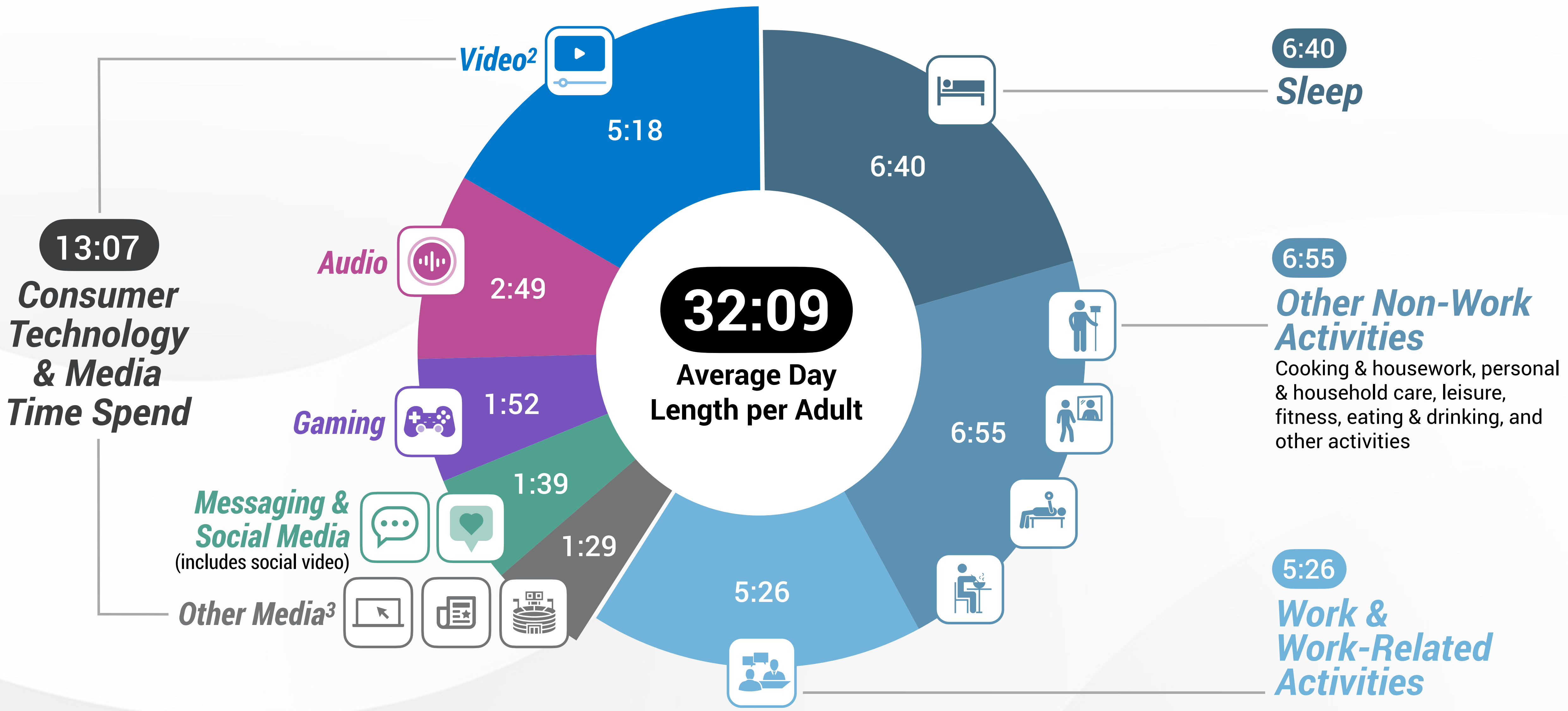
Activate's Attention Clock: Our analysis of consumer technology and media activity shows that multi-tasking leads to a 32-hour day for the average American, with over 13 hours spent using technology and media

AVERAGE DAY BY ACTIVITY PER ADULT AGED 18+[1], U.S., 2023, HOURS:MINUTES



1. Behaviors averaged over seven days. Figures do not sum due to rounding. 2. "Video" includes YouTube. 3. "Other Media" includes media activities outside of the listed categories, such as browsing websites, reading, and attending live events.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

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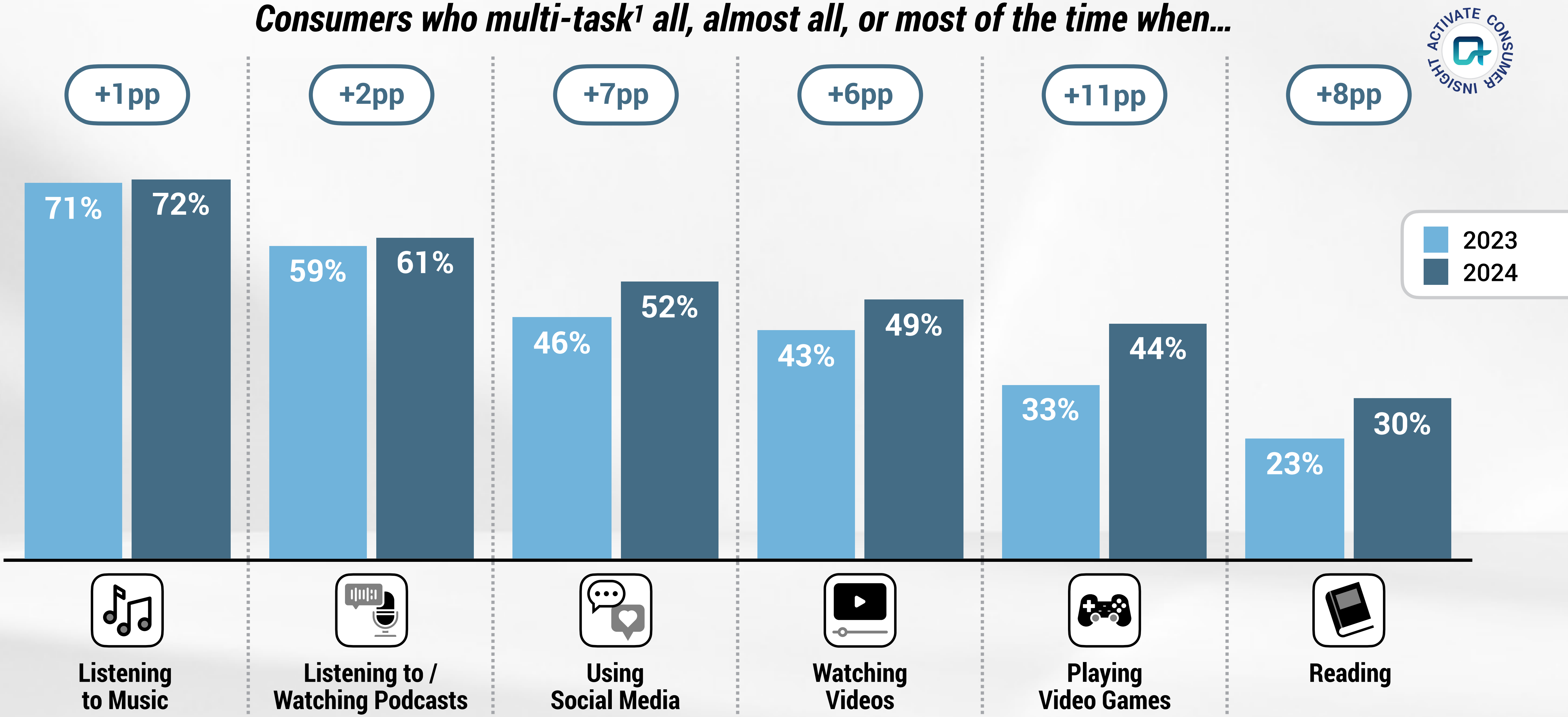
People are multi-tasking more than ever

MULTI-TASKING[1] BEHAVIOR BY ACTIVITY[2], U.S., 2023 VS. 2024, % ADULTS AGED 18+ WHO ENGAGE IN EACH ACTIVITY

Consumers who multi-task[1] all, almost all, or most of the time when…



1. "Multi-tasking" is defined as simultaneously doing another activity, such as working, cleaning, cooking, or exercising. 2. Figures do not sum due to rounding.
Sources: Activate analysis, Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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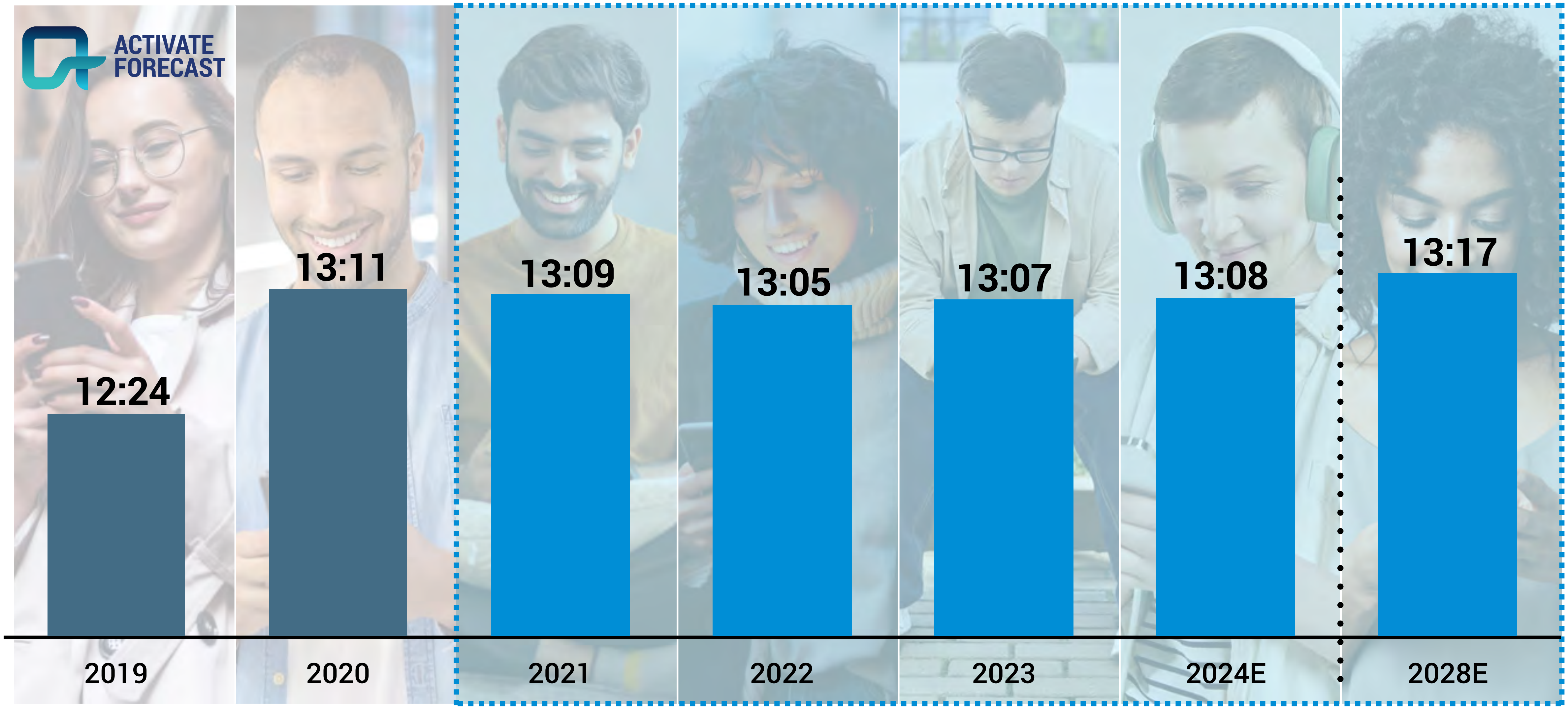
Multi-tasked time with technology and media jumped during COVID-19 and the increase has been sustained; we forecast that it will grow by nine minutes, reaching 13:17 by 2028

AVERAGE DAILY TECHNOLOGY AND MEDIA ATTENTION PER ADULT AGED 18+[1], U.S., 2019-2024E VS. 2028E, HOURS:MINUTES



1. Behaviors averaged over seven days.
Sources: Activate analysis, Activate 2019 Consumer Technology & Media Research Study (n = 4,006), Activate 2020 Consumer Technology & Media Research Study (n = 4,003), Activate 2021 Consumer Technology & Media Research Study (n = 4,018), Activate 2021 Consumer Video Research Study (n = 2,014), Activate 2022 Consumer Technology & Media Research Study(n = 4,001), Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

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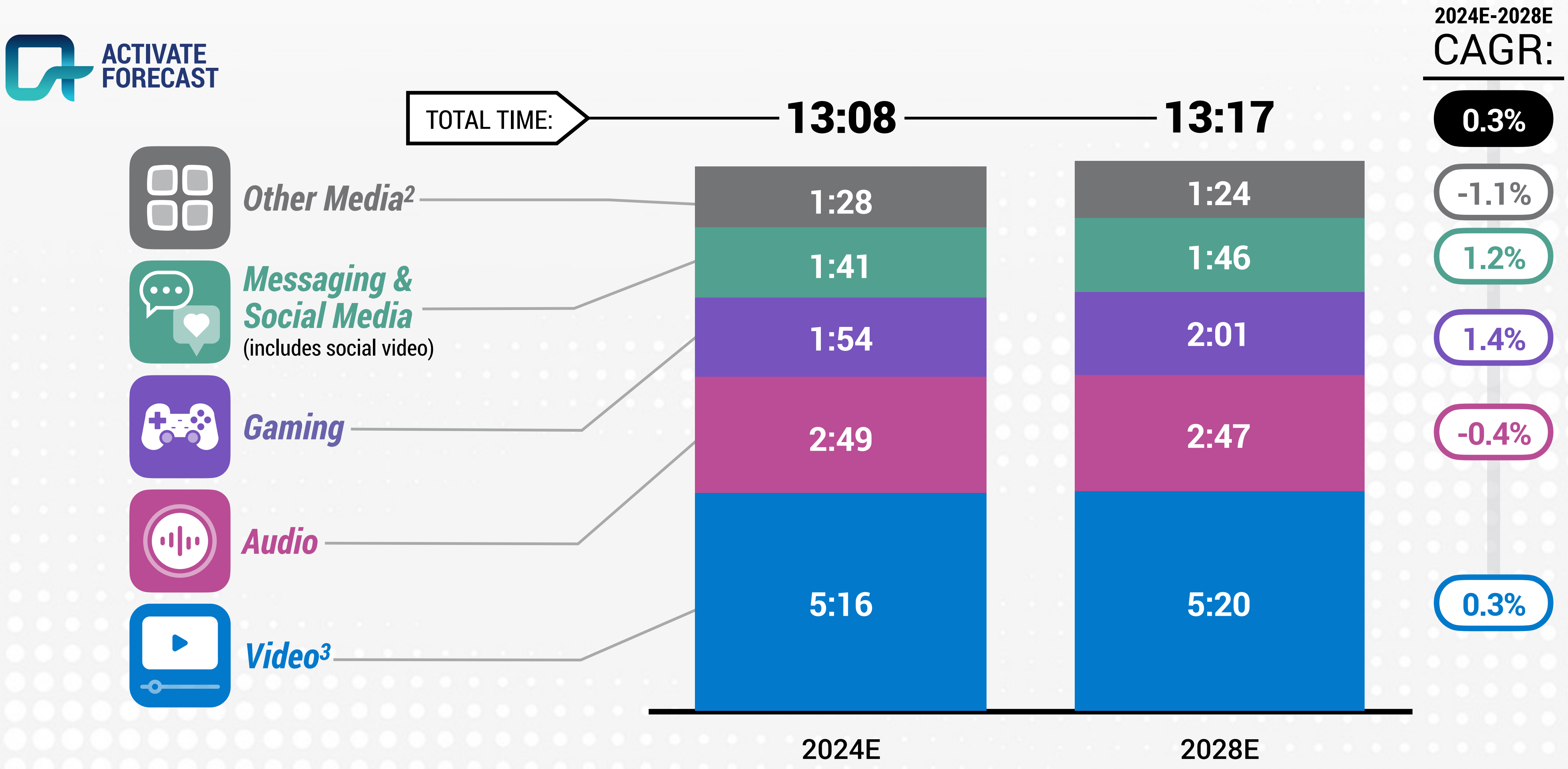
The nine-minute increase of daily technology and media attention will be driven by Gaming, Messaging/Social Media, and Video

AVERAGE DAILY TECHNOLOGY AND MEDIA ATTENTION PER ADULT AGED 18+[1], U.S., 2024E VS. 2028E, HOURS:MINUTES



1. Behaviors averaged over seven days. Figures do not sum due to rounding. 2. "Other Media" includes media activities outside of the listed categories, such as browsing websites, reading, and attending live events. 3. "Video" includes YouTube.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

Those additional nine minutes will add over $10B to the U.S. consumer technology and media industry

ACTIVATE FORECAST

Value[1] of a technology and media minute[2] in the U.S.

$1.2B

×

9 additional minutes

each day with technology and media by 2028E[3]

=

$10B+

increase in annual U.S. consumer internet and media revenues[1]

1. Includes revenues from radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, internet access, digital advertising, and traditional advertising on these platforms. 2. Reflects the annual value of one minute of technology and media time each day for the average American in 2024E. Based on behaviors averaged over seven days. Includes video, audio, gaming, messaging & social media, and other media (e.g. browsing websites, reading, and attending live events). 3. Includes time spent with video, audio, gaming, messaging & social media, and other media (e.g. browsing websites, reading, and attending live events).

Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Alliance for Audited Media, Company filings, Comscore, Conviva, data.ai, Dentsu International, eMarketer, Gallup, GroupM, GWI, IBISWorld, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov, Zenith Media

SUPER USERS

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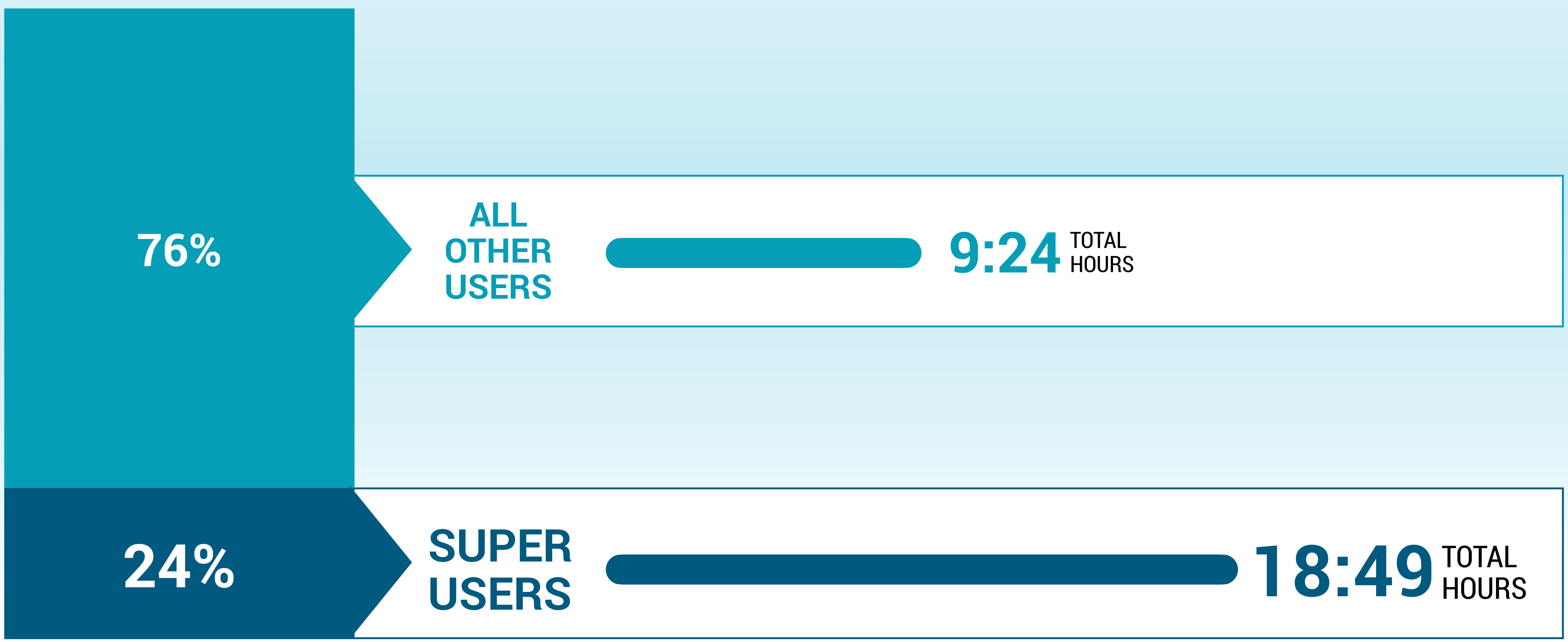
Super Users are an important segment that represents less than 25% of the population but accounts for a disproportionately high share of time spend with technology and media

AVERAGE DAILY TIME SPEND WITH TECHNOLOGY AND MEDIA PER USER[1], U.S., 2024E, % ADULTS AGED 18+ / HOURS:MINUTES



User Population

1. Includes time spent watching video, playing video games, listening to music, listening to or watching podcasts, and using messaging / social media services.

Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

Compared to all other users, Super Users spend substantially more time engaging in all major technology and media activities

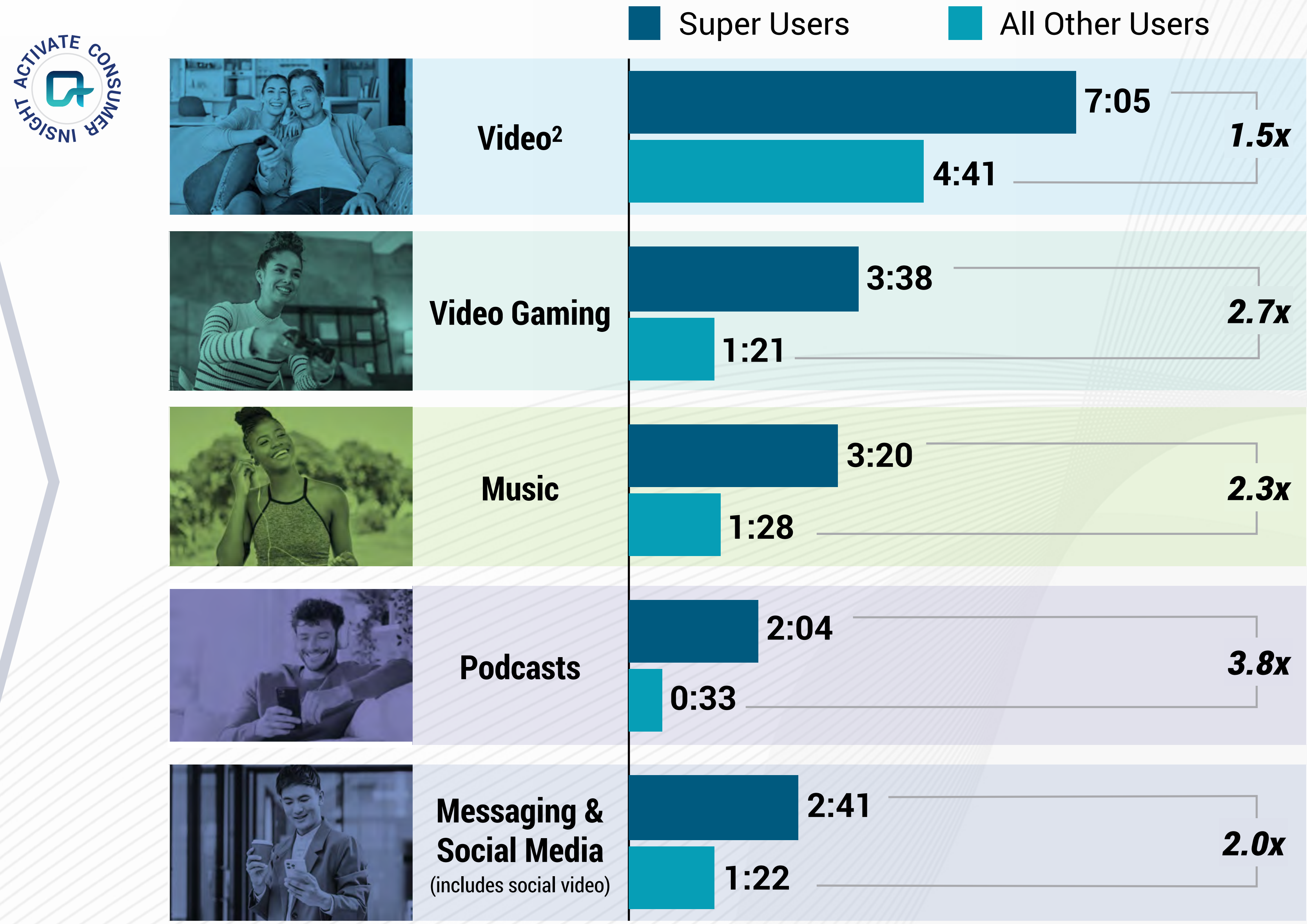
AVERAGE DAILY TIME SPEND PER USER BY TECHNOLOGY AND MEDIA TYPE, U.S., 2024E, HOURS:MINUTES

SUPER USERS

18:49
Total Hours[1]

ALL OTHER USERS

9:24
Total Hours[1]



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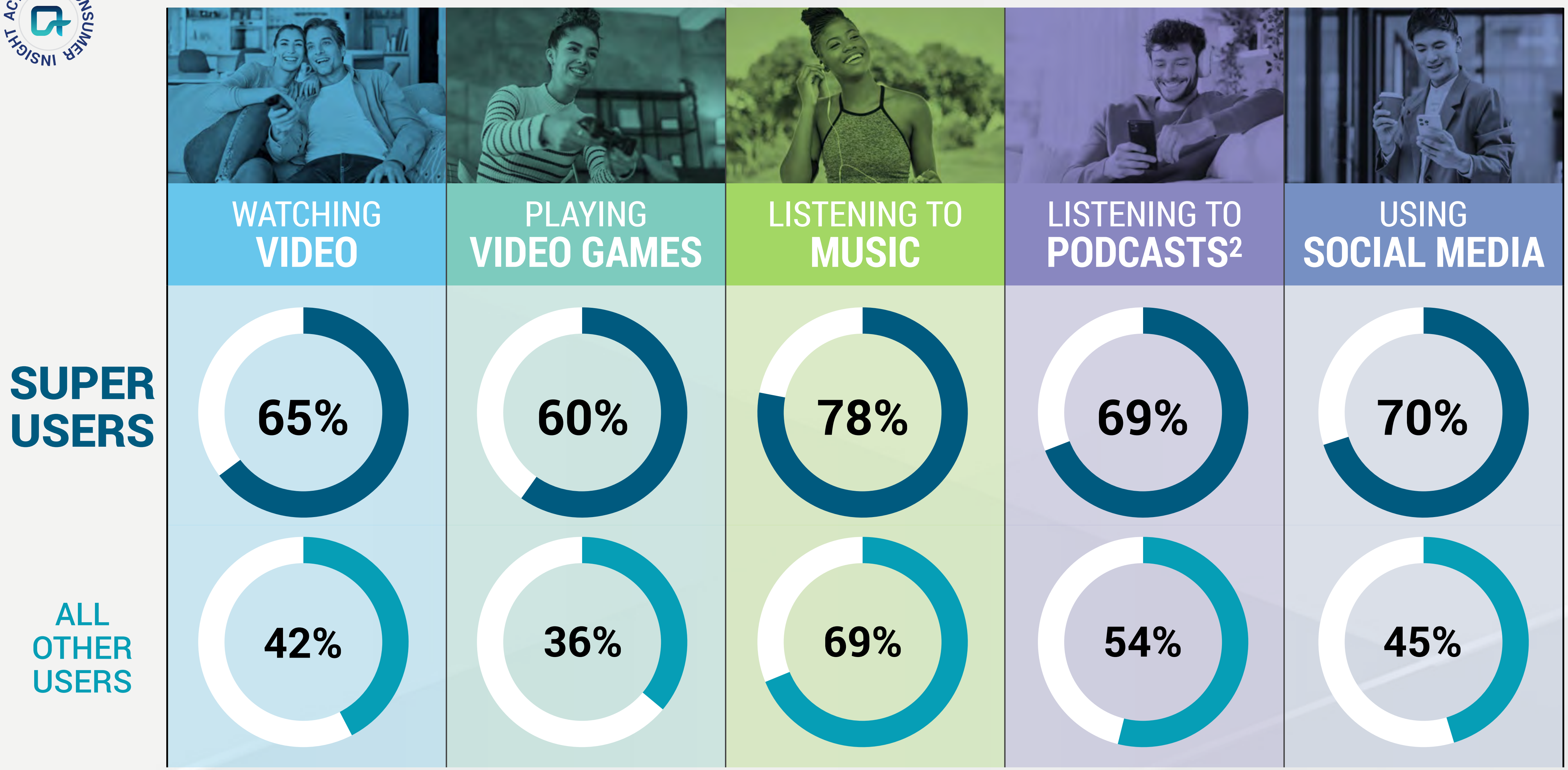
1. Figures do not sum due to rounding. 2. "Video" includes YouTube.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

Across major activities, Super Users are much more likely to multi-task

MULTI-TASKING[1] BEHAVIOR BY TECHNOLOGY AND MEDIA ACTIVITY, U.S., 2024, % ADULTS AGED 18+ WHO ENGAGE IN EACH ACTIVITY

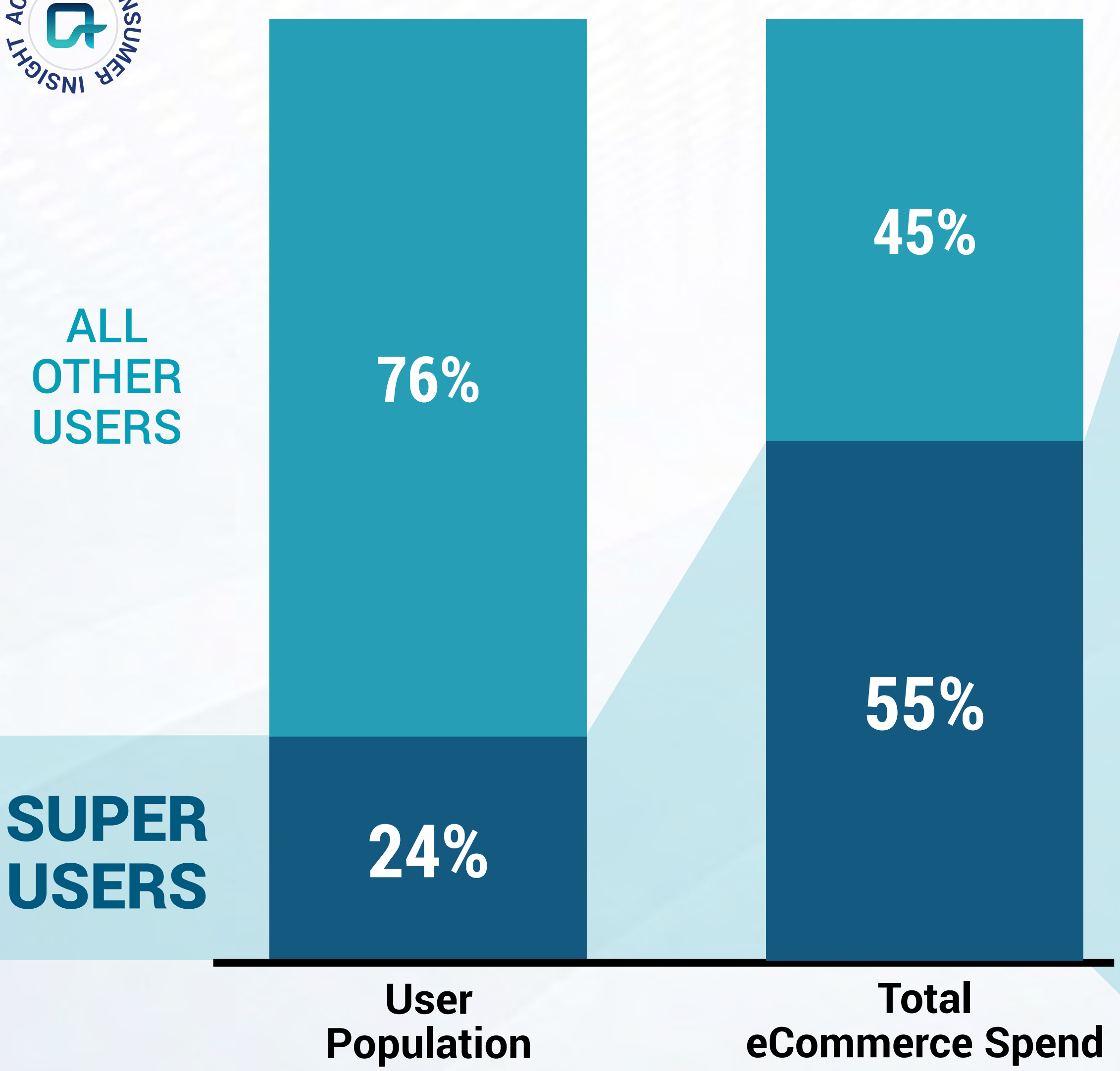
CONSUMERS WHO MULTI-TASK[1] ALL, ALMOST ALL, OR MOST OF THE TIME WHEN…



1. "Multi-tasking" is defined as simultaneously doing another activity, such as working, cleaning, cooking, or exercising. 2. Includes listening to or watching podcasts.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Super Users account for a disproportionately high share of total eCommerce spend while also over-indexing on emerging eCommerce behaviors

ECOMMERCE SPEND, U.S., 2024,
% ADULTS AGED 18+ / % TOTAL ECOMMERCE SPEND



PARTICIPATION IN EMERGING ECOMMERCE BEHAVIORS IN THE LAST 12 MONTHS, U.S., 2024,
SUPER USERS INDEXED TO ALL OTHER USERS

Super Users over-index on several emerging eCommerce activities

IMMERSIVE EXPERIENCES
3.8x
As likely to have visited a brand's immersive virtual world (e.g. Vans World on Roblox, Nike's Airphoria Island on Fortnite)

LIVESTREAM SHOPPING
3.6x
As likely to have bought a product through a livestream shopping event

VIRTUAL TRY-ON
3.3x
As likely to have used an AR-powered virtual try-on feature (e.g. to test clothing, footwear, accessories, beauty products)

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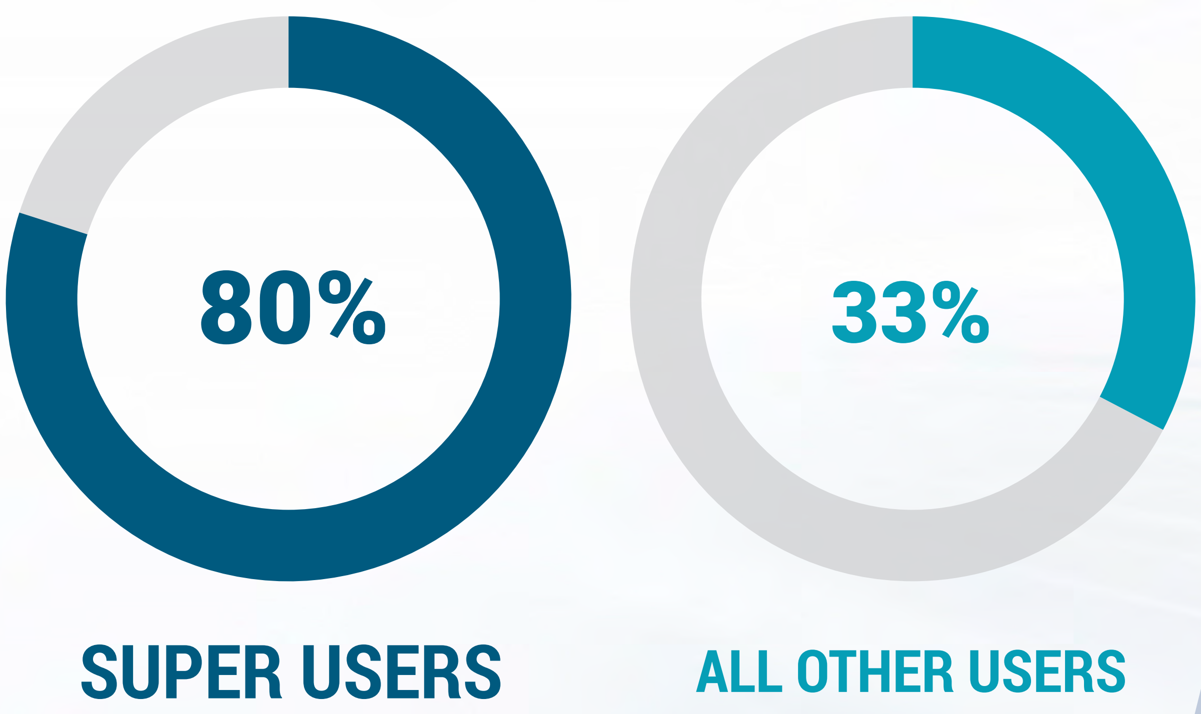
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Super Users are significantly more likely to be early adopters of new technology/devices

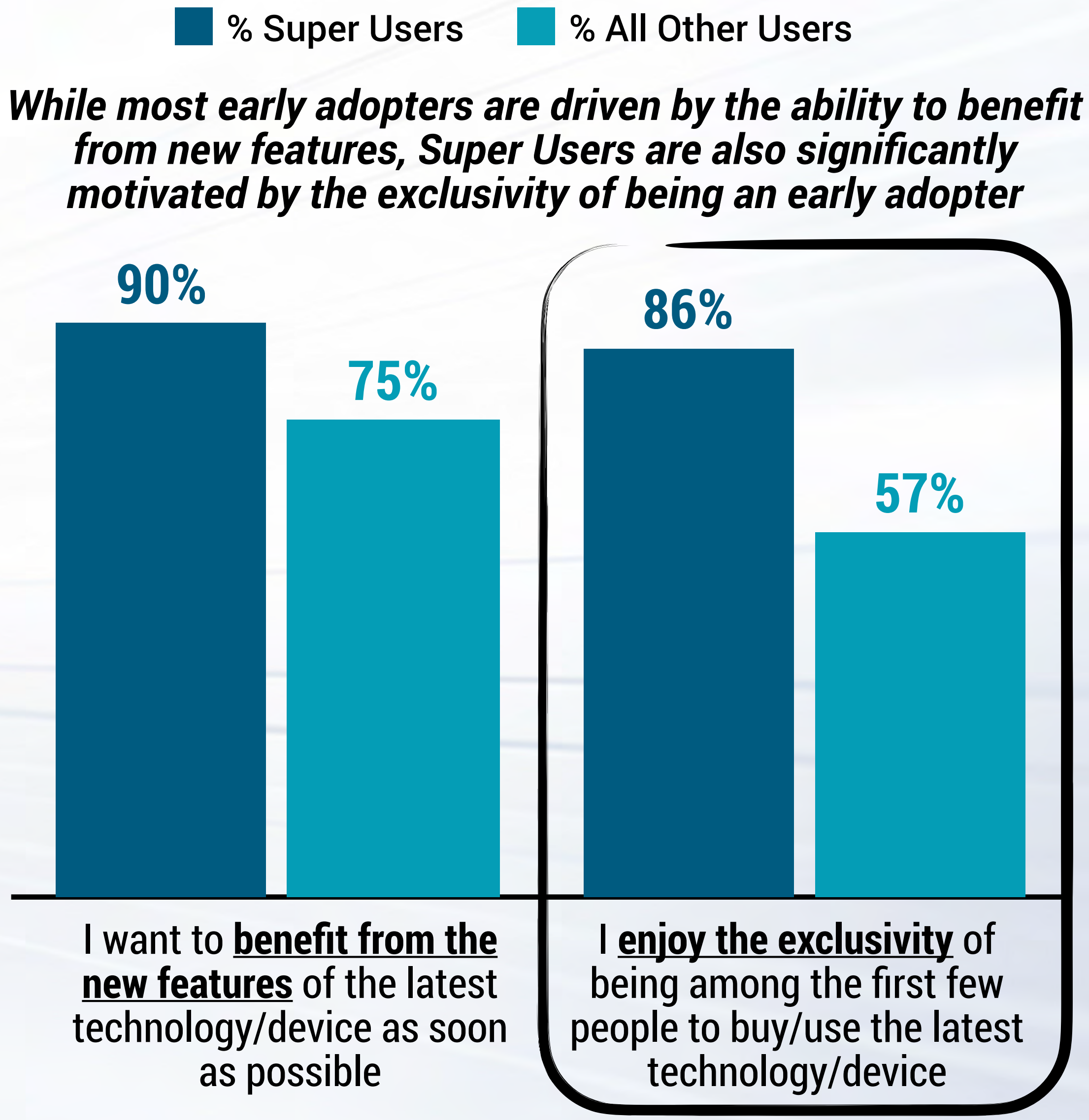
PROPENSITY TO BE AMONG THE FIRST FEW TO BUY/USE NEW TECHNOLOGY/DEVICES[1], U.S., 2024, % ADULTS AGED 18+

SHARE OF ADULTS AGED 18+ WHO ARE USUALLY AMONG THE FIRST FEW TO BUY/USE NEW TECHNOLOGY/DEVICES[1]



REASONS FOR EARLY ADOPTION OF TECHNOLOGY/DEVICES, U.S., 2024, % ADULTS AGED 18+ WHO ARE USUALLY AMONG THE FIRST FEW TO BUY/USE NEW TECHNOLOGY/DEVICES[1]

While most early adopters are driven by the ability to benefit from new features, Super Users are also significantly motivated by the exclusivity of being an early adopter



1. Includes consumers who usually buy/use new technology/devices before anyone else they know and consumers who usually buy/use new technology/devices after a few people they know have done so (but before many people they know have done so).
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Super Users are in the vanguard of generative AI adoption

USAGE OF GENERATIVE AI PLATFORMS, U.S., 2024, SUPER USERS INDEXED TO ALL OTHER USERS

Super Users are…

2.9x
AS LIKELY TO **USE A GENERATIVE AI PLATFORM** AT LEAST ONCE PER MONTH

3.8x
AS LIKELY TO HAVE **CREATED IMAGES USING A GENERATIVE AI PLATFORM** IN THE LAST 12 MONTHS

4.0x
AS LIKELY TO **USE GENERATIVE AI AS A FIRST STOP FOR ONLINE SEARCH**[1]

…as all other users

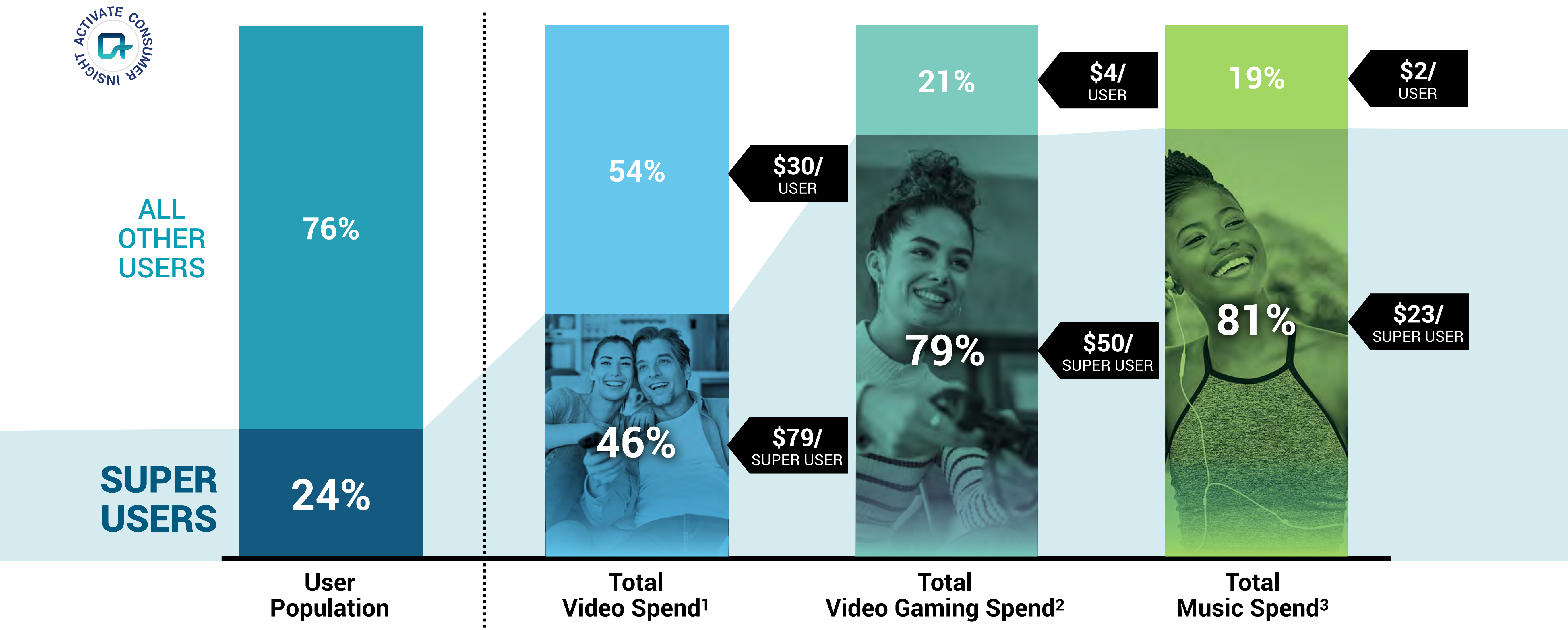
EXAMPLE GENERATIVE AI PLATFORMS TESTED IN OUR RESEARCH

Adobe Firefly · AIVA · beatoven.ai · boomy · ChatGPT · Claude
Copilot · DALL·E 2 · DEEPBRAIN AI · Gemini · lumen5 · Midjourney
perplexity · runway · soundful · Stable Diffusion · synthesia

1. "Using generative AI as a first stop for online search" is defined as typically starting the search process with a generative AI search service when looking for information online.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Super Users consistently spend more dollars on technology and media than all other users

MONTHLY DOLLAR SPEND BY TECHNOLOGY AND MEDIA TYPE,
U.S., 2024E, % ADULTS AGED 18+ / % TOTAL SPEND BY TECHNOLOGY AND MEDIA TYPE / USD PER USER



1. Includes spend on all videos and video services, including traditional/virtual Pay TV, video streaming subscription services, and video purchases/rentals. 2. Includes spend on video games and other video gaming purchases (e.g. in-game purchases, video gaming subscription services) across all devices. Excludes spend on gaming devices and accessories. 3. Includes spend on music and music services.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), eMarketer, Goldman Sachs, Grand View Research, IFPI, Newzoo, Omdia, PricewaterhouseCoopers, Recording Industry Association of America, SiriusXM, Statista

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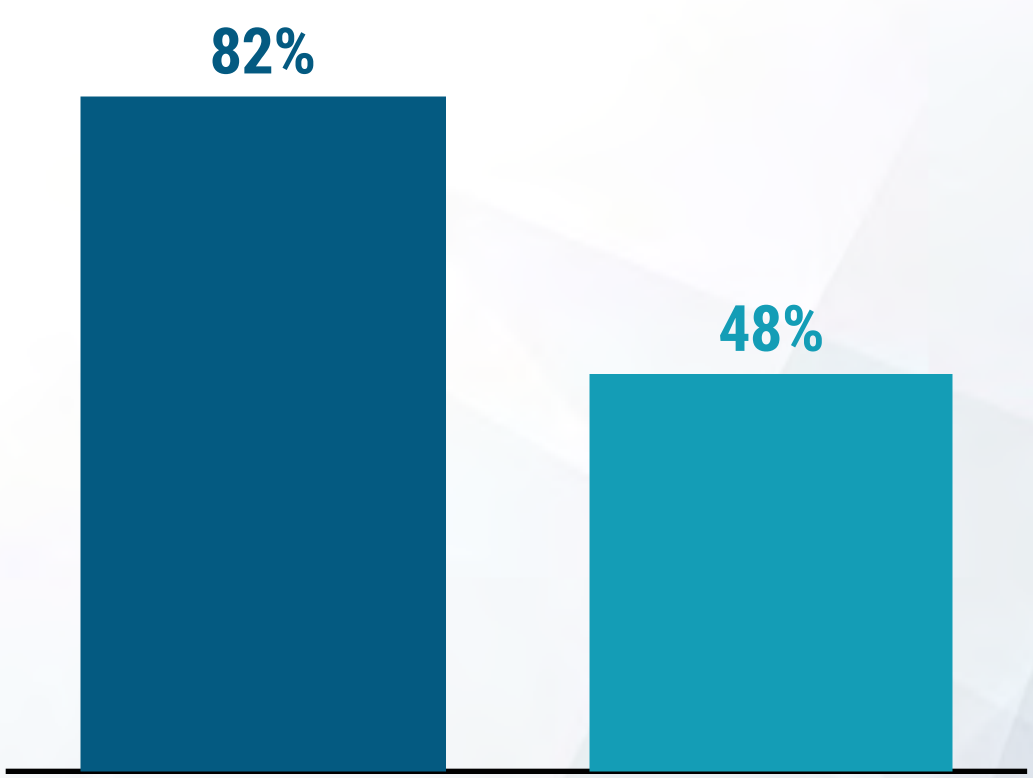
Super Users are more willing to share their data with technology and media companies in exchange for benefits

CONSUMER WILLINGNESS TO SHARE DATA WITH TECHNOLOGY AND MEDIA COMPANIES, U.S., 2024, % ADULTS AGED 18+

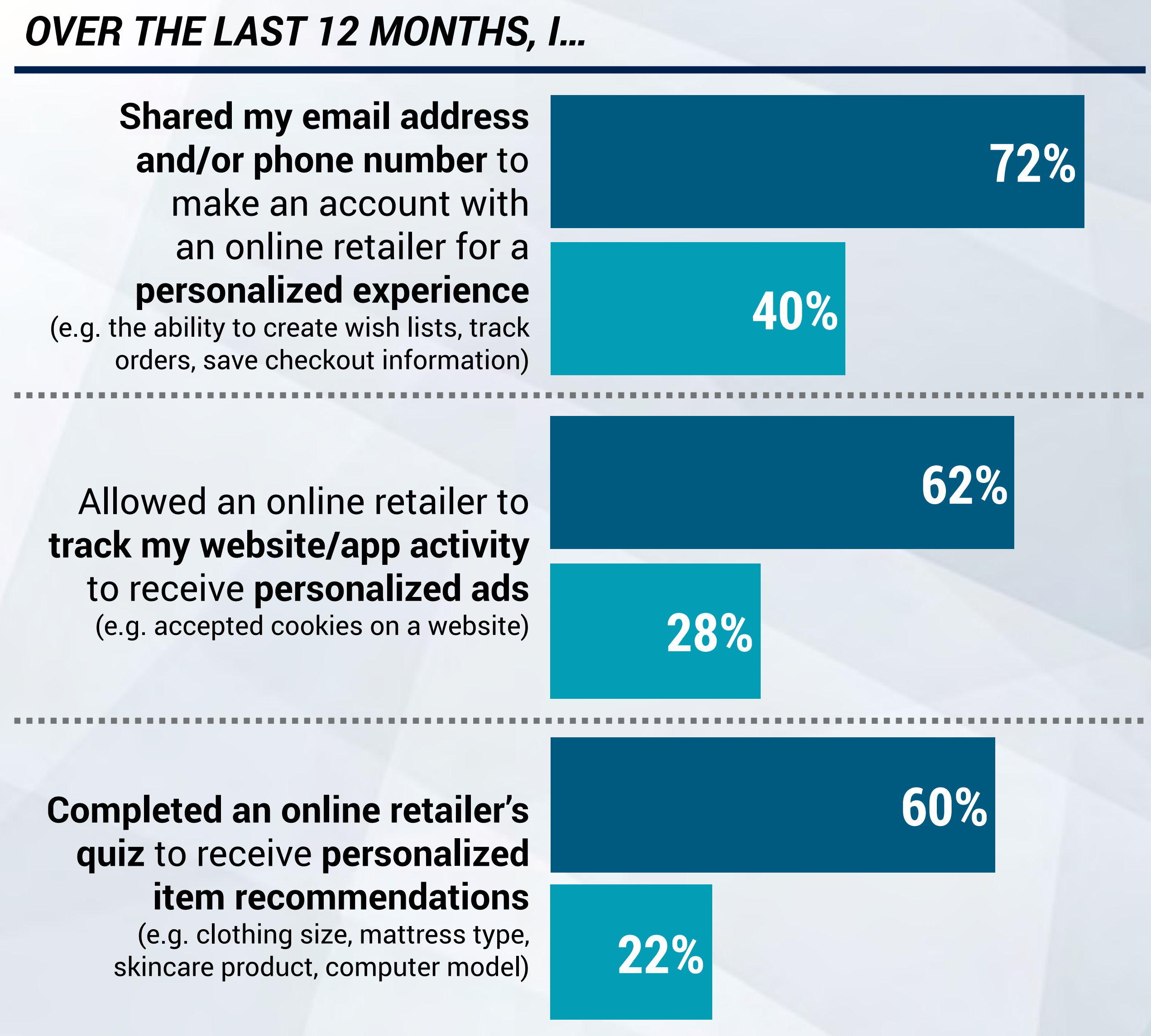
ACTIVATE CONSUMER INSIGHT

% Super Users % All Other Users

Comfortable sharing data with technology and media companies
(in exchange for more personalized/relevant recommendations and ads or rewards/discounts)



SHARING OF PERSONAL INFORMATION WITH ONLINE RETAILERS OVER THE LAST 12 MONTHS, U.S., 2024, % ONLINE SHOPPERS[1]



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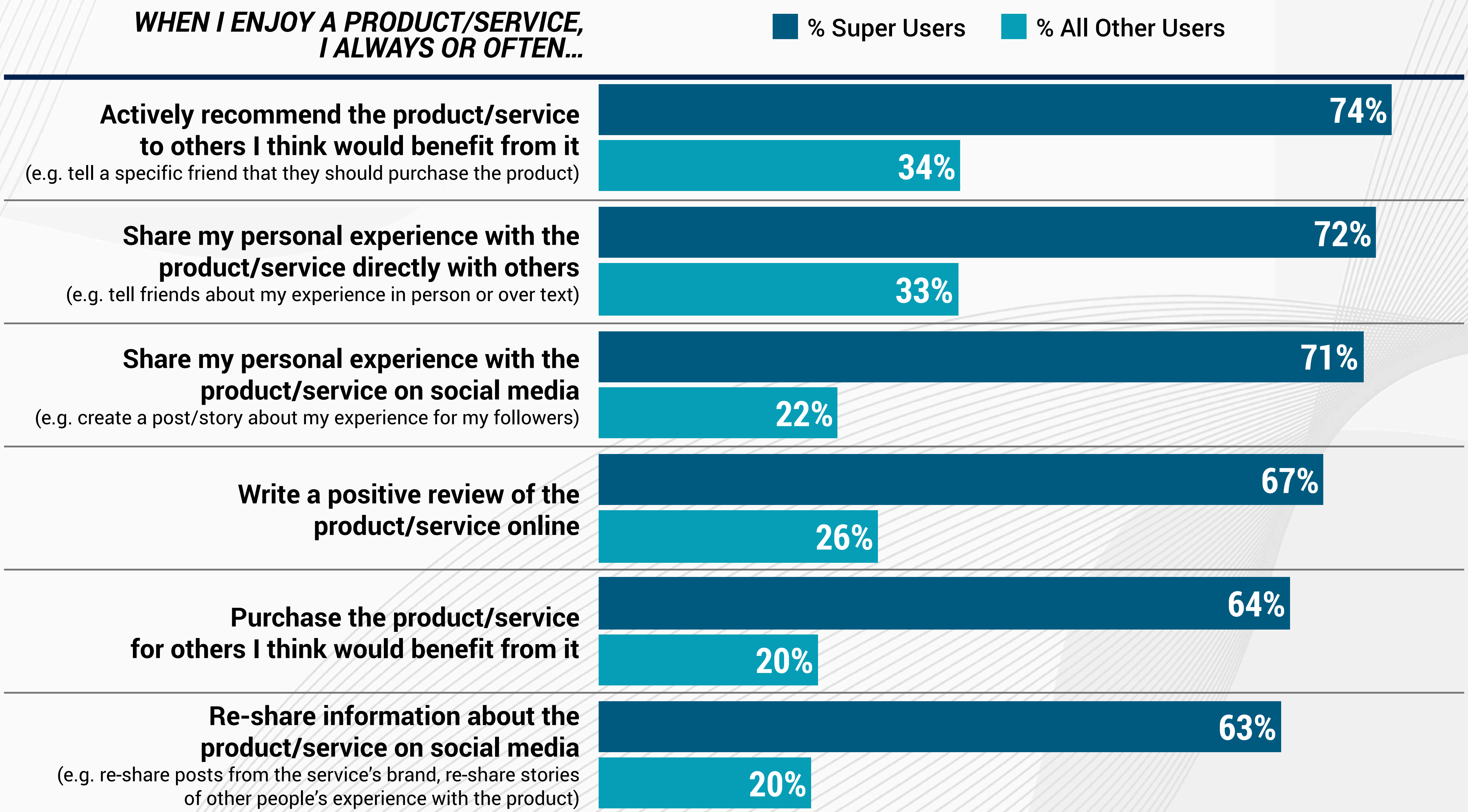
1. "Online shoppers" are defined as adults aged 18+ who shopped online at least once in the last 12 months. Shopping includes browsing and making purchases.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

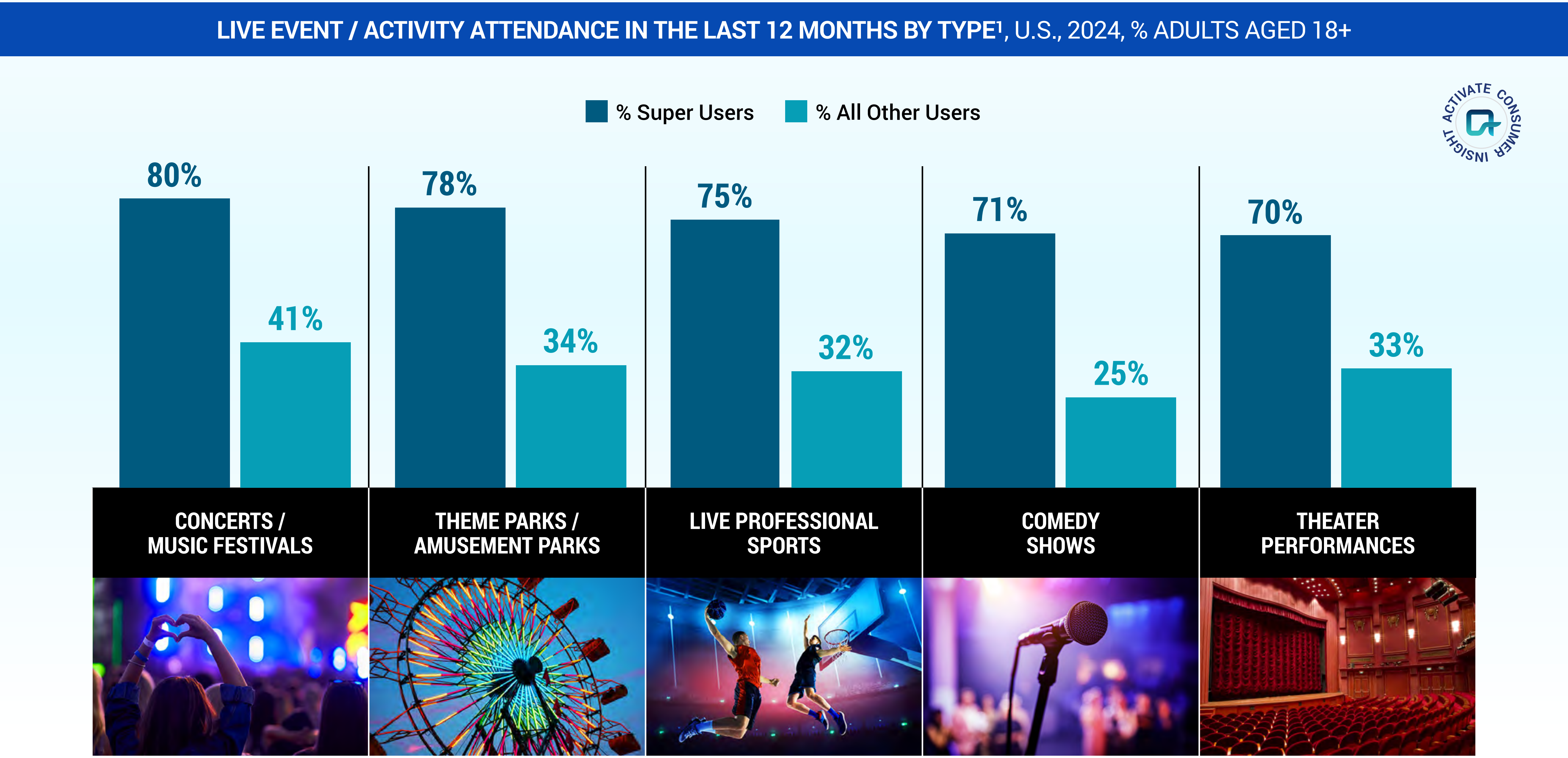
Super Users are significantly more likely to be brand amplifiers, sharing their experiences and recommending products/services

BRAND ADVOCACY BEHAVIORS, U.S., 2024, % ADULTS AGED 18+



Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

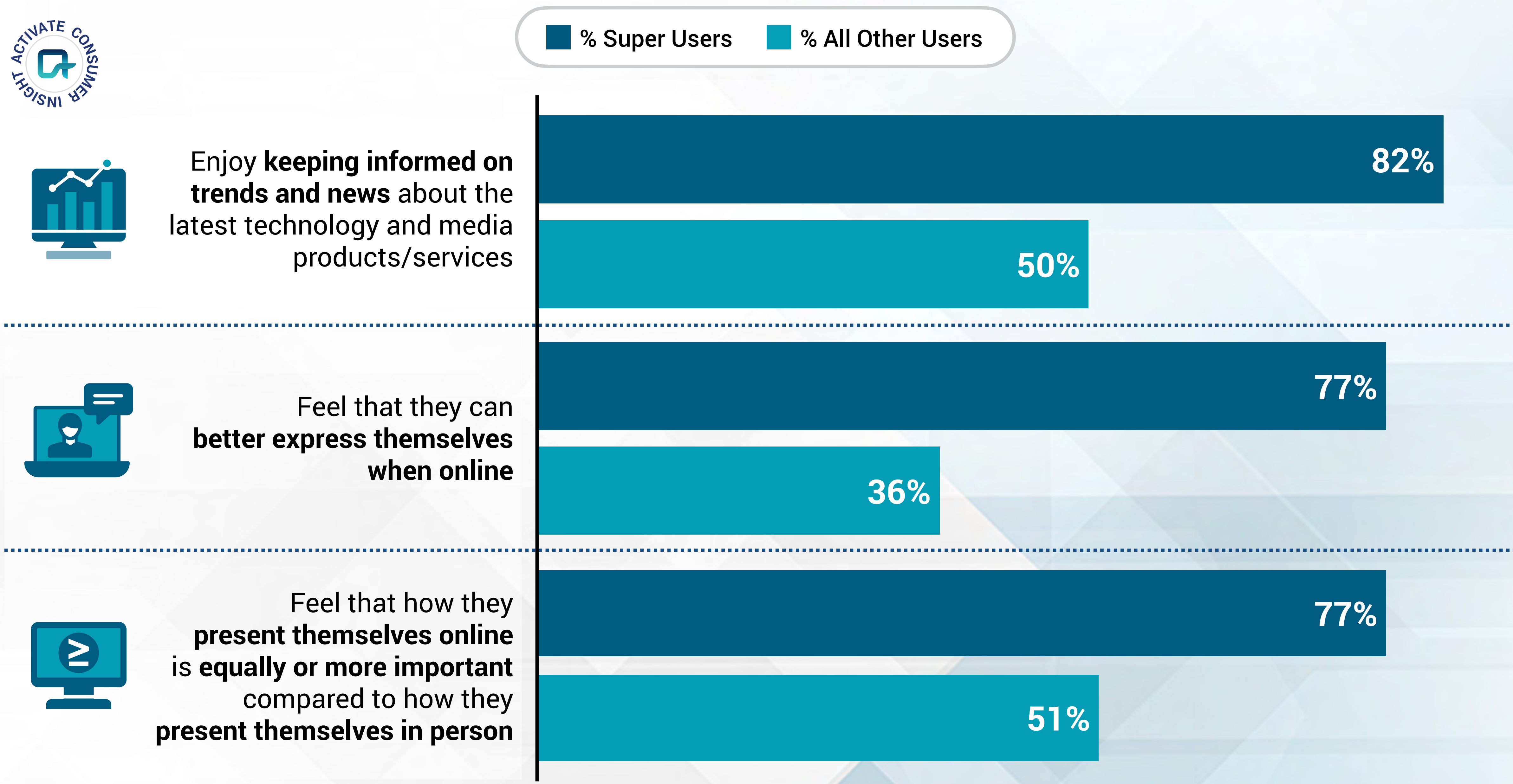
Super Users are more likely to attend live events and experiences



1. Reflects adults aged 18+ who attended at least one live event / activity in the specified category in the last 12 months.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Super Users are more comfortable with their digital identities

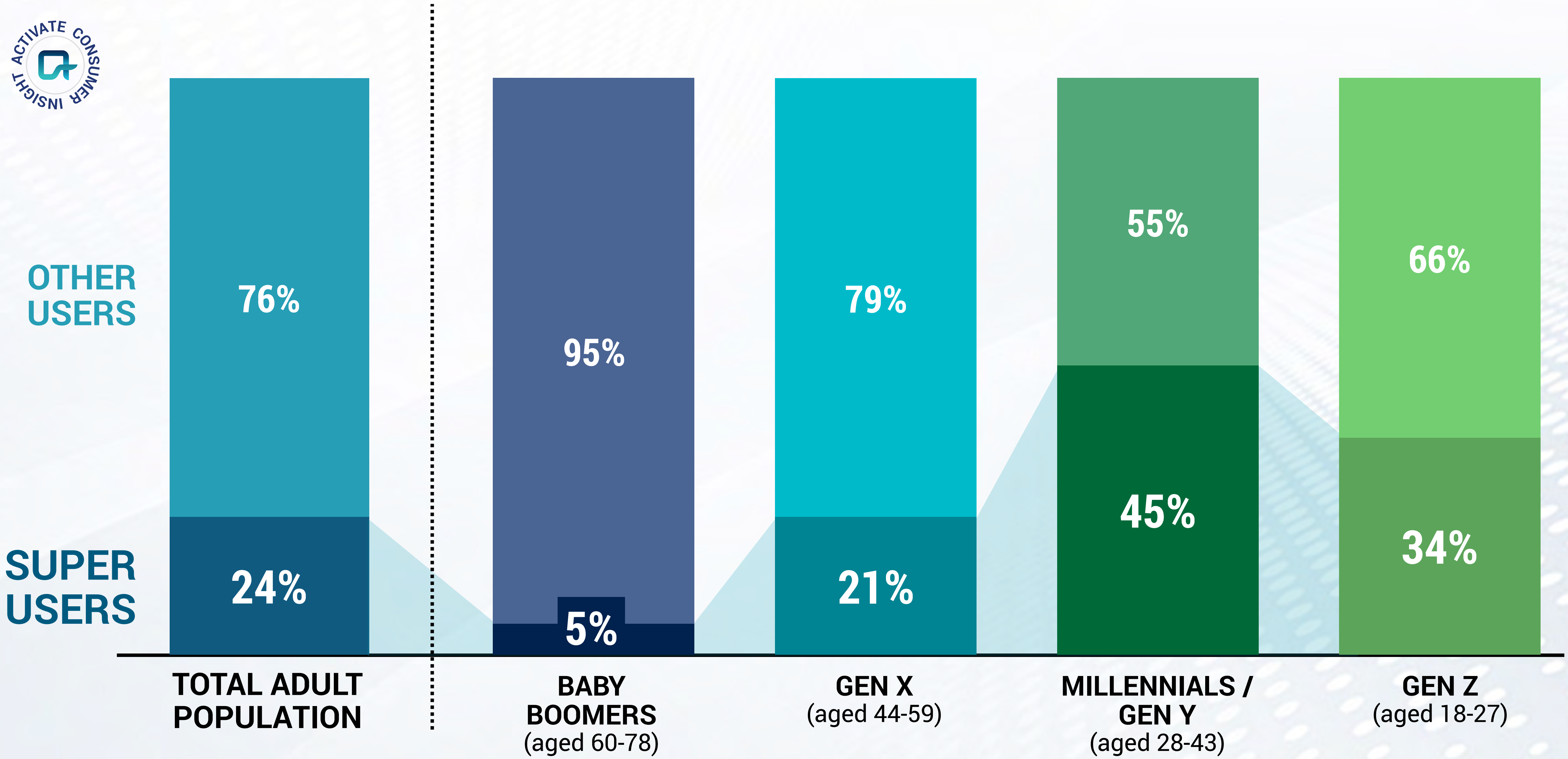
CONSUMER SENTIMENTS ABOUT DIGITAL IDENTITY, U.S., 2024, % ADULTS AGED 18+



Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Super Users span all age cohorts

SUPER USERS BY GENERATION, U.S., 2024, % ADULTS AGED 18+ / % ADULTS AGED 18+ BY GENERATION



Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

DISCOVERY AND GENERATIVE AI

Generative AI will change how people search online

Up to **60%** *of searches are already addressable through generative AI*

CURRENT STATE

The remaining **40%** *of searches will be addressable by generative AI*

FUTURE STATE

WAVE 1: OPEN WEB DISCOVERY

Content and information freely available to anyone, indexed by traditional search engines and generative AI platforms

Provides easily digestible and customizable information, with algorithm refinements and improvements in data quality (e.g. more up-to-date, diverse, and verified sources) expected to enhance accuracy

WAVE 2: GATED CONTENT DISCOVERY

Content that requires user authentication or payment, or that restricts search engine crawling and indexing

Requires expanded partnerships and licensing deals between generative AI platforms and publishers before being able to fully disrupt traditional search engines

WAVE 3: DISCOVERY-LED TRANSACTIONS

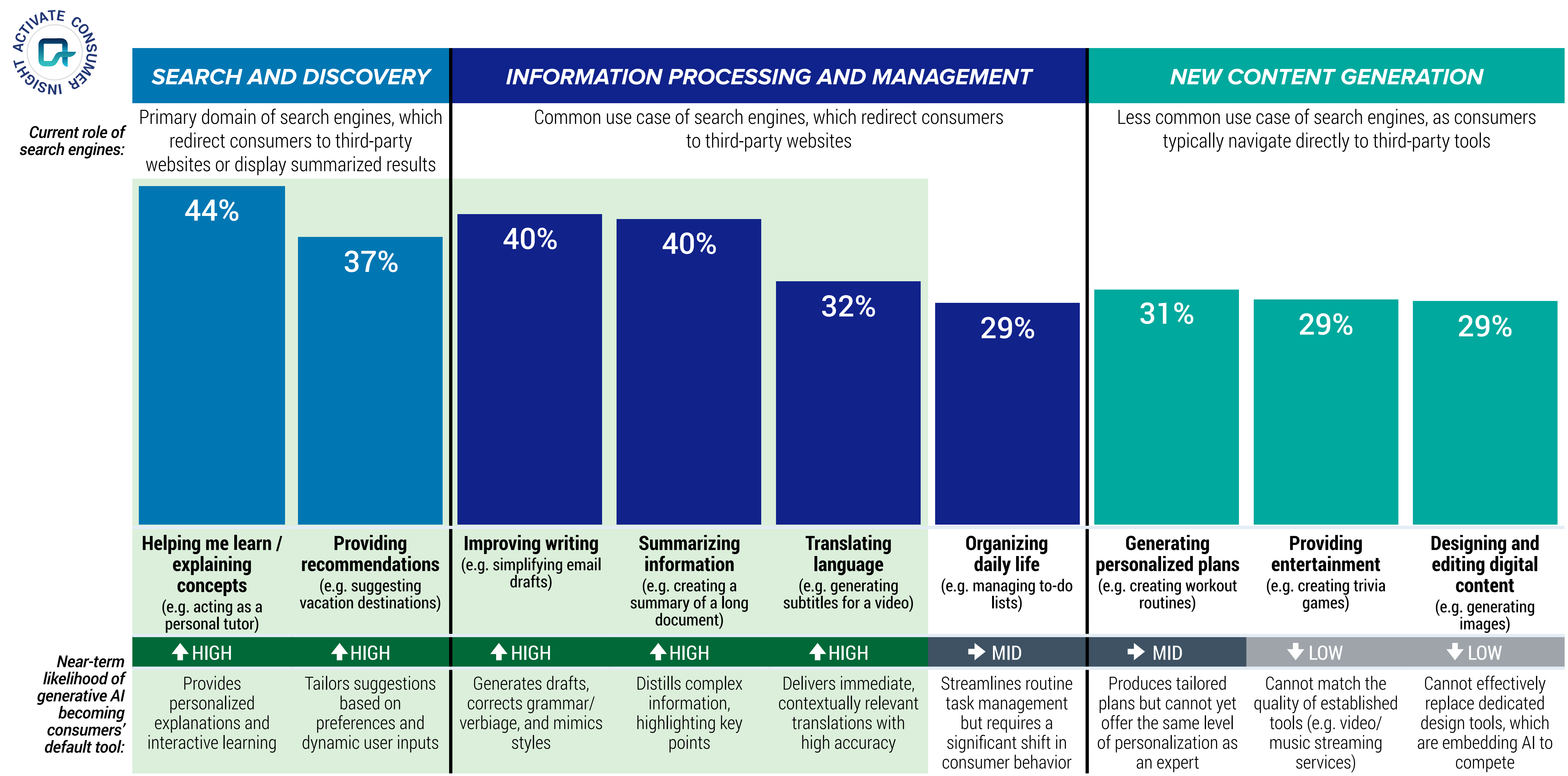
Transactions that typically require visiting external sites to complete (e.g. purchases on eCommerce sites, bookings on travel platforms)

Requires technological advancements (e.g. ability to process payments and verify product authenticity) **and consumer acceptance** before disruption can occur

Sources: Activate analysis, SparkToro

Generative AI will become people's default tool across an array of use cases

GENERATIVE AI USE CASES, U.S., 2024, % MONTHLY GENERATIVE AI USERS[1]



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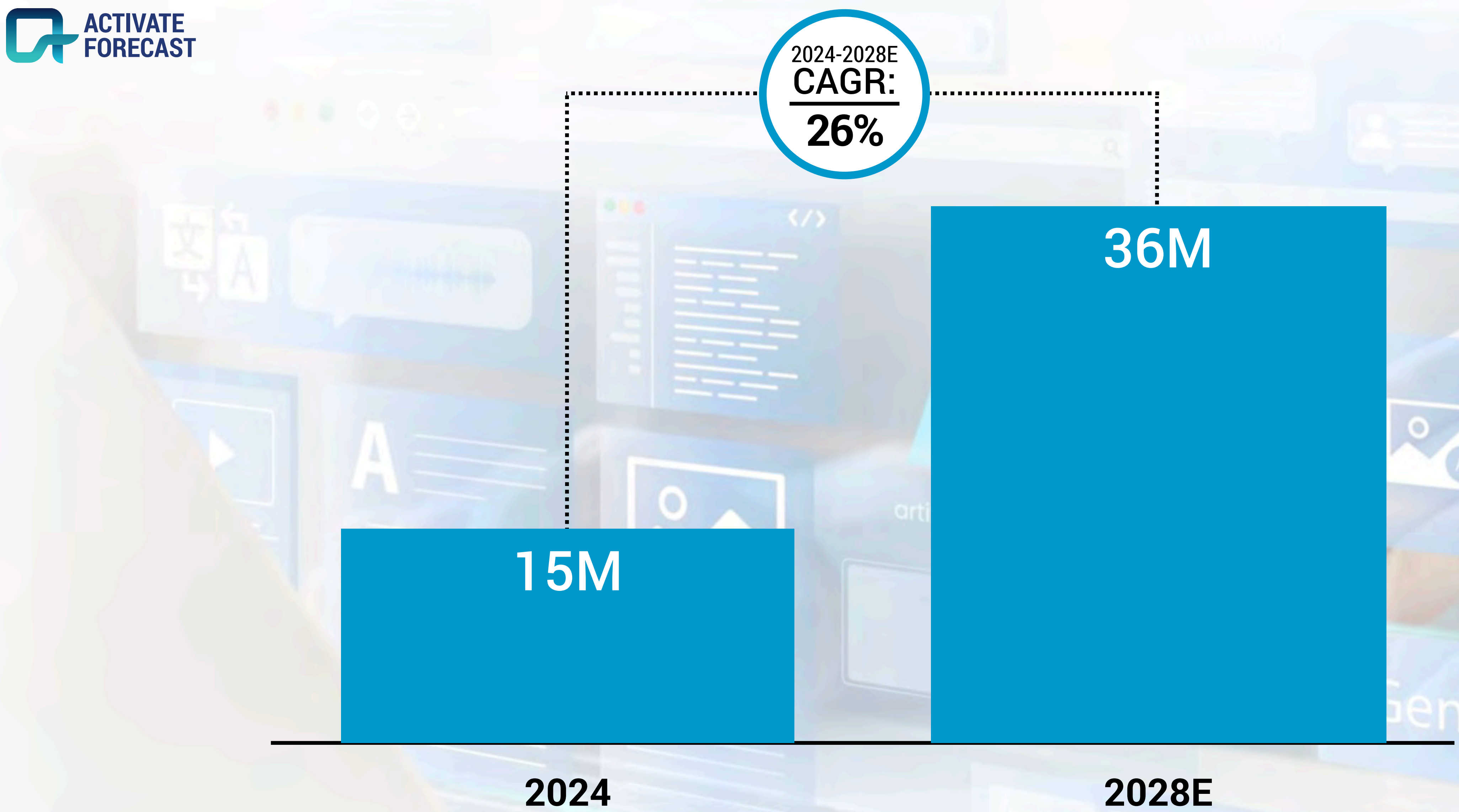
1. "Monthly generative AI users" are defined as adults aged 18+ who use at least one generative AI platform at least once per month.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

15M U.S. adults currently begin their online searches on a dedicated generative AI platform; we forecast this will grow to 36M by 2028, transforming the U.S. search market

USAGE OF GENERATIVE AI AS A FIRST STOP FOR ONLINE SEARCH[1], U.S., 2024 VS. 2028E, MILLIONS ADULTS AGED 18+



1. "Usage of generative AI as a first stop for online search" is defined as typically starting the search process with a generative AI search service when looking for information online. Excludes generative AI overviews displayed in traditional search engine results.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Semrush, U.S. Census Bureau

Consumers are already using generative AI platforms as a substitute for search engines across many of their use cases

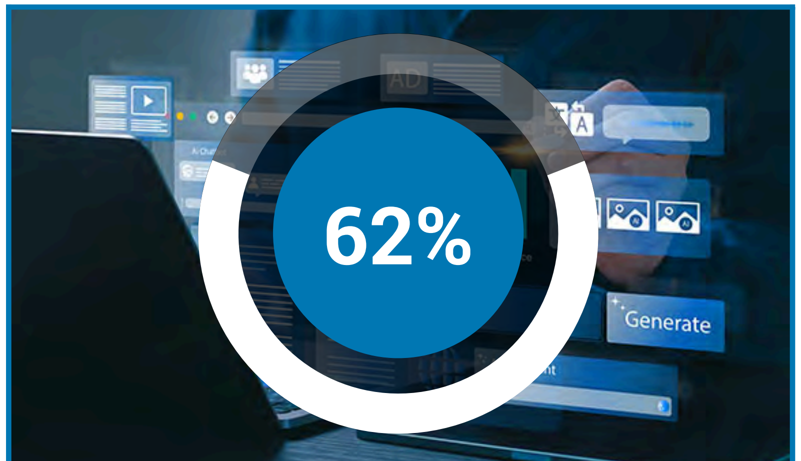
USAGE OF GENERATIVE AI[1] BY SEARCH TYPE, U.S., 2024,
% MONTHLY USERS OF BOTH GENERATIVE AI SEARCH SERVICES AND TRADITIONAL SEARCH ENGINES[2]

…typically use generative AI for
Exploration
(to explore / learn about a topic)

"What are the best women's hiking shoes for cold weather?"

"How does blockchain technology work?"

"Who were the most influential pharaohs in Ancient Egypt and why?"

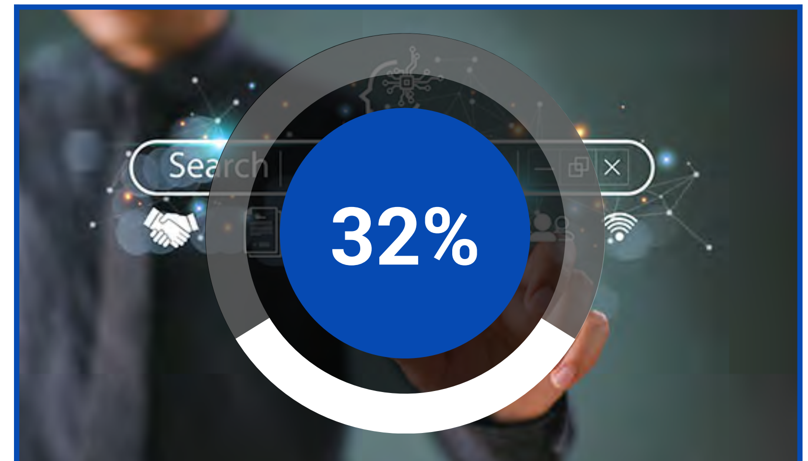


…typically use generative AI for
Direct Inquiry
(to retrieve a specific fact or statistic)

"How many U.S. presidents have there been?"

"What day of the week is July 13th, 2025?"

"What is the biggest mammal in the world?"



…typically use generative AI for
Navigation
(to find a specific website)

"YouTube login page"

"Nike customer support"

"The Wall Street Journal business section"

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1. Includes consumers who typically use only generative AI search services for each search type and consumers who typically use both generative AI search services and traditional search engines for each search type. 2. "Monthly users of both generative AI search services and traditional search engines" are defined as adults aged 18+ who use both generative AI search services and traditional search engines at least once per month.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Generative AI platforms will become strong alternatives for eCommerce and content discovery searches

eCommerce Discovery

Generative AI significantly enhances product and service discovery, answering user questions and offering personalized recommendations that adapt to feedback in real time

Example Use Cases:

- Suggesting a specific product tailored to a user's needs and preferences
- Recommending a retailer based on user expectations regarding price, shipping speed, and quality of customer service

Content Discovery

Generative AI is transforming personalized content discovery, delivering highly customized recommendations that dynamically respond to user preferences and feedback

Example Use Cases:

- Creating and refining music playlists to match a user's tastes, mood, and setting
- Recommending movies that align with a user's preferred genres, plot structures, and visual styles
- Curating eBooks that explore a user's favorite themes with characters they will find engaging

Source: Activate analysis

In response to dedicated generative AI platforms, legacy search services have integrated AI into their search experiences; nevertheless, people will still be likely to use dedicated AI platforms

TIMELINE OF SELECT MAJOR GENERATIVE AI CHATBOTS AND SEARCH SERVICES, NOV. 2022-OCT. 2024[1]

GENERATIVE-AI-NATIVE PLATFORMS

Nov. 2022: **OpenAI** releases **ChatGPT** chatbot

Nov. 2022: **Perplexity** releases search service

GENERATIVE-AI-NATIVE TOOLS: Technological breakthroughs drive the launch of generative-AI-native chatbots and search services

Mar. 2023: **Perplexity** releases mobile app[2]

May 2023: **OpenAI** releases **ChatGPT** mobile app[3]

MOBILE APPS: Generative-AI-native chatbots and search services expand their reach by releasing mobile apps

July 2024: **OpenAI** releases **SearchGPT** search service

SEARCHGPT: OpenAI challenges legacy search services by launching SearchGPT, a generative AI search service incorporating real-time information from the web

LEGACY SEARCH SERVICES

GENERATIVE AI TOOLS FROM LEGACY SEARCH SERVICES: Legacy search services respond to new competition, releasing their own generative AI search tools in a bid to protect market share

Feb. 2023: **Microsoft** releases **Bing Chat** search service, later rebranded as **Copilot**

Mar. 2023: **Google** releases **Bard** search service, later rebranded as **Gemini**

MOBILE APPS: Legacy search services release their own generative AI mobile apps

Dec. 2023: **Microsoft** releases **Copilot** mobile app

Feb. 2024: **Google** adds **Gemini** to **Google** mobile app

PLATFORM INTEGRATION: Legacy search services integrate generative AI into traditional search results to meet consumer expectations

May 2024: **Google** integrates **Gemini** into web search with **AI Overviews**

July 2024: **Microsoft** integrates generative AI search summaries into **Bing**

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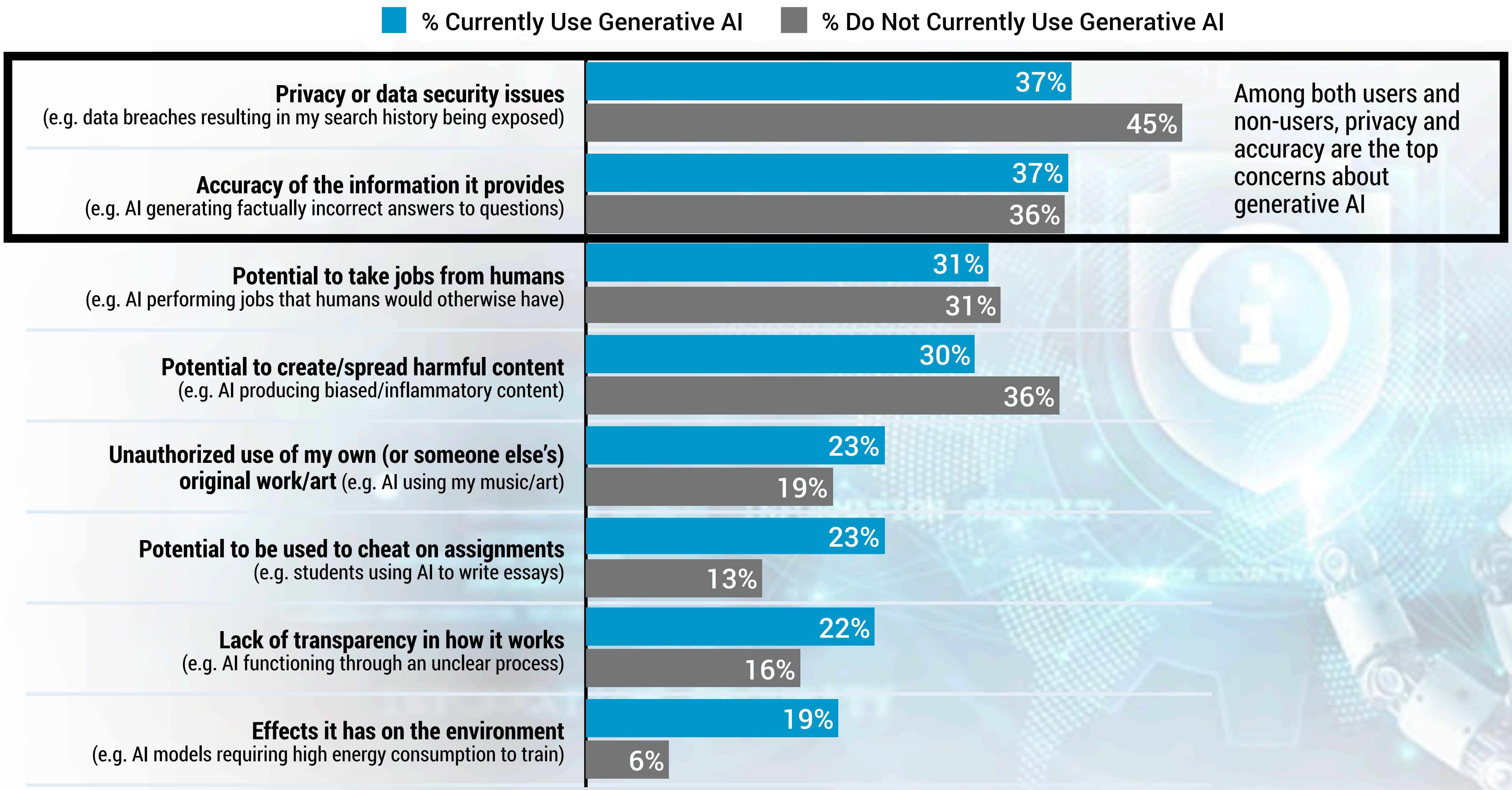
Note: Not exhaustive. 1. As of Oct. 7, 2024. 2. Perplexity launched its iOS app in Mar. 2023 and its Android app in May 2023. 3. OpenAI launched its ChatGPT iOS app in May 2023 and its Android app in July 2023.
Sources: Activate analysis, Company press releases

Widespread consumer adoption of generative AI for search will accelerate as generative AI platforms address concerns about privacy and information accuracy

TOP CONCERNS[1] ABOUT GENERATIVE AI,
U.S., 2024, % ADULTS AGED 18+ WHO ARE AWARE OF GENERATIVE AI BY GENERATIVE AI USAGE



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1. Respondents were asked to select up to three top concerns.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Digital publishers are actively pursuing generative AI partnerships to safeguard against the threat of being left behind by the next generation of search

Content partnership structures are beginning to take shape…

Fixed Licensing Fees	Variable Licensing Fees	Revenue Sharing Agreements
Upfront payment for the right to use a publisher's content to train a generative AI model	Compensation that varies based on the level of user access to or engagement with a publisher's content through generative AI search results	Compensation based on the share of revenue generated whenever a publisher's content is used in generative AI search results

OpenAI

EXAMPLE PARTNERSHIPS

AP ASSOCIATED PRESS · News Corp · The Atlantic · Dotdash meredith · FINANCIAL TIMES · HEARST

perplexity

EXAMPLE PARTNERSHIPS

DER SPIEGEL · Entrepreneur · FORTUNE · TIME

…as publishers without generative AI partnerships in place face existential risks

Web Crawlers Scrape Content Without Restrictions
Search engines use the same web crawlers for AI-generated search results as they do for traditional indexing, preventing digital publishers from blocking access without sacrificing existing search traffic

Generative AI Answers Reduce Digital Publisher Monetization Abilities
AI-generated search results may aggregate content from multiple digital publishers to provide direct answers to user queries, diminishing publisher site traffic and revenue potential

SEO Content Faces Reduced Visibility
Generative AI search results rank content differently from traditional search results, making it more challenging for digital publishers to drive traffic and engagement through typical search marketing strategies

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Sources: Activate analysis, Adweek, BrightEdge, Company press releases, The New York Times, The Seattle Times, TechCrunch, Wired

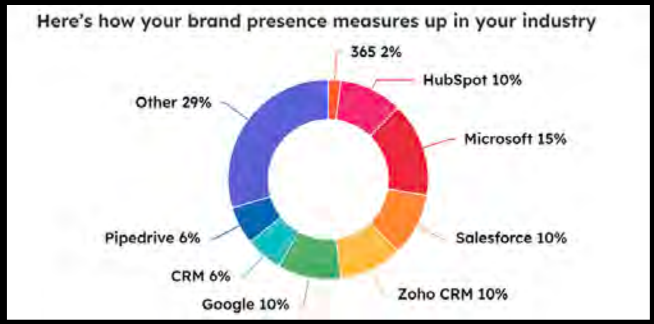
Publishers are adopting new generative engine optimization (GEO) and content licensing tools to improve their performance and discoverability on generative AI platforms as they shift their focus from traditional SEO

EXAMPLE GENERATIVE AI GEO AND CONTENT MANAGEMENT TOOLS

GENERATIVE ENGINE OPTIMIZATION (GEO) & BRAND MANAGEMENT

Profound

Analyzes how brands appear in generative AI search results and offers strategies to increase their visibility, while improving the quality and consistency of how they are featured within those results



HubSpot

Assesses the frequency of a brand's appearance in generative AI search results and the tone/sentiment of those results compared to that of their competitors

PUBLISHER CONTENT LICENSING & PROTECTION

ScalePost

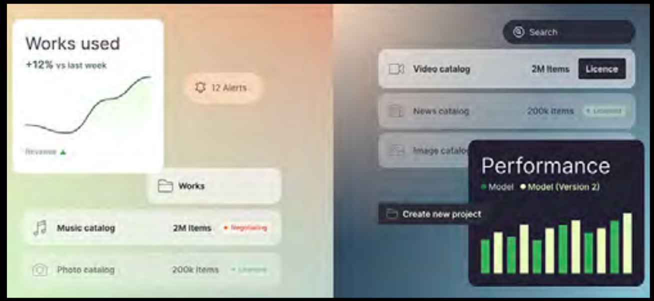
Helps publishers authorize and manage the fair use of their content and assists generative AI platforms in onboarding new publishers to the platforms' content licensing programs

Verify

Assists publishers in licensing, tracking, and authenticating the usage of their content through a traceable smart contract system

TOLLBIT

Allows publishers to set rules and pricing for generative AI platforms to access their content and provides generative AI platforms with cleaner and more digestible publisher data



Human Native.ai

Operates a marketplace in which publishers can make their ready-to-use content and data available to generative AI platforms for training and research

Sources: Activate analysis, Company sites

To get ahead of AI search, and avoid disintermediation, publishers must enhance and differentiate their digital offerings and user experience

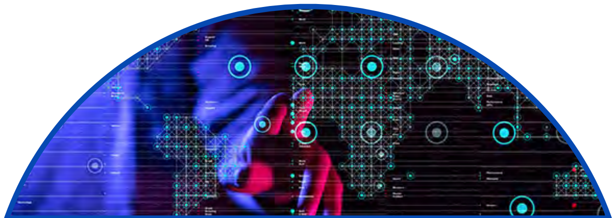
PUBLISHER STRATEGIES TO MAXIMIZE CONSUMER ENGAGEMENT

GATED ACCESS

Placing content behind a paywall or requiring user registration and authentication, restricting access from generative AI web crawlers

ECOMMERCE CAPABILITIES

Facilitating consumer transactions, which generative AI search services cannot currently process directly (e.g. the ability to purchase products or book flights)



REAL-TIME INFORMATION

Offering trustworthy, real-time news and information that is too recent for generative AI models to reliably incorporate into search responses (e.g. live event coverage, real-time market updates)

INTERACTIVE CONTENT

Creating dynamic, interactive content and engaging users in ways AI-generated responses cannot replicate (e.g. through polls, games, comments sections)

MULTIMEDIA FORMATS

Providing rich multimedia content that creates a more engaging consumer experience than AI-generated text (e.g. through podcasts, livestreams)

Source: Activate analysis

ECOMMERCE

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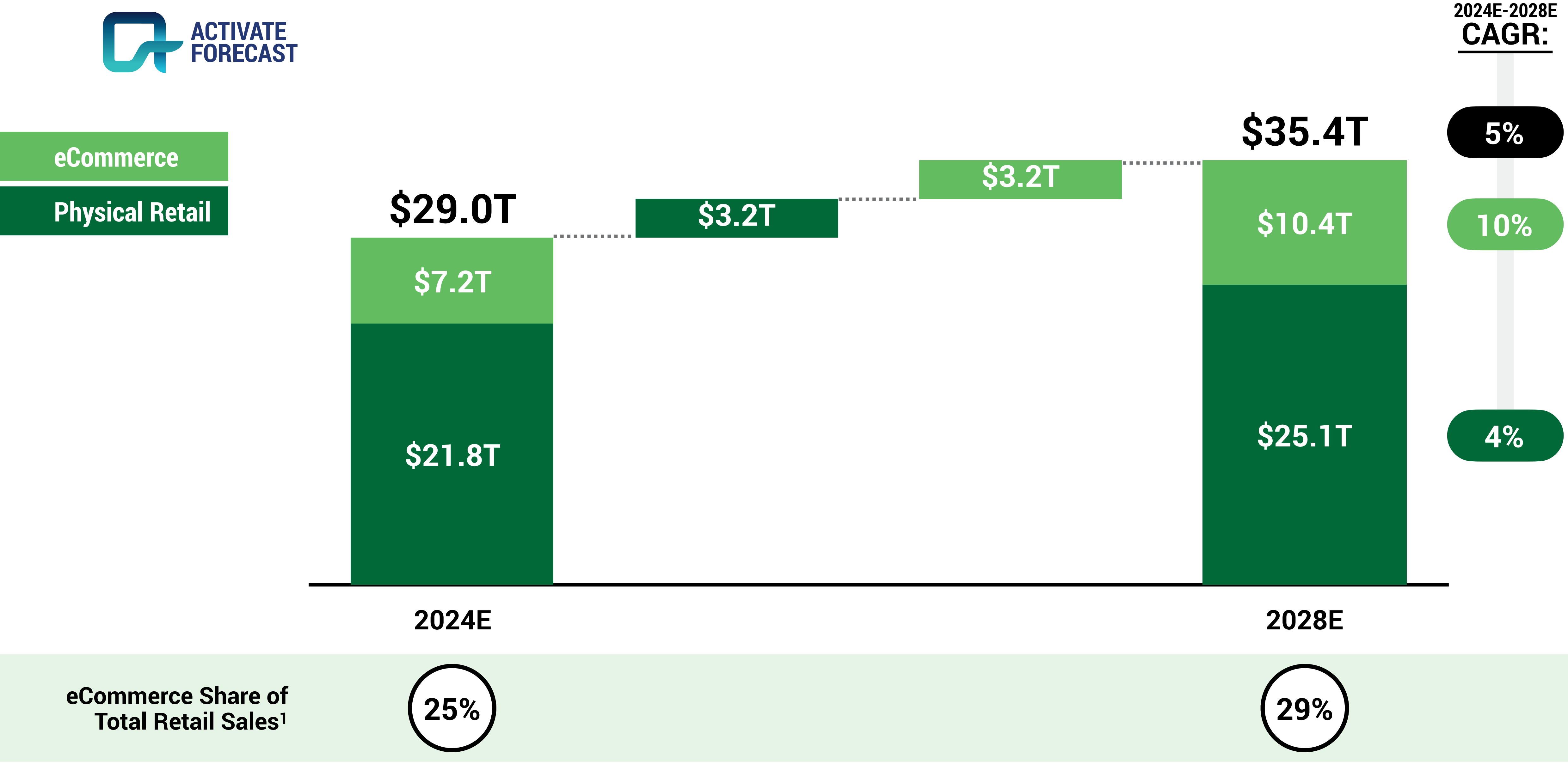
We forecast that global eCommerce and physical retail will each add over $3T growth dollars over the next four years; total eCommerce and physical retail sales will surpass $35T in 2028

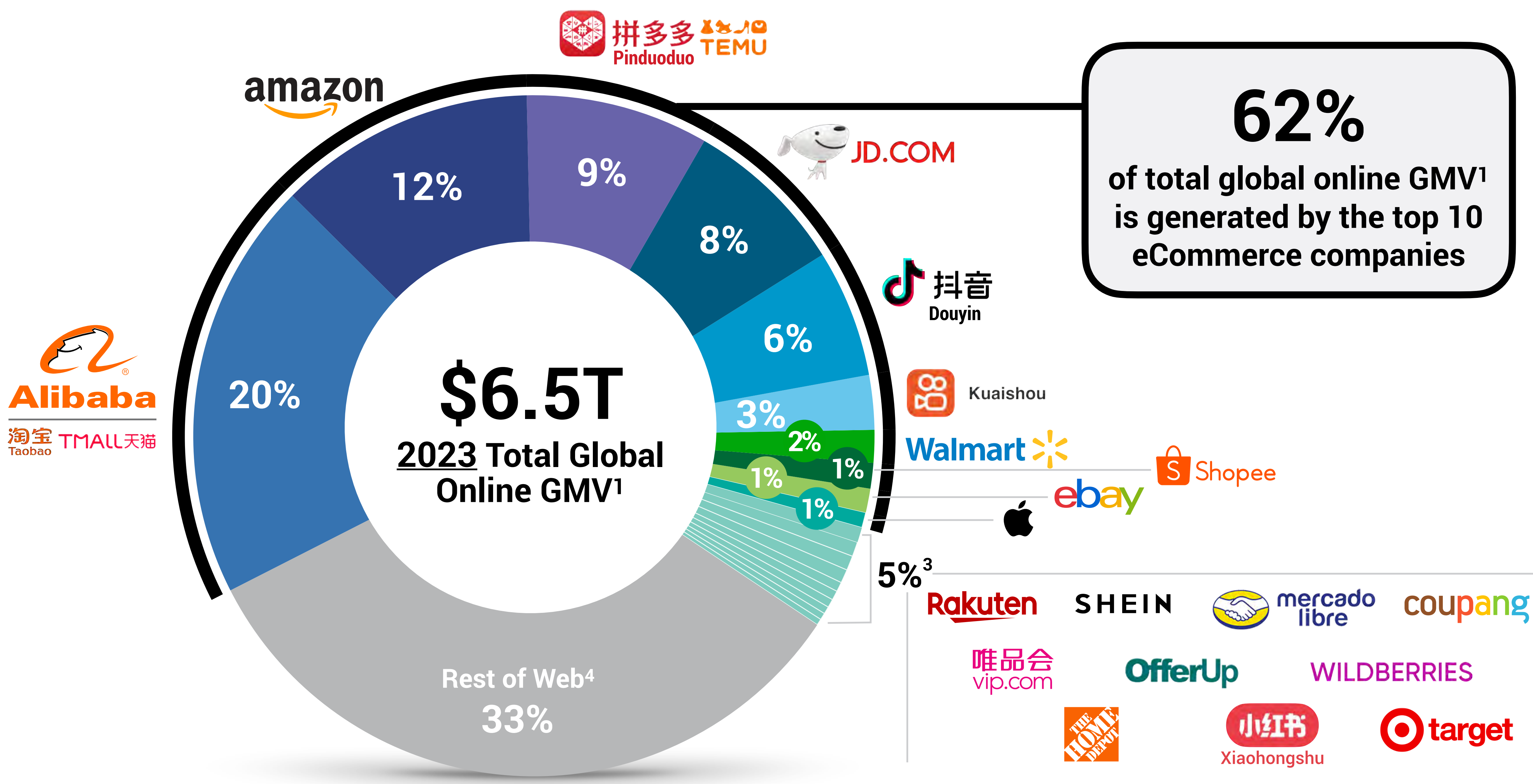
RETAIL SALES[1] BY CHANNEL[2], GLOBAL, 2024E VS. 2028E, TRILLIONS USD



1. Excludes travel and event tickets, food and drink services, and vice goods and activities.
2. Figures do not sum due to rounding.
Sources: Activate analysis, eMarketer, Research and Markets

Global eCommerce merchandise volume will continue to be dominated by the top 10 companies; nevertheless, we expect there will be opportunities for a large set of other retailers

SHARE OF ONLINE GROSS MERCHANDISE VOLUME (GMV)[1] BY COMPANY[2], GLOBAL, 2023, % TOTAL ONLINE GMV[1]



62%
of total global online GMV[1] is generated by the top 10 eCommerce companies

1. Excludes travel and event tickets, food and drink services, and vice goods and activities. 2. Figures do not sum due to rounding. 3. Each company accounts for less than 1% of the total online GMV. 4. Includes all of online GMV not covered by the top 20 eCommerce companies.
Sources: Activate analysis, Company filings, Company press releases, Company sites, Digital Commerce 360, eMarketer, The Financial Times, The Information, KrASIA, Research and Markets, U.S. Internal Revenue Service

eCommerce is a marketplace business, with third-party sellers generating nearly 85% of online GMV for the top 10 eCommerce players

SHARE OF ONLINE GMV[1] OF TOP 10 ECOMMERCE COMPANIES BY SALES TYPE, GLOBAL, 2023, % TOTAL ONLINE GMV[1] OF TOP 10 ECOMMERCE COMPANIES

83%
Marketplace
(Third-Party Sales)

17%
Direct Retail
(First-Party Sales)

SHARE OF ONLINE GMV[1] BY SALES TYPE FOR TOP 10 ECOMMERCE COMPANIES, GLOBAL, 2023, % TOTAL ONLINE GMV[1] BY COMPANY

BUSINESS MODEL	ECOMMERCE COMPANY	MARKETPLACE LAUNCH YEAR	2023 GLOBAL ONLINE GMV[1] MARKETPLACE	VS. DIRECT RETAIL
MARKETPLACE ONLY	Alibaba	2003	100%	
	拼多多 Pinduoduo	2015	100%	
	抖音 Douyin	2018	100%	
	Kuaishou	2019	100%	
	Shopee	2015	100%	
	ebay	1995	100%	
HYBRID	amazon	1999	64%	36%
	JD.COM	2010	50%	50%
	Walmart	2009	12%	88%
DIRECT RETAIL ONLY	Apple	N/A		100%

9 of the top 10 global eCommerce players operate a marketplace

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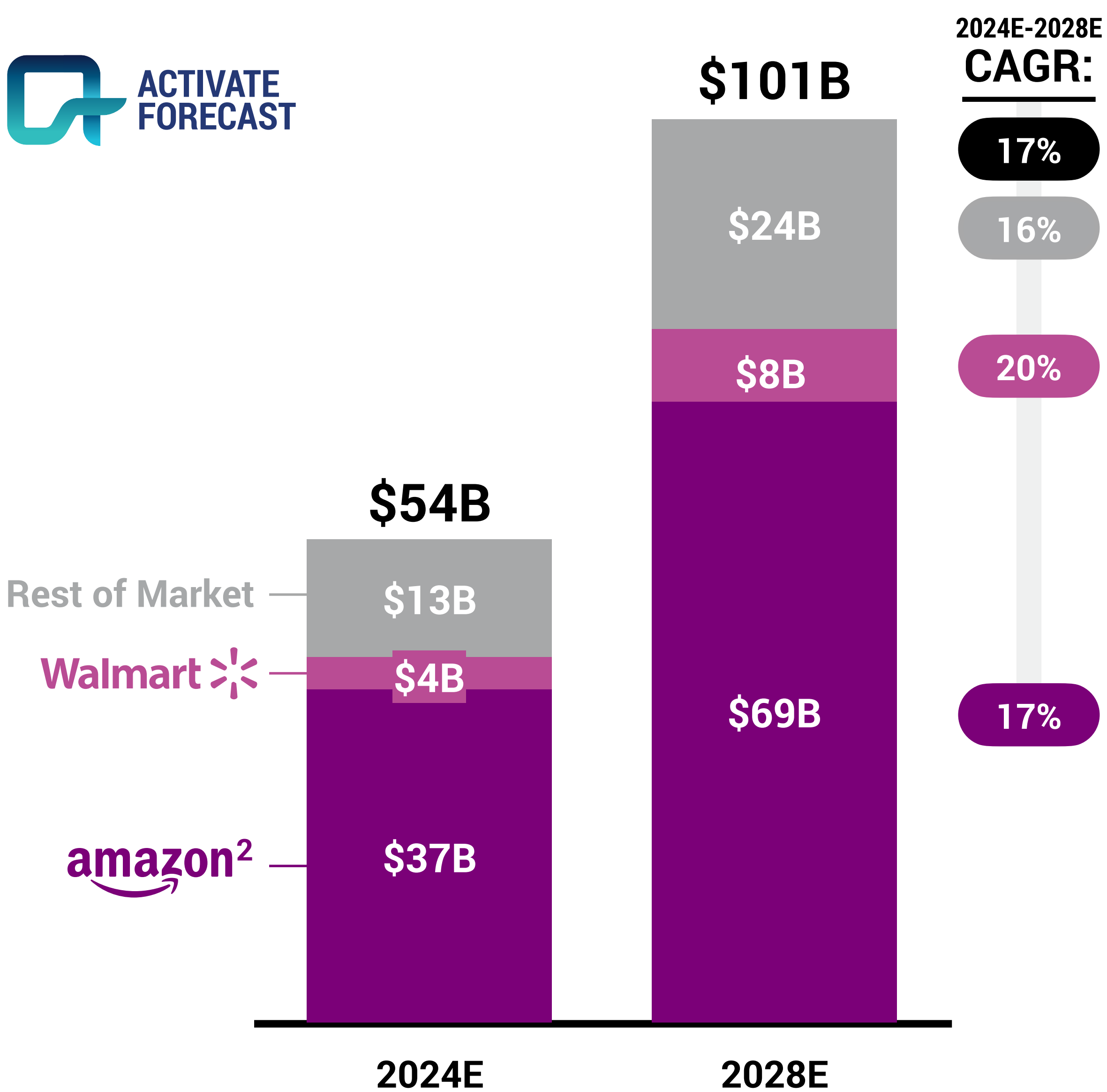
1. Excludes travel and event tickets, food and drink services, and vice goods and activities.
Sources: Activate analysis, Company filings, Company press releases, Company sites, Digital Commerce 360, eMarketer, The Information, KrASIA, Research and Markets, U.S. Internal Revenue Service

Retailers are becoming media companies; we forecast that U.S. retail media revenue will nearly double over the next four years, reaching over $100B by 2028

RETAIL MEDIA NETWORK ADVERTISING REVENUE[1] BY COMPANY, U.S., 2024E VS. 2028E, BILLIONS USD



EXAMPLES OF RETAIL MEDIA SOLUTIONS USED BY RETAILERS

Retail media solutions for retailers include:

- **Supply-facing solutions** (such as ad serving and monetization)
- **Demand-facing solutions** (such as ad sales and media activation)

EXAMPLES

CRITEO, Google, theTradeDesk, yahoo!

Epsilon / CitrusAd, Microsoft[3] / PromoteIQ, Neptune Retail Solutions / Quotient, Bridg / rippl

INMAR intelligence, instacart, SWIFTLY, ROKT

vibenomics, kevel, koddi, dunnhumby

PACVUE, skai, MOLOCO, TOPSORT

CommerceIQ, Flywheel, Stackline, Quartile

In addition to these retail media solutions, retailers will also need support with optimizing the holistic on-site shopping experience, across both sponsored and organic discovery

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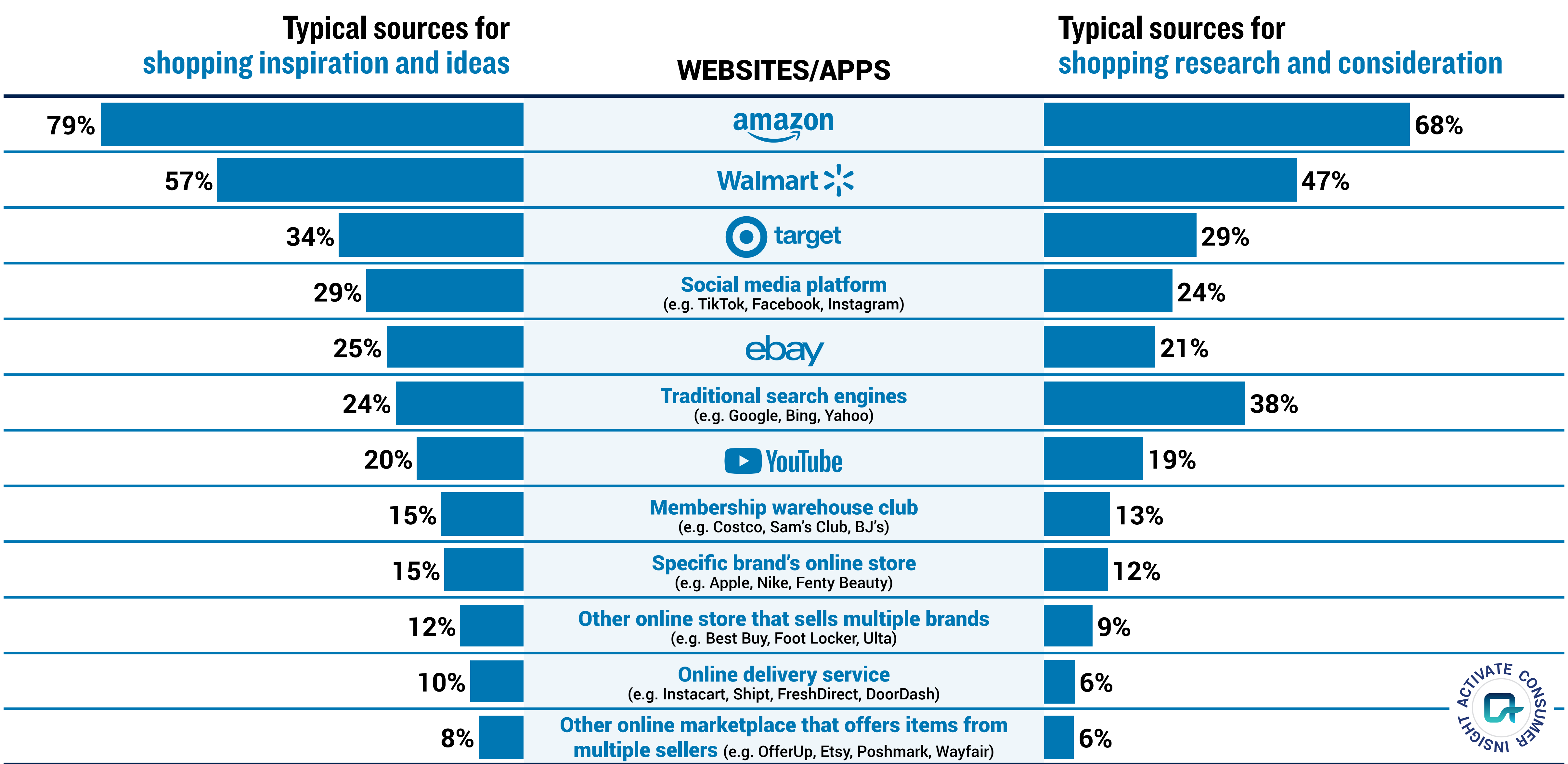
1. Includes revenue from on-site, off-site, and in-store retail media. 2. Excludes Amazon OTT ad revenue (e.g. from Prime Video, Twitch, Fire TV), as ads on these platforms are not typically purchased using retail media data. 3. While official announcements have not yet been made, reporting indicates that Microsoft will be shuttering PromoteIQ.
Sources: Activate analysis, Barclays, Company filings, Company press releases, Company sites, Digiday, eMarketer, GroupM, MAGNA

Today's consumers are multi-channel shoppers – using a range of online channels for shopping inspiration and research – including retail, social, and search

WEBSITES/APPS TYPICALLY USED FOR SHOPPING INSPIRATION AND RESEARCH, U.S., 2024, % ONLINE SHOPPERS[1]



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1. "Online shoppers" are defined as adults aged 18+ who shopped online at least once in the last 12 months. Shopping includes browsing as well as making purchases.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Younger online shoppers are more likely to use social platforms over traditional search engines for both inspiration and research

TOP WEBSITES/APPS TYPICALLY USED FOR SHOPPING INSPIRATION AND RESEARCH BY AGE GROUP,
U.S., 2024, % ONLINE SHOPPERS[1] BY AGE GROUP

ACTIVATE CONSUMER INSIGHT

	Top 5 websites/apps typically used for shopping inspiration and ideas			Top 5 websites/apps typically used for shopping research and consideration		
	Aged 18-34	Aged 35-54	Aged 55+	Aged 18-34	Aged 35-54	Aged 55+
1	amazon 71%	amazon 80%	amazon 82%	amazon 62%	amazon 72%	amazon 70%
2	Walmart 60%	Walmart 65%	Walmart 48%	Walmart 52%	Walmart 55%	Traditional Search (e.g. Google, Bing, Yahoo) 46%
3	target 43%	target 45%	Traditional Search (e.g. Google, Bing, Yahoo) 26%	Social (e.g. TikTok, Facebook, Instagram) 38%	target 38%	Walmart 38%
4	Social (e.g. TikTok, Facebook, Instagram) 40%	Social (e.g. TikTok, Facebook, Instagram) 38%	ebay 24%	target 38%	Traditional Search (e.g. Google, Bing, Yahoo) 36%	ebay 17%
5	YouTube 29%	ebay 27%	target 20%	YouTube 29%	Social (e.g. TikTok, Facebook, Instagram) 31%	target 15%

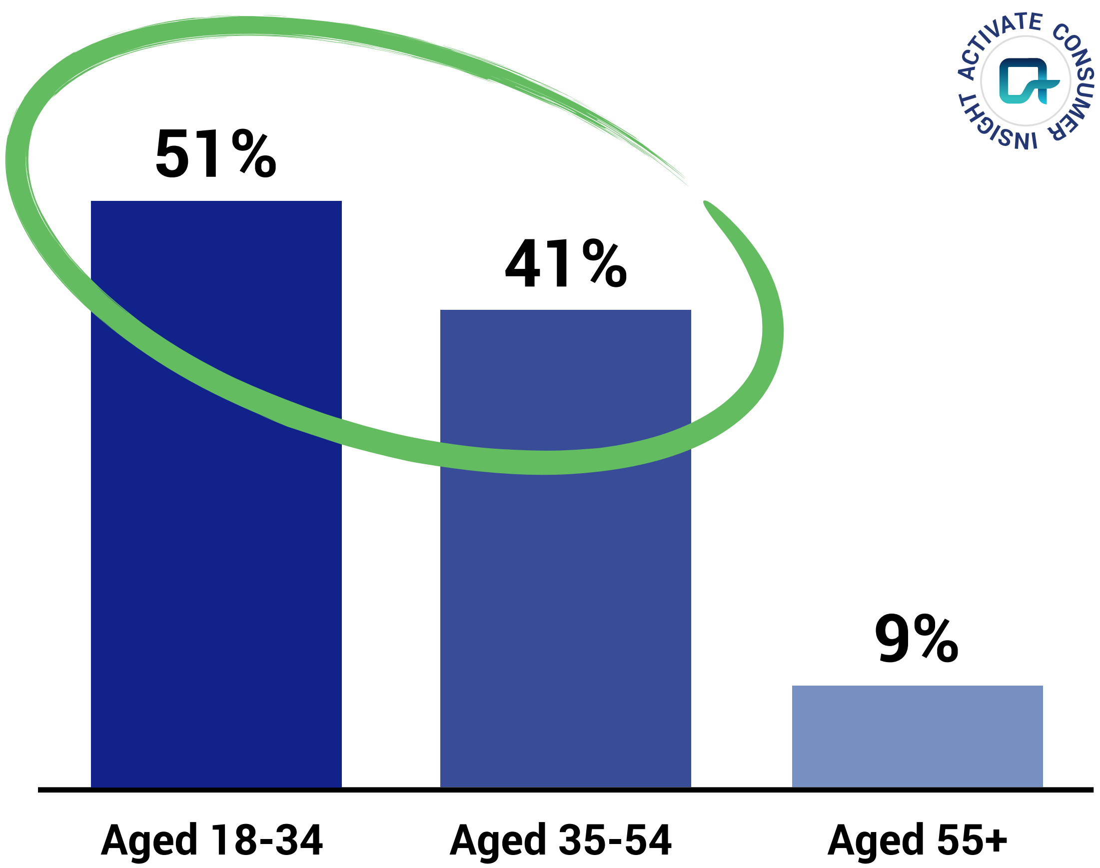
- Traditional search engines are being eclipsed, with younger online shoppers more likely to use social platforms for both product inspiration and research
- As a result, retailers are launching direct integrations with social platforms; most notably, Amazon is in the process of rolling out integrations with Meta, TikTok, Snap, and Pinterest
- Through these integrations, consumers can link their Amazon account and seamlessly purchase items from Amazon ads without leaving the social platform

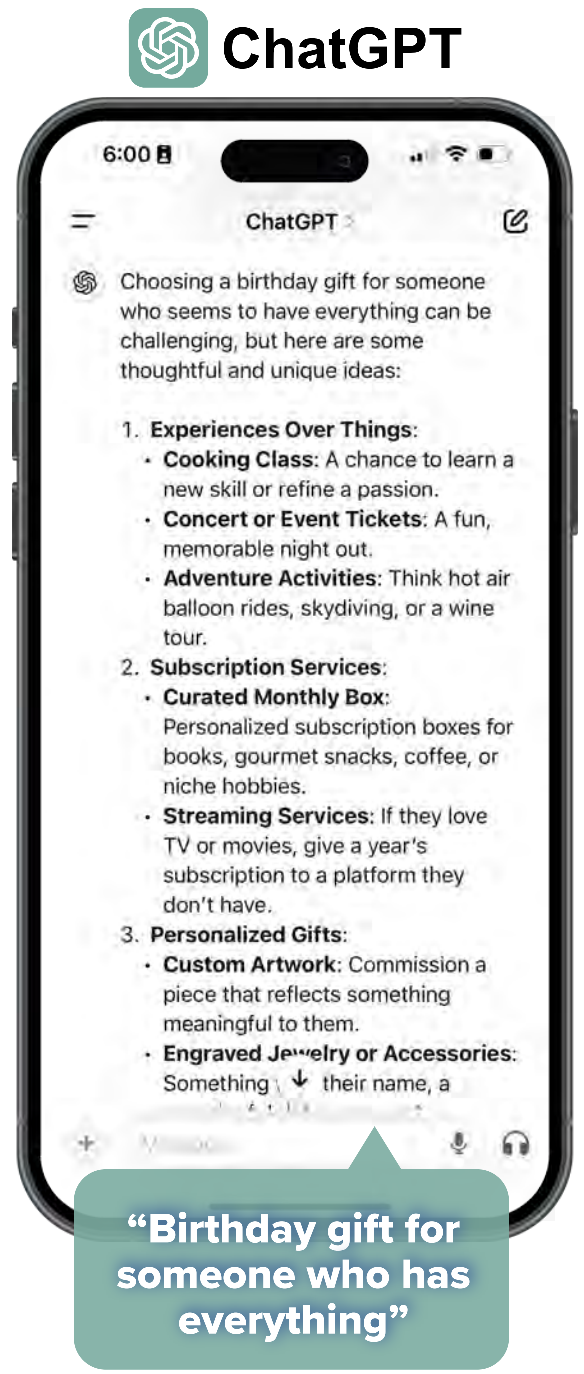
1. "Online shoppers" are defined as adults aged 18+ who shopped online at least once in the last 12 months. Shopping includes browsing as well as making purchases.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company press releases, Company sites, The Information

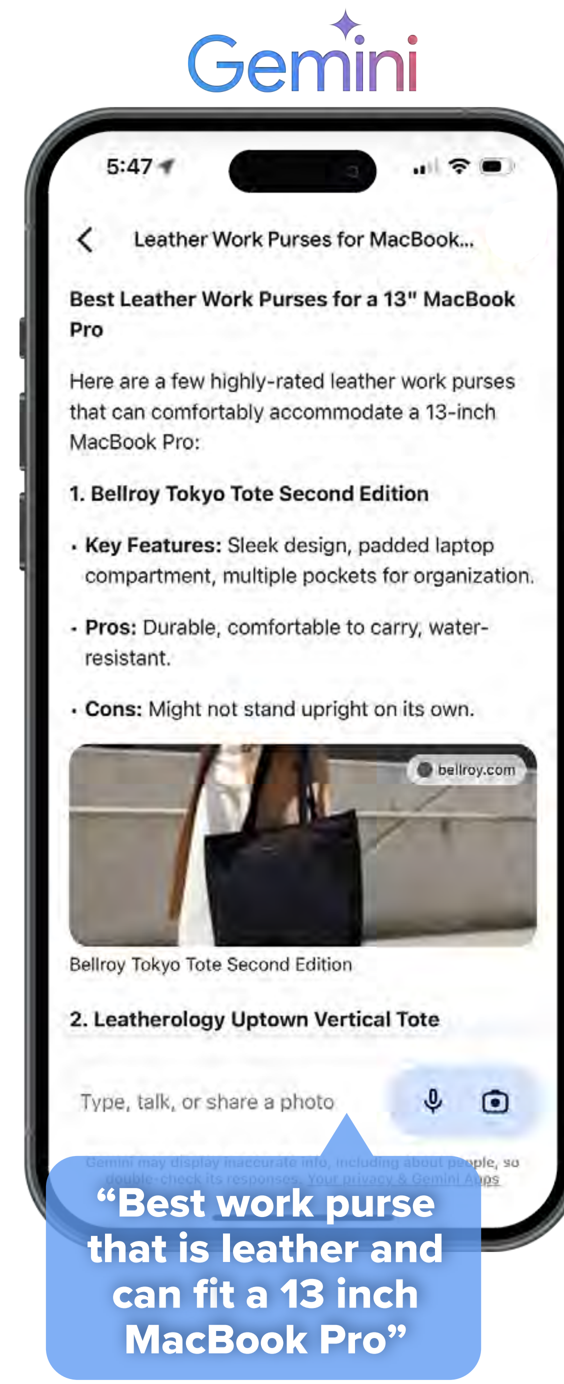
ChatGPT and other generative AI search services are quickly becoming a mainstream source for inspiration and research; looking ahead, all retail platforms will need to integrate generative AI shopping assistant tools

USAGE OF GENERATIVE AI SEARCH SERVICE FOR SHOPPING INSPIRATION OR RESEARCH IN THE LAST 12 MONTHS BY AGE GROUP, U.S., 2024, % ONLINE SHOPPERS[1] BY AGE GROUP

Share of online shoppers[1] that used a generative AI search service (e.g. ChatGPT, Google Gemini) **to find shopping inspiration and ideas or to do shopping research in the last 12 months**







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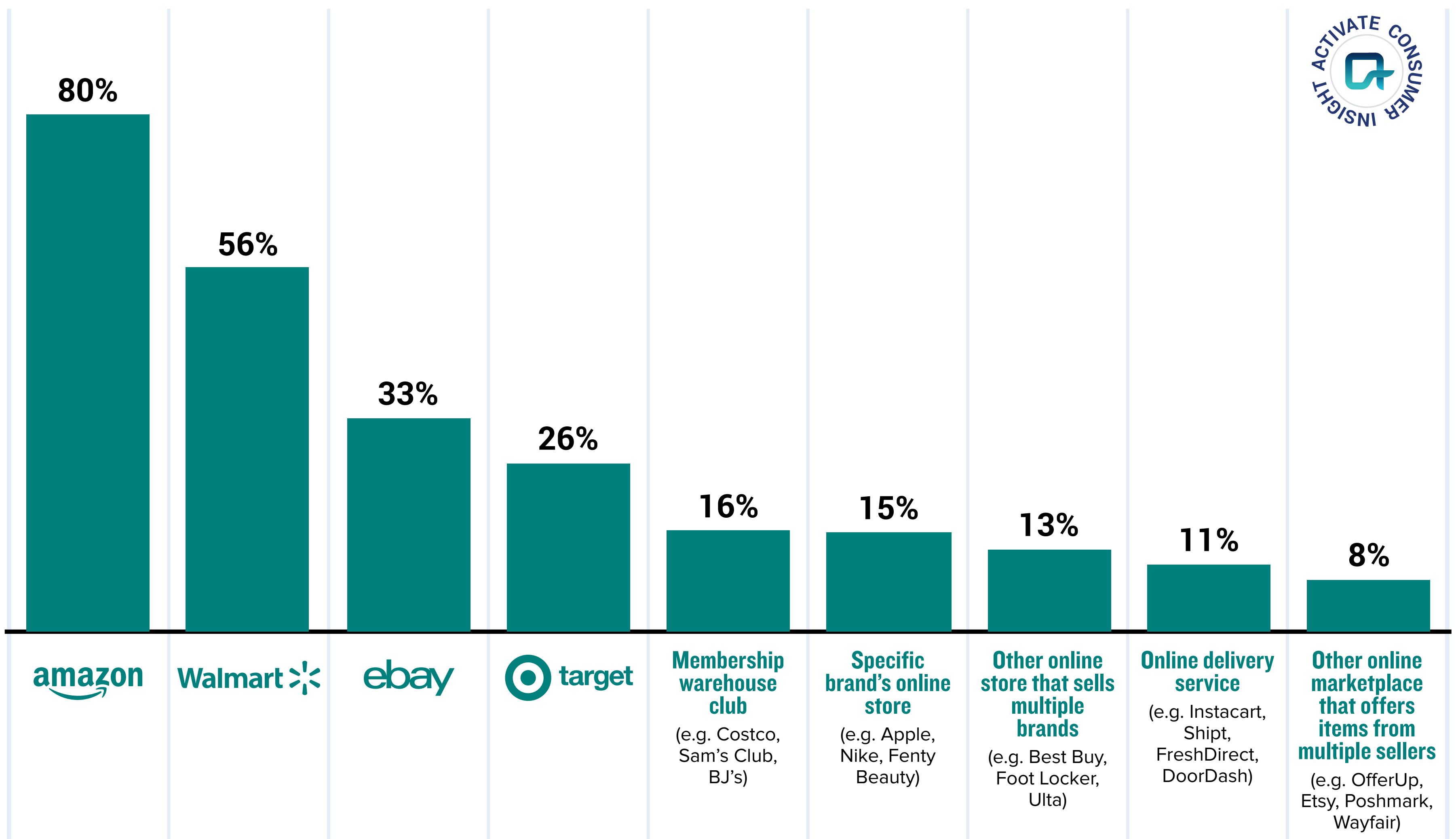
1. "Online shoppers" are defined as adults aged 18+ who shopped online at least once in the last 12 months. Shopping includes browsing as well as making purchases.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company sites

As consumers purchase across a broad set of online channels, brands will need to pursue multi-channel sales strategies, including marketplaces and other retailers, as well as direct-to-consumer platforms

WEBSITES/APPS PURCHASED FROM IN THE LAST 12 MONTHS, U.S., 2024, % ONLINE PURCHASERS[1]



CHALLENGES OF MULTI-CHANNEL MANAGEMENT FOR BRANDS

- **BRANDING AND VALUE PROPS**
  Maintaining the same brand identity across online channels
- **DEMAND & SUPPLY PLANNING**
  Optimizing assortment and inventory allocation across online channels
- **PRICING**
  Ensuring consistent prices and promotions across online channels
- **RETAIL MEDIA**
  Determining the optimal ad spend allocation and tactics across online channels
- **EXPERIENCE**
  Coordinating across online channels to deliver a uniform customer experience
- **DATA ANALYTICS**
  Unifying customer data and insights across online channels

Brands cannot rely on D2C alone to scale; they will need to sell through marketplaces and other online channels

Winning brands will be those that can navigate the unique set of challenges related to multi-channel management

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1. "Online purchasers" are defined as adults aged 18+ who made an online purchase at least once in the last 12 months.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

To meet the needs of today's multi-channel shoppers and drive eCommerce growth, brands and retailers will integrate large commerce tech stacks across a range of enablement providers

ACTIVATE ECOMMERCE ENABLEMENT FRAMEWORK

CORE ECOMMERCE PLATFORMS	CUSTOMER RELATIONSHIP MANAGEMENT	MARKETING	SEARCH ENGINE OPTIMIZATION	FRONTEND & STOREFRONT BUILDING	CONTENT MANAGEMENT	SEARCH & DISCOVERY	PRODUCT INFORMATION	PRICING
Adobe Commerce	HubSpot	attentive	BRIGHTEDGE	alokai	contentful	algolia	akeneo	Feedvisor
commercetools	Microsoft Dynamics 365	braze	conductor	shōgun	CONTENTSTACK	bloomreach	inriver	Intelligence Node
shopify	salesforce	klaviyo	SEMRUSH	tapcart	storyblok	Constructor	SALSIFY	omniaretail

MARKETPLACE	VIRTUAL STORE CREATION	LIVESTREAM SHOPPING	VIRTUAL VISUALIZATION & FIT TOOLS	SUBSCRIPTIONS	CHECKOUT & PAYMENTS	POS FINANCING	FRAUD PROTECTION
MIRAKL	byondxr	buywith_	nextech3D.ai	recharge	BOLT	affirm	FORTER
UNIRGY	EMPERIA	CS	PERFECT	Recurly	PayPal	afterpay	riskified
VTEX	Obsess	talkshoplive	TRUE FIT	Repeat	stripe	Klarna.	Signifyd

DEMAND & SUPPLY PLANNING	FULFILLMENT LOGISTICS	ORDER TRACKING EXPERIENCE	CUSTOMER REVIEWS & CONTENT	RETURNS	RE-COMMERCE	CUSTOMER SUPPORT	LOYALTY & REWARDS	DATA ANALYTICS
ORACLE	amazon	aftership	bazaarvoice	Happy Returns	ARCHIVE	freshworks	rise.ai	daasity
RELEX	Manhattan	malomo	Okendo	loop	THREDUP	gorgias	Talon.One	Heap
Toolio	shippo	narvar	POWER REVIEWS	optoro	TROVE	zendesk	yotpo.	Numerator

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Note: Not exhaustive.
Sources: Activate analysis, Company press releases, Company sites

Shifting consumer habits, new retail formats, value props, and buying experiences will reshape the future of eCommerce

KEY CONSUMER ECOMMERCE TRENDS AND EXAMPLE STRATEGIES IN RESPONSE FROM MAJOR RETAILERS IN 2024

Deep-Discount Marketplaces

Consumers will shift spend to marketplaces, such as Temu and Shein, that specialize in extremely low-priced items by shipping directly from international manufacturers

Example Strategy: Amazon is reportedly launching a deep-discount storefront on its platform, allowing direct shipments from China-based manufacturers

Re-Commerce

Consumers will demand resale and rental options for greater sustainability, lower prices, and more frequent item refreshes

Example Strategy: Walmart debuted an expanded resale storefront and became the first third-party sales partner for resale platform StockX

Paid and Free Loyalty Memberships

Consumers will prioritize retail companies with strong paid shopping program memberships and free loyalty programs

Example Strategy: Target introduced a paid shopping program membership and upgraded the benefits of its free loyalty program

In-Game Shopping

Consumers will seek to do real-world shopping activities in their favorite immersive virtual worlds

Example Strategy: Roblox partnered with Shopify as its first commerce integration partner to enable in-game purchases of physical items

Omni-Channel Retail

Consumers will value retail companies that provide an omni-channel shopping experience, seamlessly blending online and in-store

Example Strategy: Best Buy made updates to its mobile app and physical locations specifically designed to better integrate the two for enhanced in-store shopping

Flexible Fulfillment

Consumers will require delivery and pickup optionality, including same-day and scheduled options

Example Strategy: Albertsons expanded its Instacart partnership (launching 30-minute convenience item delivery and extending pickup) and entered into a partnership with Grubhub (becoming its first national grocery partner)

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Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Chain Store Age, Company press releases, Company sites, Digital Commerce 360, The Information, Modern Retail, Retail Dive, Retail TouchPoints, Supermarket News, USA TODAY, Yahoo Finance

In this complex environment, eCommerce businesses will need to optimize against their key performance drivers

Marketing Effectiveness

Optimize marketing spend allocation (including data and segmentation, evaluation of existing solutions and partner ecosystems) **to maximize customer acquisition and retention**

Pricing

Build differentiated and dynamic pricing capabilities

Loyalty

Create rewards programs (including structure, tiering, and benefits) **and other loyalty initiatives to drive customer satisfaction**

Merchandising and Assortment

Implement a sophisticated approach to portfolio optimization and expansion to align with customer needs

Customer Experience and Service

Define the seamless customer shopping journey from inspiration to post-purchase, aligning with new discovery and buying habits

Channel and Ecosystem

Maximize market reach and commercial impact by identifying high-potential channels and strategic ecosystem partners

Brand

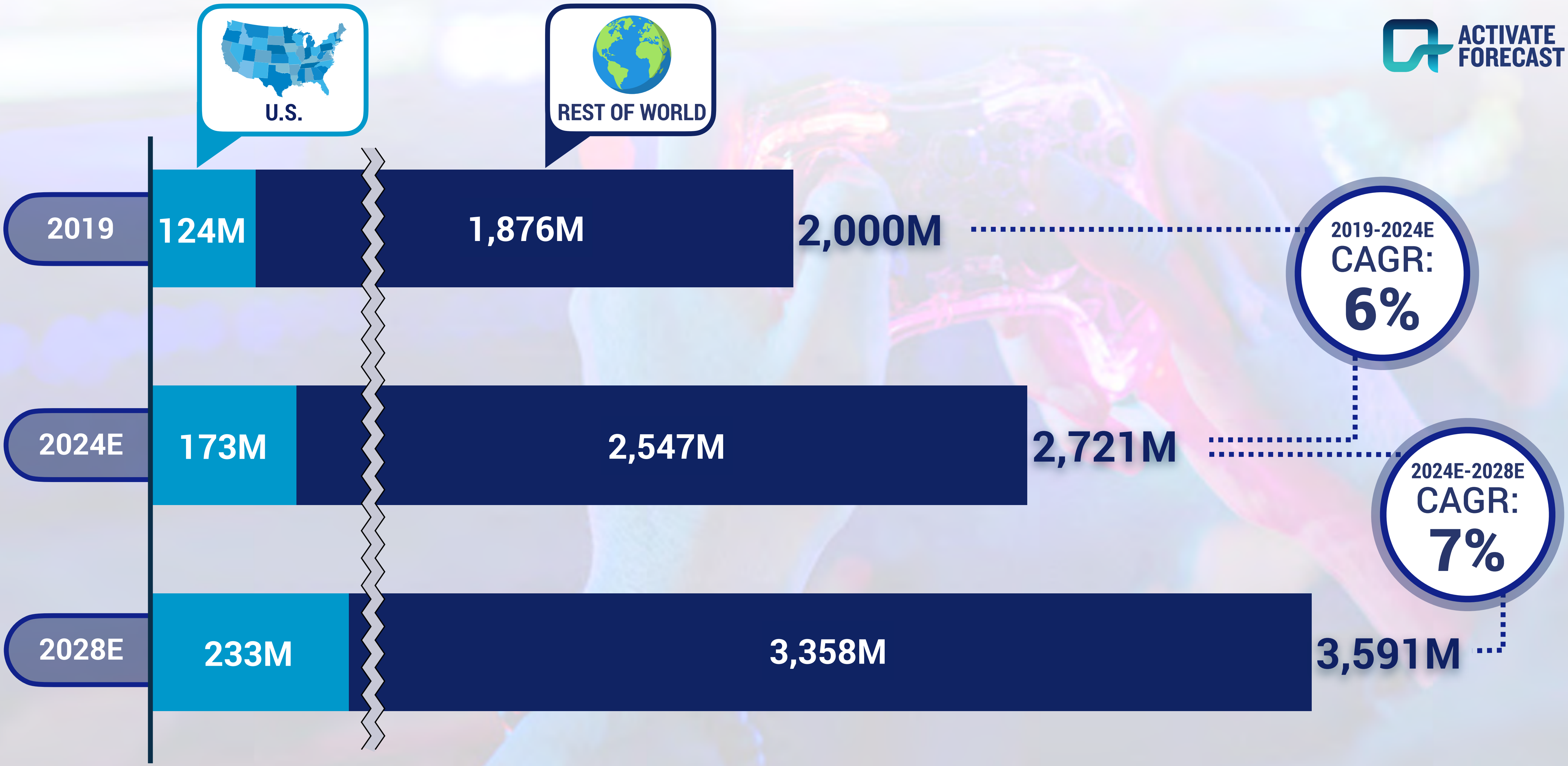
Differentiate positioning and showcase unique value propositions

Source: Activate analysis

VIDEO GAMING

Video gaming is one of the most widespread global digital behaviors, with active gamers reaching over 3.5B by 2028

GAMING POPULATION BY REGION[1], GLOBAL, 2019 VS. 2024E VS. 2028E, MILLIONS GAMERS[2]



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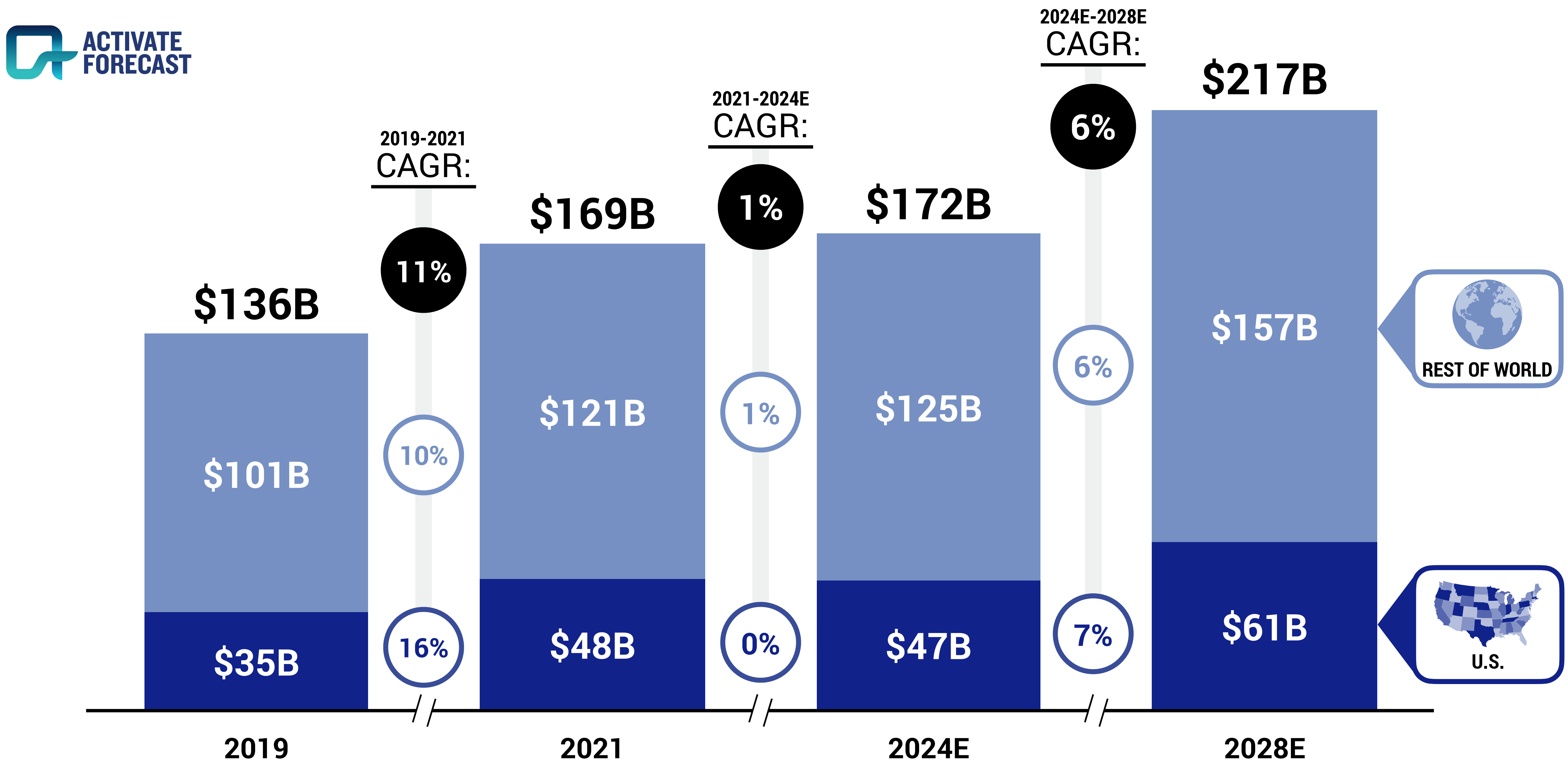
1. Figures do not sum due to rounding. 2. "Gamers" are defined as adults aged 18+ who currently play video games.
Sources: Activate analysis, Activate 2019 Consumer Technology & Media Research Study (n = 4,006), Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Newzoo, Statista Market Research, U.S. Census Bureau

We forecast that global consumer video game revenue will reach over $200B by 2028, delivering healthy growth

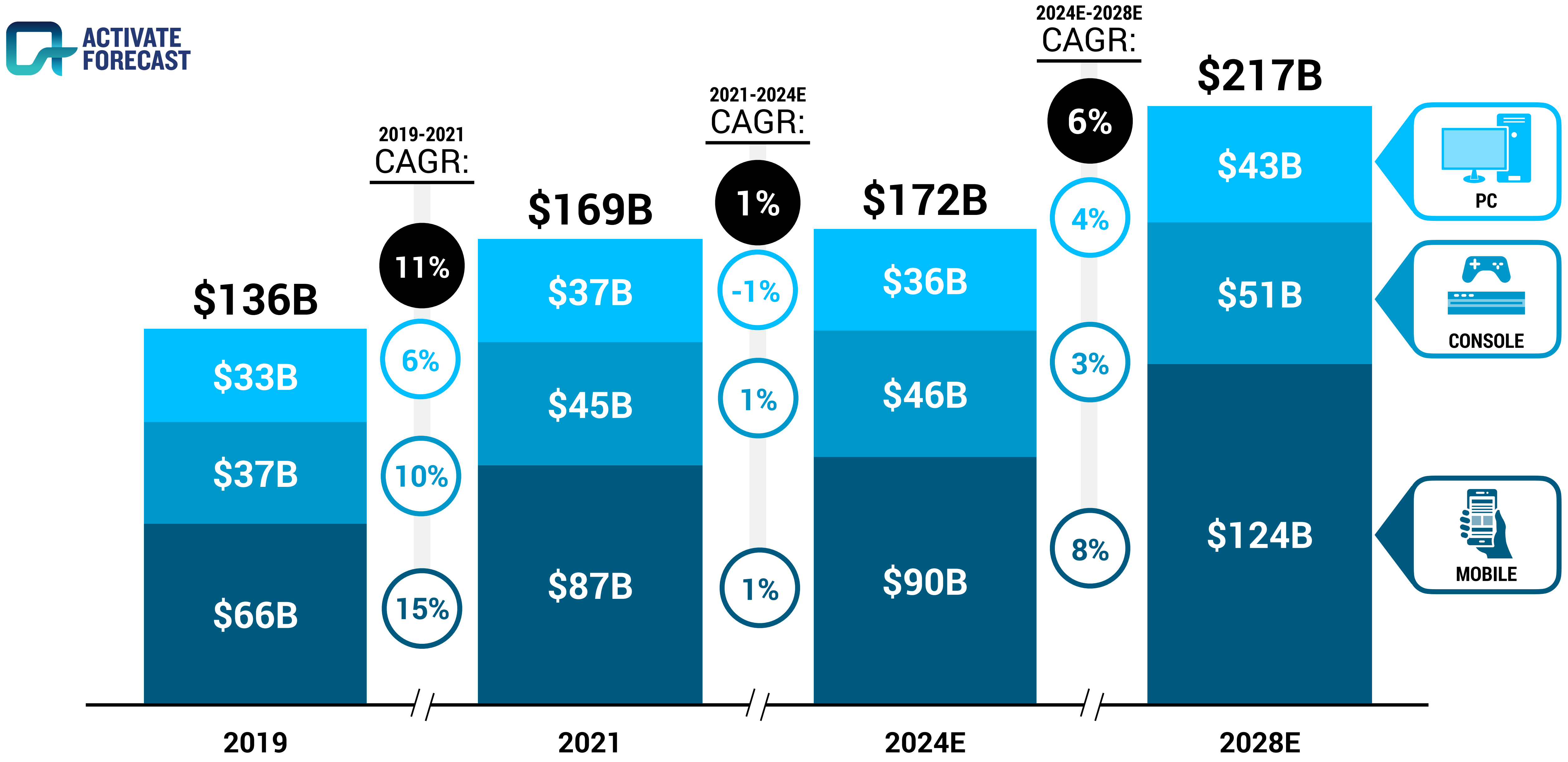
CONSUMER VIDEO GAME REVENUE BY REGION[1], GLOBAL, 2019 VS. 2021 VS. 2024E VS. 2028E, BILLIONS USD



1. Excludes hardware and device sales, augmented/virtual reality content, and advertising. Figures do not sum due to rounding.
Sources: Activate analysis, Newzoo, Omdia, PricewaterhouseCoopers, Statista Market Research

Mobile gaming makes up more than half of revenues today and will see the most growth moving forward

CONSUMER VIDEO GAME REVENUE BY PLATFORM[1], GLOBAL, 2019 VS. 2021 VS. 2024E VS. 2028E, BILLIONS USD



1. Excludes hardware and device sales, augmented/virtual reality content, and advertising. Figures do not sum due to rounding.
Sources: Activate analysis, Newzoo, Omdia, PricewaterhouseCoopers, Statista Market Research

The majority of top earning PC/console games are installments in existing game franchises, with very few new games breaking into the top 10

TOP-EARNING[1] PAID PC AND CONSOLE VIDEO GAME TITLES, U.S., 2021-2023

Sequel | New Franchise[2]

	2021	2022	2023
1	**Call of Duty:** Vanguard	**Call of Duty:** Modern Warfare II	**Hogwarts Legacy**
2	**Call of Duty:** Black Ops Cold War	**Elden Ring**	**Call of Duty:** Modern Warfare III
3	**Madden NFL 22**	**Madden NFL 23**	**Madden NFL 24**
4	**Pokemon:** Brilliant Diamond / Shining Pearl	**God of War:** Ragnarok	**Marvel's Spider-Man 2**
5	**Battlefield 2042**	**Lego Star Wars:** The Skywalker Saga	**The Legend of Zelda:** Tears of the Kingdom
6	**Marvel's Spiderman**	**Pokemon Scarlet/Violet**	**Diablo IV**
7	**Mario Kart 8**	**FIFA 23**	**Call of Duty:** Modern Warfare II
8	**Resident Evil:** Village	**Pokemon Legends:** Arceus	**Mortal Kombat 1**
9	**MLB:** The Show 21	**Horizon 2:** Forbidden West	**Star Wars:** Jedi Survivor
10	**Super Mario 3D World**	**MLB:** The Show 22	**EA Sports FC 24**

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1. Earnings includes the revenue generated from the purchase of the game itself. Excludes in-game advertising or purchases.
2. “New Franchise” is defined as the first installment in a new franchise, or a standalone game not connected to an existing game franchise.
Sources: Activate analysis, Circana, Forbes, Statista Market Research

Top franchises are controlled by the largest global gaming companies

TOP 10 PUBLIC GAMING COMPANIES BY MARKET CAP[1] AND 2023[2] GAMING REVENUE[3], GLOBAL, 2024/2023, BILLIONS USD

		Market Cap	Gaming Revenue	
1	Microsoft	$3,106B	Gaming Revenue[3]: $22B	Call of Duty; Halo; Minecraft
2	Tencent 腾讯	$522B	$25B	Honor of Kings; League of Legends; Valorant
3	SONY	$115B	Gaming Revenue[4]: $30B	God of War; Marvel's Spiderman; Uncharted
4	Nintendo	$62B	$12B	Pokémon; Super Mario; The Legend of Zelda
5	NetEase Games	$57B	Gaming Revenue[5]: $11B	Blood Strike; Identity V; Knives Out
6	sea	$55B	Gaming Revenue[6]: $2B	Black Clover; Free Fire; Speed Drifters
7	Electronic Arts	$38B	$8B	Battlefield 2024; EA Sports FC; Madden
8	ROBLOX	$27B	$3B	Roblox
9	Take Two Interactive	$27B	$5B	Grand Theft Auto; NBA 2K; Red Dead Redemption
10	NEXON	$16B	$3B	Blue Archive; KartRider; MapleStory

1. Market capitalizations as of market close on Oct. 7, 2024. 2. Revenue represents 2023 calendar year unless otherwise noted. 3. Excludes all non-gaming related revenues. 3. Revenue reflects the Microsoft fiscal year from June 2023 to June 2024. 4. Represents revenue from the "Game & Network Services" revenue segment. 5. Represents revenue from the "Games and Related Value-Added Services" revenue segment. 6. Represents revenue from the "Digital Entertainment Business" revenue segment.
Sources: Activate analysis, Company filings, Company press releases, Company sites

Technology companies are building out their capabilities and assets to become full-stack gaming enterprises

SELECT MAJOR TECHNOLOGY COMPANIES' PRESENCE IN GAMING

✱ Announced, not yet released

	amazon	Apple	Google	Meta	Microsoft	NETFLIX	Nintendo	SONY	Tencent	VALVE
GAME PUBLISHER	amazon games			oculus studios; oculus publishing	XBOX GAME STUDIOS; ACTIVISION; BLIZZARD	night school; Next Games; BOSSFIGHT; SPRYFOX	Nintendo	Sony Interactive Entertainment	Tencent Games	VALVE
VIRTUAL WORLD	amazon anywhere			horizon Worlds; REALITY LABS	MINECRAFT					garry's mod[1]
CONSOLE[2]					XBOX		NINTENDO SWITCH	PlayStation	logitech G handheld Co-development	STEAM DECK
SPATIAL COMPUTING: AR/VR		Vision Pro		Meta Quest Pro; Meta Quest 3	Microsoft HoloLens 2[3]			PlayStation VR2; Sony Spatial Content Creation System ✱		STEAMVR; VALVE INDEX
CLOUD	luna			facebook gaming[4]	CLOUD GAMING[5]	NETFLIX GAMES	NINTENDO SWITCH CLOUD STREAMING[6]	PlayStation Plus[7]	START云游戏	STEAM CLOUD PLAY
APP STORE	amazon appstore	App Store	Google Play	Meta Quest Store	Microsoft Store; MOBILE STORE ✱		My Nintendo	PlayStation Store	腾讯应用宝 Tencent App Store	STEAM
SUBSCRIPTION SERVICE	luna; prime gaming	Arcade	Google Play Pass	Meta Quest+	GAME PASS; CLOUD GAMING[5]	NETFLIX GAMES	ONLINE Nintendo Switch Online	PlayStation Plus	START云游戏	
GAMING AS VIDEO	Twitch		YouTube	facebook gaming[4]					企鹅电竞 EGAME; HUYA; trovo	STEAM TV

Note: Not exhaustive. As of Sept. 2024. Does not include areas in which a company is a majority stakeholder.
1. Engine created by Valve and game eventually published by Valve, but independently developed by Garry Newman and Facepunch Studios.
2. Excludes devices with a primary purpose other than gaming (e.g. Apple TV). 3. In Oct. 2024, Microsoft announced they are discontinuing production of the HoloLens 2, with software support ending Dec. 2027. 4. Meta does not offer a standalone cloud service but allows streaming of select games through Facebook on Android and web. The standalone Facebook Gaming app for iOS and Android was shut down in Oct. 2022, but gaming features will remain available in the main Facebook app. 5. Only available through a bundle with Xbox Game Pass Ultimate. 6. On a game-by-game basis, not as a subscription or service. 7. Only available through a bundle with PlayStation Plus Premium subscription.
Sources: Activate analysis, Company press releases, Company sites

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Mobile gamers prefer Puzzle games, console gamers prefer Arcade and Fighting games, and PC gamers more frequently play MOBAs

TOP MOBILE GAME GENRES[1], U.S., 2024, % MOBILE GAMERS[2]

87% of gamers[5] play **mobile games**

Rank	Genre	% Usage[1]
1	Puzzle	48%
2	Trivia/Word	43%
3	Action/Adventure	43%
4	Board	41%
5	Arcade	35%
6	Non-Casino Card	27%
7	Strategy	25%
8	Music	24%
9	RPG[6]	23%
10	Horror	22%

TOP CONSOLE GAME GENRES[1], U.S., 2024, % CONSOLE GAMERS[3]

61% of gamers[5] play **console games**

Rank	Genre	% Usage[1]
1	Arcade	39%
2	Fighting	37%
3	Racing	33%
4	Sports	32%
5	MMORPG[7]	32%
6	Sandbox	31%
7	Shooter	31%
8	Battle Royale	30%
9	Action/Adventure	30%
10	RPG[6]	30%

TOP PC GAME GENRES[1], U.S., 2024, % PC GAMERS[4]

59% of gamers[5] play **PC games**

Rank	Genre	% Usage[1]
1	MOBA[8]	31%
2	Board	25%
3	Shooter	24%
4	MMORPG[7]	24%
5	Puzzle	23%
6	Arcade	23%
7	Sports	23%
8	Battle Royale	23%
9	Action/Adventure	23%
10	RPG[6]	22%

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1. Genre usage is defined as having played a genre in the last year. 2. "Mobile Gamers" are defined as adults aged 18+ who have played video games on a mobile device in the last 12 months. 3. "Console Gamers" are defined as adults aged 18+ who have played video games on a console (e.g. Nintendo Switch, Playstation, Xbox) in the last 12 months. 4. "PC Gamers" are defined as adults aged 18+ who have played video games on a PC in the last 12 months. 5. "Gamers" are defined as adults aged 18+ who currently play video games. 6. Role-playing game. 7. Massively multiplayer online role-playing game. 8. Multiplayer online battle arena.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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We segmented the U.S. gaming population and identified Super Gamers; this valuable segment has the highest level of engagement with video games and represents over one-third of all U.S. gamers

2024 GAMER SEGMENTATION: OUR RESEARCH SHOWS THAT U.S. GAMERS[1] FALL INTO ONE OF THREE SEGMENTS…

ACTIVATE CONSUMER INSIGHT

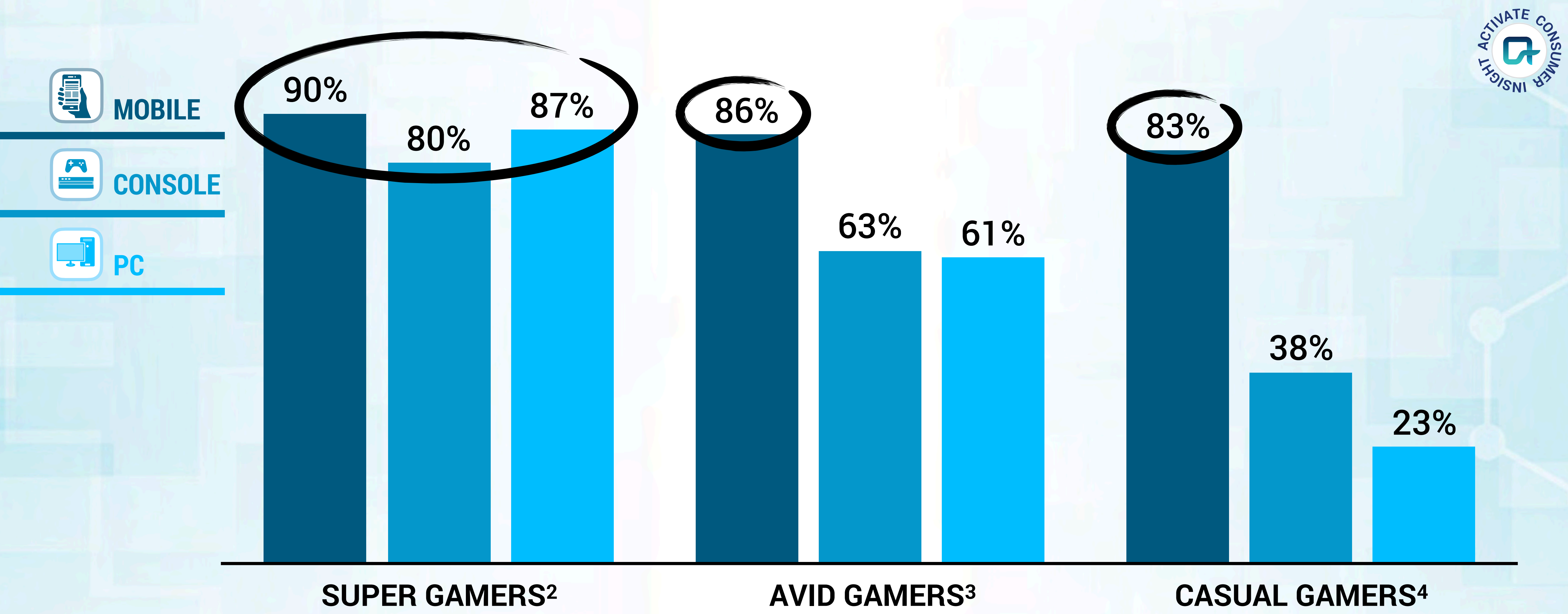
HIGHER ENGAGEMENT ⟷ LOWER ENGAGEMENT

	SUPER GAMERS[2]	AVID GAMERS[3]	CASUAL GAMERS[4]
	34% OF U.S. GAMERS[1] / 59M IN THE U.S.	36% OF U.S. GAMERS[1] / 62M IN THE U.S.	30% OF U.S. GAMERS[1] / 52M IN THE U.S.
AVERAGE DAILY TIME GAMING (HOURS:MINUTES)	3:48	2:53	1:48
GAMING BEHAVIORS/ TENDENCIES	Play video games as their **primary source** of entertainment	Play video games as **one of a few equivalent sources** of entertainment	Play video games **only when other sources** of entertainment are **unavailable**
GAMING ECOSYSTEM INVOLVEMENT	**Follow gaming content online** (e.g. watch playthroughs, read reviews)	**May follow** gaming content online	**Unlikely to follow** gaming content online

1. "Gamers" are defined as adults aged 18+ who currently play video games. 2. "Super Gamers" are defined as gamers who view gaming as their primary source of entertainment and follow gaming content online. 3. "Avid Gamers" are defined as gamers who view gaming as one of a few equivalent options for entertainment, or gamers who view gaming as their primary source of entertainment but do not follow gaming content online. 4. "Casual Gamers" are defined as gamers who only view gaming as an entertainment option when other options are not available, or gamers who view gaming as one of a few equivalent options for entertainment but do not follow gaming content online.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), data.ai, eMarketer, GWI, Newzoo, Nielsen, NPD Group, Omdia, PricewaterhouseCoopers, U.S. Census Bureau

Super Gamers play video games across all platforms, while Avid and Casual Gamers have higher usage of mobile

PLATFORMS USED FOR GAMING IN THE LAST 12 MONTHS BY SEGMENT, U.S., 2024, % GAMERS[1] BY SEGMENT



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Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Each gamer segment plays a different set of genres, influenced by the platforms on which they play

TOP THREE SUPER GAMER[1] GENRES[2] BY PLATFORM, U.S., 2024, % SUPER GAMERS[1]

SUPER GAMERS[1]

Rank	MOBILE		CONSOLE		PC	
1	Action/ Adventure	72%	Arcade	56%	MOBA[5]	39%
2	Trivia/ Word	42%	Fighting	47%	Board	29%
3	Puzzle	42%	MMORPG[6]	43%	Puzzle	28%

TOP THREE AVID GAMER[3] GENRES[2] BY PLATFORM, U.S., 2024, % AVID GAMERS[3]

AVID GAMERS[3]

Rank	MOBILE		CONSOLE		PC	
1	Puzzle	51%	Fighting	38%	MOBA[5]	26%
2	Board	47%	Action/ Adventure	36%	Shooter	25%
3	Trivia/ Word	46%	Sports	35%	Sandbox	24%

TOP THREE CASUAL GAMER[4] GENRES[2] BY PLATFORM, U.S., 2024, % CASUAL GAMERS[4]

CASUAL GAMERS[4]

Rank	MOBILE		CONSOLE		PC	
1	Puzzle	52%	Racing	12%	Arcade	18%
2	Trivia/ Word	41%	Arcade	11%	Board	18%
3	Board	33%	Action/ Adventure	11%	Puzzle	16%

Note: "Gamers" are defined as adults aged 18+ who currently play video games.
1. "Super Gamers" are defined as gamers who view gaming as their primary source of entertainment and follow gaming content online.
2. Genre usage is defined as having played a genre in the last year. 3. "Avid Gamers" are defined as gamers who view gaming as one of a few equivalent options for entertainment, or gamers who view gaming as their primary source of entertainment but do not follow gaming content online. 4. "Casual Gamers" are defined as gamers who only view gaming as an entertainment option when other options are not available, or gamers who view gaming as one of a few equivalent options for entertainment but do not follow gaming content online. 5. Multiplayer online battle arena. 6. Massively multiplayer online role-playing game.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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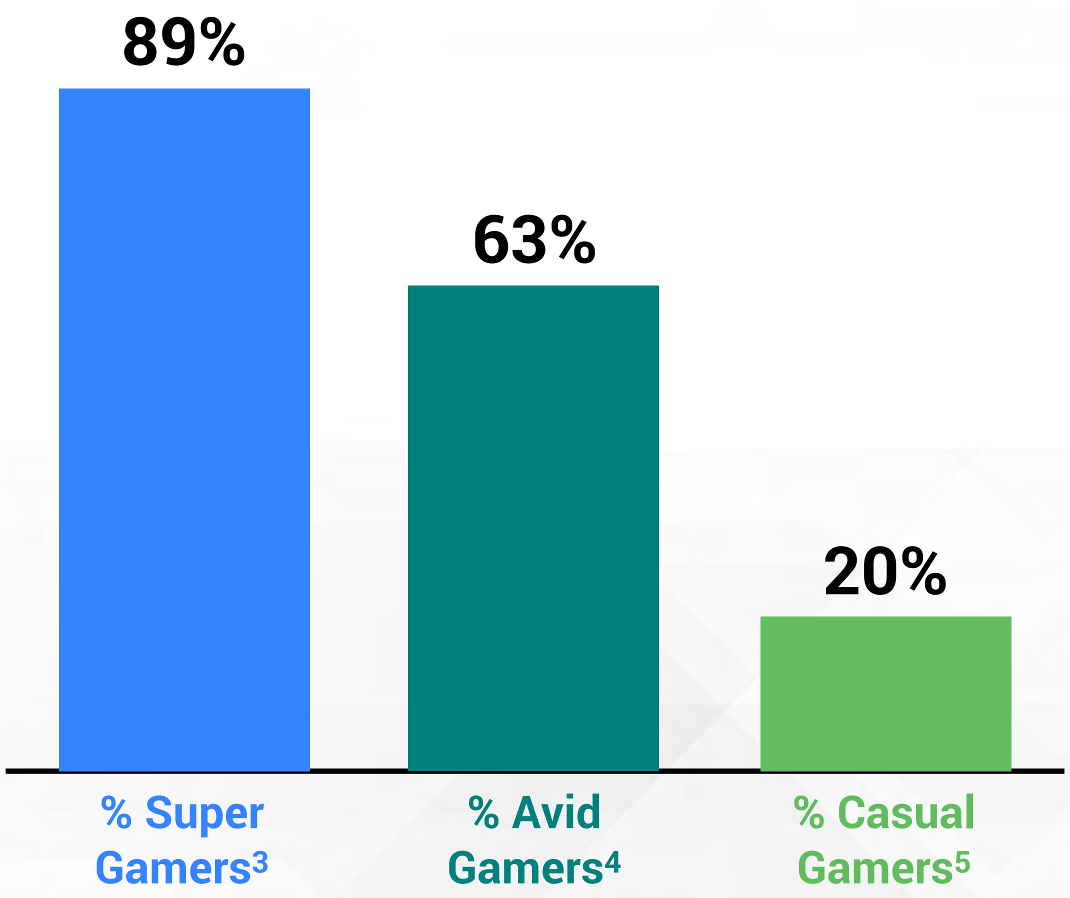
Today, there are already 400M+ people globally in major Metaverse video games and immersive virtual world platforms, and we forecast that there will be 600M+ by 2028

MONTHLY ACTIVE USERS OF SELECT METAVERSE GAMES, GLOBAL, 2024, MILLIONS MAUS

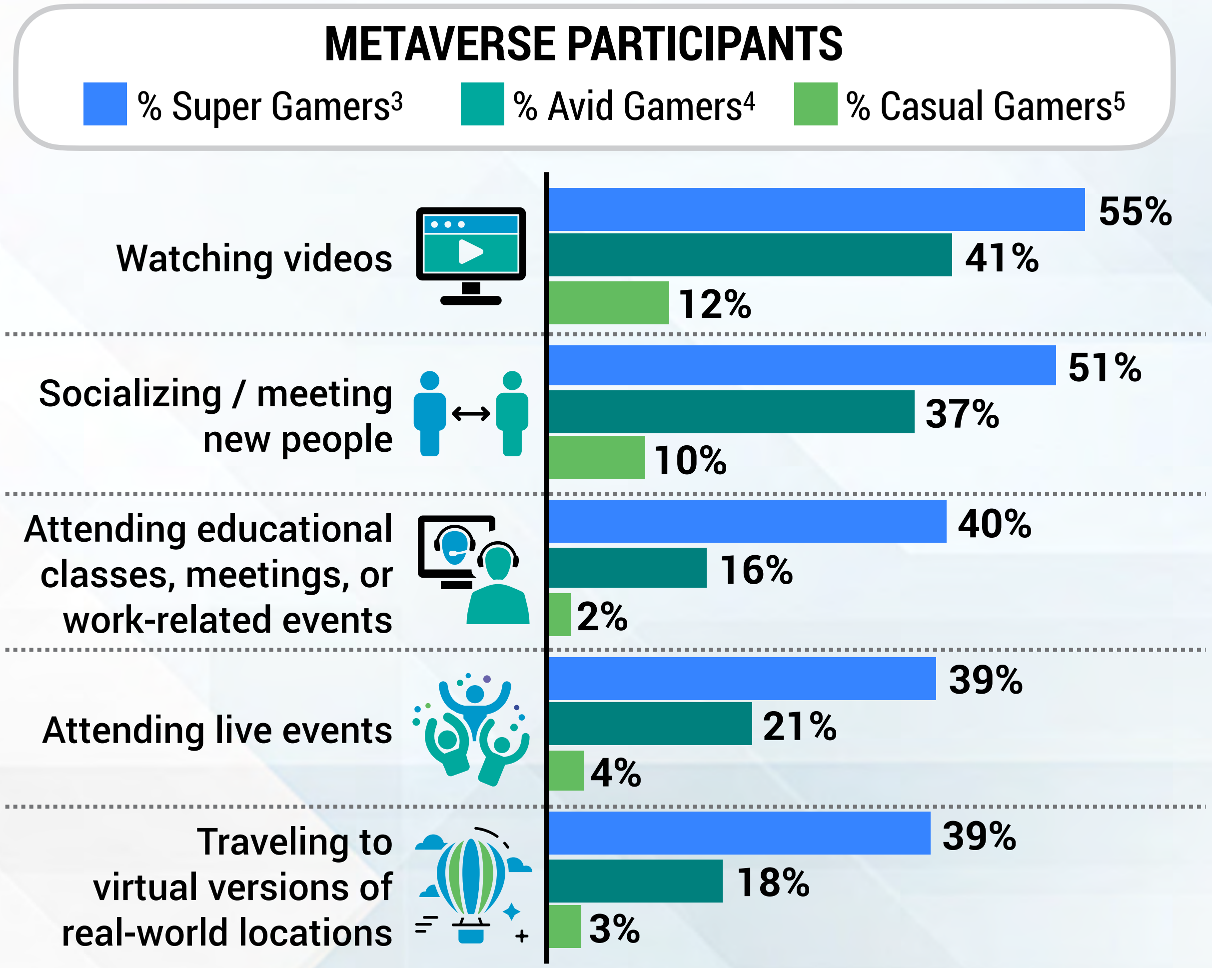
1. July 2024 estimate. 2. As of July 2024. 3. As of Aug. 2024. 4. As of June 2024.
Sources: Activate analysis, ActivePlayer, Sportskeeda

Super Gamers are the earliest adopters of the Metaverse, as they are the most likely to participate in Metaverse activities within games and virtual worlds today

METAVERSE PARTICIPATION[1] IN THE LAST 12 MONTHS, U.S., 2024, % GAMERS[2] BY SEGMENT



METAVERSE PARTICIPATION[1] IN THE LAST 12 MONTHS BY ACTIVITY, U.S., 2024, % GAMERS[2] BY SEGMENT



1. "Metaverse participation" includes socializing / meeting new people, watching entertainment videos / documentaries, attending live events, traveling to virtual versions of real-world locations, and attending educations classes, meetings, or work-related events within an immersive virtual world in the last 12 months. 2. "Gamers" are defined as adults aged 18+ who currently play video games. 3. "Super Gamers" are defined as gamers who view gaming as their primary source of entertainment and follow gaming content online. 4. "Avid Gamers" are defined as gamers who view gaming as one of a few equivalent options for entertainment, or gamers who view gaming as their primary source of entertainment but do not follow gaming content online. 5. "Casual Gamers" are defined as gamers who only view gaming as an entertainment option when other options are not available, or gamers who view gaming as one of a few equivalent options for entertainment but do not follow gaming content online.

Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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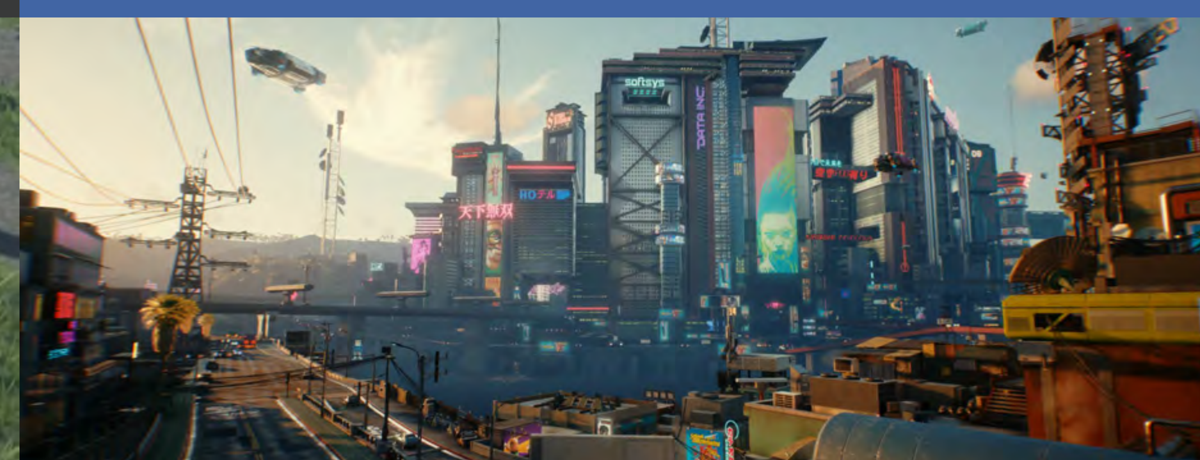
Generative AI will lower the barrier to entry for in-game creation for both users and developers, further improving the depth of new and existing immersive worlds and experiences

EXAMPLES OF GENERATIVE AI USED FOR DEVELOPMENT AND CREATION WITHIN GAMES

EA UNVEILED "IMAGINATION TO CREATION," AN AI SYSTEM THAT WILL ALLOW USERS TO MODIFY GAMES WITH SIMPLE PROMPTS

HEXWORKS USED GENERATIVE AI DURING THE DEVELOPMENT OF LORDS OF THE FALLEN TO FIX GRAPHICAL INEFFICIENCIES

ROBLOX LAUNCHED AN AI CHATBOT TO IMPROVE AND STREAMLINE THE IN-GAME CREATION EXPERIENCE



CYBERPUNK 2077 UTILIZED NVIDIA DLSS AI TECHNOLOGY TO IMPROVE THE RENDERING AND DETAIL OF ITS FUTURISTIC CITY SETTING

Sources: Activate analysis, Company sites

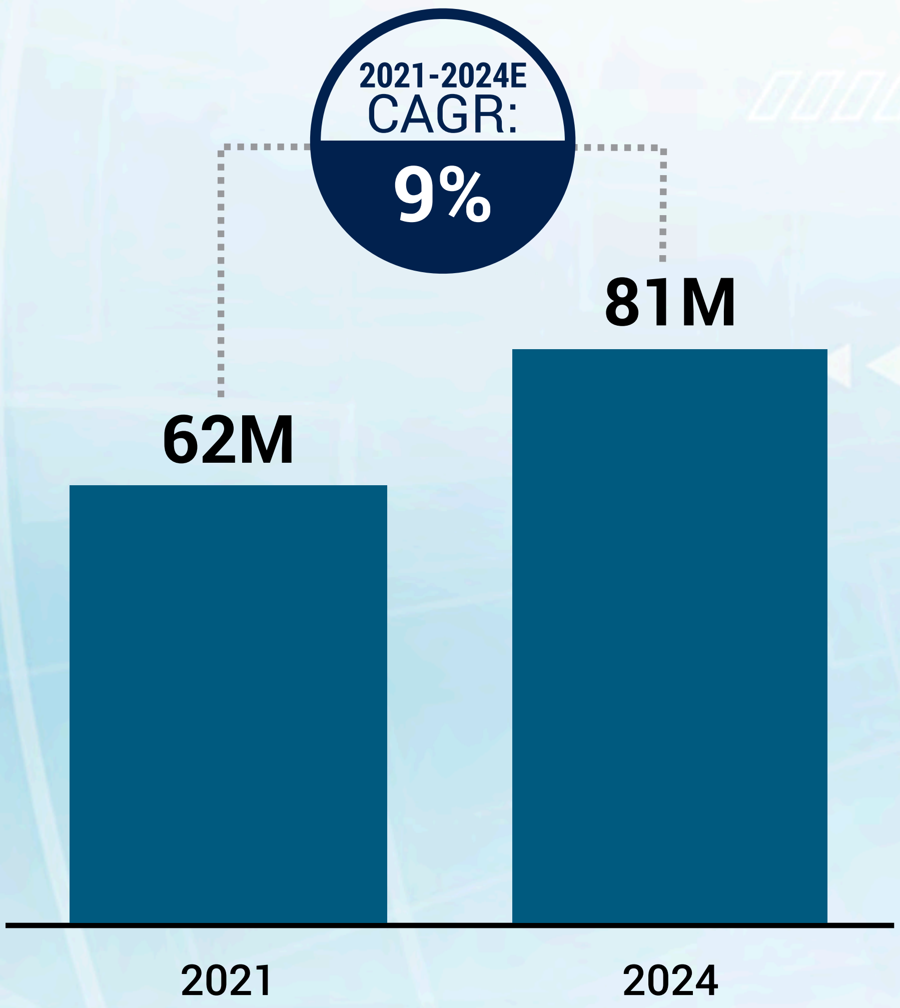
Esports is a global phenomenon; League of Legends and Mobile Legends Bang Bang lead esports viewership with record-breaking peak concurrent viewers in 2023

MOST WATCHED ESPORTS GAMES, GLOBAL EXCLUDING CHINA, 2023, MILLIONS HOURS

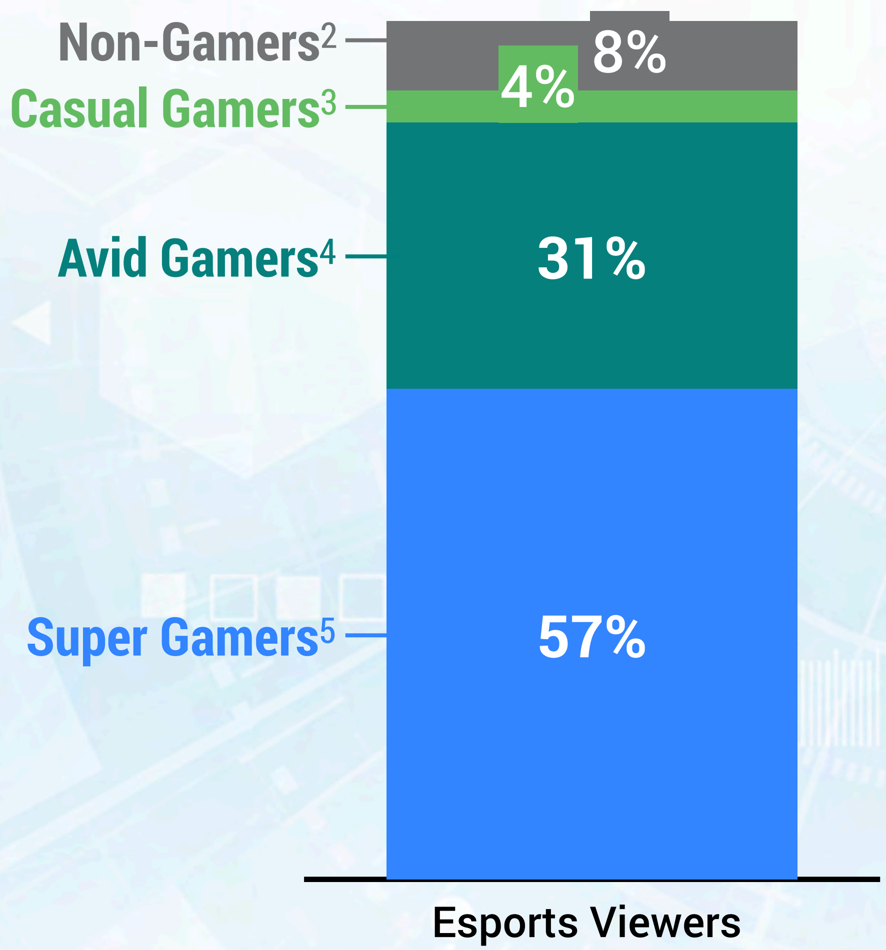
1. Includes hours watched for both Counter-Strike Global Offensive and Counter-Strike 2.
Sources: Activate analysis, Esports Charts, Esports Illustrated, Esports Insider

Esports viewership continues to grow in the U.S., primarily driven by Super and Avid Gamers

ESPORTS VIEWERS[1], U.S., 2021 VS. 2024, MILLIONS ESPORTS VIEWERS



ESPORTS VIEWERS[1] **BY SEGMENT**, U.S., 2024, % ESPORTS VIEWERS



1. "Esports viewers" are defined as adults aged 18+ who have watched or attended esports competitions in the last 12 months. 2. "Non-Gamers" are defined as adults aged 18+ who do not currently play video games. 3. "Casual Gamers" are defined as gamers who only view gaming as an entertainment option when other options are not available, or gamers who view gaming as one of a few equivalent options for entertainment but do not follow gaming content online. 4. "Avid Gamers" are defined as gamers who view gaming as one of a few equivalent options for entertainment, or Gamers who view gaming as their primary source of entertainment but do not follow gaming content online. 5. "Super Gamers" are defined as gamers who view gaming as their primary source of entertainment and follow gaming content online.
Sources: Activate analysis, Activate 2021 Consumer Technology & Media Research Study (n = 4,018), Activate 2024 Consumer Technology & Media Research Study (n = 4,004), U.S. Census Bureau

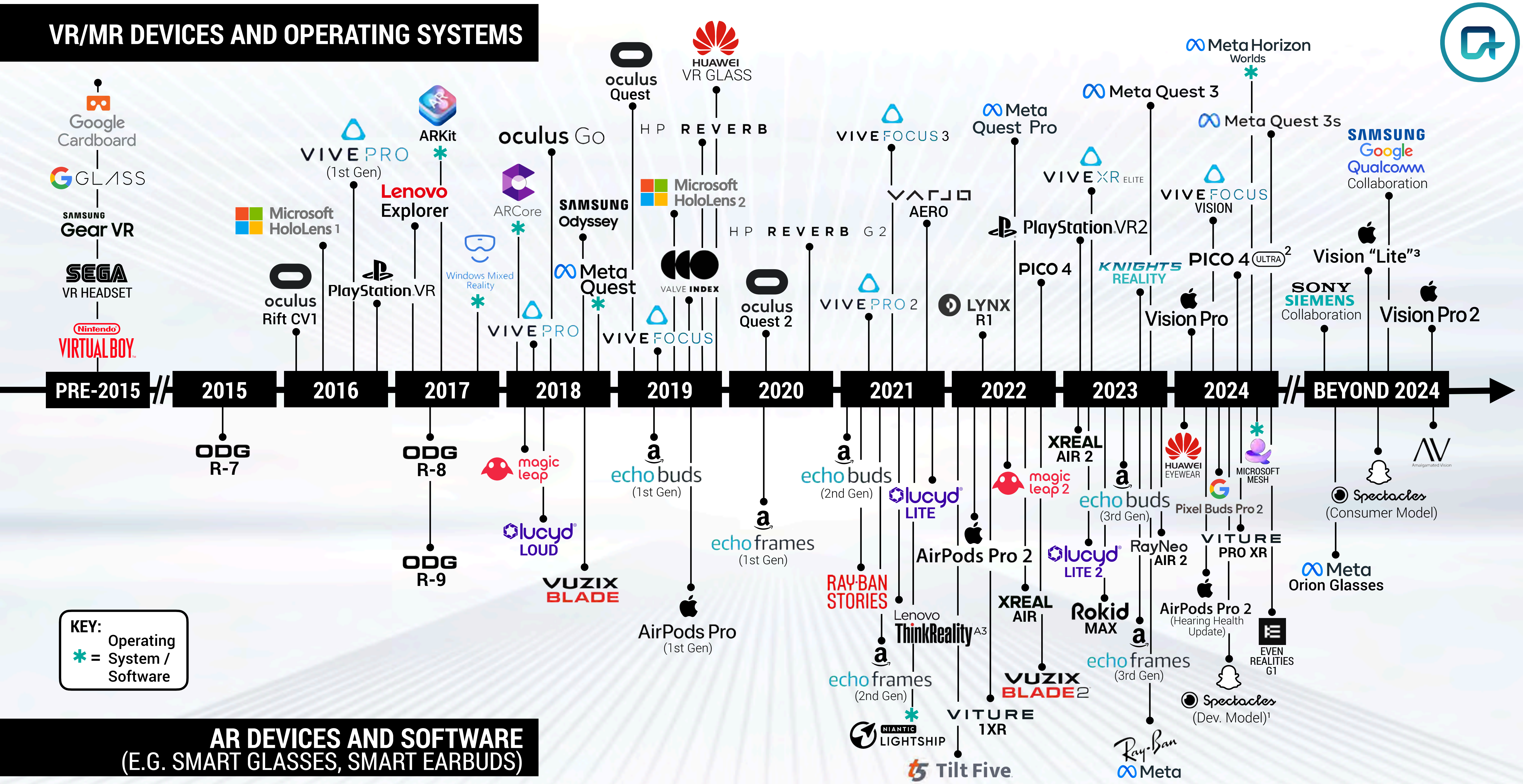
SPATIAL COMPUTING

Spatial computing's iPhone moment is within sight; much of the required technology, device, AI, and ecosystem is already in the pipeline

FULLY FEATURED SEE-THROUGH DEVICE	• Overlays digital information and holograms onto the user's physical surroundings, allowing users to interact with real and virtual objects simultaneously • Early prototypes already being developed and tested – enabling 'see-through' instead of just 'pass-through'
AMBIENT, ALWAYS-ON EXPERIENCE	• Captures and processes data in real time, providing a continuous computing interface in people's daily personal and work lives • People can wear the spatially-enabled glasses at all times, choosing their experience (clear vs. augmented)
ARTIFICIAL INTELLIGENCE AND SPATIAL INTELLIGENCE	• Development of the AI is already ahead of the device development • Force multiplier for spatial computing functionality • Data is processed in the device or peripheral
NETWORKED DATA ECOSYSTEM	• AI trains on data captured in the wild • Gathers and processes spatial data from devices • Builds a network of data from all devices in the wild
CONNECTIVITY AND COMPUTE	• Enables real-time data collection with high-throughput connectivity • Leverages expanded bandwidth coming online • Maximizes immersion with low-latency edge computing

Source: Activate analysis

For well over a decade, there has been a steady journey of innovation in devices, operating systems, and software toward a mobile and AI-enabled spatial computing paradigm



Note: Not exhaustive. Years reflect the date the device was first released to the public. 1. Spectacles (5th Gen) are only available through Snap's Developer Program. 2. As of Oct. 7, 2024, Pico 4 Ultra has not been released in the U.S. 3. Apple is rumored to be working on a cheaper version of Apple Vision Pro.

Sources: Activate analysis, Company press releases, Company sites

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Today, spatial computing experiences range from fully-immersive environments requiring advanced headsets to ambient experiences enabled through more accessible AR visual, audio, and haptic devices

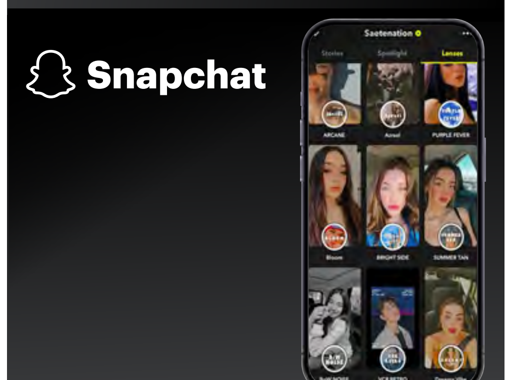
SPATIAL COMPUTING EXPERIENCES

1st Generation Glasses
(See-Through Glass with Smart Audio)

Digital visual and audio, with output provided largely through voice audio and rudimentary visual capabilities

AR: Augmented Reality / Phone Screen

Digital visual, audio, and haptic overlays that leverage data to enhance the physical world, delivered through AR-enabled smartphones



VR: Virtual Reality
(Immersive and Pass-Through)

A view that blocks out the real-world and replaces it with a fully-immersive virtual environment, usually delivered through a dedicated VR headset device

MR: Mixed Reality
(Immersive and Pass-Through)

A fusion of physical and digital worlds, which combines aspects from both VR and AR, usually delivered through a dedicated MR device

Next Generation Glasses
(Fully Featured and See-Through)

Digital visual, smart audio, and haptic overlays that leverage data to enhance the physical world, provided by see-through glasses and devices

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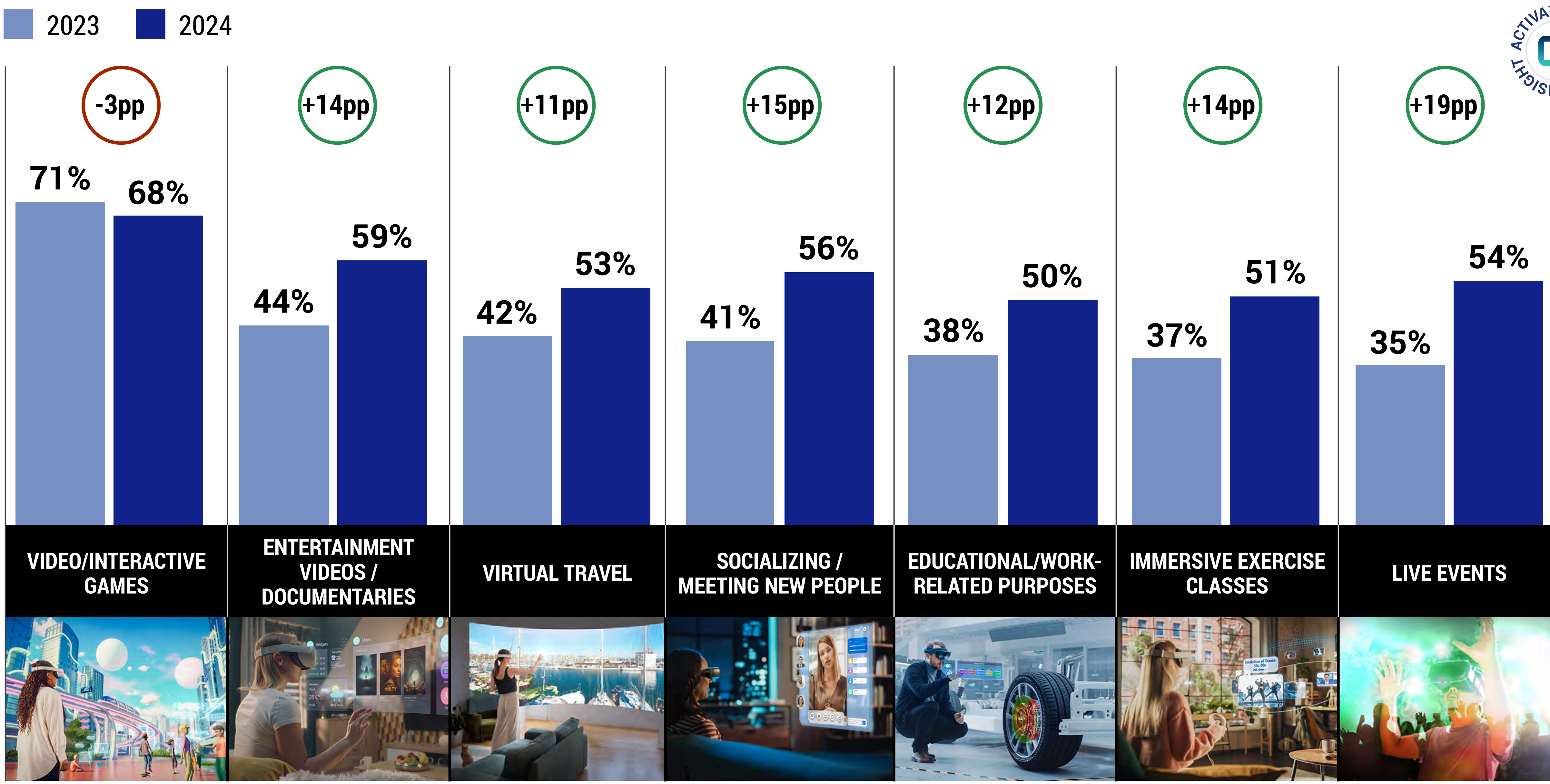
1. In Oct. 2024, Microsoft announced they are discontinuing production of the HoloLens 2, with software support ending Dec. 2027.
Sources: Activate analysis, Company press releases, Company sites, The Verge

In the past, consumers purchased VR headsets for gaming and entertainment, and are now using them for a wider range of use cases beyond gaming

VR HEADSET USE CASES[1], U.S., 2023 VS. 2024, % VR HEADSET USERS[2]



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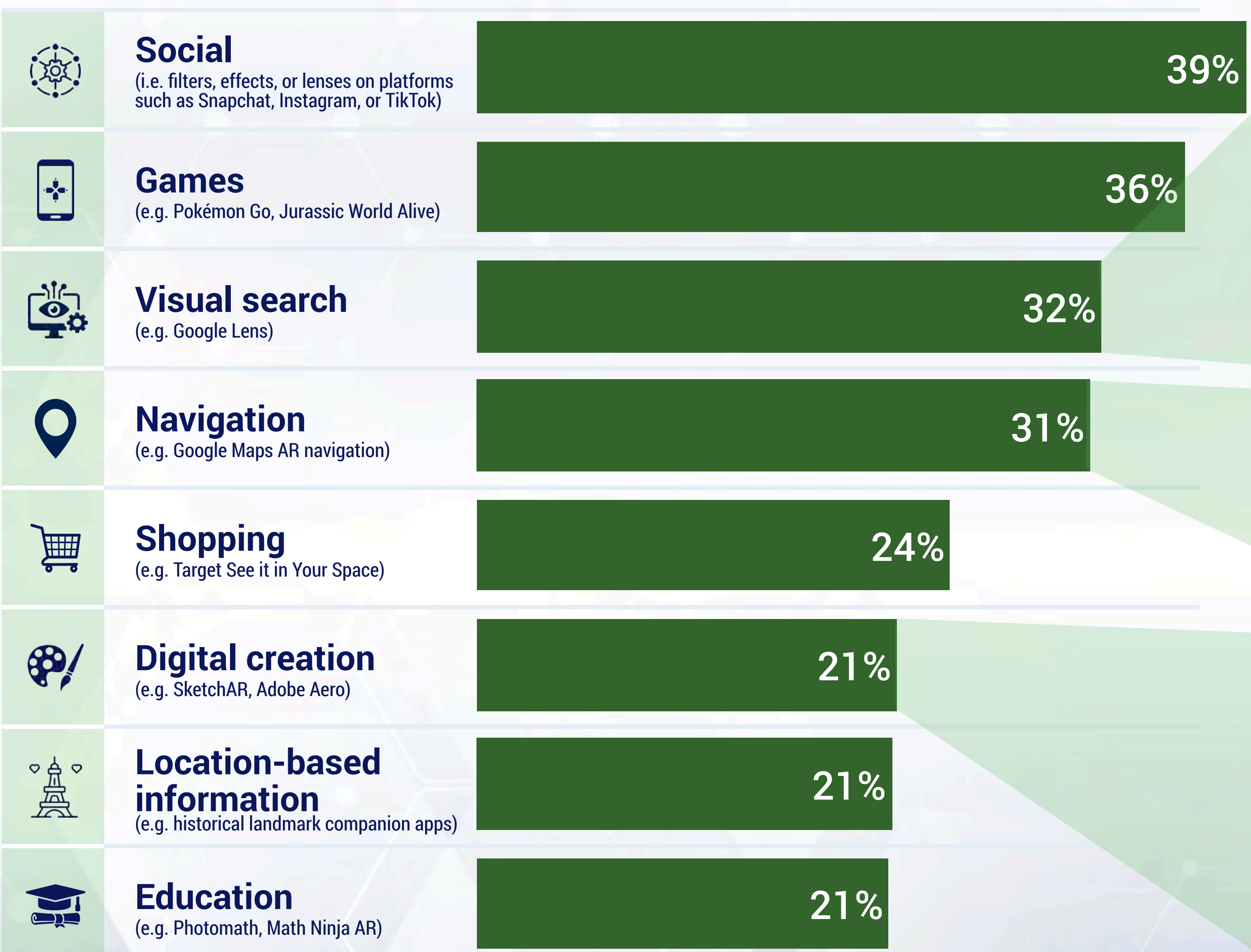
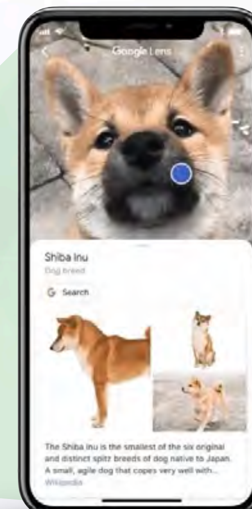
1. Figures do not sum due to rounding. 2. "VR headset users" are defined as adults aged 18+ who have used a VR headset in the last 12 months.
Sources: Activate analysis, Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

People are already using AR (predominantly through a smartphone) to enhance their core digital behaviors: social, gaming, search, and navigation

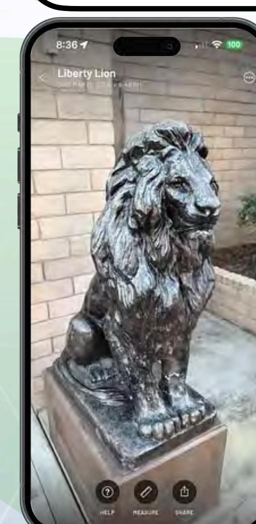
USAGE OF AR TOOLS, U.S., 2024, % ADULTS AGED 18+ WHO ARE AWARE OF AR[1]





Google Lens
Google Lens identifies an object or place through a camera and overlays digital insights in real time

Maps
Apple Maps uses AR to overlay step-by-step walking directions onto the phone's camera, providing real-time guidance

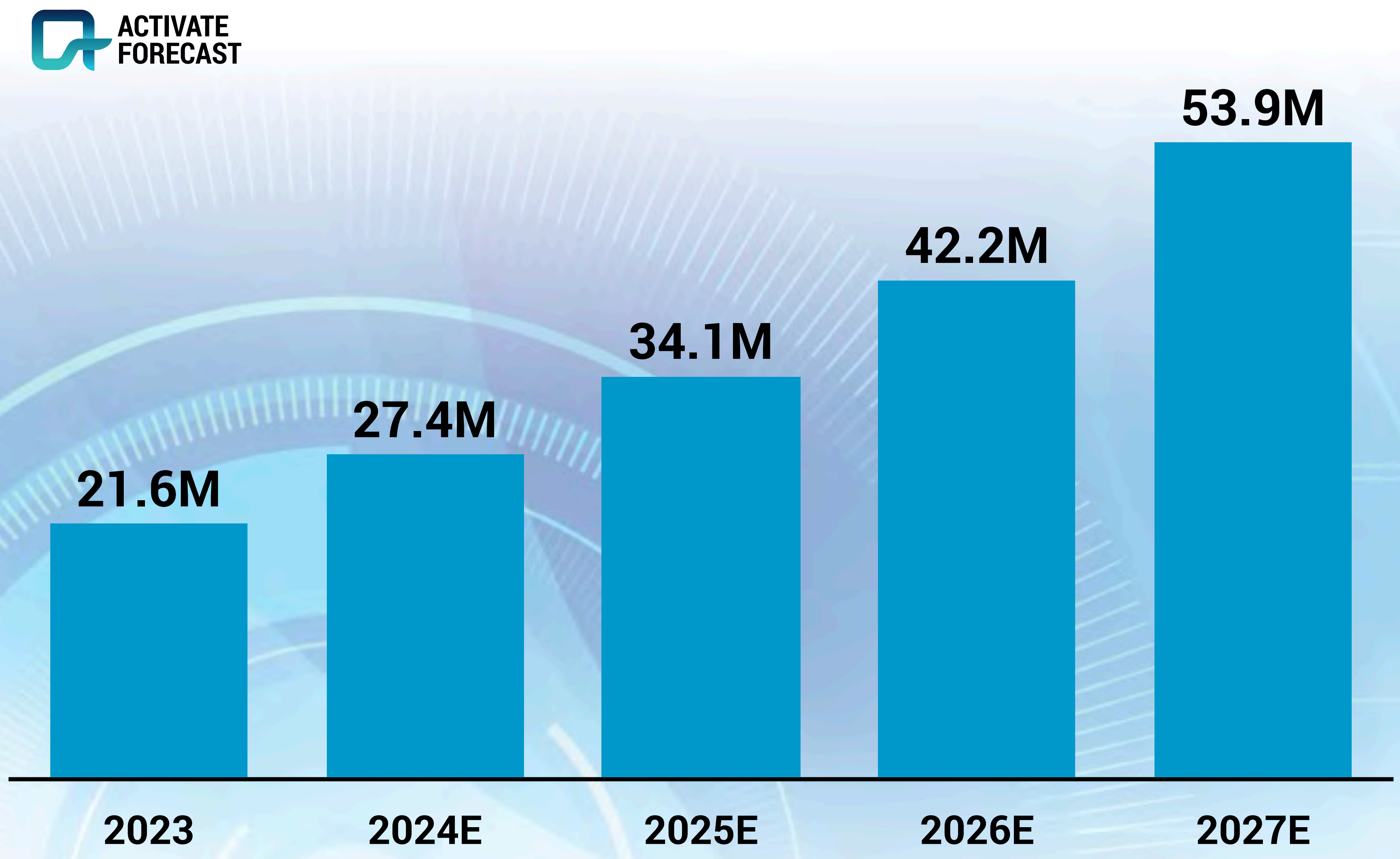


NIANTIC
Niantic Scaniverse 4 leverages AI and AR to capture environments and generate exportable 3D models

1. 38% of U.S. adults aged 18+ are aware of AR.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

We forecast that dedicated spatial device shipments will reach over 50M units by 2027

SPATIAL HEADSET UNIT SHIPMENTS[1], GLOBAL, 2023-2027E, MILLIONS UNITS



BY 2027, SPATIAL HEADSET UNIT SHIPMENTS WILL BE:

- **4%** of **smartphone** unit shipments
- **5%** of **smart home device[2]** unit shipments
- **19%** of **personal computer** unit shipments

1. Includes AR, VR, and MR headset device shipments. Excludes Google Cardboard and other headsets with no built-in technology.
2. Includes home monitoring/security, lighting, smart speakers, thermostats, and smart video entertainment.

Sources: Activate analysis, AR Insider, Company press releases, Company sites, eMarketer, International Data Corporation, Morgan Stanley, Omdia, PricewaterhouseCoopers, Road to VR, Sensor Tower, Statista, Steam Spy, Strategy Analytics, SuperData, VGChartz

For spatial computing to reach its iPhone moment, it will need to be truly artificial intelligence- and spatial intelligence-enabled, feature sophisticated displays, and be supported by networked data

PROGRESSION OF ARTIFICIAL INTELLIGENCE CAPABILITIES TOWARDS UBIQUITOUS SPATIAL COMPUTING

ARTIFICIAL INTELLIGENCE

- Features expansive, large language models with access to large amounts of spatial data (e.g. maps, geolocation)
- Lacks a truly real-world component, and running most AI models is confined to mobile, PC, or IoT devices
- Requires a smartphone or PC as a user interface

VISUAL INTELLIGENCE

- Uses front cameras as sensors to capture and analyze 2D images and audio
- Delivers responses and guidance via audio feedback or rudimentary text and displays
- Provides experiences for users through first generation AR glasses

SPATIAL INTELLIGENCE

- Represents multimodal AI interacting with the physical world, with the ability to process 3D inputs with perspective and depth
- Delivers immersive overlays and visuals
- Takes in 3D information and environments updated through data input and AI
- Will be made usable by future device and interface paradigms

AMBIENT NETWORKED SPATIAL COMPUTING

- Augments spatial intelligence capabilities with ambient, always-on data collection
- Represents the future state of ubiquitous spatial computing, with AI bridging the divide between physical and virtual worlds
- Will be made usable by future device and interface paradigms

Source: Activate analysis

The ubiquitous spatial device will be ambient and always-on, continuously collecting data and leveraging multimodal AI to improve immersive experiences

Audio
Full capture of environmental sound, with conductive audio playback

Ambient
Always-on, and continuously capturing visual, audio, motion, and spatial data

See-Through Glass
Physical environment still fully visible, with AR capabilities enhancing, not blocking, reality

AI-Enabled
Gathers and feeds visual, audio, motion, and spatial information through AI to continuously improve immersion and experiences

Front-Facing Camera
Computer vision capturing 2D and 3D video inputs

Accelerated Data Processing
Optimized multimodal AI models and compute able to quickly train and respond to input

Low Latency
Connectivity and compute functions minimizing lag and downtime, maximizing immersion

Overlays onto the Glass/Lens
Assistants, navigation, and information directly guiding users based on input data

Connected
Communication with mobile phones and other connected devices to maximize the effectiveness of compute

Optimized Battery
Long battery life sustaining always-on usage throughout the full day

Natural Interactions
Seamless and intuitive physical and motion requirements, replacing pinch-and-zoom, tap, and swipe motions

Source: Activate analysis

Spatial devices continuously gather and process real-world, 3D data to power spatial intelligence

SPATIAL MAPPING AND ENVIRONMENTAL DATA

- Hyper-location
- Geospatial
- Simultaneous Localization and Mapping (SLAM)
- Environmental sensing
- Weather and atmospheric
- Infrastructure
- Topographical

SITUATIONAL AUDIO DATA

- Ambient environmental sound
- Contextual audio cues
- User speech
- External/environmental speech

REAL-WORLD, 3D SPATIAL DATA

VISUAL DATA

- Real-world object recognition
- 3D physical spaces, dimensions, distances
- Real-world search
- Augmented navigation
- Thermal and infrared

USER INTERACTION DATA

- Hand motions / gestures
- Facial expression changes
- Body and motion tracking
- Eye tracking
- Voice
- Biometric

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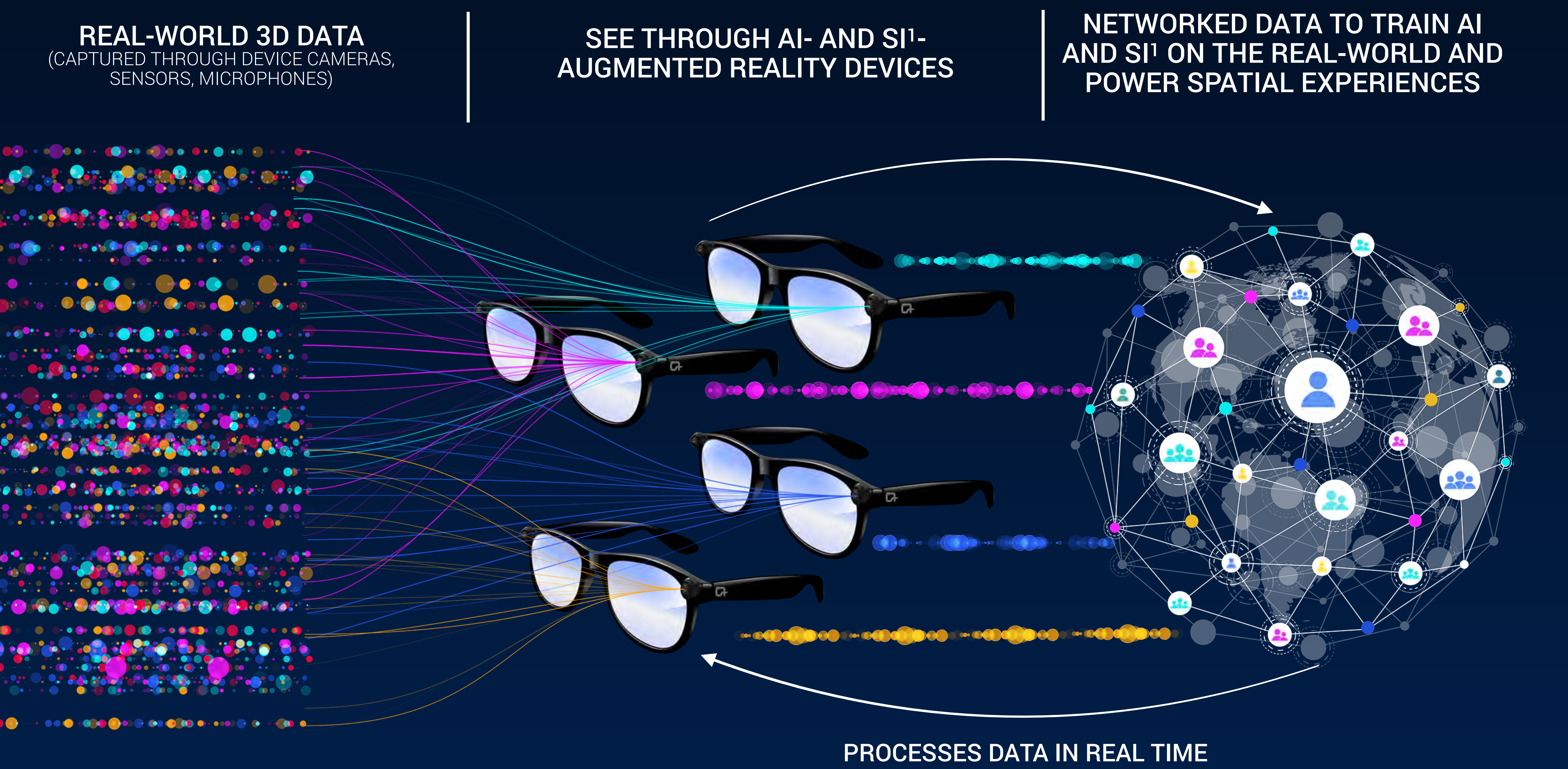
Note: Examples of real-world data. Not exhaustive.
Source: Activate analysis

Networked spatial data enables artificial intelligence and spatial intelligence to train on data from the real world — critical to overcoming the "cold start problem"



1. Spatial intelligence.
Source: Activate analysis

Ambient spatial computing will play a role in people's everyday lives and habits across consumer use cases

DAILY ROUTINE & HABITS

FITNESS | NAVIGATION | SHOPPING | HOME CONTROL

ENTERTAINMENT

VIDEO | GAMING | LIVE EVENTS | ART

ENHANCED MULTI-TASKING | ORGANIZATIONAL TASKS | VIRTUAL MEETINGS | DATA VISUALIZATION

PRODUCTIVITY

IMMERSIVE CONVERSATIONS | VIRTUAL IDENTITIES | VIRTUAL DATING | SHARED CREATION & COLLABORATION

COMMUNICATION & SOCIAL CONNECTIONS

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Source: Activate analysis

Enterprises will use spatial computing for complex use cases that enhance workflows, applying spatial data, artificial intelligence, and spatial intelligence to B2B processes

EMERGING ENTERPRISE USE CASES OF SPATIAL COMPUTING

MANUFACTURING

- Spatial technology enables manufacturers to **collaborate in 3D environments**, allowing teams to **visualize designs and make real-time adjustments**
- Manufacturers can leverage spatial computing to **streamline operator training** by creating **immersive environments** to practice operating machinery

HEALTHCARE

- Spatial technology can enhance patient communication through **enhanced visualization of medical imagery**
- Spatial technology assists physicians by providing **simulations for medical training** and **real-time overlays for surgical guidance**

INDUSTRIAL

- Spatial technology enables energy companies to visualize **3D models of energy assets to improve maintenance**, **monitoring**, and **repair** of dangerous or hard-to-reach areas
- Warehouse employees can leverage spatial technology to **guide workers through optimized paths** and **identify hazards or bottlenecks** in real-time

DEFENSE

- Spatial technology enables drone pilots to more precisely **visualize and operate drones** while **navigating through environments remotely**
- Spatial technology enables combatants to **visualize real-time battlefield data** (e.g. enemy positions, drone feeds, intelligence)

Source: Activate analysis

Spatial computing will eventually break free from the constraints of the headset and embed spatial intelligence across practically every screen in people's lives

EXAMPLE CURRENT AND FUTURE SPATIAL-ENABLED DEVICES

Source: Activate analysis

Ubiquitous spatial computing will be enabled by innovation across the full stack

THE SPATIAL COMPUTING STACK

SOFTWARE
Immersive applications enabling consumer use cases (e.g. immersive maps, entertainment, real-world search) **and enterprise functionality**

HARDWARE/DEVICE
Ambient, always-on hardware providing a constant feed of visual, audio, and motion data delivered through an energy-efficient device

OPERATING SYSTEMS
Frameworks and ecosystems enabling developers to design new spatial computing applications

SPATIAL INTELLIGENCE / GENERATIVE AI
Generative AI continuously improving and personalizing immersive, spatial environments

NETWORKED DATA
Data collected and processed in real time by spatial devices, augmented by third-party data to build complete environments (e.g. geospatial & map data)

COMPUTE
Edge computing and AI-optimized cloud platforms required for real-time data processing with low latency

CONNECTIVITY
Next generation of connectivity required for processing high volumes of data required for Spatial Intelligence functionality

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Source: Activate analysis

Competition is increasing in the spatial operating system and device markets as companies unveil new innovations and disruptive entrants join the space

MAJOR SPATIAL OPERATING SYSTEMS

- Meta[1] — Meta Horizon OS
- Microsoft — HOLOGRAPHIC OS, WINDOWS
- Apple — ARKit, iOS, visionOS
- Google[2] — ARCore, android

POTENTIAL SPATIAL COMPUTING DISRUPTORS/INNOVATORS

amazon, AMD, EPIC GAMES, EssilorLuxottica[1], htc, HUAWEI, Lenovo[1], LG[1], NIANTIC, NVIDIA, Qualcomm[2], SAMSUNG[2], SIEMENS[3], Snap Inc., SONY[3], unity

Note: Not exhaustive. Excludes devices focused exclusively on gaming purposes. 1. In Feb. 2024, Meta confirmed a partnership with LG. In Apr. 2024, Meta announced the release of Horizon OS, with new devices being built on it by Lenovo and Asus. Meta also partners with EssilorLuxottica for the Ray-Ban Meta glasses. 2. In Feb. 2023, Google, Samsung, and Qualcomm announced a partnership. 3. In Jan. 2024, Sony and Siemens announced a partnership.
Sources: Activate analysis, Company press releases, Company sites

High-throughput connectivity, edge computing, and cloud innovations will be required to enable more sophisticated and mobile connected spatial experiences

6G

verizon
AT&T
dish
T · · Mobile ·

Enhanced delivery of large volumes of data supporting immersive and synchronous experiences at scale

GLOBAL SATELLITE COVERAGE

STARLINK
OneWeb
SES | Networks
Viasat
amazon | project kuiper

Global high-speed networking coverage to enable immersive navigation across all transportation and logistics through continuous connectivity

EDGE COMPUTING AT SCALE

aws Wavelength
AT&T MEC
verizon MEC
Azure PUBLIC & PRIVATE MEC

Ultra-low latency (<20 milliseconds for media/ gaming use-cases) for optimal user experience

SPATIAL / AI-OPTIMIZED CLOUD

aws
Azure
Google Cloud

Increased storage and advanced cloud development platforms (e.g. supporting users at scale, AI-optimized cloud services/GPU access and environments)

Sources: Activate analysis, Company sites

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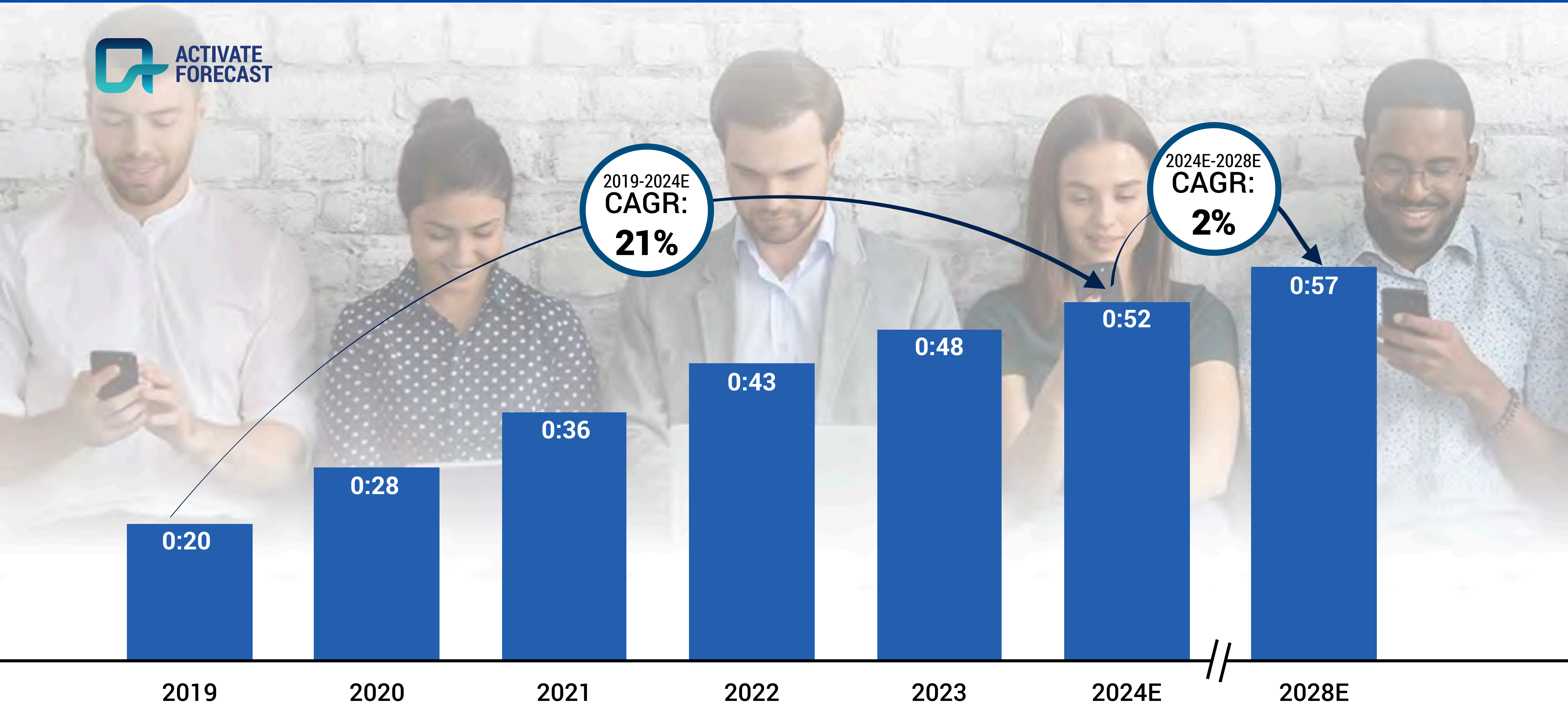
SOCIAL VIDEO

We forecast that people will continue to watch more social video over the next four years; however, growth is slowing down

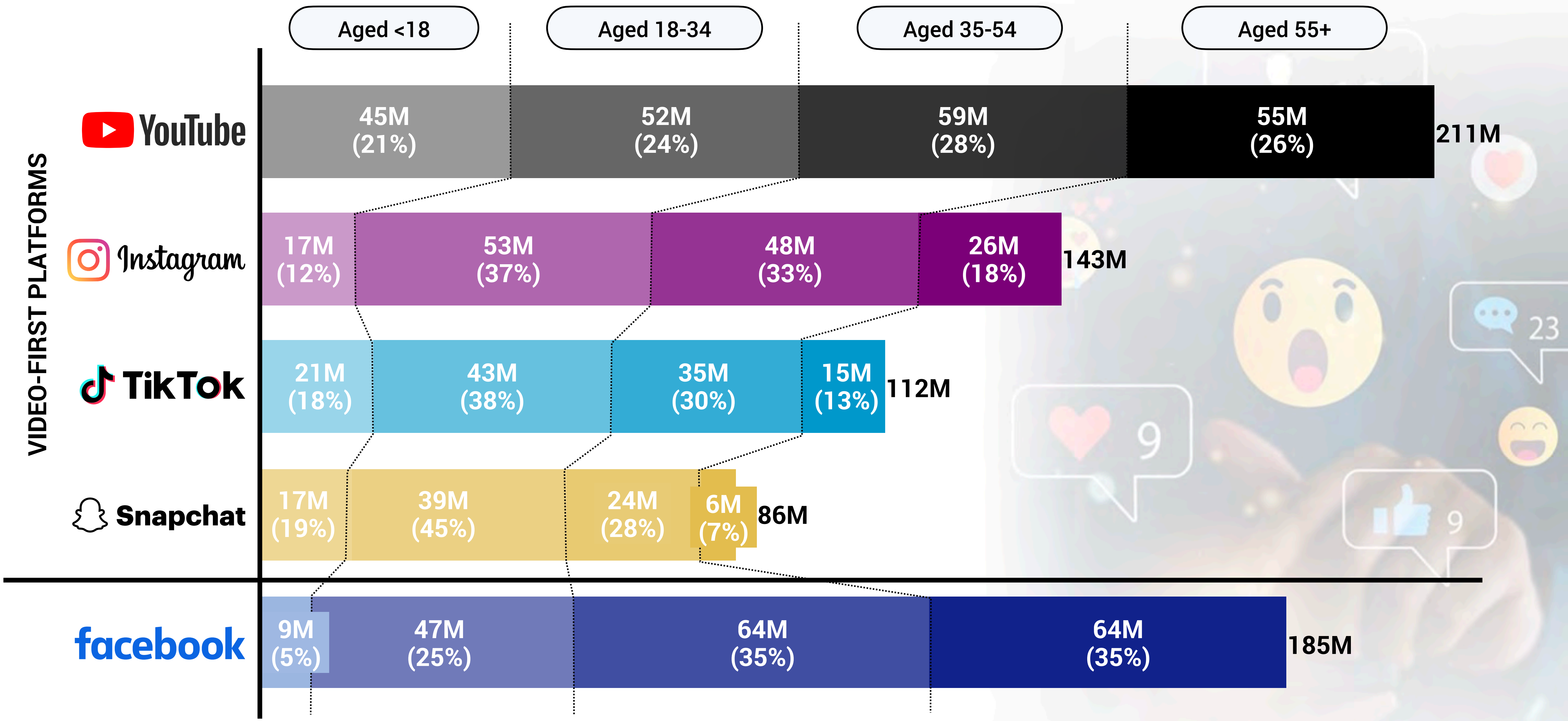
AVERAGE DAILY SOCIAL VIDEO[1] TIME SPEND PER ADULT AGED 18+, U.S., 2019-2024E VS. 2028E, HOURS:MINUTES



1. Includes time spent watching video across Facebook, Instagram, Snapchat, TikTok, X/Twitter, and other social platforms.
Sources: Activate analysis, data.ai, eMarketer, GWI, U.S. Bureau of Labor Statistics

YouTube has the broadest reach, with large user bases in each age cohort

USERS OF SELECT SOCIAL VIDEO PLATFORMS BY AGE GROUP[1], U.S., 2024, MILLIONS MONTHLY USERS



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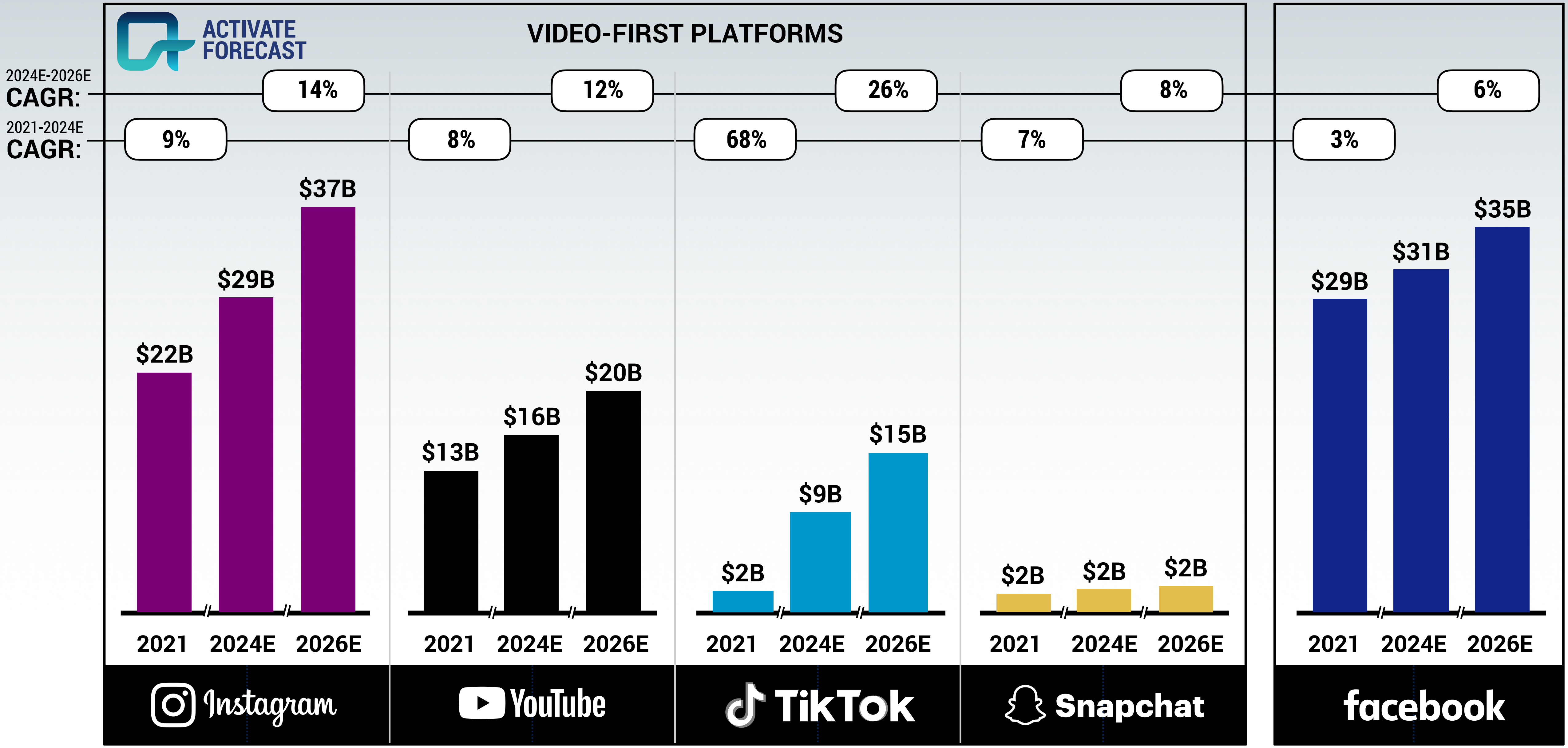
1. Figures do not sum due to rounding.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), eMarketer

We forecast that TikTok and Instagram will be the fastest growing advertising businesses

TOTAL ADVERTISING REVENUE[1] BY SOCIAL VIDEO PLATFORM, U.S., 2021 VS. 2024E VS. 2026E, BILLIONS USD



1. Includes advertising revenue generated across all internet-connected devices.
Sources: Activate analysis, Company filings, eMarketer, Statista, WARC

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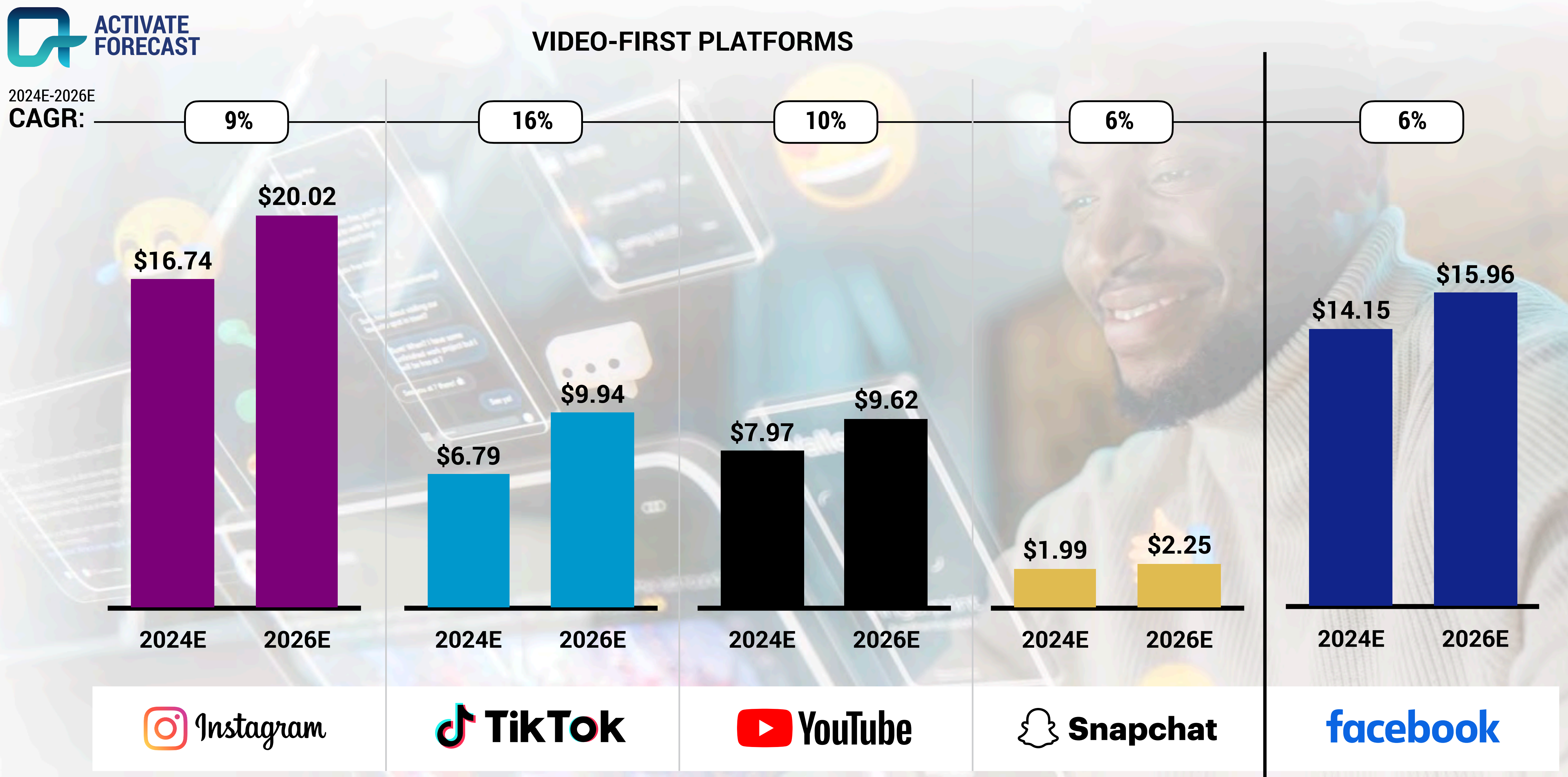
Instagram and Facebook capture the most monthly advertising revenue per user

MONTHLY ADVERTISING REVENUE[1] PER USER BY VIDEO PLATFORM, U.S., 2024E VS. 2026E, USD



1. Includes advertising revenue generated across all internet-connected devices.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, eMarketer, Statista, WARC

A diverse group of creators drives the majority of social video engagement, with limited overlap across platforms

TOP 10 TIKTOK CREATORS[1], U.S., JAN.-JULY 2024

Charli D'Amelio	People & Blogs	3.7B Views
Brooke Monk	People & Blogs	3.5B Views
Nara Smith	Food & Drink	3.0B Views
Haley Kalil ★	People & Blogs	3.0B Views
Hot Spanish ★	Entertainment	2.9B Views
Carlos Eduardo Espina	General Interest	2.9B Views
Alix Ashley Earle	People & Blogs	2.8B Views
Addie McCracken ★	People & Blogs	2.7B Views
Whistle	Sports	2.5B Views
Katteyes	People & Blogs	2.5B Views

TOP 10 YOUTUBE CREATORS[1], U.S., JAN.-JULY 2024

Zack D. Films	Gaming	9.0B Views
J House Jr.	Kids Entertainment & Animation	7.2B Views
BorisKateFamily	Entertainment	6.7B Views
MrBeast	Entertainment	6.3B Views
Family Games Media	People & Blogs	6.2B Views
Alan Chikin Chow	People & Blogs	5.7B Views
Mr DegrEE	People & Blogs	5.2B Views
Chefkoudy	Food & Drink	5.0B Views
Yana Chirkina	Entertainment	4.8B Views
Stokes Twins	People & Blogs	4.7B Views

TOP 10 FACEBOOK CREATORS[1], U.S., JAN.-JULY 2024

Bailey Payne	People & Blogs	2.3B Views
Hot Spanish ★	Entertainment	1.7B Views
Double-J Garage	Film & Movies	1.4B Views
Country Wayne	People & Blogs	1.2B Views
Showers Daycare and Preschool	Film & Movies	1.1B Views
Chicken Leg Piece	Food & Drink	1.1B Views
Frank Medrano	People & Blogs	1.0B Views
Victor Dias TV	Home & DIY	1.0B Views
Sean Bridon	People & Blogs	1.0B Views
Ray's Funny Page	Entertainment	1.0B Views

TOP 10 INSTAGRAM CREATORS[2], U.S., JAN.-JULY 2024

Bahjan Marg Official	People & Blogs	224M Engagements
Snoopdogg	Music & Dance	218M Engagements
Brittany Paige	People & Blogs	193M Engagements
Diljit Dosanjh	Music & Dance	193M Engagements
Haley Kalil ★	People & Blogs	192M Engagements
Addie McCracken ★	People & Blogs	155M Engagements
Jordan Howlett	Entertainment	129M Engagements
Kirkiimad	Entertainment	123M Engagements
Bryce Wagner	People & Blogs	118M Engagements
Will Smith	People & Blogs	115M Engagements

★ Top Creator Across Multiple Platforms

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1. Rank based on total 30-second views. 2. Rank based on total engagements (i.e. any public action including likes, comments, shares, tweets).
Sources: Activate analysis, Tubular Labs

tubular ACTIVATE DATA PARTNER

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VIDEO

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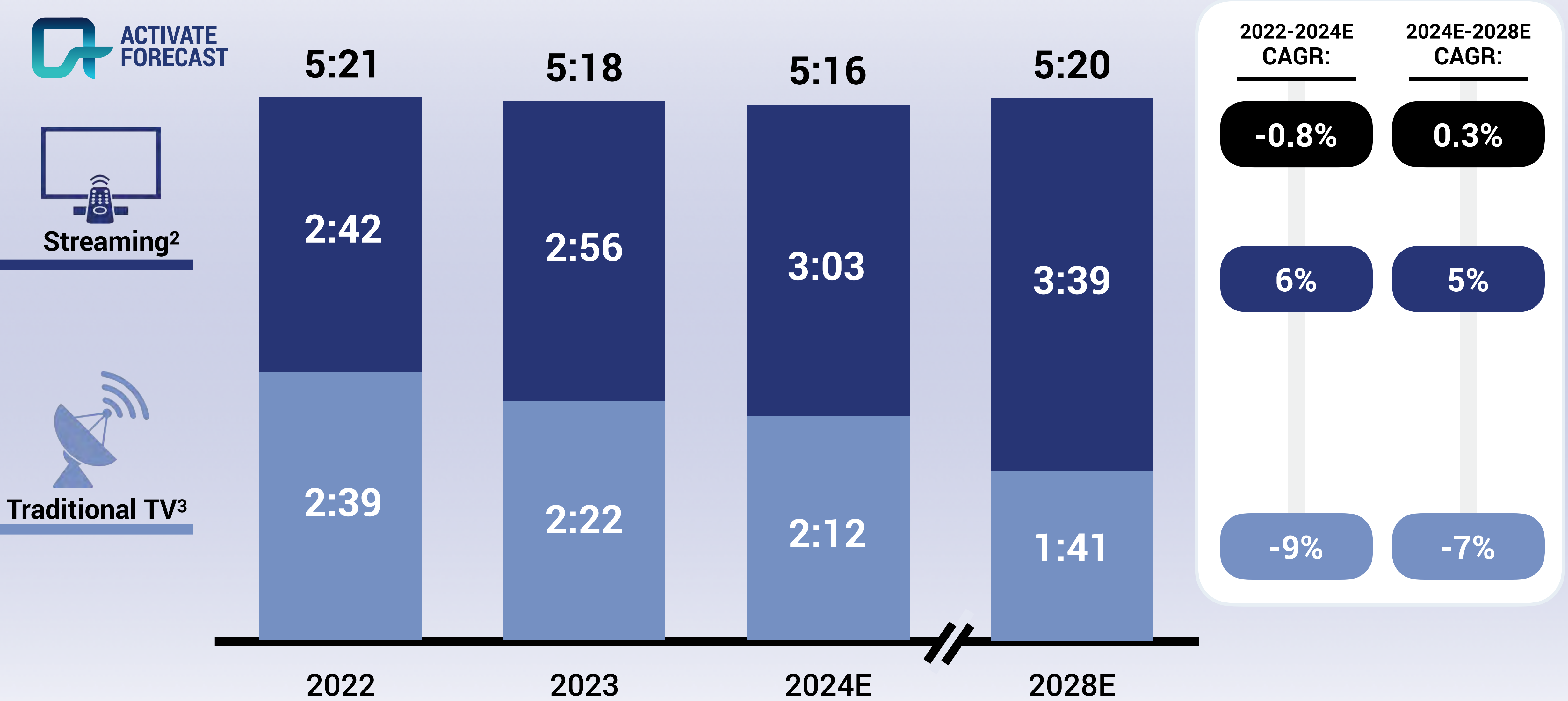
We forecast that overall time spend with video will remain flat through 2028; streaming will continue to grow at the expense of traditional TV

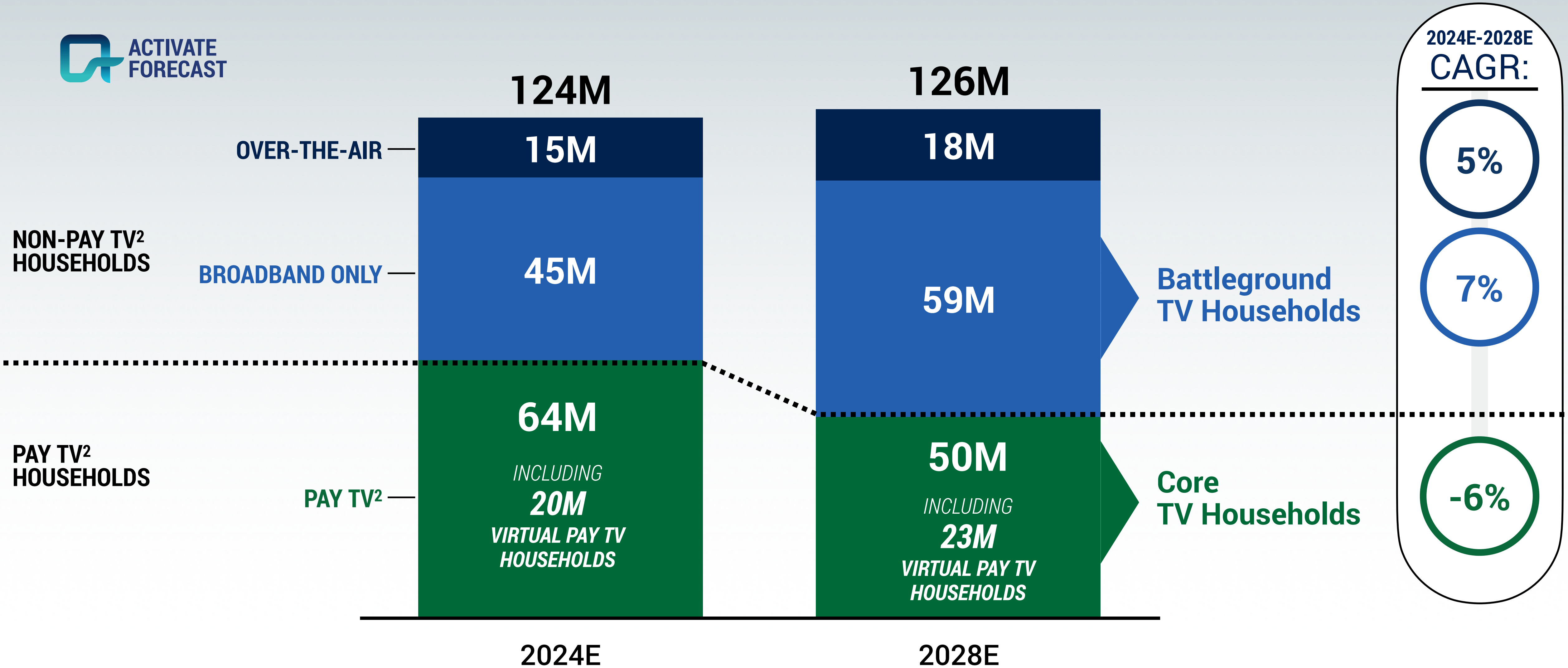
AVERAGE DAILY VIDEO TIME SPEND PER ADULT AGED 18+ BY TYPE[1], U.S., 2022-2024E VS. 2028E, HOURS:MINUTES



1. Figures do not sum due to rounding. 2. "Streaming" is defined as video watched on Connected TV, mobile phone, tablet, or desktop/laptop. Connected TVs are TV sets that can connect to the internet through built-in internet capabilities (i.e. Smart TVs) or through another device such as a streaming device (e.g. Amazon Fire TV, Apple TV, Google Chromecast, Roku), game console, or Blu-ray player. Does not include social video or virtual Pay TV. 3. "Traditional TV" is defined as both traditional and virtual Pay TV as well as time-shifted (e.g. DVR) television viewing. Includes broadcast.
Sources: Activate analysis, Comscore, Conviva, data.ai, eMarketer, GWI, Nielsen, Pew Research Center, U.S. Bureau of Labor Statistics

We forecast that in 2028 there will be 50M Pay TV households while Battleground TV households – at 59M – will be the largest segment

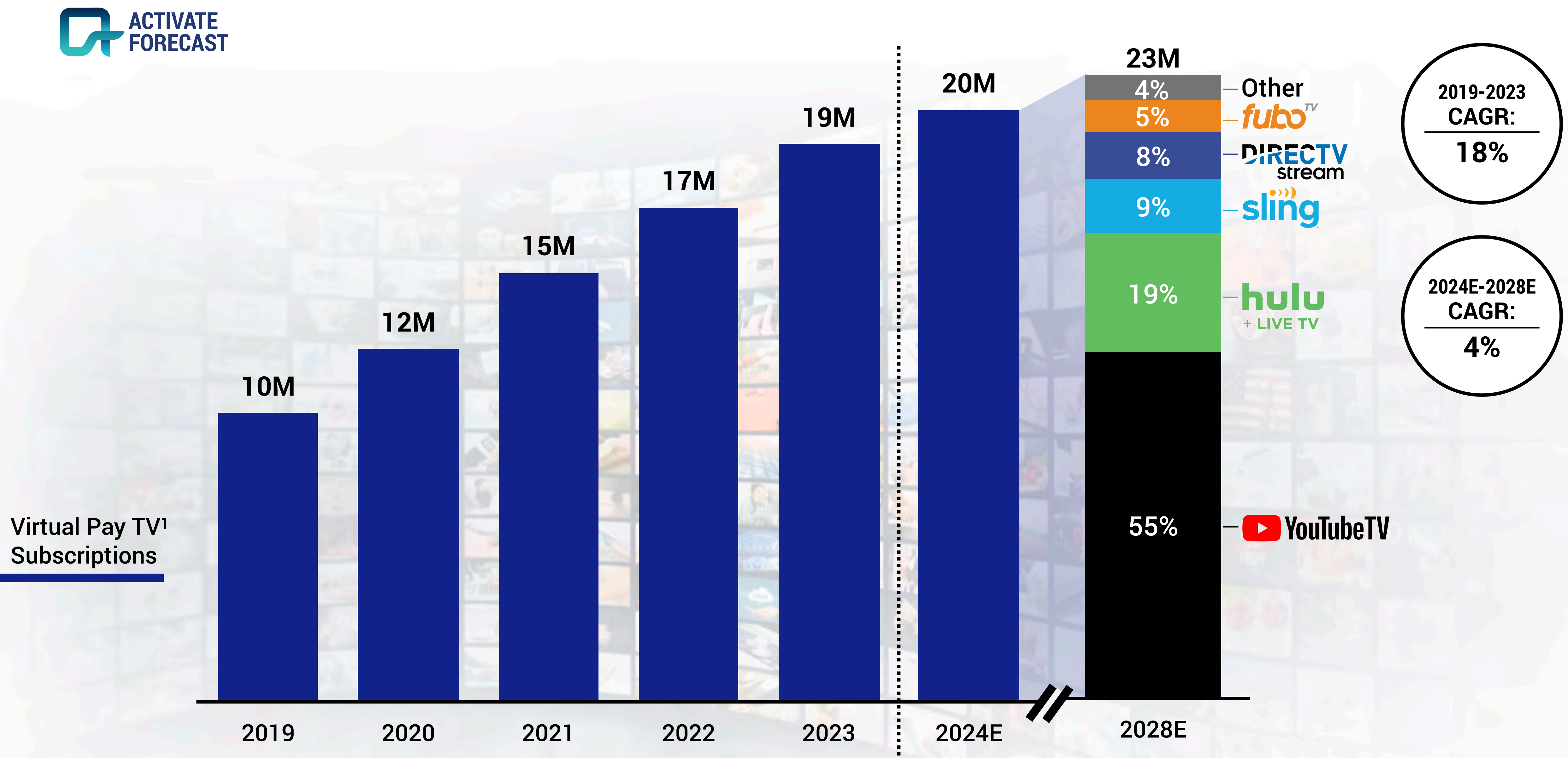
TELEVISION HOUSEHOLD BREAKDOWN[1], U.S., 2024E VS. 2028E, MILLIONS HOUSEHOLDS



1. Figures do not sum due to rounding. 2. "Pay TV" is defined as traditional Pay TV (i.e. TV delivered through a set-top box) and virtual Pay TV (i.e. TV delivered through the internet without a set-top box).
Sources: Activate analysis, Activate 2019 Consumer Technology & Media Research Study (n = 4,006), Activate 2020 Consumer Technology & Media Research Study (n = 4,003), Activate 2021 Consumer Technology & Media Research Study (n = 4,018), Activate 2021 Consumer Video Research Study (n = 2,014), Activate 2022 Consumer Technology & Media Research Study (n = 4,001), Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004), eMarketer, MoffettNathanson, Nielsen, S&P Global, U.S. Census Bureau, Wells Fargo

We forecast that Virtual Pay TV will grow to 23M subscriptions but will only partially offset the decline of Pay TV

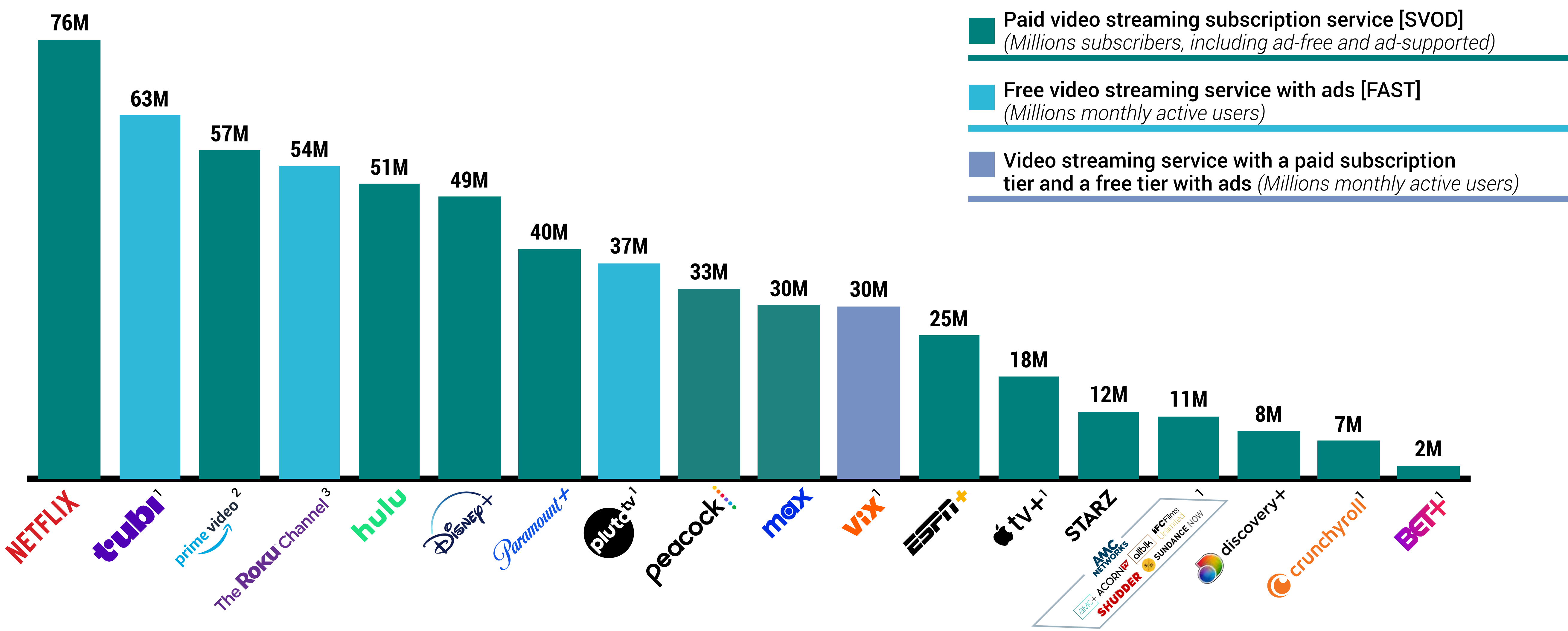
VIRTUAL PAY TV[1] SUBSCRIPTIONS, U.S., 2019-2024E VS. 2028E, MILLIONS SUBSCRIPTIONS



1. “Virtual Pay TV” is defined as TV delivered through the internet without a set-top box.
Sources: Activate analysis, eMarketer, MoffettNathanson, Nielsen, S&P Global, Wells Fargo

The streaming market is highly competitive with usage fragmented across a large number of streaming services

ESTIMATED NUMBER OF PAID SUBSCRIBERS/USERS BY SELECT VIDEO STREAMING SERVICES,
U.S., Q2 2024 OR LATEST AVAILABLE, MILLIONS SUBSCRIBERS / MONTHLY ACTIVE USERS



Note: Figures reflect latest publicly disclosed metrics as of Oct. 1, 2024, unless noted otherwise.
1. Reflects estimate. 2. Reflects estimate of total Prime Video subscribers who own and use the subscription. 3. Reflects estimate of Roku monthly active accounts in North America viewing The Roku Channel.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Antenna, Company filings, Company press releases, Company sites, eMarketer, Entertainment Strategy Guy, The Hollywood Reporter, Infillion, J.P. Morgan, MoffettNathanson, Morgan Stanley, Morningstar, Statista, Variety, Wells Fargo

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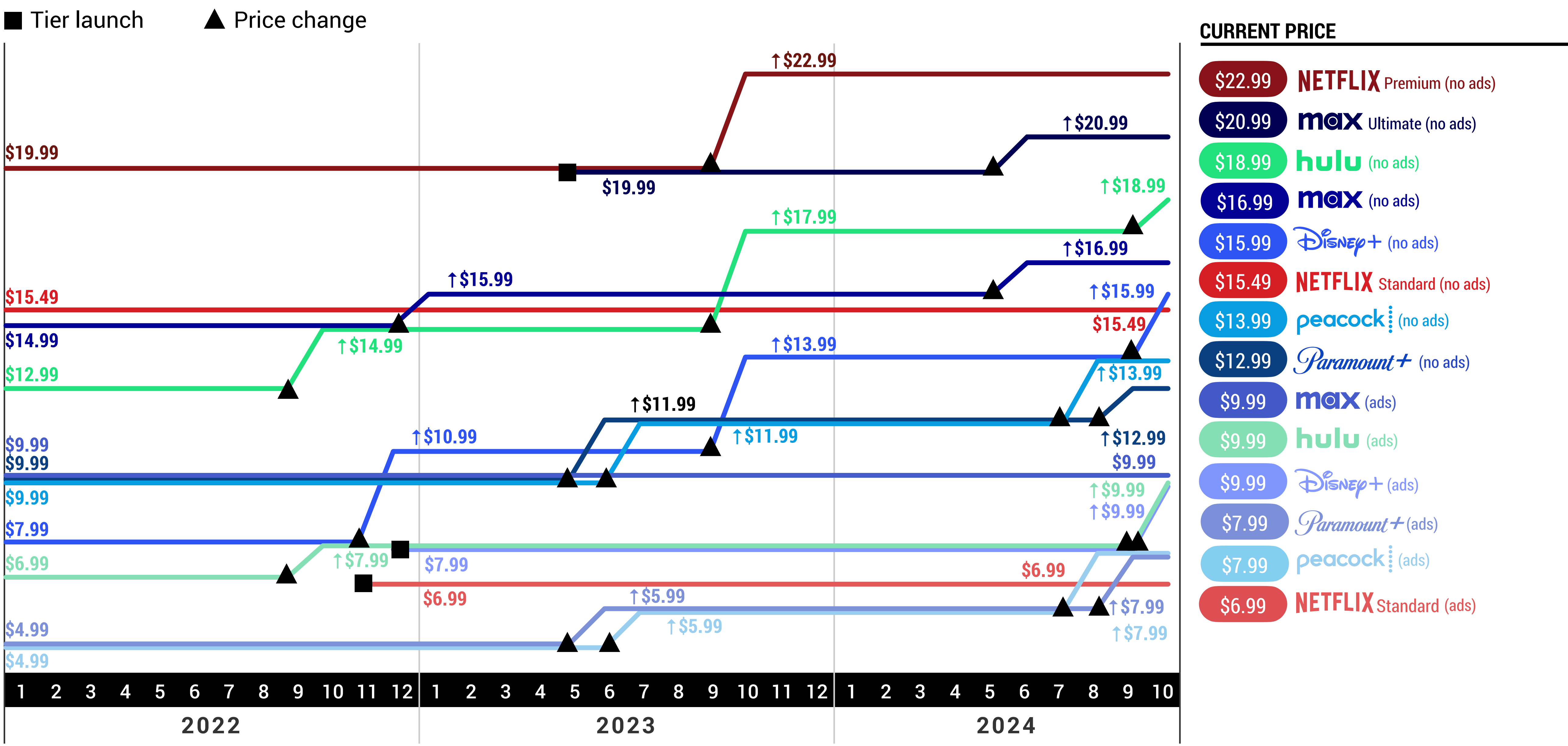
Paid streaming services will continue to raise prices in an effort to improve profitability

MONTHLY STANDARD SUBSCRIPTION PRICES OF SELECT PAID VIDEO STREAMING SERVICES, U.S., JAN. 2022-OCT. 2024[1], USD



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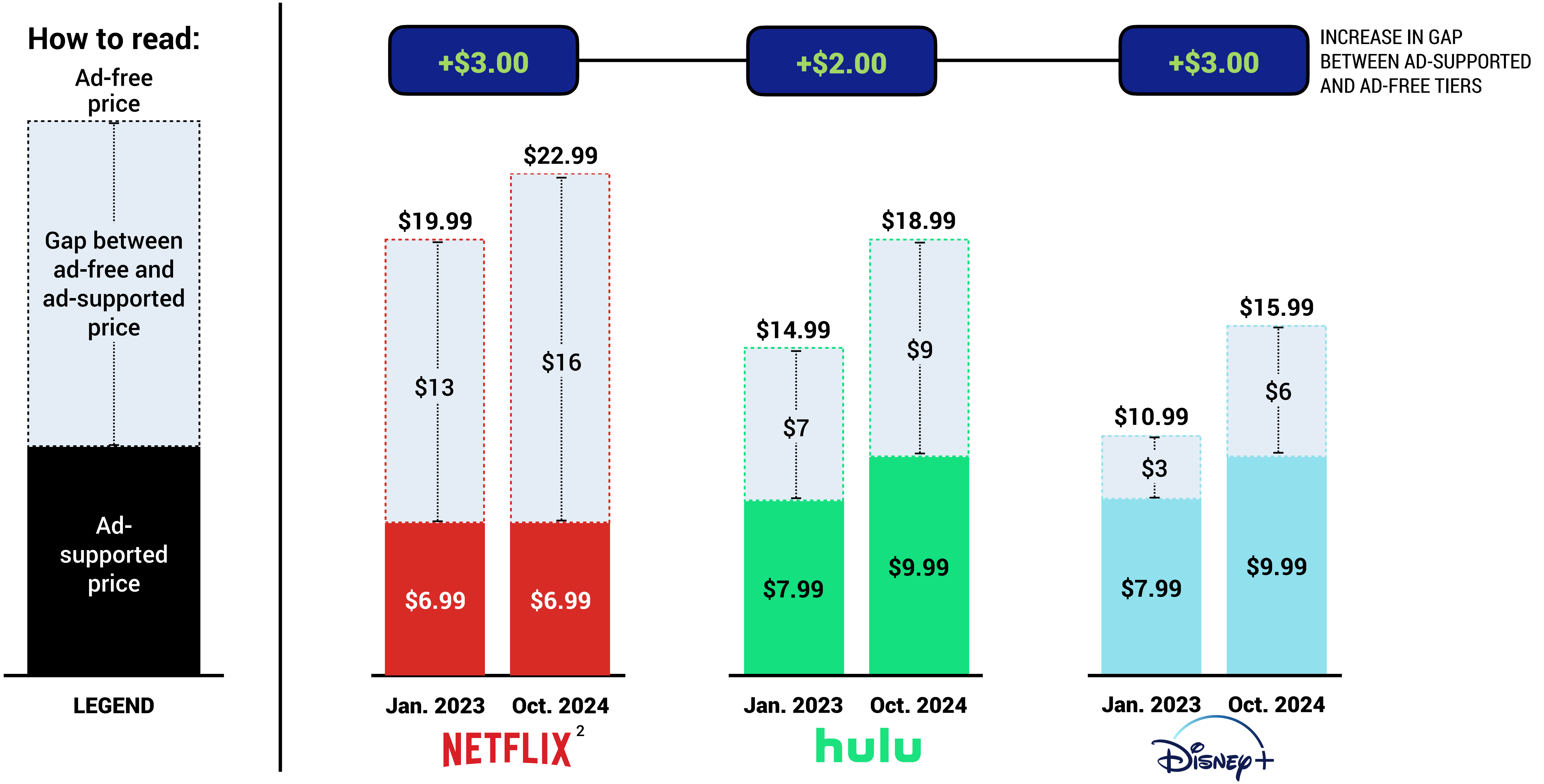
1. As of Oct. 7, 2024 except for Disney+ (no ads) which changes to $15.99 and Disney+ (ads) to $9.99 on Oct. 17, 2024.
Sources: Activate analysis, Company press releases, Company sites

Top paid streaming services are raising prices more on ad-free tiers than on ad supported to maximize revenue from subscribers who are less price sensitive

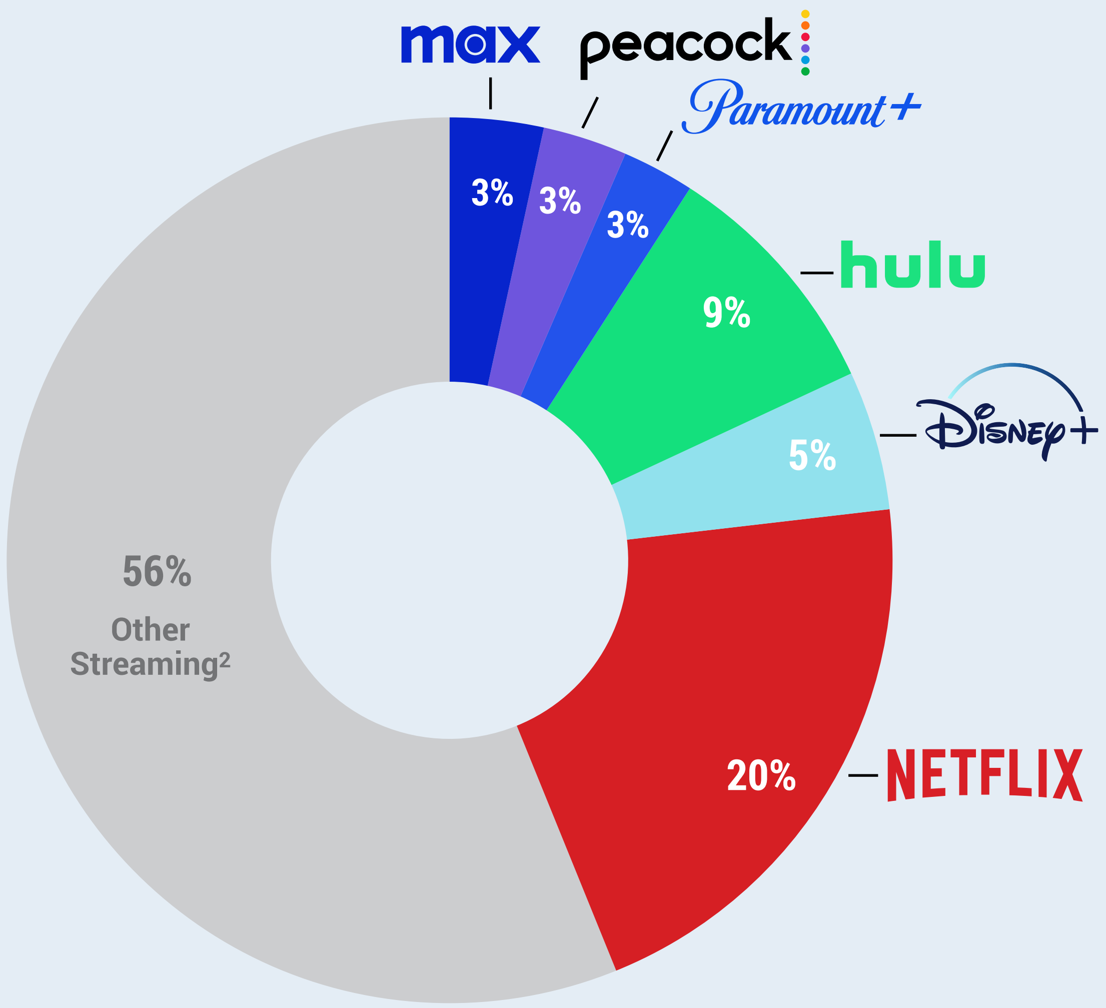
MONTHLY STANDARD SUBSCRIPTION PRICES OF SELECT PAID VIDEO STREAMING SERVICES[1],
U.S., JAN. 2023 VS. OCT. 2024[1], USD



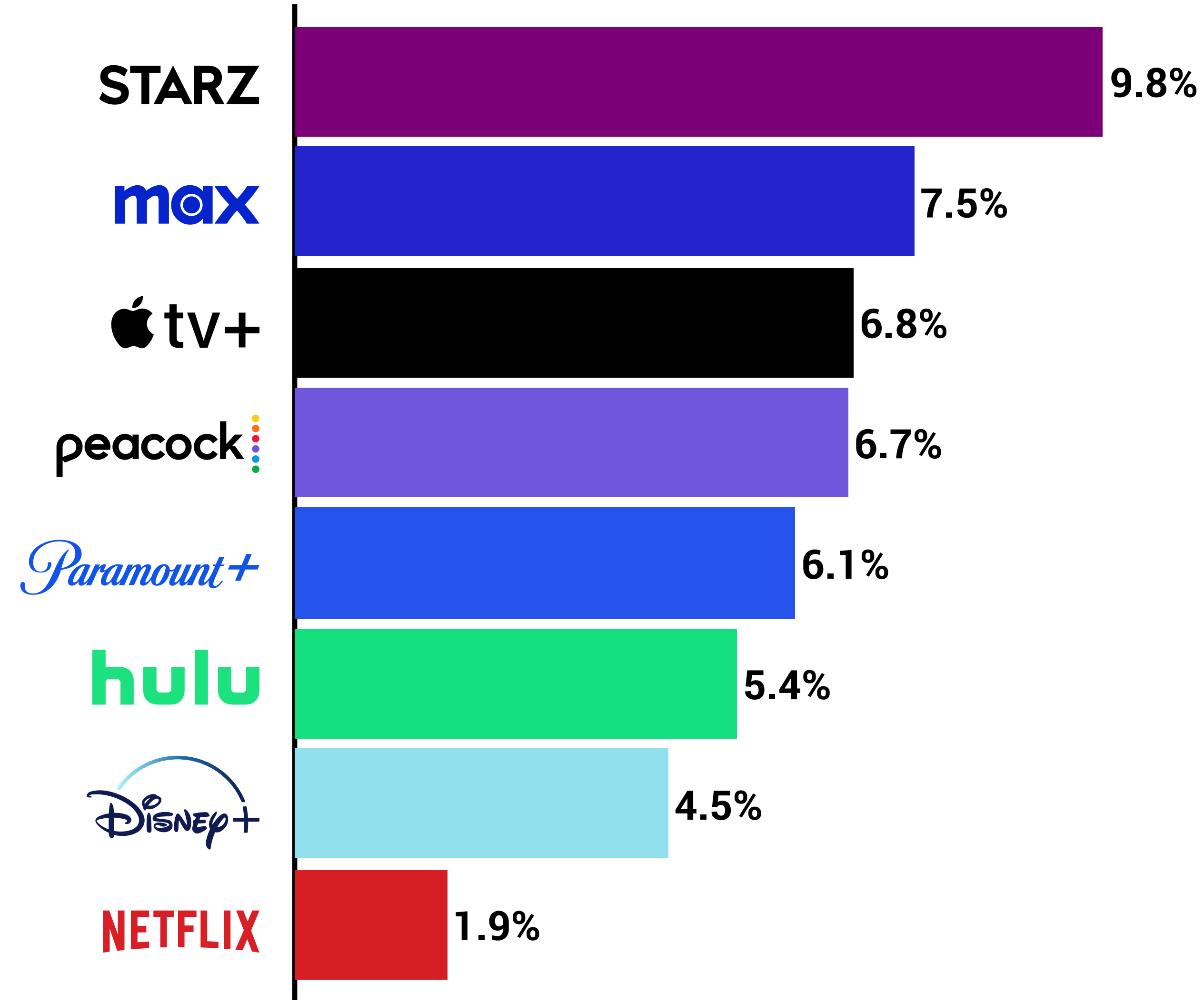
1. As of Oct. 7, 2024 except for Disney+ (no ads) which changes to $15.99 and Disney+ (ads) to $9.99 on Oct. 17, 2024. 2. Prices reflect the standard monthly price for Netflix's Premium and Standard with Ads tiers.
Sources: Activate analysis, Company press releases, Company sites

To retain subscribers, streaming services will need to drive viewer engagement

VIEWERSHIP BY STREAMING PLATFORM[1], U.S., 2023
MONTHLY AVERAGE, % STREAMING MINUTES



AVERAGE MONTHLY CHURN[3] PERCENTAGE BY STREAMING SERVICE, U.S., 2023, MONTHLY CHURN[3] RATE



1. Figures do not sum to 100% due to rounding. 2. “Other streaming” includes YouTube, Prime Video, Tubi, The Roku Channel, Pluto TV, and “other services” as defined by Nielsen’s The Gauge. 3. “Monthly Churn” is defined as the percentage of subscribers who canceled during the month relative to subscribers at the end of the previous month.
Sources: Activate analysis, Antenna, Nielsen’s The Gauge

The top shows deliver consistent viewer engagement

SHOWS MOST FREQUENTLY APPEARING ON WEEKLY TOP 10 STREAMING SHOWS LIST[1,2],
U.S., SEPT. 2023-SEPT. 2024[3], NUMBER OF APPEARANCES ON WEEKLY TOP 10 STREAMING SHOWS LIST[1]

■ = Number of appearances on weekly top 10 list

210 other shows made the top 10 list fewer than nine times

1. Based on Nielsen Streaming Content Ratings, which ranks titles based on aggregate minutes streamed. 2. Includes all shows that appeared nine times or more on the weekly top 10 list. 3. Reflects weekly top 10 lists from the week of Sept. 11, 2023-Sept. 17, 2023 through the week of Sept. 2, 2024-Sept. 8, 2024.
Sources: Activate analysis, Nielsen Streaming Content Ratings

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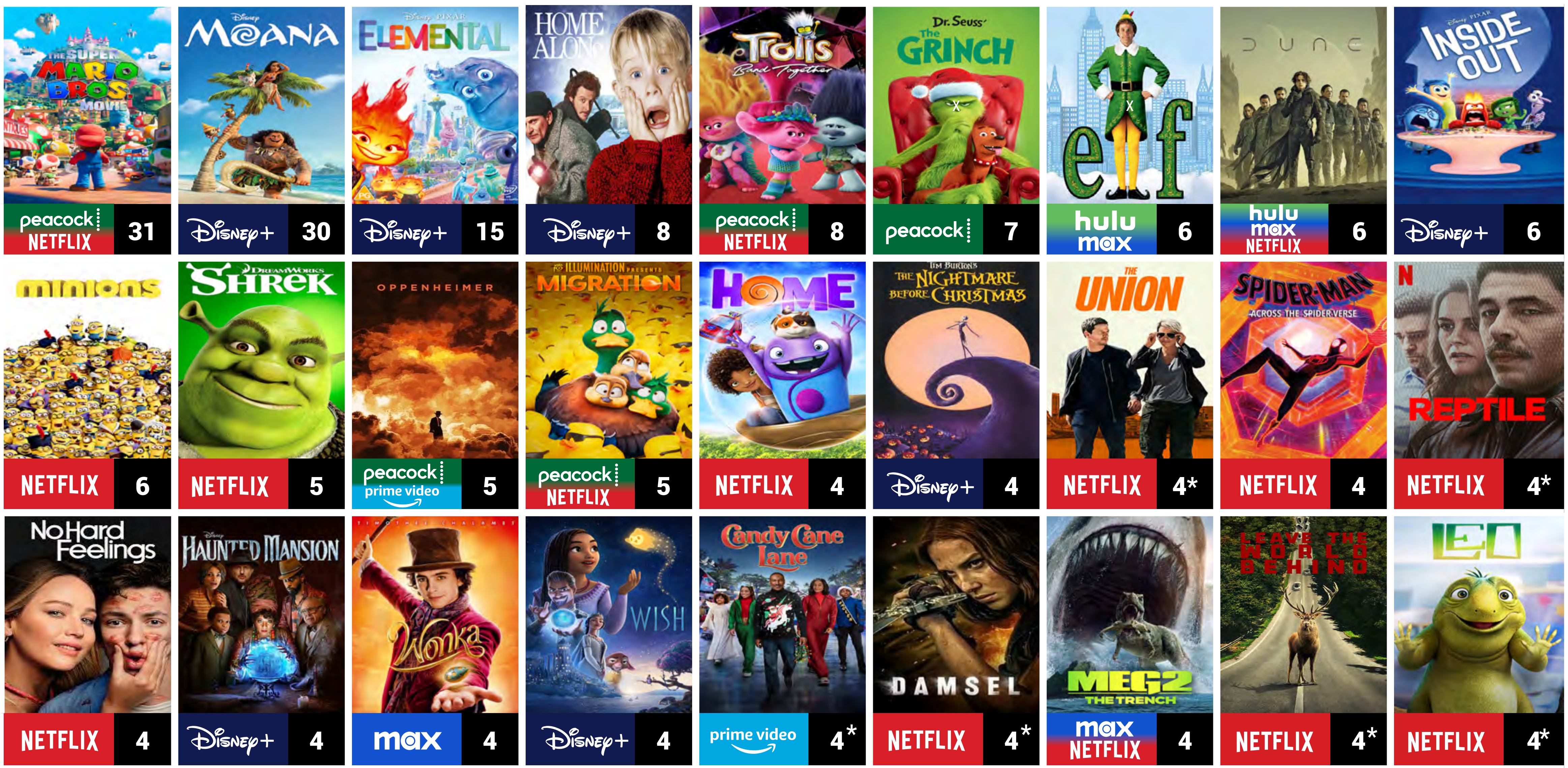
On streaming, family films that have had a theatrical release drive the most frequent engagement

FILMS MOST FREQUENTLY APPEARING ON WEEKLY TOP 10 STREAMING FILMS LIST[1,2],
U.S., SEPT 2023-SEPT. 2024[3], NUMBER OF APPEARANCES ON WEEKLY TOP 10 STREAMING FILMS LIST[1]

■ = Number of appearances on weekly top 10 list



195 other films made the top 10 list fewer than four times

*** = did not receive a theatrical release**

1. Based on Nielsen Streaming Content Ratings, which ranks titles based on aggregate minutes streamed. 2. Includes all films that appeared four or more times on the weekly top 10 list. 3. Reflects weekly top 10 lists from the week of Sept. 11, 2023-Sept. 17, 2023 through the week of Sept. 2, 2024-Sept. 8, 2024.
Sources: Activate analysis, Nielsen Streaming Content Ratings

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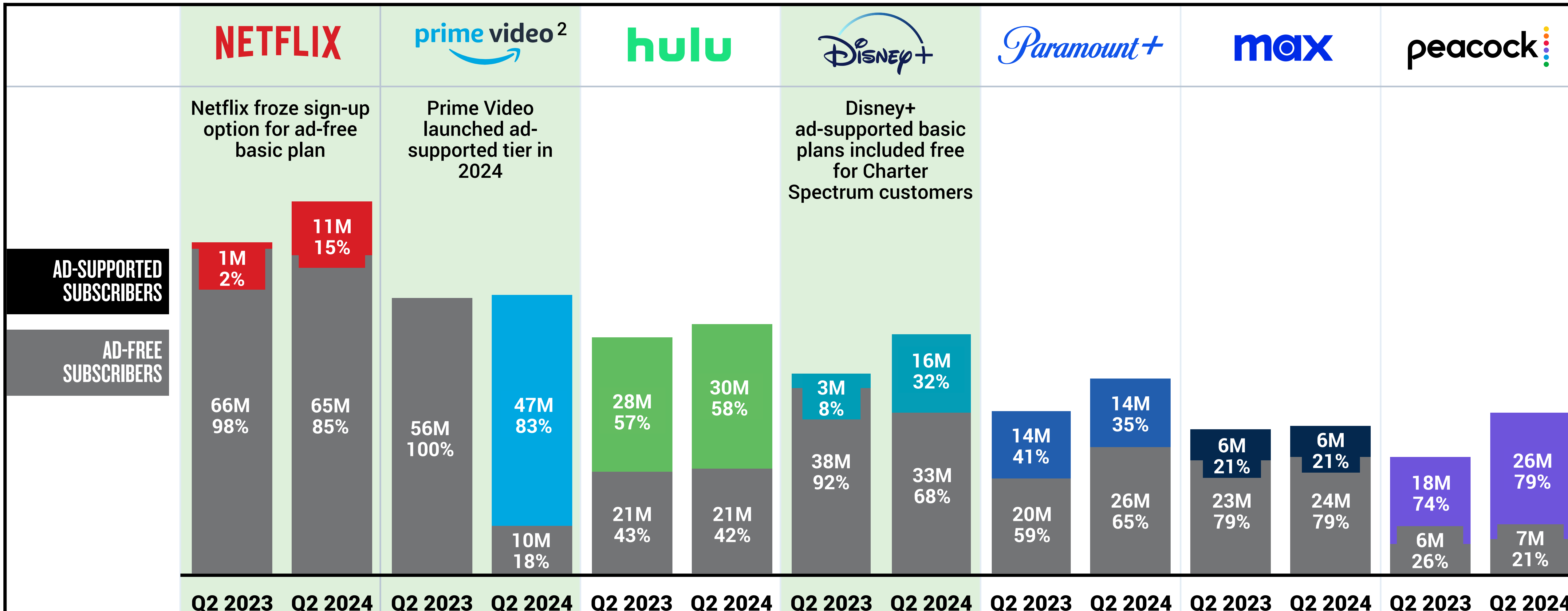
Nielsen ACTIVATE DATA PARTNER

Consumers are increasingly subscribing to lower priced ad-supported tiers, which are growing faster than ad-free

ESTIMATED PAID SUBSCRIBERS BY TIER[1], U.S., Q2 2023 VS. Q2 2024, MILLIONS SUBSCRIBERS

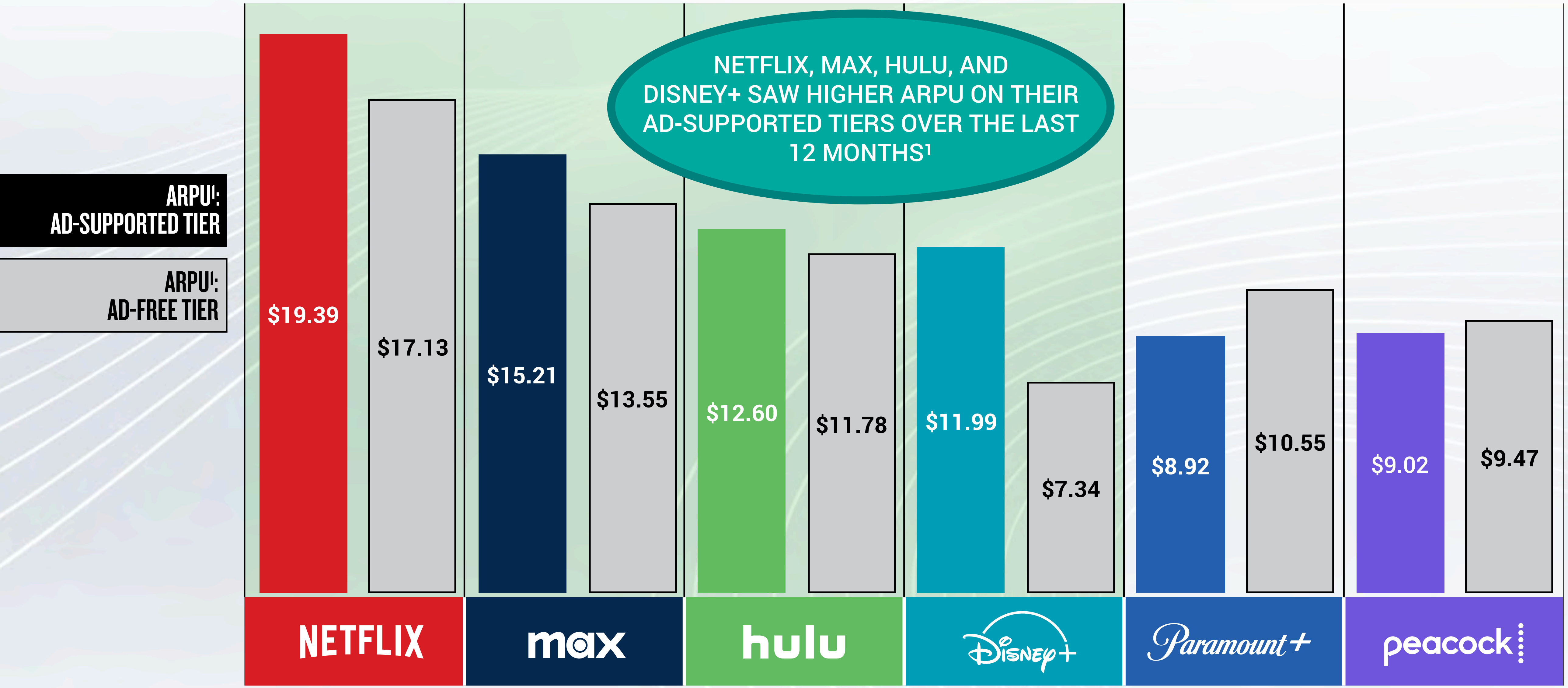


	Netflix	Prime Video	Hulu	Disney+	Paramount+	Max	Peacock
Q2 2023-Q2 2024 TOTAL SUBSCRIBER GROWTH YoY:	13%	1%	6%	19%	20%	3%	38%
Q2 2023-Q2 2024 AD-SUPPORTED SUBSCRIBERS YoY:	731%	N/A	8%	380%	2%	4%	46%

1. Figures do not sum due to rounding. 2. Prime Video subscribers calculated based on the number of households who subscribe to Amazon Prime and use Prime Video on a monthly basis.
Sources: Activate analysis, Antenna, Company filings, data.ai, eMarketer, Kantar, Morgan Stanley, Nielsen

Ad-supported tiers deliver comparable or superior revenue per user than ad-free tiers

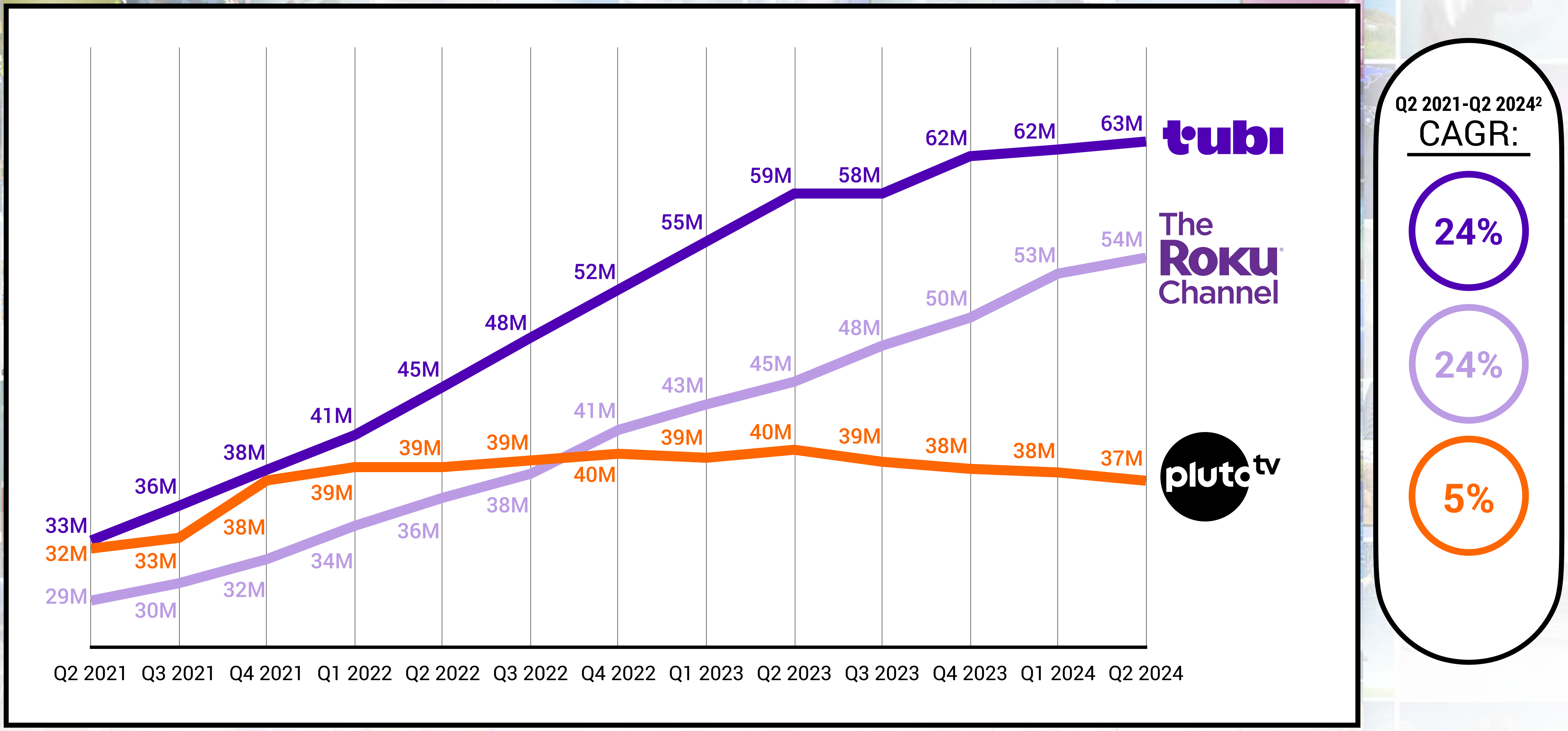
ESTIMATED ARPU[1] BY TIER FOR SELECT STREAMING SERVICES, U.S., Q2 2023-Q2 2024, USD PER SUBSCRIBER PER MONTH



1. "ARPU" is defined as the estimated average monthly revenue generated per subscriber over the last 12 months.
Sources: Activate analysis, Antenna, Bank of America, Company filings, eMarketer, MediaRadar, Morgan Stanley, Nielsen, SMI, Variety, The Verge

Free streaming services are winning and will continue to grow

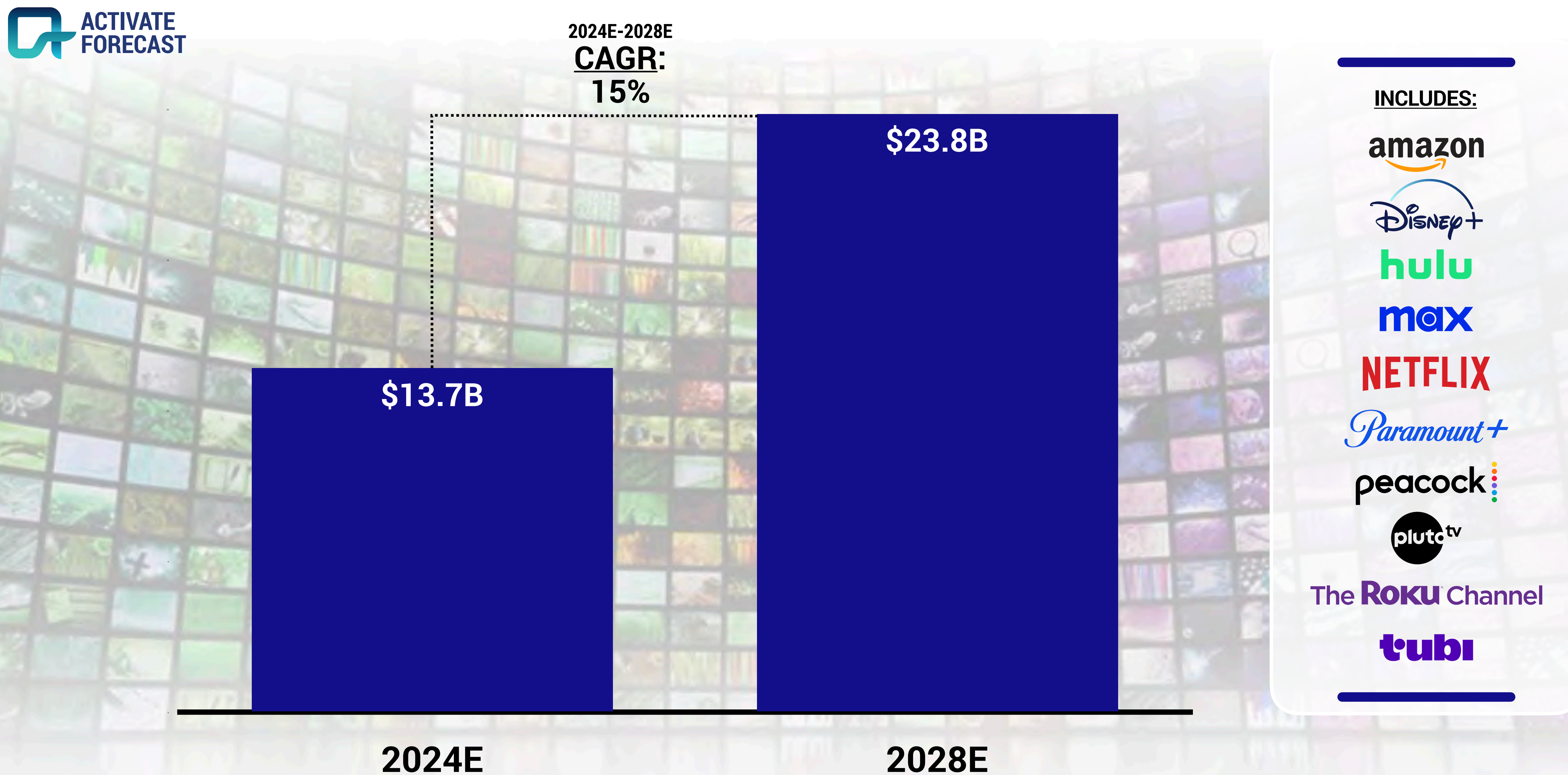
MONTHLY ACTIVE USERS BY FAST[1] SERVICE, U.S., Q2 2021-Q2 2024, MILLIONS MONTHLY ACTIVE USERS



1. "FAST" is defined as a free video streaming service with ads. 2. CAGR calculated based on MAUs as of Q2 2021 and Q2 2024.
Sources: Activate analysis, Company filings, data.ai, Guggenheim, Morgan Stanley, Next TV

As audiences migrate to ad-supported tiers and FAST services, we forecast that streaming advertising revenues will sustain strong growth through 2028

ADVERTISING REVENUES FOR SELECT STREAMING SERVICES[1,2], U.S., 2024E VS. 2028E, BILLIONS USD

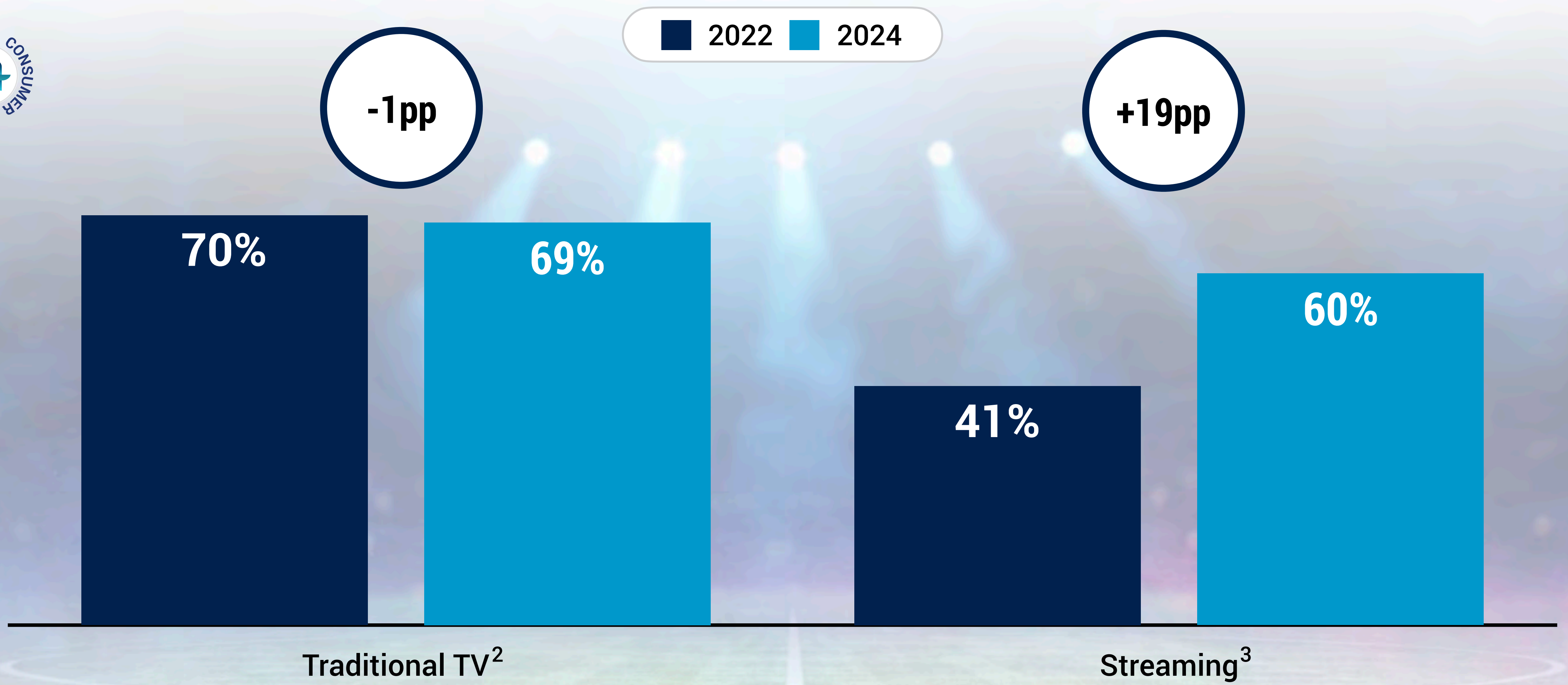


1. Figures do not sum due to rounding. 2. "Select Streaming Services" includes Amazon, Disney+, Hulu, Max, Netflix, Paramount+, Peacock, Pluto TV, The Roku Channel, and Tubi.
Sources: Activate analysis, Antenna, Bank of America, Bank of Canada, Bernstein Societe Generale Group, Canada Census, Company filings, Company sites, Cowen Research, Entertainment Strategy Guy, The Hollywood Reporter, MediaRadar, Morgan Stanley, Nielsen, SMI, S&P Global, United States Census, Variety

SPORTS MEDIA & BETTING

Sports fans are increasingly watching video on both traditional television and streaming

LIVE SPORTS VIEWERSHIP BY PLATFORM, U.S., 2022 VS. 2024, % LIVE SPORTS VIEWERS[1] AGED 18+



1. "Live Sports Viewers" are defined as adults aged 18+ who have watched at least one live sports event within the last 12 months.
2. "Traditional TV" consists of viewership through Pay TV (i.e. cable/satellite TV subscriptions) and over-the-air (e.g. watching for free through an antenna). 3. "Streaming" is defined as video watched on Connected TV, mobile phone, tablet, or desktop/laptop. Connected TVs are TV sets that can connect to the internet through built-in internet capabilities (i.e. Smart TVs) or through another device such as a streaming device (e.g. Amazon Fire TV, Apple TV, Google Chromecast, Roku), game console, or Blu-ray player.
Sources: Activate analysis, Activate 2022 Consumer Technology & Media Research Study (n = 4,001), Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Sports streaming growth will accelerate as more games from the top leagues are available on streaming (and in some cases exclusively) (1/2)

AVAILABILITY OF 2024-2025 NFL REGULAR SEASON GAMES[1] BY DISTRIBUTION PLATFORM

1. Does not include out-of-market games available on NFL Sunday Ticket. Excludes 21 games that currently do not have a finalized distribution platform.
Sources: Activate analysis, NFL schedule data

Sports streaming growth will accelerate as more games from the top leagues are available on streaming (and in some cases exclusively) (2/2)

NBA

2025-2036 NBA MEDIA RIGHTS DEAL OVERVIEW

			SEASON PROGRAMMING					
LINEAR	STREAMING	ANNUAL VALUE	Finals	NBA CONFERENCE FINALS	FIRST AND SECOND ROUND PLAYOFFS	SoFi PLAY-IN TOURNAMENT	NBA REGULAR SEASON	Emirates NBA CUP[1]
abc / ESPN	ESPN FLAGSHIP	$2.6B	Every finals game, each season	10 seasons, 1 series each season	~18 games/ season		80 games/ season	
NBC	peacock	$2.5B		6 seasons, 1 series each season	~28 games/ season		100 games/ season	
Not Available	prime video	$1.9B		6 seasons, 1 series each season	~1/3 of games/ season	Every game/ season (6 games)	66 games/ season	Championship game, semi-finals, and quarter-finals

A significant share of NBA games will only be available on streaming beginning with the 2025 season

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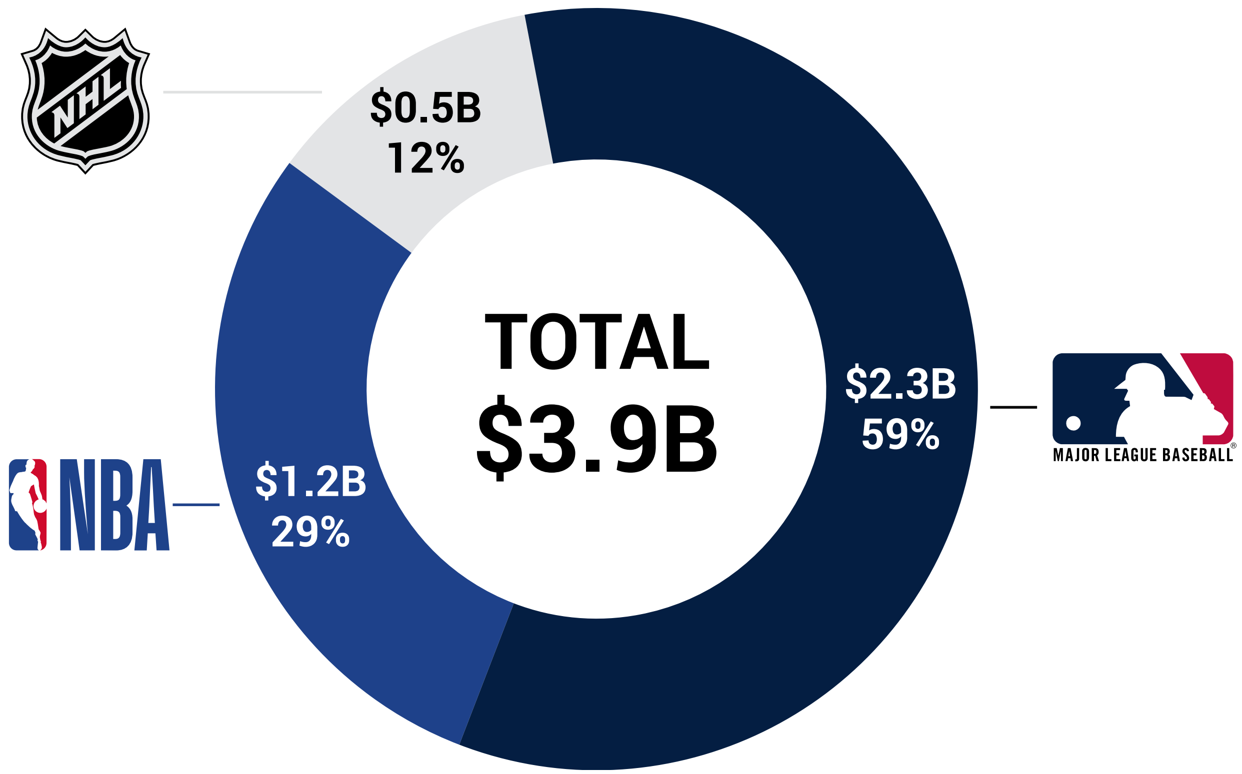
1. Group Play round distribution platform(s) has not been announced.
Sources: Activate analysis, NBA Press Release

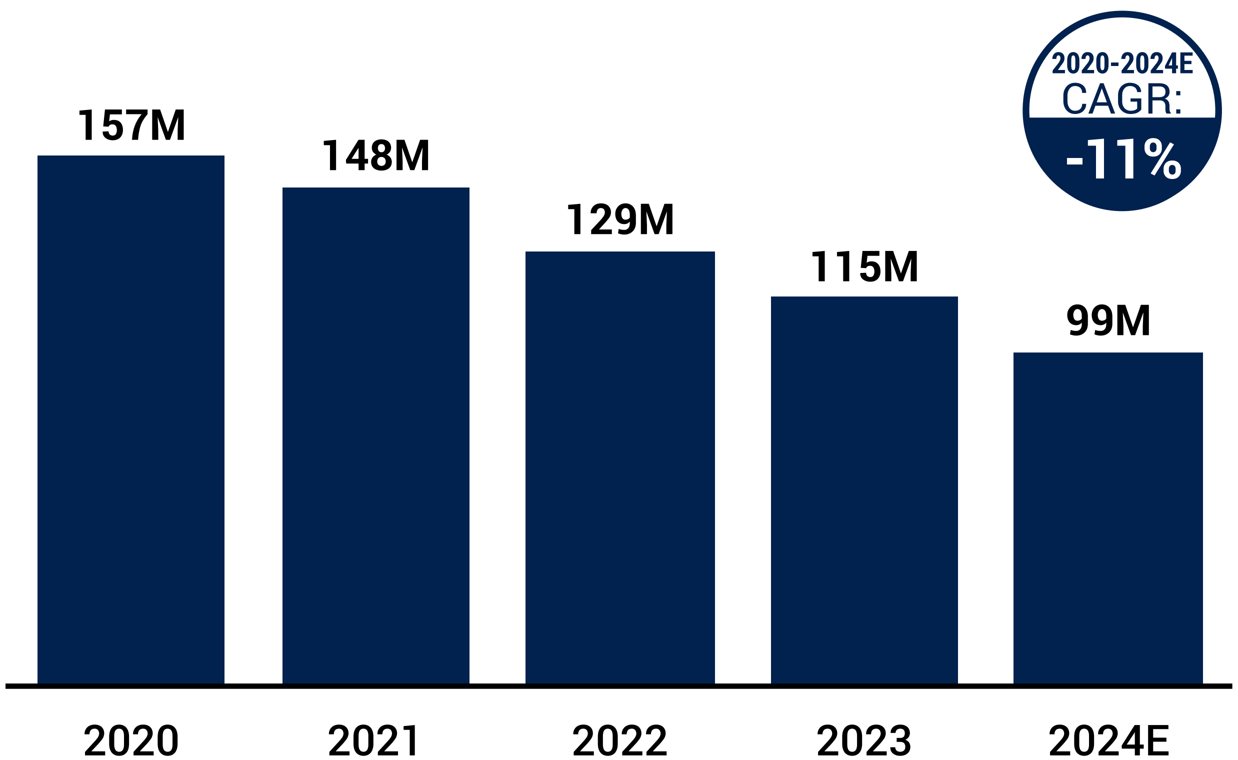
Almost $4B is at risk as distribution of Regional Sports Networks declines precipitously

LOCAL MLB, NBA, AND NHL ANNUAL RIGHTS VALUE[1],
U.S., 2024, BILLIONS USD



Local sports rights deliver ~$4B in annual revenue to the NBA, MLB, and NHL

TOTAL REGIONAL SPORTS NETWORK SUBSCRIPTIONS,
U.S., 2020-2024E, MILLIONS SUBSCRIPTIONS



REGIONAL SPORTS NETWORK EXAMPLES

Altitude sports · Bally Sports · Monumental · MSG Networks · NESN · SNY · Spectrum SportsNet · YES

1. Figures do not sum due to rounding.
Sources: Activate analysis, S&P Global

Private equity investments in sports teams are likely to increase

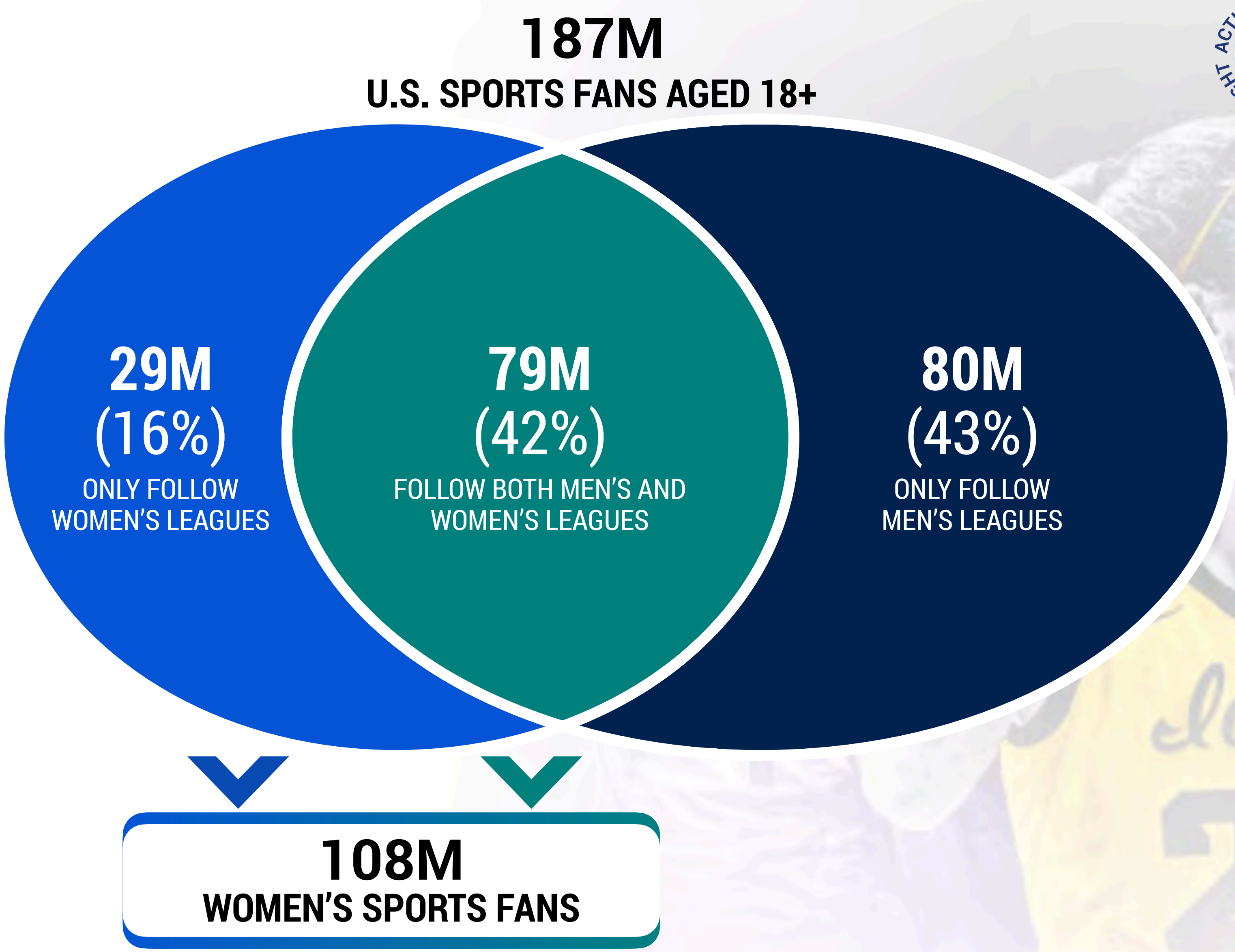
PRIVATE EQUITY INVESTMENTS IN SPORTS TEAMS ACROSS U.S. BIG 4 SPORTS LEAGUES

League	Investors		
NFL	In August 2024, NFL owners approved allowing teams to sell up to 10% of equity to a group of eight pre-approved institutional investors: ARCTOS, ARES, Blackstone, CARLYLE, CVC, DYNASTY EQUITY, LUDIS CAPITAL, SIXTH STREET		
NBA[1]	ARCTOS	BLUE OWL	SIXTH STREET
MAJOR LEAGUE BASEBALL[1]	ARCTOS	REDBIRD CAPITAL PARTNERS	
NHL[1]	ARCTOS	REDBIRD CAPITAL PARTNERS	

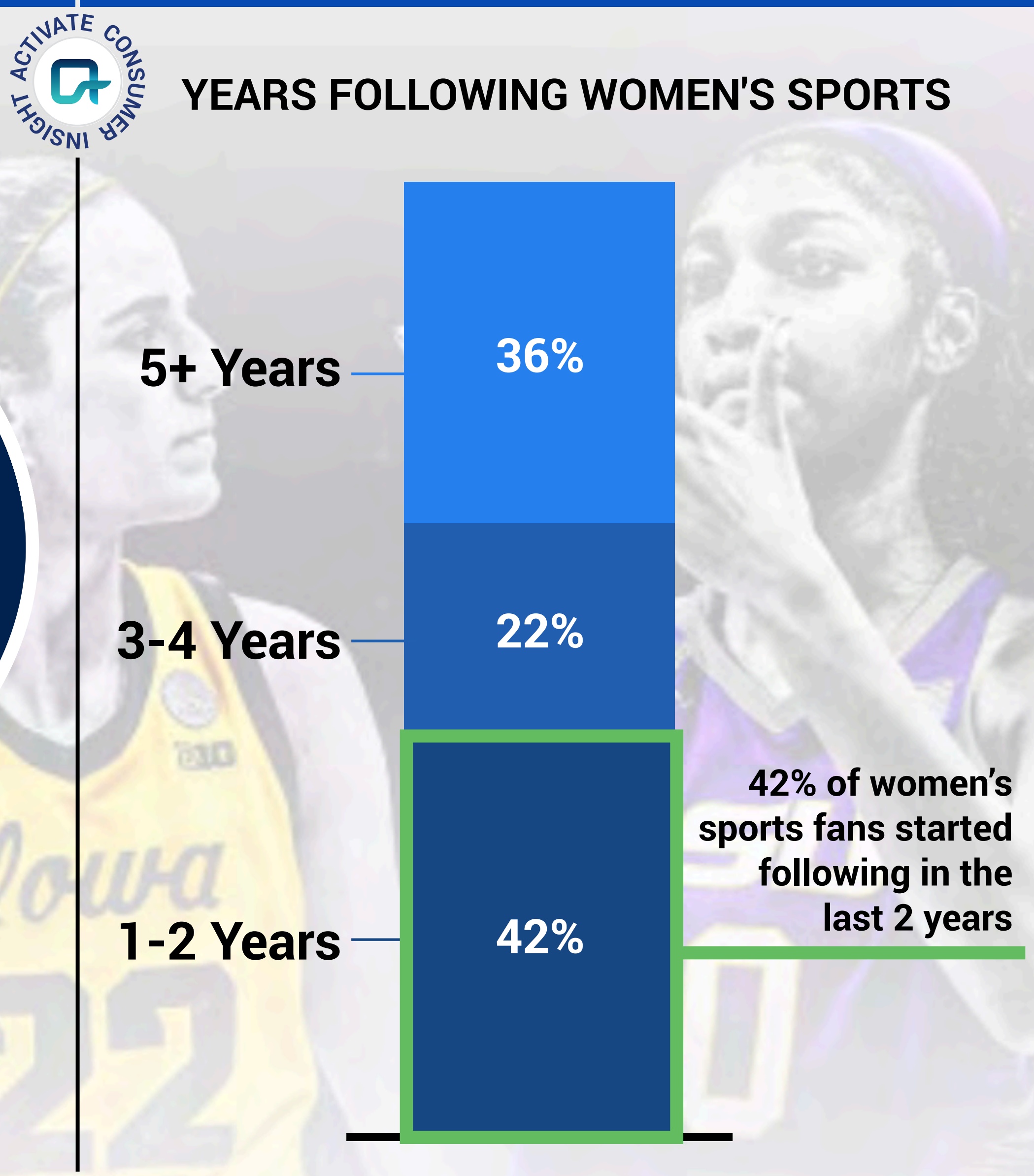
1. Potentially not exhaustive, as teams are not required to disclose sales or investments of minority equity.
Sources: Activate analysis, Forbes, Sportico, Sports Business Journal

After many years of investment, women's sports have exploded in popularity, reaching 108M U.S. fans in 2024, many of whom started following women's leagues in the last two years

DISTRIBUTION OF SPORTS FANS[1] BY VIEWERSHIP OF WOMEN'S SPORTS[2],
U.S., 2024, MILLIONS SPORTS FANS[1]



WOMEN'S SPORTS FANS[1] BY YEARS OF FANDOM,
U.S., 2024, % WOMEN'S SPORTS FANS[1]



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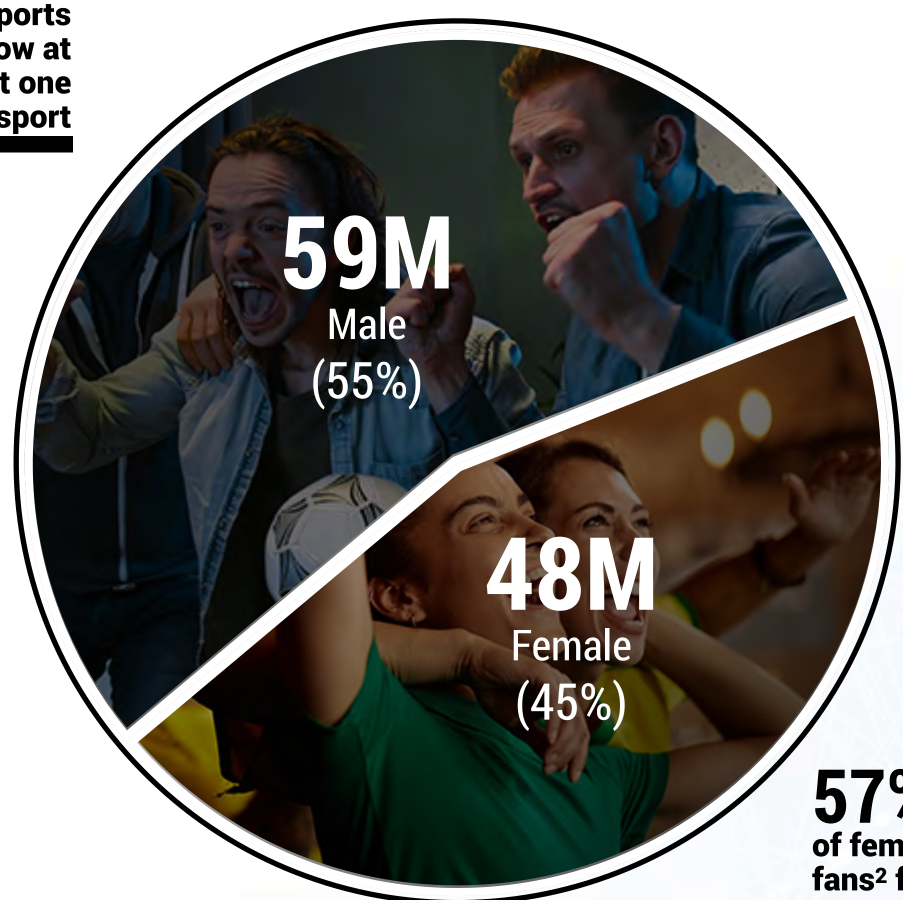
1. "Sports fans" are defined as adults aged 18+ who followed at least one sport in the last 12 months (e.g. attended live games in person, watched live games or game highlights, read articles or statistics). 2. Figures do not sum due to rounding.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), U.S. Census Bureau

Women's sports have broad appeal across both men and women, and skew towards younger sports fans

WOMEN'S SPORTS FANS BY GENDER[1,2], U.S., 2024, % WOMEN'S SPORTS FANS[2]

58% of male sports fans[2] follow at least one women's sport

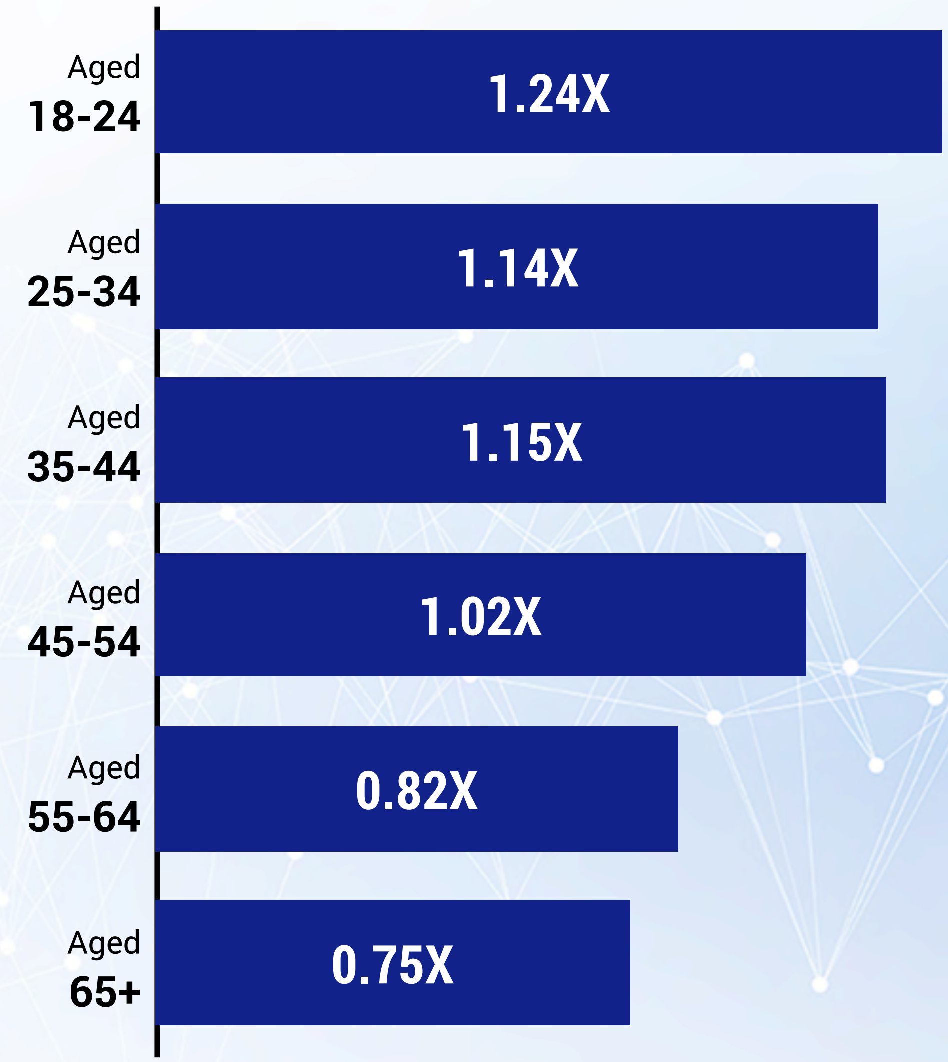


57% of female sports fans[2] follow at least one women's sport

108M
WOMEN'S SPORTS FANS[2]

WOMEN'S SPORTS FANS[2] BY AGE GROUP, U.S., 2024, SPORTS FANS[2] IN AGE GROUP INDEXED TO ALL SPORTS FANS[2]

Younger fans are more likely to watch women's sports than the average sports fan[2]...



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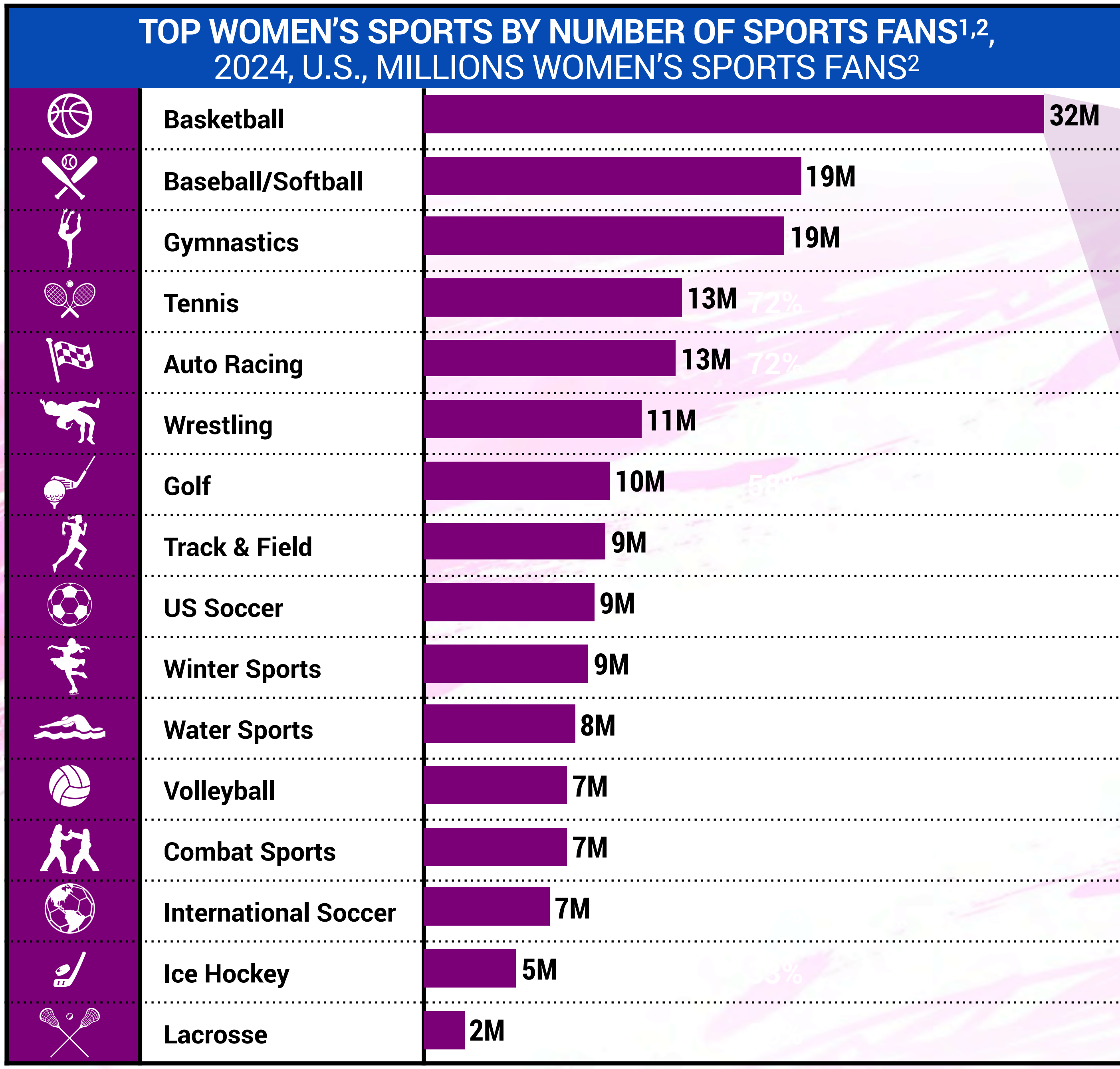
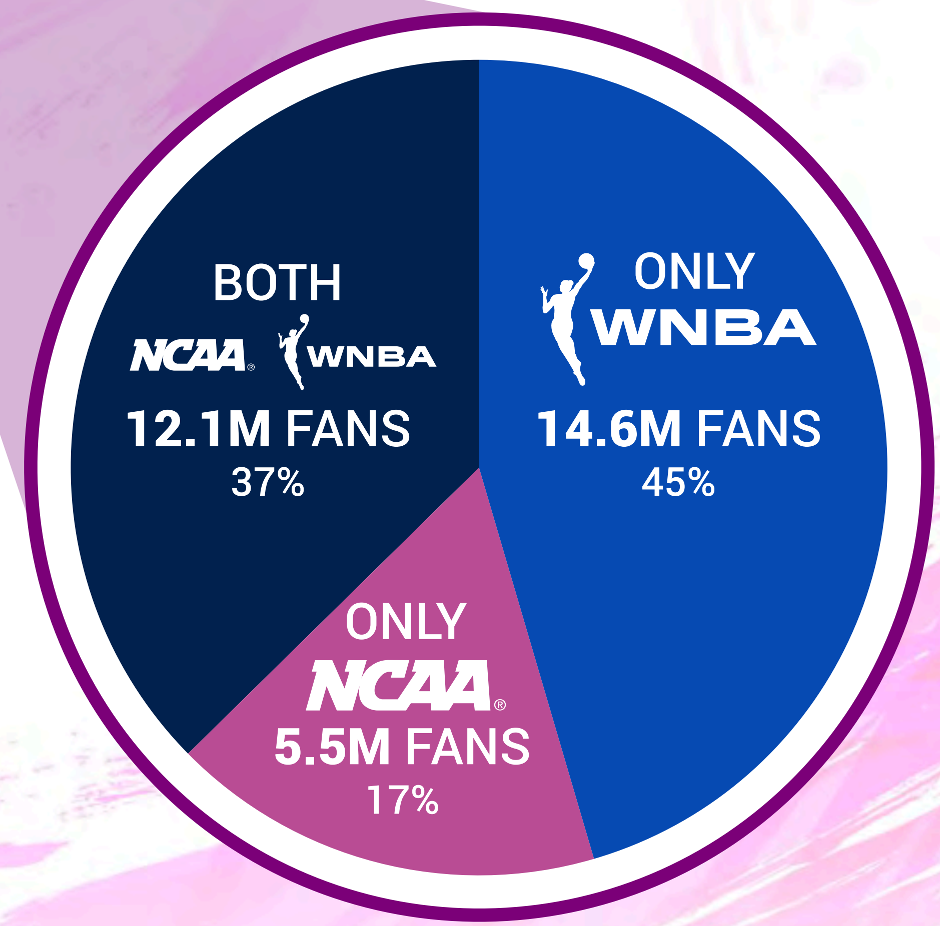
1. Figures do not sum due to rounding. 2. "Sports fans" are defined as adults aged 18+ who followed at least one sport in the last 12 months (e.g. attended live games in person, watched live games or game highlights, read articles or statistics).
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Basketball is the most popular women's sport, with over 30M fans across both the WNBA and the NCAA





1. Figures do not sum to 100% due to rounding. 2. "Sports fans" are defined as adults aged 18+ who followed at least one sport in the last 12 months (e.g. attended live games in person, watched live games or game highlights, read articles or statistics).
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), U.S. Census Bureau

The broad appeal of women's sports has led to significant investment in video rights, teams, and new leagues

MAJOR NORTH AMERICAN INVESTMENTS AND LEAGUE EXPANSIONS/LAUNCHES IN WOMEN'S SPORTS

INVESTMENT TRENDS	KEY EVENTS & ANNOUNCEMENTS		
MEDIA RIGHTS INVESTMENTS	WNBA / Disney / NBCU / prime video 11-year, $2.2B media rights deal announced in July 2024	USL Super League / peacock Multi-year agreement making Peacock the streaming provider for USL Super League matches announced in June 2024	NWSL / prime video / ESPN / CBS / SCRIPPS 4-year, $240M media rights deal announced in Nov. 2023
TEAM ACQUISITIONS & EXPANSIONS	WNBA PORTLAND EXPANSION Portland awarded league's 15th franchise in Sept. 2024; play to begin in 2026, following Golden State (2025) and Toronto (2026)	NWSL MARC LASRY / NC Courage Majority stake acquisition in Sept. 2024, valuing club at $108M	NWSL WILLOW BAY & BOB IGER / Angel City Majority stake acquisition in July 2024, valuing club at $250M
CREATION OF NEW LEAGUES	MEADOWLARK / hs&e / Unrivaled Inaugural season plans to be launched in 2025; investors include former athletes such as Alex Morgan, Carmelo Anthony, and Steve Nash	LOVB Inaugural season plans to be launched in Jan. 2025; $50M raised as of late 2023, and investors include Jayson Tatum and Billie Jean King	MARK WALTER / PWHL Inaugural season launched in Jan. 2024; all six inaugural teams owned by Mark Walter

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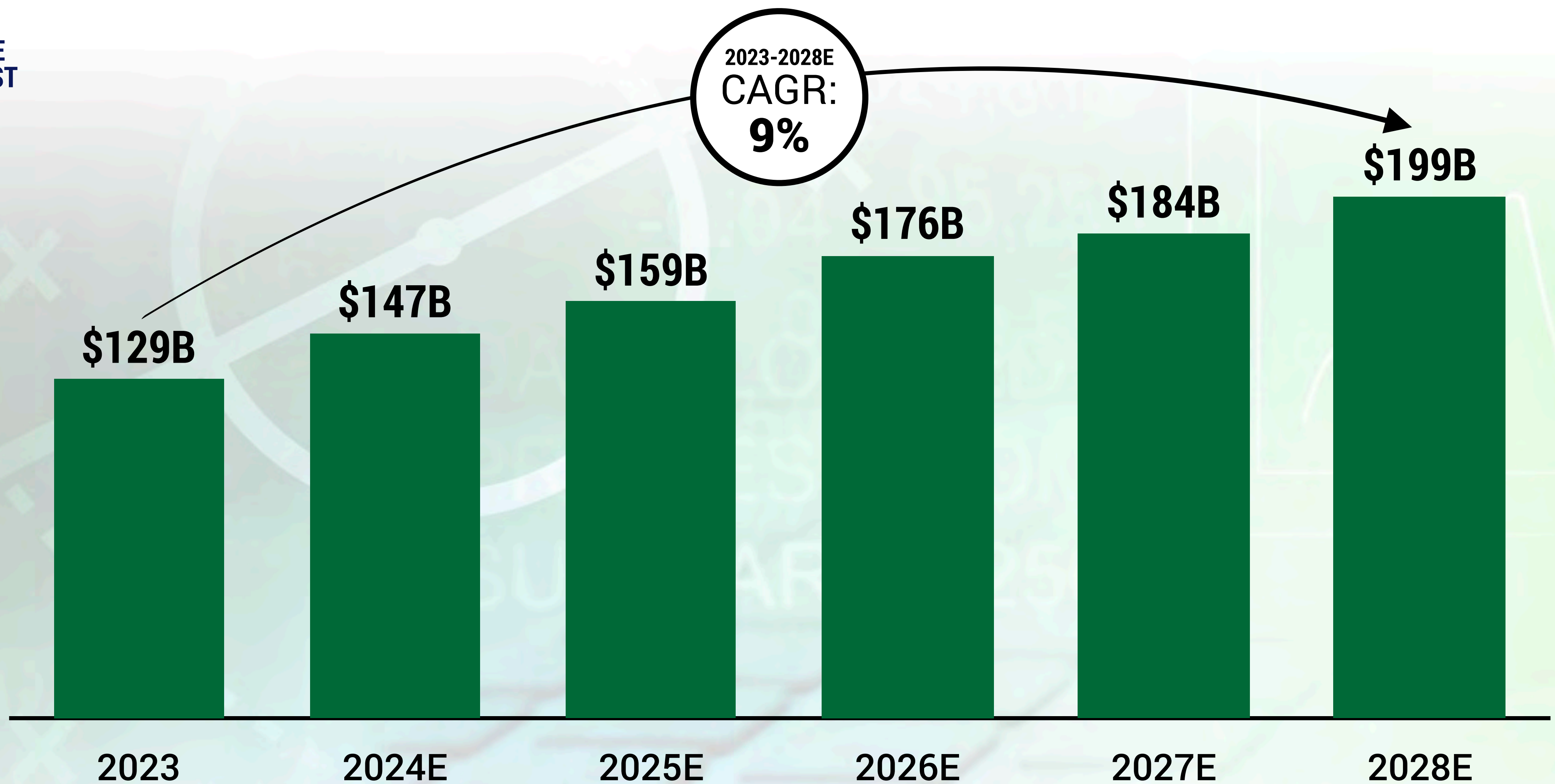
Sources: Activate analysis, Company press releases, Company sites, Forbes, Sportico, Sports Business Journal

Sports betting will be a significant driver of sports fan engagement; we forecast that the total amount wagered in sports betting will reach ~$200B by 2028

TOTAL SPORTS BETTING AMOUNT WAGERED[1], U.S., 2023-2028E, BILLIONS USD

ACTIVATE FORECAST



	2023	2024E	2025E	2026E	2027E	2028E
NUMBER OF STATES WITH LEGAL SPORTS BETTING[1]:	39	40	43	45	47	47

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1. Projection assumes 47 states will legalize (but not necessarily launch) sports betting by 2028. Includes Washington, D.C. as a state.
Sources: Activate analysis, Legal Sports Report, The Lines, Nevada Gaming Control Board, SportsHandle, State regulator press releases, State regulator sites, U.K. Gambling Commission

Today, sports betting is legal and live in 39 states, accounting for approximately two-thirds of the U.S. adult population

SPORTS BETTING MARKET LIVE STATES[1] BY CHANNEL, U.S., SEPT. 2024

39
LEGAL & LIVE STATES[1]

28 **LEGAL** ONLINE & IN-PERSON[2]

9 **LEGAL** IN-PERSON ONLY[3]

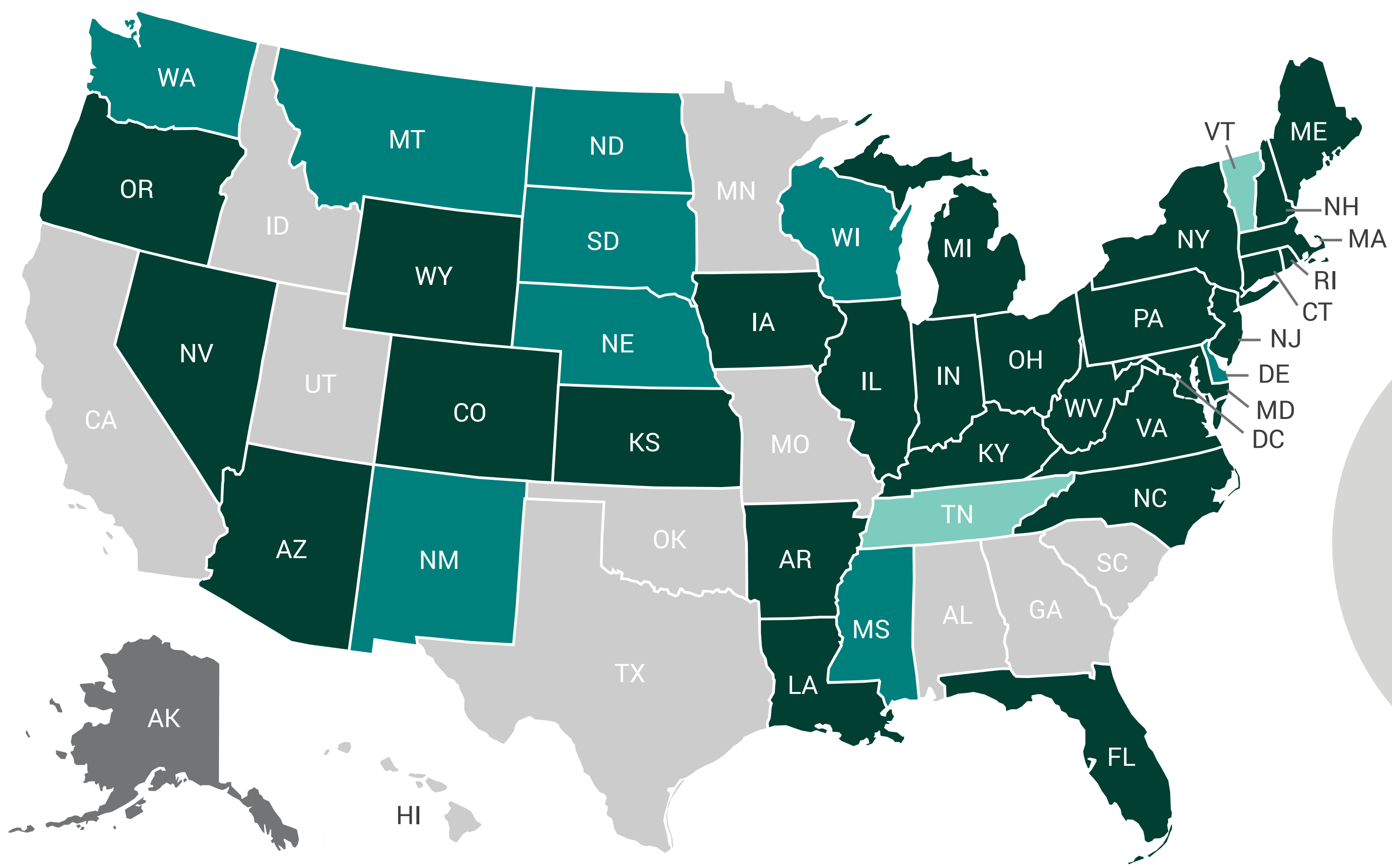
2 **LEGAL** ONLINE ONLY[4]

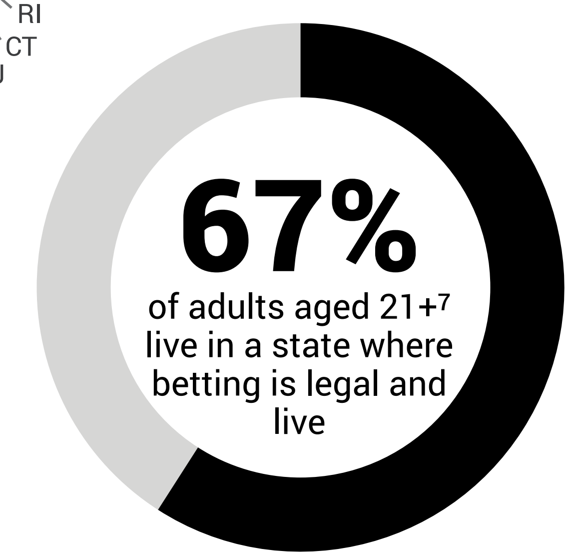
12
NON-LIVE STATES[1]

0 **LEGAL** NOT LIVE[5]

1 **PENDING** LEGISLATION[6]

11 NOT LEGAL



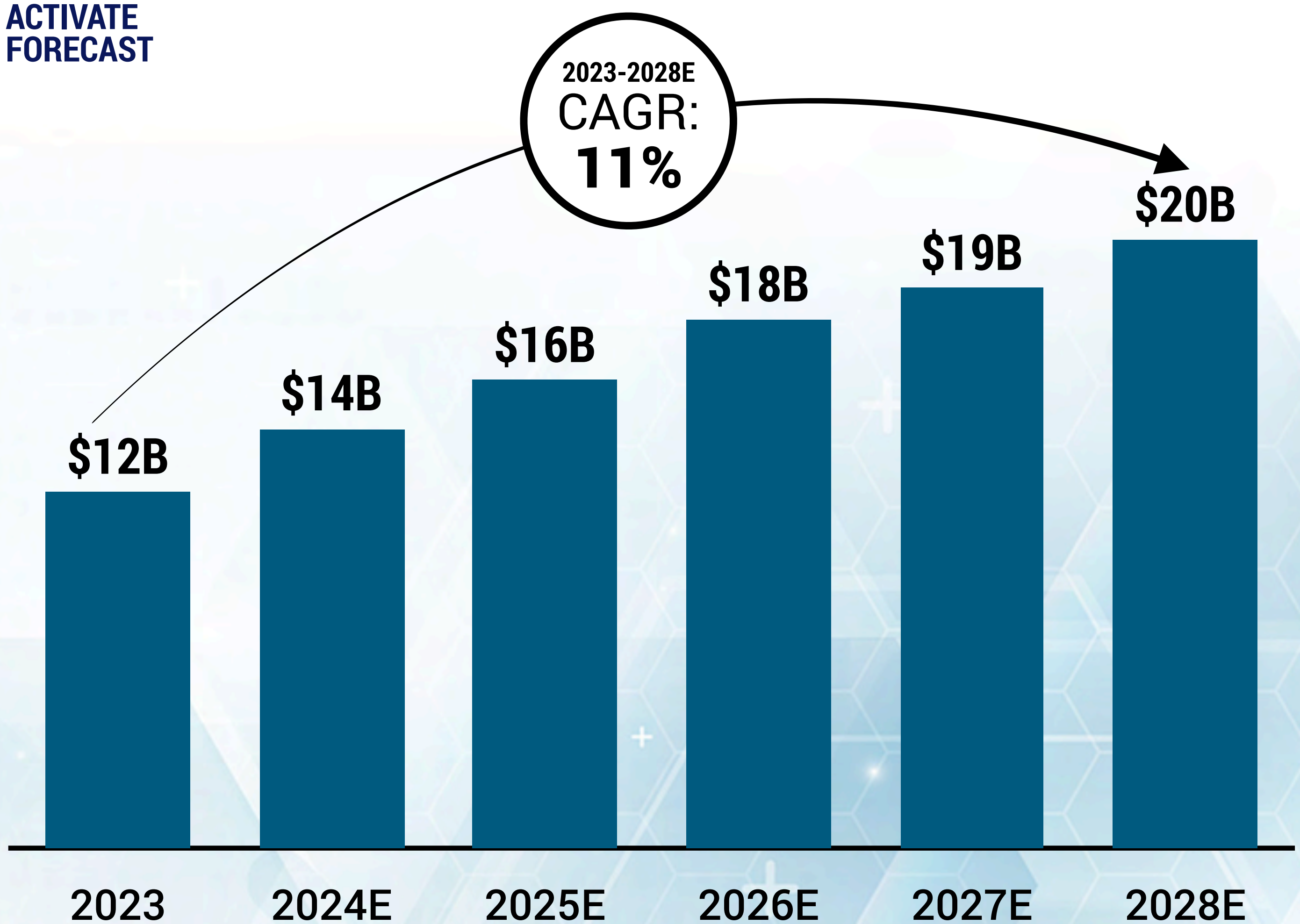


1. "Live states" are defined as states in which sports betting is legal and currently operational as of Sept. 2024. Includes Washington, D.C. as a state. 2. "Legal online & in-person" is defined as states where online sports betting and in-person sports betting is legal. 3. "Legal in-person only" is defined as states where sports betting is legal and live but permitted only within the physical boundaries of a retail-licensed sports betting operator or other geofenced location (e.g. sports venues, casinos, hotels, restaurants). 4. "Legal online only" is defined as states where sports betting is legal and live, but not permitted in-person; it is only legal online. 5. "Legal not live" is defined as states who have passed legislation legalizing sports betting, but, as of Sept. 2024, do not have any live operations to sports bet. 6. "Pending legislation" is defined as states that have active legislation to legalize sports betting. 7. 21 is the legal betting age in most states.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,006), Legal Sports Report, State regulator sites

Sports betting operator revenue will exceed $20B by 2028 and will grow faster than the amount wagered as operator margins continue to expand

GROSS GAMING REVENUE[1], U.S., 2023-2028E, BILLIONS USD

ACTIVATE FORECAST



HOLD %[2]	2023	2024E	2025E	2026E	2027E	2028E
HOLD %[2]	9.1%	9.5%	9.8%	9.9%	10.1%	10.2%

SPORTS BETTING REVENUE[1] GOES TO…

ONLINE SPORTSBOOKS

BETMGM
DRAFTKINGS
CAESARS SPORTSBOOK
FANDUEL

CASINOS/RACETRACKS

Churchill Downs
Wynn Resorts
Sands
Belmont Park

FACTORS CONTRIBUTING TO AN INCREASE IN HOLD PERCENTAGE[2]

Promotion of same-game parlays on major online sportsbooks and continued development of high-margin betting products and markets

More accurate odds-setting due to increased sophistication of risk management solutions

Personalized betting experiences that tailor recommendations based on players' historical betting styles and activity

1. Total handle less player winnings. Calculated as a share of the total amount wagered, dependent on odds, type of wager, and individual sportsbooks. 2. "Hold" is defined as the margin generated by the sportsbooks and calculated as the weighted average annualized hold percentage across all reporting jurisdictions.
Sources: Activate analysis, Legal Sports Report, The Lines, Nevada Gaming Control Board, SportsHandle, State regulator press releases, State regulator sites, U.K. Gambling Commission, The Wall Street Journal

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LIVE EVENTS, EXPERIENCES, AND EXHIBITIONS

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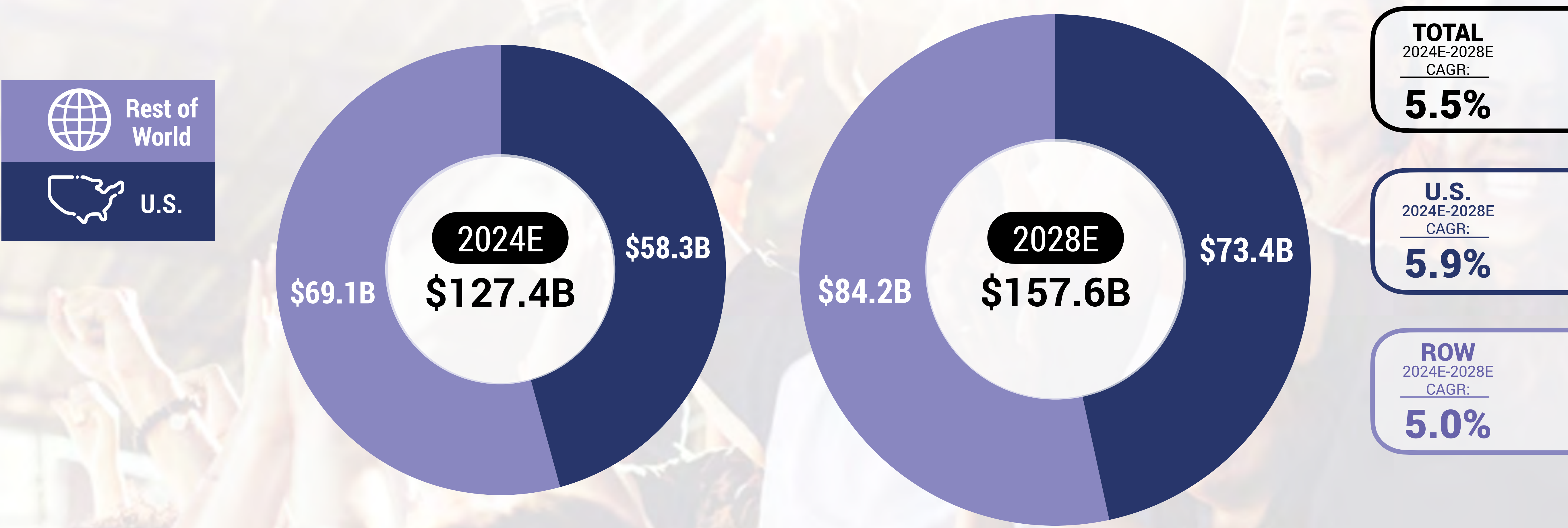
We forecast that global visitor/audience spend on live events and experiences will grow to $158B by 2028

CONSUMER SPEND ON ADMISSION TO LIVE EVENTS AND EXPERIENCES[1] BY REGION,
U.S. VS. REST OF WORLD, 2024E VS. 2028E, BILLIONS USD

ACTIVATE FORECAST



1. "Live events and experiences" consist of live music events (i.e. concerts and festivals), theme parks and amusement parks, live professional sports events, and live professional theater shows, musicals, operas, dance shows, and comedy shows. Excludes ancillary spend at the venue (e.g. food and beverage, parking, merchandise) and on transit to and from the venue.
Sources: Activate analysis, AECOM and Themed Entertainment Association, The Broadway League, Company filings, Company press releases, Company sites, ESPN, IBISWorld, Omdia, Pollstar, PricewaterhouseCoopers, Statista Market Insights, U.S. Bureau of Labor Statistics

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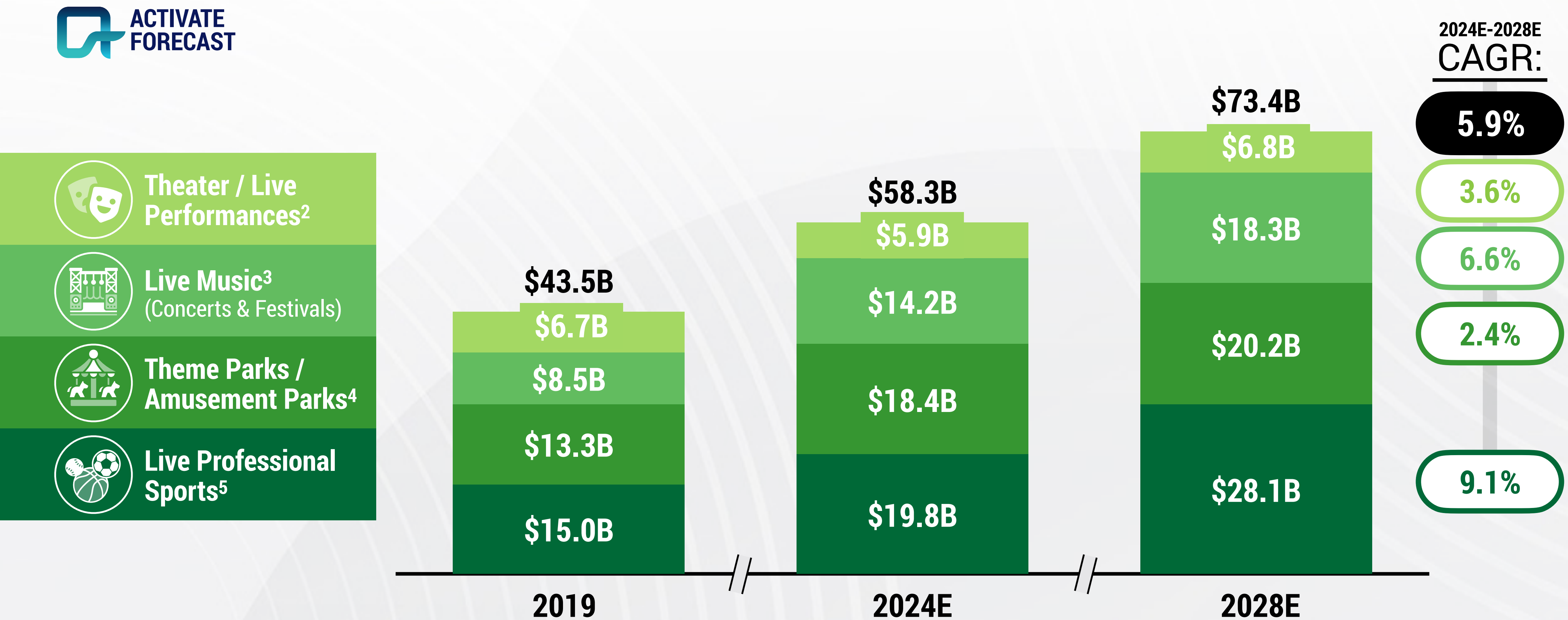
Sports and music will drive U.S. spend on live events and experiences

CONSUMER SPEND ON ADMISSION TO LIVE EVENTS AND EXPERIENCES[1] BY CATEGORY, U.S., 2019 VS. 2024E VS. 2028E, BILLIONS USD



1. "Live events and experiences" consist of live music events (i.e. concerts and festivals), theme parks and amusement parks, live professional sports events, and live professional theater shows, musicals, operas, dance shows, and comedy shows. Excludes ancillary spend at the venue (e.g. food and beverage, parking, merchandise) and on transit to and from the venue. 2. "Theater / live performances" revenue is defined as the gross value of online and offline ticket sales for live professional theater shows, musicals, operas, dance shows, and comedy shows purchased by consumers. 3. "Live music" revenue is defined as the gross value of online and offline ticket sales for live professional music events purchased by consumers. 4. "Theme parks / amusement parks" revenue is defined as the gross value of online and offline gate (admission) fees paid for entry to theme parks by consumers. Theme parks operate mechanical rides, water rides, game shows, themed exhibits, and other attractions. 5. "Live professional sports" revenue is defined as the gross value of online and offline ticket sales for live professional sporting events purchased by consumers.

Sources: Activate analysis, AECOM and Themed Entertainment Association, The Broadway League, Company filings, Company press releases, Company sites, ESPN, IBISWorld, Omdia, Pollstar, PricewaterhouseCoopers, Statista Market Insights, U.S. Bureau of Labor Statistics

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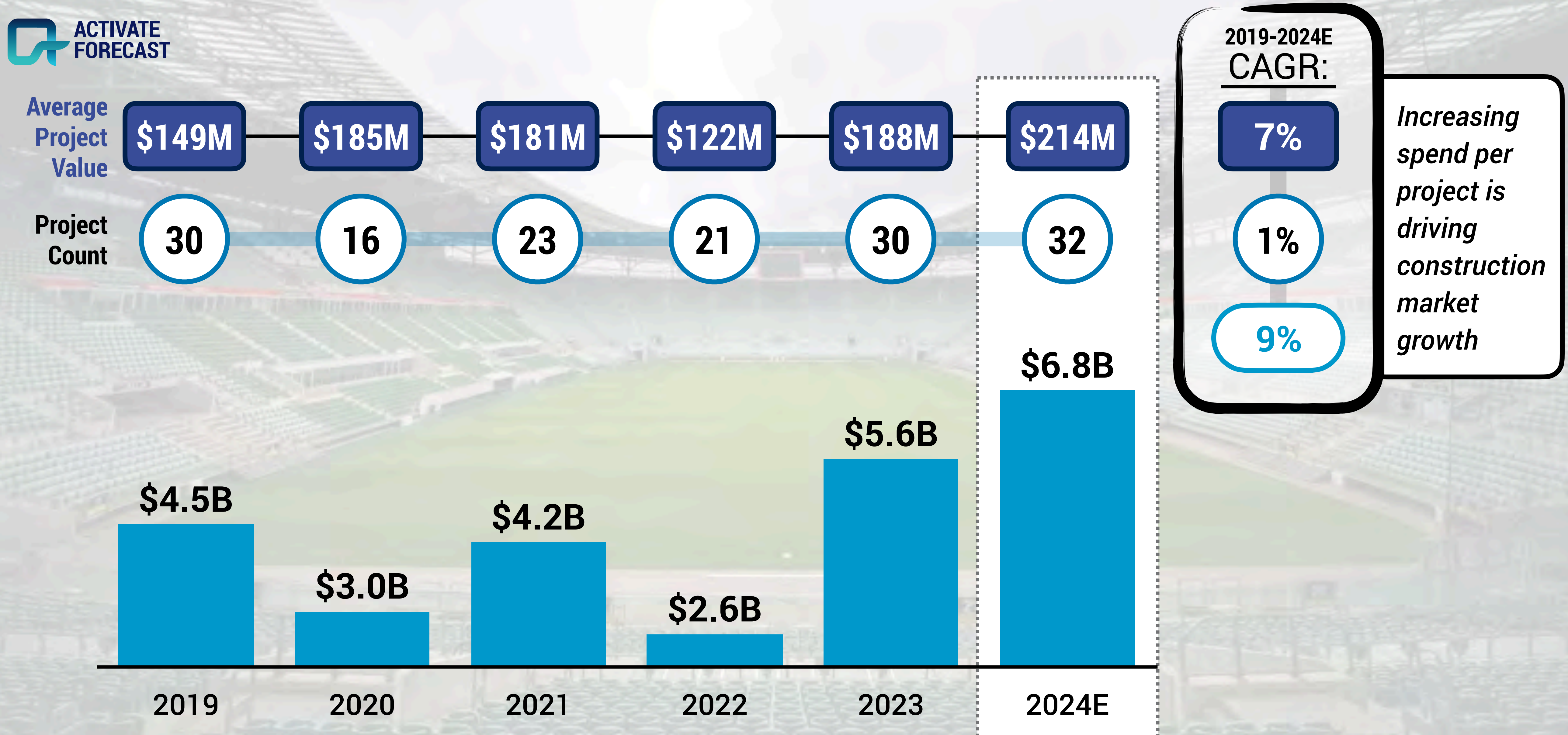
Stadium and arena investment is booming to meet the demand from sports and large-scale artist concerts

TOTAL STADIUM AND ARENA INVESTMENT[1] BY PROJECT START DATE[2], U.S., 2019-2024E, BILLIONS USD



1. Includes the total cost of stadium and arena construction projects, including all expenses associated with planning, designing, and construction. 2. Total stadium and arena investment associated with a project in the U.S. (including school and college projects) exceeding $25M in value allocated to the year that construction began.
Sources: Activate analysis, GlobalData, Team sites, University sites

New stadium and arena technology will raise the bar for fan experience, requiring increased investment and design innovation

EXAMPLES OF TECHNOLOGY FEATURED AT NEW STADIUMS AND ARENAS[1]

SMART SEATING

LARGE-SCALE DISPLAYS

CLIMATE CONTROL & COMFORT

AI-ASSISTED CONCESSIONS

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1. Includes planned, announced, and completed projects.
Sources: Activate analysis, Associated Press, Axios, Company sites, Construction Dive, Fast Company, MLB, Washington Post

The Sphere's investment in technology and innovation has showcased the realm of possibility within live experiences

sphere


U2:UV ACHTUNG BABY LIVE


DEAD & COMPANY LIVE


ANYMA: THE END OF GENESYS


EAGLES LIVE

IMMERSIVE PROJECTION MAPPING
580,000 square foot surface area across exterior projection surfaces

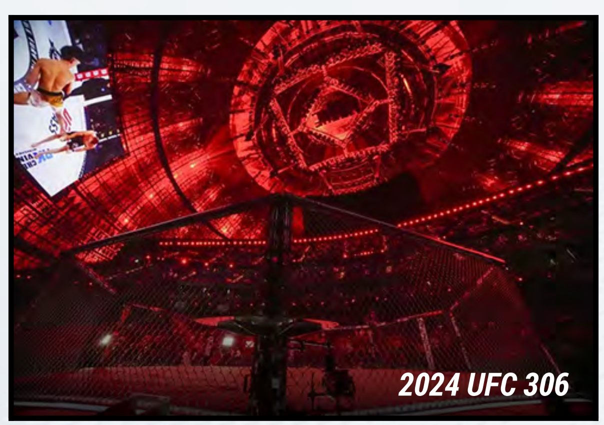
SPATIAL AUDIO SYSTEMS
Three-dimensional sound experience delivered through **168,000 speakers**

LED TECHNOLOGY
160,000 square foot LED media plane featured within interior of venue

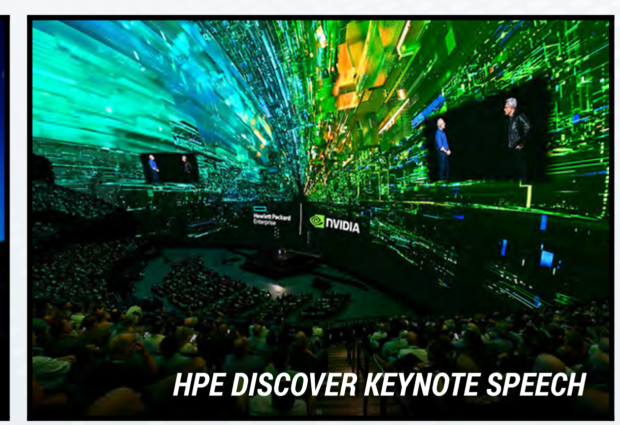
HAPTIC FEEDBACK
10,000 haptic feedback seats providing tactile sensations that sync with audio and visuals

HOLOGRAPHIC DISPLAY
Largest holographic display wall **(30 feet by 50 feet)** in the world

2024 NHL ENTRY DRAFT


2024 UFC 306


POSTCARD FROM EARTH


HPE DISCOVER KEYNOTE SPEECH

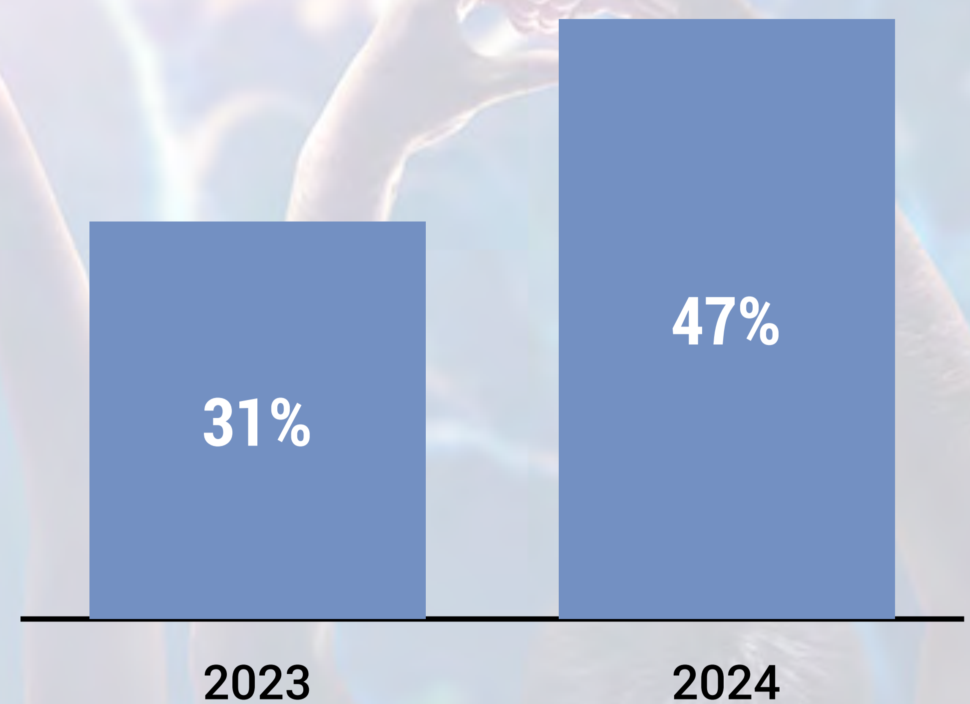
Attendance at concerts is growing as fans increase the number of concerts they attend

TOTAL CONCERT ATTENDEES, U.S., 2023 VS. 2024, MILLIONS ADULTS AGED 18+

There are a similar number of concert attendees in 2024 compared to 2023

SHARE OF CONCERT-GOERS ATTENDING 5+ CONCERTS, U.S., 2023 VS. 2024, % ADULTS AGED 18+ WHO ATTENDED AT LEAST ONE CONCERT IN THE LAST 12 MONTHS

Concert-goers are attending more concerts this year compared to last year



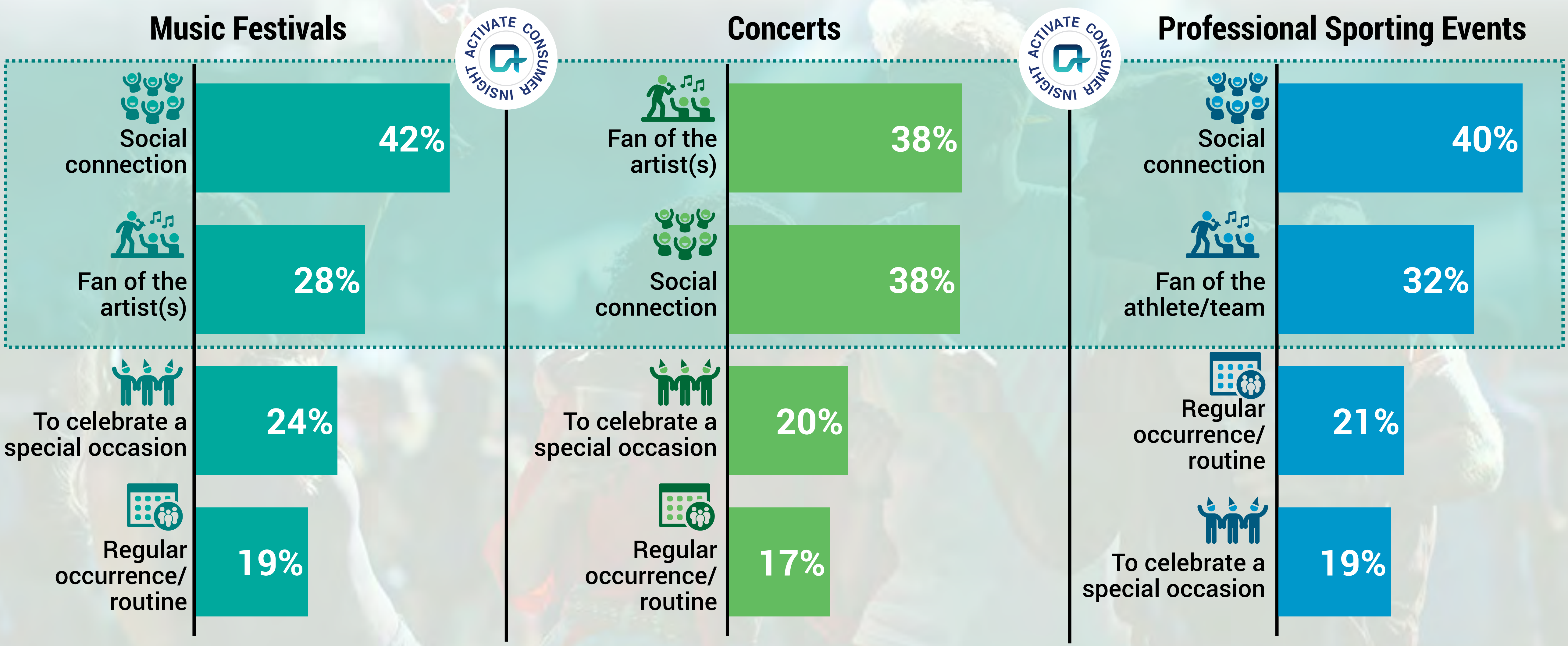
Sources: Activate analysis, Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004), U.S. Census Bureau

People are attending live events mainly for social connection and team/artist fandom

TOP REASONS[1] FOR ATTENDING A MUSIC FESTIVAL IN THE LAST 12 MONTHS, U.S., 2024, % MUSIC FESTIVAL ATTENDEES[2]

TOP REASONS[1] FOR ATTENDING A CONCERT IN THE LAST 12 MONTHS, U.S., 2024, % CONCERT ATTENDEES[3]

TOP REASONS[1] FOR ATTENDING A LIVE PROFESSIONAL SPORTING EVENT IN THE LAST 12 MONTHS, U.S., 2024, % LIVE PROFESSIONAL SPORTING EVENT ATTENDEES[4]



1. Consumers were asked to select up to three top reasons. 2. "Music festival attendees" are defined as adults aged 18+ who attended at least one music festival in the last 12 months. 3. "Concert attendees" are defined as adults aged 18+ who attended at least one concert in the last 12 months. 4. "Live professional sporting event attendees" are defined as adults aged 18+ who attended at least one live professional sporting event in the last 12 months.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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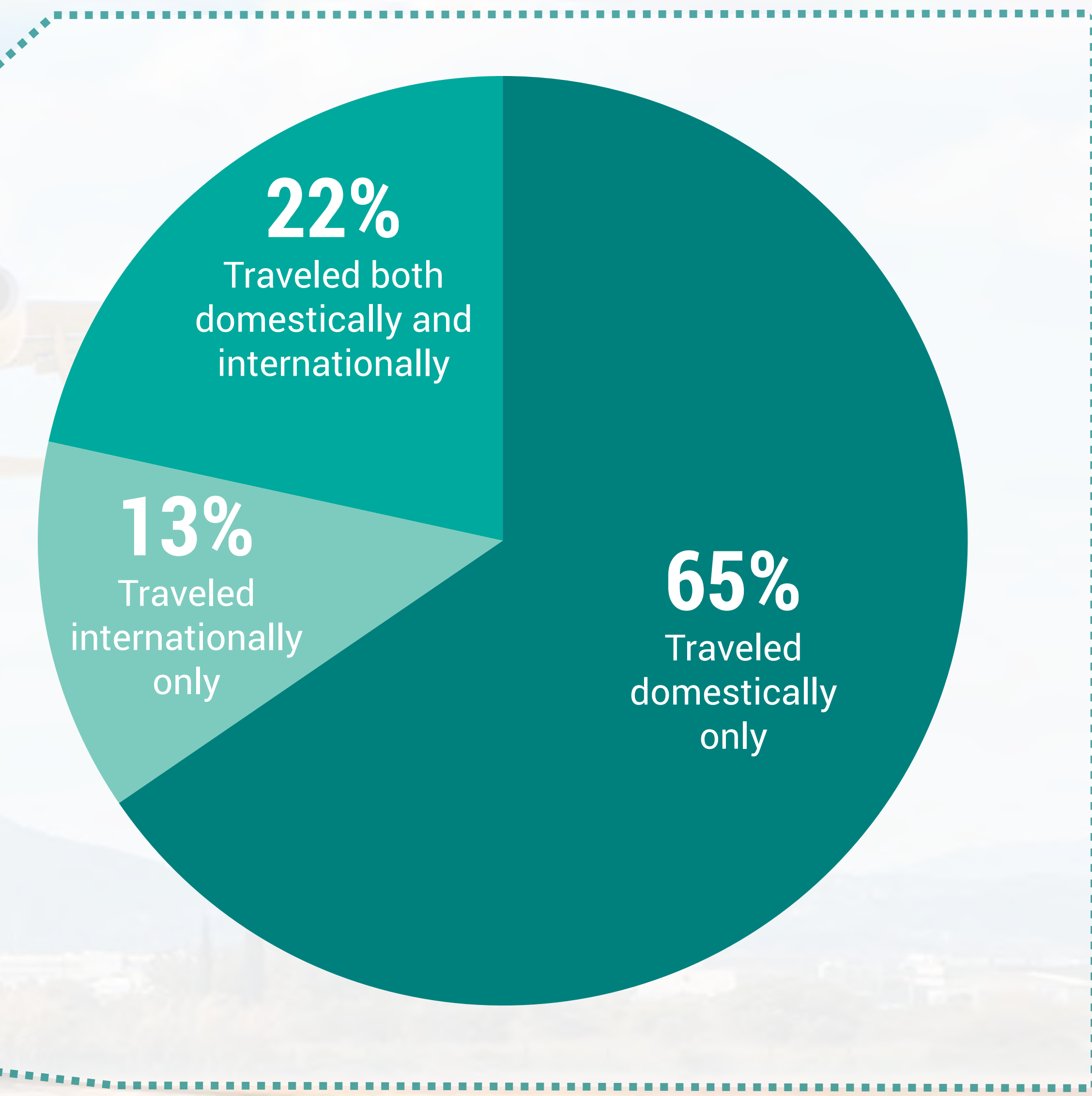
Most live music fans have traveled outside their city to attend concerts or music festivals

SHARE OF LIVE MUSIC ATTENDEES THAT TRAVELED TO ATTEND A CONCERT OR MUSIC FESTIVAL, U.S., 2024, % LIVE MUSIC EVENT ATTENDEES[1]

DOMESTIC VS. INTERNATIONAL TRAVEL TO ATTEND A CONCERT OR MUSIC FESTIVAL, U.S., 2024, % LIVE MUSIC EVENT ATTENDEES[1] WHO TRAVELED TO ATTEND A LIVE MUSIC EVENT IN THE LAST 12 MONTHS

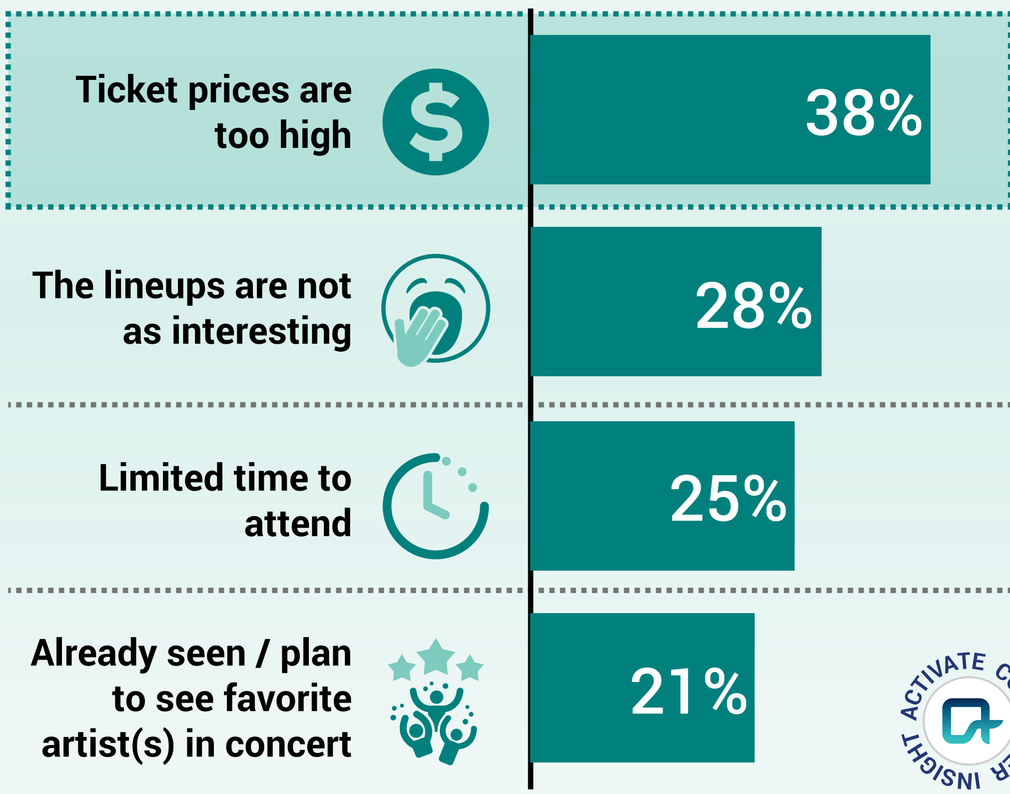


1. “Live music event attendees” are defined as adults aged 18+ who attended at least one live music event in the last 12 months.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Music festival attendance is softening as fans are turned off by high prices and less exciting lineups

TOP REASONS[1] FOR ATTENDING FEWER MUSIC FESTIVALS, U.S., 2024, % MUSIC FESTIVAL ATTENDEES[2] WHO PLAN TO ATTEND FEWER MUSIC FESTIVALS IN THE NEXT 12 MONTHS

High ticket prices are driven by the need for music festival organizers to compensate for increasing production costs amidst supply chain challenges



SELECT MAJOR U.S. MUSIC FESTIVALS WITH CANCELLATIONS OR REDUCED DEMAND

MUSIC FESTIVAL	STATE	ESTIMATED ATTENDANCE	INAUGURAL YEAR	LAST ACTIVE YEAR	NOTE
COACHELLA	CA	200K (2024)	1999	-	Slow to sell out
EZoo	NY	90K (2023)	2009	2023	Canceled
MADE in AMERICA	PA	80K (2022)	2012	2022	Canceled
bonnaroo music & arts festival	TN	70K (2024)	2002	-	Did not sell out
BURNING MAN PROJECT	CA	70K (2024)	1986	-	Did not sell out
FIREFLY	DE	50K (2021)	2012	2022	Canceled
RIVERBEND	TN	50K (2023)	1982	2023	Canceled
Beale Street Music Festival	TN	40K (2023)	1977	2023	Canceled
OKEECHOBEE music + arts festival	FL	30K (2023)	2016	2023	Canceled
DESERT DAZE	CA	10K (2022)	2012	2022	Canceled

1. Consumers were asked to select up to two top reasons. 2. "Music festival attendees" are defined as adults aged 18+ who attended at least one music festival in the last 12 months.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Axios, Billboard, Business Insider, Delaware Online, Desert Sun, Festival Insider, Fortune, Grammy's, LA Times, Memphis in May Annual Report, Palm Beach Post, Rolling Stone, The Tennessean, Vice, Yahoo News

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Partnerships are bolstering fan experiences

TRANSPORTATION

Uber

Launched Uber Shuttle to offer transportation to and from live events at Live Nation venues

American Airlines

Partnered with Ticketmaster to allow members to earn miles from ticket purchases and buy tickets with miles

PERSONAL FINANCE

mastercard

Partnered with Live Nation to offer cardholders access to perks such as presale tickets and VIP experiences

Capital One

Offered exclusive MLB tickets and experiences as well merchandise discounts through MLB partnership

HOSPITALITY

Marriott | MARRIOTT BONVOY

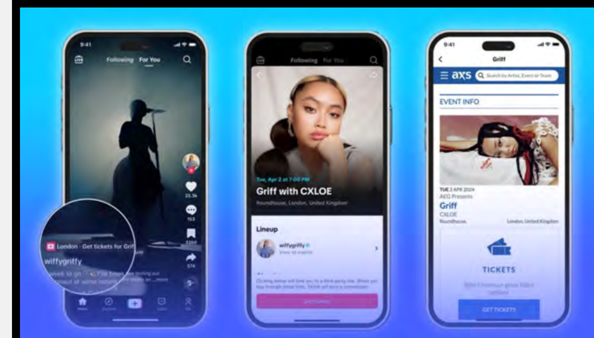
Created Taylor Swift packages including tickets to The Eras Tour, hotel stay, and event transportation

IHG HOTELS & RESORTS

Partnered with leagues (e.g. MLS, USTA) to grant members access to exclusive live events and experiences

TICKETING

axs



Partnered with TikTok to allow artists, venues, and festivals to sell tickets through the TikTok app

SEAT GEEK

Partnered with Big 12 Conference as official ticket marketplace and are exploring co-marketing opportunities

Sources: Activate analysis, Company sites, Forbes, TechCrunch, The Verge, Yahoo Finance

There are considerable revenue upside opportunities for teams, venues, and promoters

COMPREHENSIVE REVENUE PROGRAM TO DRIVE TEAM AND VENUE GROWTH

PREMIUM FAN EXPERIENCES
Next-generation VIP experiences (e.g. meet and greet, luxury amenities), premium seating (e.g. club, private, court side), season-long fan experiences

MEDIA RIGHTS
Rights valuation modeling, rights revenue optimization and negotiation

CONCESSION MANAGEMENT
Vendor management for food and beverage, outsourcing, local partnerships, themes, branding, exclusive sponsorships

LICENSING AND MERCHANDISING
Logos, branding, royalties, manufacturing partnerships, co-branded collections

NEXT GENERATION VISITOR EXPERIENCES
Connectivity, AR/VR, in-seat interactive experiences, digital wallets and payments, fan engagement during and outside live events

HOSPITALITY EXTENSIONS AND PARTNERSHIPS
Hotel packages, travel packages, transportation

SPONSORSHIPS, NAMING RIGHTS, AND PARTNERSHIPS
Inventory segmentation, activation capabilities and data, yield management, prospecting and sales process, salesforce effectiveness, partnerships

EVENT PIPELINE, SCHEDULING, AND EXPERIENCE DIVERSIFICATION
Sports, concerts, festivals, exhibitions, location-based entertainment

TICKETING REVENUE
Inventory segmentation, pricing processes and capabilities, dynamic pricing, sales channels, ticketing platforms, data and analytics, suites

Source: Activate analysis

The business-focused exhibitions market will reach over $15B by 2028, surpassing pre-COVID levels

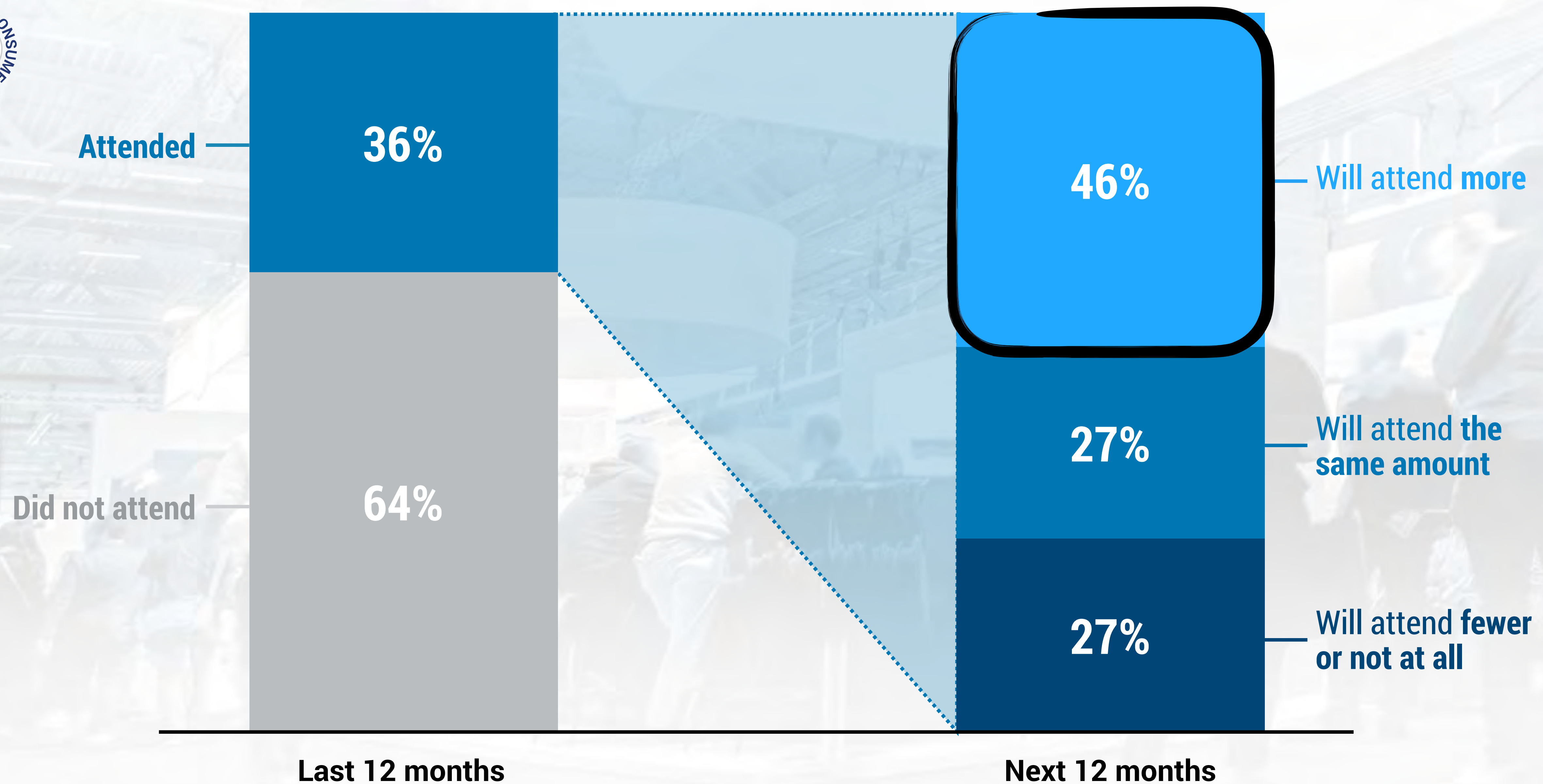
TOTAL SPEND[1] ON BUSINESS-FOCUSED EXHIBITIONS[2], U.S., 2019-2024E VS. 2028E, BILLIONS USD

1. "Total spend" includes business spend on exhibit space, conference fees, advertising, and sponsorships. 2. "Business focused exhibitions" include exhibitions focused on connecting businesses; they are not targeted at the general public.
Sources: Activate analysis, Center for Exhibition Industry Research, Company filings, IBISWorld, Omdia, PricewaterhouseCoopers

Nearly half of those who have attended exhibitions in the last 12 months expect to increase attendance going forward

EXHIBITIONS[1] ATTENDANCE IN THE LAST 12 MONTHS, U.S., 2024, % ADULTS AGED 18+

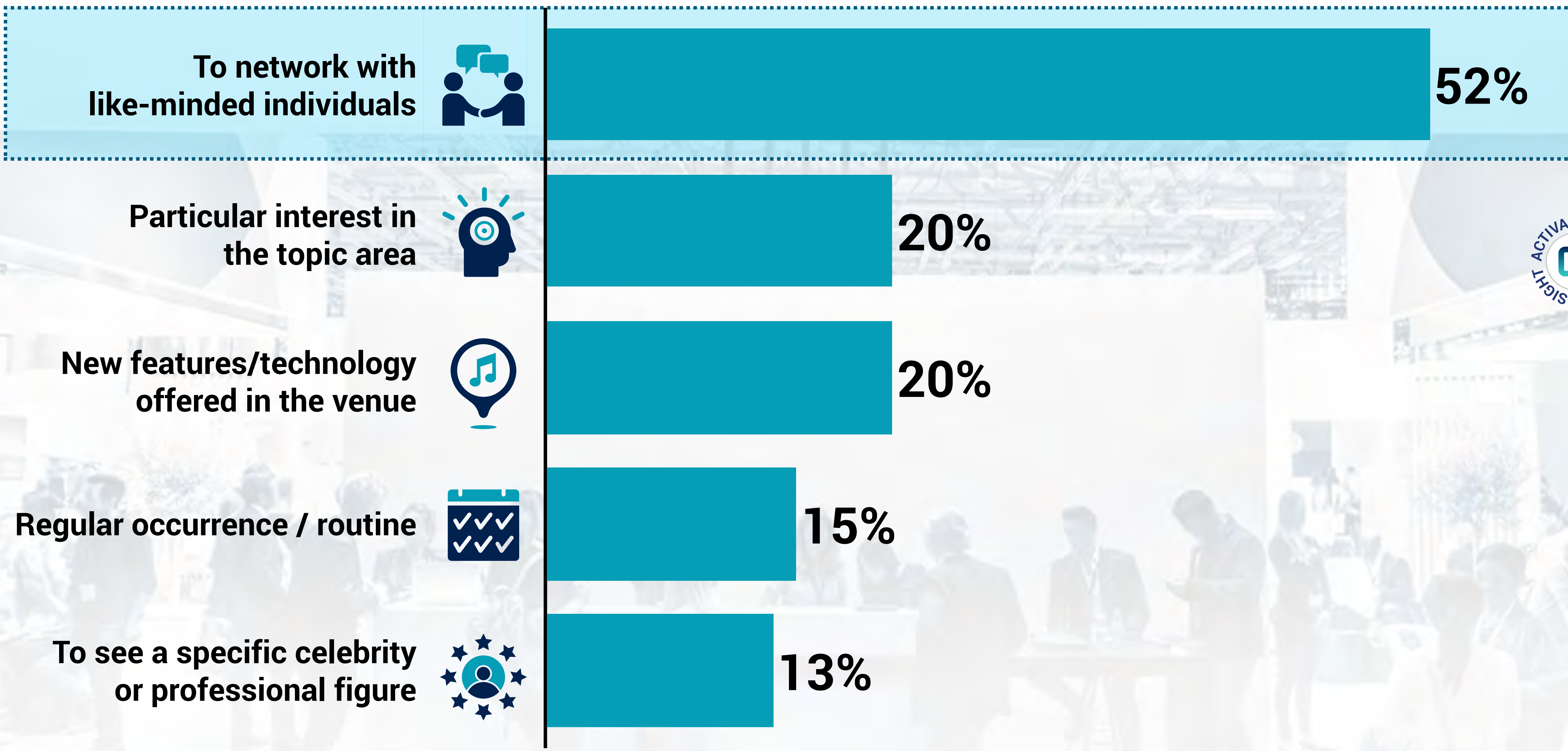
INTENT TO ATTEND EXHIBITIONS[1] IN THE NEXT 12 MONTHS, U.S., 2024, % ADULTS AGED 18+ WHO ATTENDED AN EXHIBITION[1] IN THE LAST 12 MONTHS



1. "Exhibitions" consists of both consumer-focused and business-focused conventions, expositions, and conferences.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Networking is by far the top reason for attending exhibitions

TOP REASONS[1] FOR ATTENDING EXHIBITIONS[2] IN THE LAST 12 MONTHS,
U.S., 2024, % ADULTS AGED 18+ THAT ATTENDED AT LEAST ONE EXHIBITION[2] IN THE LAST 12 MONTHS



1. Consumers were asked to select up to three top reasons. 2. "Exhibitions" consists of both consumer-focused and business-focused conventions, expositions, and conferences.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Alongside market growth, acquisition and investment activity in the exhibitions space will increase

SELECT MAJOR ACQUISITIONS AND INVESTMENTS IN EXHIBITIONS[1] SPACE, GLOBAL, 2023-2024, USD

DEAL DATE	INVESTOR	TARGET	SIZE
June 2023	Blackstone	cvent	$4.6B
Oct. 2024	informa	Ascential	$1.6B
Mar. 2023	informa	TARSUS	$940M
June 2023	PROVIDENCE EQUITY PARTNERS; SEARCHLIGHT	Hyve	$579M
May 2023	informa	Winsight	$380M
May 2024	RX	sec Sustainable Energy Council	Undisclosed
June 2024	MARKETPLACE EVENTS	31 events from Master Promotions Ltd.	Undisclosed
July 2024	Maritz	Convention Data Services	Undisclosed
Sept. 2024	SHAMROCK CAPITAL	nth degree	Undisclosed

1. "Exhibitions" consists of both consumer-focused and business-focused conventions, expositions, and conferences.
Sources: Activate analysis, Company sites, GlobeNewswire, Houlihan Lokey, PR Newswire, Reuters

AUDIO

activate consulting

Audio will remain a critical part of consumers' daily technology and media attention

AUDIO CONSUMPTION BEHAVIORS FOR ADULTS AGED 18+, U.S., 2024E

ACTIVATE CONSUMER INSIGHT

AUDIO INCLUDES...

MUSIC · PODCASTS · AUDIOBOOKS · RADIO

Audio consumption is…

Among the top technology and media activities

Audio time accounts for

22%

of total technology and media consumption[1]

Among the technology and media activities with the highest consumer time spend

The average adult spends

2:49

per day consuming audio[2]

The most multi-tasked technology and media activity

68%

of audio listeners[3] multi-task[4] all, almost all, or most of the time when listening to audio[5]

1. "Total technology and media consumption" includes time spent watching video, listening to audio, gaming, using social media and message apps, and time spent with other media, such as browsing websites, reading, and attending live events. 2. Includes audio streamed via mobile and desktop/laptop, podcast streaming, audiobooks, and radio. Excludes audio streamed on social media platforms (e.g. Snapchat, TikTok) and digital radio. 3. Does not include audiobook listeners. 4. "Multi-tasking" is defined as simultaneously doing another activity, such as working, cleaning, cooking, or exercising. 5. Does not include time spent listening to audiobooks.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), data.ai, eMarketer, GWI, Music Biz, Nielsen

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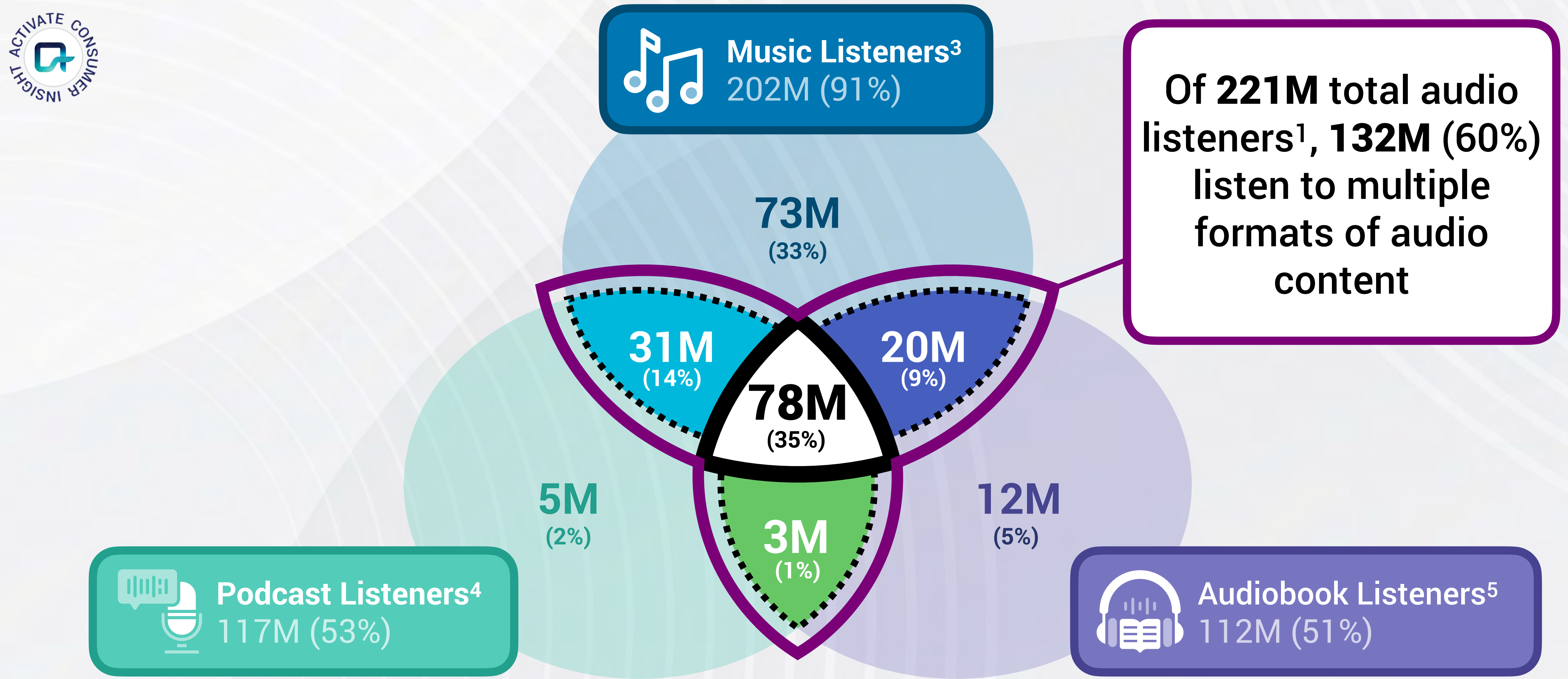
Most people listen to multiple audio formats

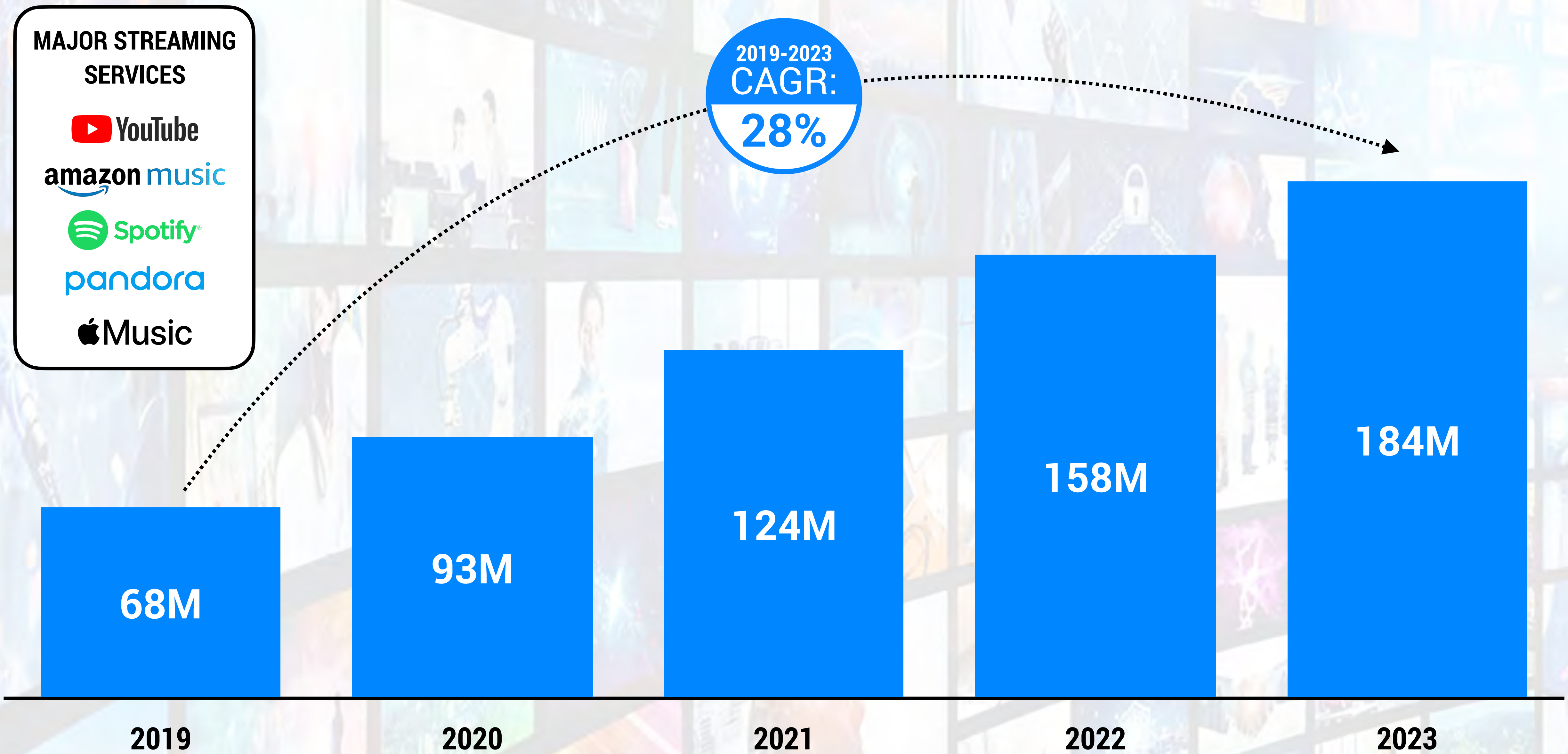
AUDIO LISTENERS[1] BY AUDIO FORMAT[2], U.S., 2024, MILLIONS LISTENERS AGED 18+



1. "Audio listeners" are defined as adults aged 18+ who currently listen to music, podcasts, or audiobooks. 2. Figures do not sum due to rounding. 3. "Music listeners" are defined as adults aged 18+ who spend any time listening to music. Includes time spent listening to music through AM/FM radio, satellite radio (e.g. SiriusXM), music streaming services (e.g. Apple Music, Spotify), and owned music (e.g. through Apple iTunes Store, CDs). 4. "Podcast listeners" are defined as adults aged 18+ who spend any time listening to podcasts. 5. "Audiobook listeners" are defined as adults aged 18+ who currently listen to audiobooks.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

The number of tracks on streaming continues to grow

MUSIC TRACKS AVAILABLE ON STREAMING SERVICES[1], GLOBAL, 2019-2023, MILLIONS MUSIC TRACKS[1]

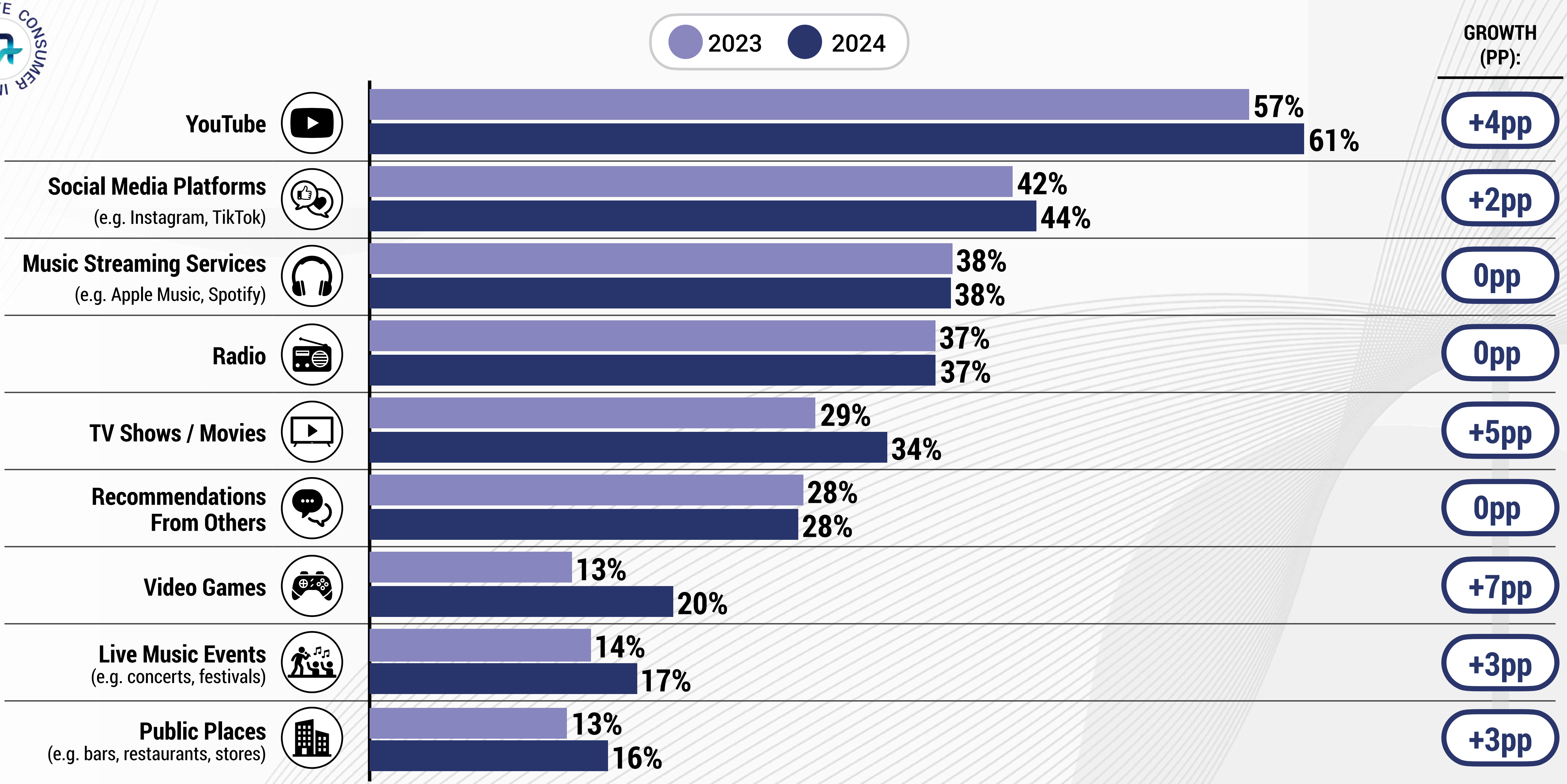


1. Reflects any music track with an ISRC (International Standard Recording Code) on any music streaming service/site. Excludes podcasts and audiobooks.
Sources: Activate analysis, Luminate

LUMINATE
ACTIVATE DATA PARTNER

Our research shows that consumers are increasingly discovering music across a broad set of channels

SOURCES OF MUSIC DISCOVERY[1] IN THE LAST 12 MONTHS, U.S., 2023 VS. 2024, % MUSIC LISTENERS[2]



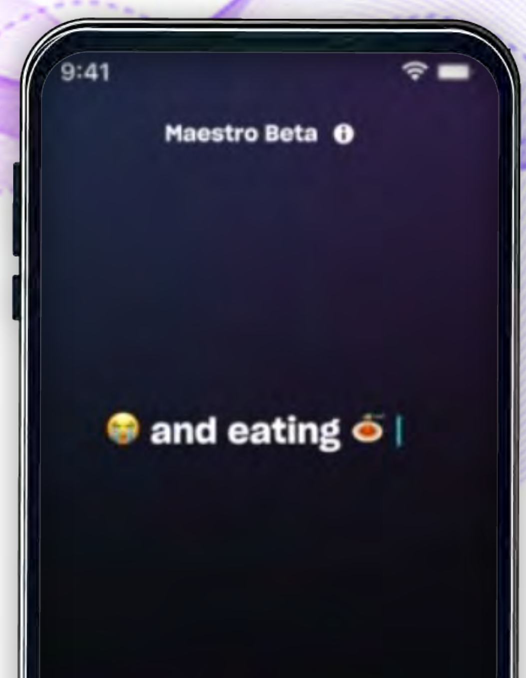
1. "Music discovery" is defined as discovering new music / music artists. 2. "Music listeners" are defined as adults aged 18+ who spend any time listening to music.
Sources: Activate analysis, Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

AI is now a powerful tool for listeners to discover music and create playlists

SELECT MAJOR ARTIFICIAL INTELLIGENCE TOOLS THAT PERSONALIZE MUSIC CONSUMPTION

Amazon debuted their AI playlist generator, **Maestro**, allowing users to create custom track lists **using emojis, emotions, activities, sounds, or suggested prompts**

amazon music

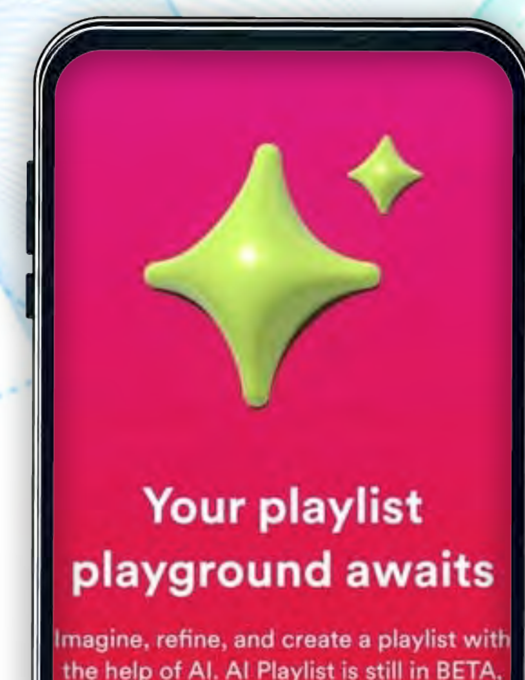


Apple Music overhauled their AI suite, **Apple Intelligence,** enabling users to **create personalized compilations** with their most-streamed songs

Music

Spotify launched their AI playlist generator, enabling users to **create a custom catalog with limited functionality** (e.g. no functionality for current events or brands)

Spotify



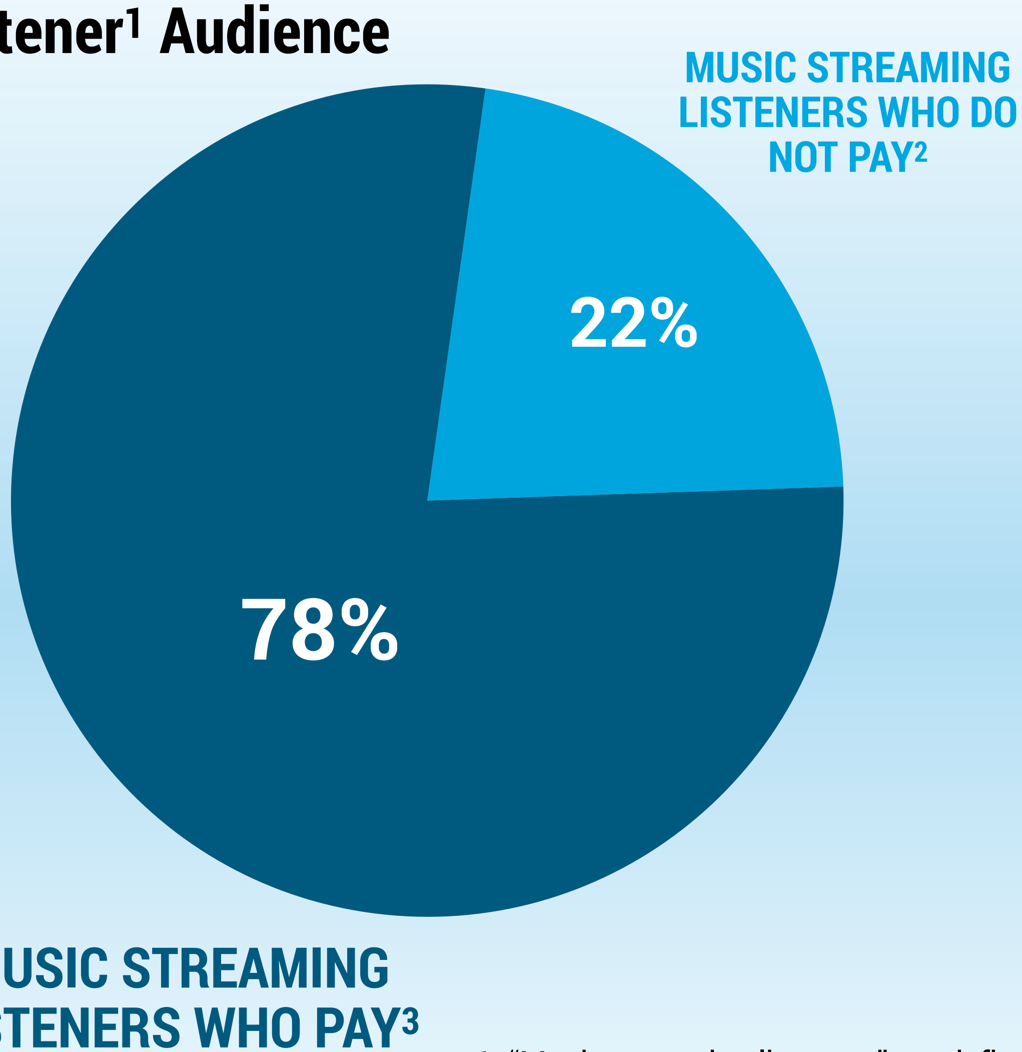
***More sophisticated AI algorithms are increasingly able to tailor music recommendations to the tastes of individual consumers to create a personalized catalog of songs based on an idea or hyper-specific input** (e.g. moving from passive playlist recommendations to more active and customizable user-prompted content)*

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

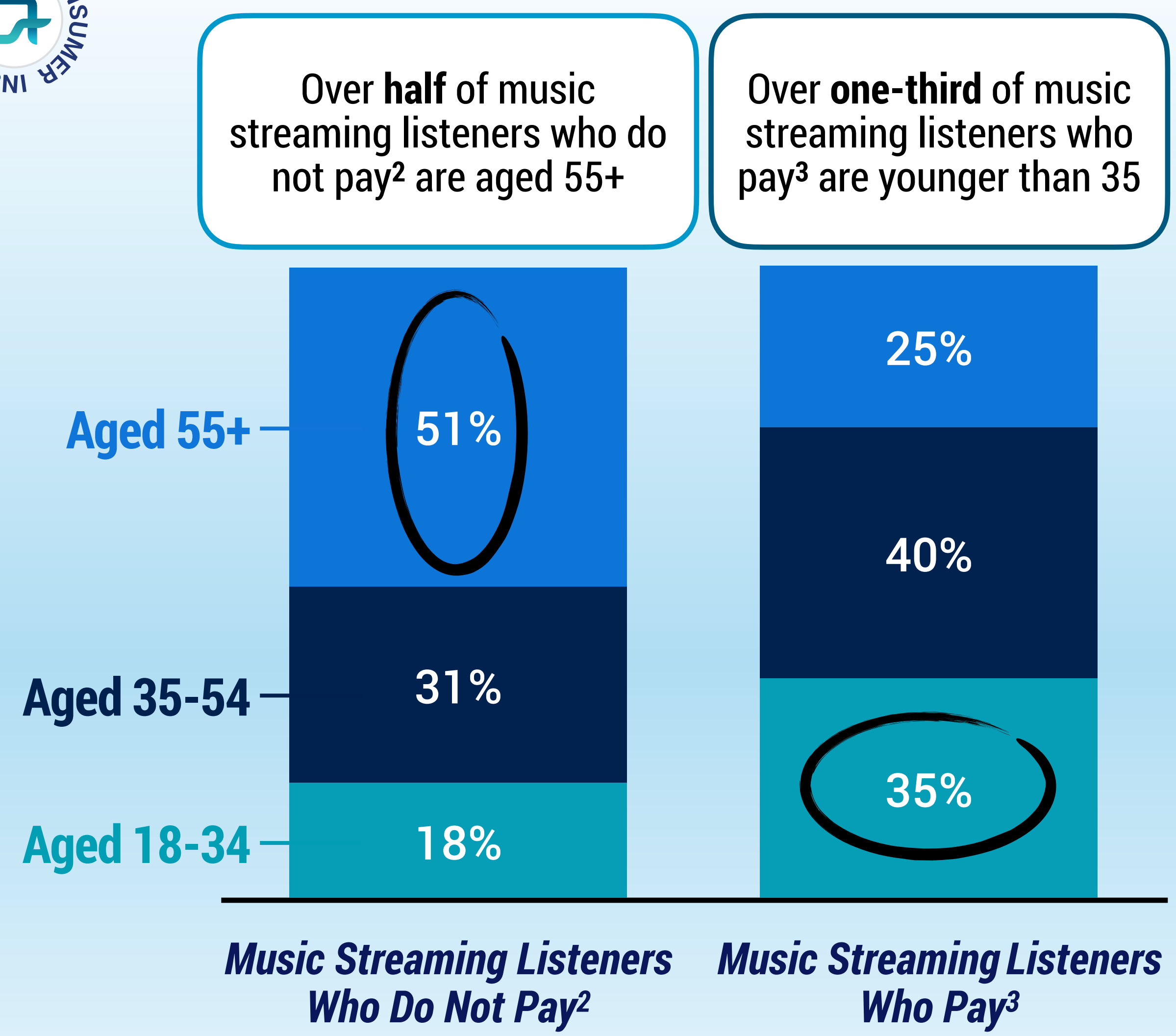
The majority of people who stream music pay for it; younger users are willing to pay while older users listen to music via free streaming

TYPES OF MUSIC STREAMING LISTENERS[1],
U.S., 2024, % TOTAL MUSIC STREAMING LISTENERS[1]

Total Music Streaming Listener[1] Audience



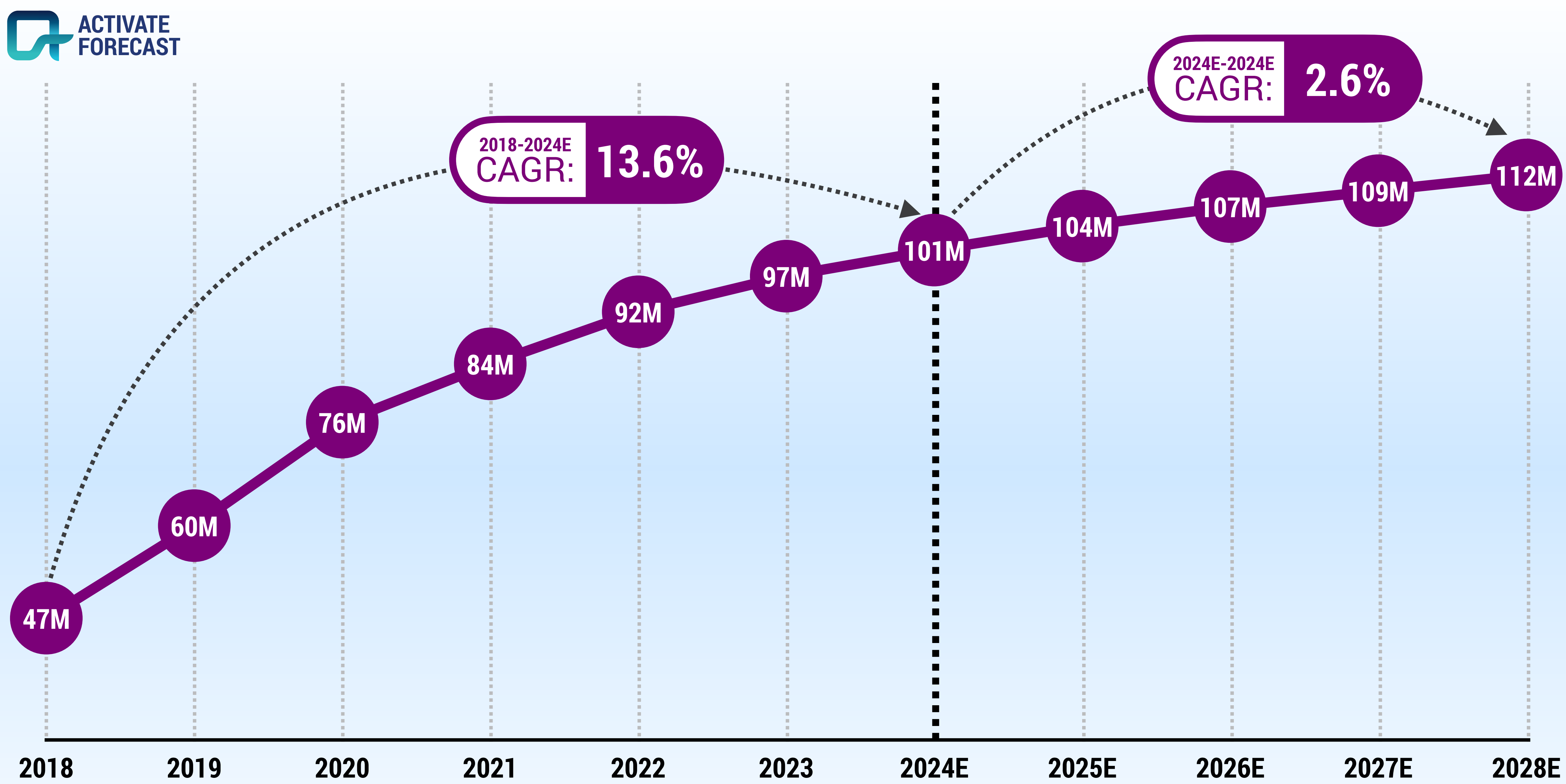
SHARE OF MUSIC STREAMING LISTENERS[1] BY AGE GROUP,
U.S., 2024, % TOTAL MUSIC STREAMING LISTENERS[1] BY TYPE



1. "Music streaming listeners" are defined as adults aged 18+ who listen to music at least once a month on a streaming service.
2. "Music streaming listeners who do not pay" are defined as music streaming listeners whose household does not pay for a music streaming subscription. 3. "Music streaming listeners who pay" are defined as music streaming listeners whose household pays for a music streaming subscription.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Paid subscriptions to music streaming services will continue to increase, albeit at a slower pace than before

TOTAL MUSIC STREAMING SUBSCRIPTIONS[1], U.S., 2018-2028E, MILLIONS MUSIC STREAMING SUBSCRIPTIONS[1]



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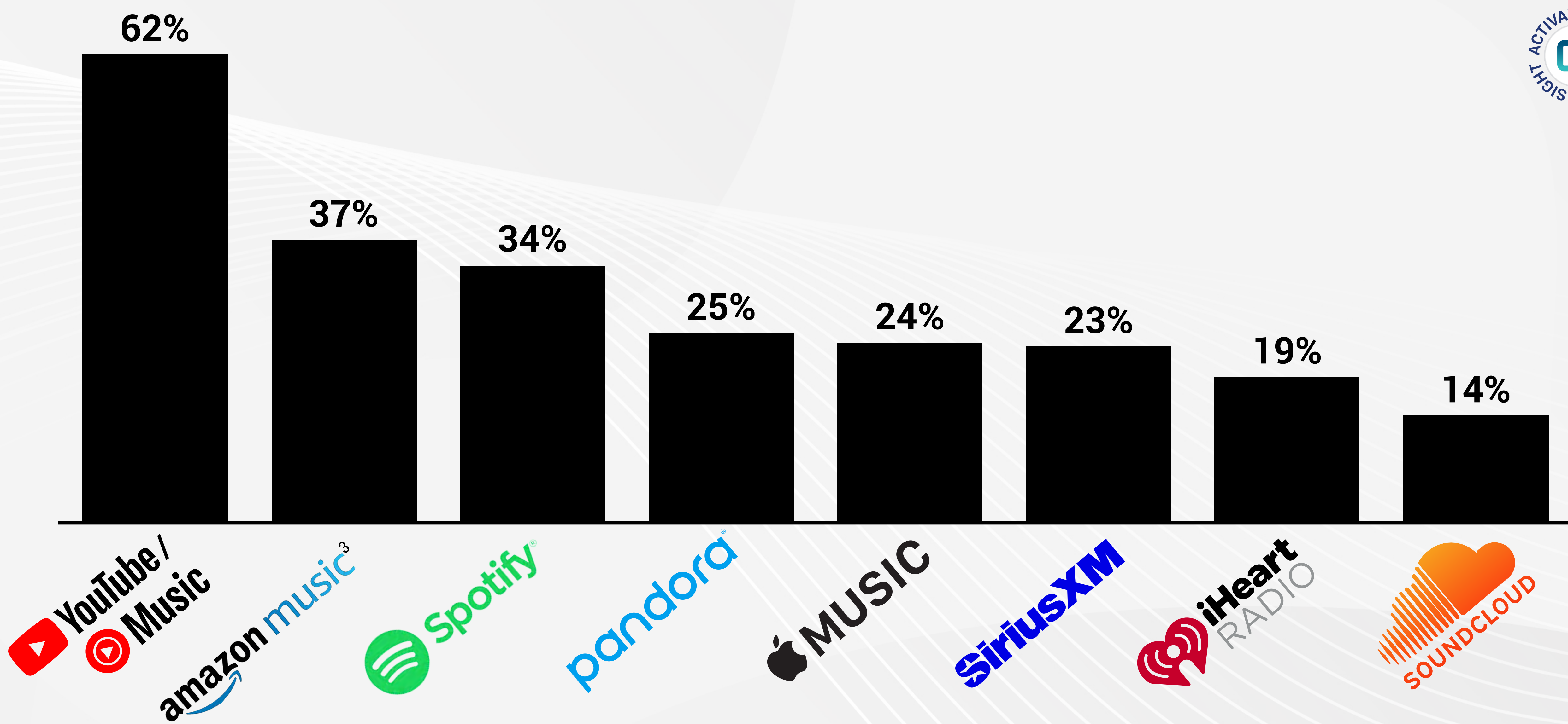
1. Excludes limited-tier services, and counts multi-user plans as a single subscription.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), eMarketer, RIAA, Statista

YouTube is the most used music service among music listeners, followed by Amazon and Spotify

MUSIC SERVICES[1] USED AT LEAST ONCE PER MONTH, U.S., 2024, % MUSIC LISTENERS[2]



1. “Music services” include free and paid services used for listening to music through any format, excluding terrestrial radio. 2. “Music listeners” are defined as adults aged 18+ who spend any time listening to music. 3. Includes consumers who use Amazon Music through an Amazon Prime subscription and consumers who use the standalone Amazon Music service.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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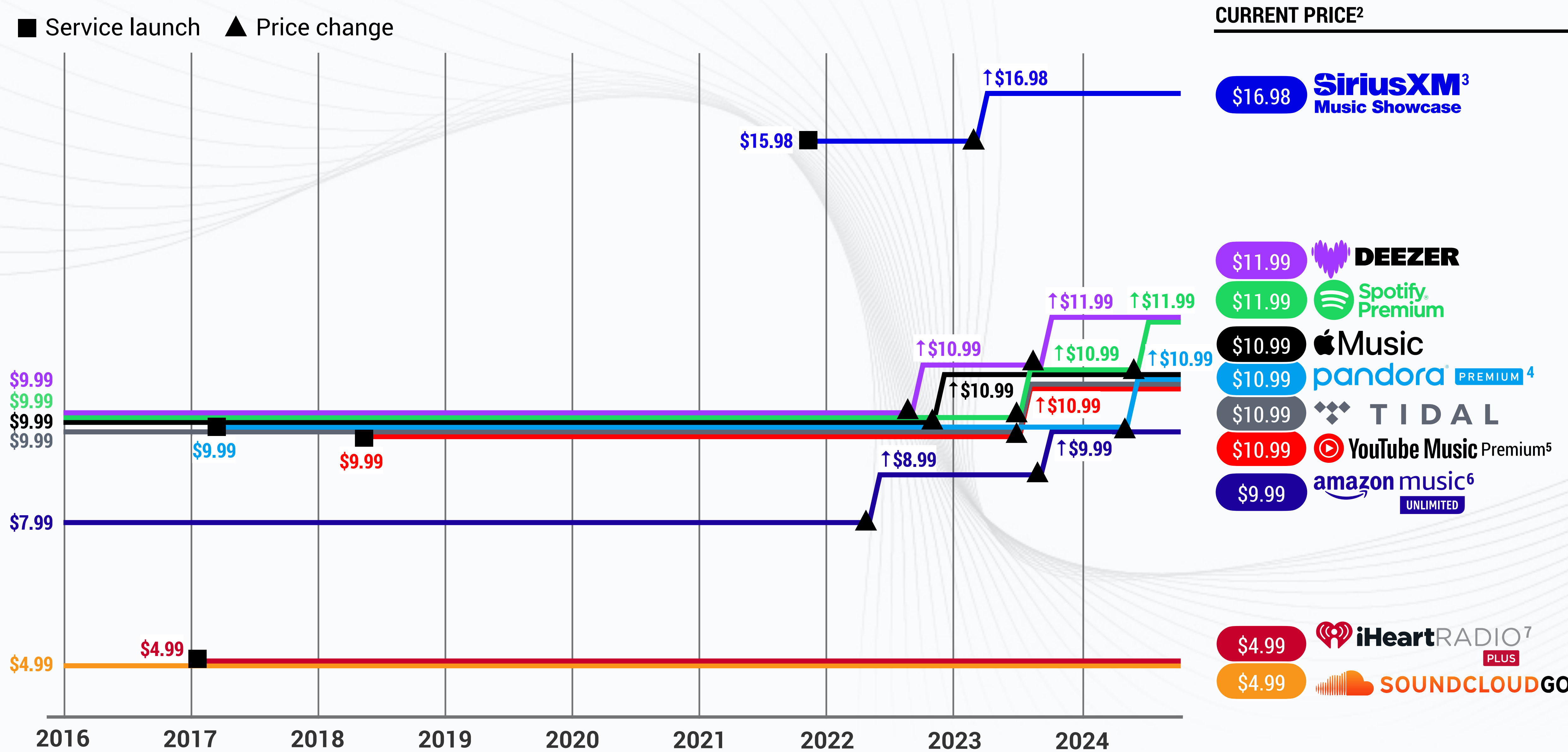
After a long period of price stability, streaming services recently began raising prices

MONTHLY STANDARD SUBSCRIPTION PRICES OF SELECT PAID MUSIC STREAMING SERVICES[1], U.S., JAN. 2016-OCT. 2024[2], USD



1. Subscription tiers were chosen to be comparable between streaming services. 2. As of Oct. 7, 2024. 3. Service launched Nov. 2021. 4. Service launched Mar. 2017. 5. Service launched May 2018. 6. Reflects price of Amazon Music Unlimited with an Amazon Prime subscription. 7. Service launched Jan. 2017.
Sources: Activate analysis, Company press releases, Company sites

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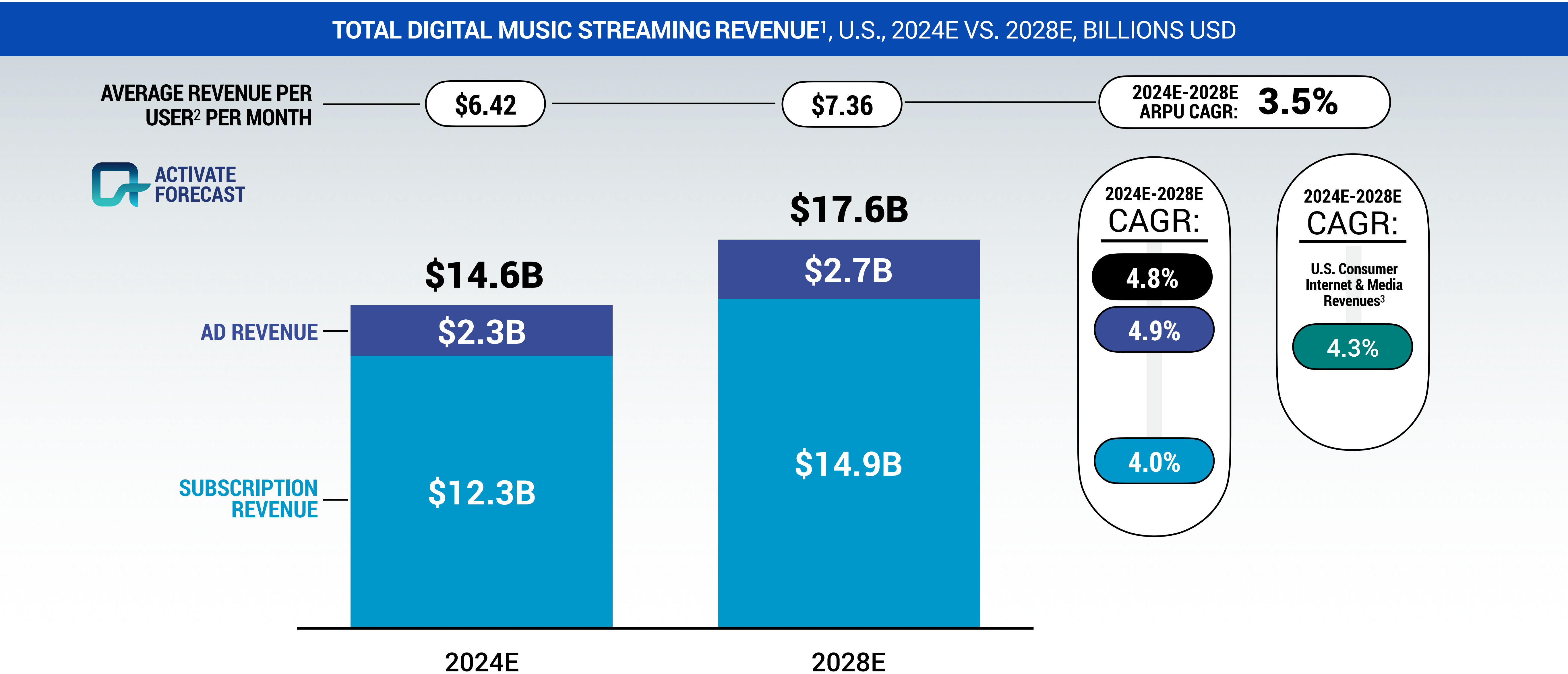
Going forward, digital music streaming revenues will be driven by ARPU expansion



1. "Digital music streaming revenue" includes paid subscriptions, digital & customized radio services, and ad-supported music streaming. Figures do not sum due to rounding. 2. "Average revenue per user" includes revenue from all music streaming listeners. 3. "Consumer internet and media revenues" include revenues from book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, internet access, digital advertising, and traditional advertising on these platforms. Excludes radio subscription and licensing fees and recorded music.

Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Alliance for Audited Media, Dentsu International, eMarketer, GroupM, IBISWorld, Newzoo, Omdia, Pew Research Center, PricewaterhouseCoopers, Recording Industry Association of America, Zenith Media

Major institutional investors are investing heavily in music

FUND	SELECT INVESTORS	SELECT RECENT MUSIC CATALOG ACQUISITIONS[1]		
concord	Michigan Office of Retirement Services; Apollo	Round Hill Music Royalty Fund[2] $470M	Phil Collins/Genesis $300M	Corey Crowder *Undisclosed*
Harbourview	KKR	Luis Fonsi $100M	Nelly $50M	Wiz Khalifa *Undisclosed*
Hipgnosis	Blackstone	Justin Bieber $200M	Red Hot Chili Peppers $140M	Justin Timberlake $100M
Influence Media Partners	BlackRock; Warner Music Group	Enrique Iglesias *Undisclosed (9 figures)*	Future *Undisclosed*	Logic *Undisclosed*
litMUS music	Carlyle	Katy Perry $225M	Benny Blanco *Undisclosed*	Keith Urban *Undisclosed*
Primary Wave Music	Oaktree; Brookfield; CAA	Stevie Nicks $100M	Huey Lewis and the News $20M	Sarah McLachlan *Undisclosed*
Shamrock Capital (Content Fund III)	*N/A*	Dr. Dre[3] $250M	Calvin Harris $100M	Metro Boomin $70M
Sony Music	*N/A*	Queen $1.2B	Michael Jackson $600M	Bruce Springsteen $550M
Universal Music Group	*N/A*	Sting $300M	RS Music $45M	Neil Diamond *Undisclosed*
Warner Music Group	*N/A*	David Bowie $250M	David Guetta $100M	YES *Undisclosed*

1. Includes partial or full catalog acquisitions. 2. Concord acquired Round Hill Music Royalty Fund for $470M, which includes over 150,000 songs and 51 catalogs. The collection features works by Alice in Chains, Billie Holiday, Elvis Presley, and James Brown. 3. Dr. Dre's collection was sold for $250M to Shamrock Capital and Universal Music Group in two separate transactions.
Sources: Activate analysis, Billboard, Music Business Worldwide, PitchBook, Variety

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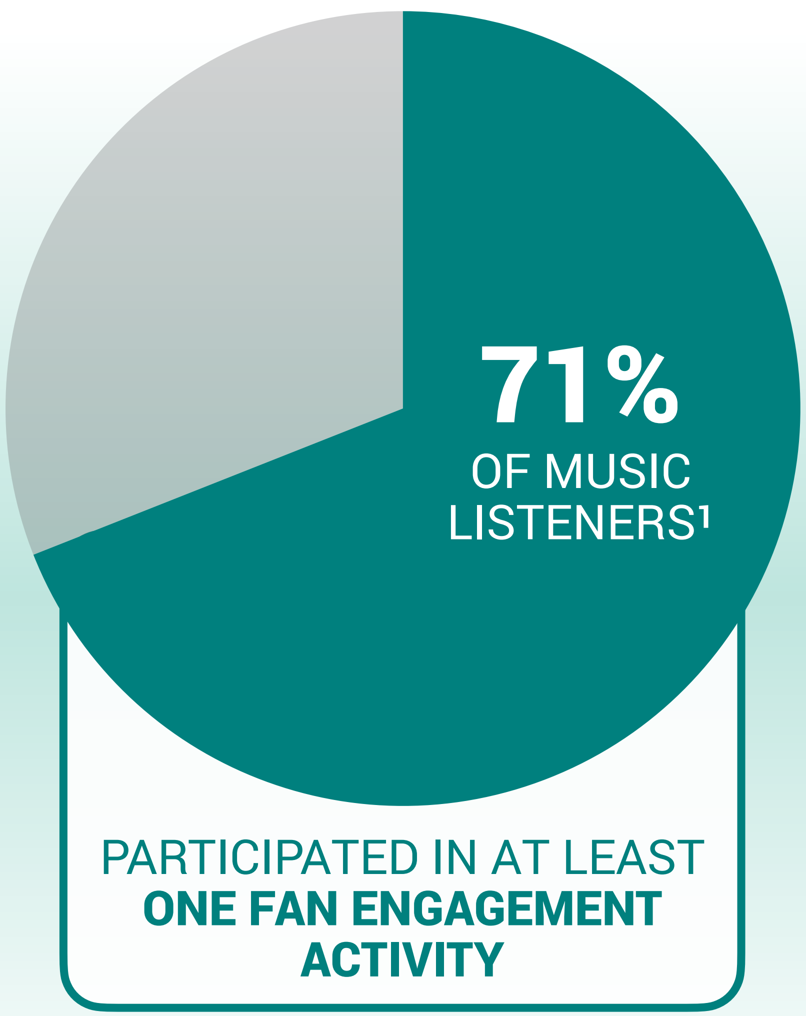
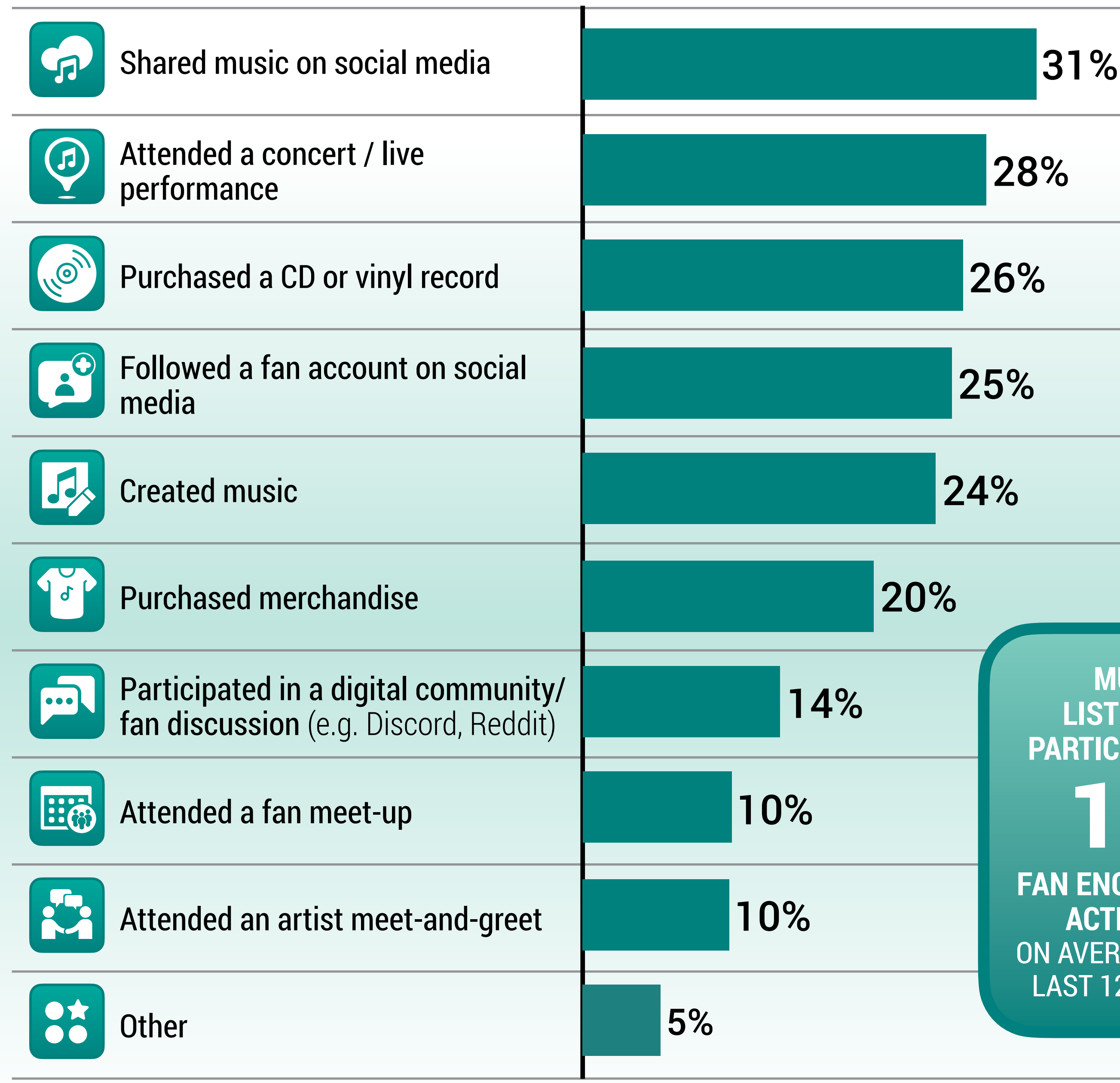
Music fans are connecting with their favorite artists through a broad set of channels

FAN ENGAGEMENT WITH ARTISTS AND MUSIC, U.S., 2024, % MUSIC LISTENERS[1]





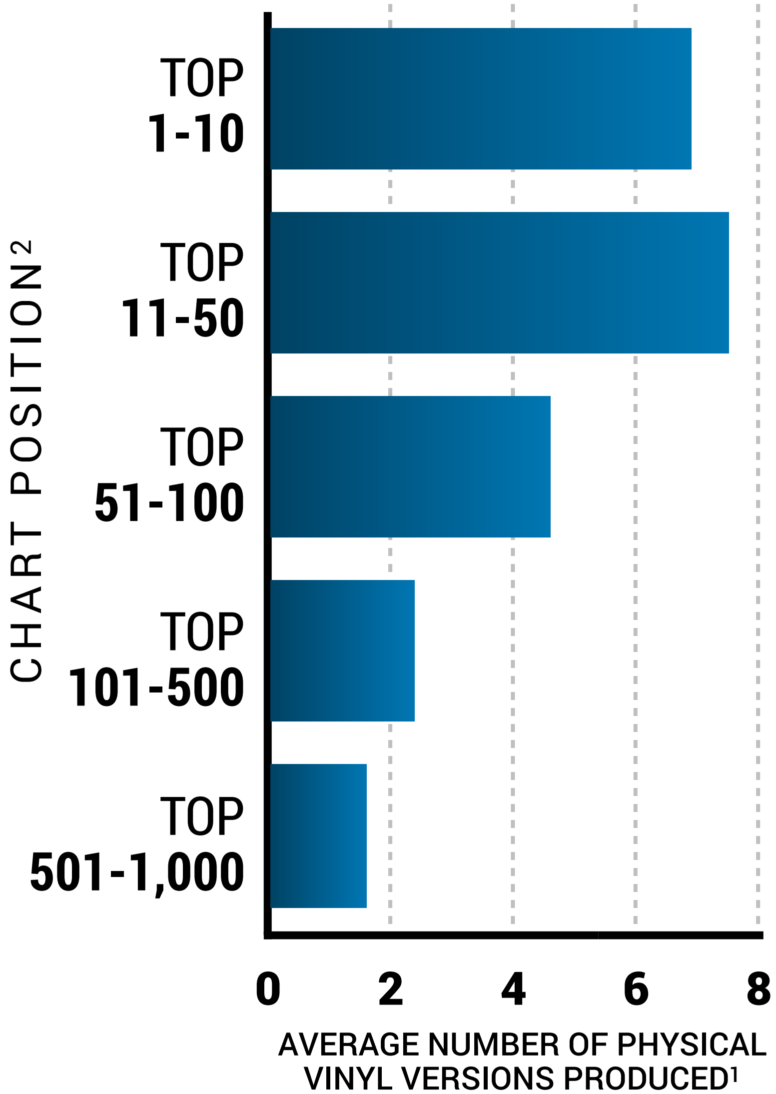
MUSIC LISTENERS[1] PARTICIPATED IN **1.9** FAN ENGAGEMENT ACTIVITIES ON AVERAGE IN THE LAST 12 MONTHS

1. "Music listeners" are defined as adults aged 18+ who spend any time listening to music in the last 12 months.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

People buy vinyl records for the listening experience and collection value

AVERAGE NUMBER OF PHYSICAL VINYL VERSIONS PRODUCED[1] PER ALBUM BY CHART POSITION[2], U.S., H1 2024

On average, records that chart in the Top 50 have more vinyl versions produced than lower-charting records



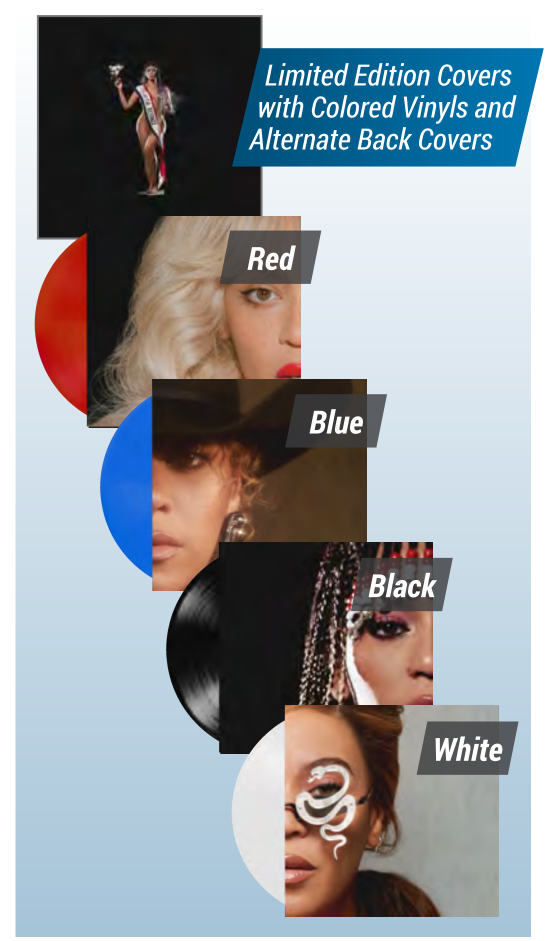
SELECT ARTIST VINYL VERSIONS

TAYLOR SWIFT

THE TORTURED POETS DEPARTMENT

BEYONCÉ

COWBOY CARTER



PEARL JAM

DARK MATTER

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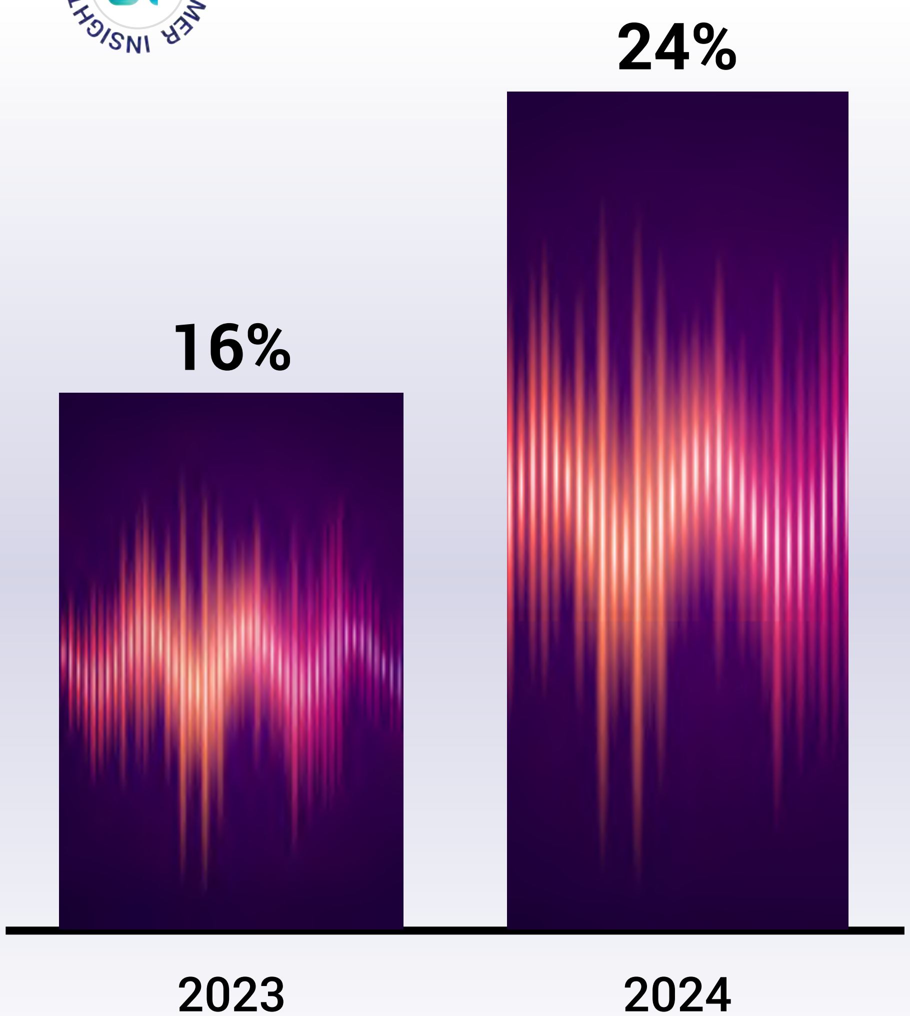
1. Reflects the number of physical UPCs (unique product codes) per album release, averaged among chart position categories. 2. Reflects Billboard chart position based on cumulative album-equivalent unit sales over H1 2024.
Sources: Activate analysis, Billboard, Company sites, Luminate

LUMINATE
ACTIVATE DATA PARTNER

An increasing number of people are becoming music creators, using AI-supported creation and distribution tools

PARTICIPATION IN MUSIC CREATION,
U.S., 2023 VS. 2024, % MUSIC LISTENERS[1]



LANDSCAPE OF SELECT AI-SUPPORTED DIGITAL MUSIC CREATOR TOOLS[2]

	SELECT EXAMPLE TOOLS
DIGITAL AUDIO WORKSTATIONS (DAWS)	Ableton Live; FL STUDIO
SAMPLE MARKETPLACES	splice Sounds; Loopmasters; LANDR Samples
PLUG-INS	xfer records SERUM; Ozone 11 STANDARD; NATIVE INSTRUMENTS; fabfilter Pro-Q 3; splice
DISTRIBUTION PLATFORMS	tunecore; LANDR
OTHER SPECIALTY TOOLS	ripple; serato; Soundtrap; WAVES

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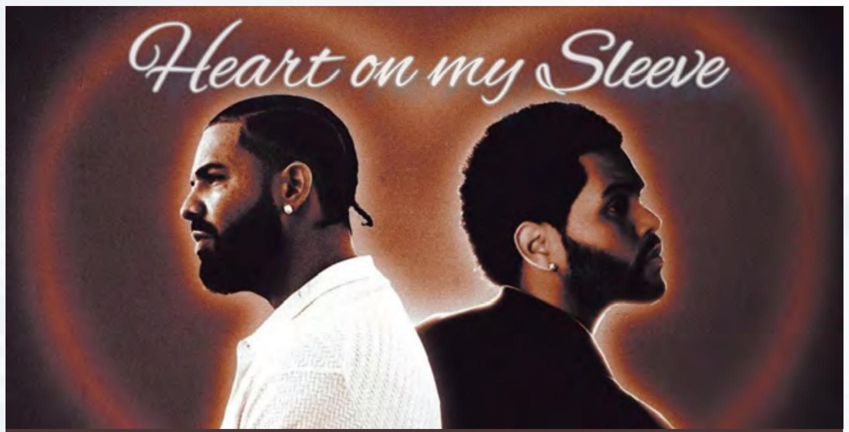
1. "Music listeners" are defined as adults aged 18+ who spend any time listening to music. 2. "AI-supported digital music creator tools" are defined as tools which can utilize AI to edit, enhance, manipulate, or record music, or that host AI-based samples within the platform.
Sources: Activate analysis, Activate 2023 Consumer Technology & Media Research Study (n = 4,023), Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company sites

AI may have made music creation too easy, enabling song clones, a new form of piracy

EXAMPLES OF SONG CLONES



AI-generated song “Heart On My Sleeve” based on vocals from Drake and The Weeknd received **over 15M views on TikTok** in less than a week before being removed from all streaming platforms

A Rolling Stone song generated from the prompt “Mississippi Delta blues song about a sad AI” using ChatGPT gained more than **36,000 plays in four days**

AI-generated song “Where That Came From” featuring Randy Travis’ voice has garnered **3.5M views on YouTube**

Drake’s Kendrick Lamar “Taylor Made Freestyle” used AI-generated Tupac Shakur voice, prompting Tupac’s estate to **send a cease and desist letter**

Scam artist sold **AI-generated Frank Ocean songs for thousands of dollars**

”Leaked” version of Taylor Swift’s “Fortnight” featuring Post Malone is **determined to be AI generated**

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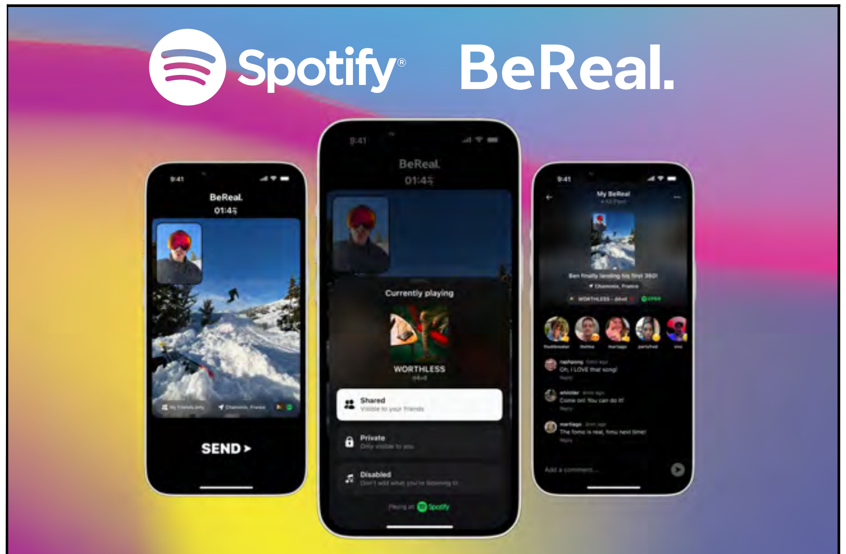
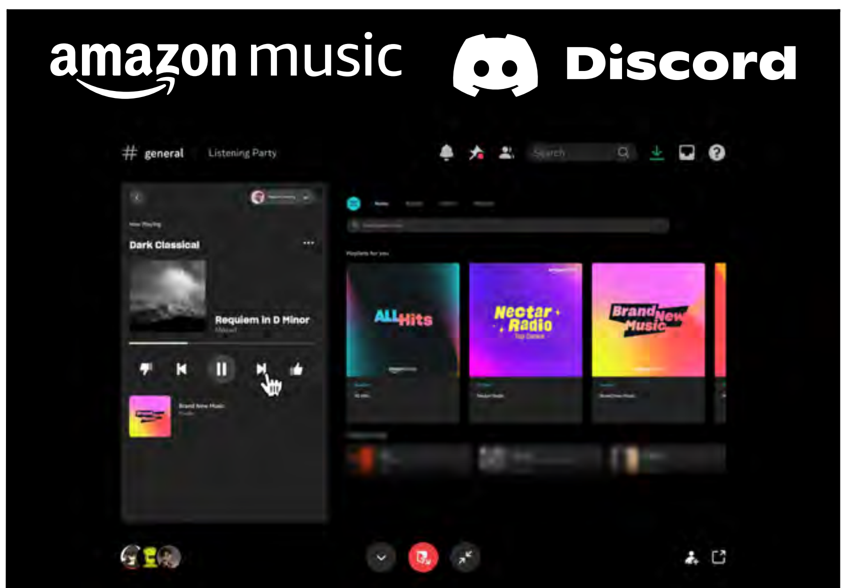
Sources: Activate analysis, Company sites, Rolling Stone, TikTok, Yahoo News, YouTube

Audio streaming services will add partnerships and collaborations to capture value from artist engagement

SOCIAL MUSIC INTEGRATION

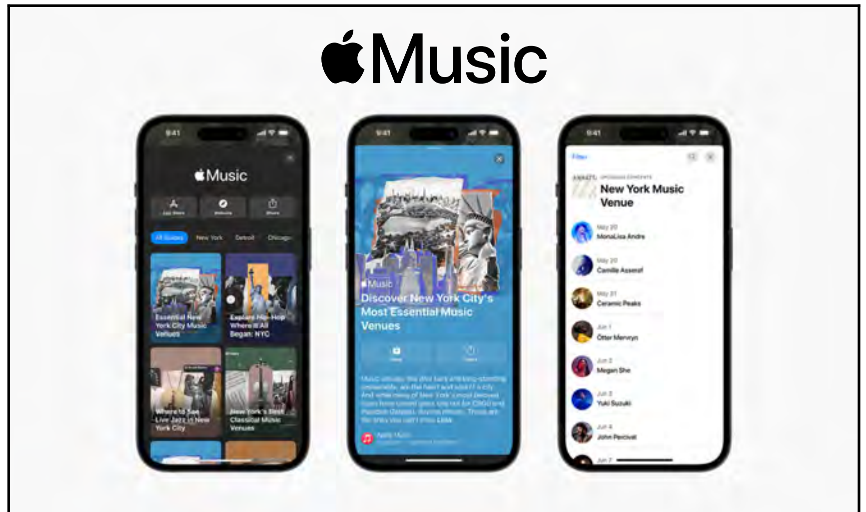


Users can share music directly on the platform

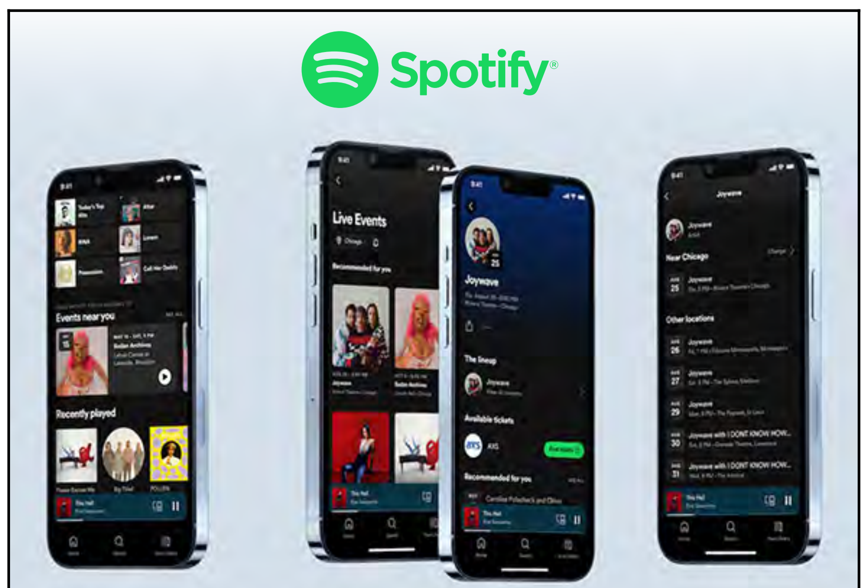


Users and their friends can share their own listening party through voice calls or texts

CONCERT TICKETS

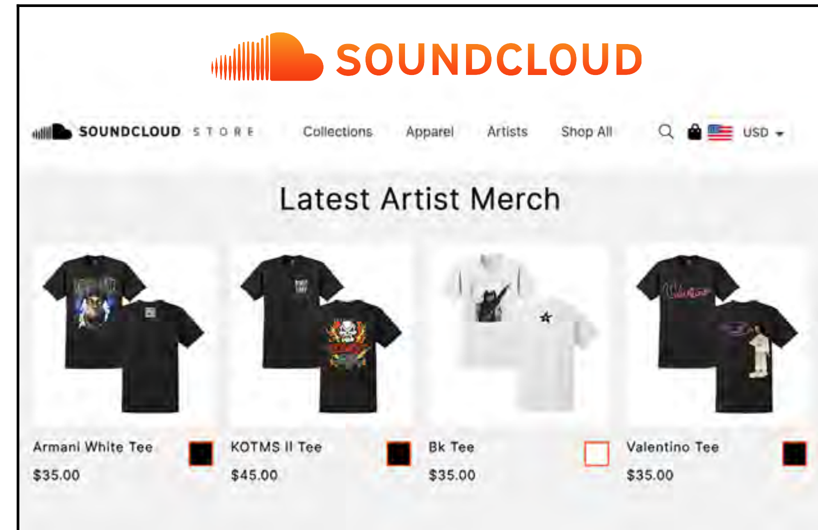


Concerts are discoverable on Apple Music through Set Lists; fans can listen to playlists, explore artist catalogs, and browse upcoming concerts

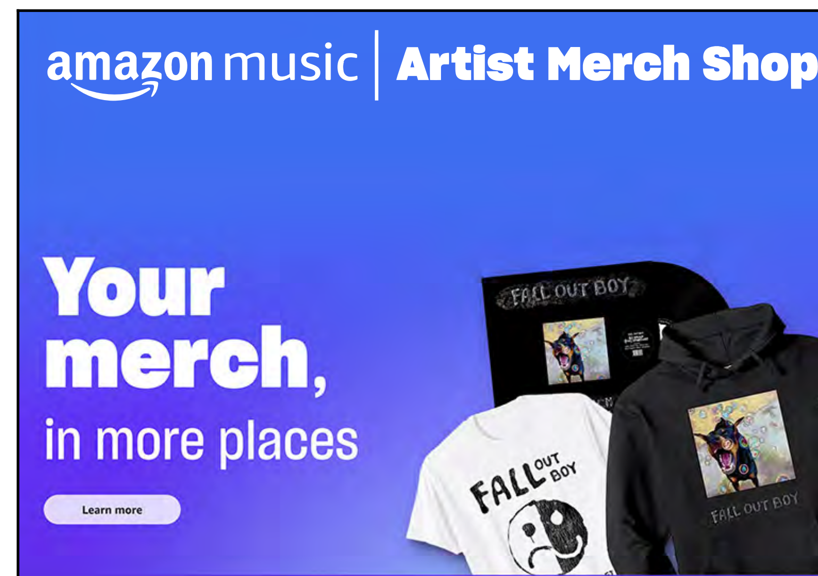


Listeners can discover upcoming live events from their favorite artists directly in the Spotify app

MERCHANDISE



Fans can purchase exclusive artist merch through the SoundCloud Store



Music fans can purchase merchandise from their favorite artists online through Amazon Music's Artist Merch Shop

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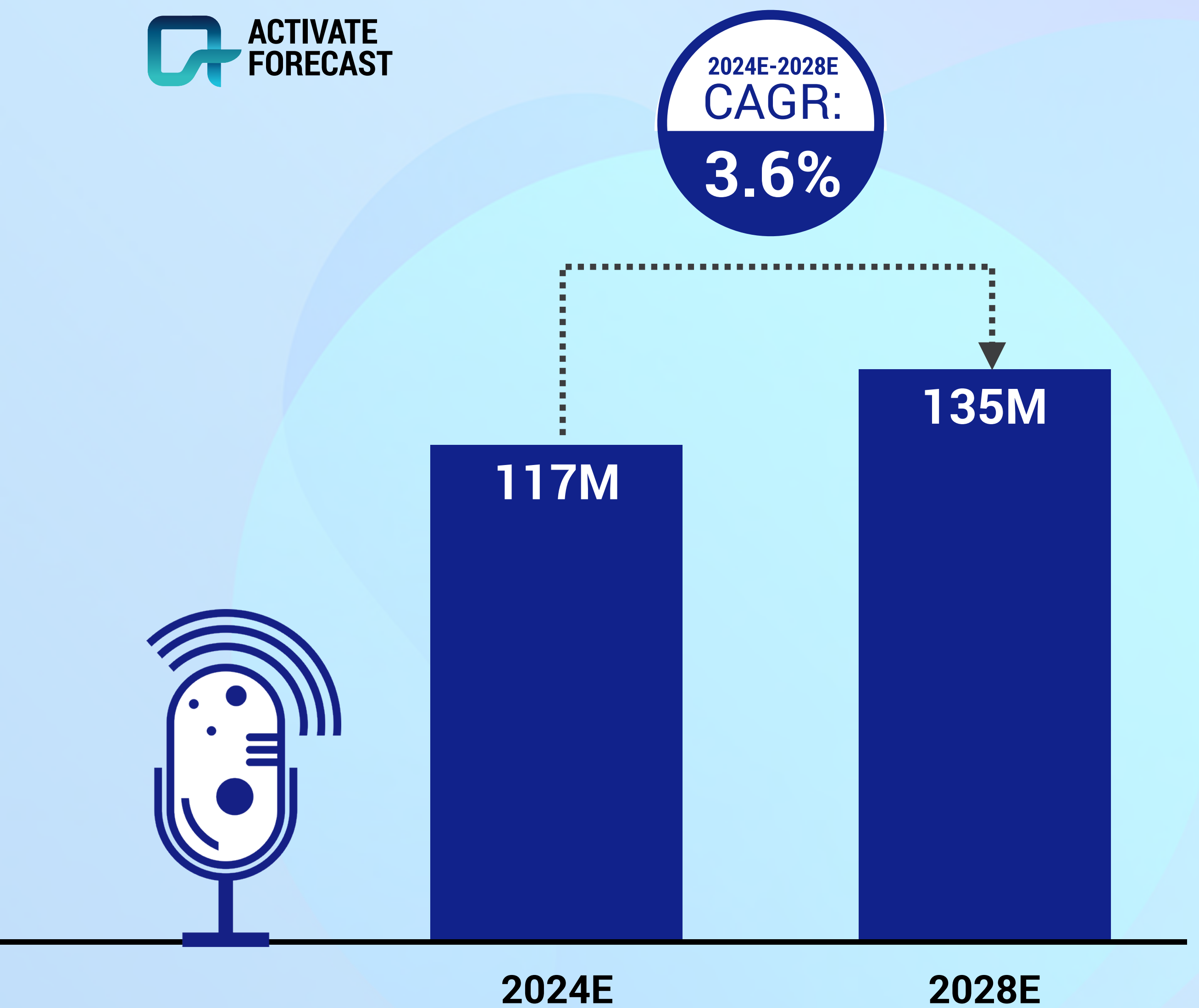
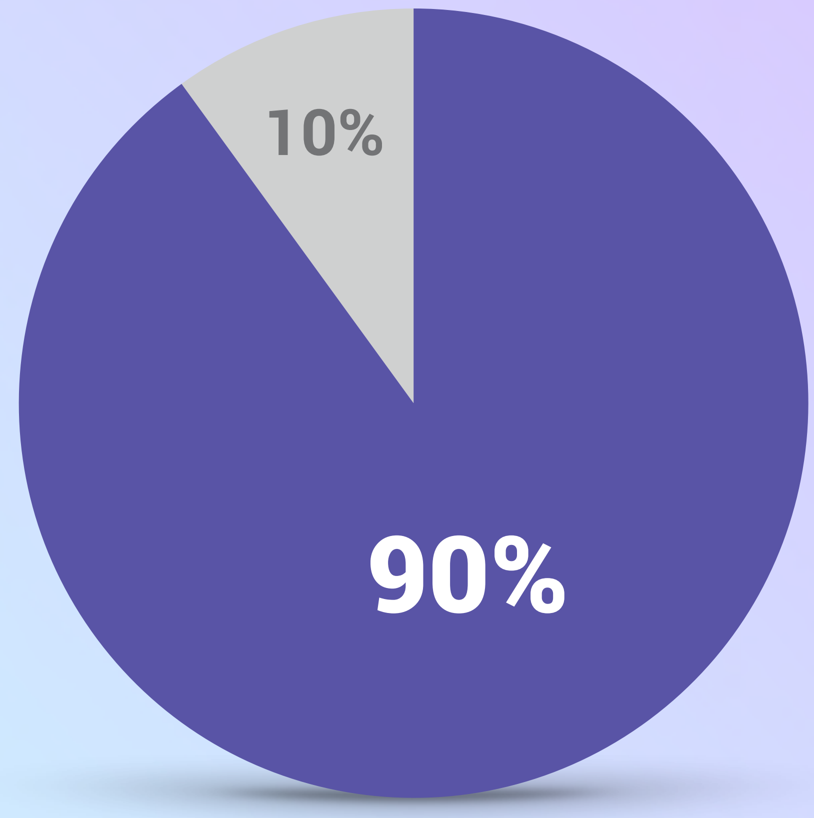
Sources: Activate analysis, Company press releases, Company sites

Almost half of American adults are listening to podcasts; not surprisingly, podcasts are an important way for streaming services to engage listeners

PODCAST LISTENERS[1], U.S., 2024E VS. 2028E, MILLIONS PODCAST LISTENERS[1]



MUSIC & PODCAST LISTENERSHIP OVERLAP WITHIN THE SAME SERVICE, U.S., 2024, % MUSIC & PODCAST LISTENERS[2]

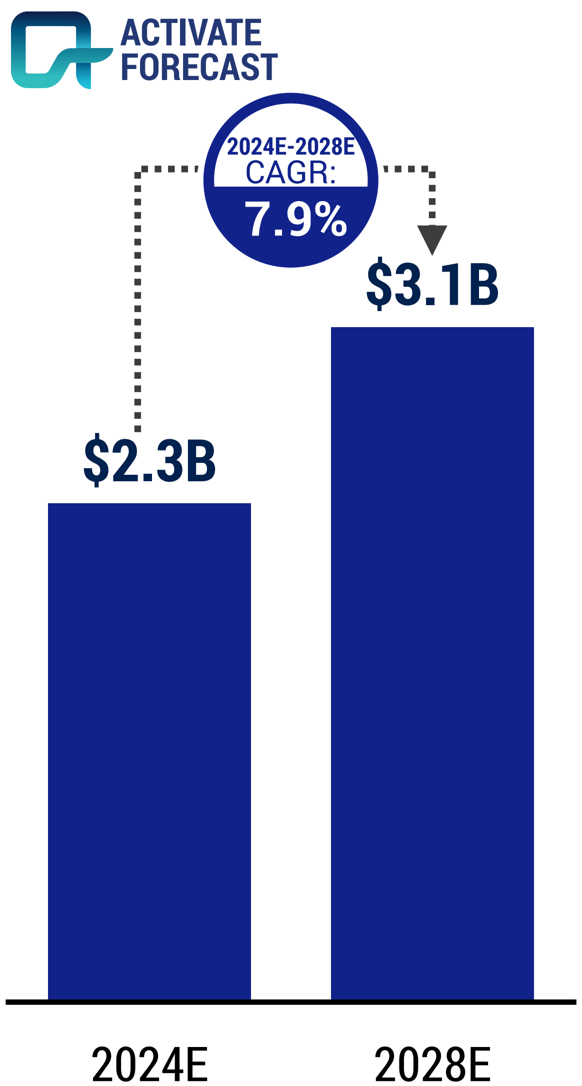


of music & podcast listeners[2] **use the same service to listen to both music and podcasts**

1. "Podcast listeners" are defined as adults aged 18+ who spend any time listening to podcasts. 2. "Music & podcast listeners" are defined as adults aged 18+ who spend any time listening to both music and podcasts.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), eMarketer

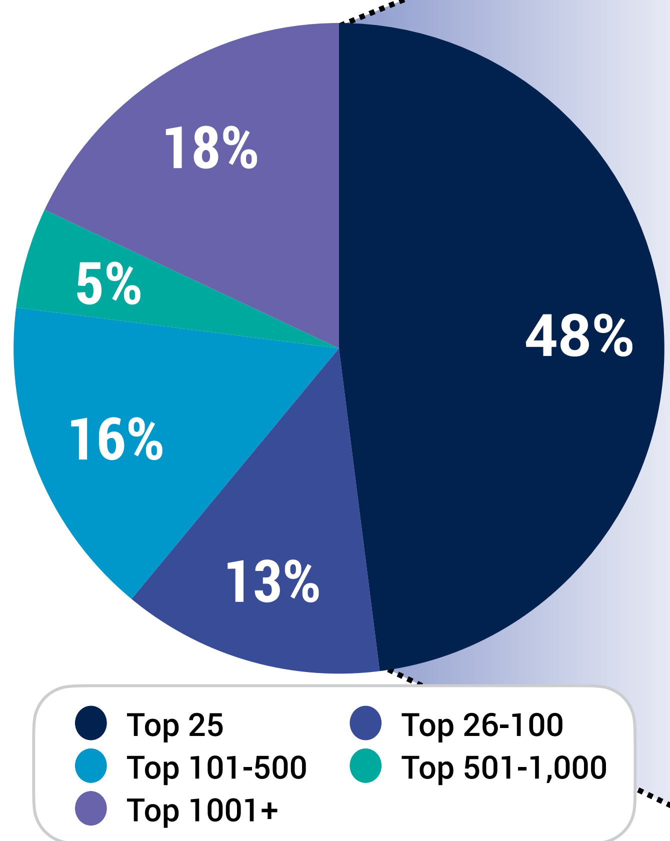
We forecast increases in podcast advertising revenue; these revenues will primarily go to the top podcast creators

PODCAST AD REVENUE, U.S., 2024E VS. 2028E, BILLIONS USD

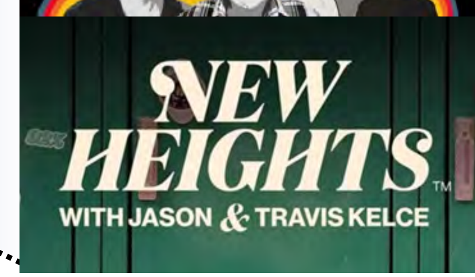


TOP PODCASTS BY AUDIENCE SIZE, U.S., Q2 2024, % TOTAL WEEKLY PODCAST LISTENERS[1]

Of the more than 4.2M available podcasts[2], the top 25[3] comprise nearly half of the audience reach



TOP PODCAST PARTNERSHIPS[4], U.S., JAN. 2024-OCT. 2024, MILLIONS USD

PODCAST	ACQUIRER / LICENSOR DEAL VALUE	DETAILS
	Spotify $250M	• Renewal of 3-year deal previously signed • Podcast will now be available on all platforms; no longer a Spotify exclusive
	SiriusXM $100M - $125M	• 3-year deal beginning in 2025 • Exclusive advertising and distribution rights; podcast will still be available on all platforms
	SiriusXM $100M+	• One week early access to new episodes for SiriusXM subscribers • Exclusive advertising and sales rights
	WONDERY $100M	• One week early access for new episodes to Wondery+ subscribers • Includes exclusive rights to all past episodes, merch, and future content

1. "Weekly podcast listeners" are defined as anyone aged 13+ in the US who listened to a podcast at least once per week in Q2 2024.
2. Available podcasts published across all digital streaming platforms. 3. Rankings were compiled by measuring the total unduplicated reach of all shows represented by a given network. 4. Partnerships by dollar value among the top 25 podcasts by audience size.
Sources: Activate analysis, Company press releases, Edison Research, eMarketer, Interactive Advertising Bureau, Podcast Industry Insights, SiriusXM, Spotify, Wondery

Media companies will begin to charge for top podcasts

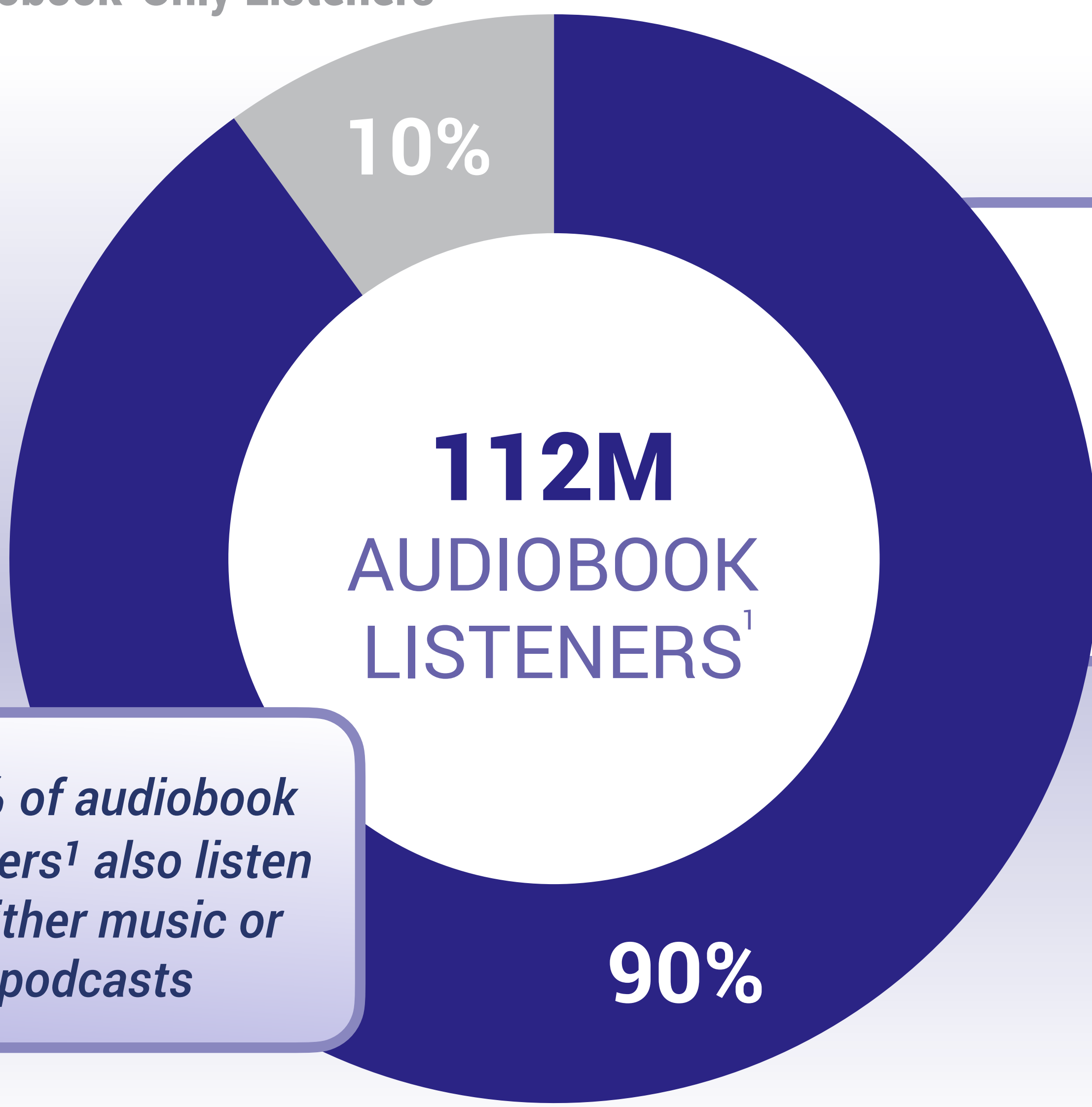
EXAMPLES OF MEDIA PUBLISHERS WITH PAID SUBSCRIPTION OFFERINGS

	The Economist	The New York Times	npr
PRICING	**$4.90/month**[1] or **$49/year**[2]	**$6/month**[1] or **$50/year**[2]	NPR+: **$8/month**[3] Single-show purchases: **$2.99/month**[1] or **$29.99/year**[2]
EXAMPLE SHOWS REQUIRING A SUBSCRIPTION FOR FULL ACCESS[4]		The Daily, Modern Love, Hard Fork	npr news now, Car Talk, Planet Money
AVAILABILITY ON O&O AND SELECT STREAMING SERVICES[5]			
SUBSCRIPTION ACCESS DETAILS	Listeners must subscribe to Economist Podcasts+ to access The Economist's entire collection of podcasts	Beginning October 2024, listeners must subscribe to access archived content for select hit shows	Listeners must subscribe to NPR+ or single-show purchases to access ad-free and bonus episodes for select podcast shows

Note: As of Oct. 7, 2024. 1. Billed monthly. 2. Billed annually. 3. NPR+ offers all NPR podcast shows through one holistic bundle. NPR listeners must donate $8/month minimum to gain access to NPR+. 4. "Full access" is defined as users having the ability to listen to / download all content episodes (including archived and bonus content). 5. Select streaming services include Amazon Music, Apple Podcasts, and Spotify.
Sources: Activate analysis, Axios, Company sites, Digiday

Over 110M U.S. adults are listening to audiobooks; the great majority are also listening to either music or podcasts

AUDIOBOOK LISTENERS[1] BY AUDIO CONSUMPTION TYPE, U.S., 2024, % AUDIOBOOK LISTENERS[1]



***90%** of audiobook listeners[1] also listen to either music or podcasts*

EXAMPLE AUDIOBOOK SERVICES

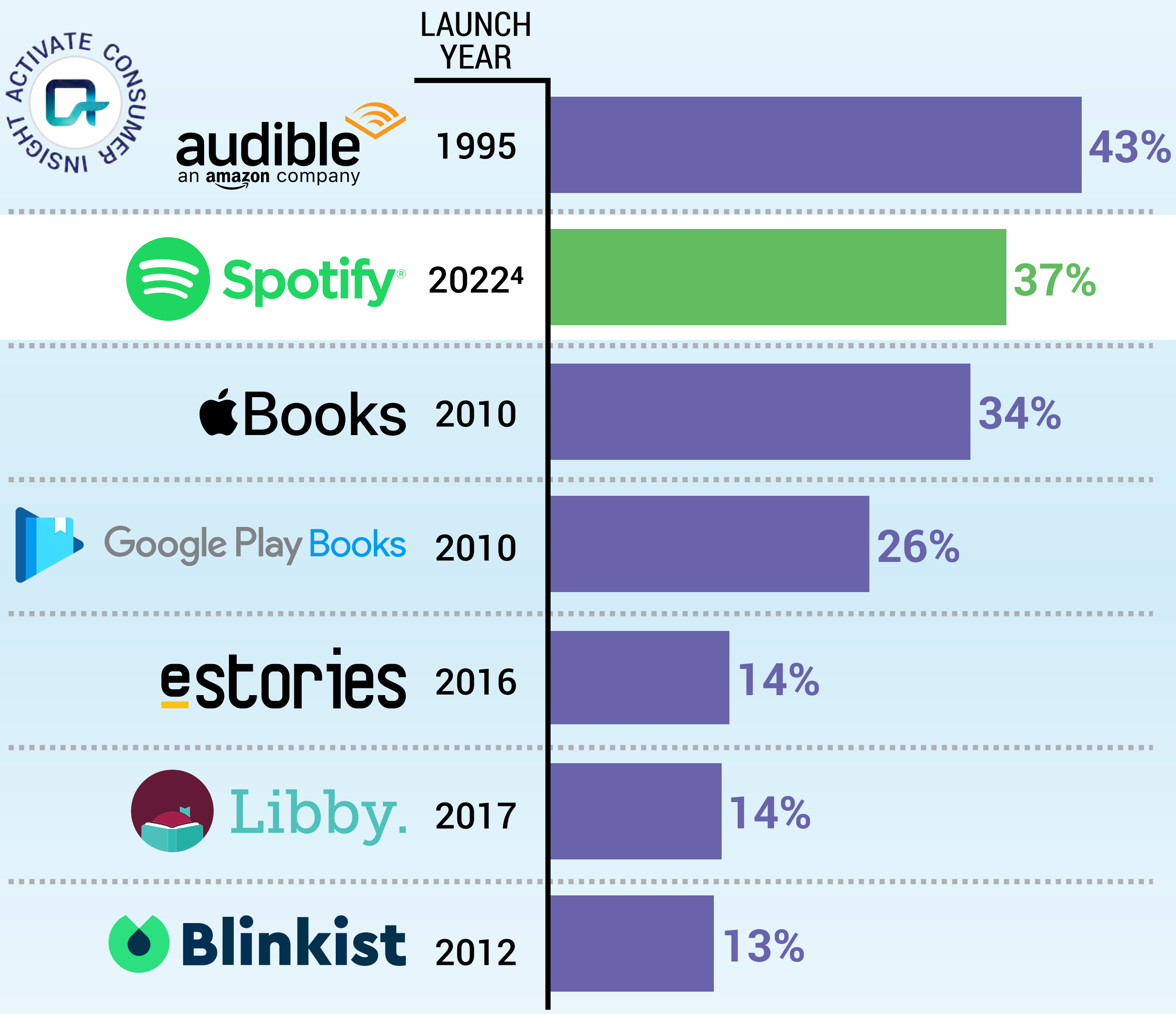
Books, audible (an amazon company), Blinkist, downpour, estories, Google Play Books, hoopla, Libby., LibriVox, Loyal Books, Rakuten kobo, REALM, SCRIBD, Spotify

*Audiobook listeners[1] use **2.5 platforms** to listen to audiobooks on average*

1. "Audiobook listeners" are defined as adults aged 18+ who currently listen to audiobooks.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

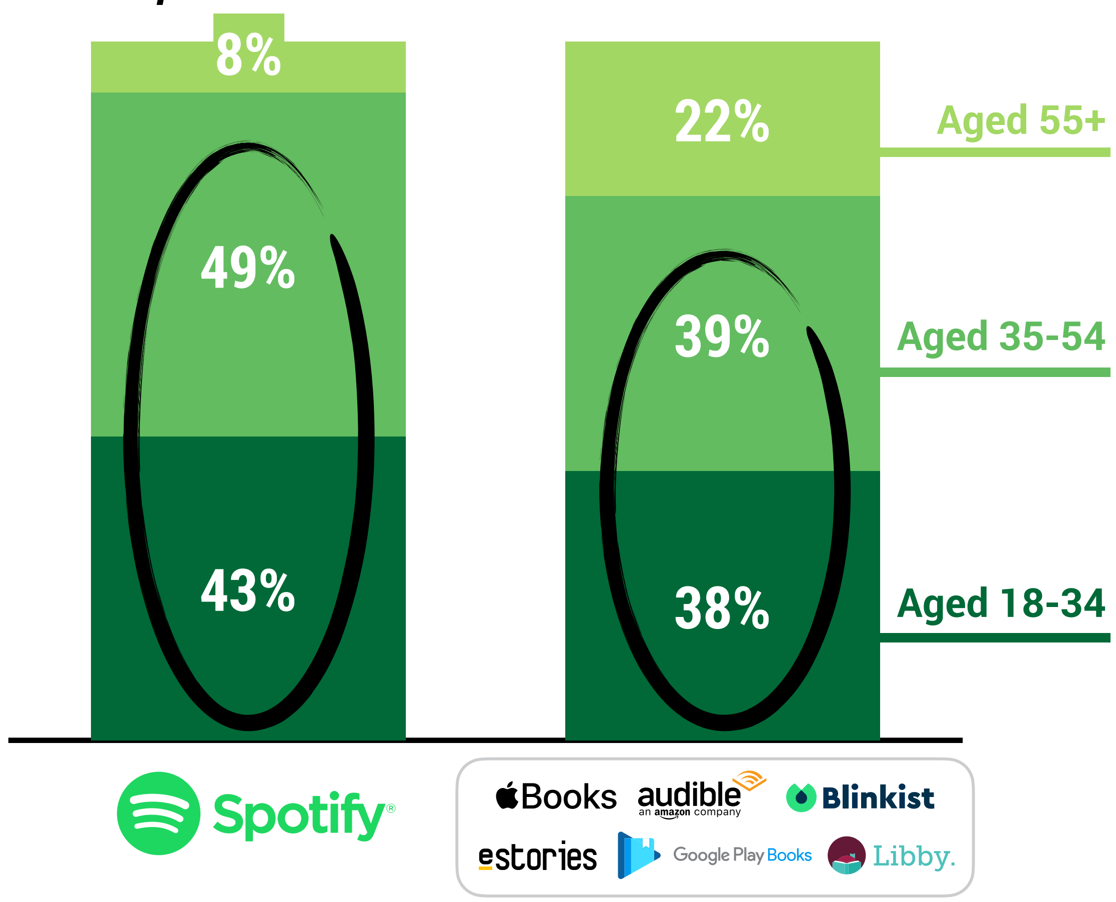
Audible, Spotify, and Apple are the industry leaders in audiobooks; Spotify is leading the way by creating an integrated experience

USAGE OF AUDIOBOOK SERVICES, U.S., 2024, % AUDIOBOOK LISTENERS[1]



SPOTIFY AUDIOBOOK USERS[2] VS. OTHER AUDIOBOOK SERVICE USERS[3] BY AGE GROUP, U.S., 2024, % AUDIOBOOK LISTENERS BY PLATFORM

Spotify audiobook users[2] skew significantly younger compared to those of other audiobook services[3]



1. "Audiobook listeners" are defined as adults aged 18+ who currently listen to audiobooks. 2. "Spotify audiobook users" are defined as adults aged 18+ who currently use Spotify to listen to audiobooks. 3. "Other audiobook services users" are defined as adults aged 18+ who listen to audiobooks on platforms other than Spotify, including Apple Books, Audible, Blinkist, Downpour, eStories, Google Play Books, Hoopla, Kobo, Libby, LibriVox, Loyal, Scribd, Serial Box, and others. Logos in graph are not exhaustive. 4. Spotify introduced audiobooks in 2022.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company press releases

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B2B TECHNOLOGY AND SOFTWARE

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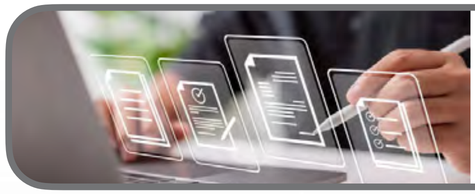
B2B technology and software companies will need to reshape their go-to-market strategies to meet the challenges of radically different customer needs and buying processes

	CHANGING MARKET FORCES	*REQUIREMENTS FOR B2B TECHNOLOGY GO-TO-MARKET STRATEGIES*
	Fragmentation of technology buyer needs based on **differing IT maturity levels**	**Tailored customer targeting** approaches including **company size and IT maturity**
	Decision-making processes involving **business leaders beyond the CTO and CIO**	**Sales narratives developed for each persona** to address pain points
	Shorter **sales cycles** and **contract lengths**, driven by appetite for new solutions	Higher stakes to **quickly engage buyers** and **showcase features and value early**
	**Integrations and security** prioritized as top **technology selection criteria**	Product feature discussions **centered on solution interoperability** and **security**
	Focus on **"Everyday AI" solutions** with tangible ROI, **moving past the hype cycle**	AI sales approaches depicting **specific use cases & value, not cutting-edge features**
	**Uneven data availability, access, & capabilities** vs. high requirements for AI	Opportunity to **drive investment** in **data collection & management solutions**

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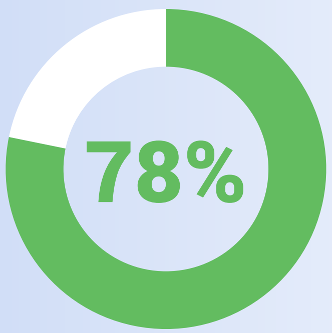
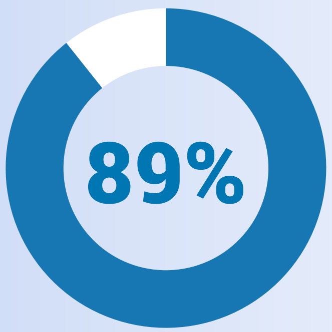
Source: Activate analysis

Our research with technology decision makers indicates that companies of all sizes plan to increase technology spend in the next five years, driven by adoption of AI and data capabilities, productivity and efficiency needs, and cybersecurity improvements

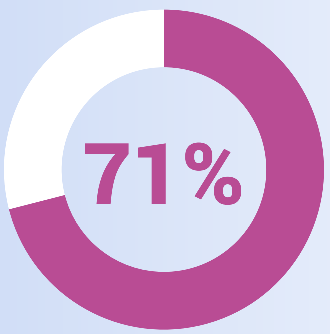
EXPECTATIONS TO INCREASE TECHNOLOGY AND SOFTWARE SPEND IN THE NEXT FIVE YEARS, U.S., 2024, % COMPANIES BY SIZE



of **Enterprise Buyers** (5,001+ employees) expect to increase technology spend in the next five years

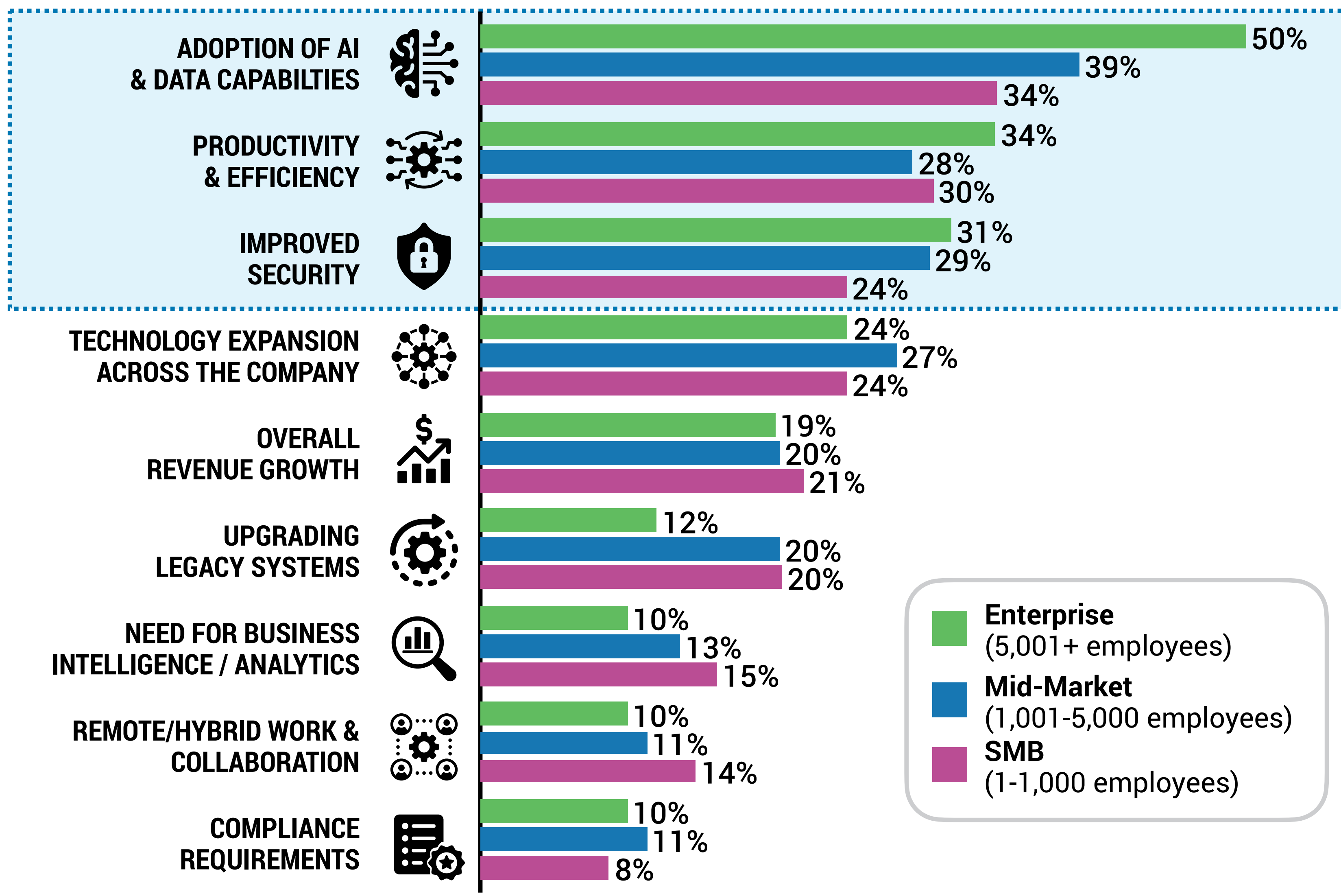


of **Mid-Market Buyers** (1,001-5,000 employees) expect to increase technology spend in the next five years



of **SMB Buyers** (1-1,000 employees) expect to increase technology spend in the next five years

TOP REASONS[1] WHY TECHNOLOGY AND SOFTWARE SPEND IS EXPECTED TO GROW, U.S., 2024, % COMPANIES THAT EXPECT TO INCREASE TECHNOLOGY AND SOFTWARE SPEND IN THE NEXT FIVE YEARS BY SIZE



1. Respondents were asked to select up to two top reasons.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

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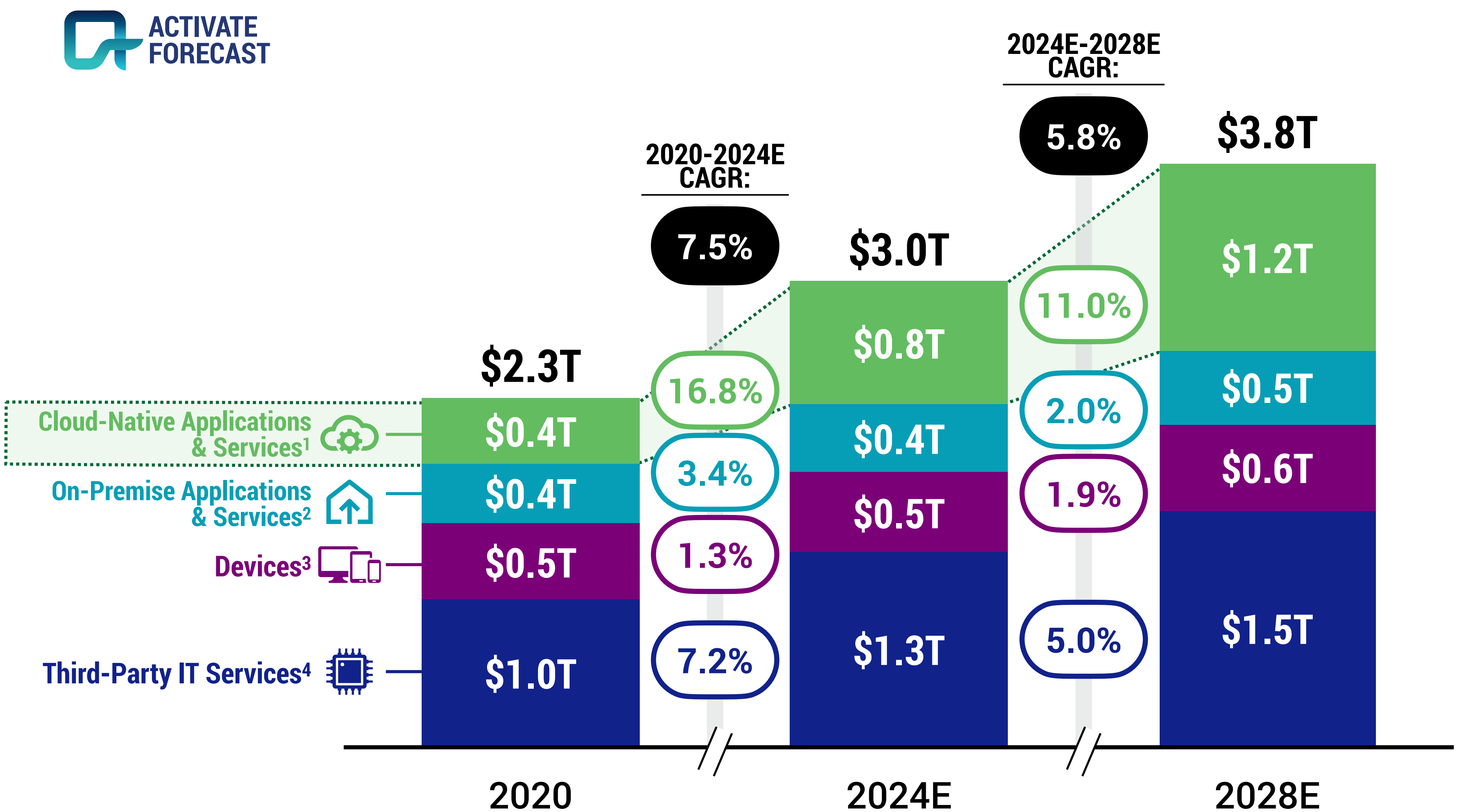
We forecast that companies will spend an additional $800B on technology by 2028; most of this growth will be driven by cloud-native software and services, as well as adoption of AI-enabled functionality

B2B TECHNOLOGY SPEND BY CATEGORY, GLOBAL, 2020 VS. 2024E VS. 2028E, TRILLIONS USD



ACTIVATE PERSPECTIVE

- Companies will continue increasing spend on technology, adding an **incremental $800B from 2024E-2028E**
- Spend on **cloud-native applications and services** will **grow at a double-digit pace**
- Our forecast reflects **renewed decision-maker optimism**, with new spend driven by **increased efficiencies** realized, new growth opportunities **enabled by technology**, and continued focus on **security and risks**

1. "Cloud-native applications & services" is defined as software, data storage, and compute hosted on a public cloud platform or remote data center. 2. "On-premise applications & services" is defined as software, data storage, and compute hosted on-site, including servers and enterprise network equipment. 3. "Devices" is defined as PCs, mobile phones, tablets, and printers in the enterprise. 4. "Third-party IT services" is defined as any service offering that assists enterprises in implementing, managing, and operating systems, software, and equipment used in modern IT environments. Does not include the software, storage, and devices themselves.
Sources: Activate analysis, Analysys Mason, Company filings, Fortune Business, Gartner, HG Insights, IBISWorld, International Data Corporation, Precedence Research, Synergy Research Group

Technology buyers are not created equal, with IT maturity levels becoming the essential catalyst for the specific needs they prioritize and the customer personas sellers need to target

COMPANY IT MATURITY LEVEL[1] PROGRESSION

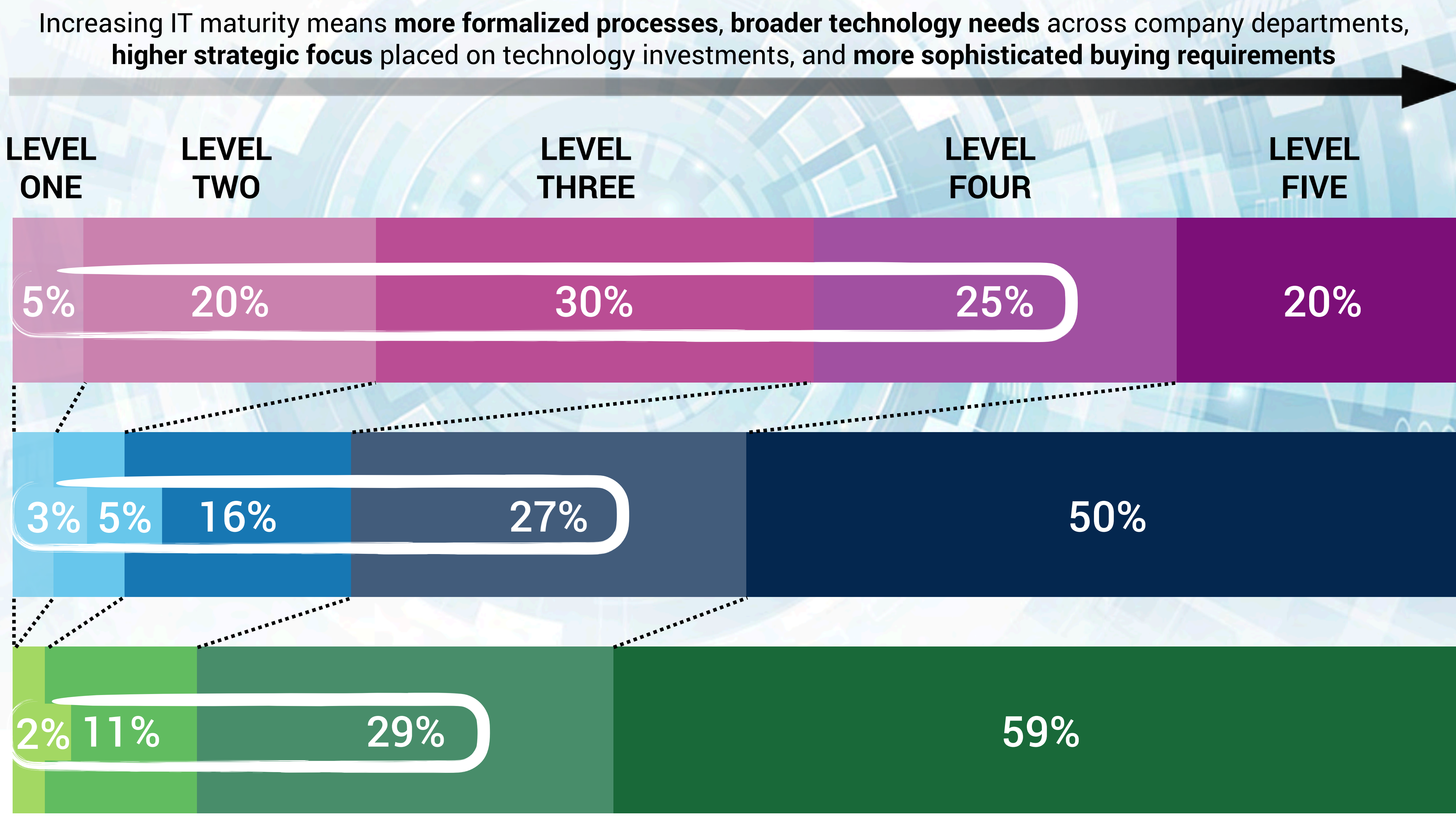
Increasing IT maturity means **more formalized processes**, **broader technology needs** across company departments, **higher strategic focus** placed on technology investments, and **more sophisticated buying requirements**

	LEVEL ONE	LEVEL TWO	LEVEL THREE	LEVEL FOUR	LEVEL FIVE
	IT processes are ad hoc, disorganized, and chaotic, with no structure in place	IT processes are in place and organized, but not organized enough to be proactive	IT processes are in place with documentation, and teams can proactively predict issues	IT processes are in place with documentation, and actively aligned with business goals	IT is central to business processes, and receives investment to ensure alignment with business goals
INDUSTRIES OVER-INDEXING AT EACH LEVEL	Arts & Design Government Hospitality & Travel	Nonprofit Retail Transportation	Education Professional Services Real Estate	Manufacturing Healthcare Media & Entertainment	Finance Insurance Technology

1. IT maturity levels are self-reported by survey respondents.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

We expect companies of all sizes to invest to lift their IT maturity; to capitalize on this, technology sellers will need distinct go-to-market approaches that are tailored for each buyer size and maturity segment

IT MATURITY LEVEL[1] BY COMPANY SIZE[2], U.S., 2024, % COMPANIES BY SIZE



1. IT maturity levels are self-reported by survey respondents. 2. Figures do not sum to 100% due to rounding. 3. No respondents at Enterprise companies indicated Level One IT maturity.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

Beyond the CIO and IT teams, a broader set of stakeholders is influencing technology buying decisions

THE MODERN TECHNOLOGY DECISION-MAKING TEAM:
It takes a village to select a solution

IT
Assess technology, features/ functionality, and security

LEGAL
Ensure compliance with data protection, privacy, and security regulations

EXECUTIVE MANAGEMENT
Drive alignment between technology adoption and implementation and overall company strategy

END USERS
Confirm software fulfills major use cases, integrates into existing workflows, and offers necessary enablement and training

LINE OF BUSINESS LEADERS
Manage spend and software utilization as part of specific department P&Ls

PROCUREMENT
Evaluate vendor capabilities, negotiate MSA terms, and manage implementation

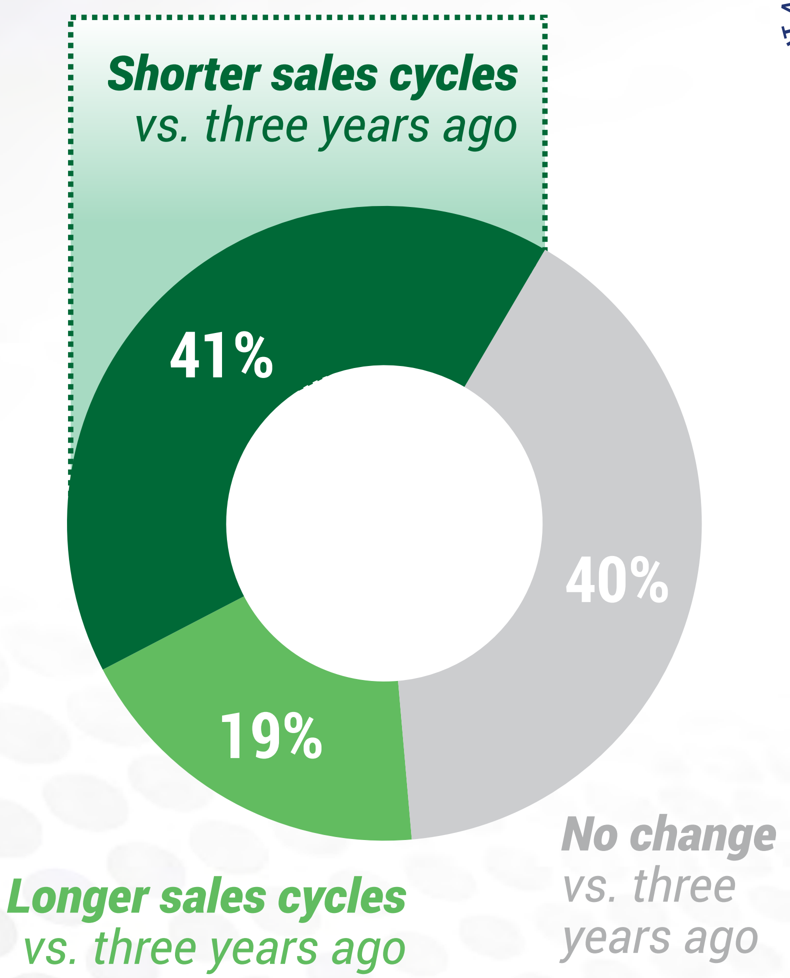
CORPORATE STRATEGY
Align technology with long-range business planning and corporate development opportunities

FINANCE
Scrutinize budget and incremental value delivered compared to existing solutions

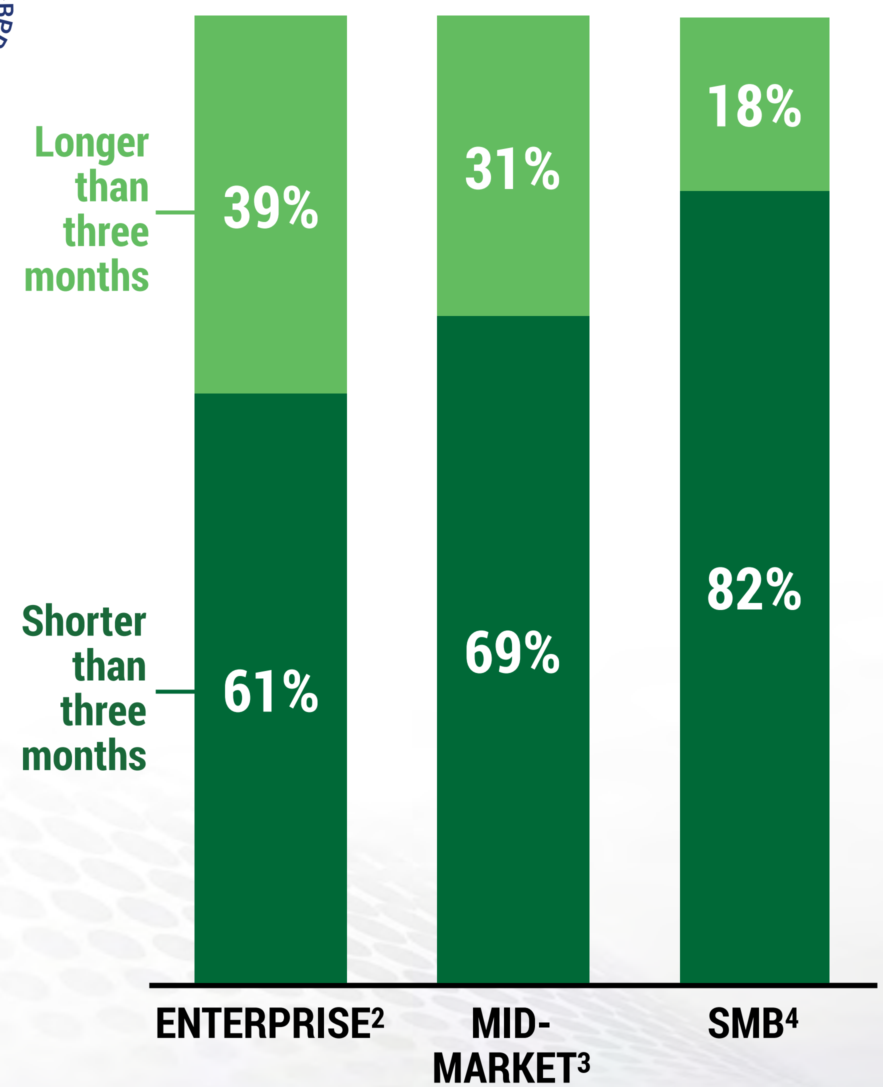
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

Based on our research with technology decision makers, technology and software sales cycles are becoming shorter as buyers are more willing to try new, innovative solutions

TECHNOLOGY/SOFTWARE SALES CYCLE LENGTHS[1] VS. THREE YEARS AGO, U.S., 2024, % COMPANIES



TYPICAL TECHNOLOGY/SOFTWARE SALES CYCLE LENGTHS[1] BY COMPANY SIZE, U.S., 2024, % COMPANIES BY SIZE



REQUIREMENTS FOR SELLERS

- **Buyer Outreach:** Identify and engage the most valuable decision makers in a potential buyer organization quickly, before interest is lost
- **Use Cases and Features:** Showcase most relevant solution features and functionality, and highlight alignment with buyer needs to immediately demonstrate relevance and value
- **Addressing Pain Points:** Ensure sellers acknowledge buyer concerns (e.g. cost, compliance issues, privacy) early in the process to reduce friction when closing the sale

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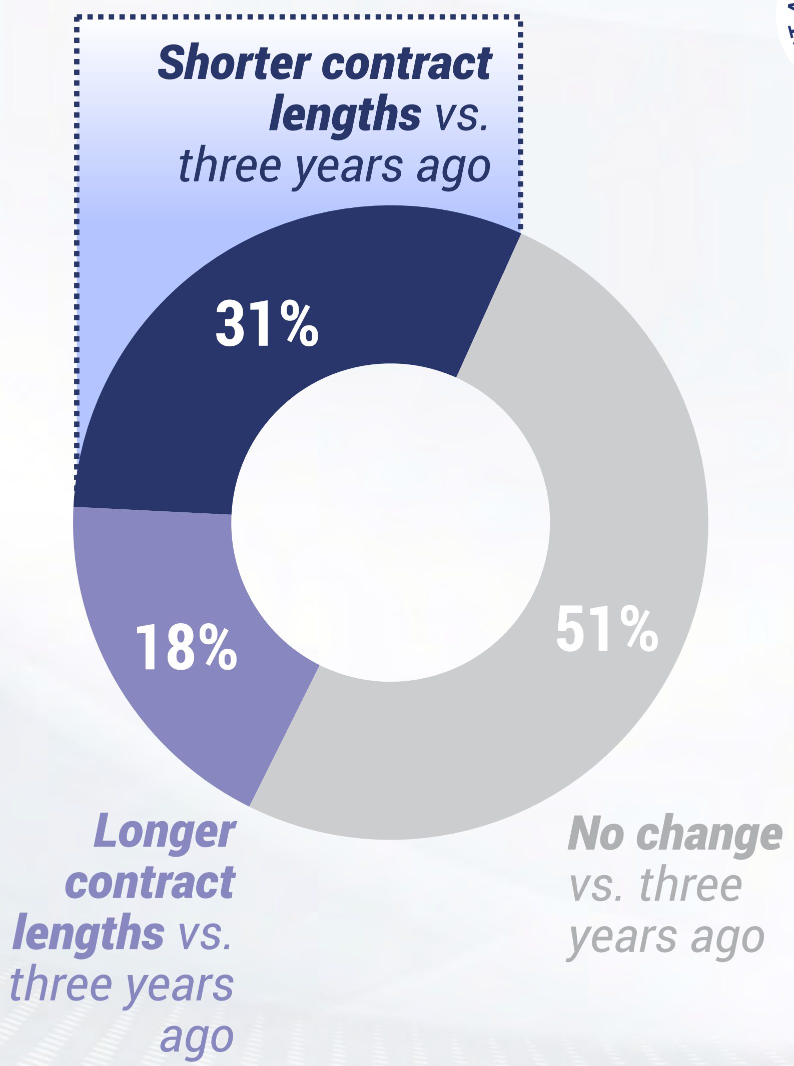
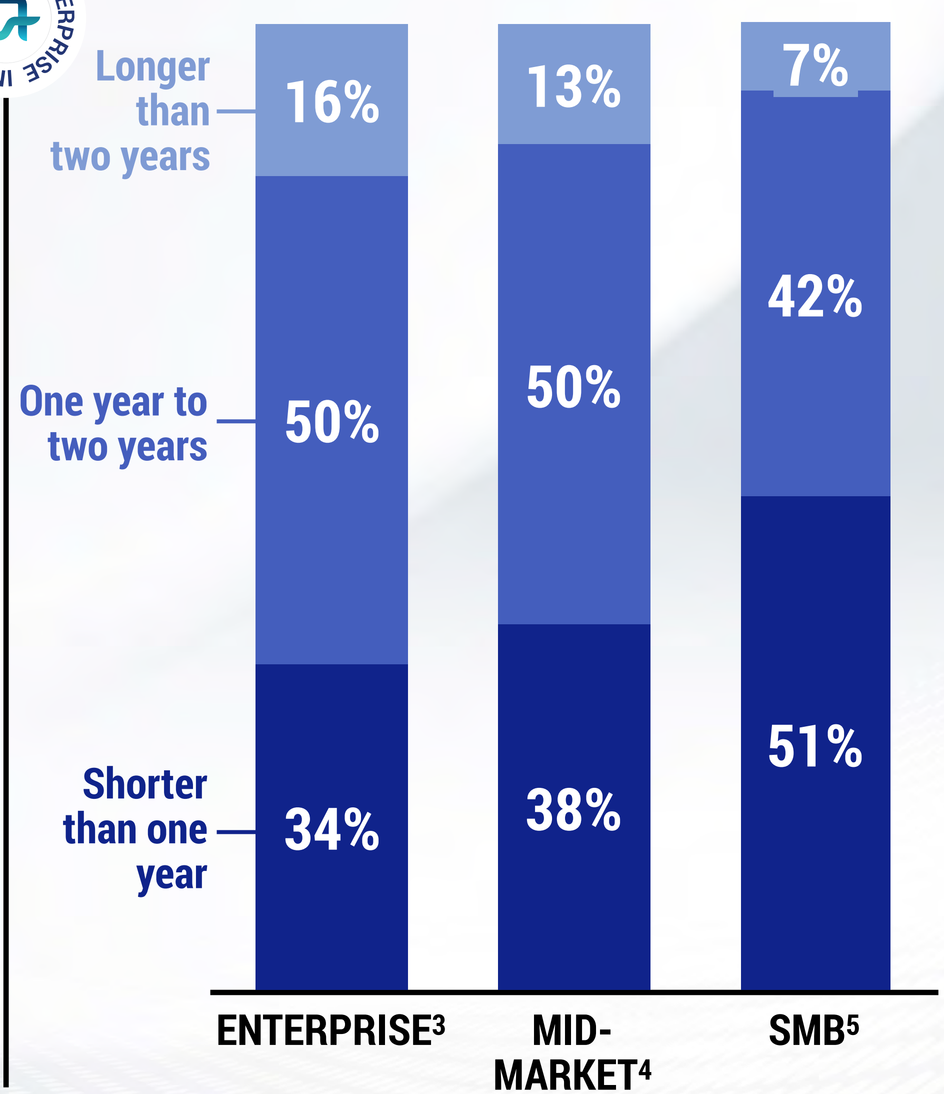
1. Includes full length of time spanning need identification, vendor research, vendor engagement, negotiation, and completion of purchase.
2. Greater than 5,000 employees. 3. 1,001 to 5,000 employees. 4. 1,000 employees or fewer.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

Contracts lengths are becoming shorter as technology decision makers are willing to try new solutions, but do not want to be locked into long contracts

TECHNOLOGY/SOFTWARE CONTRACT LENGTHS[1] VS. THREE YEARS AGO, U.S., 2024, % COMPANIES



TYPICAL TECHNOLOGY/SOFTWARE CONTRACT LENGTHS[1] BY COMPANY SIZE[2], U.S., 2024, % COMPANIES BY SIZE



REQUIREMENTS FOR SELLERS

- **Proving ROI:** Demonstrate that technology can be quickly implemented and buyers will see high value in the first year
- **Pricing:** Offer flexible, incentive-based pricing (e.g. teaser rates in first year, usage-based pricing) to allow customers to more easily commit in the near term
- **Expansion and Upselling:** Develop sales strategies that not only enable contract renewals, but can also upsell customers on new features and offerings

1. Excludes contracts with largest software vendors with long-term agreements (e.g. Microsoft, Oracle, Salesforce, SAP). 2. Figures do not sum to 100% due to rounding. 3. Greater than 5,000 employees. 4. 1,001 to 5,000 employees. 5. 1,000 employees or fewer.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

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Software and technology buyers' criteria is evolving: integration quality and security are table stakes for all companies, SMBs place a premium on value and cost, and larger companies look for scalability and AI features

TOP 10 CONSIDERATIONS FOR PURCHASING SOFTWARE BY COMPANY SIZE, U.S., 2024

ACTIVATE ENTERPRISE INSIGHT

	ENTERPRISE (5,001+ employees)	MID-MARKET (1,001-5,000 employees)	SMB (1-1,000 employees)
#1	Quality of Integrations	Quality of Integrations	Security
#2	Security	Security	Ease of Implementation
#3	Scalability	AI-Based Features	Quality of Integrations
#4	AI-Based Features	Scalability	Low Cost
#5	Vendor Reputation	Ease of Implementation	Time to Value
#6	Ease of Implementation	Number of Integrations	Number of Integrations
#7	Time to Value	Flexible Pricing	Ease of Customization
#8	Number of Integrations	Vendor Reputation	Vendor Reputation
#9	Ease of Customization	Speed of Implementation	Scalability
#10	Service Partner Network	Service Partner Network	Customer Support Quality

Integrations and **security** are top considerations for all companies, regardless of size

SMBs prioritize **easy implementation**, **low cost**, and quick **time to value** more than larger buyers

Scalability and **AI features** are highly prioritized by Enterprise and Mid-Market customers, but not SMBs; AI is not yet a top 10 buying consideration for SMBs

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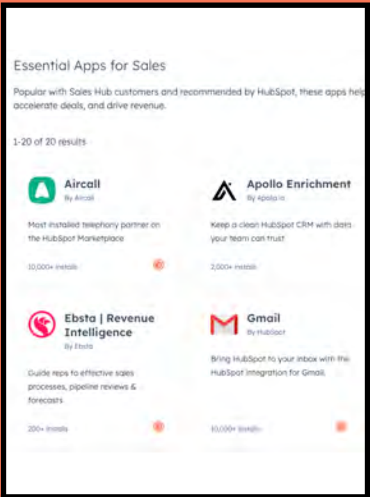
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

As quality of integrations are a top buying criteria, software vendors are launching integration marketplaces and app stores

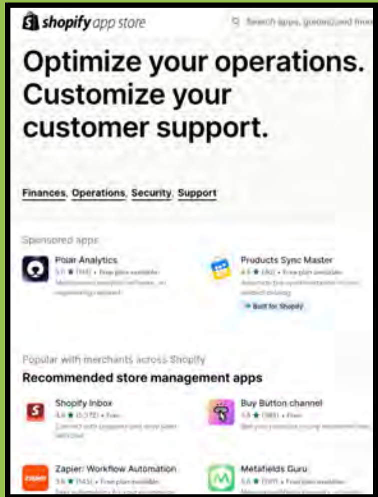
EXAMPLES OF API-DRIVEN INTEGRATION MARKETPLACES

HubSpot



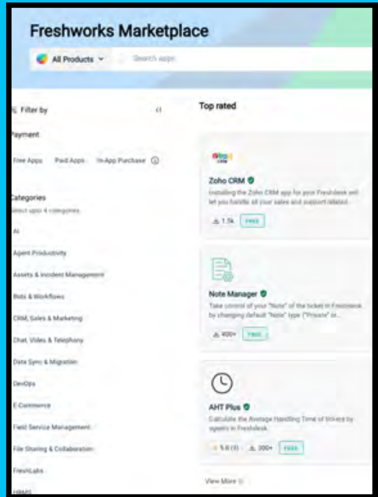
Offers integrations with the most popular tools for sales, marketing, customer service, and commerce to boost HubSpot productivity

shopify



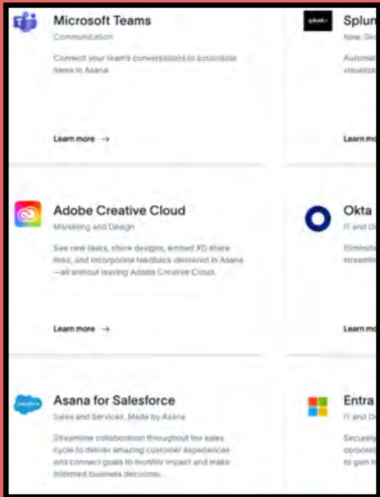
Integrates with platforms needed to build and run an eCommerce business with Shopify, including CRM, financial tools, and analytics tools

freshworks



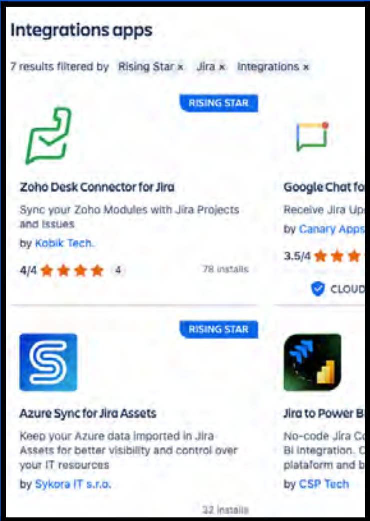
Connects to eCommerce, collaboration, analytics, workforce, and project management tools to increase efficiency of Freshworks

asana



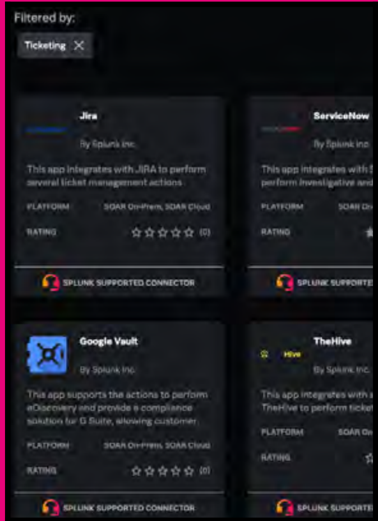
Allows businesses to further streamline workflows and manage resources in Asana by connecting to other communication and operation platforms

ATLASSIAN



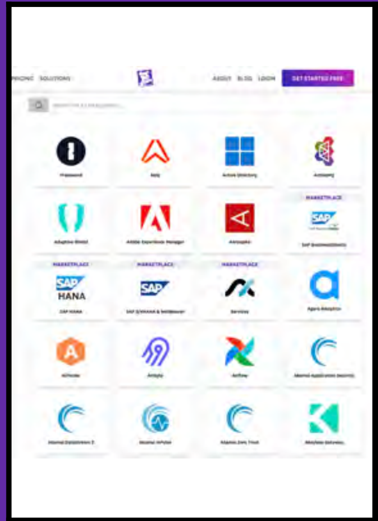
Offers integrations with communication platforms, productivity tools, and developer tools, allowing for easier collaboration across business areas with Atlassian

splunk>



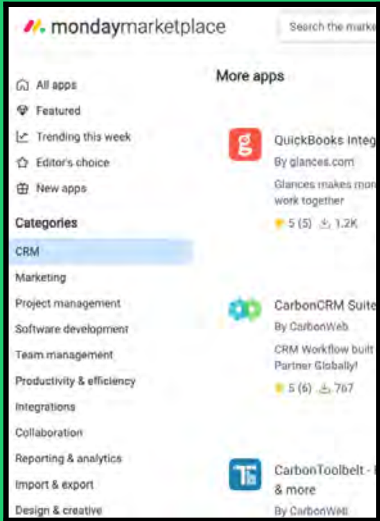
Connects to software vendors in ITSM, APM, monitoring, and CRM, increasing the ease of business management with Splunk

DATADOG



Integrates with hundreds of tools across automation, security, cost management, and data storage to enhance Datadog monitoring capabilities

monday.com



Improves collaboration and productivity across teams through Monday.com's integrations with marketing, development, and communication platforms

Sources: Activate analysis, Company sites

Major technology companies are developing strategic alliances to enhance offerings and unlock further value for their customers

EXAMPLES OF STRATEGIC ALLIANCES BETWEEN ENTERPRISE SOFTWARE PROVIDERS

	PARTNERSHIP DESCRIPTION	VALUE UNLOCKED
Google & salesforce **ANNOUNCEMENT DATE:** September 2023	• Integrates **Salesforce and Google Workspace** generative AI assistants • Allows customers to **produce personalized content across platforms** (e.g. uses Salesforce information from meetings to generate Gmail content, automatically updates Salesforce records using Workspace data) • **Automates mundane processes** (e.g. scheduling follow-up meetings, assigning tasks, creating meeting summaries)	Improves **employee and customer experiences** through **boosted productivity and automation**
Microsoft & servicenow **ANNOUNCEMENT DATE:** May 2024	• Integrates **ServiceNow Now Assist and Microsoft Copilot** • **Reduces friction in workflows** (e.g. enables Copilot to transition employee customer service requests to Now Assist in Microsoft Teams) • **Leverages AI to generate insights across platforms** (e.g. creating a presentation in Microsoft PowerPoint based on ServiceNow information)	Enhances **employee choice and flexibility** through **reduced output time for insights and analysis**
aws & workday **ANNOUNCEMENT DATE:** July 2024	• Expands partnership to **further leverage AWS generative AI capabilities** • Helps customers **manage their workforce and financial assets** (e.g. create job descriptions, correct contracts) • **Allows Workday developers and customers to build custom applications** (e.g. build secure customized apps for finance and HR processes) using **AWS technologies**	Accelerates **efficiency within essential job functions** and **enables custom applications at scale**

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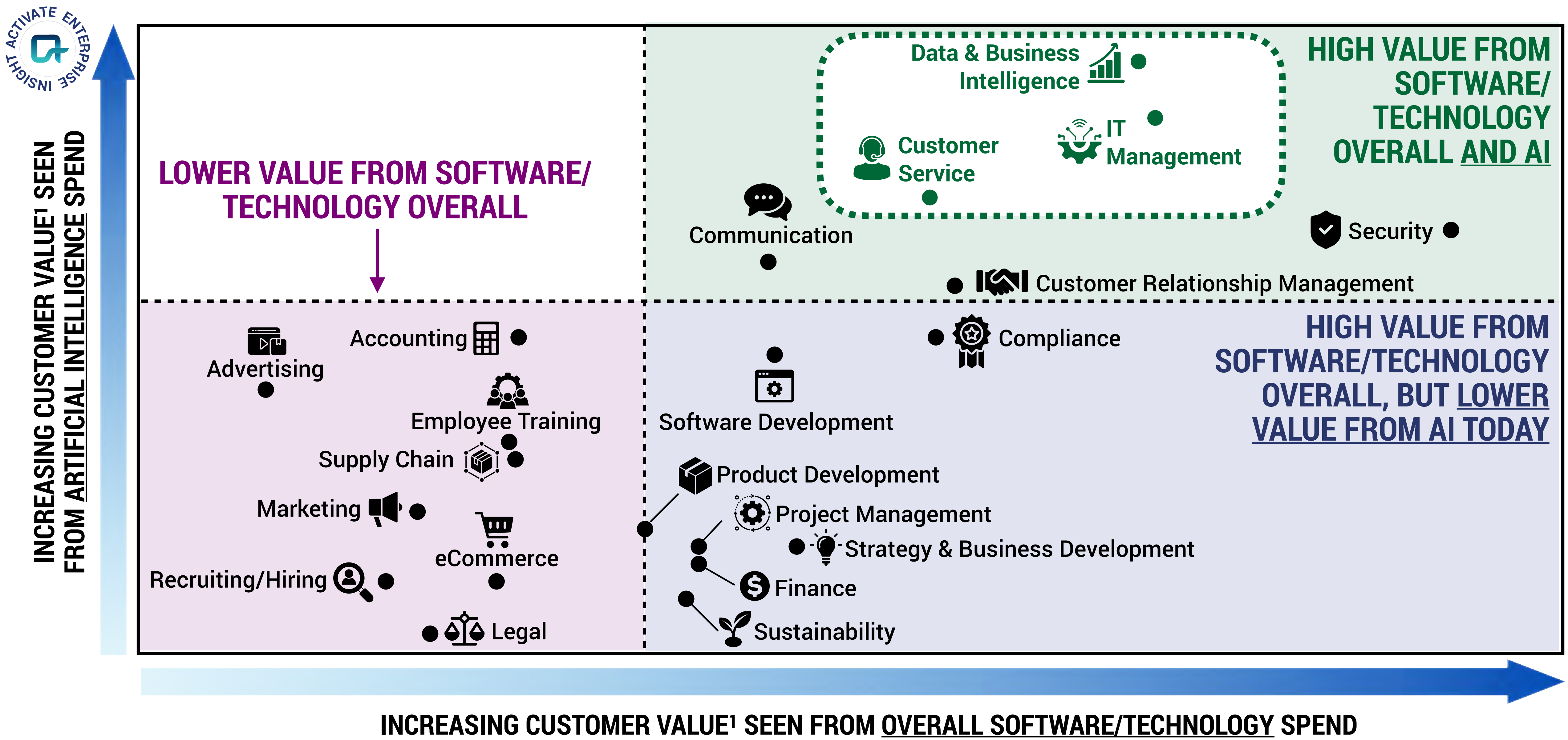
Sources: Activate analysis, Company press releases, Company sites

Enterprise technology decision makers perceive that "Everyday AI" drives the most value today (the automation of more tedious tasks that employees view as lower value or struggle to find the time to execute)

PERCEIVED CUSTOMER VALUE[1] FROM OVERALL SOFTWARE/TECHNOLOGY SPEND VS. PERCEIVED CUSTOMER VALUE[1] FROM AI SPEND, ENTERPRISE COMPANIES[2], U.S., 2024

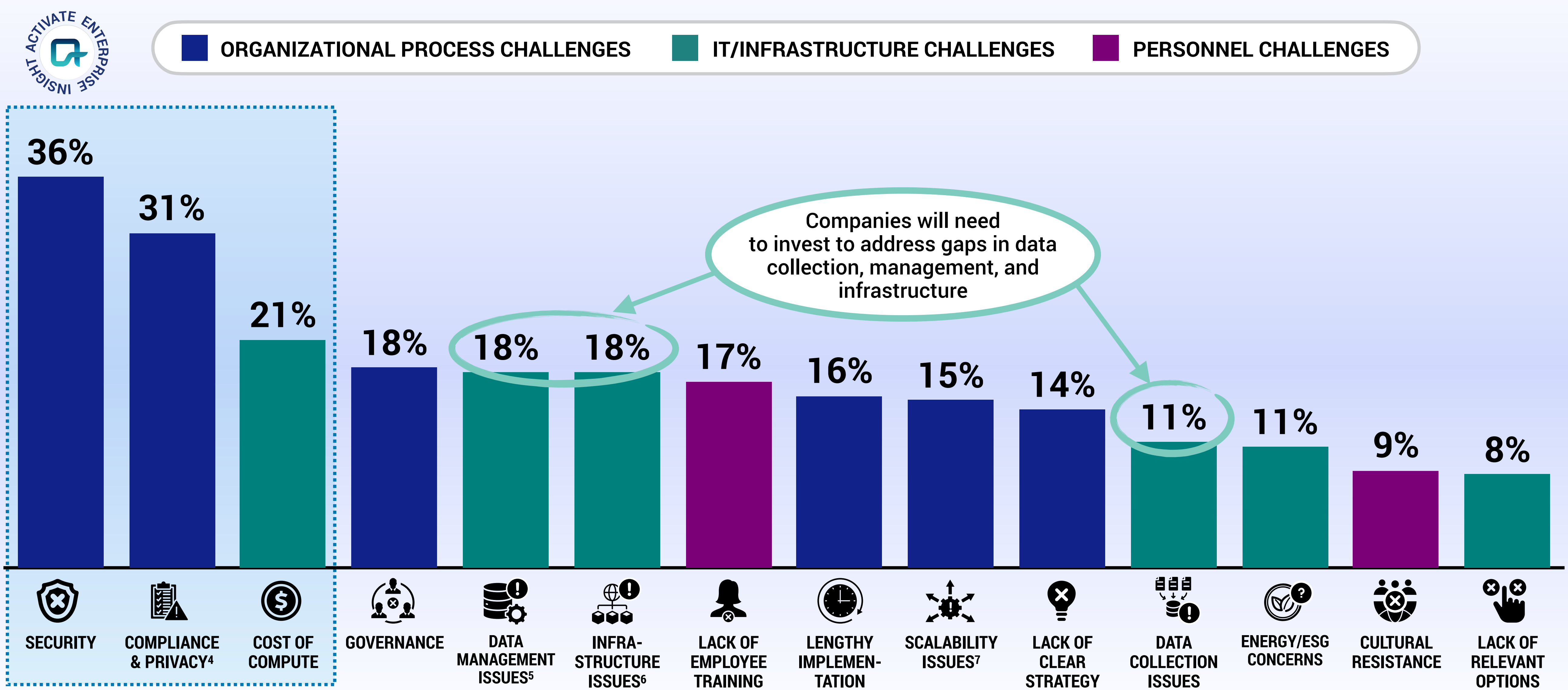


1. "Perceived Customer Value" is specified as ROI or productivity/efficiency gains to survey respondents.
2. Greater than 5,000 employees.

Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

Enterprise and Mid-Market companies will need to address a new set of challenges across security, compliance, computing costs, and data capabilities to unlock their AI opportunity

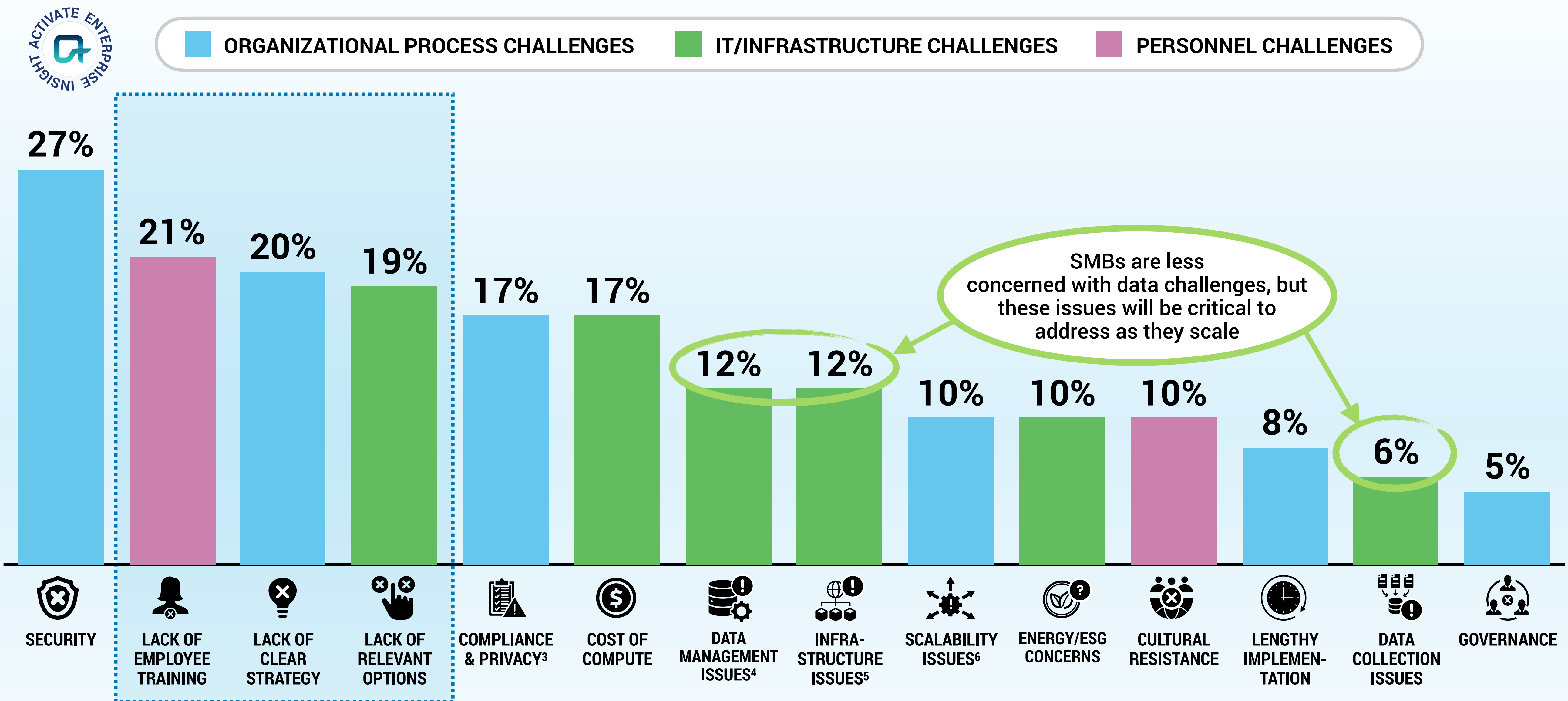
TOP CHALLENGES[1] PREVENTING COMPANIES FROM FULLY REALIZING BENEFITS OF AI,
U.S., 2024, % ENTERPRISE[2] & MID-MARKET[3] COMPANIES



1. Respondents were asked to select up to three top challenges. 2. Greater than 5,000 employees. 3. 1,001 to 5,000 employees. 4. Includes inability to make use of customer data as part of AI models. 5. Includes issues with data storage and organization. 6. Includes not having enough computing power to run AI models. 7. Includes AI models not being able to be deployed across the full company.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

SMBs are earlier in their AI journey and can unlock value by addressing a core set of needs that includes training employees, clarifying the organization's AI strategy, and identifying AI solutions relevant for their scale

TOP CHALLENGES[1] PREVENTING COMPANIES FROM FULLY REALIZING BENEFITS OF AI, U.S., 2024, % SMB[2] COMPANIES



1. Respondents were asked to select up to three top challenges. 2. 1,000 employees or fewer. 3. Includes inability to make use of customer data as part of AI models. 4. Includes issues with data storage and organization. 5. Includes not having enough computing power to run AI models. 6. Includes AI models not being deployed across the full company.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336)

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The B2B AI landscape is expanding rapidly, driven by customers' enthusiasm to try new solutions

AI-ENABLED B2B TECHNOLOGY LANDSCAPE

INDIVIDUAL ENTERPRISE APPLICATIONS

HORIZONTAL SOFTWARE

AI AUDIO GENERATION: AssemblyAI, ElevenLabs, SUNO

AI VIDEO/IMAGE GENERATION: ideogram, OpusClip, Pika, Photoroom, pitchy, stability.ai

AI TEXT/COPY GENERATION: DeepL, Genspark, WRITER

ECOMMERCE: Aisles, cart.com, Pandion, salla, shadowfax, Shop Circle, uniuni

FINANCE: AccountsIQ, AgentSync, bolttech, cloudpay, FINOM, clip, Flex, FloQast, FOUND, Slope, unlimitd

AI-ENABLED CUSTOMER EXPERIENCE / SALES: clay, COGNIGY, DevRev, kore.ai, posh, Prins, RASA, SIERRA

HR & ADMINISTRATION: deputy, employmenthero, HiBob, Human Interest, SmartHR, Vestwell

LEGAL/COMPLIANCE: Clio, Harvey., KLARITY, STENO, THENTIA CLOUD

MARTECH / ADTECH / AD OPS: HeyGen, hivebrite, Owner, Simon, theydo

SUPPLY CHAIN: Altana, EquipmentShare, flexport., MYTRA, PLATFORM SCIENCE, procurify

VERTICAL SOFTWARE

AEROSPACE/DEFENSE: ANDURIL, CESIUM ASTRO, D-ORBIT, H, LEOLABS, Shield AI, True Anomaly

BIOTECH/PHARMA: Iambic, METiS, SEISMIC THERAPEUTIC, SKY CELL, xaira

HEALTHCARE: ABRIDGE, commure, elucid, innovaccer, k health, reveleer

EDUCATION / PUBLIC SECTOR: Abre, MARK43, MERLYN MIND, Zencity

CROSS-ENTERPRISE TOOLS

COMMUNICATION: ALIANZA, amity, celona, CRG Critical Response Group, PolyAI

AI-BASED ANALYTICS & MODELING: acceldata, coalesce, codeium, databricks, essential AI, Fireworks AI, Grafana Labs, hume, Perfios, PRYON, scale, SwarmOne

AI-POWERED DEV. TOOLS: antithesis, Anysphere, Augment code, cognition, Magic, Pixis, Pulumi

IDENTITY & ACCESS: INCOGNIA, Josys, OASIS, Prove, SILVERFORT

BUS. INTEL. & PLANNING: cdata, glean, Island, MaintainX, OBSERVE, Pigment, Sequin

SUSTAINABILITY: accenta., Enerdigit, GridBeyond, LevelTen Energy, greenly, Pachama, RONDO, Watershed

RPA[1]: brain corp, Bright Machines., FIGURE, Hebbia, Physical Intelligence (π), opkey, tines

NETWORK SECURITY / FIREWALL: aqua, BlueVoyant, CATO NETWORKS, corelight, CORO, CYERA, Kiteworks, PROTECT AI, THREATLOCKER, Vanta

ENDPOINT SECURITY: Abnormal, AXONIUS, cybereason, kandji, NOZOMI NETWORKS, WIZ

THREAT RESPONSE: adlumin, cyberhaven, DRAGOS, DTEX, HIDDENLAYER, HUNTRESS, semperis

DATA & INFRASTRUCTURE

AI-FOCUSED CLOUD SERVICES: alkira, auradine, CLUMIO, CoreWeave, Lambda, together.ai, Vercel, ZEDEDA

DATA MANAGEMENT, STORAGE, & API PLATFORMS: Aerospike, atlan, COHESITY, Cribl, d-Matrix, Kong, LucidLink, MotherDuck, odaseva, sigma, VAST, WEKA

GENERATIVE AI MODELS & TOOLS: AI21 labs, ALEPH ALPHA, ANTHROPIC, character.ai, cohere, contextual.ai, H, imbue, MINIMAX, MISTRAL AI_, Moonshot AI, OpenAI, perplexity, SiMa.ai, Twelve Labs, XAI

NEXT-GEN HARDWARE[2]: celestial AI, DreamBig SEMICONDUCTOR, enfabrica, groq, HAILO, Kneron, LM, Rivos

QUANTUM COMPUTING: FLEXCOMPUTE, KNIGHTS QUANTUM, OQC, planqc, photonic, river lane, QUANDELA, QUANTINUUM

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Note: Not exhaustive. Includes B2B and enterprise software companies that have had a deal size of at least $50M in the last year (since Sept. 2023). 1. Robotic Process Automation. 2. Includes innovators driving improvements to semiconductors, data center technology, and IoT hardware.
Sources: Activate analysis, Axios, Company sites, Crunchbase, Pitchbook, TechCrunch

Expansion of the B2B AI ecosystem is happening alongside continued technology breakthroughs, allowing innovation to be more impactful (e.g. lower time and cost to deploy, increased accessibility)

TECHNOLOGICAL BREAKTHROUGHS ENABLING MORE EFFICIENT AI

	MULTIMODAL MODELS	CHIP INNOVATIONS	MATRIX MULTIPLICATION BREAKTHROUGHS	AI MODEL COMPRESSION	GPU CLOUD SERVICES	AI-READY END USER HARDWARE
	• Large language models that process and generate content across diverse data inputs (e.g. text, image, audio, video, code) • Enables greater productivity and usability for employees with wider range of output	• GPU innovations enable deployment of AI capabilities with real-time, localized data processing • Potential for up to 4x faster AI model training speeds and 25x reduction in large language model cost	• Improvements to computation methodologies and inefficiencies in AI training, requiring fewer calculation steps • Leads to compute and energy savings, making AI more accessible and cost-effective for companies	• Reduction in AI model size by lowering number of parameters, compute requirements, and storage needs • Allows for smaller chips and ability to run on edge devices, which is crucial given today's scarcity of compute resources for AI	• Cloud services powered by GPU chips, able to speed up compute time through parallel compute • Enables faster training of AI models and more effective forecasting and analytics	• Computing devices optimized for edge-level AI inferences to deliver AI-powered use cases (e.g. document organization, data visualization) • Enhances data compliance, safeguarding information locally
KEY INNOVATORS	ANTHROPIC cohere Google DeepMind Inflection LLaMA OpenAI	AMD Google AI Edge GRAPHCORE intel MYTHIC NVIDIA Qualcomm	MIT UNIVERSITY OF CALIFORNIA Tsinghua University	Deeplite DEEP RENDER intel Neural Compressor OMNI ML	aws Azure CoreWeave FluidStack Google Cloud Lambda	Apple DELL Technologies hp SAMSUNG

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Sources: Activate analysis, Andreessen Horowitz, Ars Technica, Company sites, Forbes, The Information, Quanta Magazine, Semafor, TechTarget, VentureBeat, Wired

A new ecosystem of AI development tools and platforms is emerging to further increase accessibility, enabling companies to build, tailor, and train models that fit specific use cases and meet compliance needs

ADVANTAGES OF SMALLER, SPECIALIZED AI MODELS

COMPLIANCE: Provides ability to deploy models locally and keep sensitive data (e.g. customer data, PII) on premise

COST: Requires significantly less computation power to train, as they are only used for tailored use cases

EASE OF USE: Enables simple, intuitive model development and training, with digestible, low-code interfaces

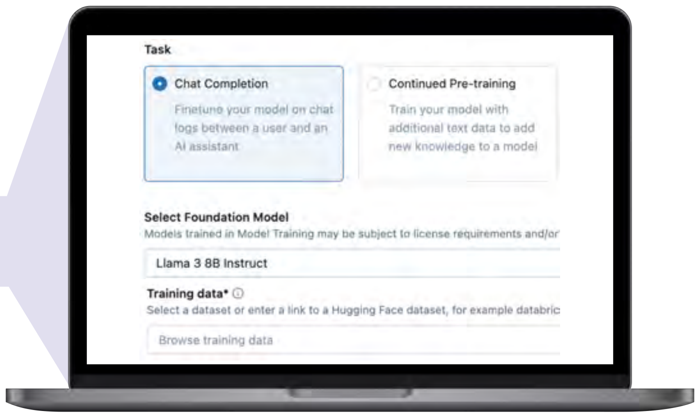
SPEED OF TRAINING: Requires fewer parameters to train, with quicker time to insight

CUSTOMIZATION: Allows models to be tailored to suit specific company functions, rather than remain generalist

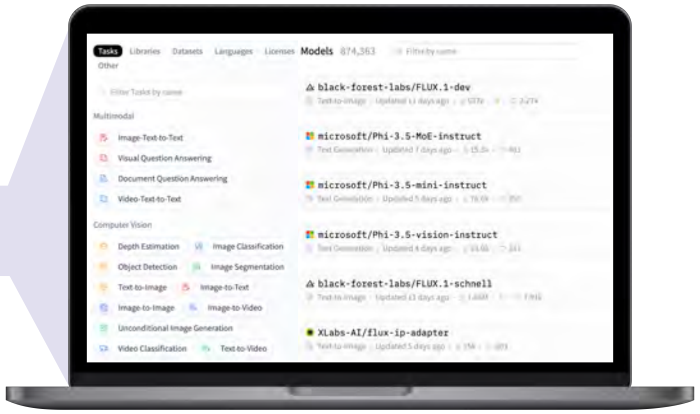
ACTIVATE ENTERPRISE INSIGHT

USAGE OF AI DEVELOPMENT TOOLS, U.S., 2024, % ENTERPRISE COMPANIES[1] THAT DEVELOP OR TRAIN AI MODELS

amazon bedrock	27%
Vertex.ai from Google Cloud	27%
databricks	23%
scale	16%
copy.ai	14%
DataRobot	14%
DOMINO	9%
C3.ai	5%
dataiku	5%
Hugging Face	5%
H2O.ai	5%
alteryx	4%
Weights & Biases	4%



Databricks training tools enable fine-tuning of base models (e.g. GPT, Llama) with proprietary company data



Hugging Face model catalog has 800K+ AI models that can be downloaded, tailored, and used by companies and researchers

1. Greater than 5,000 employees.
Sources: Activate analysis, Activate 2024 Technology Decision Maker Research Study (n = 336), CB Insights, Company sites

AI innovation will enable companies to develop self-healing networks and security frameworks, in which IT operations are automated and maintenance is proactive, not reactive

FRAMEWORK FOR SELF-HEALING NETWORKS

ASSET DISCOVERY

- Scans network and identifies all hardware and software assets
- Maps dependencies between all technology assets, and how they interact and transmit data between each other

EVENT MANAGEMENT

- Leverages observability data with discovery and service mappings, to provide real-time feeds and signals showing asset performance
- Indicates when assets start behaving differently to mark potential points of failure or security vulnerabilities

DATADOG dynatrace new relic splunk>

SERVICE MAPPING

- Visualizes all assets and interdependencies, and filters to include a subset for closer examination (e.g. by function, by location)
- Reports which assets are operating well or failing

SELF-HEALING NETWORK FUNCTIONS AND REQUIREMENTS

- Detects and remedies threats without human intervention
- Uses AI to ensure responses are proactive, not reactive
- Allows IT teams to focus on more strategic tasks, as network monitoring happens autonomously and predictive insights are used to continuously optimize operations

NETWORK SECURITY

- Protects network infrastructure from unauthorized access or misuse
- Implements controls to ensure information is only accessible by permitted users

FORTINET CISCO paloalto NETWORKS

ENDPOINT SECURITY

- Ensures that entry points to a network are secure and not exploitable (e.g. PCs, mobile devices, IoT devices)
- Remains highly important for companies with hybrid work environments and distributed employees

cybereason SOPHOS SentinelOne

THREAT RESPONSE

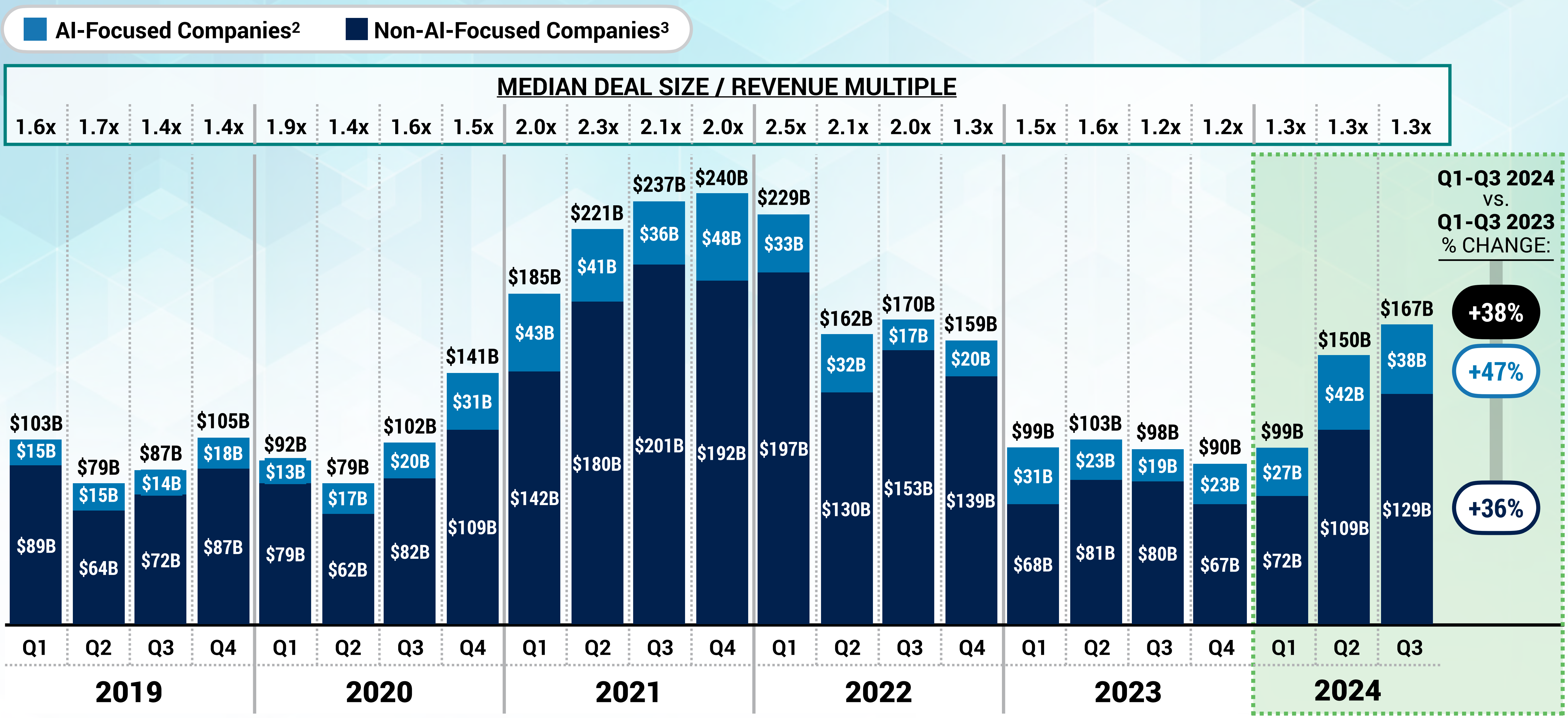
- Takes action to mitigate and eliminate cybersecurity threats after detection
- Uses AI to automate threat analysis, pattern recognition, and improve responses in future events

CROWDSTRIKE HUNTRESS sumo logic

Sources: Activate analysis, Company press releases, Company sites, Gartner, Nile Security, TechRadar, TechTarget

B2B technology and software fundraising has surged back in 2024; this is not driven solely by AI hype, but by companies fundraising to address a clearly defined set of enterprise needs

TOTAL B2B TECHNOLOGY & ENTERPRISE SOFTWARE PRIVATE CAPITAL RAISED BY COMPANY TYPE[1], GLOBAL, Q1 2019-Q3 2024, BILLIONS USD



1. Figures do not sum due to rounding. Includes all venture capital and private equity deals across software, IT services, semiconductors, and computer hardware. 2. "AI-Focused Companies" are defined as B2B technology companies that encompass artificial intelligence and machine learning, including platforms, point solution software, and hardware. 3. "Non-AI-Focused Companies" are defined as B2B technology companies that are not indicated as AI-enabled.
Sources: Activate analysis, Crunchbase, Forbes, The Information, Pitchbook

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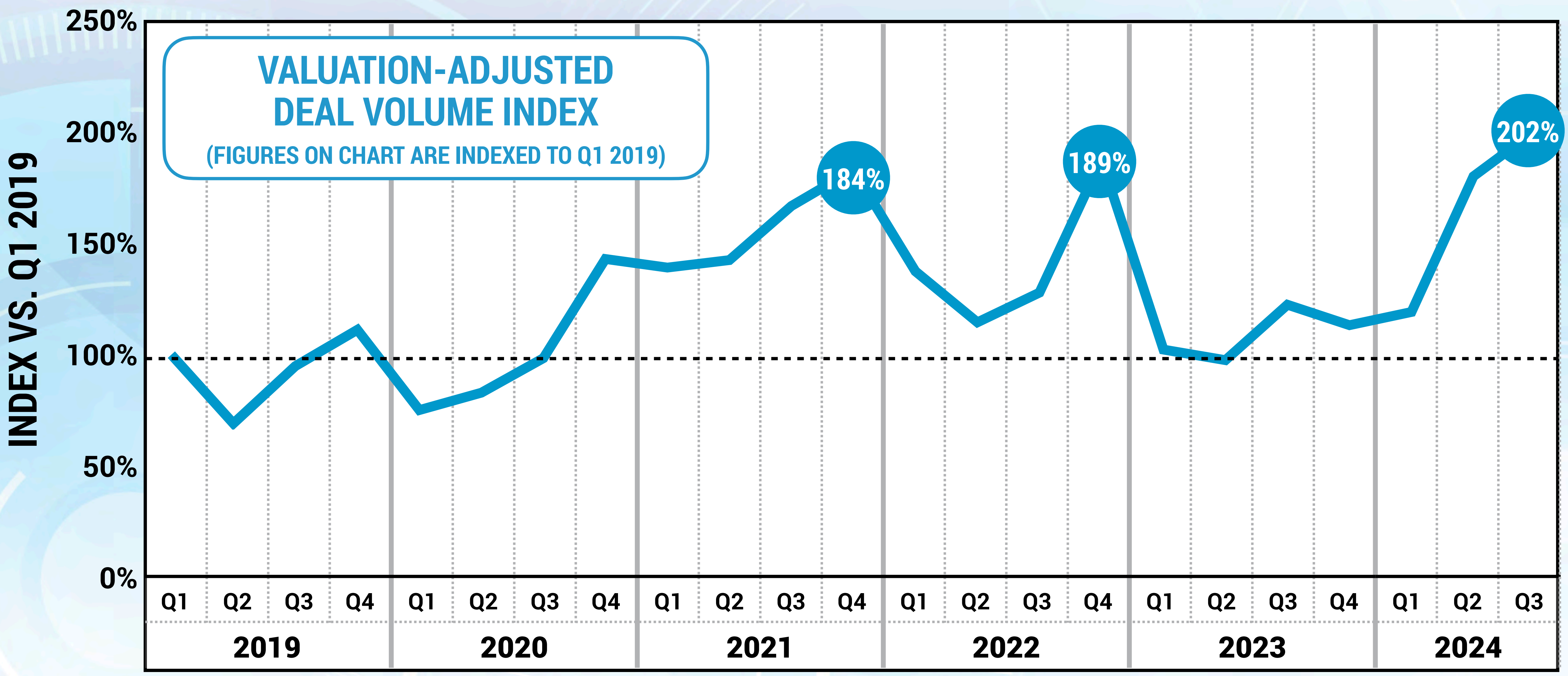
B2B technology fundraising volume has reached new peak levels, adjusted for valuation multiples

VALUATION-ADJUSTED DEAL VOLUME INDEX[1],
GLOBAL, Q1 2019-Q3 2024, VALUATION-ADJUSTED PRIVATE CAPITAL RAISED[1] INDEXED TO Q1 2019



1. Calculated for each quarter by dividing the total capital raised by the median deal size / revenue multiple, including all venture capital and private equity deals across software, IT services, semiconductors, and computer hardware.
Sources: Activate analysis, Crunchbase, Forbes, The Information, Pitchbook

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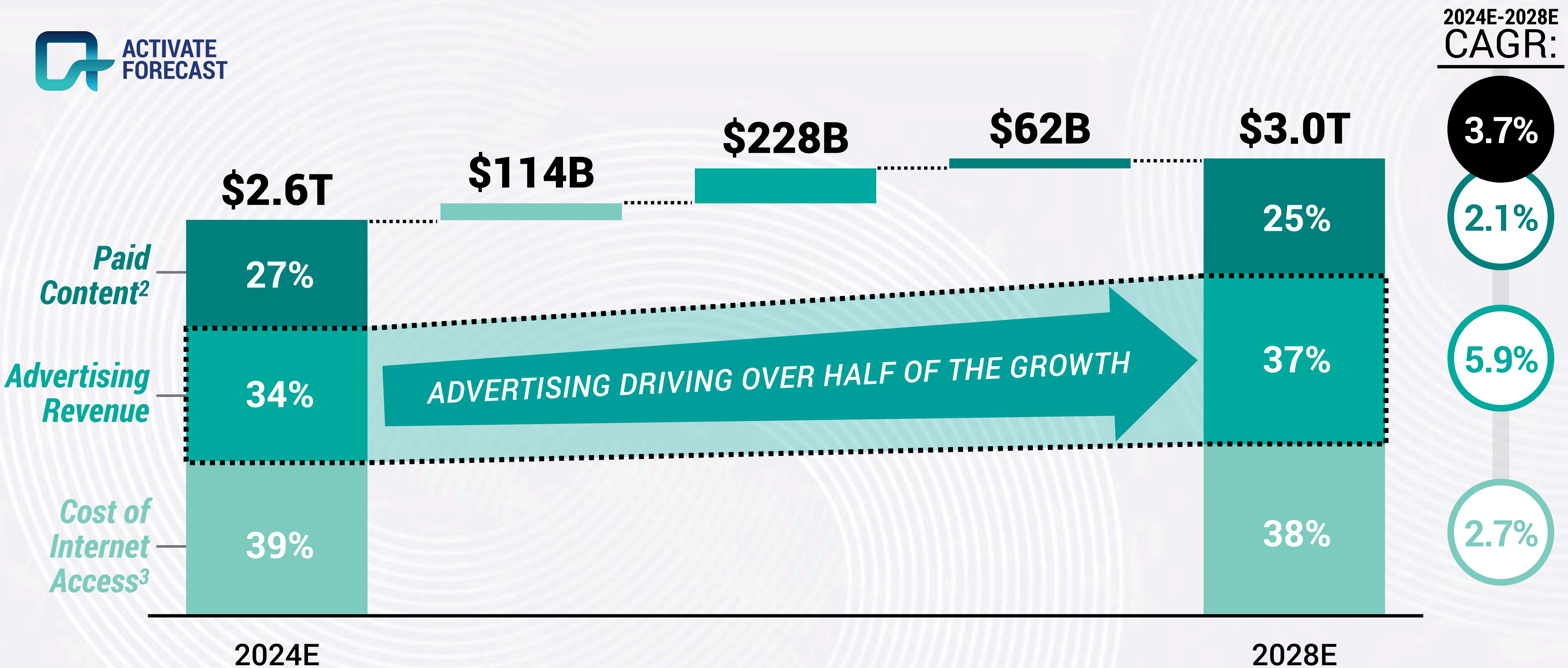
DATA AND ADVERTISING

Advertising spend will drive more than half of the global growth in consumer internet and media revenues

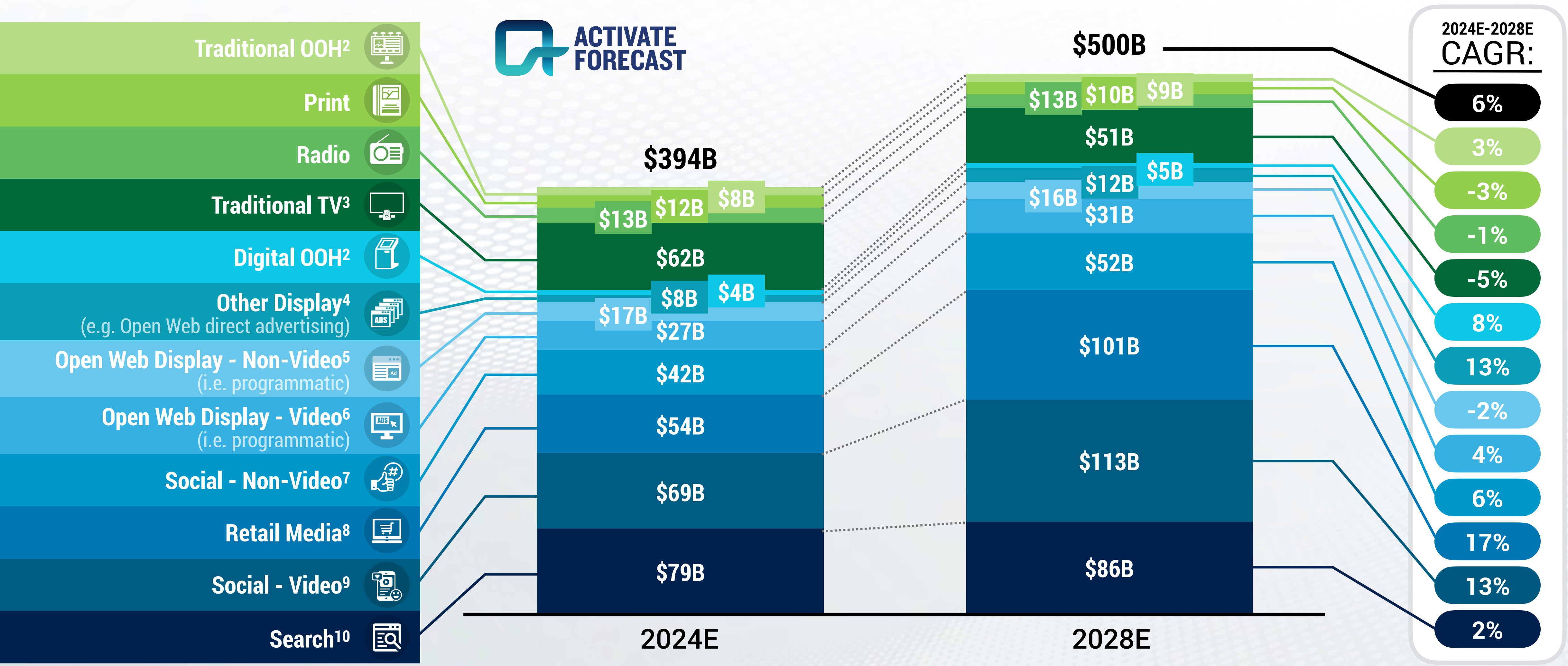
GROWTH IN CONSUMER INTERNET AND MEDIA REVENUE[1] BY SEGMENT, GLOBAL, 2024E VS. 2028E, USD



1. "Consumer internet and media revenues" include revenues from radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, internet access, digital advertising, and traditional advertising on these platforms. 2. "Paid content" includes radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, and TV subscription and licensing fees.
3. "Internet access" includes fixed broadband, wireless, and mobile internet access.
Sources: Activate analysis, Alliance for Audited Media, Dentsu International, eMarketer, GroupM, IBISWorld, Newzoo, Omdia, Pew Research Center, PricewaterhouseCoopers, Zenith Media

We forecast total U.S. advertising spend to reach nearly $500B by 2028, with retail media comprising over 20% of spend

ADVERTISING SPEND BY CHANNEL[1], U.S., 2024E VS. 2028E, BILLIONS USD



1. Figures do not sum due to rounding. 2. Out-of-Home advertising. 3. Includes broadcast and cable television. Excludes digital. 4. Includes additional open web and walled garden display advertisements bought directly. Includes direct spend on ad-supported streaming. 5. Includes digital audio (e.g. dynamically inserted podcast advertisements). 6. Includes programmatic spend on ad-supported streaming. 7. Includes non-video advertising revenue from YouTube. 8. Includes revenue from on-site, off-site, and in-store retail media. 9. Includes video advertising revenue from YouTube. 10. Excludes search advertisements purchased through retail media networks or related to AI-powered search summaries and chatbots (e.g. ChatGPT).

Sources: Activate analysis, Barclays, Company filings, Company press releases, Company sites, Datos, Dentsu, Deutsche Bank, eMarketer, GroupM, Interactive Advertising Bureau, J.P. Morgan, Jefferies, Jounce Media, MAGNA, Needham & Company, PricewaterhouseCoopers, Raymond James, S&P Global, Semrush, Statista Market Research, TD Cowen, UBS, WARC

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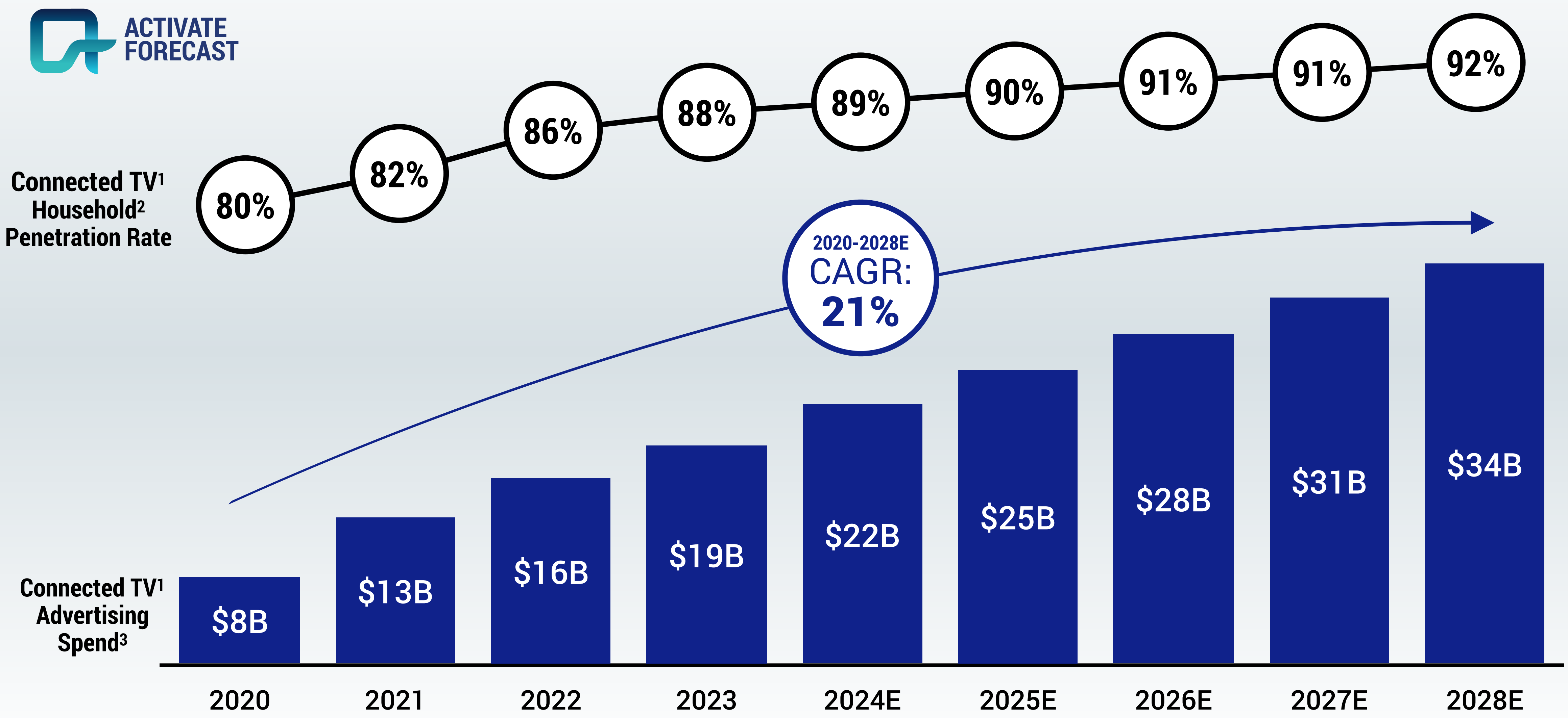
We forecast that practically every home in the U.S. will have a connected television enabling advertisers to address cross-platform viewers

CONNECTED TV[1] HOUSEHOLD[2] PENETRATION / DIGITAL VIDEO ADVERTISING SPEND[3],
U.S., 2020-2028E, % TOTAL HOUSEHOLDS / BILLIONS USD



1. "Connected TV" is defined as TV sets that can connect to the internet through built-in internet capabilities (i.e. Smart TVs) or through another device such as a streaming device (e.g. Amazon Fire TV, Apple TV, Google Chromecast, Roku), gaming console, or Blu-ray player. 2. "Connected TV households" is defined as households with at least one person of any age that uses the internet through a Connected TV at least once per month. 3. Includes revenues from digital video ads (e.g. ad-supported streaming, YouTube, publisher apps) that appear on Connected TV devices. Excludes broadcast and cable.
Sources: Activate analysis, Comscore, Conviva, eMarketer, Global Data, GWI, IAB, IMF, PricewaterhouseCoopers, Leichtman Research Group, S&P Global, Statista, U.S. Census Bureau

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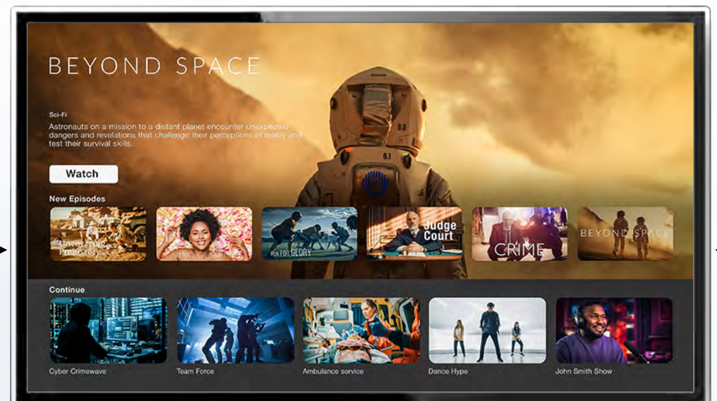
Connected TV will leverage broad data sets to significantly improve advertising targeting and outcomes

CONNECTED TV[1] ADVERTISING DATA SYSTEM



MAJOR DATA ENABLERS

AUDIENCE DATA
- Demographics
- Geolocation
- Device/platform data

VIEWING DATA
- Content consumption patterns
- Linear TV ad exposure
- Time spent on streaming services

PERFORMANCE METRICS (for native Connected TV[1] ads)
- Ad impressions
- Click-through rates
- Conversion and attribution metrics

KEY DATA SOURCES:

OEM OS	Technology Platform OS	Media Company (First-Party Data)	Measurement Company	Ad Server

MULTIPLE ADVERTISING PRODUCTS

- **Connected TV[1] OS Ads** (OEM or technology platform OS)
- **Linear Addressable**
- **Streaming / Digital Video Apps**
- **vMVPD**
- **Gaming**

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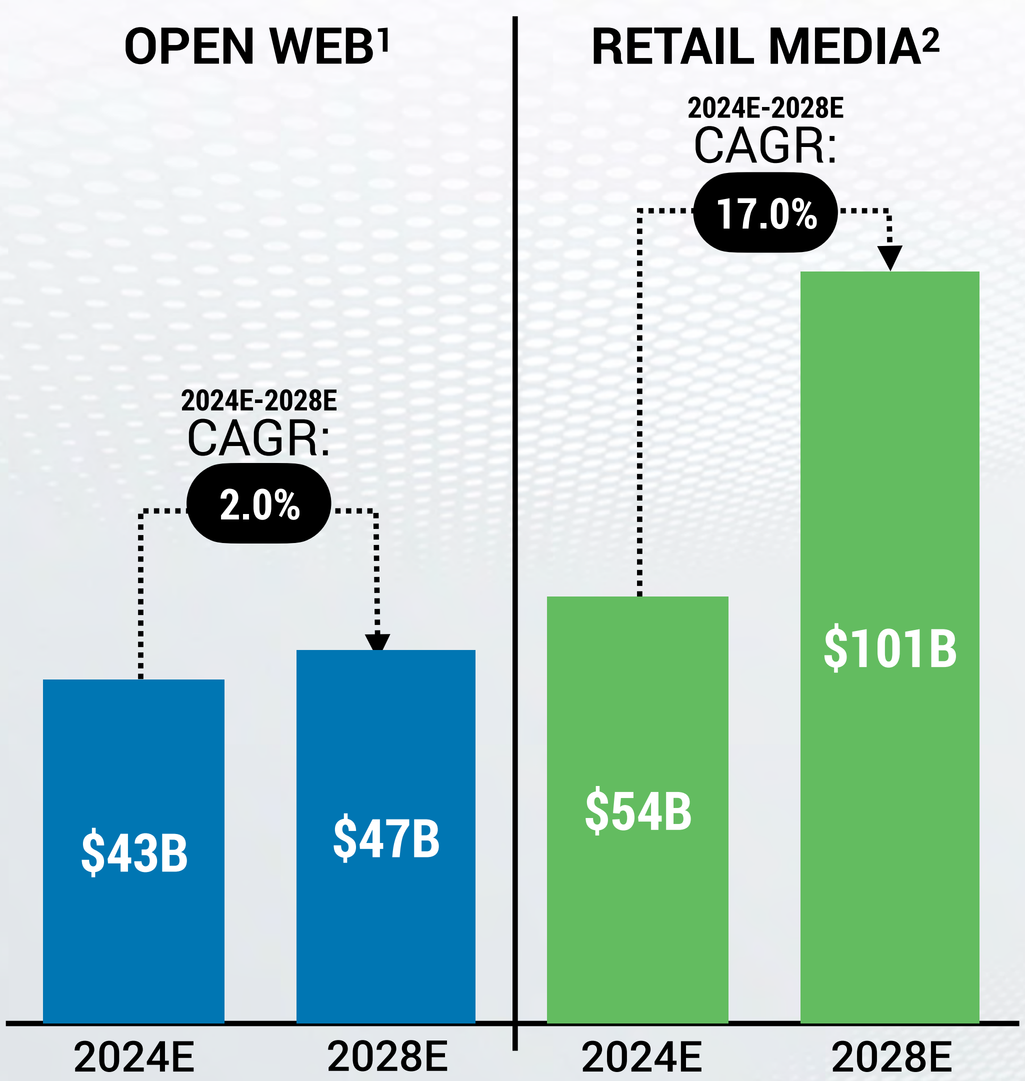
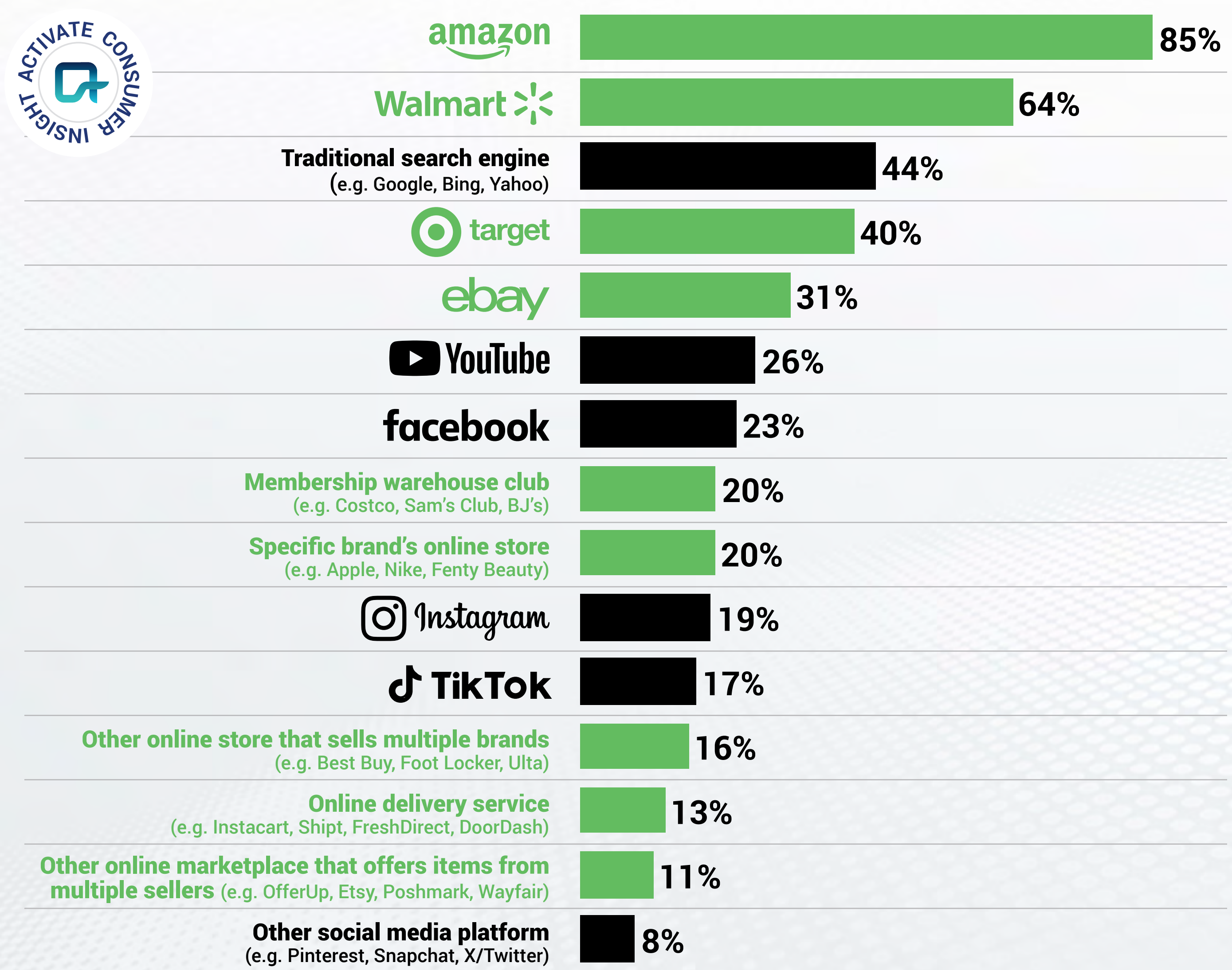
1. "Connected TV" is defined as TV sets that can connect to the internet through built-in internet capabilities (i.e. Smart TVs) or through another device such as a streaming device (e.g. Amazon Fire TV, Apple TV, Google Chromecast, Roku), gaming console, or Blu-ray player.
Source: Activate analysis

Retail media will capture more spend than the Open Web as retailers become a critical media channel (in addition to points of sale), shaping how consumers discover and research brands and products

OPEN WEB[1] / RETAIL MEDIA[2] ADVERTISING SPEND, U.S., 2024E VS. 2028E, BILLIONS USD



WEBSITES/APPS TYPICALLY USED FOR SHOPPING INSPIRATION OR RESEARCH, U.S., 2024, % ONLINE SHOPPERS[3]



ACTIVATE FORECAST

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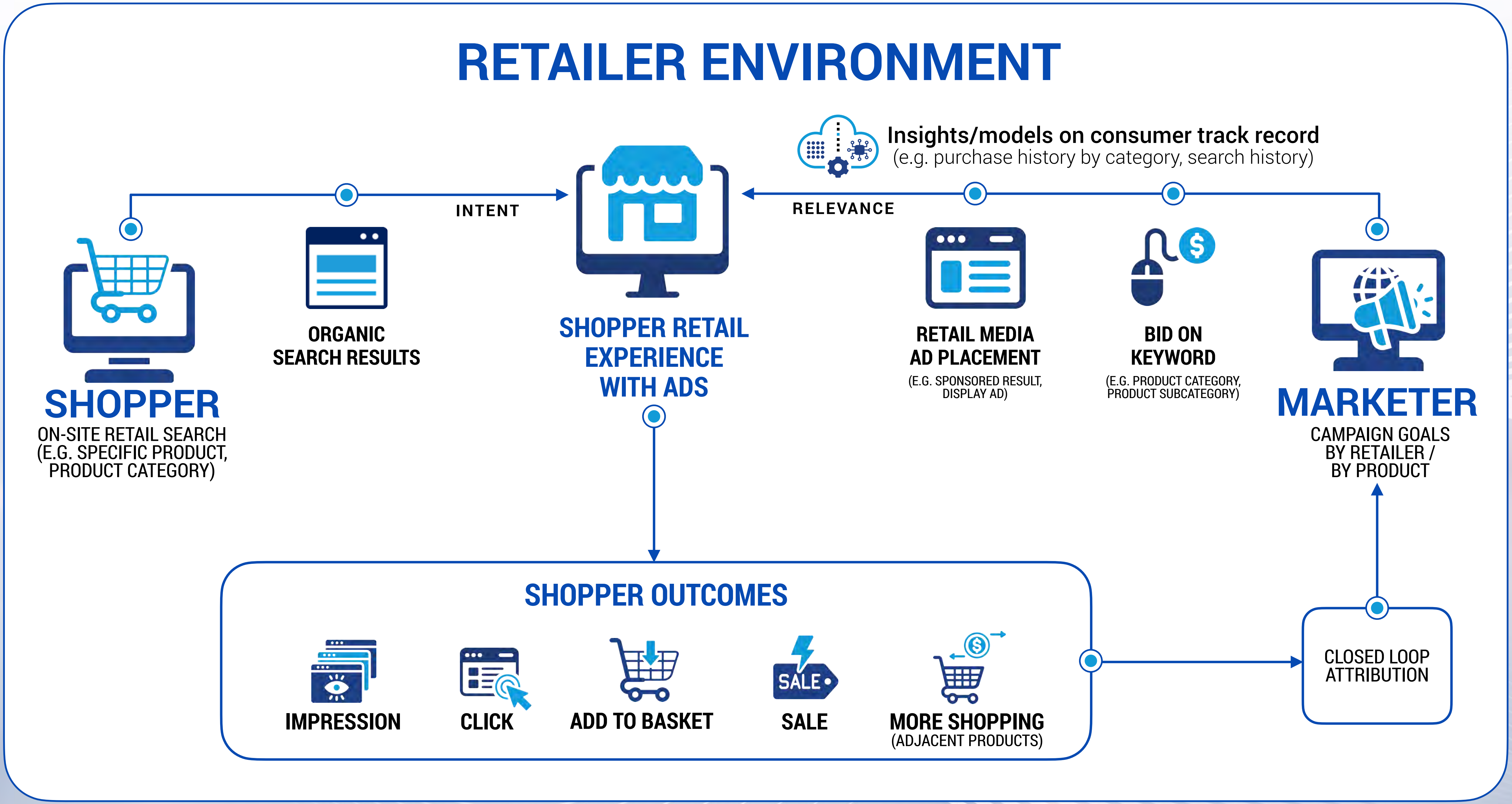
1. Only includes programmatic ad spend. 2. Includes revenue from on-site, off-site, and in-store retail media. 3. "Online shoppers" is defined as adults aged 18+ who shopped online at least once in the last 12 months. Shopping includes browsing as well as making purchases.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Barclays, Company filings, Company press releases, Company sites, Datos, Dentsu, Deutsche Bank, eMarketer, GroupM, Interactive Advertising Bureau, J.P. Morgan, Jefferies, Jounce Media, MAGNA, Needham & Company, PricewaterhouseCoopers, Raymond James, S&P Global, Semrush, Statista Market Research, TD Cowen, UBS, WARC

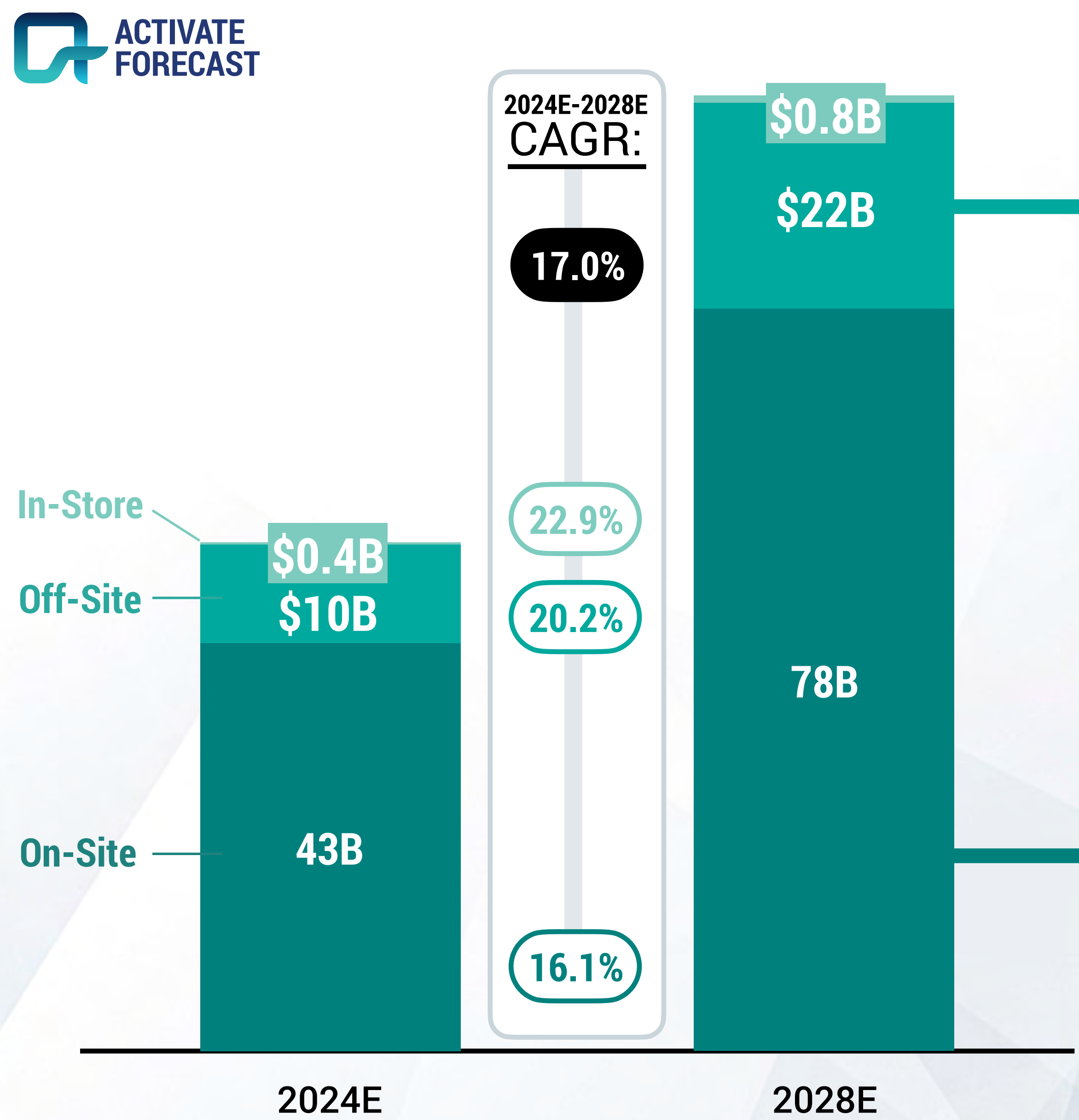
Shopper intent data will enable brands to serve highly relevant ads to drive shopper outcomes on-site and provide marketers with high confidence in return on ad spend through closed-loop attribution



Source: Activate analysis

Retail media growth will be shaped by retailers extending the utility of their data to monetize on-site user traffic and engagement, as well as to inform audiences for off-site activations such as social, open web, and CTV

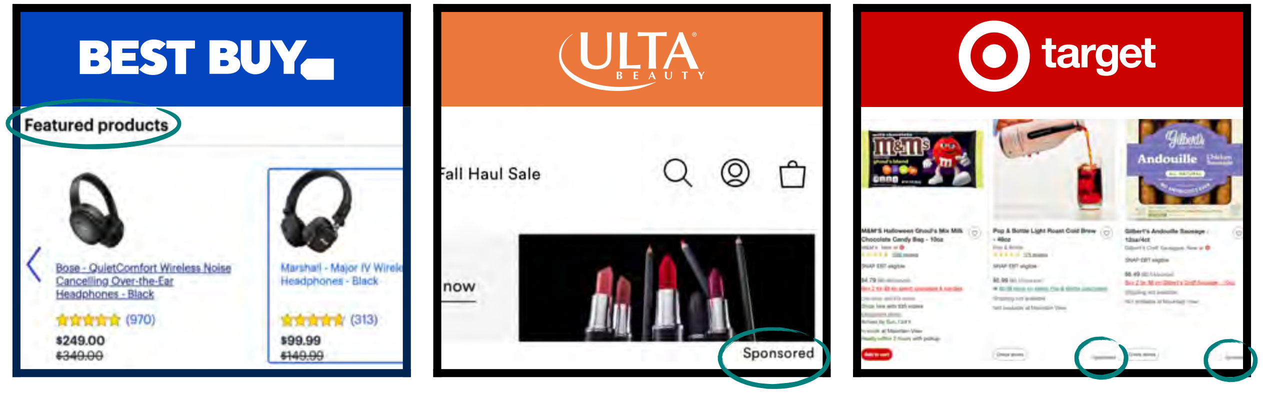
RETAIL MEDIA AD SPEND BY PLATFORM[1], U.S., 2024E VS. 2028E, BILLIONS USD



Example off-site activation partnerships that use retailer data to inform audiences on other platforms (audience extension marketing use cases)

RETAILER	BEST BUY	DOLLAR GENERAL	instacart	LOWE'S
MEDIA PARTNER	Roku	Meta	YouTube	Google

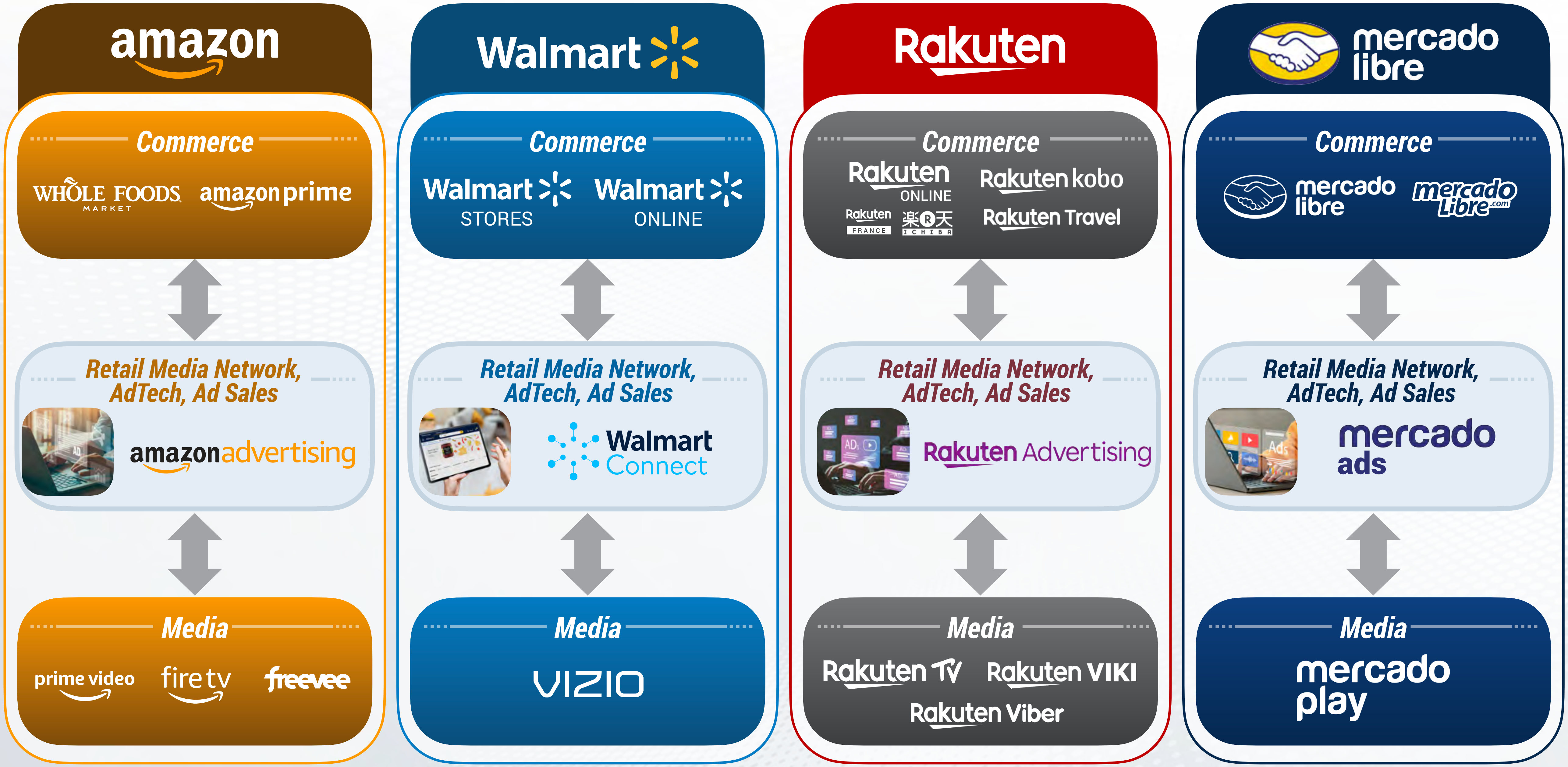
Example on-site retail media ad units seamlessly woven into the commerce experience



Carousel Ads | Shoppable Banner Ads | In-Grid Ads

1. Figures do not sum due to rounding.
Sources: Activate analysis, Barclays, Company filings, Company press releases, Company sites, eMarketer, GroupM, MAGNA

Retailers will capitalize on their data foundation and fully integrate commerce and media; this will bring their retail experiences together with an extended set of media assets and address full-funnel advertising use cases



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Note: Not exhaustive.
Sources: Activate analysis, Company filings, Company press releases, Company sites

Going forward, the advertising space will be powered by a wealth of data sets to inform audiences, attribution, and outcomes, reshaping how advertising is bought and sold

NEW ADVERTISING DATA SYSTEM

CONTEXTUAL DATA
- Contextual Technology
- Brand Safety
- Publisher Environments
- Content Analytics
- Automatic Content Recognition

INTENT DATA
- Search Engine
- Commerce Search
- Contextual Insights
- Shopping Behaviors

AUDIENCE ATTRIBUTES
- Logged-In User Data*
- Media Consumption*
- Device-Level Data*
- Purchasing History*
- Demographics*
- Geography*

New Advertising Data System

For **Marketers**, **Media** Companies, **Retailers**, **AdTech** Companies, **MarTech** Companies, and **Measurement/Data/ Information** Companies

POST-CAMPAIGN DATA
- Ad Impressions
- Syndicated Retail Data
- Publisher/Walled Garden Data*
- Retailer Data*
- Panel-Based & Digital Measurement
- Credit Analytics
- Attribution Analytics

MARKETER DATA
- First-Party Data* (Loyalty, Newsletter, Email, Credit Card)
- Owned Site / Commerce Outcomes*
- Advertising Track Record
- Historical Audience Performance

IDENTITY
- Persistent Cross-Domain/ Device Identifiers
- Opt-In Device IDs/Cookies
- First-Party Data Networks*
- UID 2.0
- Clean Rooms

*Marketers, media companies, and retailers will need to develop sophisticated first-party data approaches given its prominence across the advertising data system

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Source: Activate analysis

To fully capitalize on the new advertising environment, marketers, media companies, retailers, and the advertising, marketing, and data technology industry will need to evolve

IMPERATIVES TO ADAPT TO THE NEW ADVERTISING ENVIRONMENT

MARKETERS

- **First- and third-party data strategies** (data operation, centralized organization, structured processes)
- **Marketing transformation to cross-channel advertising** (approach, capabilities, organizations)

MEDIA COMPANIES, STREAMING SERVICES, AND RIGHTS OWNERS

- **First-party data capabilities and partnerships** (e.g. retailers, consumer data companies)
- **Platform integrations** (streamlined user experiences, advertising)

RETAILERS

- **Improved consumer experiences, partnerships, and ad offerings** (on- and off-site)
- **Retail media industry standardization**

ADTECH COMPANIES

- **Next-generation targeting and attribution capabilities**

MARTECH COMPANIES

- **Ecosystem integration and data flow across the technology stack**

MEASUREMENT, DATA, AND INFORMATION COMPANIES

- **New measurement methodologies** (including new and extended data sets)
- **Ecosystem partnerships**

Source: Activate analysis

USER GENERATIONS

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Technology, internet, and media companies need to move to a tailored approach for each major age cohort, especially to capture the attention and spend of older groups of consumers

There is a substantial digital divide between generations — while technology and media behaviors are becoming more mainstream, Millennials and Gen Z are significantly more immersed in the digital world than Gen X and Baby Boomers

Each generation has distinct preferences for how to interact with the digital world, including key differences in the overall media activities they engage in as well as the specific services they use

Accordingly, there is an opportunity for companies to both **super-serve the younger generations**, who are the earliest adopters of new technology, **and close the digital divide** through tailored experiences that address the needs of older generations

Source: Activate analysis

Today, Millennials and Gen Z are spending considerably more time with technology, internet, and media

INTRODUCTION TO THE GENERATIONS[1]

	BABY BOOMERS	GEN X	MILLENNIALS / GEN Y	GEN Z
AGE RANGE[1]	60 to 78	44 to 59	28 to 43	18 to 27
U.S. ADULT POPULATION	70M	66M	73M	44M
DAILY TIME SPEND ON TECHNOLOGY AND MEDIA[2]	8:35	11:50	14:18	14:22

Baby Boomers spend the least time with media per day on average, in part due to a lower propensity for multi-tasking

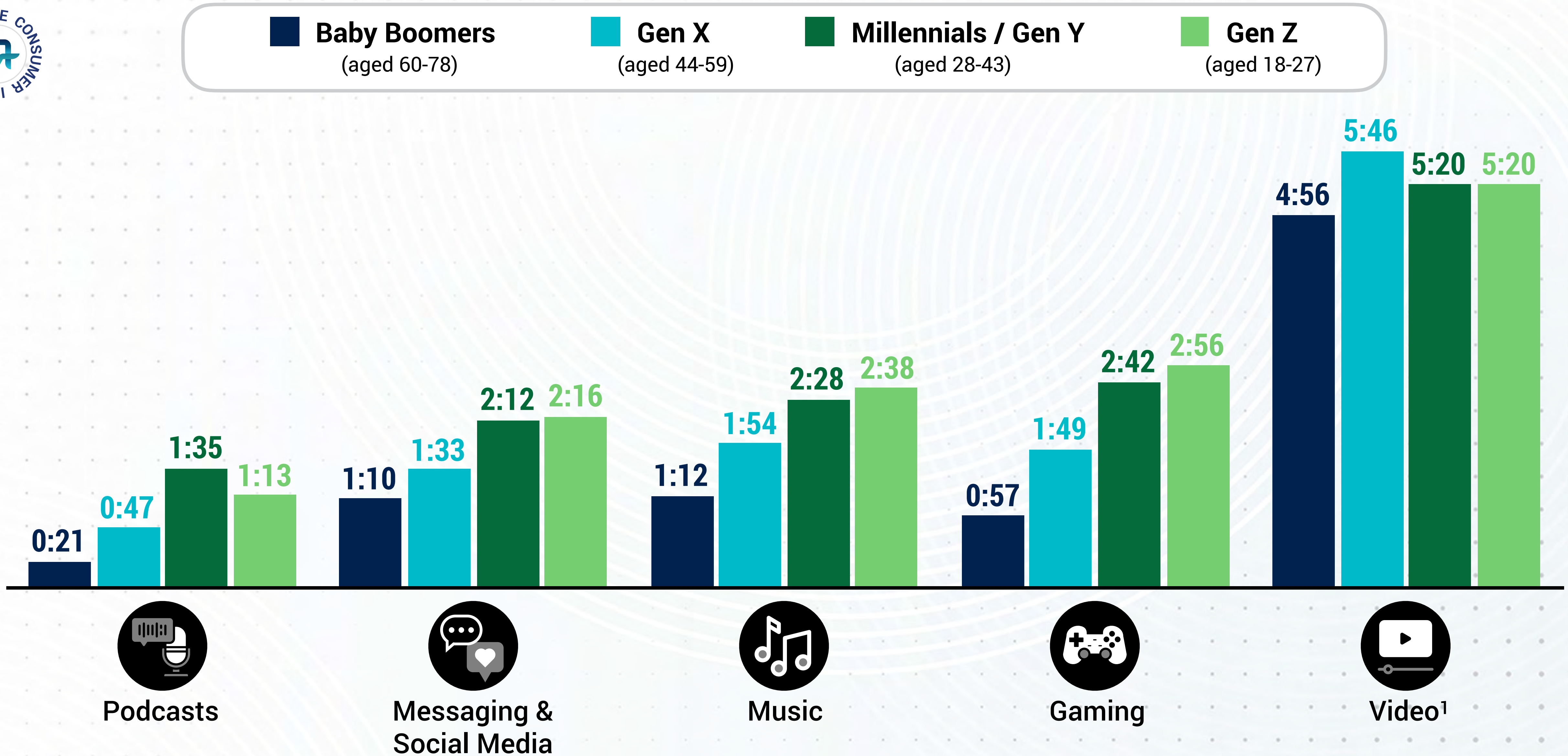
Gen X spends nearly 12 hours per day with media on average

Millennials and Gen Z are highly similar in their average daily media time, with nearly 6 more hours per day than Baby Boomers and over 2 more hours per day than Gen X

1. Includes adults aged 18+. Excludes adults aged 79 and older (e.g. Silent Generation). 2. Includes time spent watching video, playing video games, listening to music, listening to or watching podcasts, and using messaging / social media services.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, U.S. Census Bureau, YouGov

There are stark differences in daily time spend across age cohorts; time spend with video is more closely aligned

AVERAGE DAILY TIME SPEND WITH MEDIA PER USER BY GENERATION, U.S., 2024E, HOURS:MINUTES



1. "Video" includes YouTube.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), Company filings, Comscore, Conviva, data.ai, eMarketer, Gallup, GWI, Interactive Advertising Bureau, Music Biz, National Sleep Foundation, Newzoo, Nielsen, NPD Group, Omdia, Pew Research Center, PricewaterhouseCoopers, U.S. Bureau of Labor Statistics, YouGov

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Paid video streaming is the preferred platform across most age cohorts, with Pay TV still at the top for Baby Boomers

TOP PREFERRED VIDEO PLATFORMS BY GENERATION, U.S., 2024, % VIDEO PLATFORM USERS[1] BY GENERATION

ORDER OF PREFERENCE	BABY BOOMERS (AGED 60-78)	GEN X (AGED 44-59)	MILLENNIALS / GEN Y (AGED 28-43)	GEN Z (AGED 18-27)
1	Pay TV 30%	Paid video streaming subscription services 36%	Paid video streaming subscription services 33%	Paid video streaming subscription services 31%
2	Paid video streaming subscription services 27%	Pay TV 26%	Pay TV 25%	YouTube 30%
3	YouTube 16%	YouTube 15%	YouTube 17%	Social websites/apps 18%

1. "Video platform users" are defined as adults aged 18+ who watch video through traditional Pay TV (i.e. TV delivered through a set-top box), virtual Pay TV (i.e. TV delivered through the internet without a set-top box), free TV though an antenna, paid video streaming subscription services, free video streaming services with ads, YouTube, or other social websites/apps (e.g. TikTok, Facebook, Snapchat).
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

For both music and social media, the top services dominate across all age cohorts

MOST USED MUSIC SERVICES AND SOCIAL MEDIA PLATFORMS BY GENERATION, U.S., 2024

MUSIC SERVICES

ORDER OF USAGE	BABY BOOMERS (AGED 60-78)	GEN X (AGED 44-59)	MILLENNIALS / GEN Y (AGED 28-43)	GEN Z (AGED 18-27)
1	YouTube / Music	YouTube / Music	YouTube / Music	YouTube / Music
2	amazon music	amazon music	Spotify	Spotify
3	SiriusXM	Spotify	amazon music	amazon music
4	iHeart RADIO	pandora	Music	Music
5	pandora	SiriusXM	pandora	SOUNDCLOUD
6	Spotify	iHeart RADIO	iHeart RADIO	pandora

SOCIAL MEDIA PLATFORMS

ORDER OF USAGE	BABY BOOMERS (AGED 60-78)	GEN X (AGED 44-59)	MILLENNIALS / GEN Y (AGED 28-43)	GEN Z (AGED 18-27)
1	facebook	facebook	facebook	Instagram
2	Instagram	Instagram	Instagram	TikTok
3	Pinterest	TikTok	TikTok	facebook
4	LinkedIn	X	X	Snapchat
5	nextdoor	LinkedIn	Snapchat	X
6	X	Pinterest	LinkedIn	Discord

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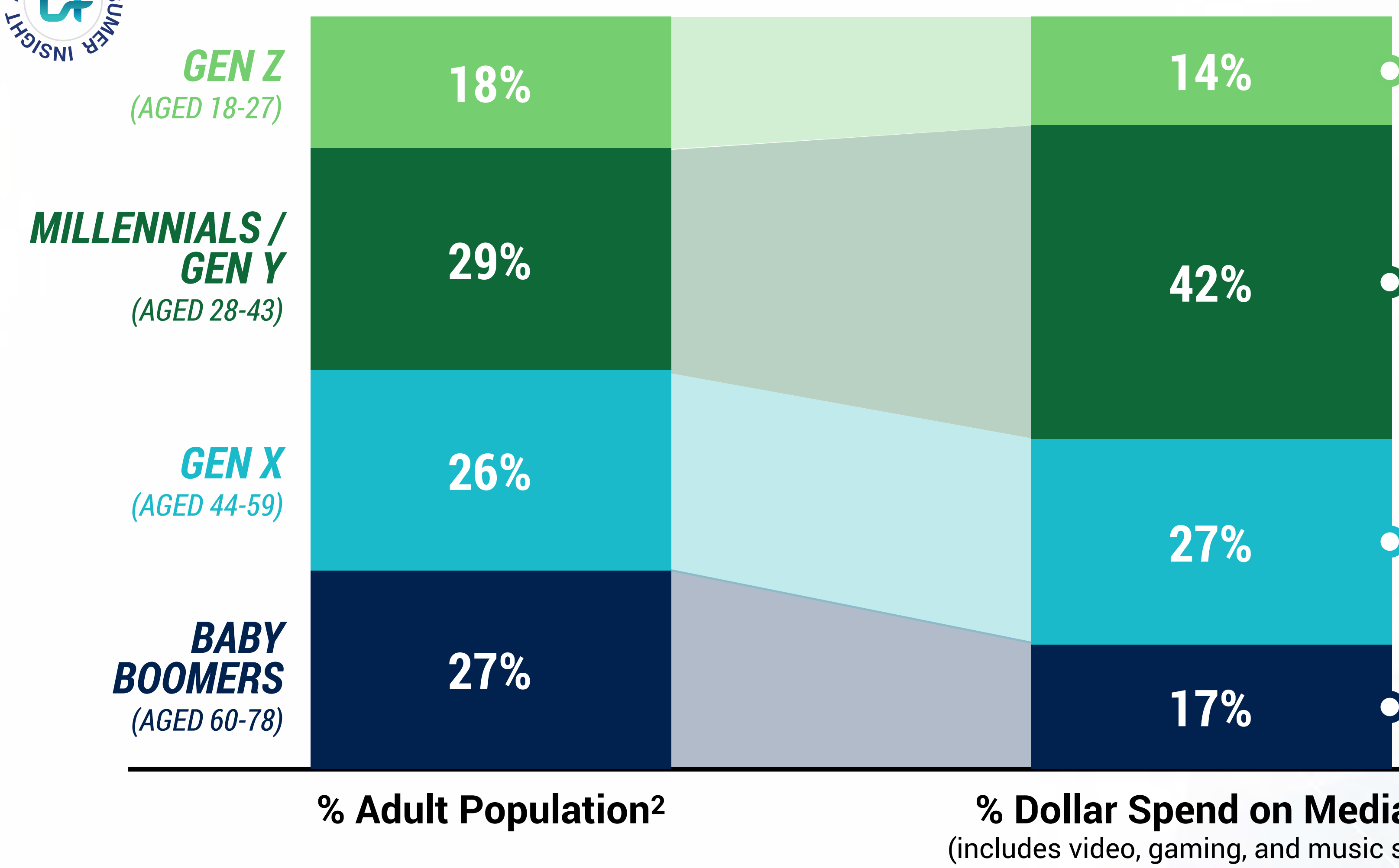
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Millennials significantly over-index on video, gaming, and music dollar spend; companies can drive additional spend from each cohort

DOLLAR SPEND ON MEDIA[1,2] BY GENERATION, U.S., 2024, % ADULTS AGED 18+[2] / % TOTAL DOLLAR SPEND ON MEDIA[1,2]



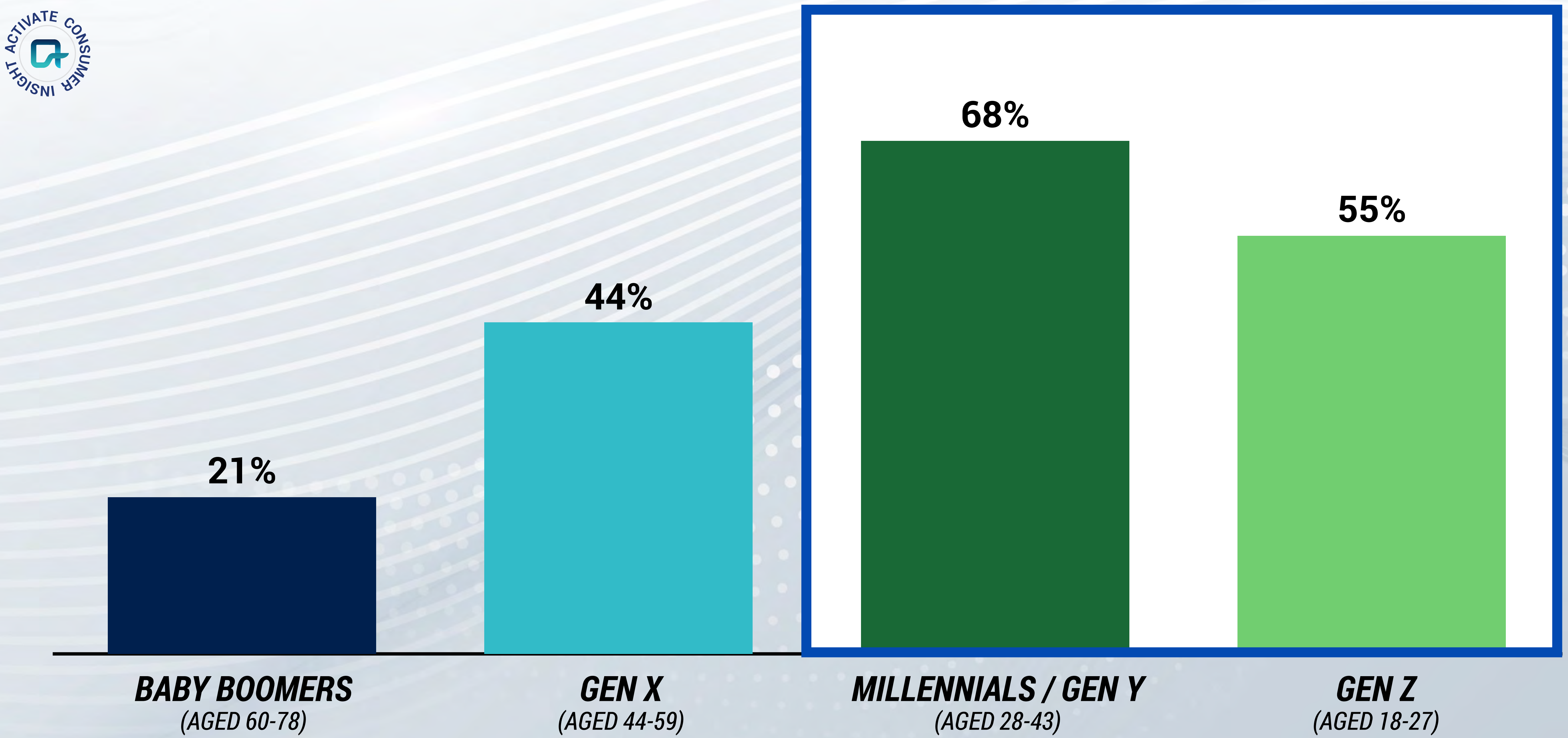
COHORT REVENUE GROWTH OPPORTUNITIES

- **Target with ad-supported offerings**
- **Super-serve with paid offerings**
- **Capture willingness to pay across technology and media types** (including and beyond video)
- **Better address with focused programming and marketing**

1. Includes spend on all videos and video services, including traditional/virtual Pay TV, video streaming subscription services, and video purchases/rentals. Includes spend on video games and other video gaming purchases (e.g. in-game purchases, video gaming subscription services) across all devices. Excludes spend on gaming devices and accessories. Includes spend on music and music services. 2. Excludes adults aged 79 and older (e.g. Silent Generation).
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004), eMarketer, Goldman Sachs, Grand View Research, IFPI, Newzoo, Omdia, PricewaterhouseCoopers, Recording Industry Association of America, SiriusXM, Statista

Millennials and Gen Z are the first to buy/use new technology and devices; Millennials have more spending power

PROPENSITY TO BE AMONG THE FIRST FEW TO BUY/USE NEW TECHNOLOGY/DEVICES[1],
U.S., 2024, % ADULTS AGED 18+ BY GENERATION



1. Includes consumers who usually buy/use new technology/devices before anyone else they know and consumers who usually buy/use new technology/devices after a few people they know have done so (but before many people they know have done so).
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

While awareness of generative AI is strong across generations, Millennials and Gen Z are significantly more likely to have used generative AI platforms

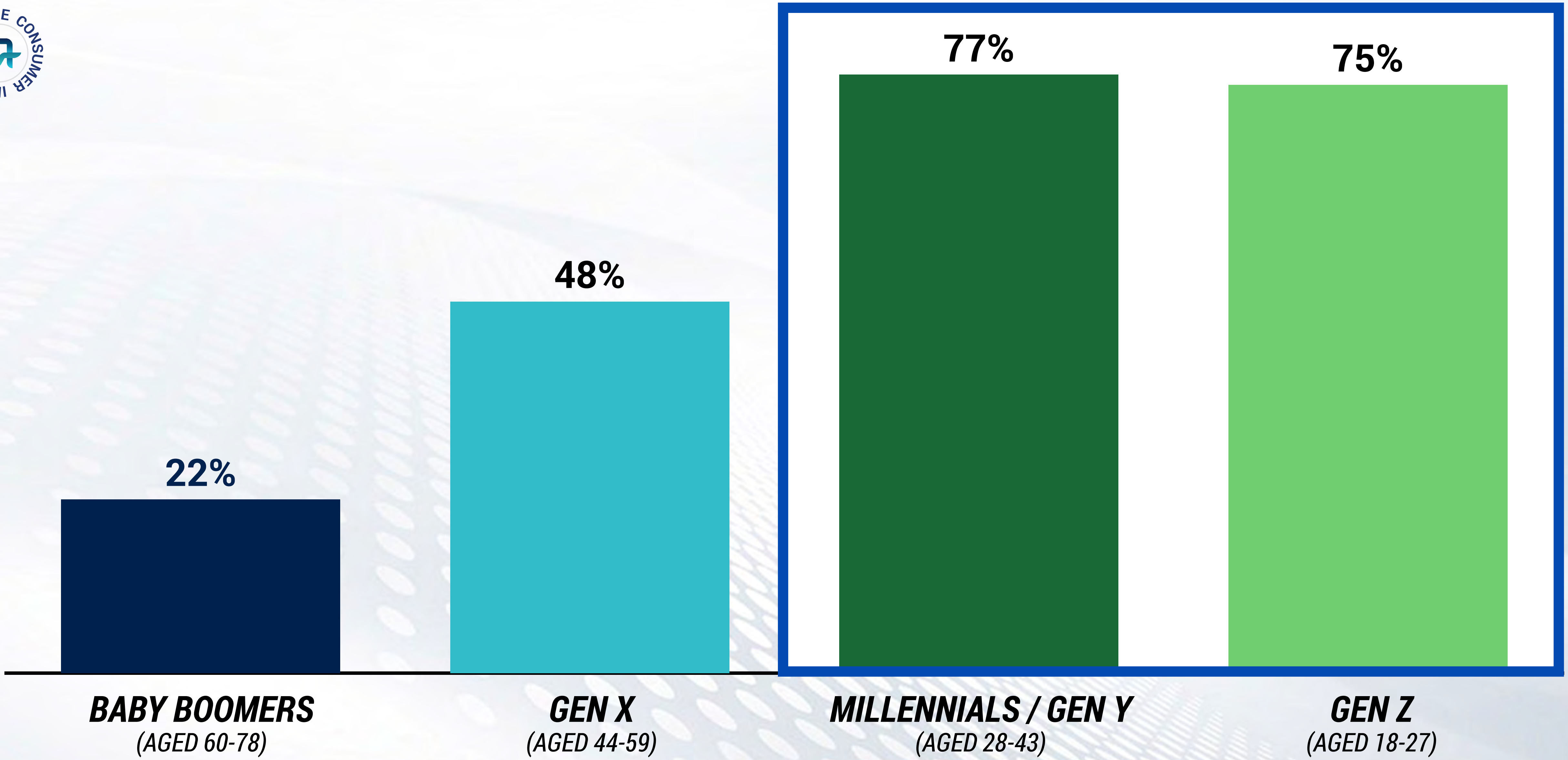
AWARENESS AND USAGE OF GENERATIVE AI PLATFORMS, U.S., 2024, % ADULTS AGED 18+ BY GENERATION

	BABY BOOMERS (AGED 60-78)	GEN X (AGED 44-59)	MILLENNIALS / GEN Y (AGED 28-43)	GEN Z (AGED 18-27)
ARE AWARE OF GENERATIVE AI PLATFORMS	63%	73%	84%	83%
HAVE USED GENERATIVE AI PLATFORMS[1]	27%	50%	71%	66%
CONVERSION RATE[2]	43%	67%	85%	79%

1. Includes consumers who currently use a generative AI platform or have used a generative AI platform in the past.
2. Reflects the share of consumers who are aware of generative AI platforms who have used a generative AI platform.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Millennials and Gen Z are also much more likely to engage with emerging technologies, such as AR applications and VR/MR headsets

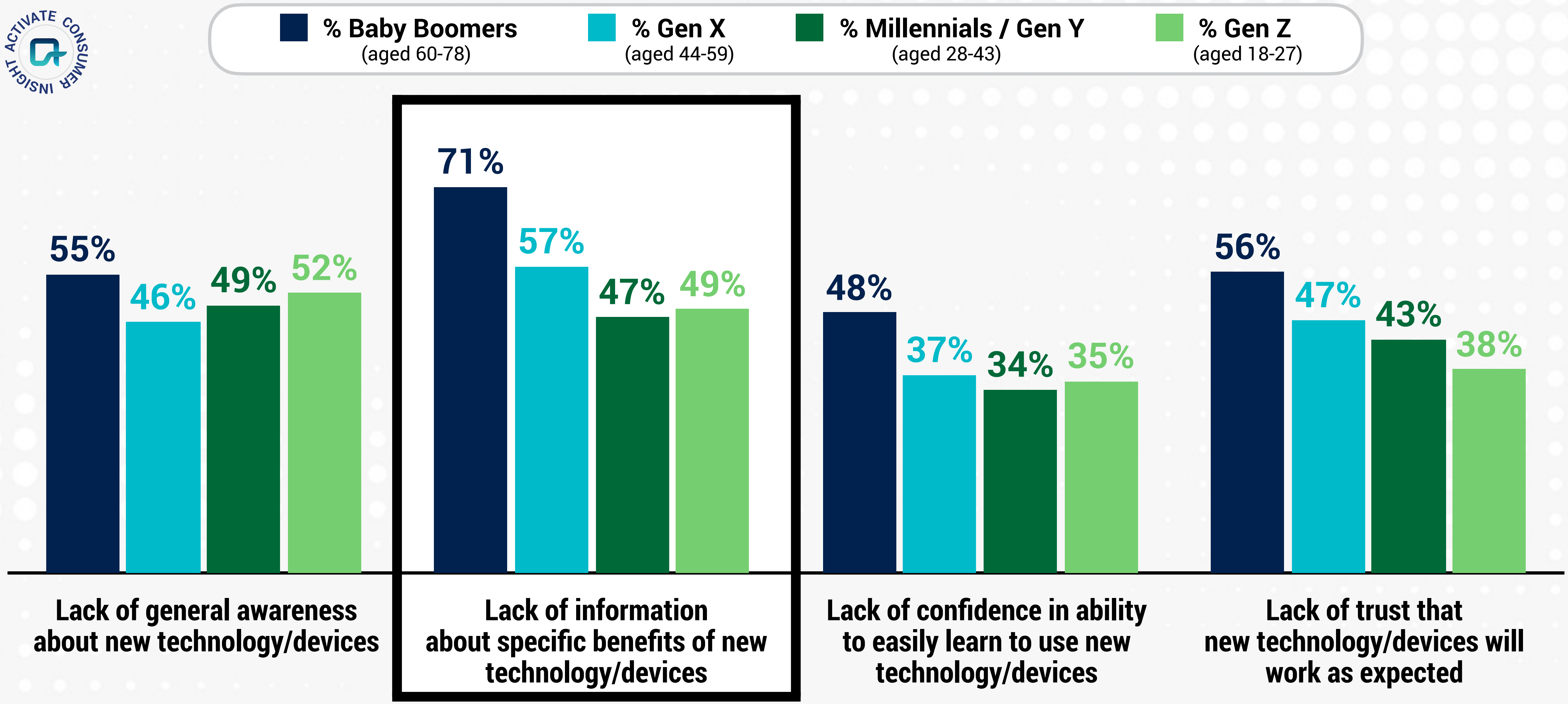
USAGE OF AN AR APPLICATION/TOOL OR VR/MR HEADSET IN THE LAST 12 MONTHS BY GENERATION,
U.S., 2024, % ADULTS AGED 18+ BY GENERATION



Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

Baby Boomers and Gen X need more information (such as targeted marketing, communications, and messaging) to drive their adoption of new technology/devices

BARRIERS TO EARLY ADOPTION OF NEW TECHNOLOGY/DEVICES BY GENERATION[1], U.S., 2024,
% ADULTS AGED 18+ WHO ARE USUALLY NOT AMONG THE FIRST FEW TO BUY/USE NEW TECHNOLOGY/DEVICES[2] BY GENERATION



1. Includes percentage of non-early adopters in each generation who agree or strongly agree with each barrier to early adoption. 2. Includes consumers who usually buy/use new technology/devices after many people they know have done so, consumers who are usually one of the last people they know to buy/use new technology/devices, and consumers who usually never buy new technology/devices.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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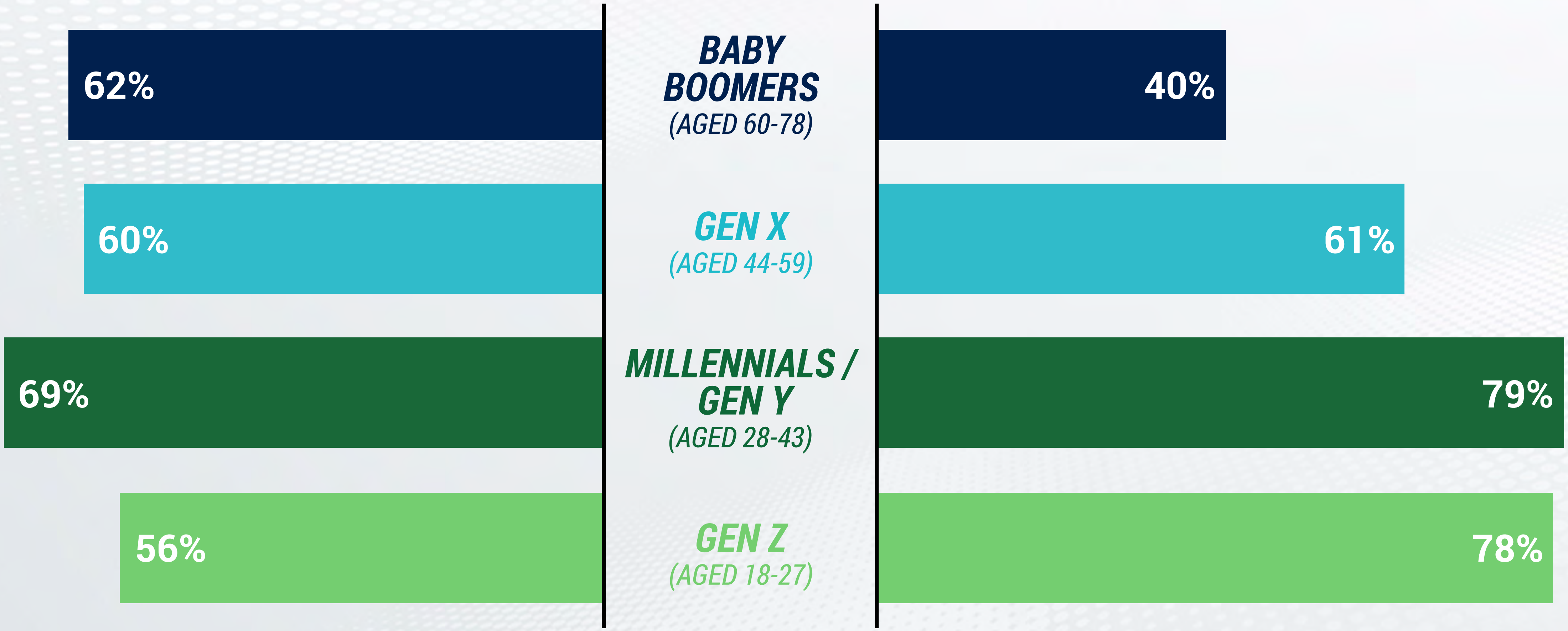
In online shopping, Millennials and Gen Z are more willing to share their data in exchange for personalization; however, all age cohorts are concerned about privacy/security risks

CONCERN ABOUT PRIVACY/SECURITY RISKS FROM ONLINE SHOPPING BY GENERATION, U.S., 2024, % ONLINE SHOPPERS[1] BY GENERATION

SHARING OF PERSONAL INFORMATION WITH ONLINE RETAILERS OVER THE LAST 12 MONTHS BY GENERATION, U.S., 2024, % ONLINE SHOPPERS[1] BY GENERATION

Share of online shoppers[1] who agree that they are concerned about potential privacy/security risks from online shopping

Share of online shoppers[1] who have shared personal information with online retailers to receive enhanced personalization over the last 12 months[2]



1. "Online shoppers" are defined as adults aged 18+ who shopped online at least once in the last 12 months. Shopping includes browsing and making purchases. 2. Includes consumers who have shared their email address and/or phone number to make an account with an online retailer for a personalized experience, completed an online retailer's quiz to receive personalized item recommendations, or allowed an online retailer to track their website/app activity to provide personalized ads.
Sources: Activate analysis, Activate 2024 Consumer Technology & Media Research Study (n = 4,004)

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CONSUMER INTERNET AND MEDIA REVENUES

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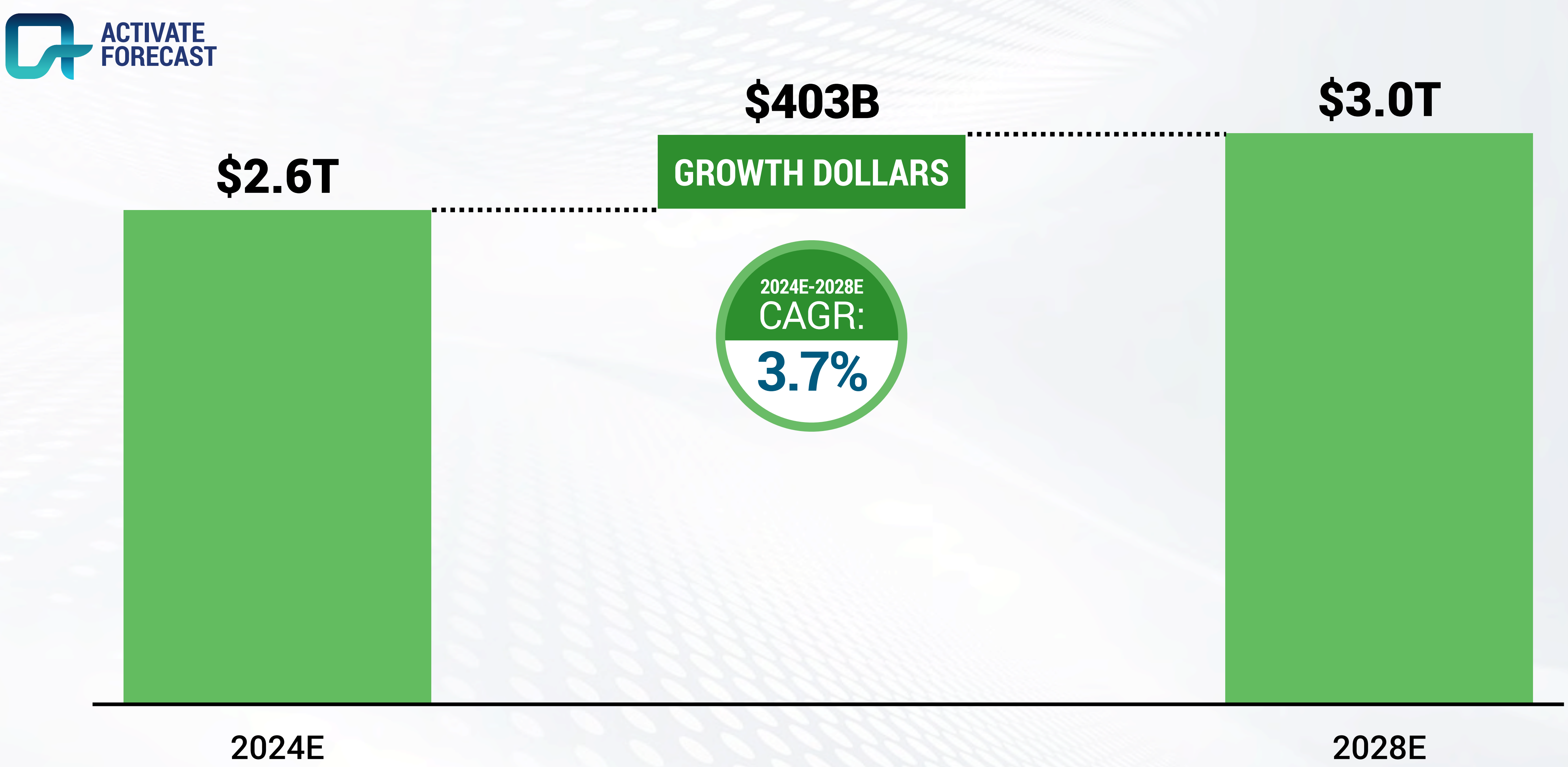
We forecast significant growth ahead for the global consumer internet and media industries, increasing by over $400B between 2024 and 2028

CONSUMER INTERNET AND MEDIA REVENUES[1], GLOBAL, 2024E VS. 2028E, USD

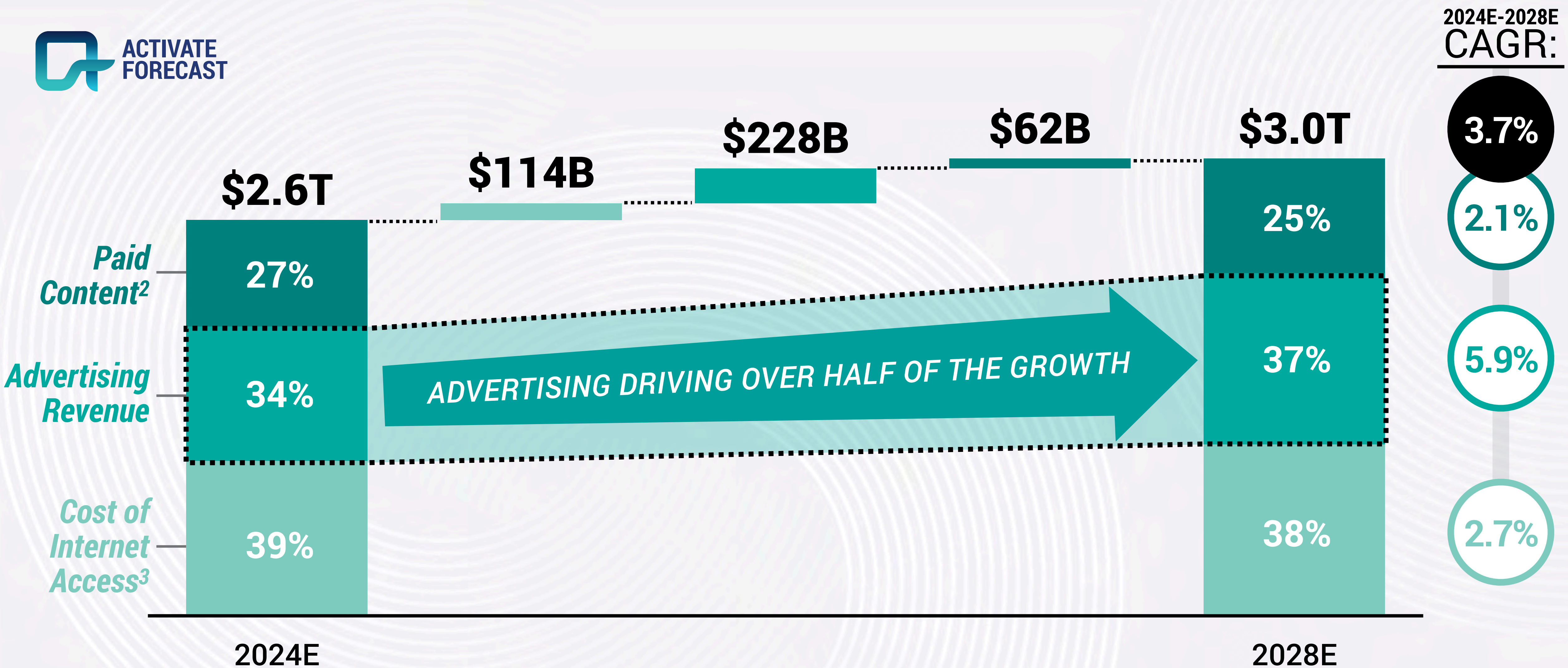


1. "Consumer internet and media revenues" include revenues from radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, internet access, digital advertising, and traditional advertising on these platforms.

Sources: Activate analysis, Alliance for Audited Media, Dentsu International, eMarketer, GroupM, IBISWorld, Newzoo, Omdia, Pew Research Center, PricewaterhouseCoopers, Zenith Media

Global advertising spend will drive more than half of the growth in consumer internet and media revenues

GROWTH IN CONSUMER INTERNET AND MEDIA REVENUE[1] BY SEGMENT, GLOBAL, 2024E VS. 2028E, USD



1. "Consumer internet and media revenues" include revenues from radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, internet access, digital advertising, and traditional advertising on these platforms. 2. "Paid content" includes radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, and TV subscription and licensing fees. 3. "Internet access" includes fixed broadband, wireless, and mobile internet access.
Sources: Activate analysis, Alliance for Audited Media, Dentsu International, eMarketer, GroupM, IBISWorld, Newzoo, Omdia, Pew Research Center, PricewaterhouseCoopers, Zenith Media

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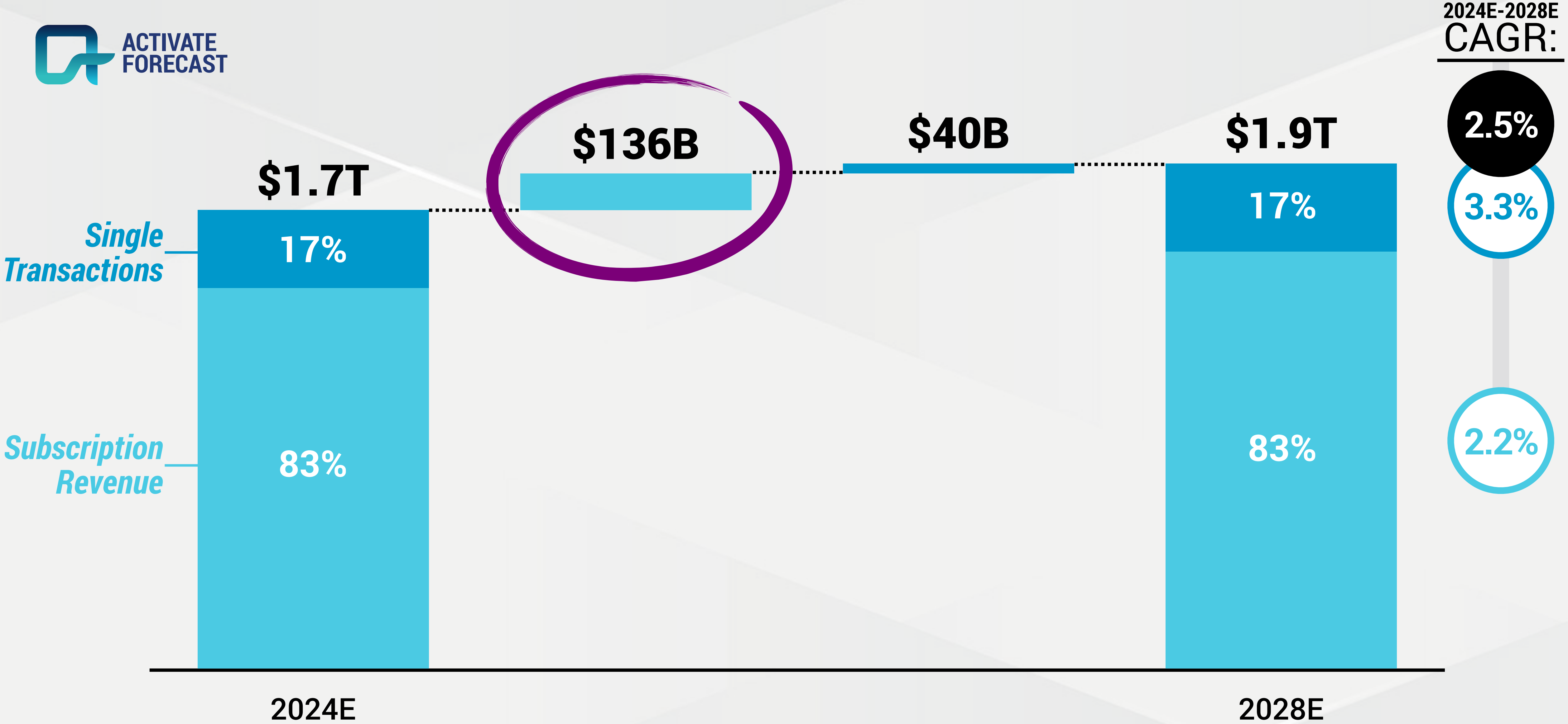
Subscriptions will make up the vast majority of the growth in consumer spend, adding $136B by 2028

GROWTH IN CONSUMER SPEND ON INTERNET AND MEDIA[1] BY REVENUE MODEL, GLOBAL, 2024E VS. 2028E, USD



1. "Consumer spend on internet and media" includes revenues from radio subscription and licensing fees, recorded music, book publishing, magazine publishing, newspaper publishing, video games, filmed entertainment, TV subscription and licensing fees, and internet access.
Sources: Activate analysis, Alliance for Audited Media, Dentsu International, eMarketer, GroupM, IBISWorld, Newzoo, Omdia, Pew Research Center, PricewaterhouseCoopers, Zenith Media

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Activate Consulting: We help leading companies and innovators grow their revenues, take advantage of new opportunities and get ahead of the forces transforming their businesses

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GO TO MARKET

CONSUMER AND CONSUMER INSIGHTS

AI STRATEGY AND ENABLEMENT

PRICING

NEW BUSINESS CREATION

PRIVATE EQUITY SERVICES

PROJECT MANAGEMENT

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