October 25, 2016

THINK AGAIN:
TECH & MEDIA OUTLOOK 2017

activate

www.activate.com

WSJ.D LIVE

Welcome to Activate's Tech and Media Outlook 2017.

For everyone in the tech and media industry, there's the fun and challenge of trying to anticipate what's going to matter in the future. That's why we take time each year, as part of the WSJD Live Conference, to offer a look at the big picture, identifying and evaluating the non-obvious patterns and sometimes-subtle trends that help us predict what's about to happen next.

We're most excited to share the Outlook for its surprising and unexpected insights. From the rise of messaging bots, to the extraordinary growth of eSports, to the future of streaming music, we've uncovered the key insights and likely trends. There's also a hard look at the likely winners in Pay TV and video streaming. Forecasts include how consumers will spend their tech and media time, the next wave of internet and media revenues, and the growth of the smart speaker category – which may be the most significant new platform launch since the smartphone. Some of the other results are important at a broader social level including a clear look at the tens of millions of people who are under-served by tech and media companies.

This year, we've gone deeper than ever, drawing upon extensive proprietary industry research along with brand new, exclusive user surveys of over 5,000 tech and media consumers. We know you'll find the results both provocative and useful and we look forward to a lively discussion.

Let's see where tech and media are headed!

The Activate Team

The 9 Most Important Insights for Tech and Media in 2017

Super-serve the Super-users and Chase the Attention Unicorns
Subscriptions will Feed the World (or at least Internet and Media Businesses)
Learn to Live with the Discovery Oligopoly
The Bot Battles are about Winning the Great Messaging War
eSports is the Next Tech Phenomenon
You Already Know the New Winners in Pay TV
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Post-Household America: A New Era of Users

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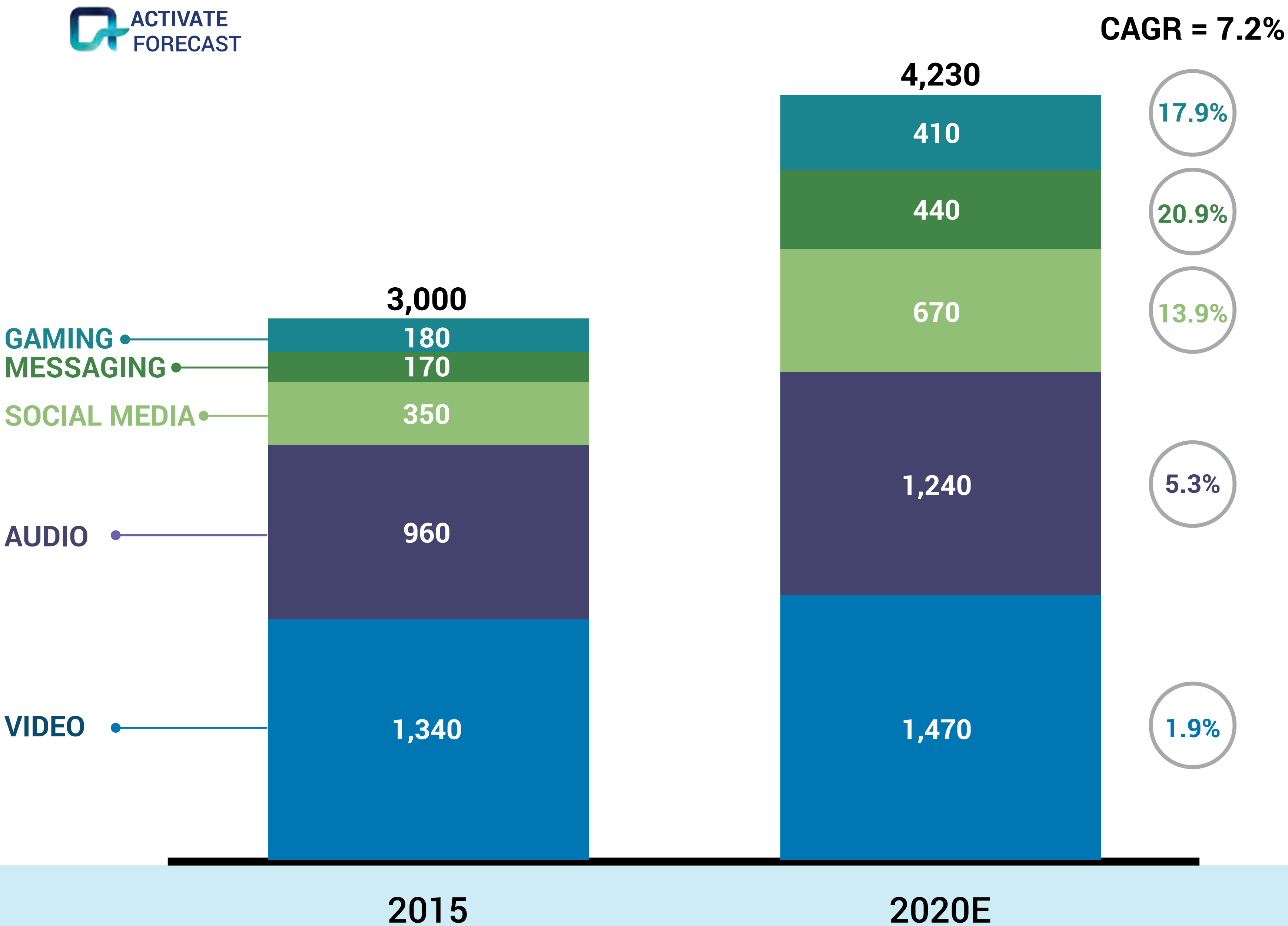
Tech and media consumption will increase across all formats by 2020, with most of the increase in messaging and gaming

TOTAL US HOURS SPENT DAILY AMONG ALL USERS, 2015-2020E, MILLIONS



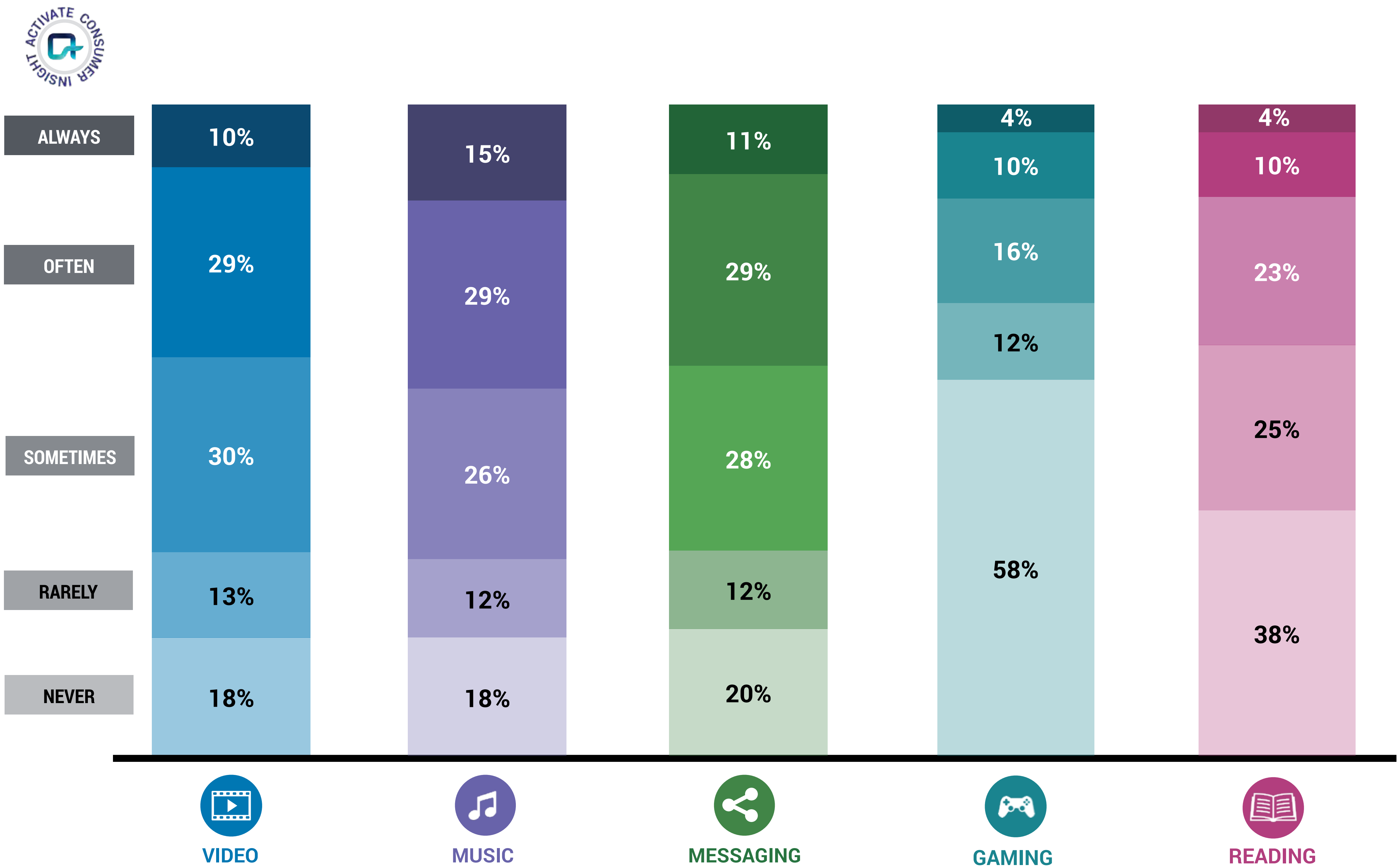
BY 2020:

- **GAMING** time will more than double, fueled by e-sports
- **MESSAGING** will grow faster than **SOCIAL MEDIA**
- **AUDIO** time will grow as ambient technology becomes pervasive
- **VIDEO** time will moderate

Note: Values do not account for multitasking. 2020 estimate is not normalized for population growth.
Sources: Activate analysis, comScore, Deloitte, Edison, eMarketer, Flurry Insights, Global Web Index, Informate, NetMarketShare, Nielsen, Pew Research Center, Sandvine, SNL Kagan, Statcounter, We Are Social

Most consumers are multitasking across media

MULTITASKING FREQUENCY BY MEDIA TYPE, U.S., 2016, PERCENT OF RESPONDENTS

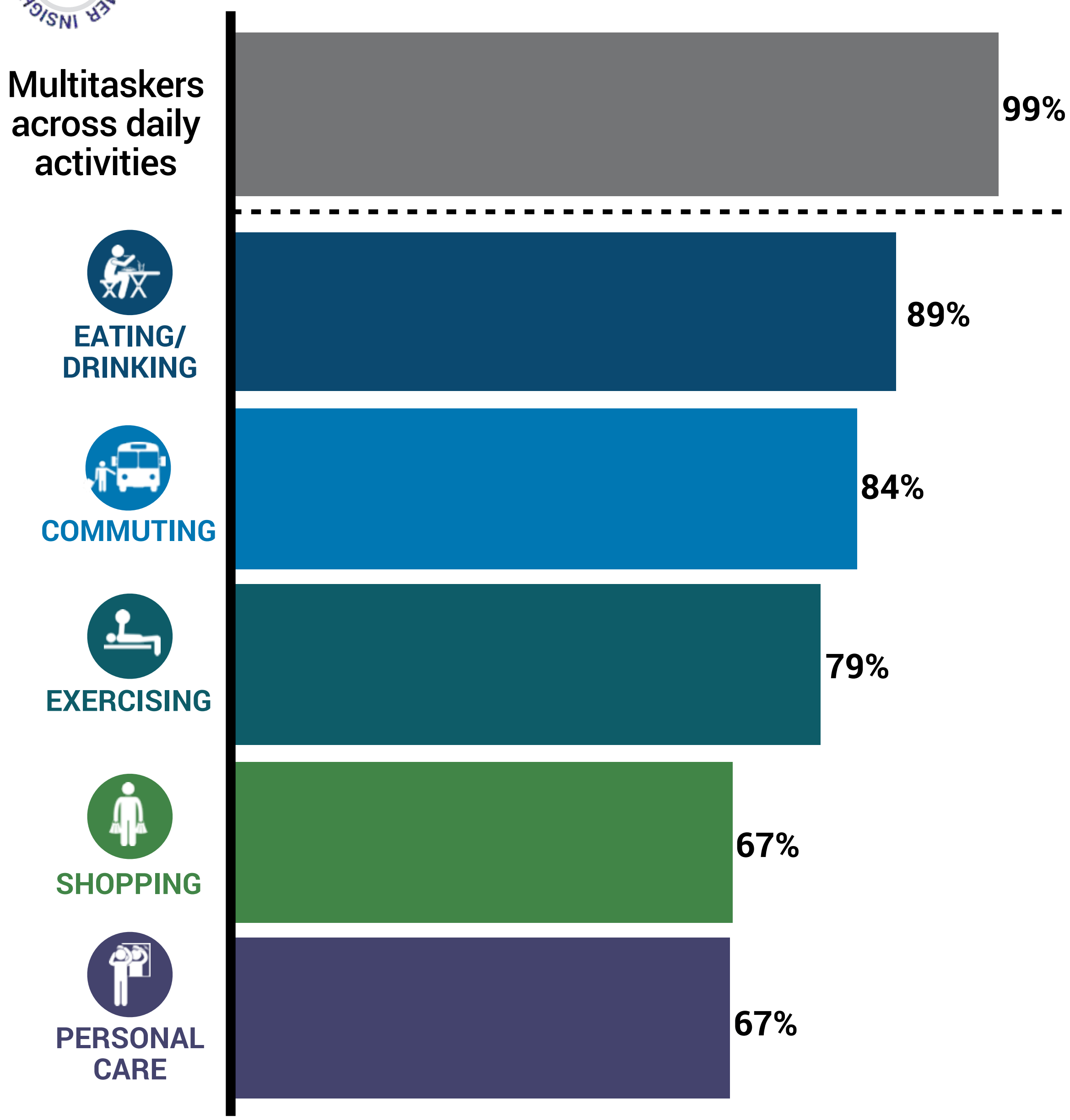


92% OF CONSUMERS MULTITASK ACROSS AT LEAST TWO MEDIA TYPES

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,003)

People also multitask during most other daily activities

MEDIA MULTITASKING BY DAILY ACTIVITY*, U.S., 2016, PERCENT OF RESPONDENTS



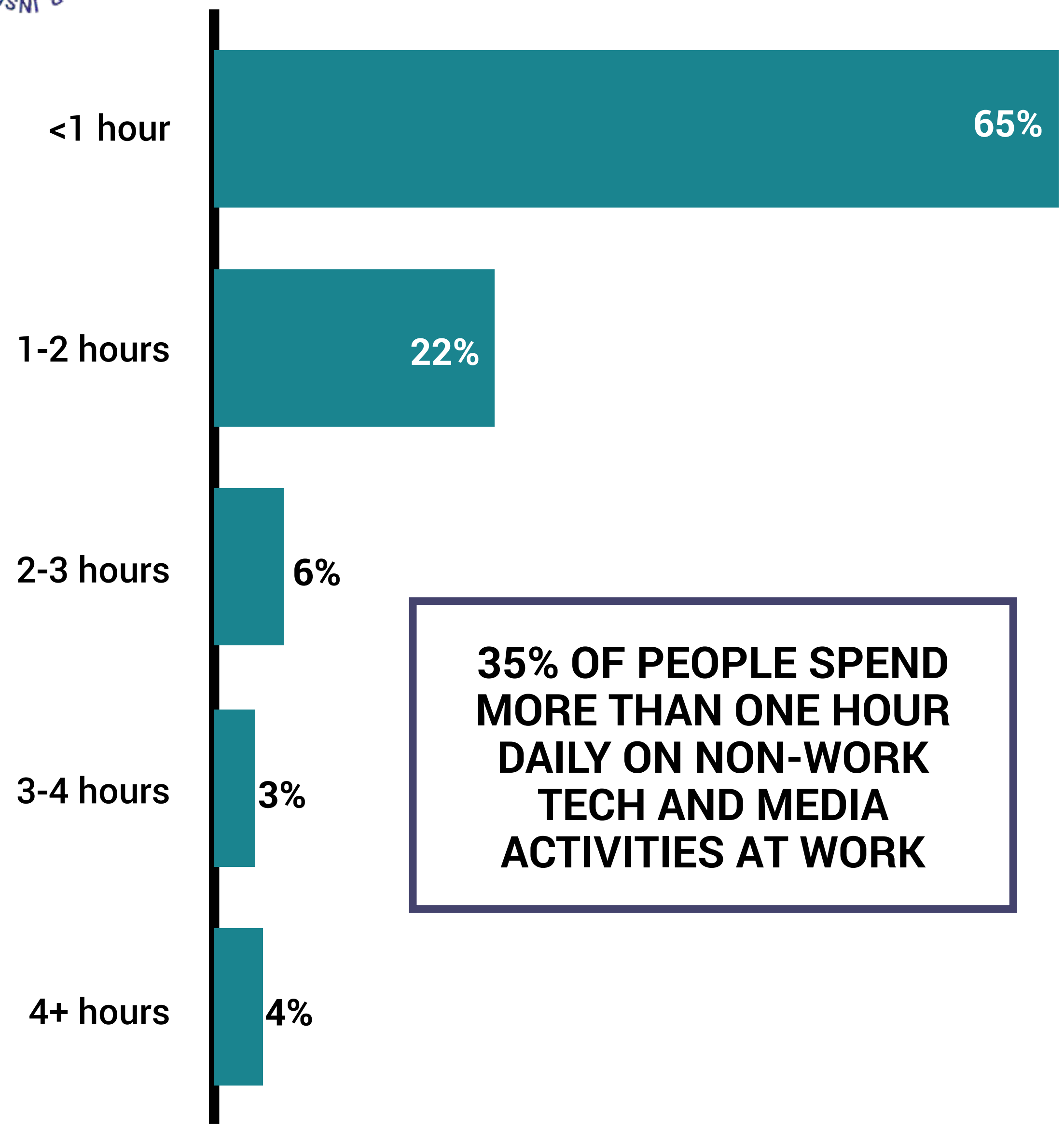
TOP 3 MEDIA MULTITASKING TYPES BY DAILY ACTIVITY, U.S., 2016, PERCENT OF RESPONDENTS

	#1 ACTIVITY	#2 ACTIVITY	#3 ACTIVITY
Multitaskers across daily activities	MUSIC	VIDEO	MESSAGING
EATING/ DRINKING	VIDEO	MESSAGING	MUSIC
COMMUTING	MUSIC	MESSAGING	SOCIAL MEDIA
EXERCISING	MUSIC	VIDEO	MESSAGING
SHOPPING	MESSAGING	MUSIC	SOCIAL MEDIA
PERSONAL CARE	MUSIC	VIDEO	MESSAGING

*Respondents could select more than one activity.
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,003)

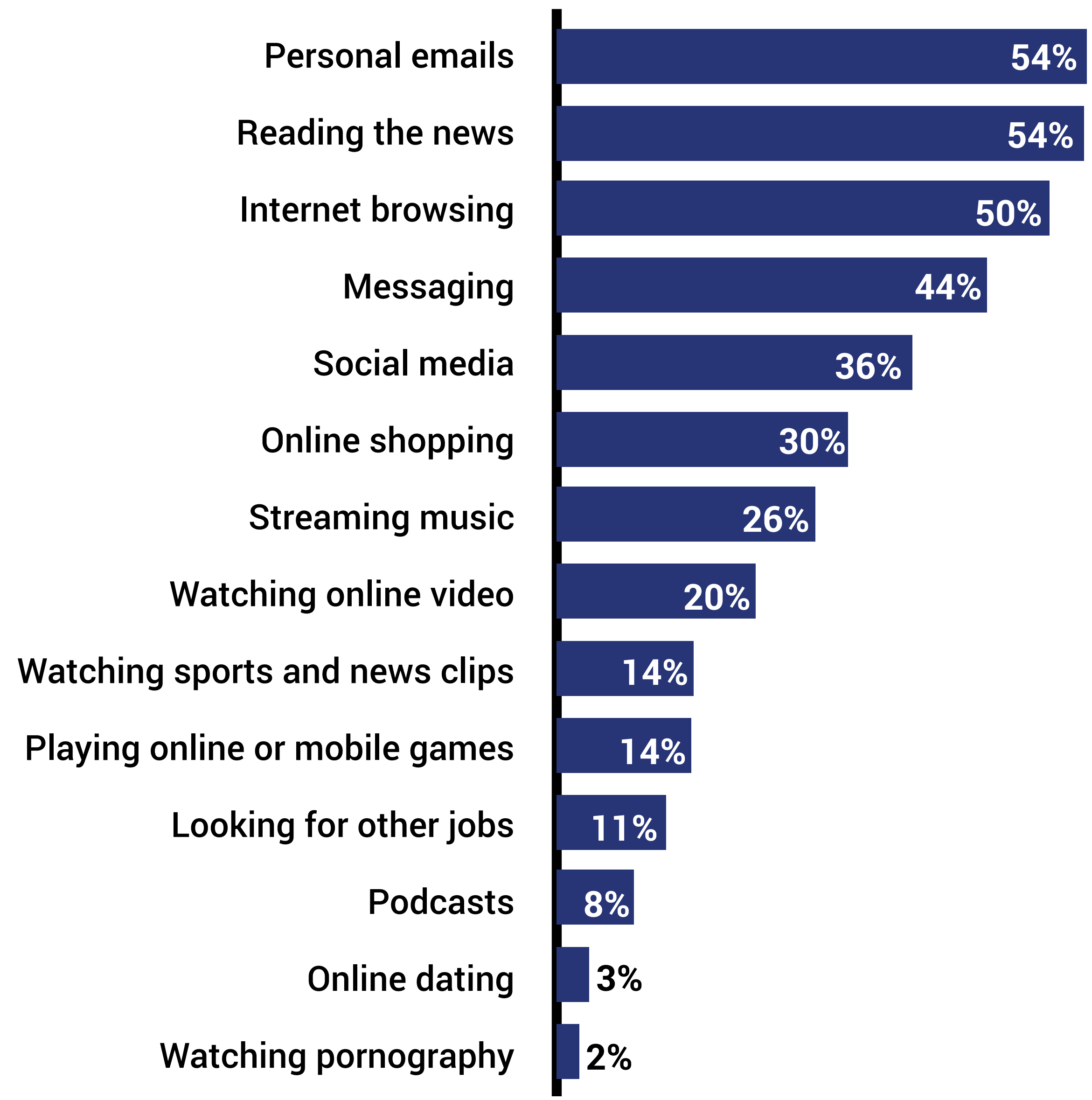
At work, people spend time on many non-work tech and media activities

TIME SPENT AT WORK ON NON-WORK TECH AND MEDIA ACTIVITIES, U.S., 2016, PERCENT OF RESPONDENTS



35% OF PEOPLE SPEND MORE THAN ONE HOUR DAILY ON NON-WORK TECH AND MEDIA ACTIVITIES AT WORK

NON-WORK TECH AND MEDIA ACTIVITIES AT WORK*, U.S., 2016, PERCENT OF RESPONDENTS

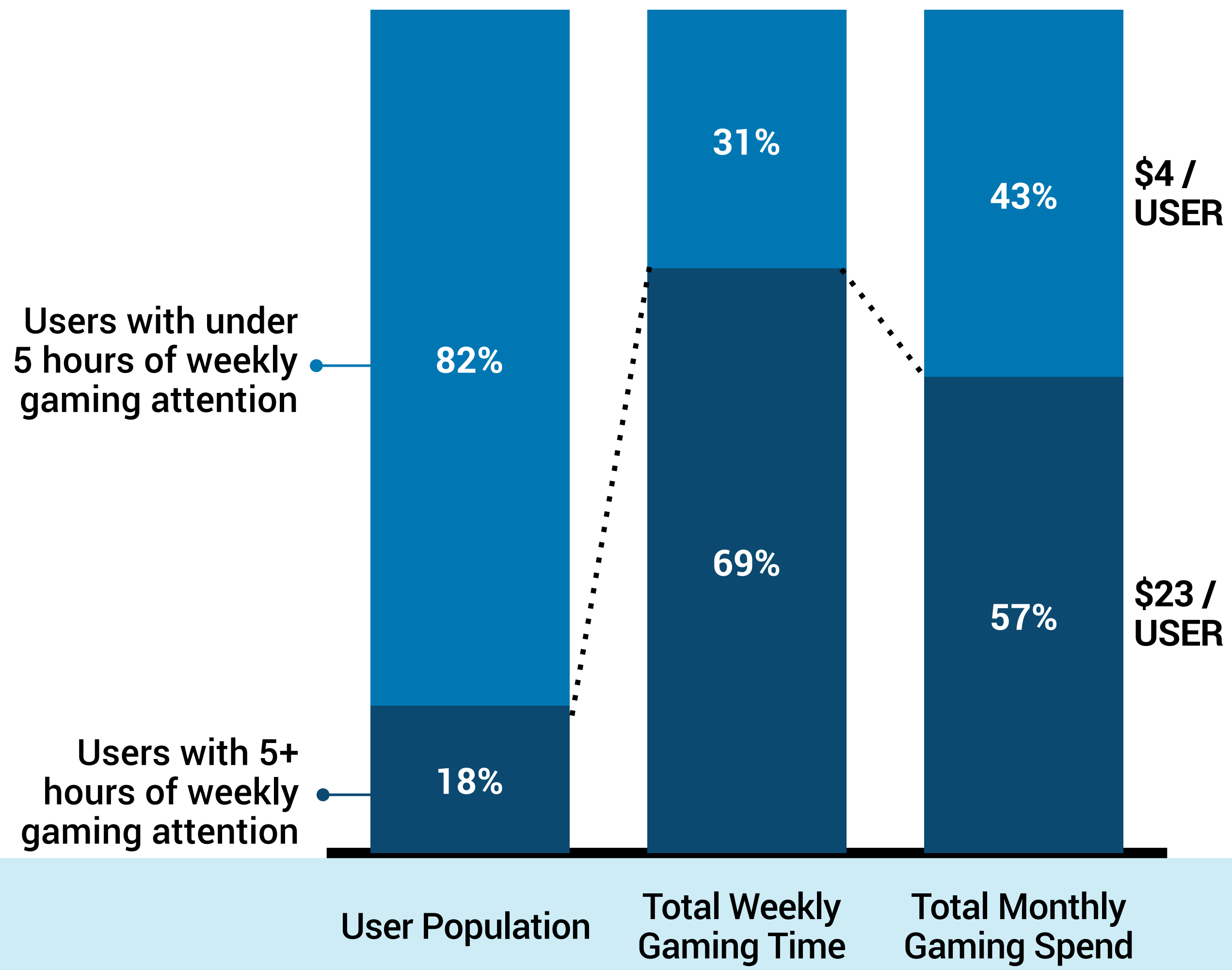


*Respondents could select more than one activity.
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=759)

Super-users hold massive potential for tech/media firms as they spend disproportionately more time and money consuming media than most users

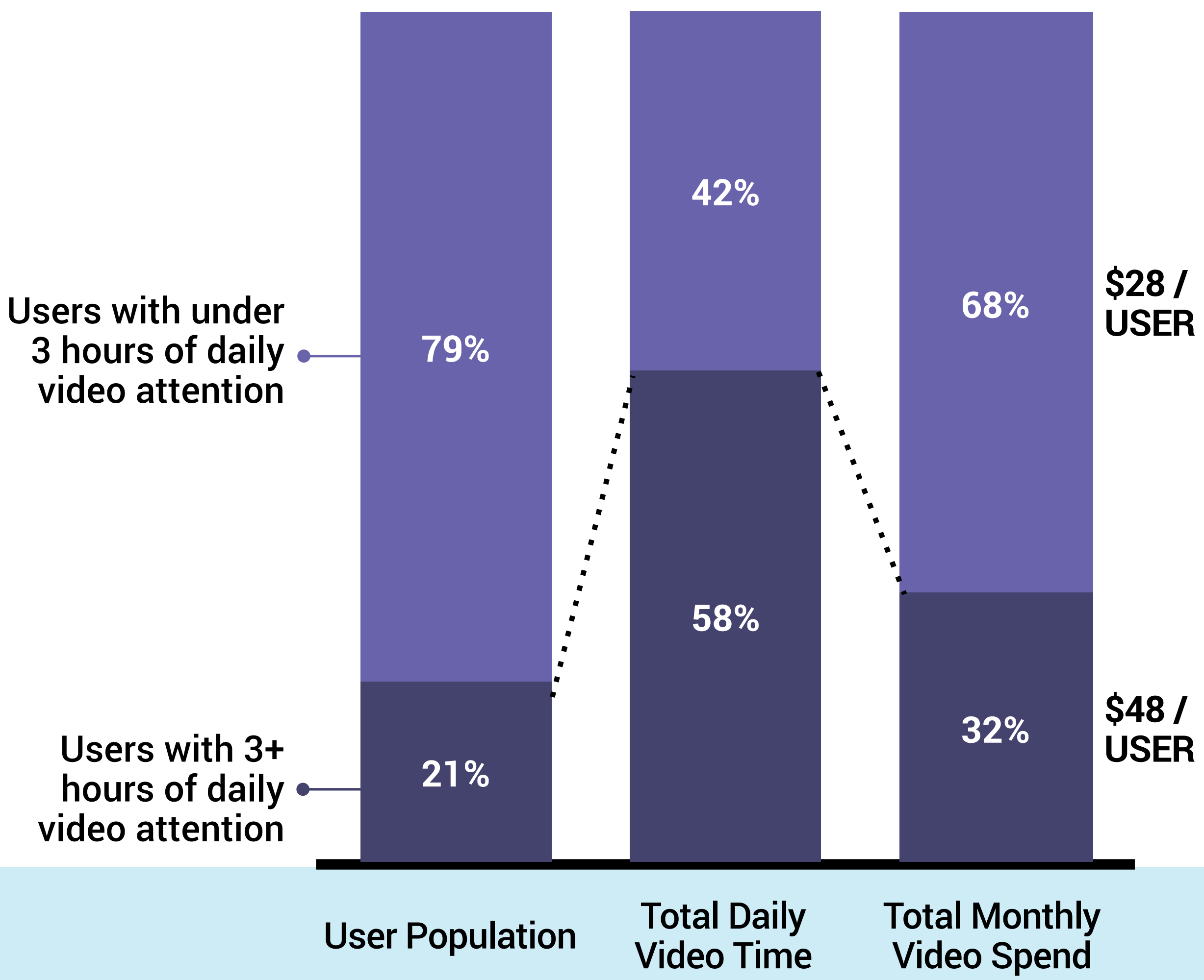
GAMING TIME AND SPEND RELATIVE TO SHARE OF USERS, U.S., 2016, PERCENT OF RESPONDENTS

A GAMING SUPER-USER SPENDS ~6X MORE MONEY PER MONTH THAN 82% OF USERS



VIDEO TIME AND SPEND RELATIVE TO SHARE OF USERS, U.S., 2016, PERCENT OF RESPONDENTS

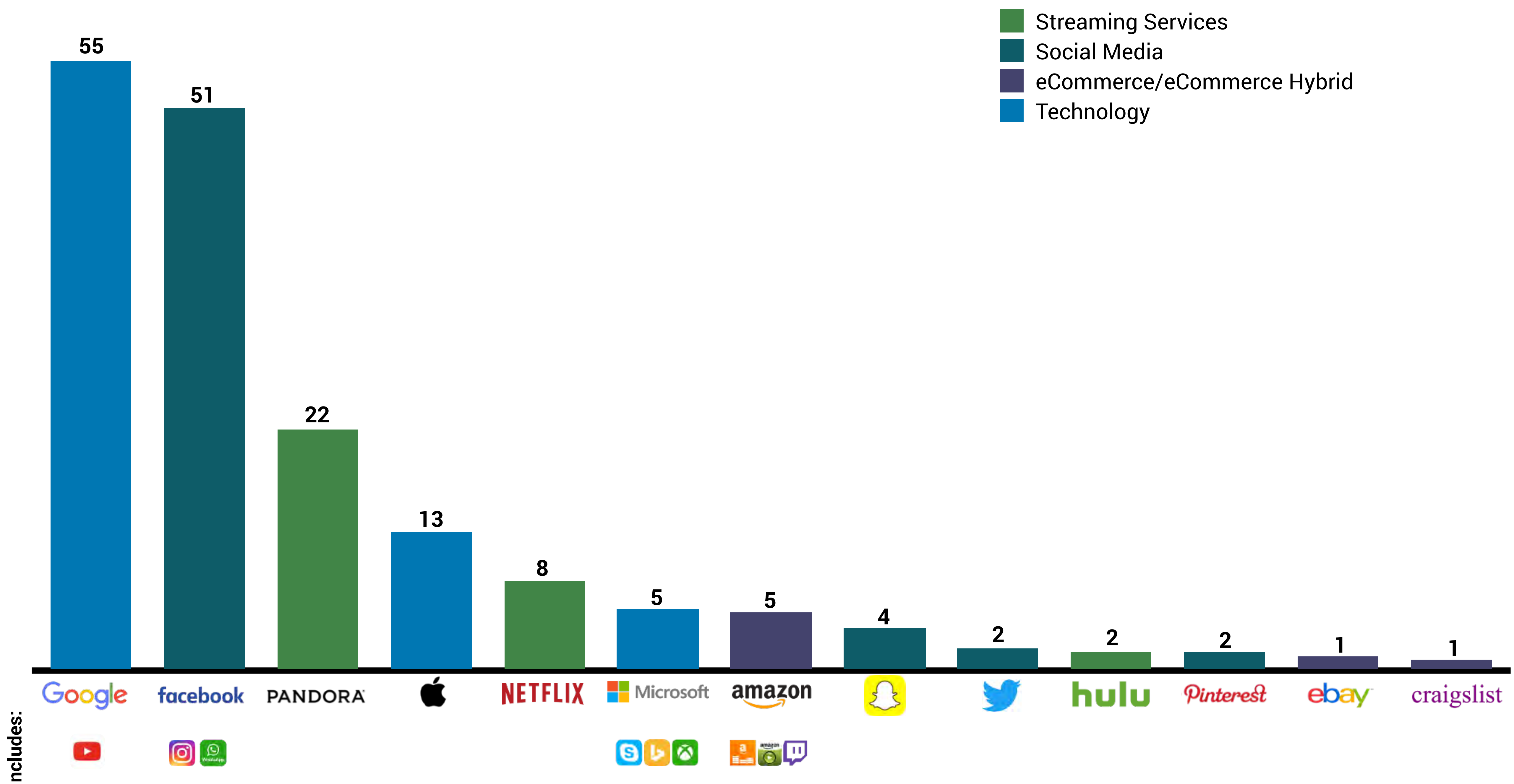
A VIDEO SUPER-USER SPENDS ~2X MORE MONEY PER MONTH THAN 79% OF USERS



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,003)

Digital Attention Unicorns capture 1 billion or more minutes of digital attention per week

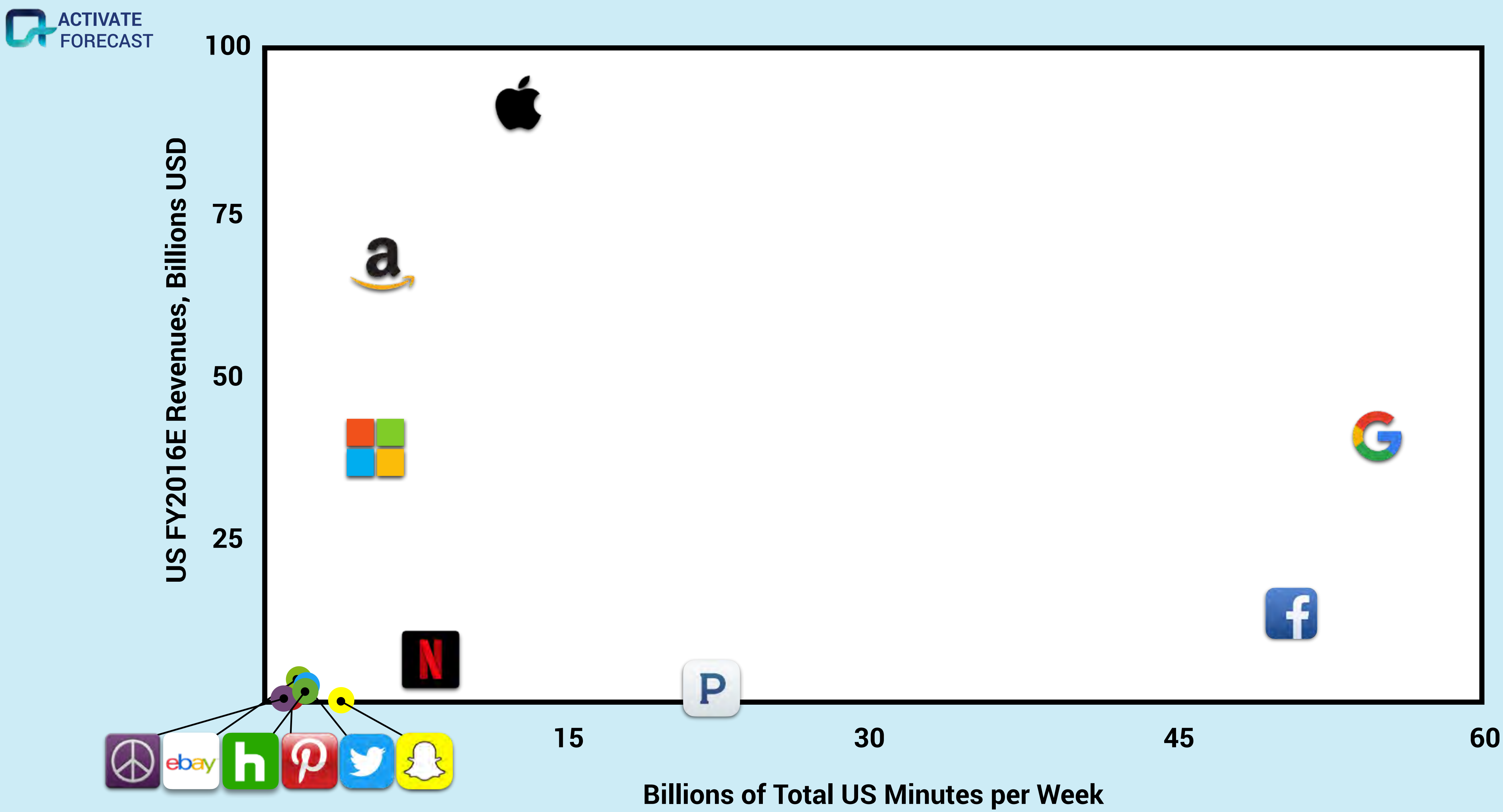
BILLIONS OF TOTAL US MINUTES, AS MEASURED BY COMSCORE, PER WEEK SPENT ON DIGITAL PLATFORMS, U.S., AUGUST 2016



Note: Only digital-first businesses included. Values do not account for multitasking.
Sources: Activate analysis, comScore

Monetization is not only a function of consumer attention, but also a function of the business model

WEEKLY TOTAL ATTENTION AND ANNUAL REVENUES OF DIGITAL PLATFORMS, U.S., 2016E



Note: Values do not account for multitasking
Sources: Activate analysis, Adweek, AIM Group, Company websites, comScore, Motley Fool

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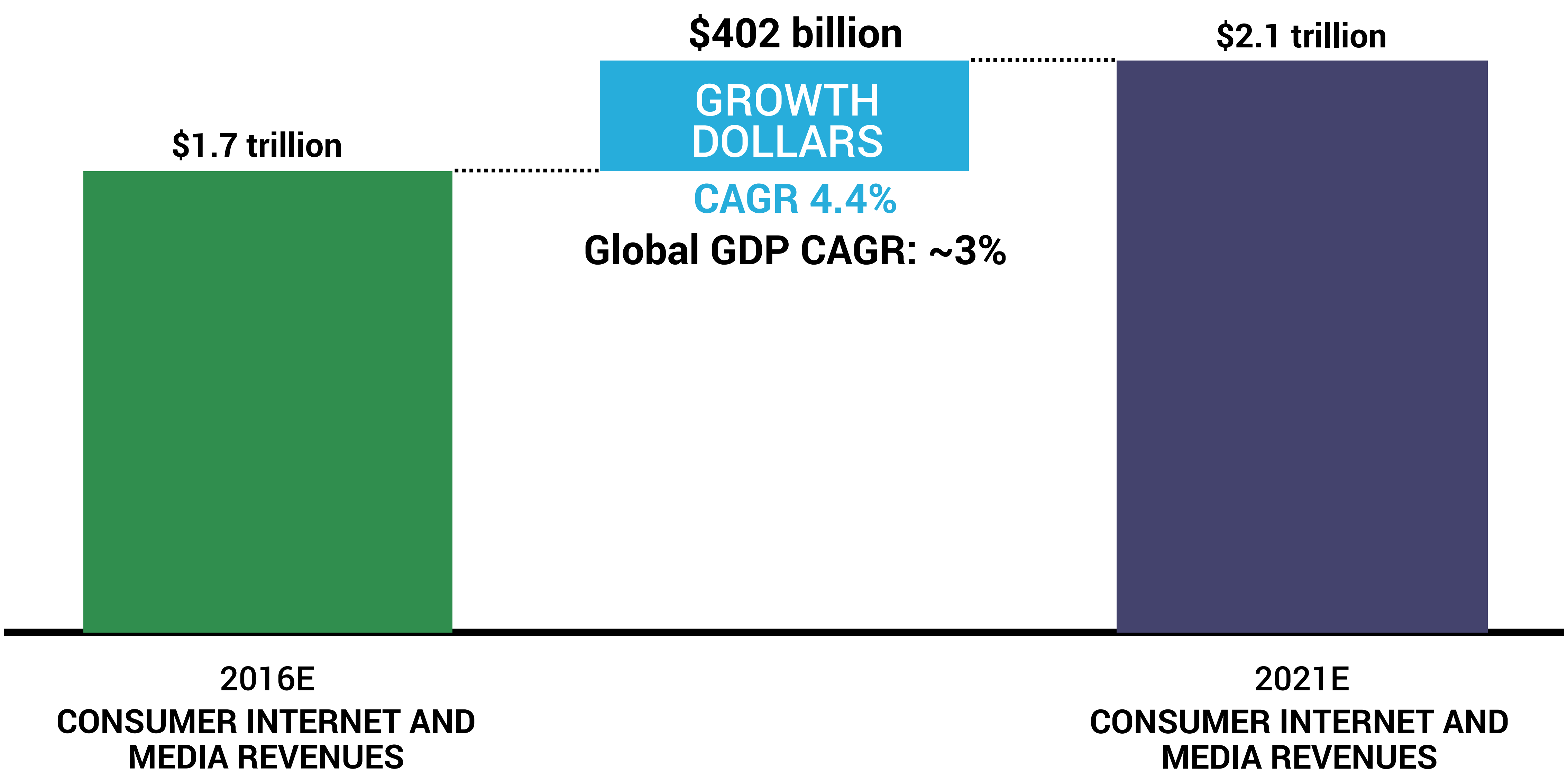
Over the next five years, global internet and media revenues will grow by over $400 billion, outpacing GDP growth

CONSUMER INTERNET AND MEDIA REVENUES*, GLOBAL, 2016E-2021E, USD

ACTIVATE FORECAST

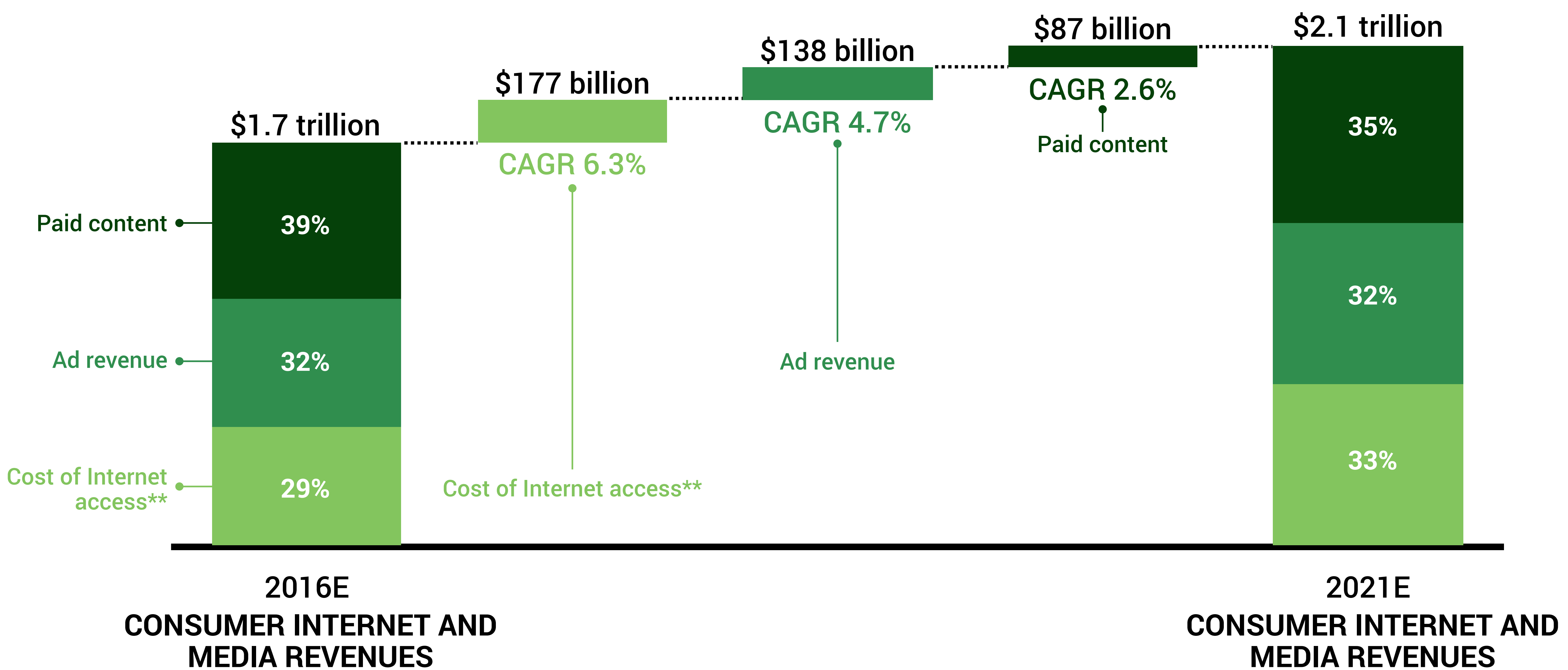


*Consumer Internet and Media Revenues include Radio, Recorded Music, Magazine Publishing, Newspaper Publishing, Video Games, Filmed Entertainment, Book Publishing, TV Subs and Licensee Fees, Internet Access, Digital Advertising & Traditional Advertising on these platforms.
Sources: Activate analysis, eMarketer, GroupM, IBIS, IFPI, IMF, World Bank, NewZoo, PwC, RBC, ZenithOptimedia

Access, not content, will be the revenue growth driver over the next five years

CONSUMER INTERNET AND MEDIA REVENUE GROWTH BY REVENUE SEGMENT*, GLOBAL, 2016E-2021E, USD

ACTIVATE FORECAST

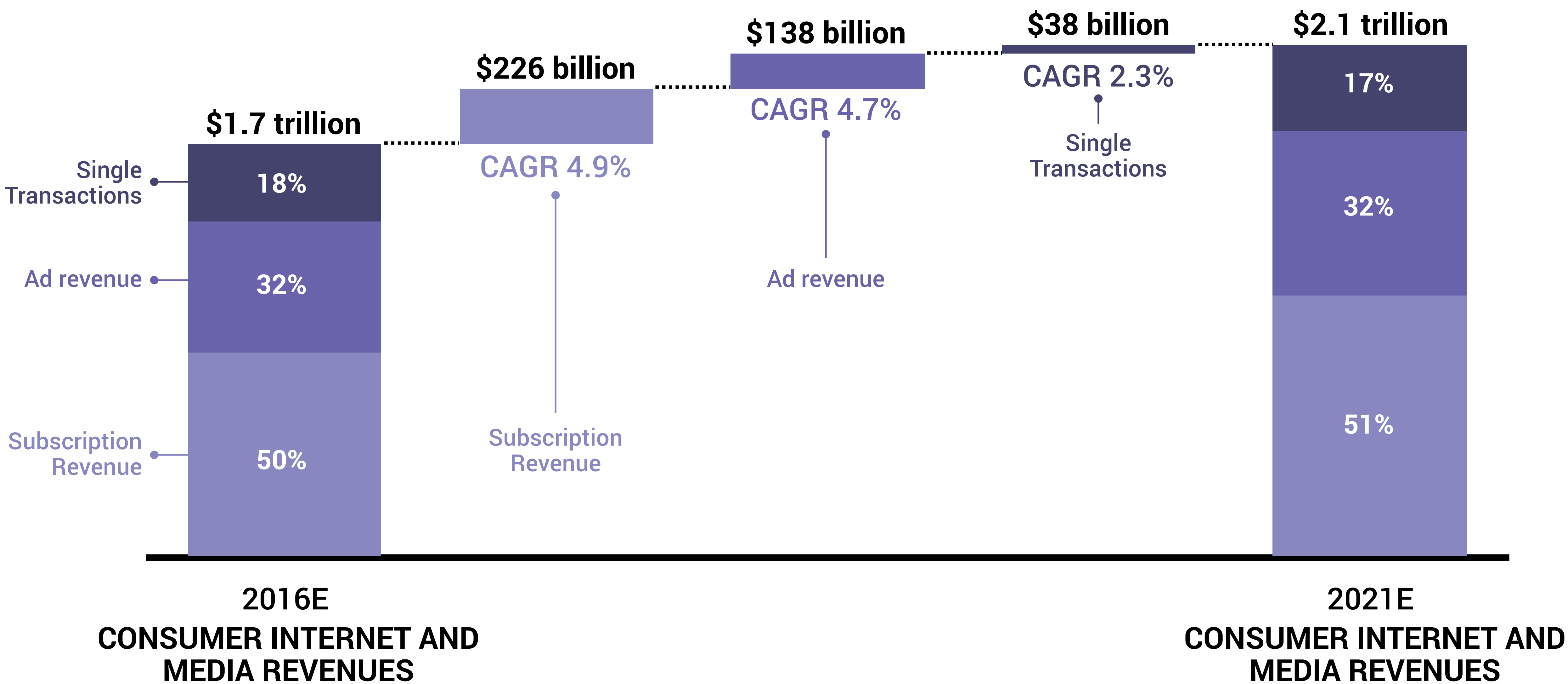


*Consumer Internet and Media Revenues include Radio, Recorded Music, Magazine Publishing, Newspaper Publishing, Video Games, Filmed Entertainment, Book Publishing, TV Subs and Licensee Fees, Internet Access, Digital Advertising & Traditional Advertising on these platforms.
**Includes fixed broadband, wireless, and mobile internet access.
Sources: Activate analysis, eMarketer, GroupM, IBIS, IFPI, NewZoo, PwC, RBC, ZenithOptimedia

Subscription will continue to be the dominant revenue model, accounting for over half of consumer internet and media growth

CONSUMER INTERNET AND MEDIA REVENUE GROWTH BY REVENUE MODEL*, GLOBAL, 2016E-2021E, USD

ACTIVATE FORECAST



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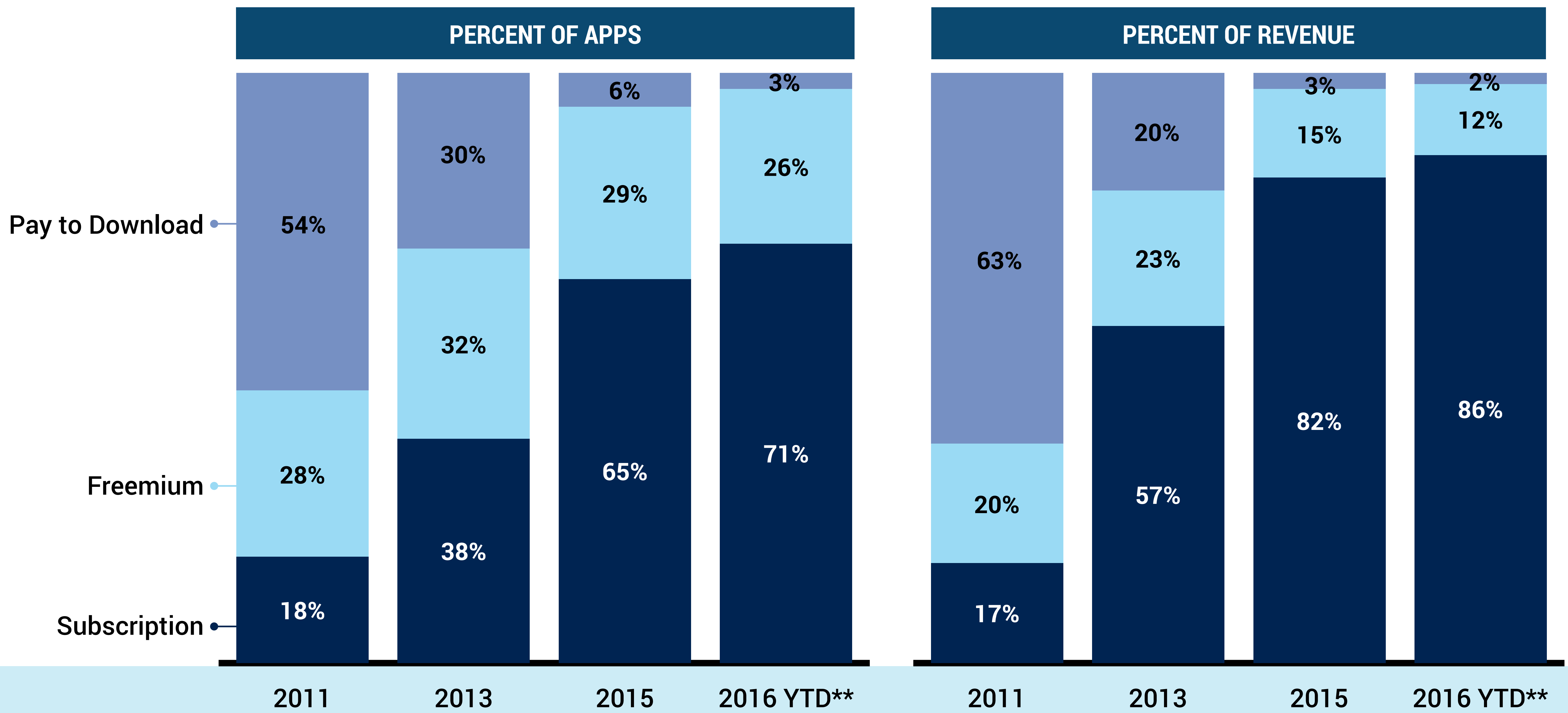
Sources: Activate analysis, eMarketer, GroupM, IBIS, IFPI, NewZoo, PwC, RBC, ZenithOptimedia

Consumer pay models outside of subscription and freemium are essentially disappearing

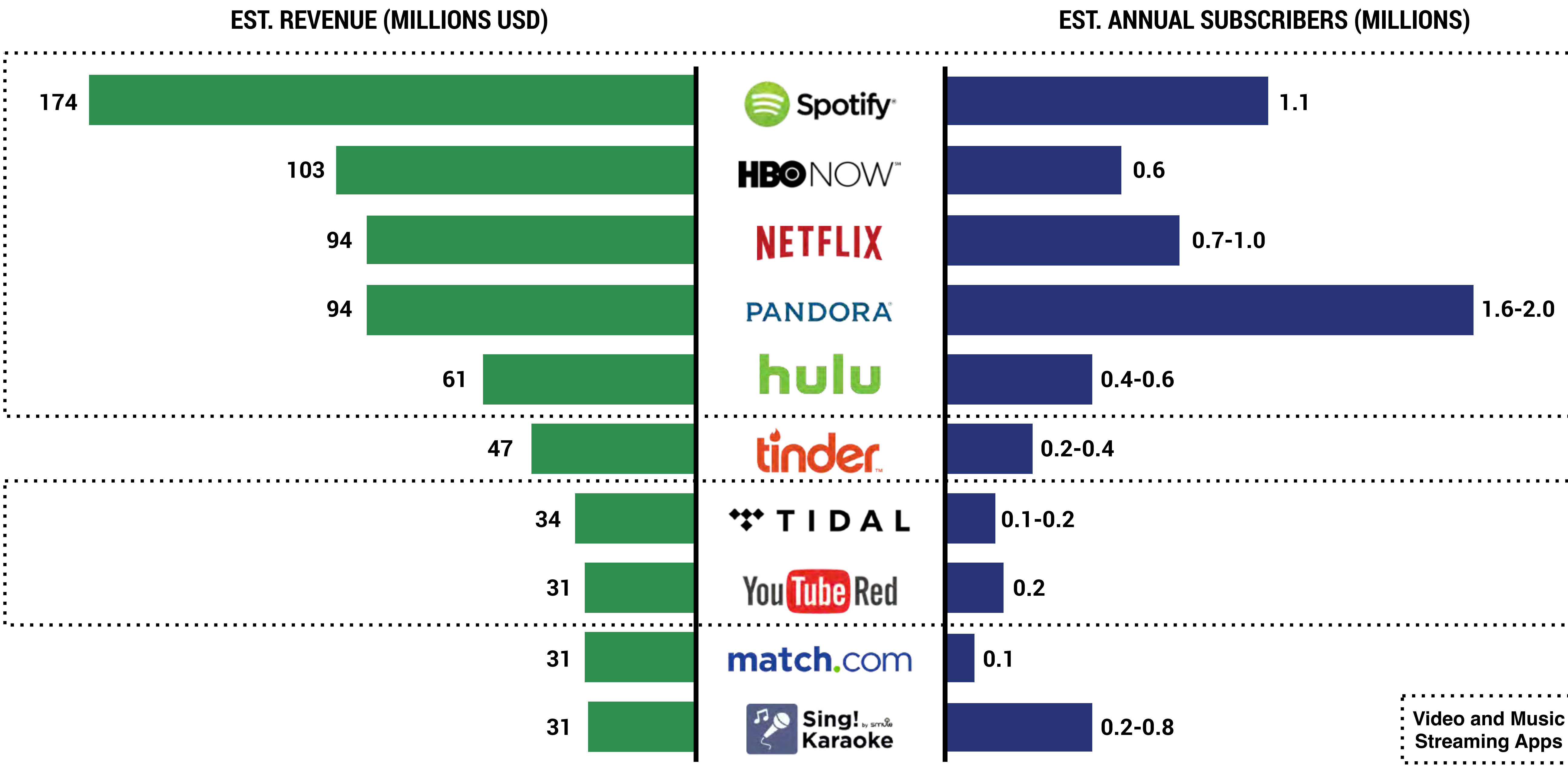
MEDIA AND ENTERTAINMENT (NON-GAME) TOP 100 APPS BY REVENUE MODEL*, U.S., 2011-2016 YTD



*Non-game apps are all apps across all categories except games.
**January - September 2016.
Sources: Activate analysis, App Annie, Apple, App Websites, Google Play, Multiple (100+) News Article Reviews of Apps (e.g., PC Magazine)

The top subscription services in app stores are mainly video and music streaming

TOP TEN (NON-GAME)* SUBSCRIPTION APPS BY REVENUE, U.S., TRAILING 12 MONTHS FROM SEPT. 16



*Non-game apps are all apps across all categories except games.
Sources: Activate analysis, App Annie, Apple, App Websites, comScore, Google Play, Multiple (100+) News Article Reviews of Apps (e.g., PC Magazine)

The demographics of top subscription apps over-index on young adult users

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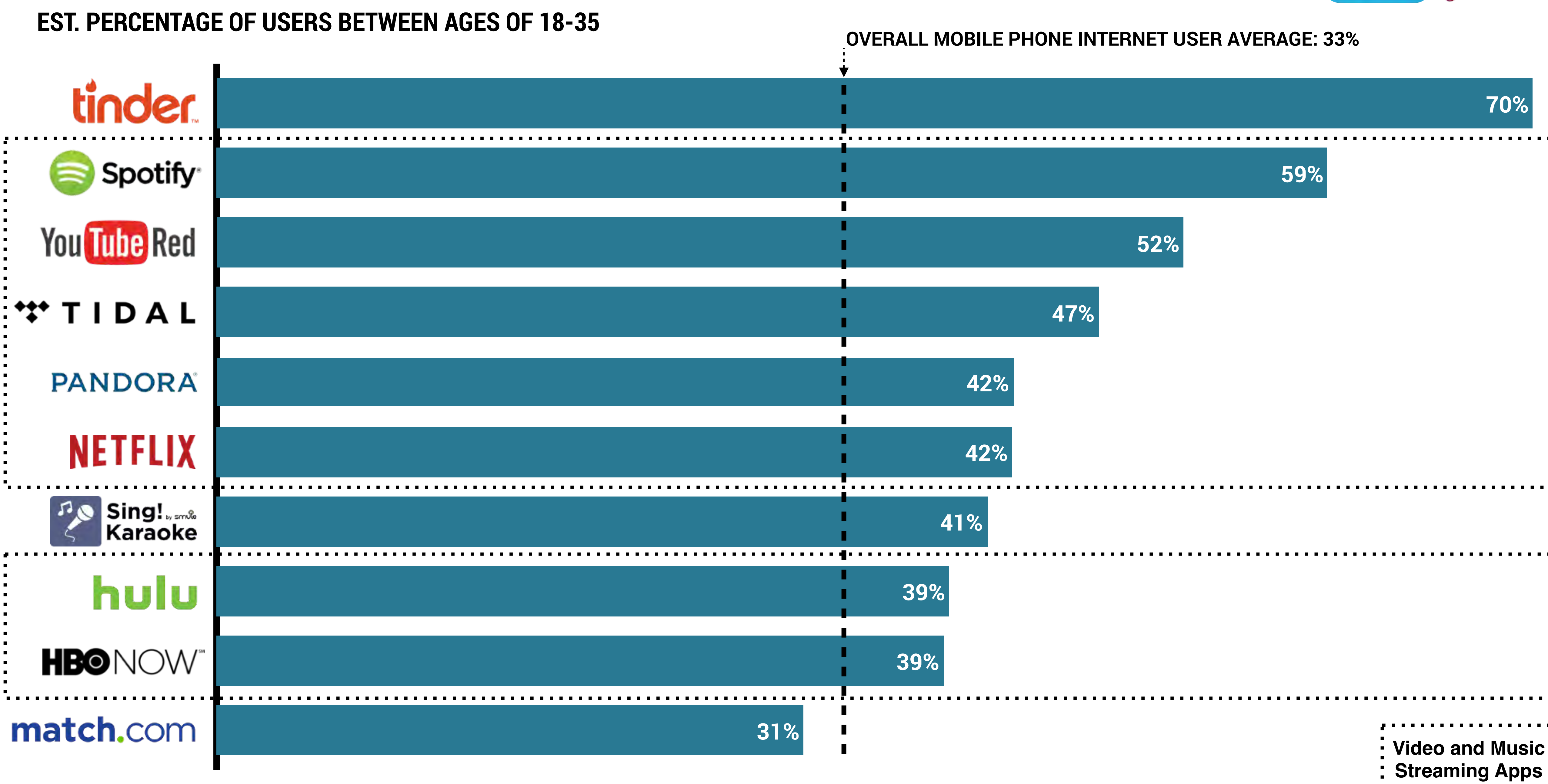
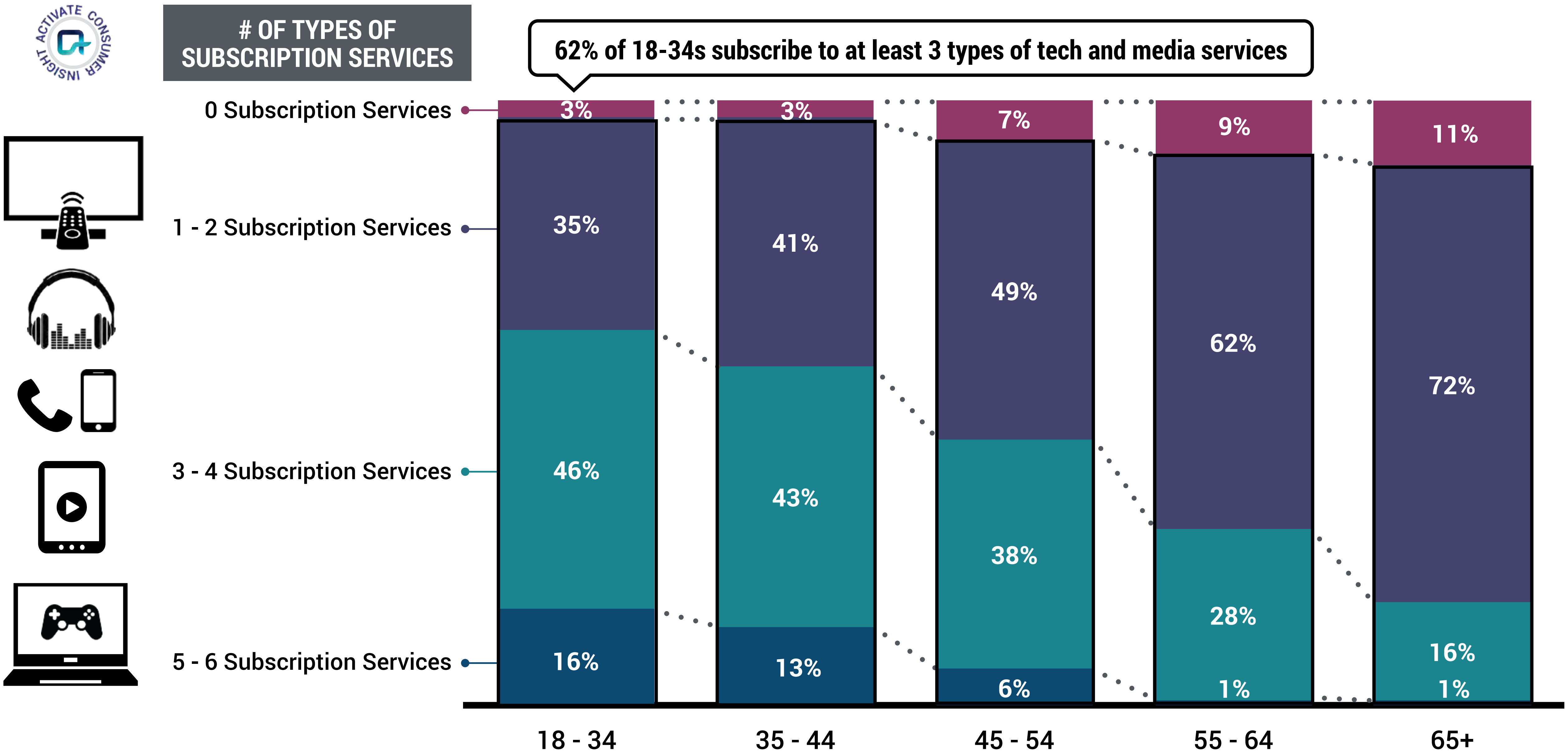


*Non-game apps are all apps across all categories except games.
Sources: Activate analysis, App Annie, Apple, App Websites, comScore, eMarketer, Google Play, Multiple (100+) News Article Reviews of Apps (e.g., PC Magazine)

Although the trend of consuming via subscription is also seen in the general population, younger people aging in will further increase tech and media subscription adoption

OF TYPES OF SUBSCRIPTION SERVICES* BY AGE GROUP, U.S., 2016, PERCENT



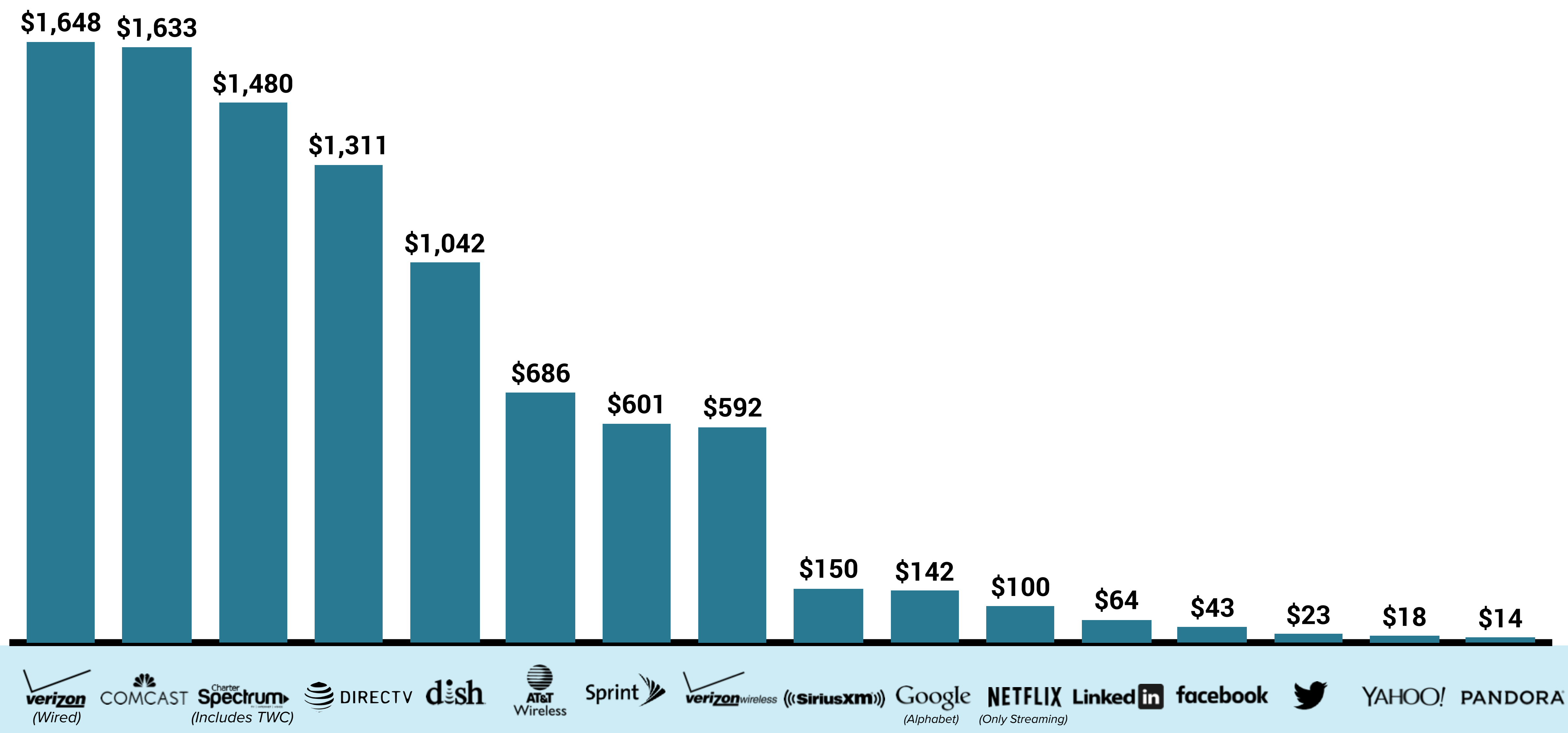
*Includes Virtual Pay TV (e.g., Sling TV), Subscription Streaming Video (e.g., Netflix), Phone Plan (Cellular and Landline), Pay TV (e.g., Comcast, Direct TV, etc.), Online Video Gaming Service (e.g., Xbox Live), and Streaming Music Services (e.g., Spotify).

Note: excludes broadband Internet.

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

Digital access and television providers capture the highest average revenue per user in the U.S.

ANNUAL AVERAGE REVENUE PER USER (ARPU), U.S., 2015, USD

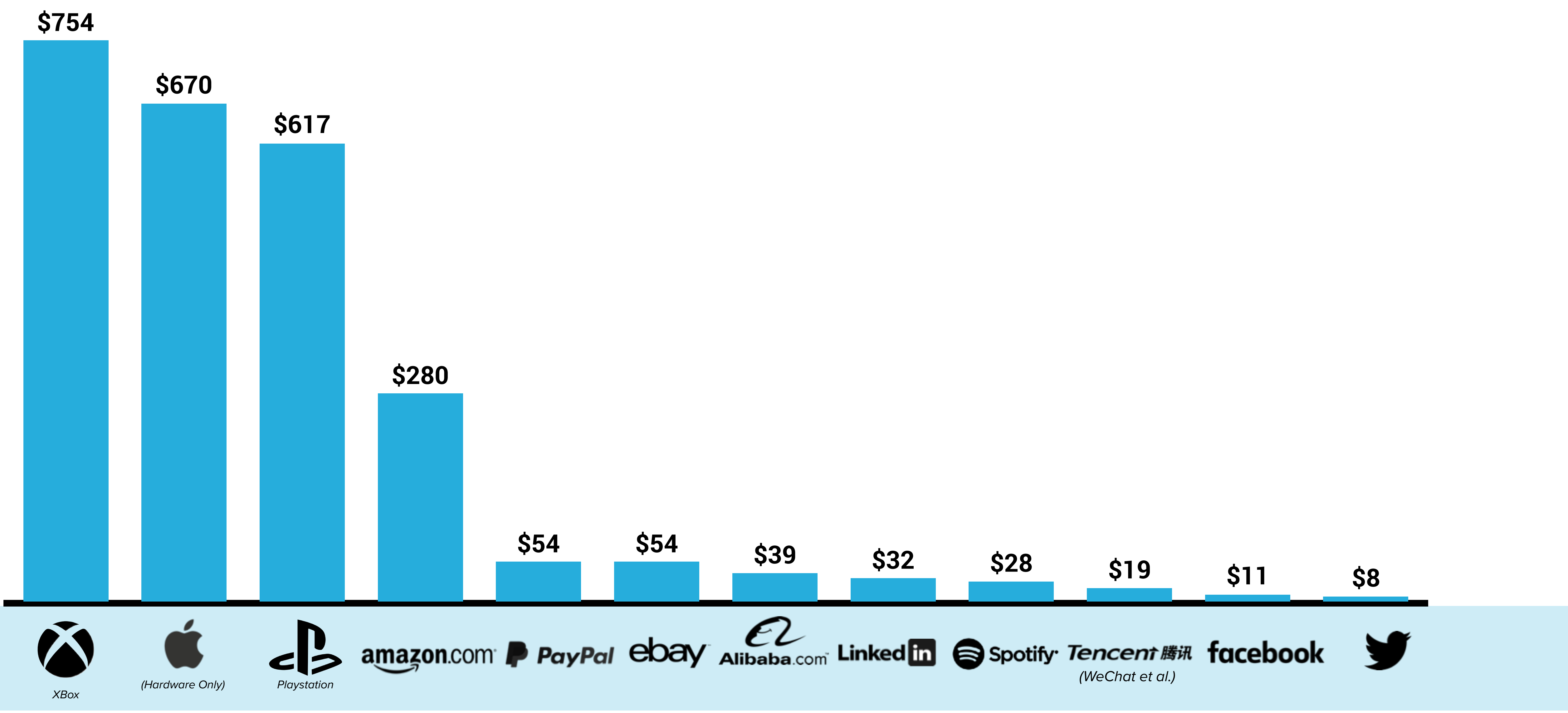


ARPU based on consolidated US revenues except: Comcast ARPU is based on Residential & Business Services and advertising within the Cable Communications division. Verizon Wired based of Consumer ARPU, and Wireless based off retail post & post-paid ARPU. Charter includes TWC Subscription Revenue for Residential & Businesses services along with advertising, all Charter, and all Bright House Networks. DirecTV uses a 2014 ARPU grown by average rate of other listed PayTV providers. AT&T Wireless based on pre & post-paid services. Sirius is based on subscriber and subscriber related revenues. Netflix is streaming revenues only. Facebook is based on advertising revenue.

Sources: Activate analysis, Company financials (10-K/10-Q), comScore, eMarketer, IRS exchange rates

Viewed through a global lens, hardware/commerce-oriented businesses are the ARPU leaders

ANNUAL AVERAGE REVENUE PER USER (ARPU), GLOBAL, 2015, USD



ARPU based on consolidated global revenues except: Apple ARPU is for equipment sales (excludes accessories, apps, and iPods). Amazon excludes services. Xbox values are for fiscal year ending June 30th, 2015 and include all xbox related revenue. Playstation includes all items in Games & Network services segment. Facebook is based on advertising revenue.

Sources: Activate analysis, Company financials (10-K/10-Q), comScore, eMarketer, IRS exchange rates

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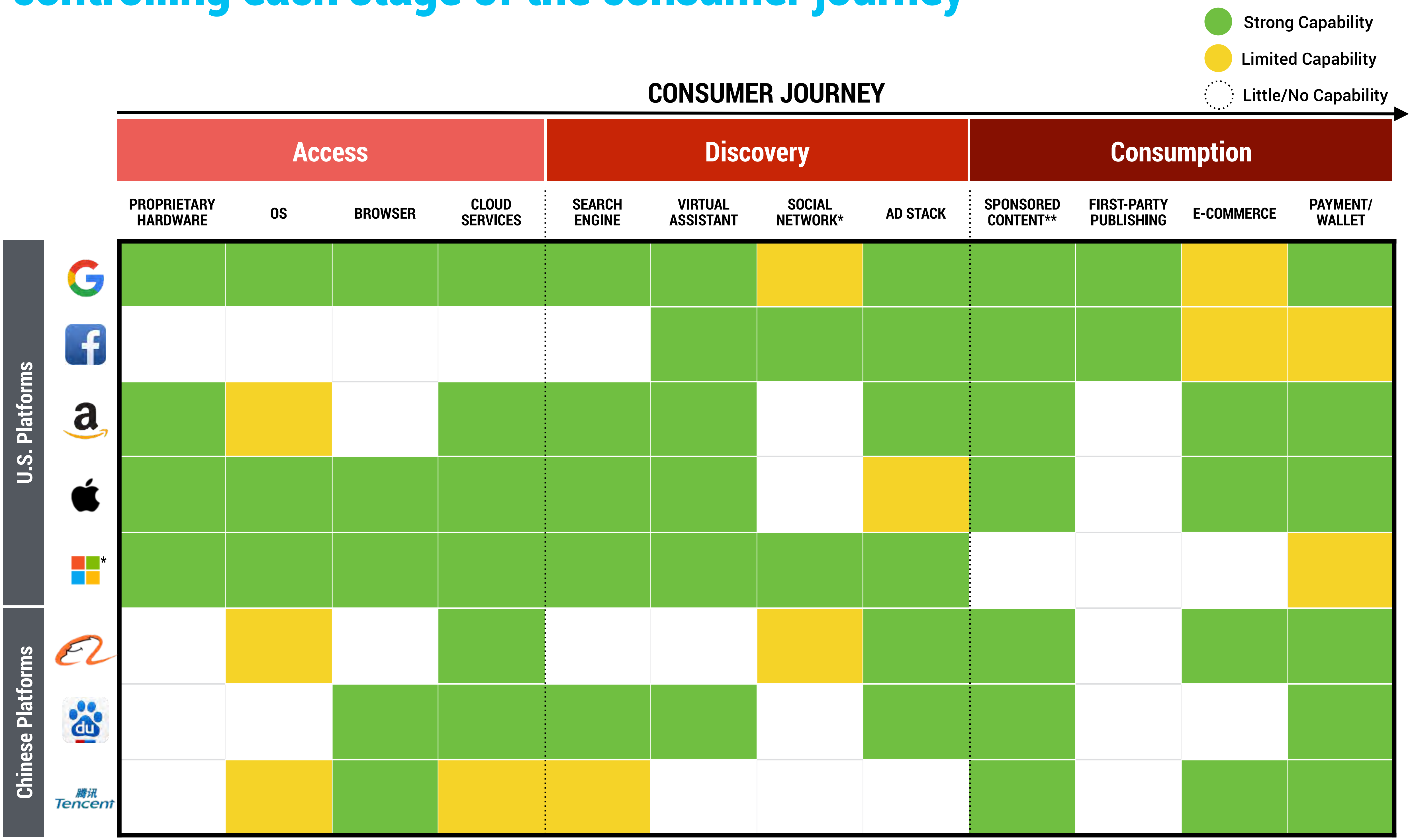
A handful of digital platforms have become the Discovery Oligopoly, controlling each stage of the consumer journey



* Microsoft social network capability through LinkedIn.
** Includes recommended products, sponsored tweets, sponsored articles, etc.
Sources: Activate analysis, Company websites

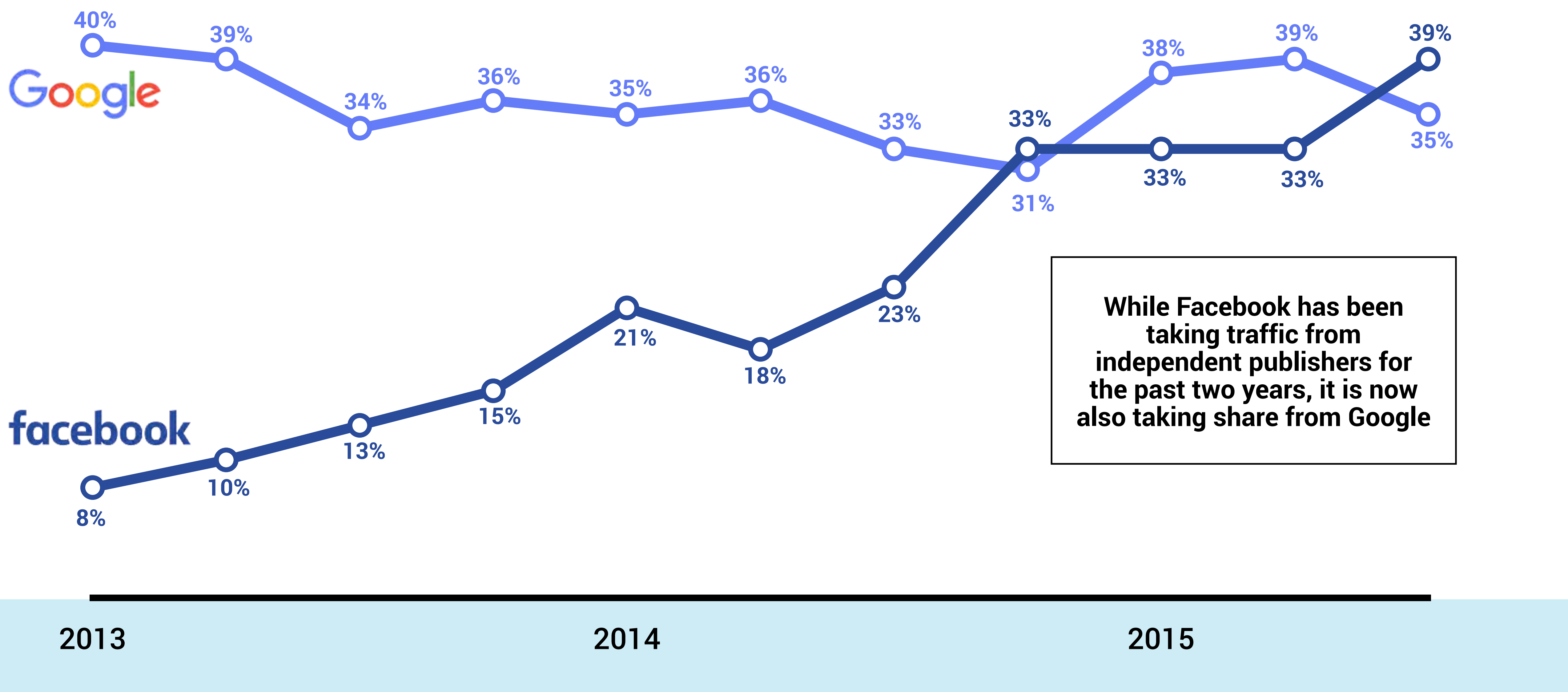
The Discovery Oligopoly uses discovery algorithms and sponsored content deals to pick winners, forcing everyone who wants to reach a user to buy their way to prominence

	PREFERRED CONTENT	SEARCH OPTIMIZATION	CURATED RESULTS	PAID PROMOTION	SPONSORED ADS	EXCLUSIVES
EXAMPLES	YouTube		YouTube	YouTube	YouTube	
DEFINITION	• Visibility of content dependent upon past click history or relationship to content shared by friends/colleagues/ family members	• Optimization algorithms require content creators to adapt to search engine requirements • Optimization also requires partnerships with search widgets like Google Now	• Search results personalized based on past browsing or shopping history • Removal of content for abuse or violations of terms of service	• Search algorithms will return partnered content (e.g., Sponsored Tweets) along with a list of other results • Unifying search and business development	• Sponsored ad inventory enables marketers to gain increased exposure in search results on highly trafficked platforms	• Consumption of specific content requires using a proprietary platform (e.g., New York Times exclusive at launch of Facebook Instant Articles)

Sources: Activate analysis, Company websites and press releases

Social has overtaken search as the primary vehicle for digital discovery

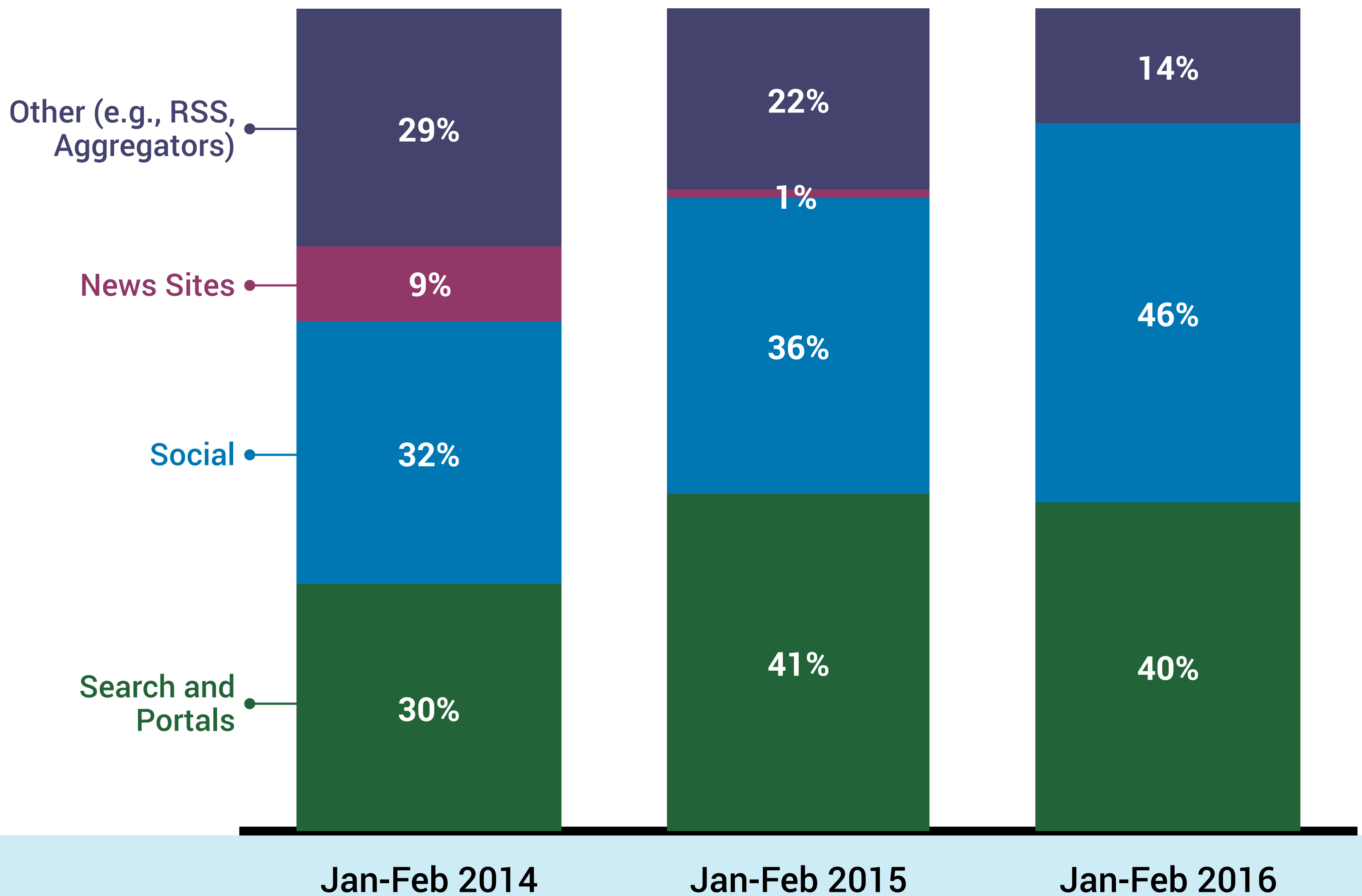
TRAFFIC TO GOOGLE AND FACEBOOK, GLOBAL, 2013-2015, PERCENT OF TOTAL WEB TRAFFIC



Sources: Activate analysis, Parse.ly

The major search and social platforms have squeezed out news sites to solidify their control over publishers

NEWS/INFORMATION REFERRAL TRAFFIC BY SOURCE, U.S. 2014-2016,



BY THE NUMBERS

+14%
Growth in U.S. consumers using social media for news, 2014-2016

+6%
Growth in number of consumers using push notifications for news, 2014-2016

44%
Share of social news consumers using Facebook as primary source, 2016

Sources: Activate analysis, Parse.ly, Reuters

Major platforms dictate increasingly strict discovery requirements for media creators during each platform shift

SEARCH ENGINE OPTIMIZATION

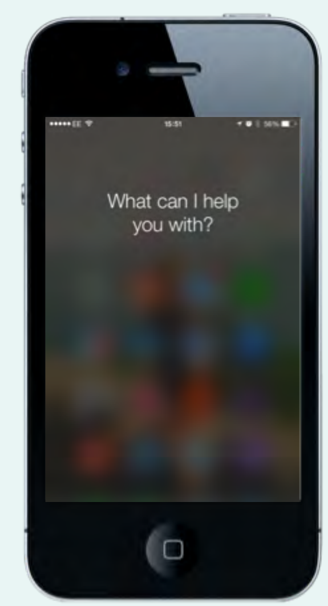
- Evolving SEO requirements require publishers to constantly tweak content in order to guarantee discovery
- Favors larger publishers with advanced technical capabilities and awareness of most recent Google/Bing updates

FIRST-PARTY PUBLISHING

- Discovery on social platforms require loosening control over the ad stack and sharing advertising revenues
- Recent Facebook algorithm tweaks favor user-generated content over publisher content

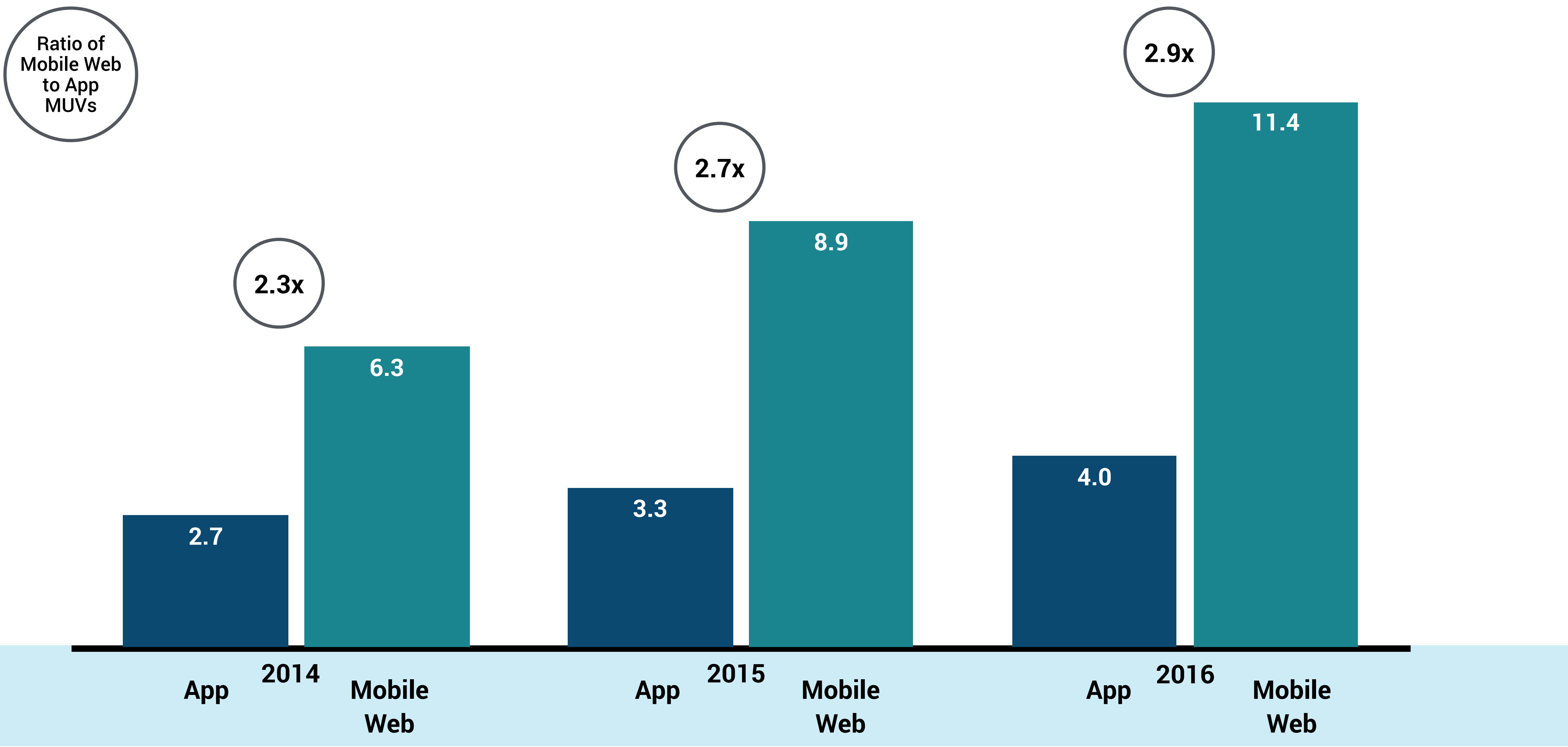
BOT APPLICATIONS

- Voice-control bots (e.g., Siri) and search widgets (e.g., Google Now) pull content from pre-determined sources and publishers
- Discovery algorithms on these platforms will grow in influence



In terms of mobile, traffic for the top 50 sites increasingly exceeds direct app traffic, and is now almost three times greater

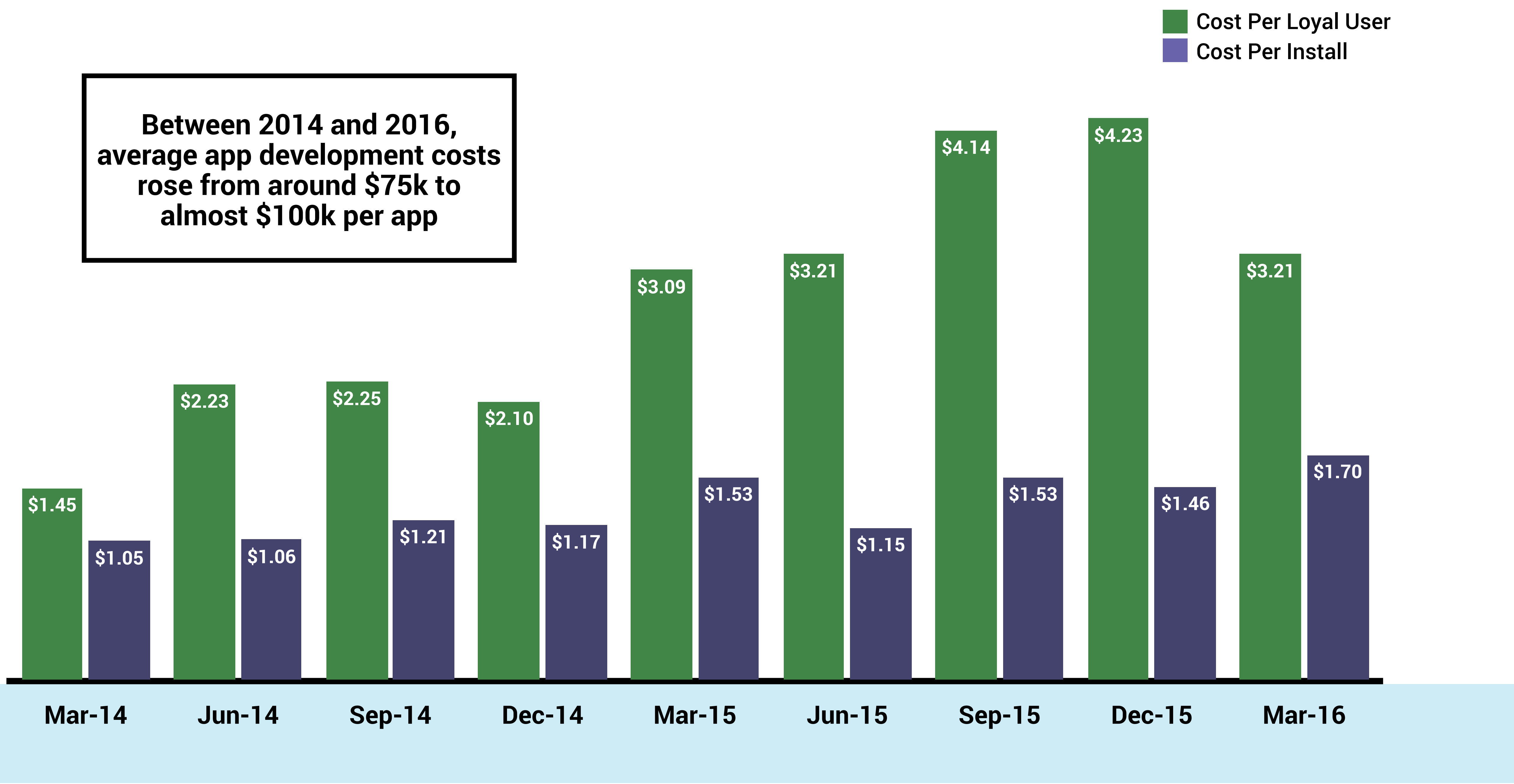
MEDIAN MONTHLY UNIQUE VISITORS OF TOP 50 MOBILE SITES AND APPS, U.S., AUGUST 2014-2016, MILLIONS



Sources: Activate analysis, comScore, Morgan Stanley

Discovery challenges and increasing development costs are making new apps largely uneconomical

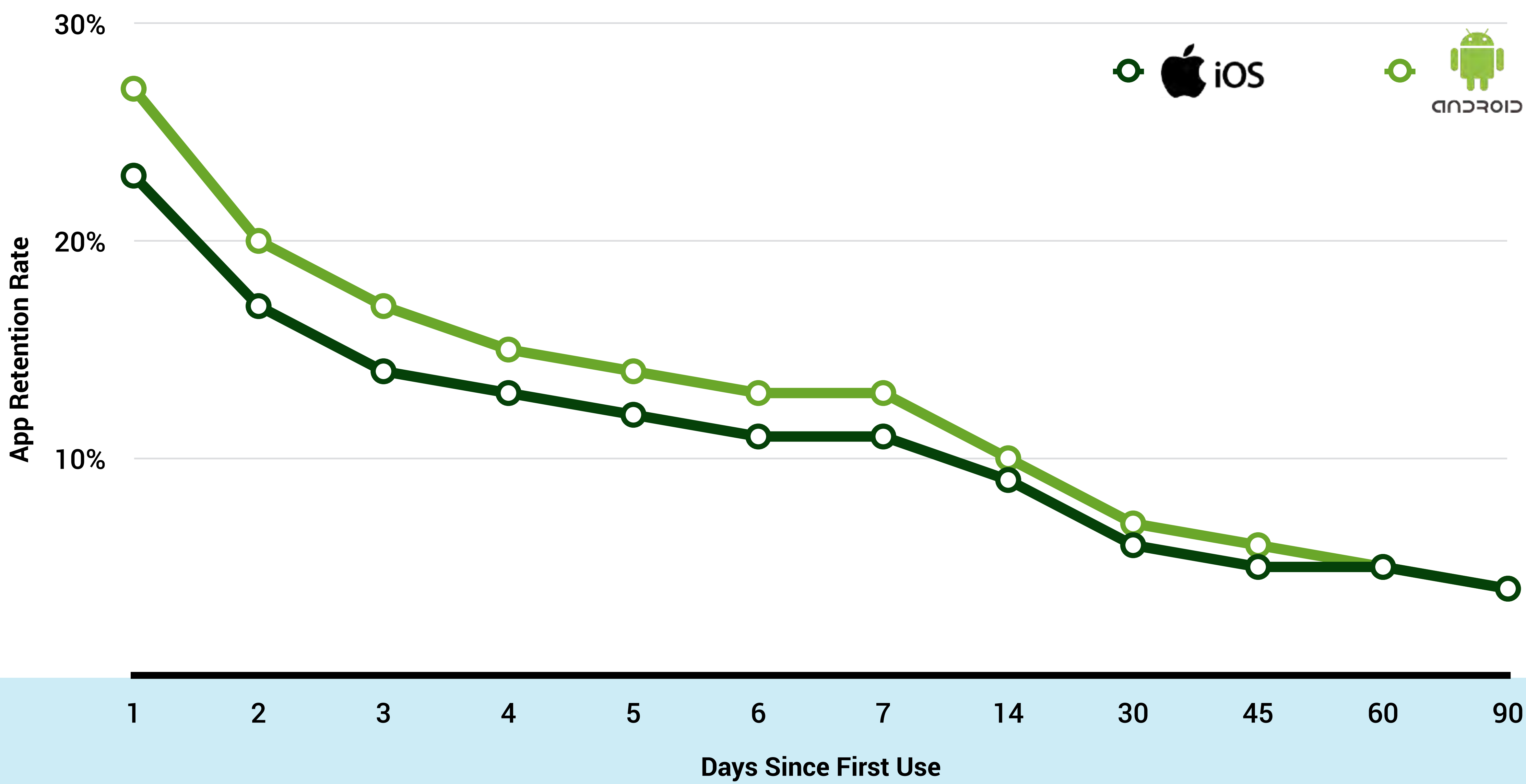
AVERAGE MOBILE APP CPLU*/CPI AND DEVELOPMENT COST, GLOBAL, 2014-2016, USD



*CPI/CPLU data for iOS applications.
Sources: Activate analysis, Blur, Fiksu

Even when a consumer discovers and downloads an app, they are highly unlikely to repeatedly use it; some people download and never use

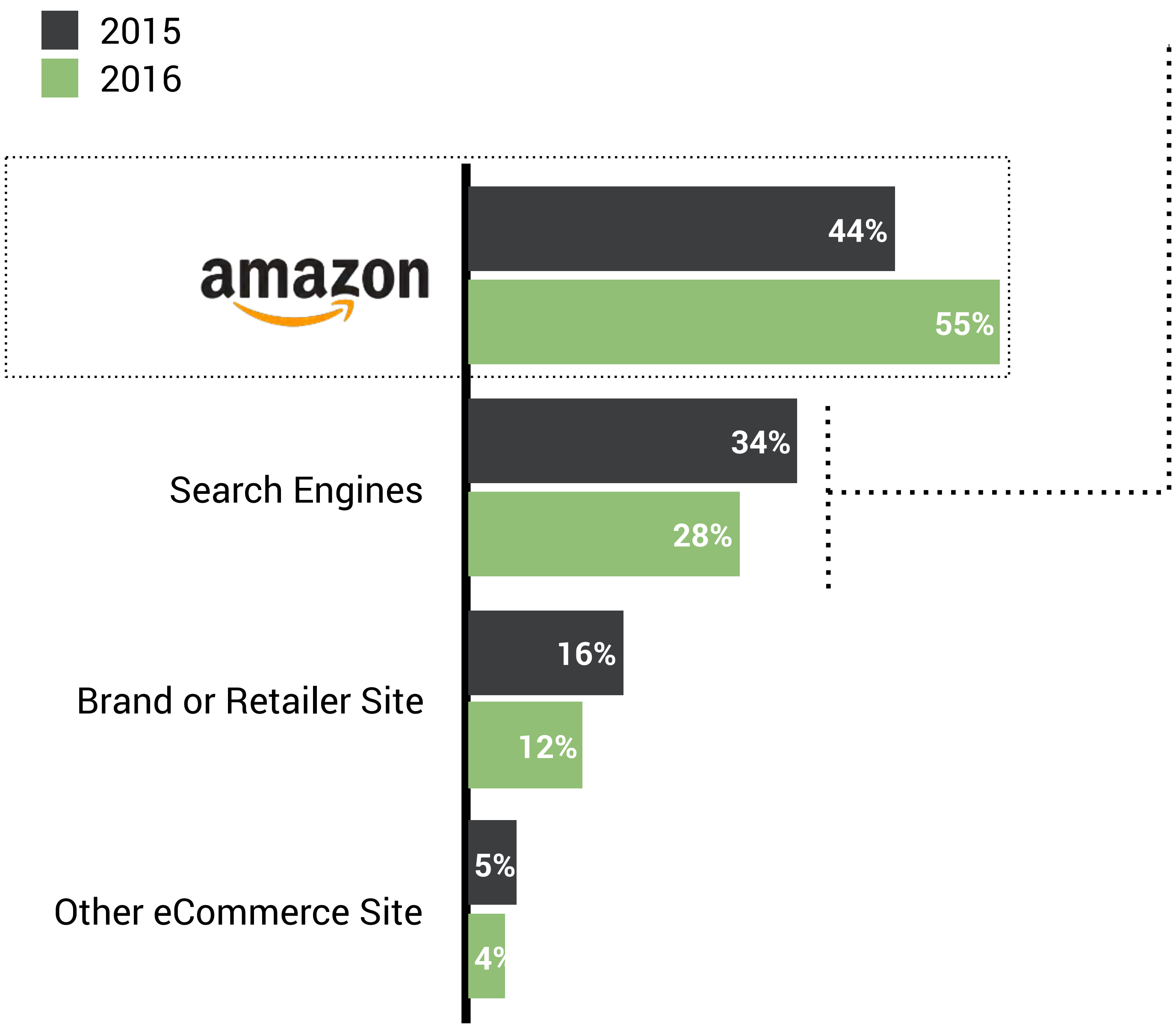
APP RETENTION RATE BY DAYS SINCE FIRST USE, GLOBAL, 2016, RETENTION PERCENT



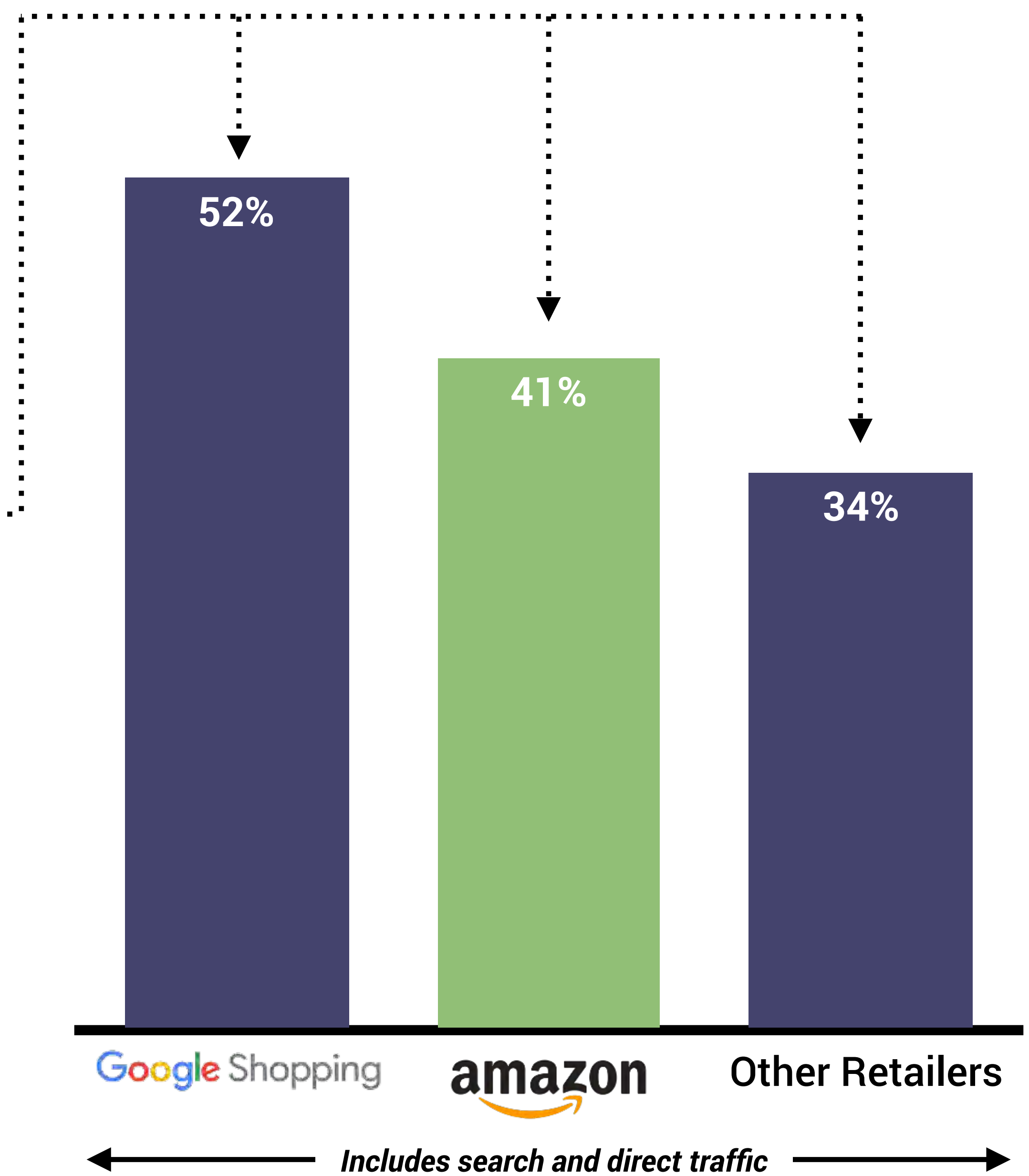
Sources: Activate analysis, eMarketer, Localytics

In eCommerce, Amazon and Google are increasingly becoming discovery vehicles for online shopping

WHERE SHOPPERS START THEIR PRODUCT SEARCH, U.S., 2015-2016, PERCENT OF RESPONDENTS



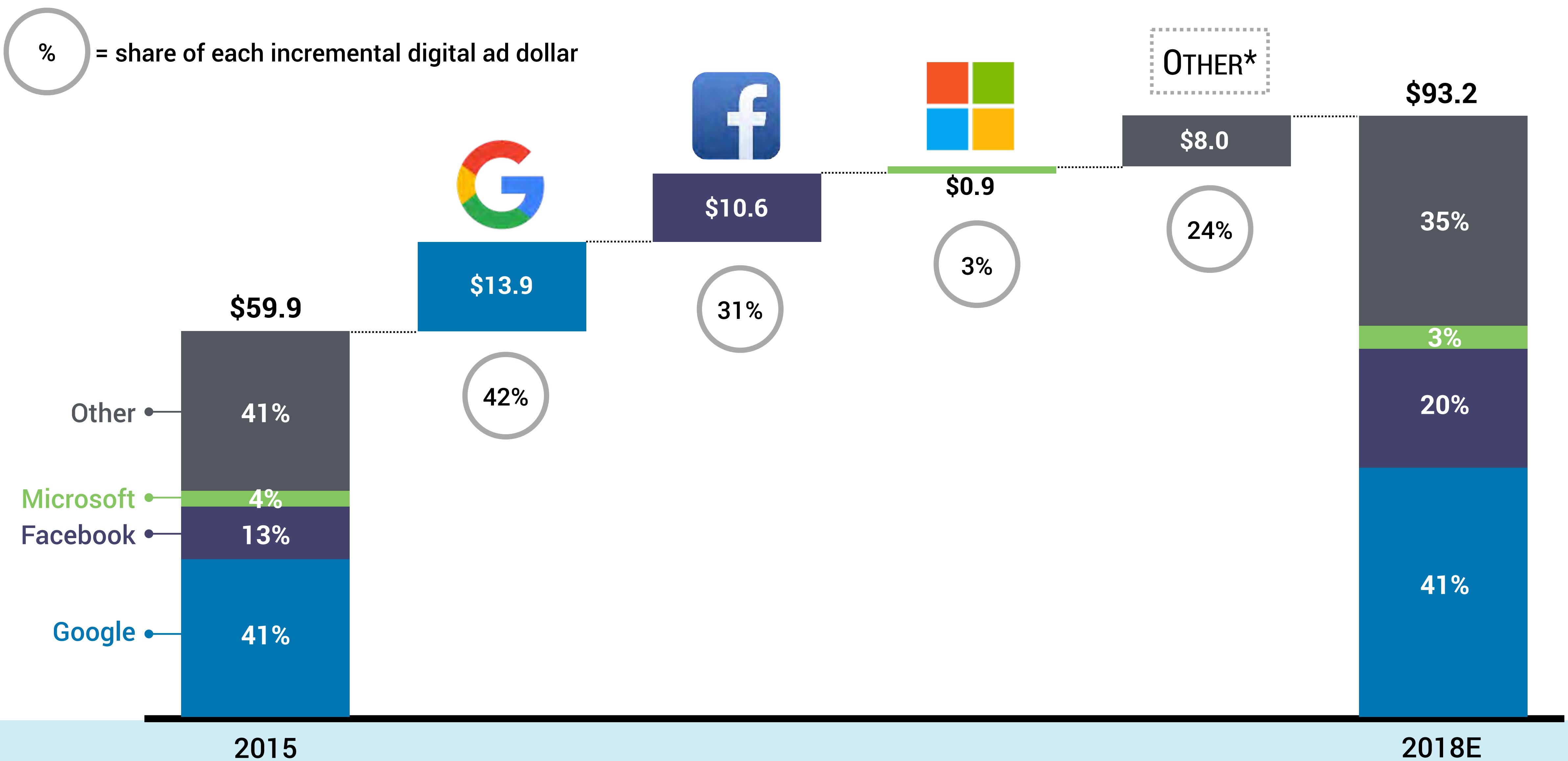
SHOPPING SITES VISITED AFTER GOOGLE SEARCH, U.S., 2016, PERCENT OF RESPONDENTS



Sources: Activate analysis, BloomReach, PowerReviews

Overall, discovery dominance translates into revenue — Google and Facebook are expected to command 73% of each additional digital ad dollar over the next three years

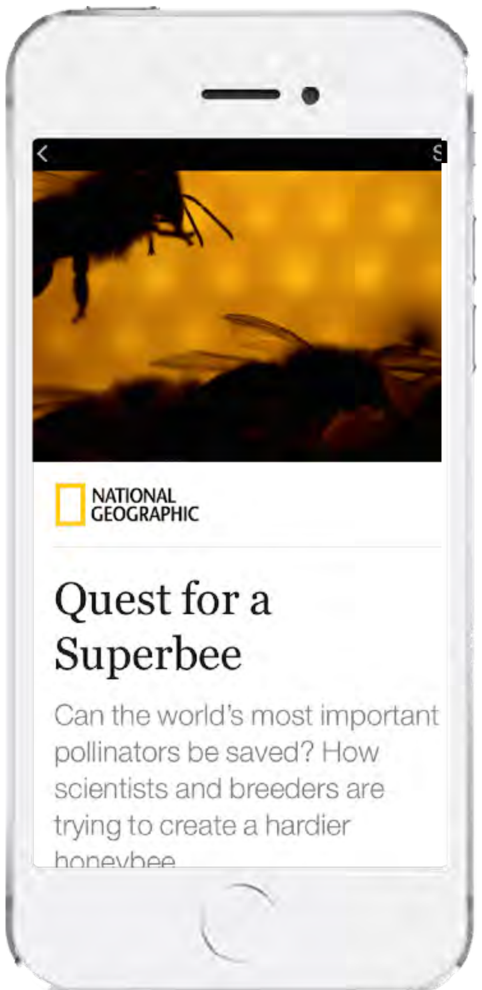
DIGITAL AD REVENUE GROWTH BY PLATFORM, U.S., 2015-2018E, BILLIONS



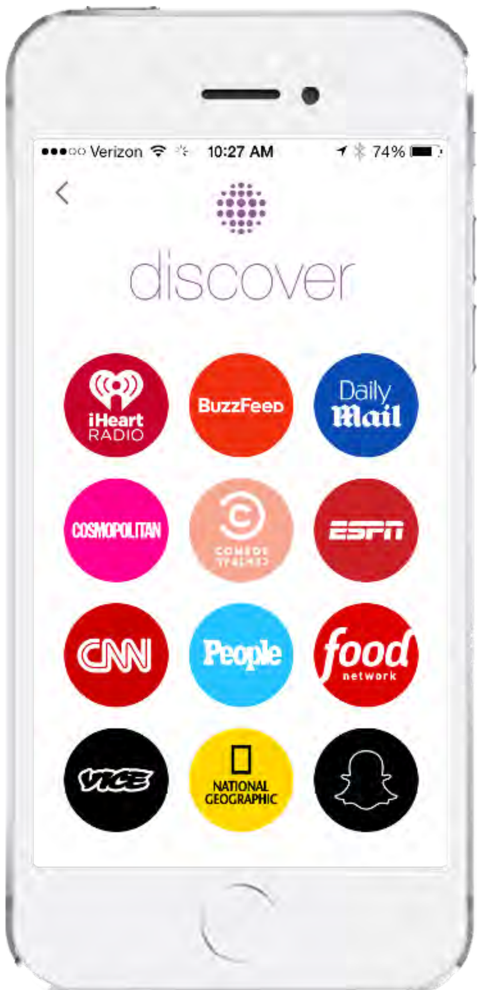
Note: Figures will not sum perfectly due to rounding.
*Includes digital revenues from both traditional and digital native media companies.
Sources: Activate analysis, eMarketer, IAB, MoffettNathanson, PwC

First-party publishing initiatives will strengthen digital platforms as a source of content discovery

INSTANT ARTICLES	DISCOVER	ACCELERATED MOBILE PAGES
Opened to Publishers in April 2016	Launched in January 2015	Launched in February 2016



Facebook is default white-listed ad platform



Google is default white-listed ad platform

Successful content platforms build sophisticated curation engines into their offerings or integrate with third-party virtual assistants

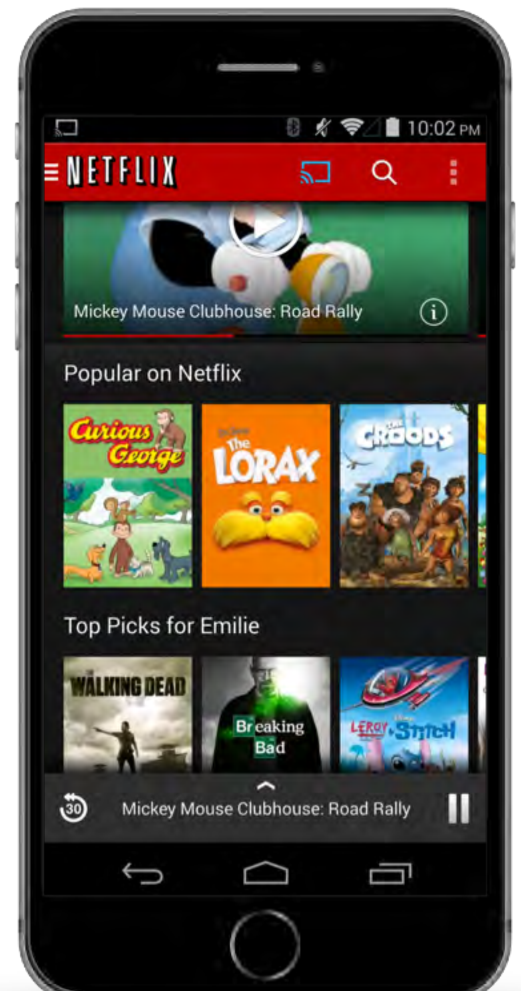
Spotify Discover: Curated playlists for users based on listening history

71% Discover Weekly listeners save at least one track to personal playlists

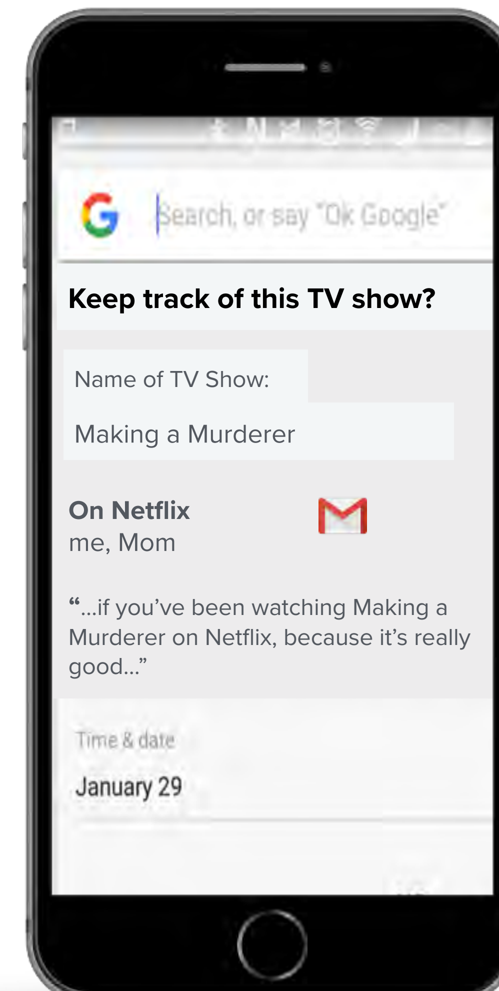
60% Discover Weekly listeners stream at least five of the playlist's tracks

Netflix: Updated global recommendations and bot integration

Native Recommendation Engine



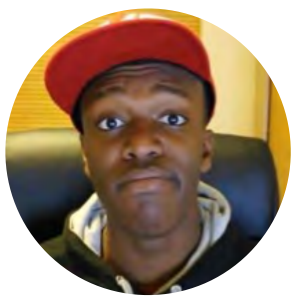
Integrated Into Virtual Assistant



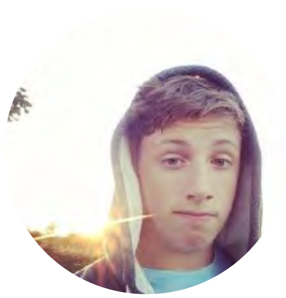
Sources: Activate analysis, Netflix, Spotify

Nurturing fan culture and developing communities are some of the few ways for media companies to overcome the Discovery Oligopoly's user control

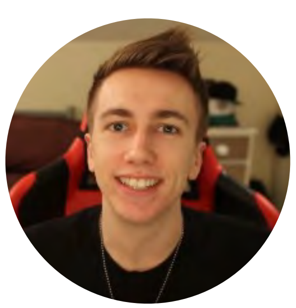
"SIDEMEN" FIFA COMMUNITY



KSI — 14.8 MILLION SUBSCRIBERS



W2S — 8.5 MILLION SUBSCRIBERS



Miniminter — 5.2 MILLION SUBSCRIBERS

- Group of partnered FIFA YouTubers
- Promotion of FIFA titles and add-ons
- Merchandise sales and online stores
- Gaming-oriented music singles
- Sponsored gaming content
- Game promotions through "Let's Play" series
- Social media presence

FRANCHISE GAME COMMUNITIES

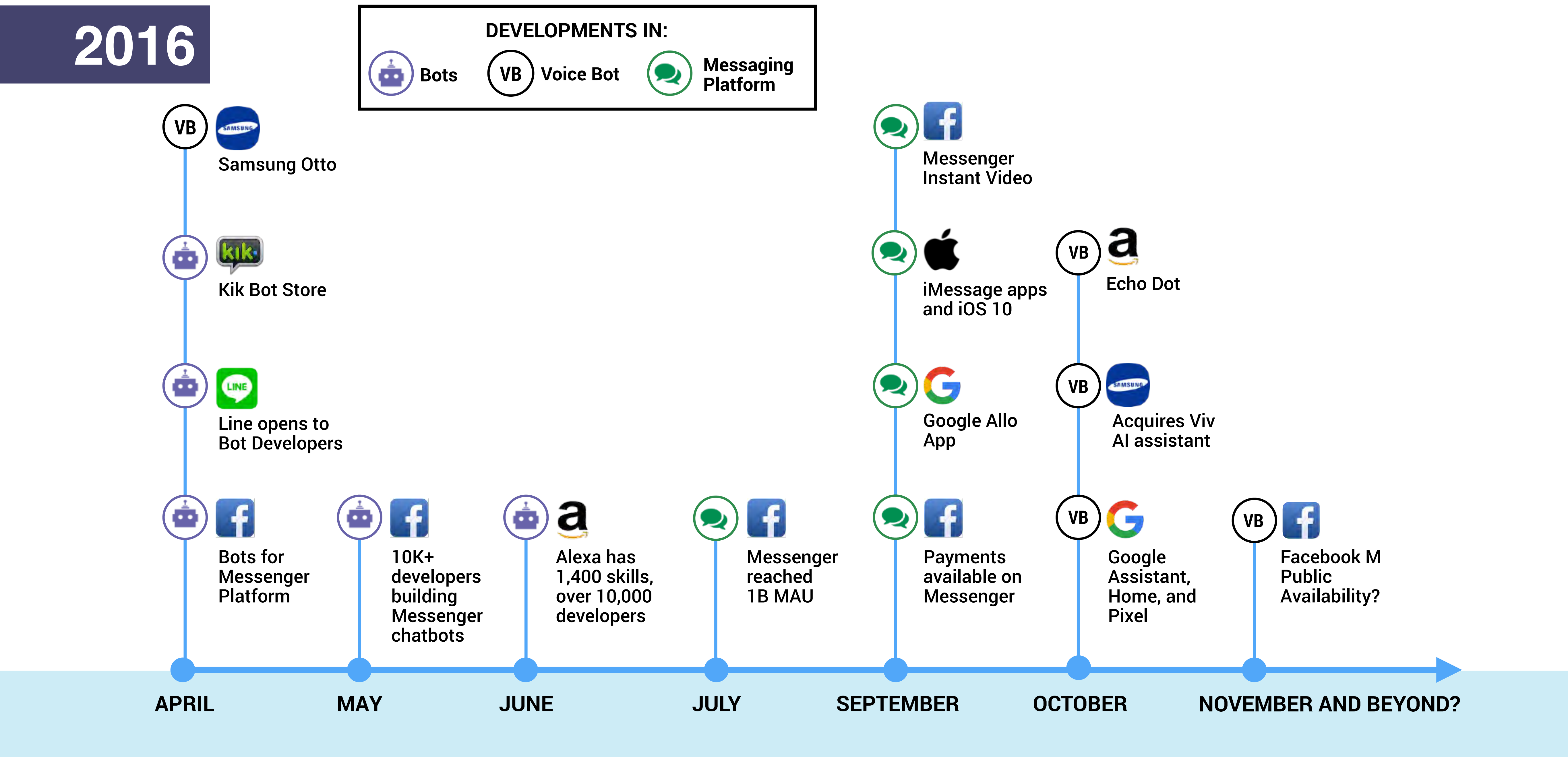
T2 TAKE TWO INTERACTIVE
- 2K SPORTS
- RED DEAD REDEMPTION
- grand theft auto
- BIOSHOCK

EA
- STAR WARS BATTLEFRONT
- FIFA
- MADDEN NFL
- BATTLEFIELD

The 9 Most Important Insights for Tech and Media in 2017

- Super-serve the Super-users and Chase the Attention Unicorns
- Subscriptions will Feed the World (or at least Internet and Media Businesses)
- Learn to Live with the Discovery Oligopoly
- **The Bot Battles are about Winning the Great Messaging War**
- eSports is the Next Tech Phenomenon
- You Already Know the New Winners in Pay TV
- Video Streaming: The Bundle is the Future
- Audio: Smart Speakers, Gray Music
- Post-Household America: A New Era of Users

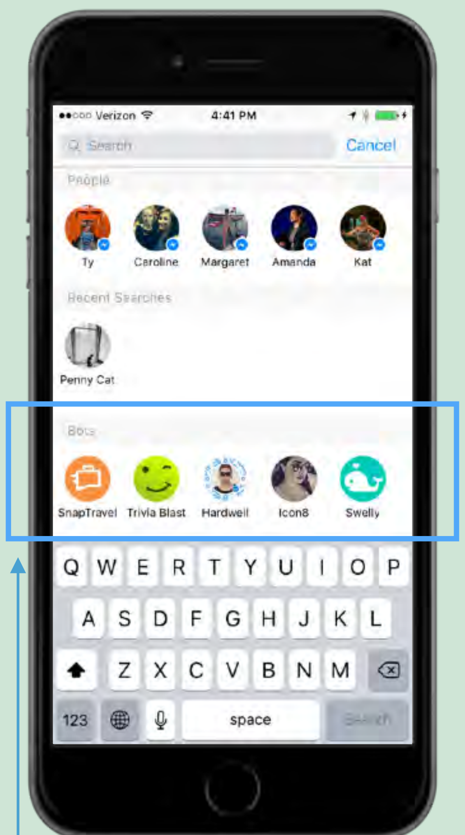
Bot proliferation began in early 2016; in less than six months, each of the major tech platforms either launched a bot platform, created a messaging app, or both



Sources: Activate analysis, Company websites and press releases

Despite all the investment, bots are still in their infancy, with real challenges to functionality, discovery, adoption and monetization

POOR DISCOVERABILITY

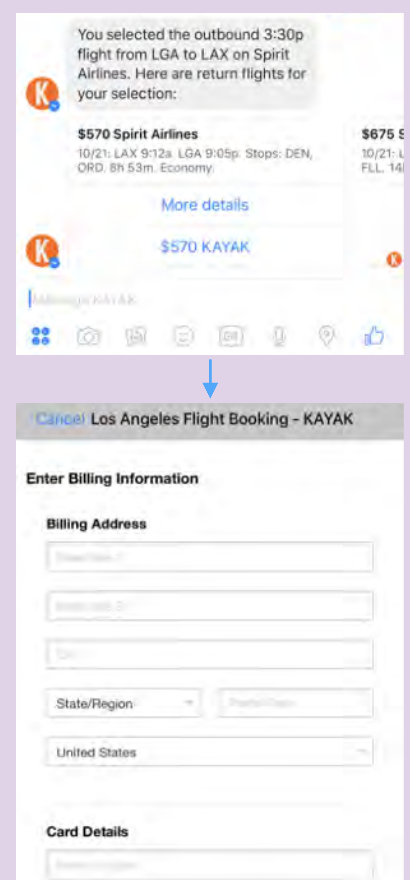


Bot discovery in FB Messenger is limited to featured placement and user search

POOR USER EXPERIENCE, LIMITED AI

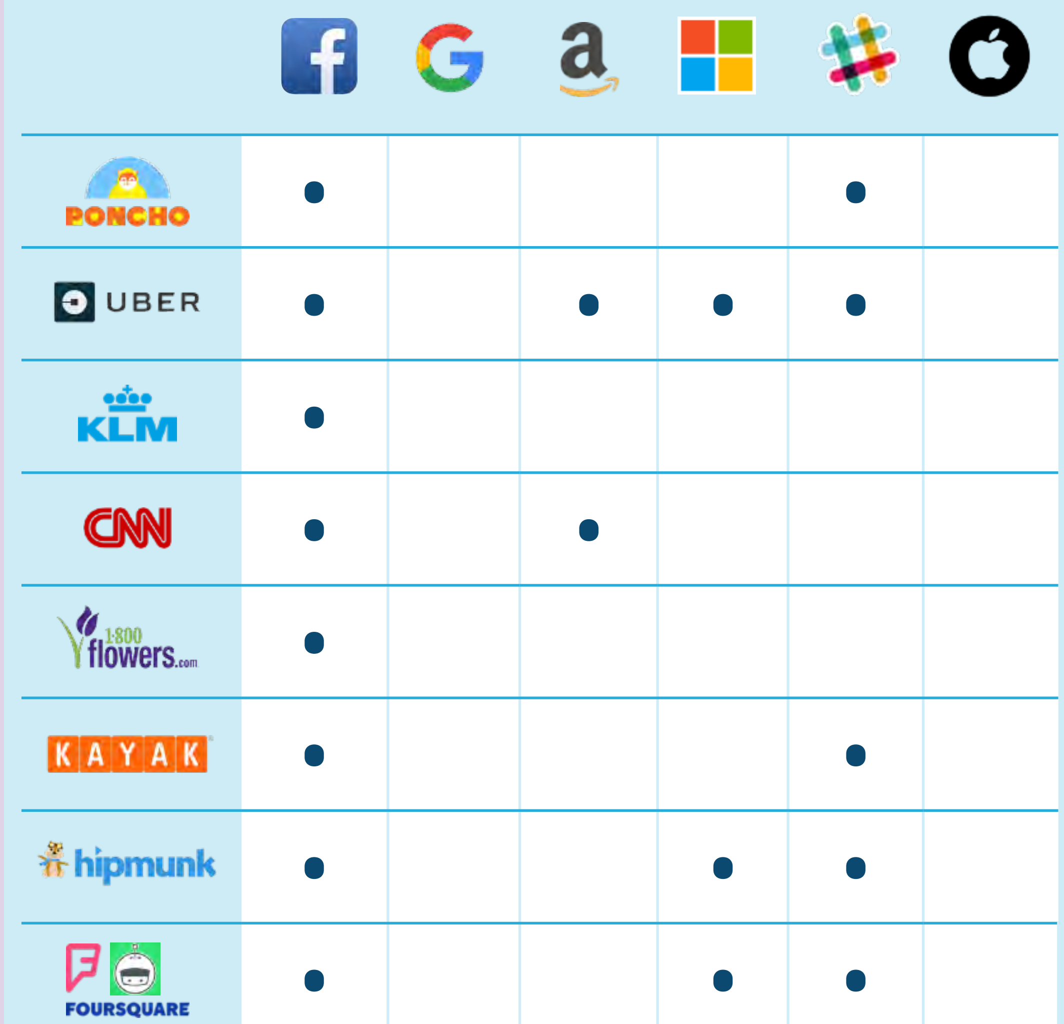
Natural language recognition and responses for many services require refinement

LIMITED PAYMENT INTEGRATIONS



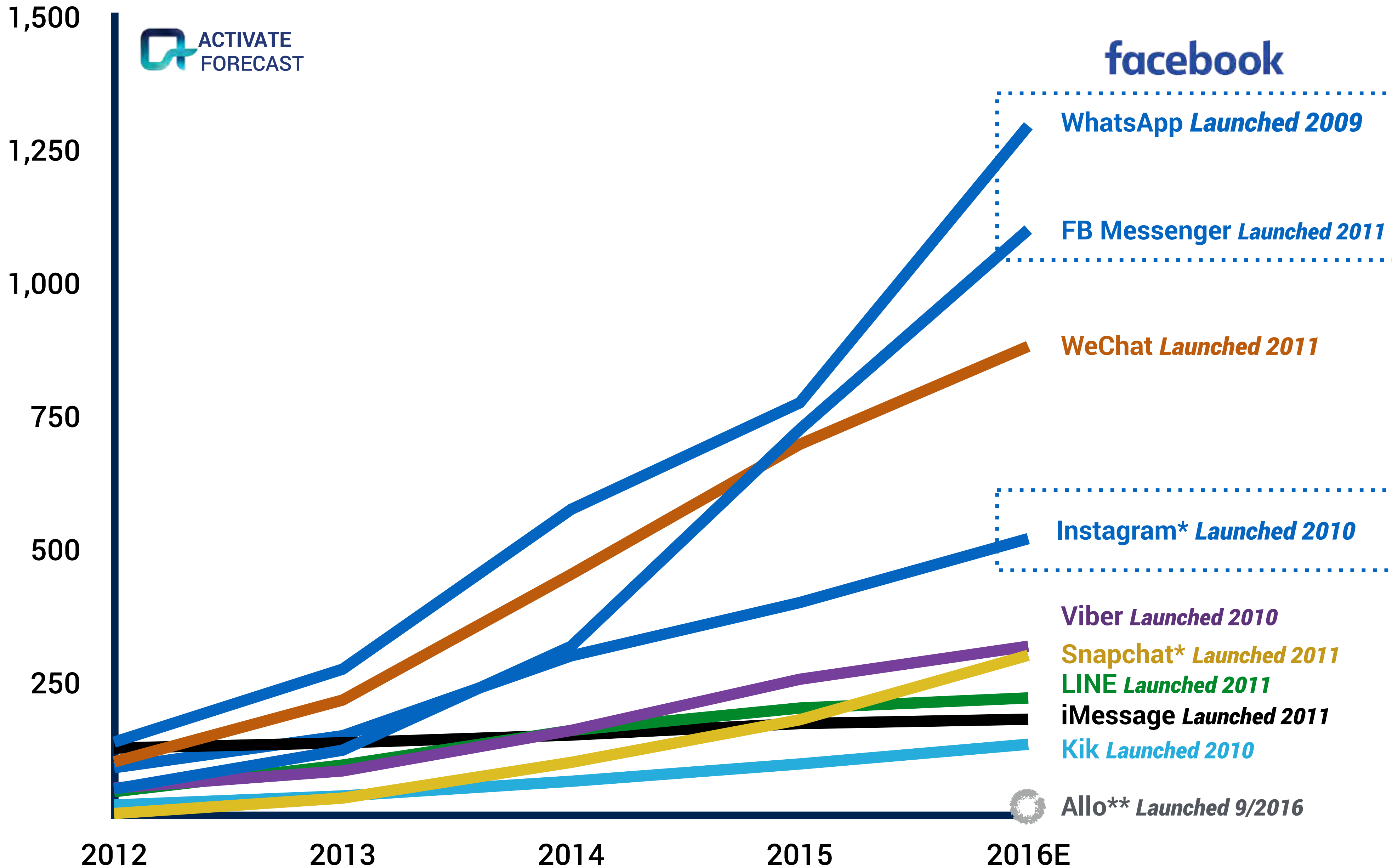
Many bots redirect users to external sites for payment

LACK OF CROSS-PLATFORM DISTRIBUTION



The bot battles are about growing each company's messaging services—and stopping Facebook's march to total world domination

USE OF MAJOR MESSAGING PLATFORMS, GLOBAL, 2012-2016E, MONTHLY ACTIVE USERS,

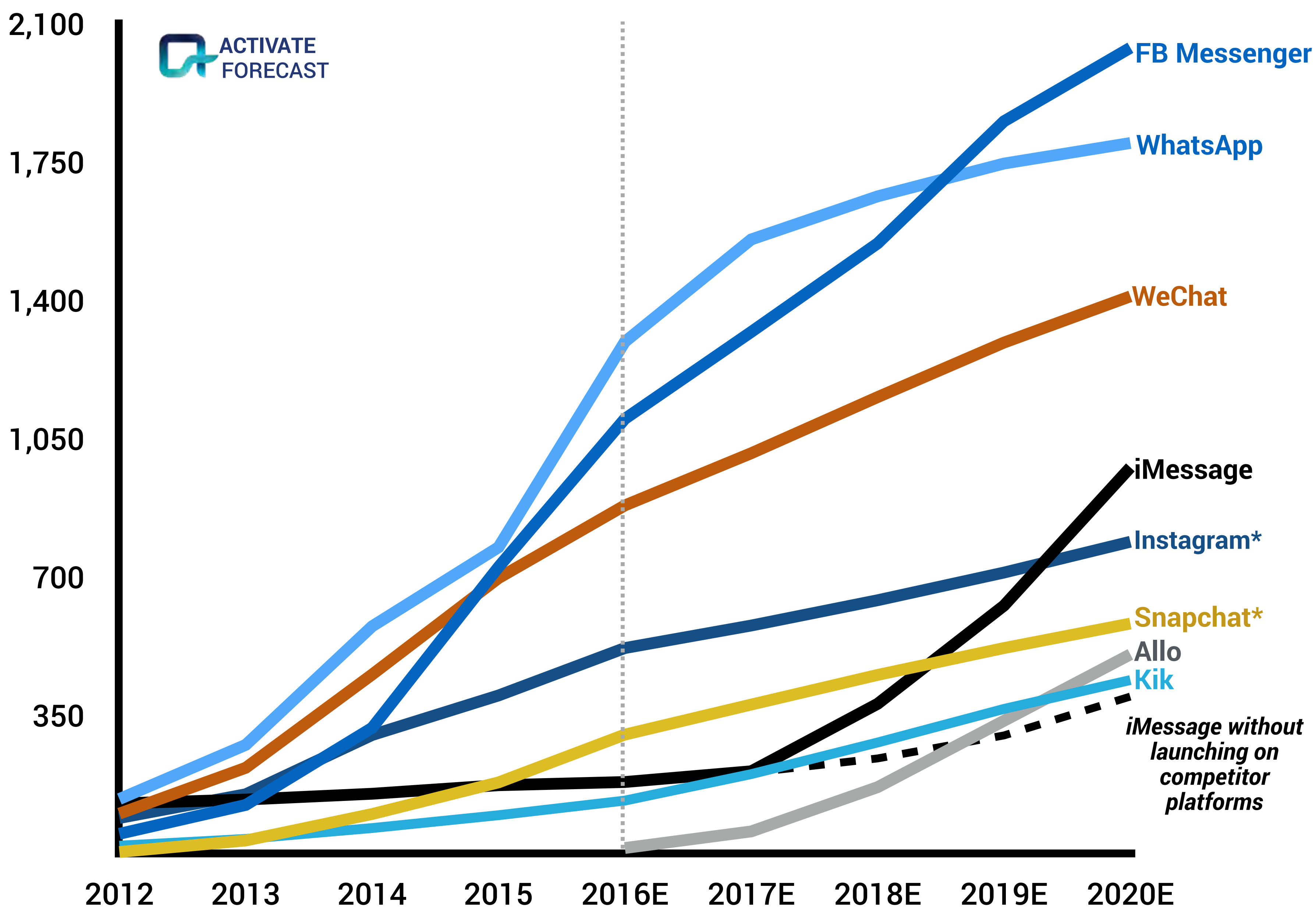


- Facebook messaging properties comprise a majority of global usage
- Google launched Allo to compete against Messenger and provide a home for Google Assistant to live across platforms
- Hybrid platforms, e.g., Snapchat and Instagram, are experiencing notable growth as each bolsters social media presence with messaging features

Note: Messaging defined as communicating in real time with other contacts; social defined as broadcast sharing of updates, images, videos, etc.
*Hybrid messaging apps
**No data available for MAU of Allo
Sources: Activate analysis, Company websites, eMarketer, GlobalWebIndex, SNL Kagan, TechCrunch, US Census

The messaging wars are far from over, and various market dynamics could tip the balance of power

SCENARIOS: MAJOR MESSAGING PLATFORMS, GLOBAL, 2012-2020E, MONTHLY ACTIVE USERS, MILLIONS



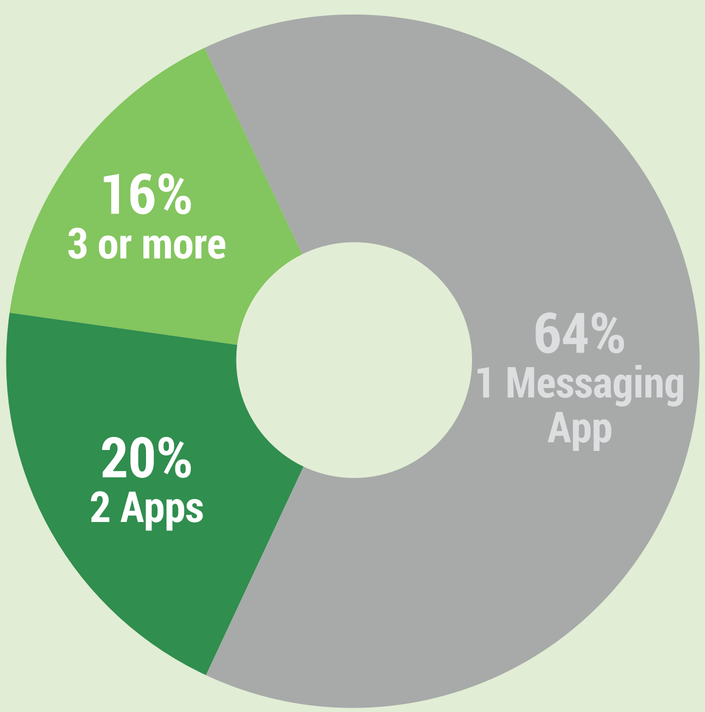
What would you have to believe?

- FB Messenger can reach 2B+ MAUs by entering China and innovating features e.g., payments and M assistant
- WhatsApp's growth could flatten due to reaching saturation and lack of content beyond emoji
- WeChat could have issues expanding adoption beyond Asia at meaningful scale
- Releasing iMessage onto all competitive platforms, launching Siri as a messaging assistant, and significantly supporting the messaging app/bot developer community could help iMessage approach 1B MAUs
- Apple risks a much flatter path for iMessage if it does nothing to evolve the service
- Instagram and Snapchat continue growing, but at a slower rate, as direct competition between the two intensifies
- Allo could skyrocket if it becomes a GMS component, the default messenger/SMS client in Android, and more of a central interface for Google search
- A potential Amazon acquisition of Kik and integration of Alexa and commerce could drive Kik usage, growth and purchases

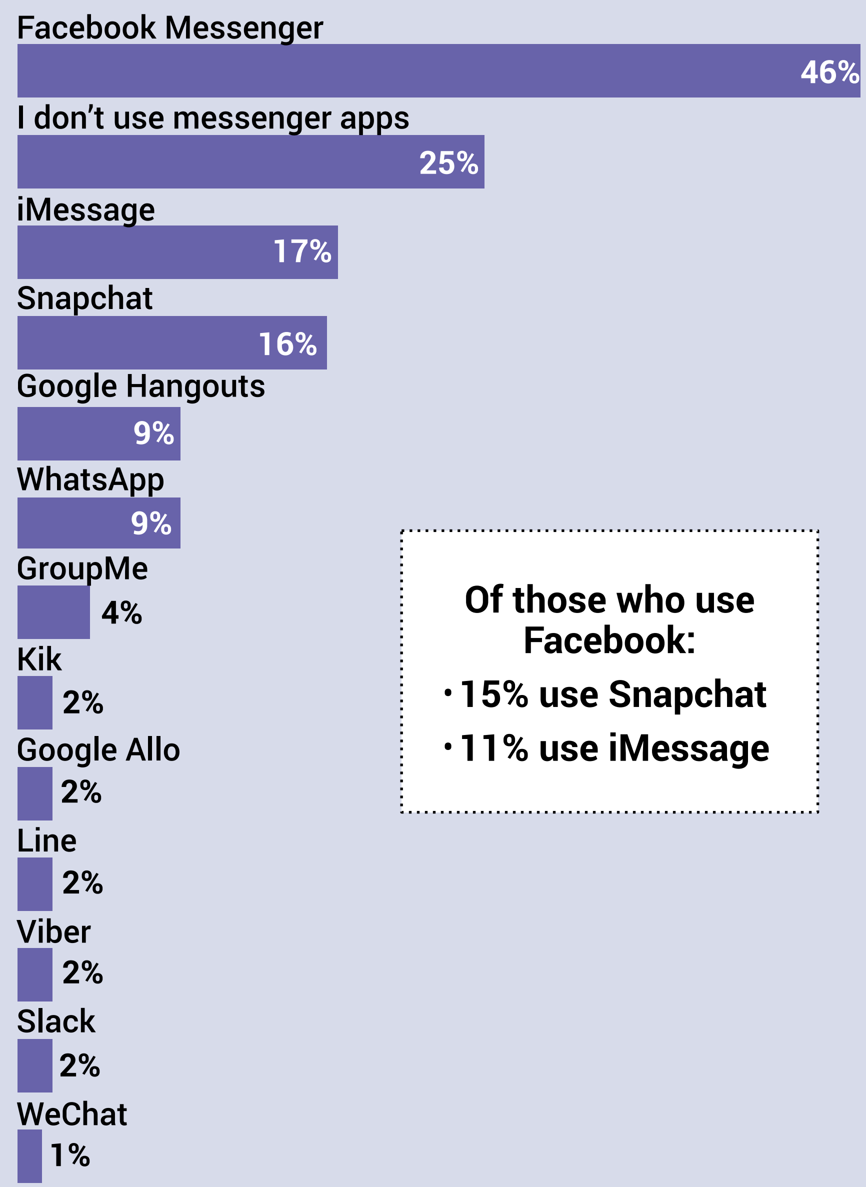
*Hybrid messaging apps
Note: Excludes Line and Viber
Sources: Activate analysis, Ark Invest, Asymco, CNET, Company websites, eMarketer, Ericsson, Forbes, GlobalWebIndex, IDC, SNL Kagan, TechCrunch, US Census

The messaging war will not be a winner-takes-all; consumers will use multiple messaging services

TODAY, 36% OF CONSUMERS SAY THEY USE TWO OR MORE MESSAGING APPS



CONSUMERS ALREADY USE MULTIPLE APPS EACH MONTH



Of those who use Facebook:

- **15% use Snapchat**
- **11% use iMessage**

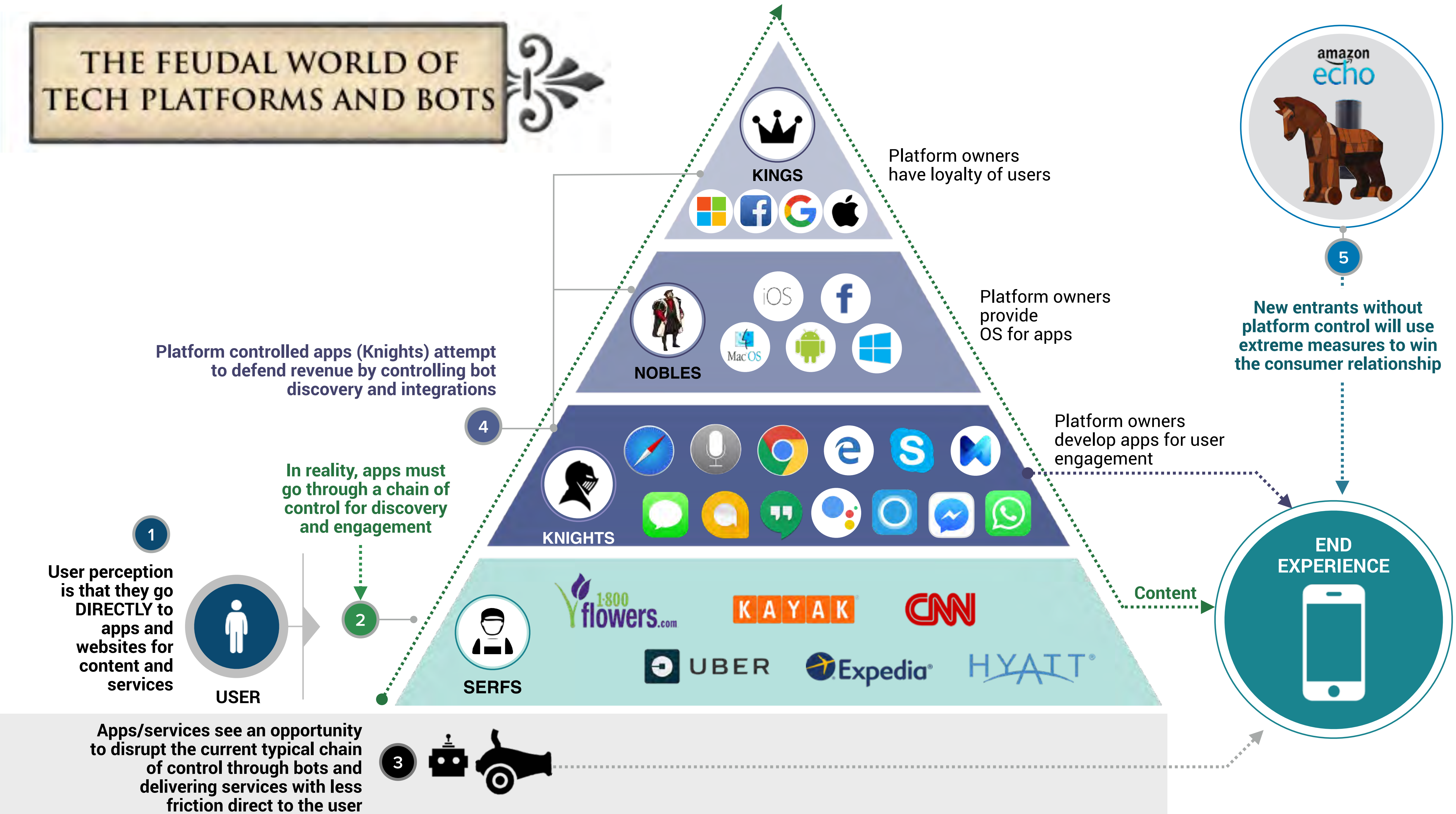
MARKET DIFFERENTIATION

Customers currently see the most popular messaging platforms as differentiated, with each possessing its own inherent value proposition. For example:

- **iMessage** is used to communicate **conversationally with close friends**
- **Snapchat Stories** are used to distribute **viral content to large audiences**
- **Facebook** is used for its **directory value**

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,003)

Messaging wars are being fought to control the consumer relationship and interaction path to functionality and content



Source: Activate analysis

What's at stake? This goes far beyond messaging—it's about defending each major platform's core revenues and consumer bases

CORE AREAS OF PLATFORM CONTROL

SEARCH ADVERTISING
APPS
RETAIL E-COMMERCE
SOCIAL MEDIA ADVERTISING
ENTERPRISE

WHAT IS AT STAKE FOR THE MAJOR PLATFORMS?

Google, Microsoft	Bots facilitate search on major platforms and messaging apps, many of which leverage Bing instead of Google, reducing Google's search stronghold
Apple, Google	Many bots offer the same content and services as apps, drawing users away from the app store and traditional forms of discovery
amazon	Messaging holds potential for alternative platform product discovery and purchase
facebook, snapchat	Messaging has potential to create stickiness on particular social platforms, or move social behavior from old platforms to messaging platforms
slack, Microsoft	B-to-B messaging and productivity integration threaten existing enterprise platforms

Source: Activate analysis

Companies entering the enterprise messaging space anticipate that the workplace will adopt messaging and use it as the primary interface for internal communication and collaboration

	ENTERPRISE MESSAGING PLATFORMS			
	Enterprise Communication	Document Storage and Search	Document Creation	Bot Platform
Office	🟢	🟢	🟢	
G Suite	🟢	🟢	🟢	
slack	🟢	🟢	🟡	🟢
LinkedIn Messaging	🟢			
skype	🟢	🟢		🟢
yammer	🟢	🟢		
Bloomberg PROFESSIONAL	🟢	🟢		
salesforce chatter	🟢	🟢		🟢
Workplace by facebook	🟢	🟢		
SYMPHONY SOFTWARE FOUNDATION	🟢	🟢		

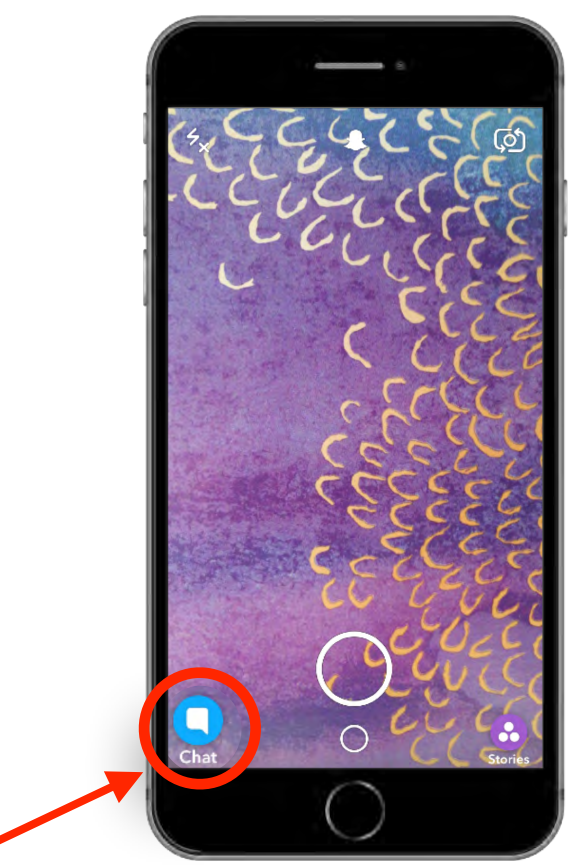
🟢 In-place integrations 🟡 Add-on integrations

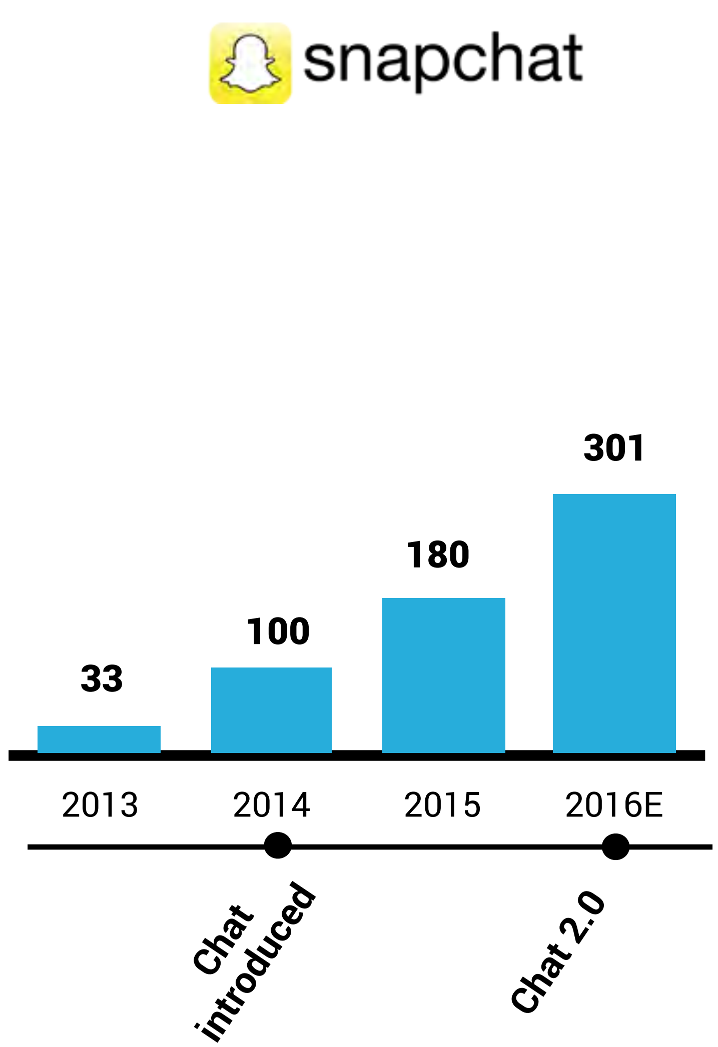
Sources: Activate analysis, Company websites, LinkedIn, Salesforce Annual Report, Salesforce appexchange, Quartz

Hybrid sharing/messaging platforms will also gain traction and capture daily digital behavior

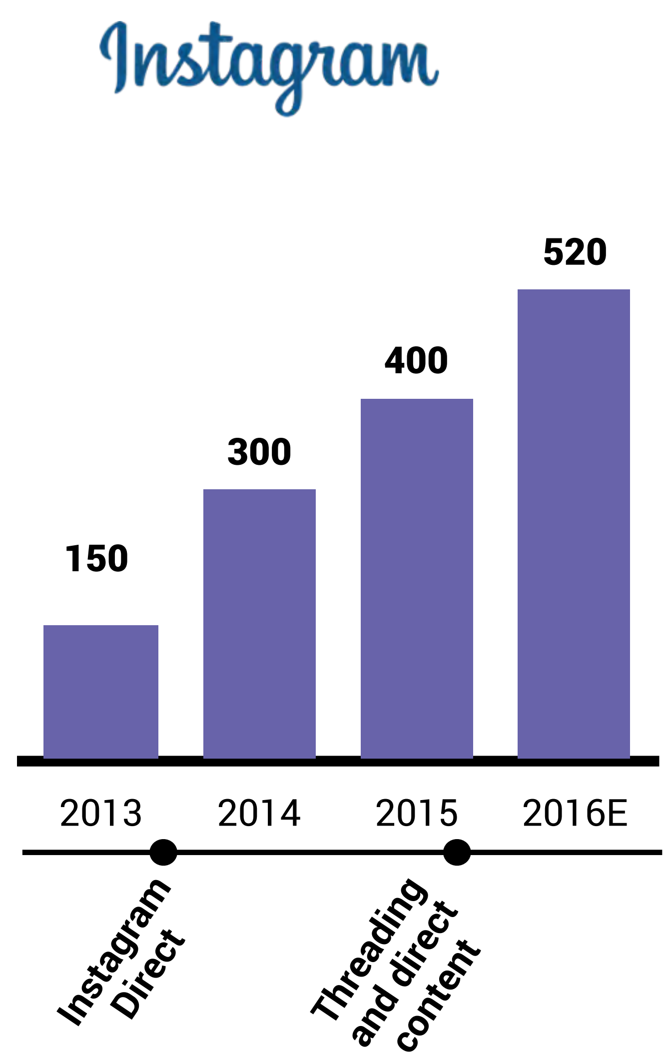
Instagram Direct	Snapchat "Chat"	Instagram Direct with threading and direct content	Snapchat "Chat 2.0"
DECEMBER 2013	MAY 2014	DECEMBER 2014	MARCH 2016

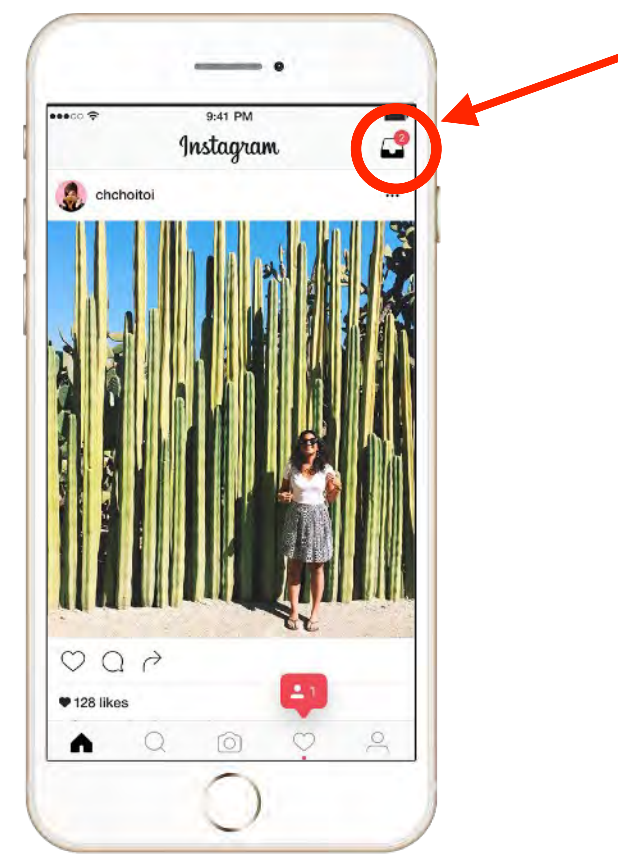
SNAPCHAT MONTHLY ACTIVE USERS, GLOBAL, 2013-2016E, MILLIONS





INSTAGRAM MONTHLY ACTIVE USERS, GLOBAL 2013-2016E, MILLIONS





Sources: Activate analysis, Adweek, Bloomberg, eMarketer, Instagram, SNL Kagan

The voice bot market started very differently from chatbots, relying on hardware-connected platforms like Amazon Alexa instead of text-based messaging

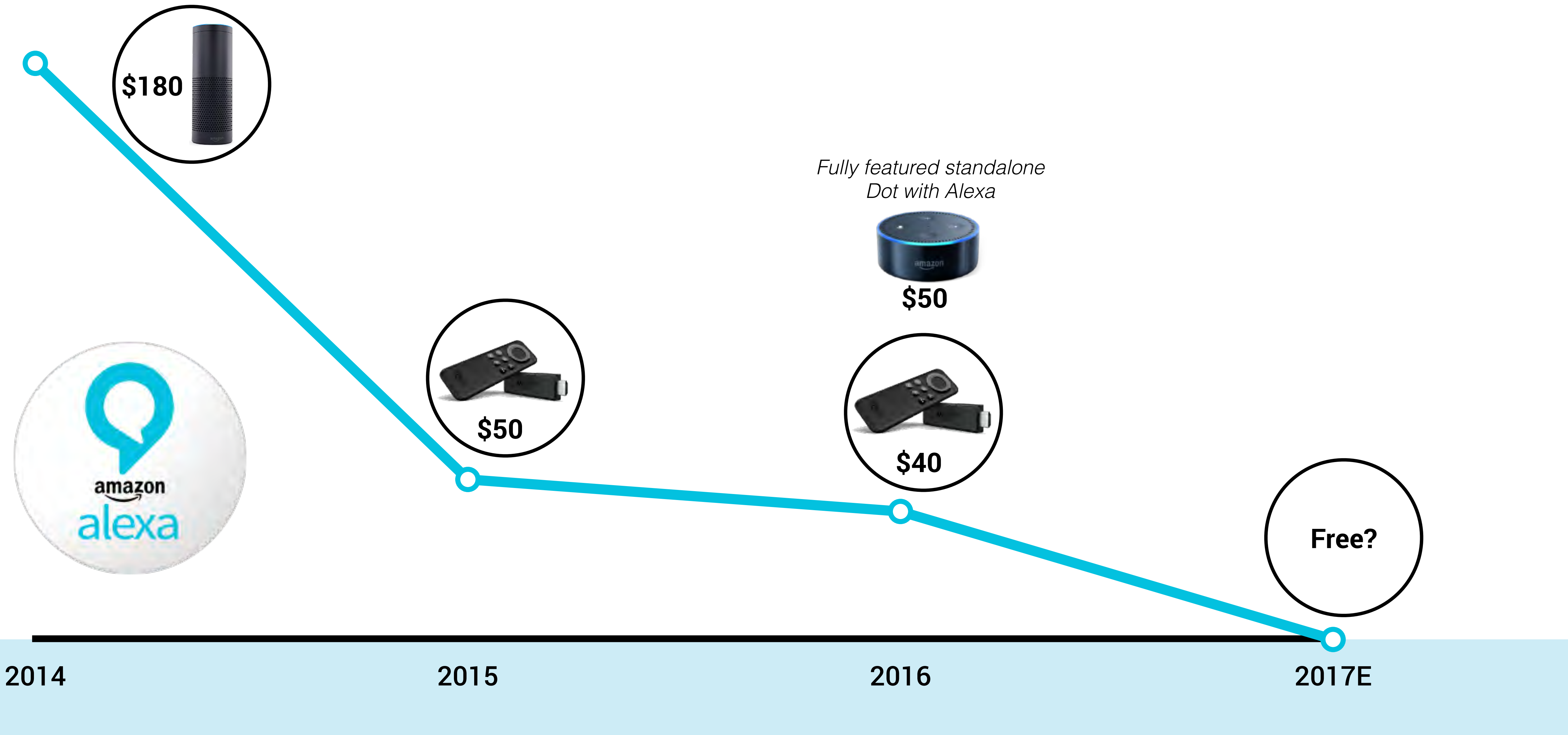
HARDWARE WITH VOICE BOTS BY INITIAL LAUNCH YEAR, 2011-2014

	2011	2012	2014	2014
COMPANY		Google	Microsoft	amazon
VOICE BOT	Siri	Google Now	Cortana	amazon alexa
HARDWARE	 iPhone 4S	 Galaxy Nexus	 Lumia phones running Windows Phone 8	 Echo

Sources: Activate analysis, Amazon, Company websites, The Verge

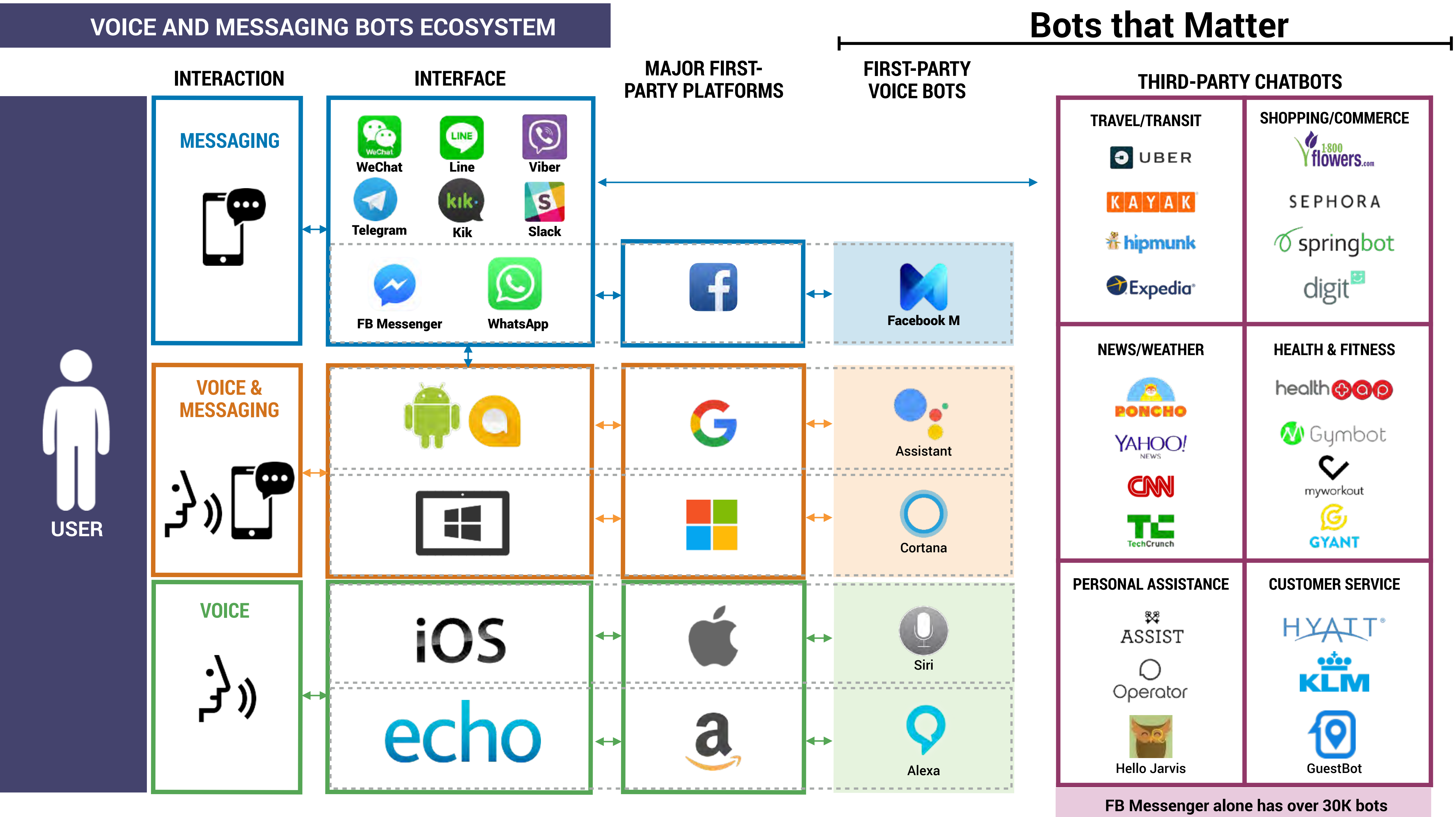
Amazon's strategy is the opposite of every other player: price subsidized, reliant on eCommerce and no text messaging platform. Alexa could be the foundation for building or acquiring a messaging service

LOWEST ENTRY PRICES FOR ALEXA ENABLED DEVICES,



Sources: Activate analysis, Amazon, The Verge

The bots that matter today are largely recognizable brands that rely on messaging apps and major platforms for distribution



Sources: Activate analysis, BotList, Facebook, Forbes, TechCrunch, The Verge

First-party bots promise to reshuffle the deck in search, as well as the way users discover information and services

	VOICE BOTS / CHATBOTS FROM MAJOR CONSUMER PLATFORMS				
	GOOGLE ASSISTANT	MICROSOFT CORTANA	APPLE SIRI	AMAZON ALEXA	FACEBOOK M*
SEARCH	G	bing	bing	bing	bing
BROWSING	Chrome	Edge	Safari	N/A	N/A
PROFILE	Cloud-Based	Cloud-Based	Device-Based	Cloud-Based	Cloud-Based
LOCATION	Google Maps	Bing Maps	Apple Maps	N/A	N/A
DEFAULT CONTENT SOURCES & SELECT INTEGRATIONS	Google Finance Google News Weather.com Zagat OpenTable Walgreens Instacart Google Play Music	MSN MSN Money Uber Foreca Yelp OpenTable Groove Music	Apple News Apple Stocks Yahoo Local Citysearch Weather.com OpenTable Yelp iTunes	AP BBC News NPR Uber Accuweather Twitter Jeopardy Dominos Amazon Music	N/A

First-party voice bots and chatbots are **deeply integrated** into the OS by platform owners in order to **direct users to preferred search results**

Competitor platforms **do not want Google to dominate** this next evolution of search or have their customer data, and **instead default to Bing**

First-party bots have access to **proprietary user data** in order to deliver tailored results

Deeply integrated, third-party content partnerships are **this era's version of "featured placement" in the app store**

SHIFT IN SEARCH

Users will no longer access platforms to find information and services. With virtual assistance, platforms will instead allow information and services to find users.

*Note: Bing search as default on Facebook M unconfirmed, though Facebook search agreement is with Microsoft
Sources: Activate analysis, Company websites, SearchEngineLand

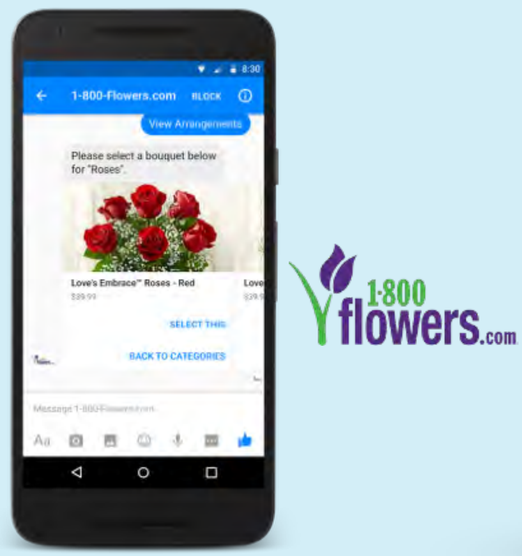
Chatbots will be successful in use cases where interactions are simple, fast and easily automated

LIKELY WINNING BOT USE CASES

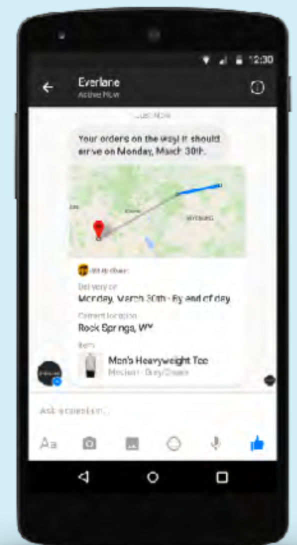
DECISION TREES

LOCAL SERVICES

ECOMMERCE

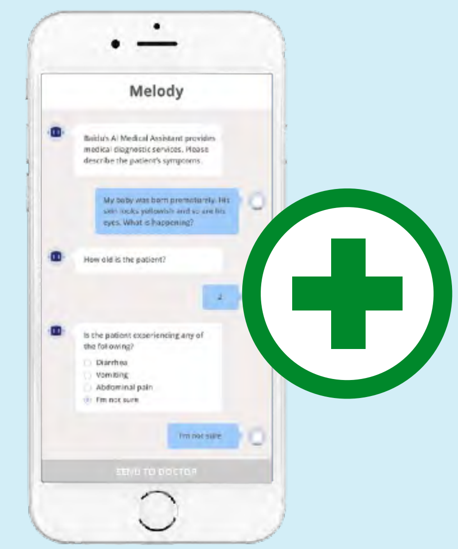


CUSTOMER SERVICE



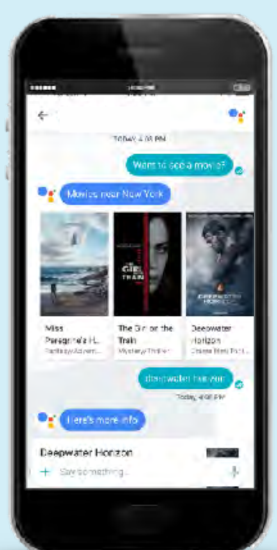
When can I expect my order?

QUICK DIAGNOSTICS



COMMANDS OR PASSIVE SUGGESTIONS

CONVERSATIONAL

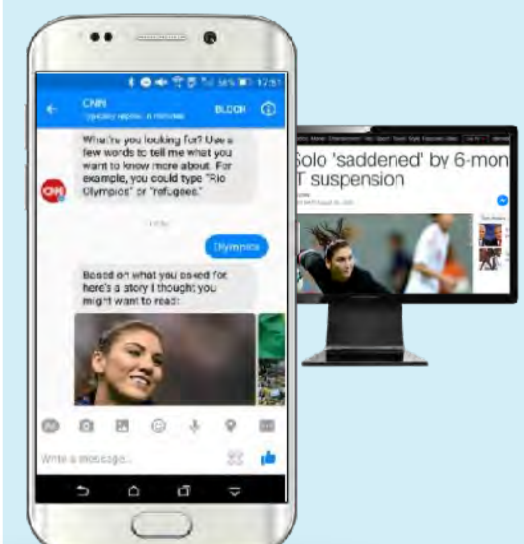


INTERNET OF THINGS

VOICE

Alexa, how long will it take me to get to work this morning?

PERSONALIZED CONTENT



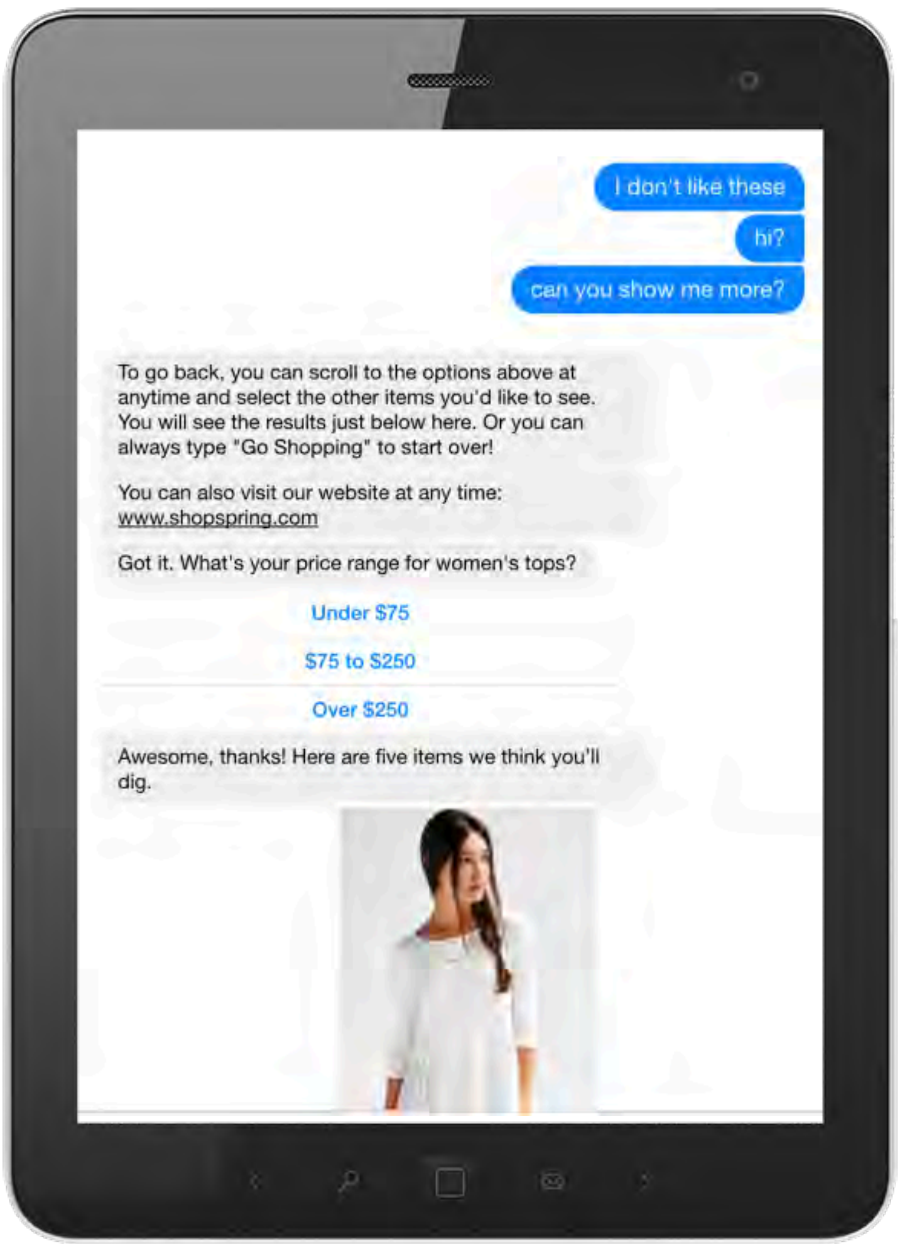
activate

Source: Activate analysis

Messaging chatbots and voice bots that do not enhance, accelerate or simplify a web or in-person experience will fail

LOSING BOT USE CASES

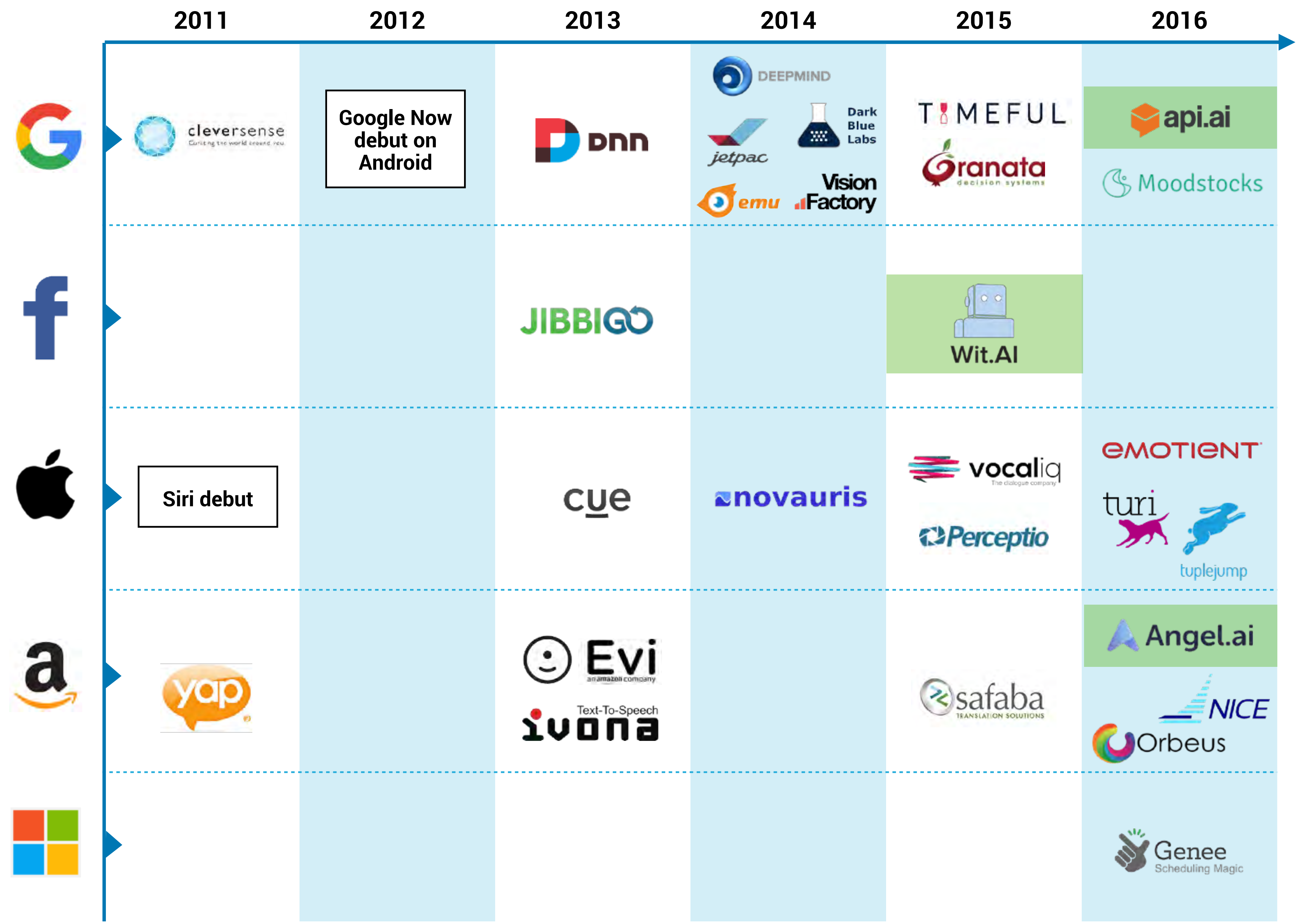
CONSIDERED PURCHASES	COMPLEX PURCHASES	THIRD-PARTY BANKING AGGREGATION



Sources: Activate analysis, Wired

Today's bots are rudimentary, but with investment in AI they will improve in sophistication and personalization

ARTIFICIAL INTELLIGENCE RELATED ACQUISITIONS BY MAJOR TECH COMPANIES, 2011-2016



Major platforms are accelerating acquisitions in 2016 alongside messaging growth

AI has many applications, but it's following current market momentum

Bot-focused

Sources: Activate analysis, CB Insights, Company press releases, Company websites, CrunchBase, TechCrunch

More sophisticated bots may start to gain traction in emerging areas of technology and services

FUTURE BOT USE CASES

DECISION TREES

Bots will be able to respond to complex and considered requests and consumer preferences

MORE EFFICIENT WORKPLACES

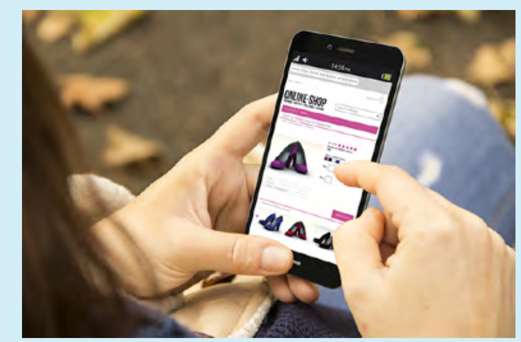
- Automated calendar management
- Online research
- Bookkeeping

BETTER CUSTOMER SERVICE

- Immediate response times
- Unlimited sales support
- Richer data and analytics

COMMERCE

- Automated purchasing
- Personalized shopping experience
- Integrated payment

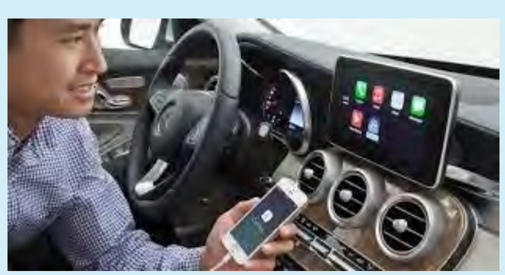


COMMANDS OR PASSIVE SUGGESTIONS

Bots will no longer require commands, and will instead automatically serve preferred, regular content and services

FUTURE CAR / HANDS-FREE TRANSIT APPLICATIONS

- Remote automobile monitoring/ management
- Automated communications functions
- Anticipatory mapping/transit routing

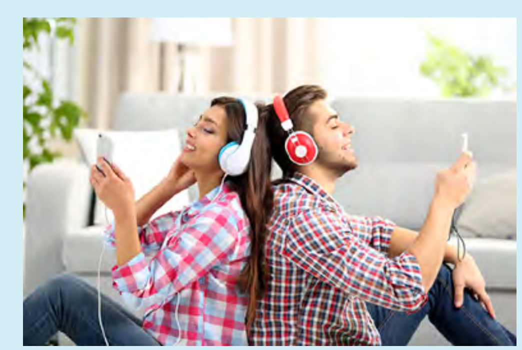


INTERNET OF THINGS ADOPTION

- Home & appliance management
- Utilities monitoring
- Virtual personal trainers/coaches

MEDIA DISCOVERY

- Audio & video content management
- Tailored recommendations
- Discovery across content providers



Source: Activate analysis

Each of the tech companies is hoping to monetize messaging, and in 2020 could look similar to Asian first-mover counterparts

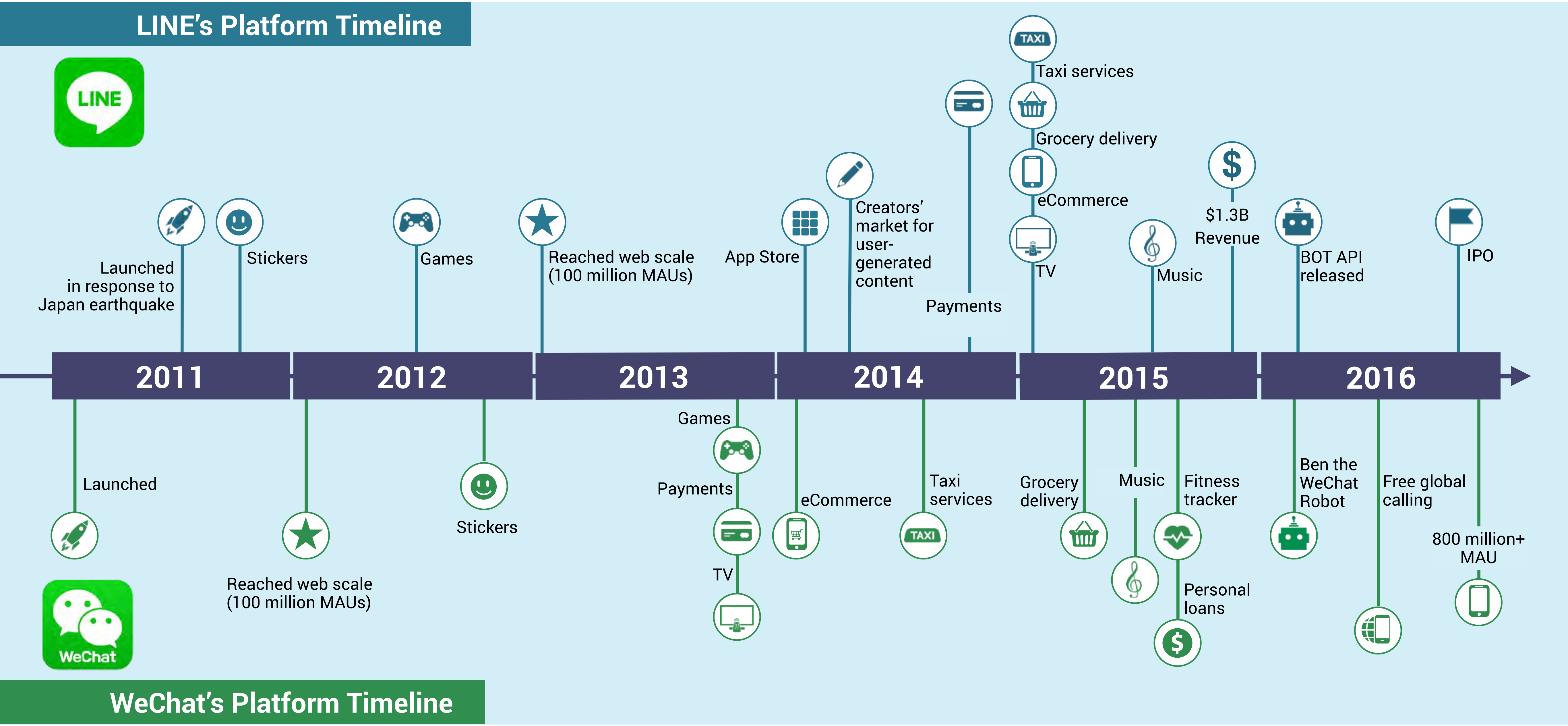
MESSAGING PLATFORM PROJECTIONS, SERVICES AND ARPU, GLOBAL, 2020E,

Service	Ads	Stickers	Games	Payments	App Store	Music	TV	eCommerce	Web Search	ARPU
WeChat	●	●	●	●	●	●	●	●		$15.65
LINE	●	●	●	●	●	●	●	●		$13.16
Apple		●	●	●	●	●	●		●	$6.03
Facebook*	●	●	●	●	●					$4.94
Google	●	●	●	●	●	●	●		●	$2.47
Microsoft**	●	●	●	●	●	●	●	●	●	$1.83
Amazon***	●	●	●	●	●	●	●	●		$1.74

ACTIVATE FORECAST

*Includes Messenger and WhatsApp
**Assuming successful transition of Skype to messaging platform
***Assuming messenger build or acquisition
Sources: Activate analysis, App Annie, Andreessen Horowitz, The Economist, Forbes, Nomura, TechInAsia, TechRadar

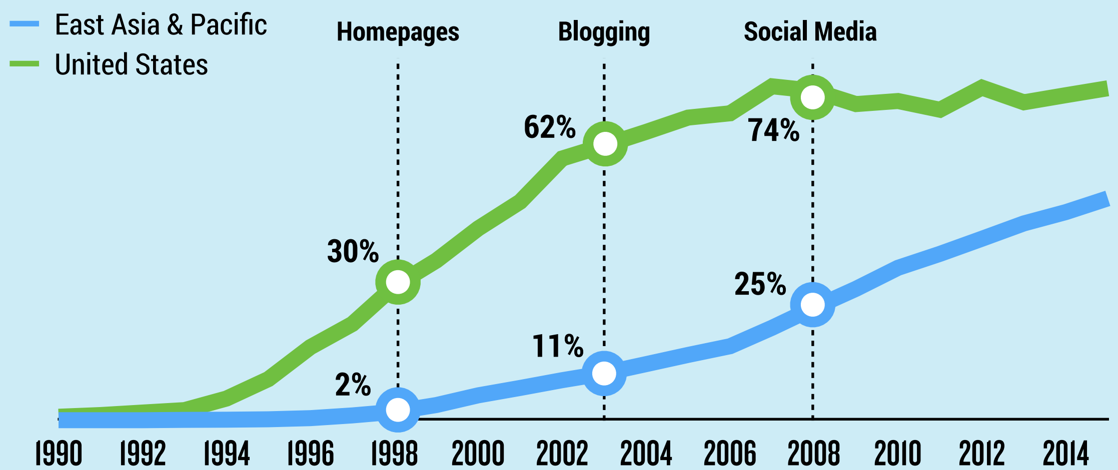
The key question for messaging: will the rest of the world follow the adoption patterns of Asia?



The risk to messaging monetization in the rest of the world is that drivers of adoption may be unique to Asia

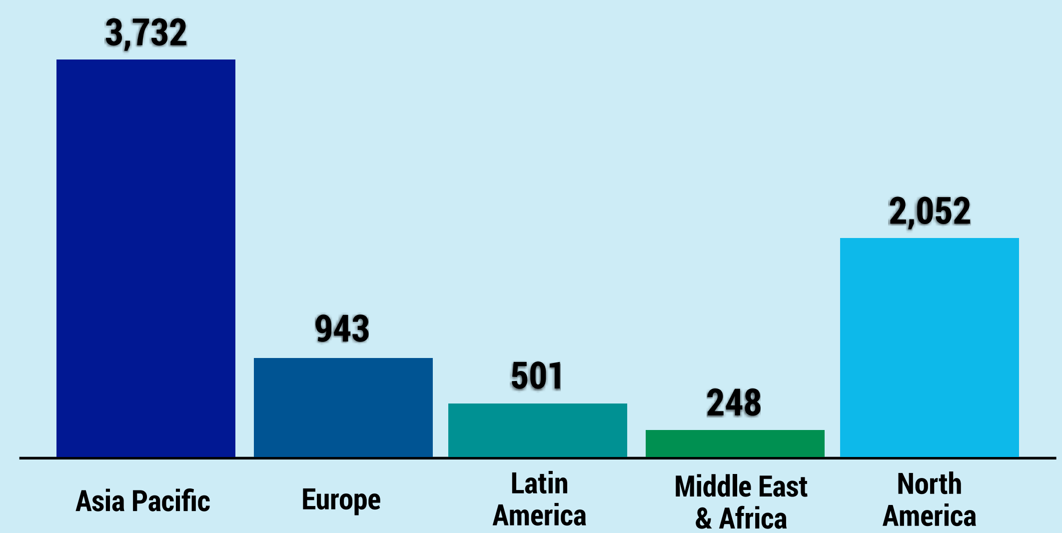
1 INTERNET ADOPTION LAGGED BEHIND THE US

Internet Penetration, 1990-2015, US and Asia, Percent of Population



2 HIGH USAGE OF SMS

SMS Traffic (Number of SMS), 2014, Global, Billions



3 DIGITAL MARKET DRIVEN BY COMMERCE, NOT ADS

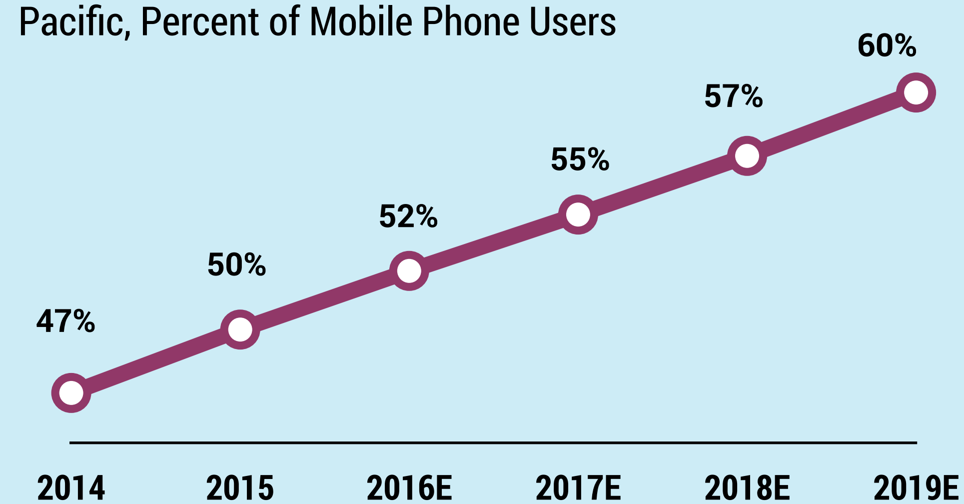
Case Study: Tencent, 2012, China

>80% of Tencent's $7B in revenue was generated from Value Added Services and eCommerce

<10% of revenue came from banner ads and search keywords

4 MOBILE-FIRST / MOBILE ONLY USERS

Mobile Phone Internet User Penetration, 2014-2019E, Asia Pacific, Percent of Mobile Phone Users



For successful messaging monetization, services will need to address payment and eCommerce adoption in messaging

FACTORS DRIVING MESSAGING MONETIZATION SUCCESS IN ASIA

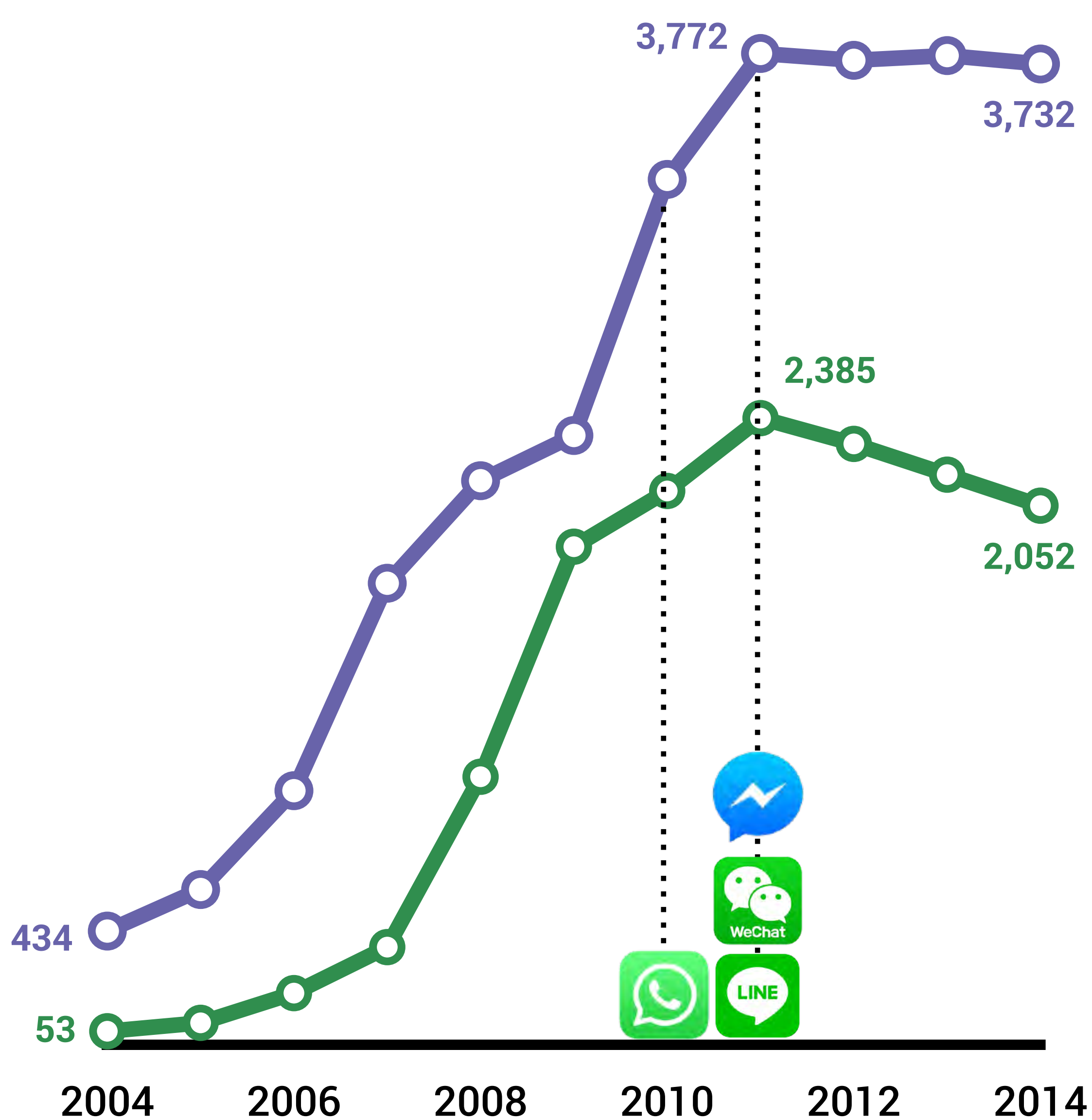
	1 SMS POPULARITY	2 STICKERS AND EMOJI	3 MESSAGING PAYMENT ADOPTION	4 MESSAGING ECOMMERCE ADOPTION
True outside of Asia?	**YES**	**YES**	**NOT YET**	**NOT YET**
	High adoption rates of both mobile and SMS in Asia and North America propelled messaging to be the dominant form of communication in those regions	Visual messaging short-hand e.g., emoji, emoticons and stickers drives messaging engagement by enabling quick interactions	Messaging payment adoption in Asia has been driven by cultural watershed moments e.g., Q Coin and the Red Envelope phenomenon with WeChat	Messaging commerce has translated into success for shopping use cases in messaging

Sources: Activate analysis, Quartz

SMS grew quickly in popularity in Asia and North America, which acclimated users to mobile messaging

TRUE OUTSIDE OF ASIA: YES

GLOBAL SMS TRAFFIC, 2004-2014, BILLIONS OF TEXTS



- SMS usage in the US took off in the pre- and early smartphone era due to cost and utility value (immediacy of communication, convenience, etc)
- SMS traffic in both regions dropped once "free" IP messaging alternatives came to market, with added features such as emoji, stickers and access to directories of popular social networks

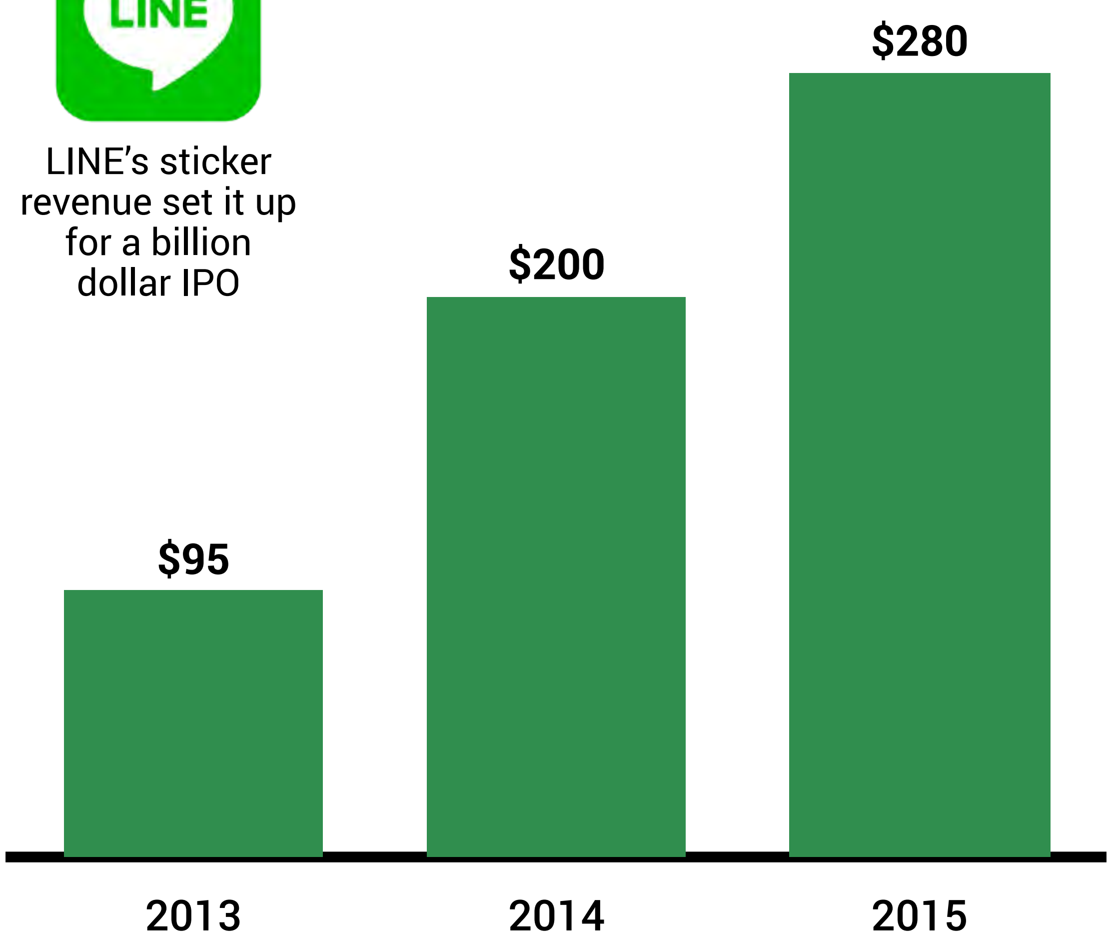
*Note: Indexed against United States SMS costs, normalized for median household income & purchasing power parity 2015
Sources: Activate analysis, China Internet Network Information Center (CNNIC), eMarketer, Forbes, Gallup Global Data Insights, OECD, Twilio, U.S. Census Bureau, We Are Social, World Bank

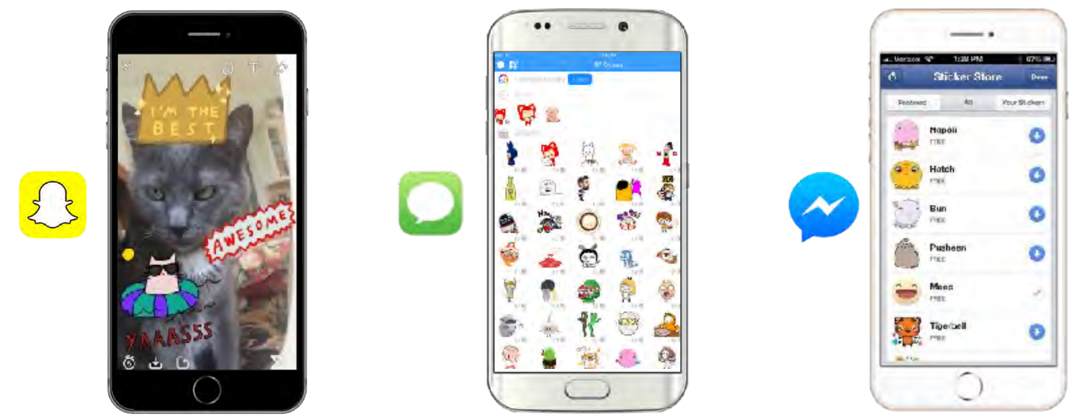
US consumers—especially younger consumers—are adopting stickers and emoji

TRUE OUTSIDE OF ASIA: YES

LINE STICKER REVENUE, GLOBAL, 2013-2015, MILLIONS,

LINE's sticker revenue set it up for a billion dollar IPO





U.S. SNAPCHAT GROWTH AND STICKER LAUNCHES

YEAR	U.S. Users 16-35 (Millions)	PENETRATION (PERCENT OF SOCIAL NETWORK USERS)	LAUNCH
2014	32.8	18.9%	Chat
			Geofilters
2015	46.1	25.6%	Discover
			Lenses
2016	58.6	31.6%	Auto-Advance Stories
			Memostories

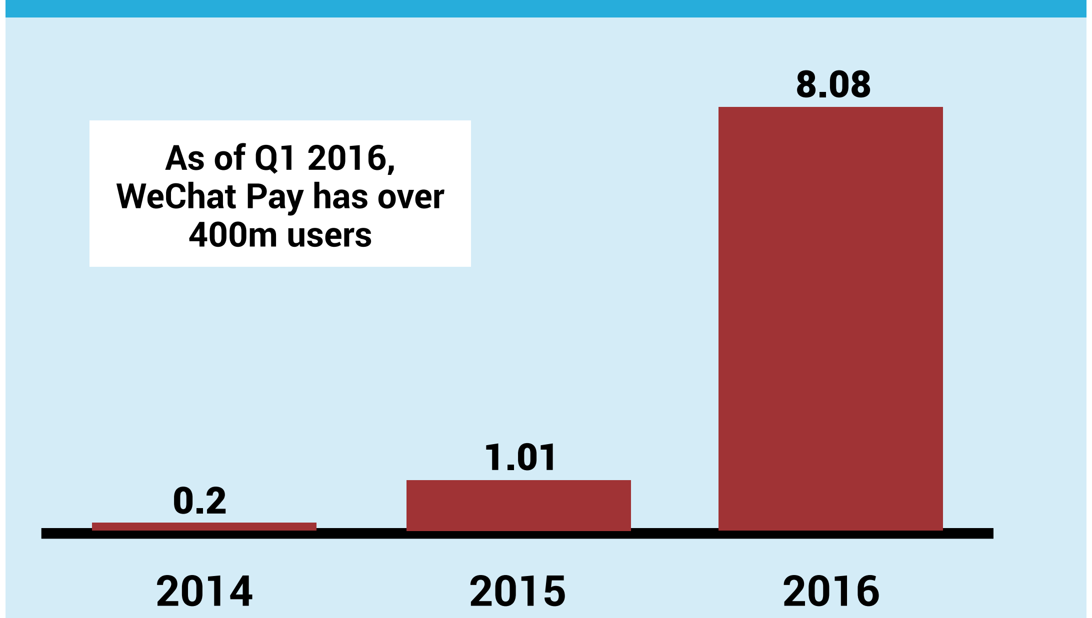
Some specific cultural behaviors that drove payment and commerce adoption in Asia will not translate to the US

RED ENVELOPES

In **2014, WeChat launched "red envelopes,"** allowing users to send random amounts to money to each other. Since exchange of red envelopes was already an established cultural practice, **tens of millions of users attached their bank cards to the app, opening up opportunities for purchasing rides, meals, etc via WeChat.** Since then, gifting digital red envelops has become a tradition.

American culture has no analogous practices

WECHAT RED ENVELOPES SENT LUNAR NYE, CHINA, BILLIONS



QQ COIN

In 2007, China's fastest growing currency was QQ coin, a virtual currency introduced by Tencent in 2002. Users saw the coins as a safer way to conduct small online purchases, because credit cards weren't yet commonplace.

Unlikely to follow in the US as credit cards are commonplace.

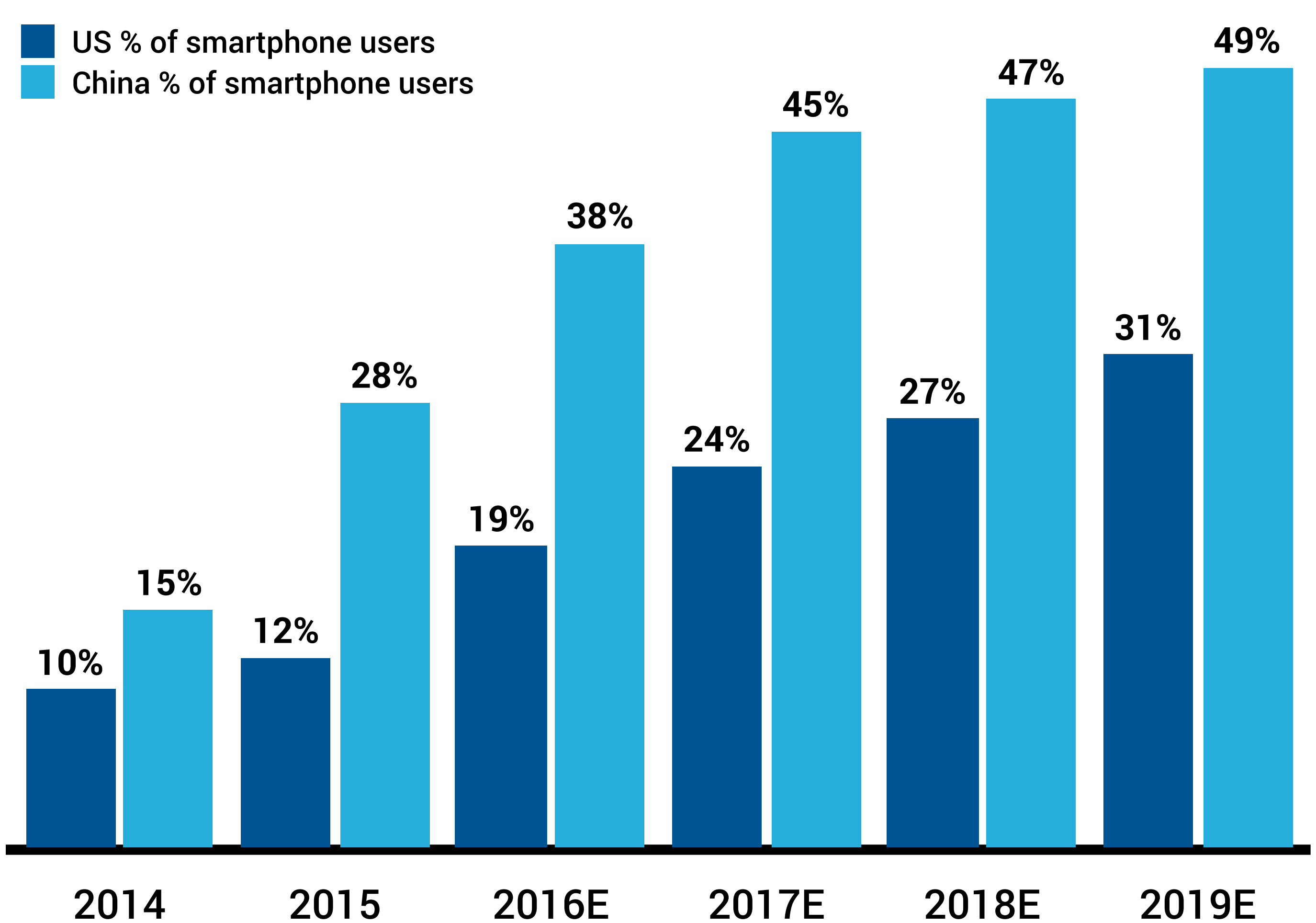
In 2006, the total volume of trading in virtual items in China was worth $900 million USD. Only 45% of this was for Tencent items. A parallel market for real items, such as CDs and makeup, also quickly formed.

Sources: Activate analysis, Jefferies, Quartz, WeChat, Wall Street Journal

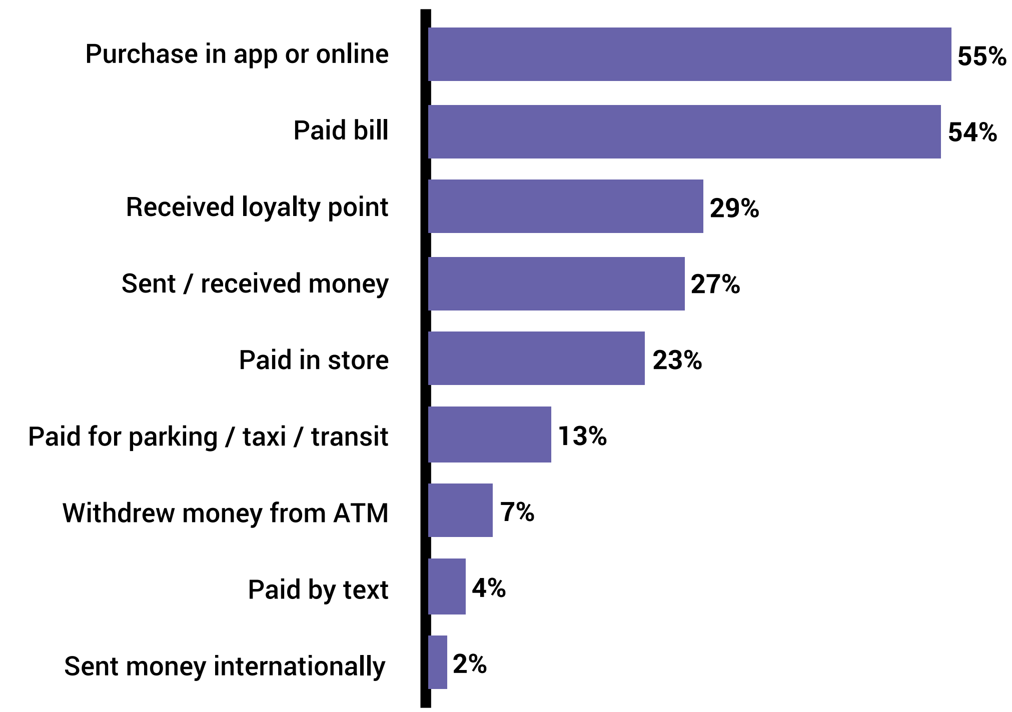
US subscribers are getting comfortable with payments through mobile, however, adoption has fallen well short of Asia

TRUE OUTSIDE OF ASIA: NOT YET

MOBILE PAYMENT ADOPTION FORECAST, U.S. AND CHINA,



TYPES OF MOBILE TRANSACTIONS MADE BY U.S. SMARTPHONE USERS, JUNE 2016



PAYMENT OPTIONS OWNED BY U.S. PLATFORMS

Messenger P2P

Google Wallet

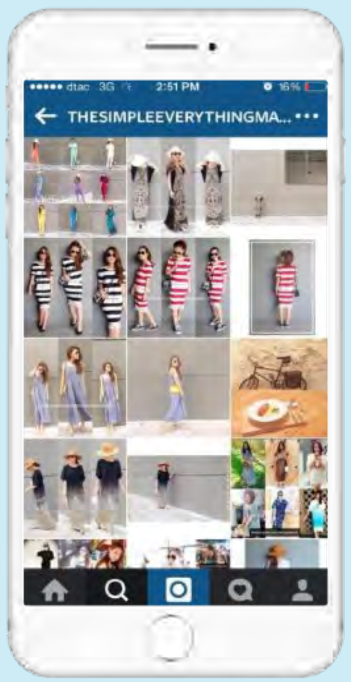
Apple Pay

Sources: Activate analysis, Accenture, eMarketer

The commercialization of social media in Asia has driven messaging platforms to become central areas of eCommerce

High mobile penetration and content creation concentrated on social media platforms

Example: Customer purchases attire via Instagram and LINE



SHADOW MARKETS

Informal C2C eCommerce on social media is on the rise in Asia. Merchants feature their products on Instagram, and customers purchase the items entirely through messenger platforms, such as LINE. This was estimated to account for **33% of eCommerce gross merchandise volume in Thailand in 2014.**

Commerce-driven digital market

Example: LINE Groceries

PLATFORM MONETIZATION

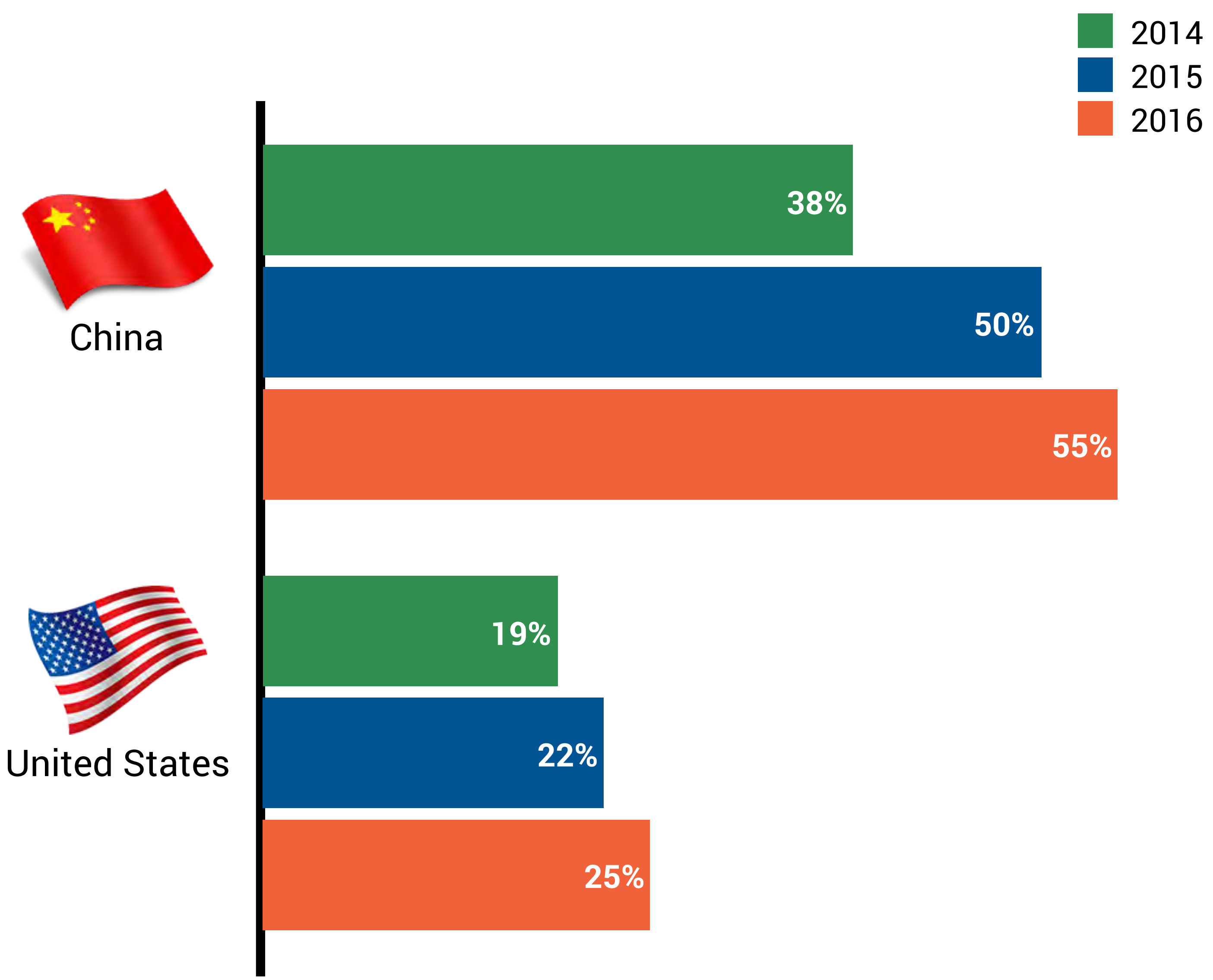
Purchasing via platforms is considered a necessity in Asia due to mobile playing such a large role in commerce (versus a convenience in the US). As a result, buy buttons are expected to take off quickly in Asia.

Sources: Activate analysis, TechCrunch, TechinAsia

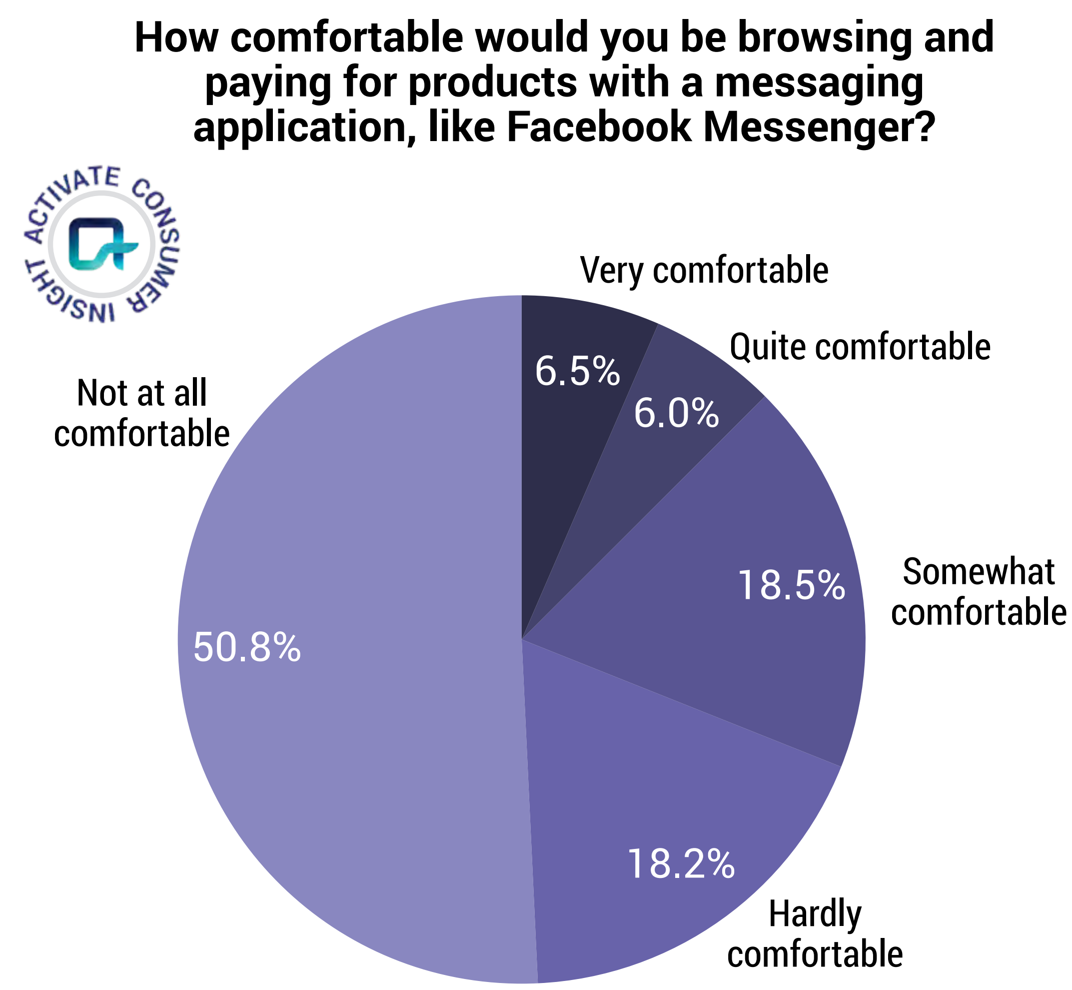
While eCommerce is taking off in the US, customers are still uncomfortable paying for products via messenger

TRUE OUTSIDE OF ASIA: NOT YET

PERCENTAGE OF RETAIL ECOMMERCE TRANSACTIONS CONDUCTED VIA MOBILE, 2014-2016E, U.S. &



U.S. CONSUMERS SLOW TO ADOPT PAYMENT VIA MESSENGER



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,003), Critero State of Mobile Quarterly Reports, Gartner, Goldman Sachs

The 9 Most Important Insights for Tech and Media in 2017

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- Subscriptions will Feed the World (or at least Internet and Media Businesses)
- Learn to Live with the Discovery Oligopoly
- The Bot Battles are about Winning the Great Messaging War
- **eSports is the Next Tech Phenomenon**
- You Already Know the New Winners in Pay TV
- Video Streaming: The Bundle is the Future
- Audio: Smart Speakers, Gray Music
- Post-Household America: A New Era of Users

eSports – competitive video gaming – is the next tech phenomenon

eSports

MASSIVE AUDIENCE - over 250 million enthusiasts worldwide following events both online and in person

SKILL-BASED - players must be nimble decision makers who can devise and execute strategies

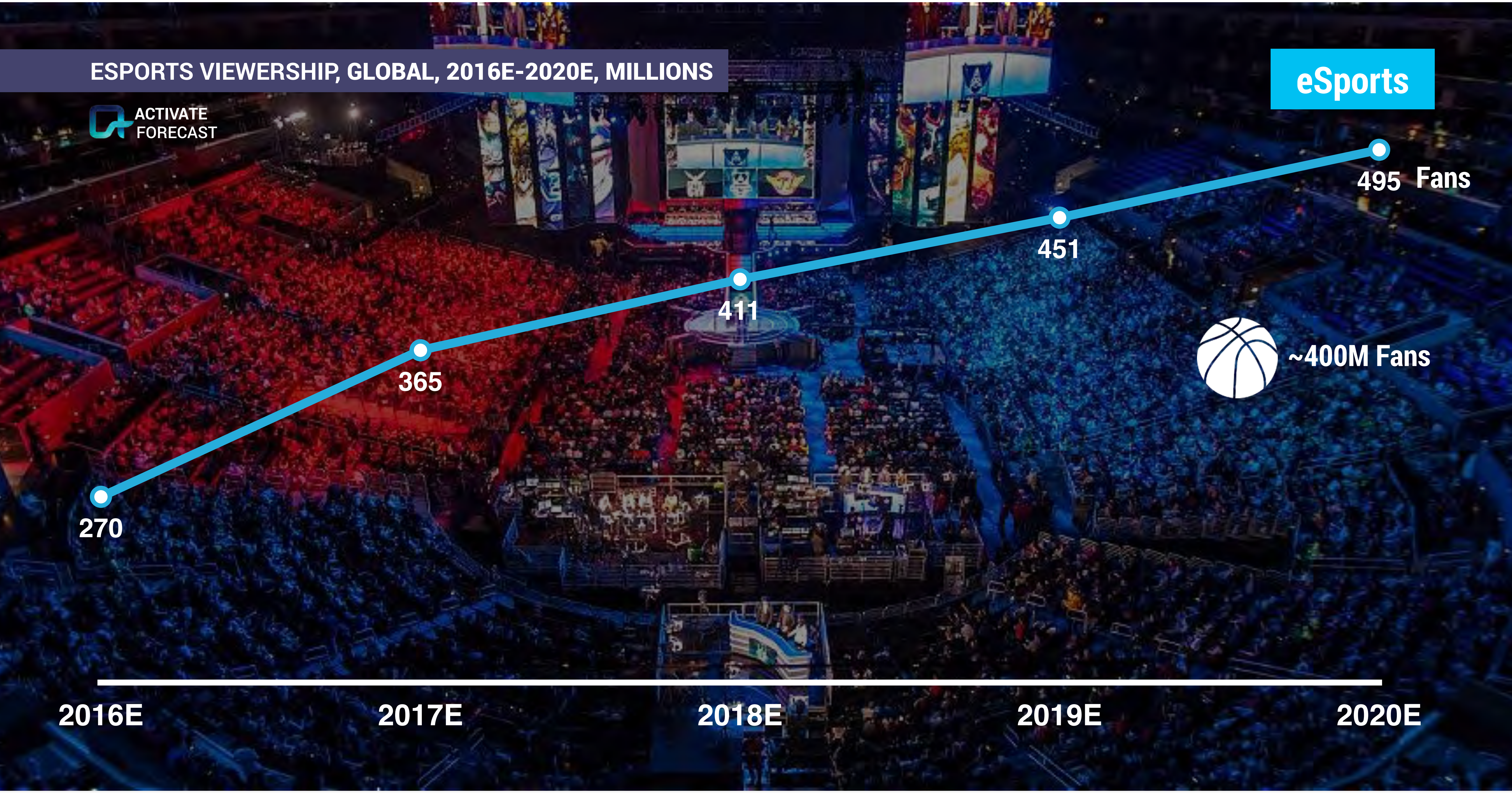
PARTICIPATIVE - 90% of eSports enthusiasts are also participating gamers

GLOBALLY CONNECTED - no boundaries to create global and social communities

MULTIPLE PATHS TO MONETIZATION - multiple revenue streams built off existing gaming mechanics, such as in-game betting

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), Newzoo, Nielsen, SuperData Research

We forecast that eSports will reach ~500 million fans worldwide by 2020, ahead of popular sports such as basketball



activate

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), Newzoo, Nielsen, SuperData Research

WSJ.D LIVE

Major tech and media companies will continue to capitalize on the eSports opportunity

EXAMPLES OF MAJOR TECH AND MEDIA COMPANIES IN ESPORTS WORLDWIDE

amazon	Launched eSports Championship Series via Twitch (ECS, twitch)
facebook	Broadcasting Activision Blizzard games live on Facebook (Activision Blizzard)
Google	Launched gaming dedicated service: YouTube Gaming (YouTube GAMING)
YAHOO!	Collaborating on streaming, new tournaments, sponsorships with ESL (ESL)
Microsoft	Will launch Arena, its own eSports platform - built in service for Xbox (XBOX ONE)
The Walt Disney Company	ESPN launched a dedicated vertical for eSports; began broadcasting tournaments (ESPN)
TimeWarner	Partnered with WME/IMG to organize ELeague that airs on TBS and Twitch (WME IMG, ELEAGUE, tbs, twitch)
SONY	Introduced PlayStation Plus League for eSports (PlayStation Plus LEAGUE)
Tencent 腾讯	Owns the developer of most popular eSports game (LoL) worldwide: Riot (RIOT GAMES)
Alibaba.com	Invested ~$150m in the International eSports Federation (IeSF)

By 2020, eSports viewership will exceed 10 percent of all US sports viewing, and attract more viewers than the finals of other major US sports

ACTIVATE'S 2020 FORECAST

ACTIVATE FORECAST

VIDEO VIEWS

GLOBAL FANS WILL BE WATCHING

11 Billion hours of eSports

VIEWERS

70 Million+

WILL WATCH AN ESPORTS FINAL

(MORE PEOPLE THAN MLB, NHL, NBA FINALS)

ESPORTS vs SPORTS

In the US, there will be

3 Billion hours of eSports viewed

vs. 30 Billion across all other sports

~10% OF ALL SPORTS VIEWING

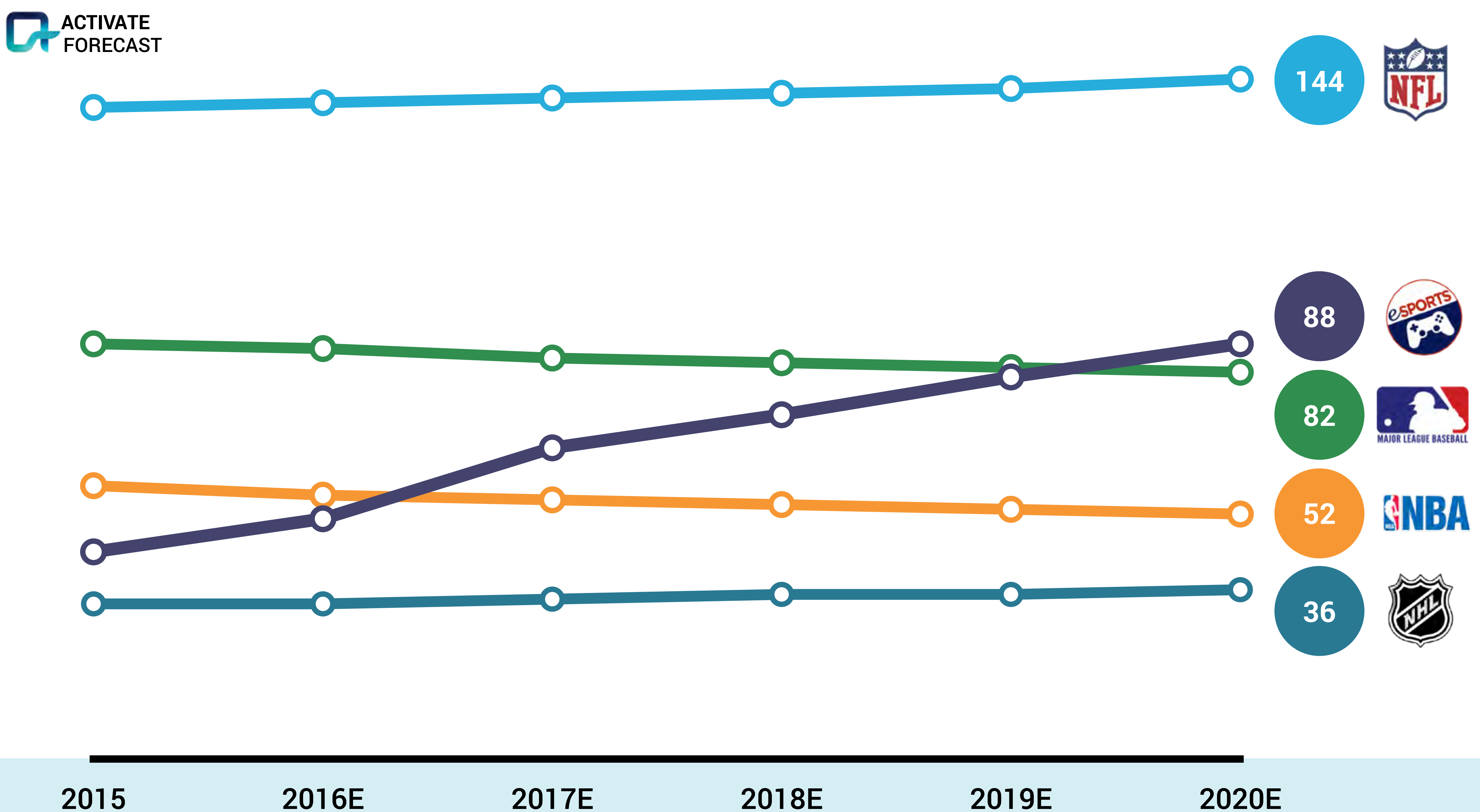
Examples of Current Games:

- League of Legends
- Dota 2
- Counter-Strike: Global Offensive
- World of Tanks
- Smite
- Hearthstone: Heroes of Warcraft
- Starcraft II: Wings of Liberty
- Overwatch
- Grand Theft Auto Online

Sources: Activate analysis, Cisco, ESPN, Nielsen, Riot, Twitch, Tubular

Overall, eSports viewership will outstrip the viewership of most of the established sports in the US

VIEWERSHIP, U.S., 2016E-2020E, MILLIONS

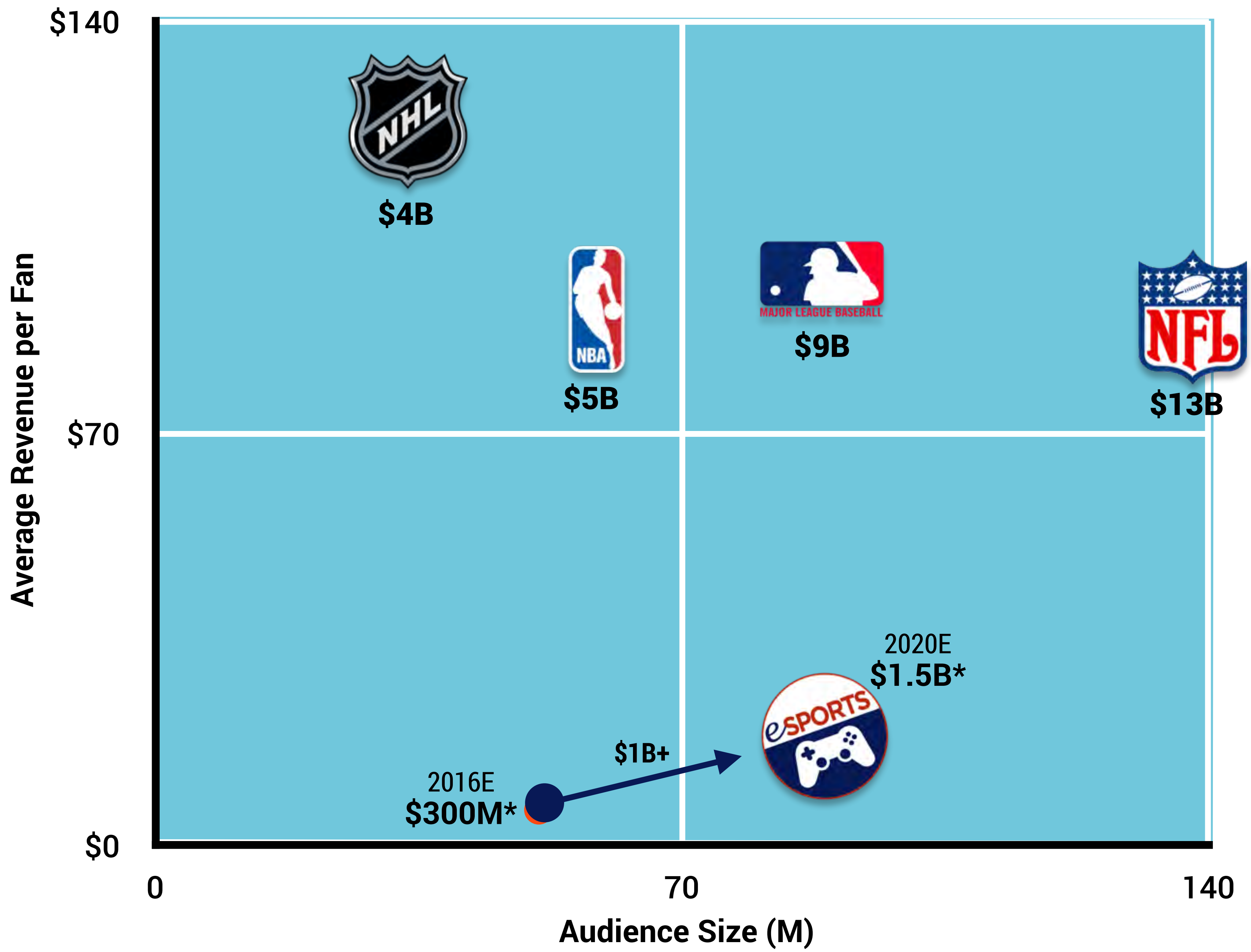


Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), ESPN, Forbes, NewZoo, Nielsen Scarborough, SuperData Research

By 2020, eSports will be a $1.5 billion business in the US

REVENUE, U.S., 2016E (EXCEPT FOR ESPORTS 2020E),

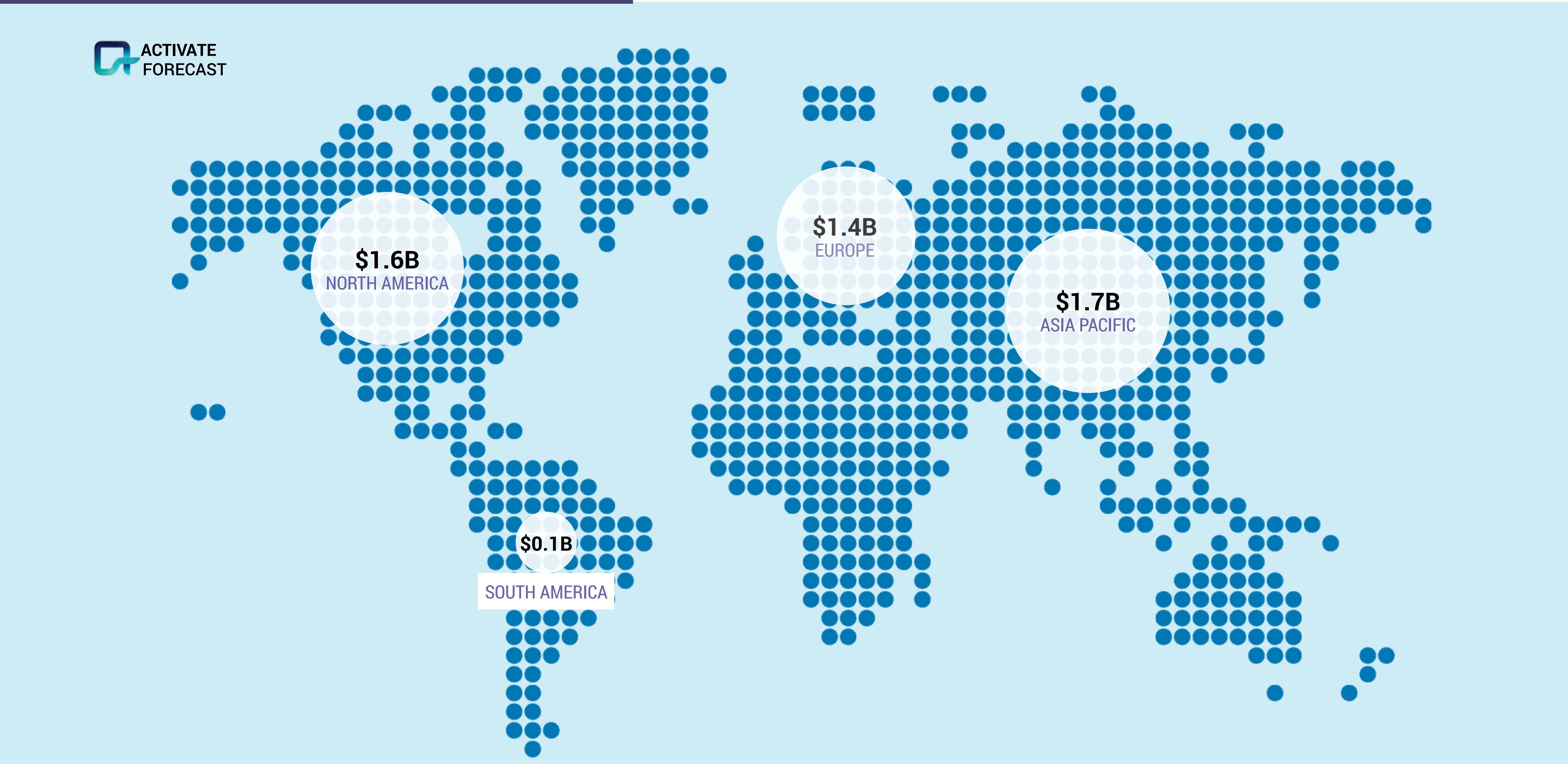
ACTIVATE FORECAST



*Revenues include sponsorship and advertising, prize pools, eSports betting, ticketing, merchandise, and media rights
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), ESPN, Forbes, H1 Gambling Capital, IEG, Narus Advisors/Eilers & Krejcik Gaming, NewZoo, Nielsen Scarborough, SuperData Research

For global eSports revenues, we forecast eSports will reach nearly $5 billion by 2020…

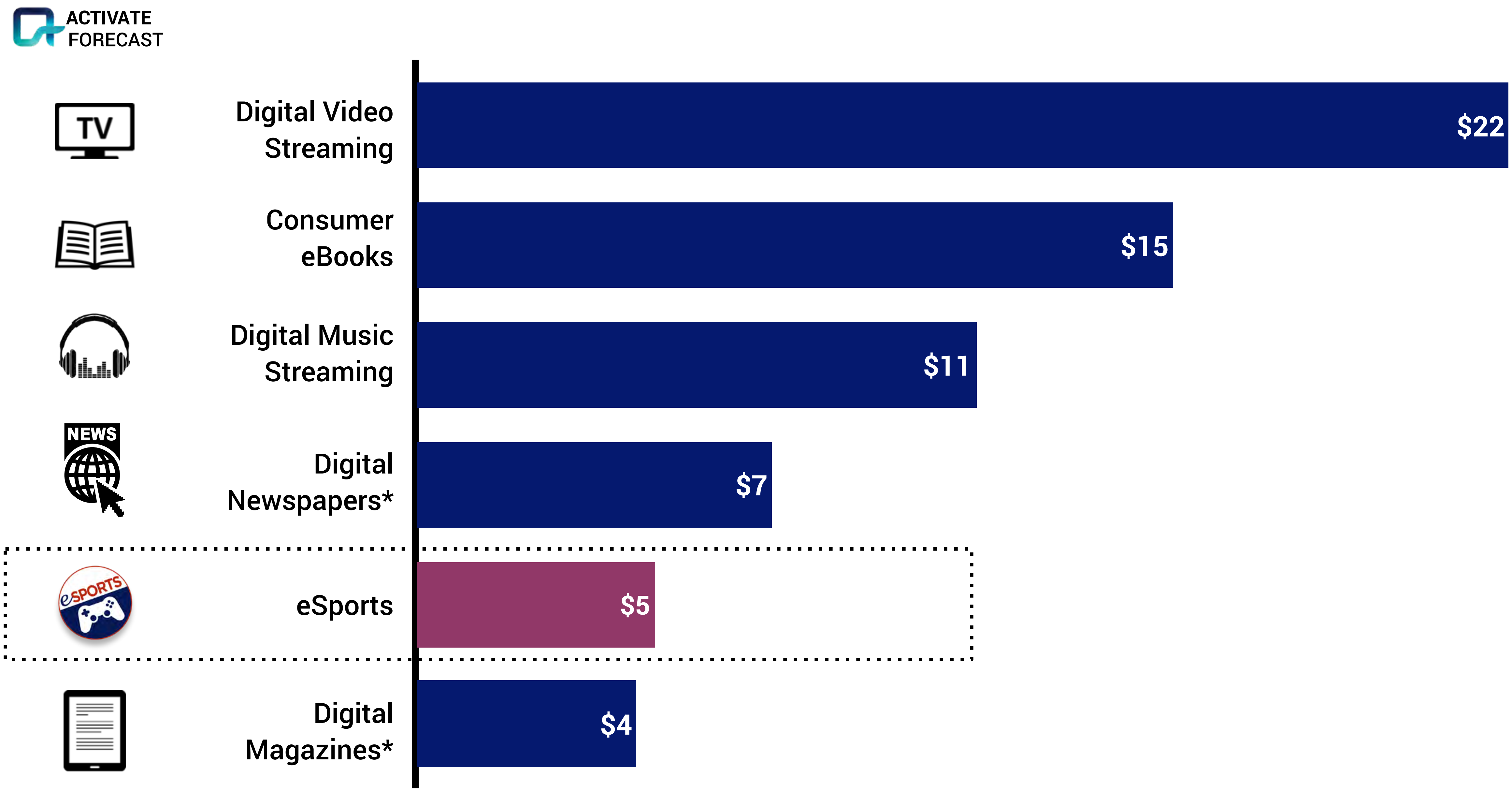
ESPORTS REVENUE*, GLOBAL, 2020E, BILLION



*Includes sponsorship and advertising, prize pools, eSports betting, ticketing, merchandise, and media rights
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), ESPN, Forbes, H1 Gambling Capital, IEG, Narus Advisors/Eilers & Krejcik Gaming, NewZoo, Nielsen Scarborough, SuperData Research

…giving eSports a serious seat at the digital media table

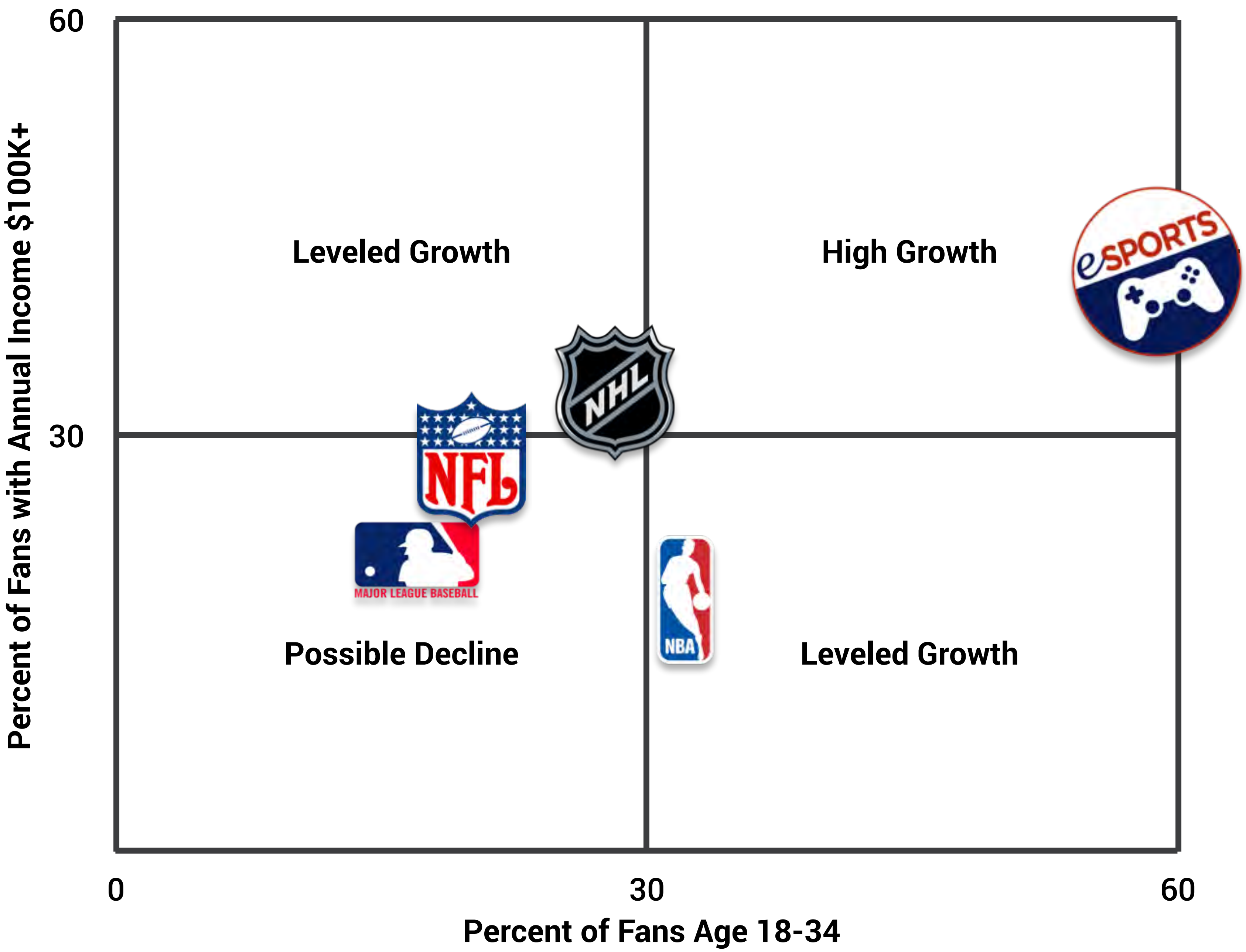
CONSUMER SPEND ON DIGITAL MEDIA, GLOBAL, 2020E, BILLIONS

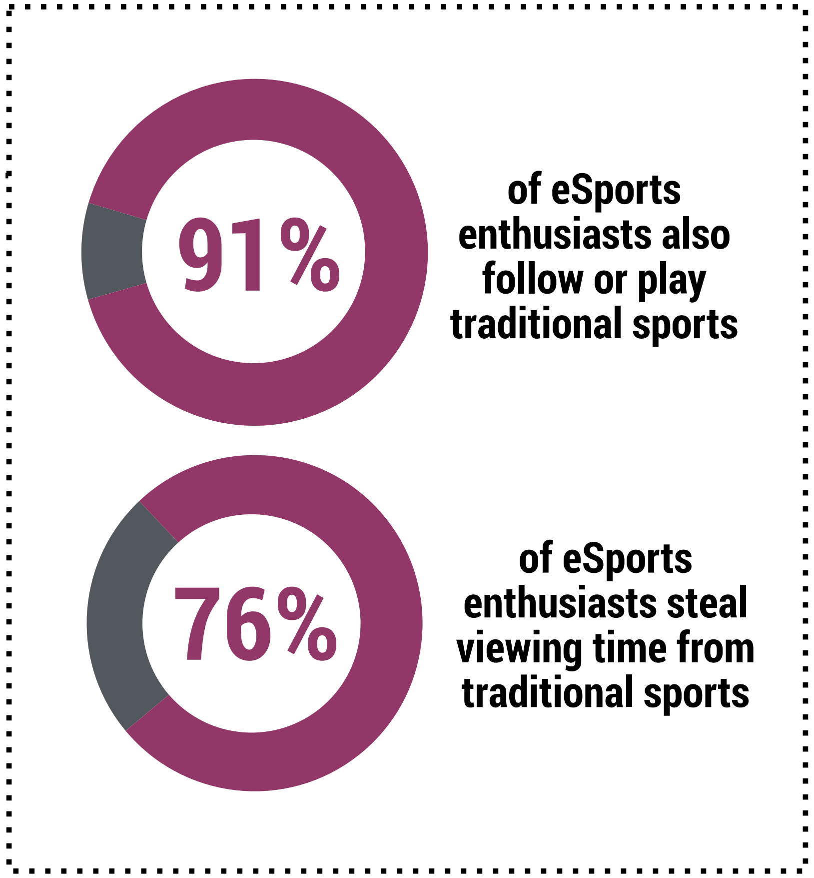


*Does not include advertising
Sources: Activate analysis, IBISWorld, IFPI, NewZoo, PwC, SuperData Research

Affluent Millennials – the most desirable demographic following sports – will continue to move their attention and spend to eSports

ACTIVATE REVENUE GROWTH OPPORTUNITY MATRIX, 2016





Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), Nielsen, opendorse

Consumer brands will follow their customers to eSports platforms, and will also covet eSports' Millennial audience

EXAMPLE ESPORTS SPONSORS

CURRENT ENDEMIC

- Twitch
- Alienware
- Logitech
- KontrolFreek
- IGN Entertainment
- Acer
- Microsoft
- Sony
- Turtle Beach
- Razer
- Intel
- Sennheiser

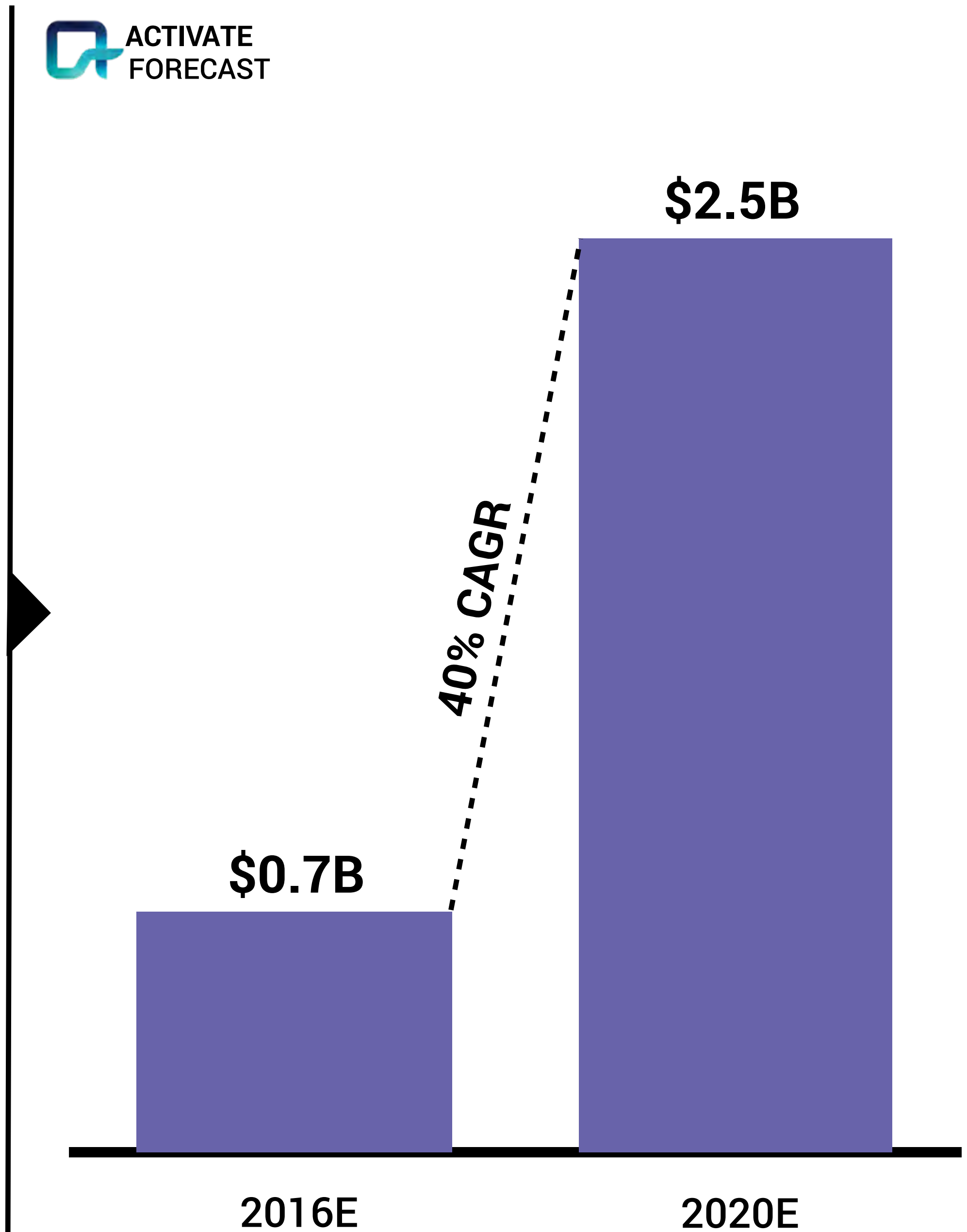
CURRENT NON-ENDEMIC

- Coca-Cola
- Red Bull
- GEICO
- Quest Nutrition
- Hot Pockets
- Mountain Dew
- Arby's
- Bud Light
- xfinity
- American Express
- Nissan

LIKELY TO JOIN

- Toyota
- GM
- Allstate
- Under Armour
- FedEx
- MillerCoors
- Sprint
- Citi

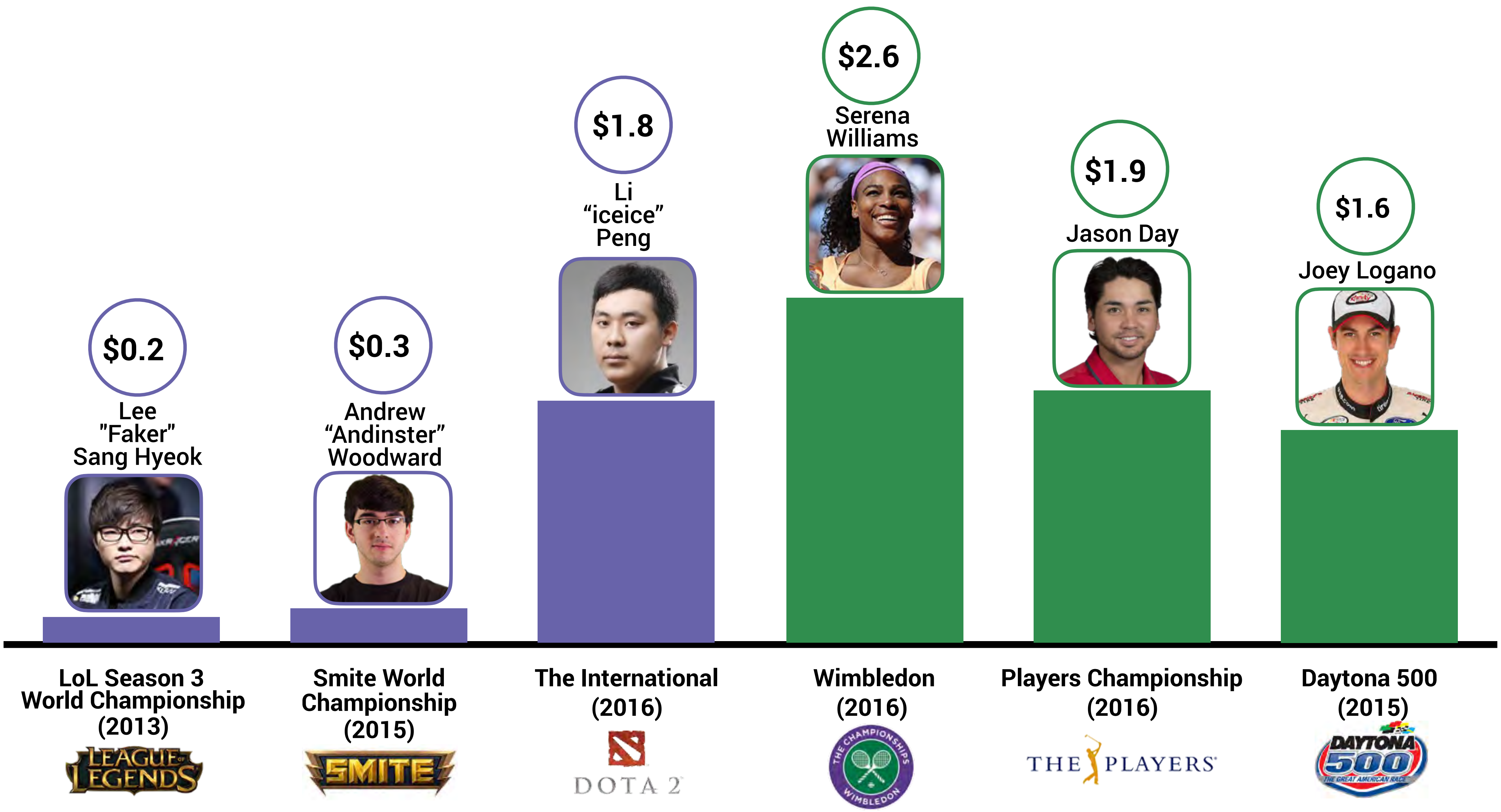
GLOBAL ESPORTS SPONSORSHIP REVENUE



Sources: Activate analysis, Company press releases, IEG, Ludlow Ventures, Newzoo, Nielsen Scarborough, Smart Launch, SuperData Research

eSports stars are likely to move into the mainstream, and prize levels are reaching those of other professional sports

SELECT MONETARY AWARDS FOR INDIVIDUAL TOURNAMENTS, MILLIONS, USD



Sources: Activate analysis, eSports Earnings, Sports Blog Nation, Wimbledon

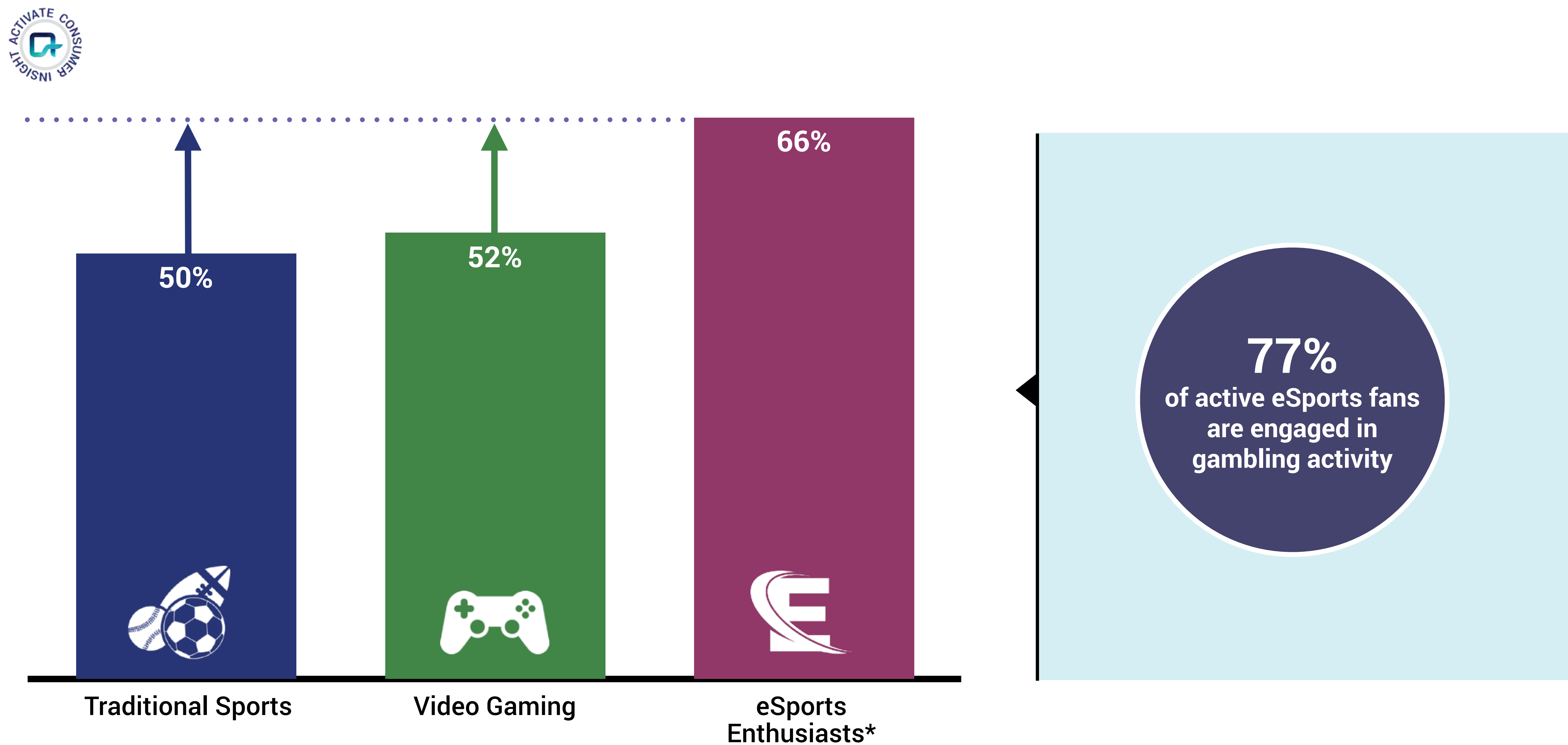
Across the tech and media ecosystem, many players stand to win with eSports

	CONTENT DEVELOPERS	DISTRIBUTORS	ENABLING TECH	ORGANIZERS
EXAMPLE ESPORTS BUSINESS OPPORTUNITIES	• New monetization (e.g., in-game betting) • eSports as a marketing channel	• New platforms • Platforms integrated into games • Marketing and sponsorships	• Betting tech • Low latency infrastructure • Gaming engines • Gaming communications	• New leagues, tournaments • eSports venues • Marketing and sponsorship • Talent representation
EXAMPLES	DEVELOPERS & PUBLISHERS TEAMS	DIGITAL VIDEO PLATFORMS GAMING PLATFORMS TRADITIONAL VIDEO PLATFORMS	BETTING & MARKETPLACES PLATFORM TECH & TOOLS	LEAGUES & ASSOCIATIONS VENUES
EXAMPLE INVESTORS or PARTNERS	Alex Rodriguez Shaquille O'Neal Rick Fox Steve Aoki		Mark Cuban	

Sources: Activate analysis, CrunchBase, Dexerto, ESPN, eSports Betting Report, Forbes, Fortune, Ludlow Ventures, Narus Advisors/Eilers & Krejcik Gaming, Newzoo, Sport Techie, The Daily Dot, The eSports Observer

Built on strong consumer interest, eSports betting has the potential to be a substantial revenue driver

PARTICIPANTS INTERESTED & ENGAGED IN GAMBLING ACTIVITY, U.S., 2016, PERCENT



*Actively following or interested in eSports
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

We believe eSports betting has high potential—this is amplified by a user's ability to place bets as a spectator or as an active participant

eSports Betting

1 **AS A PARTICIPANT (ACTIVE)**
unlike in traditional sports, gamers can bet on the outcome of their own competitive game

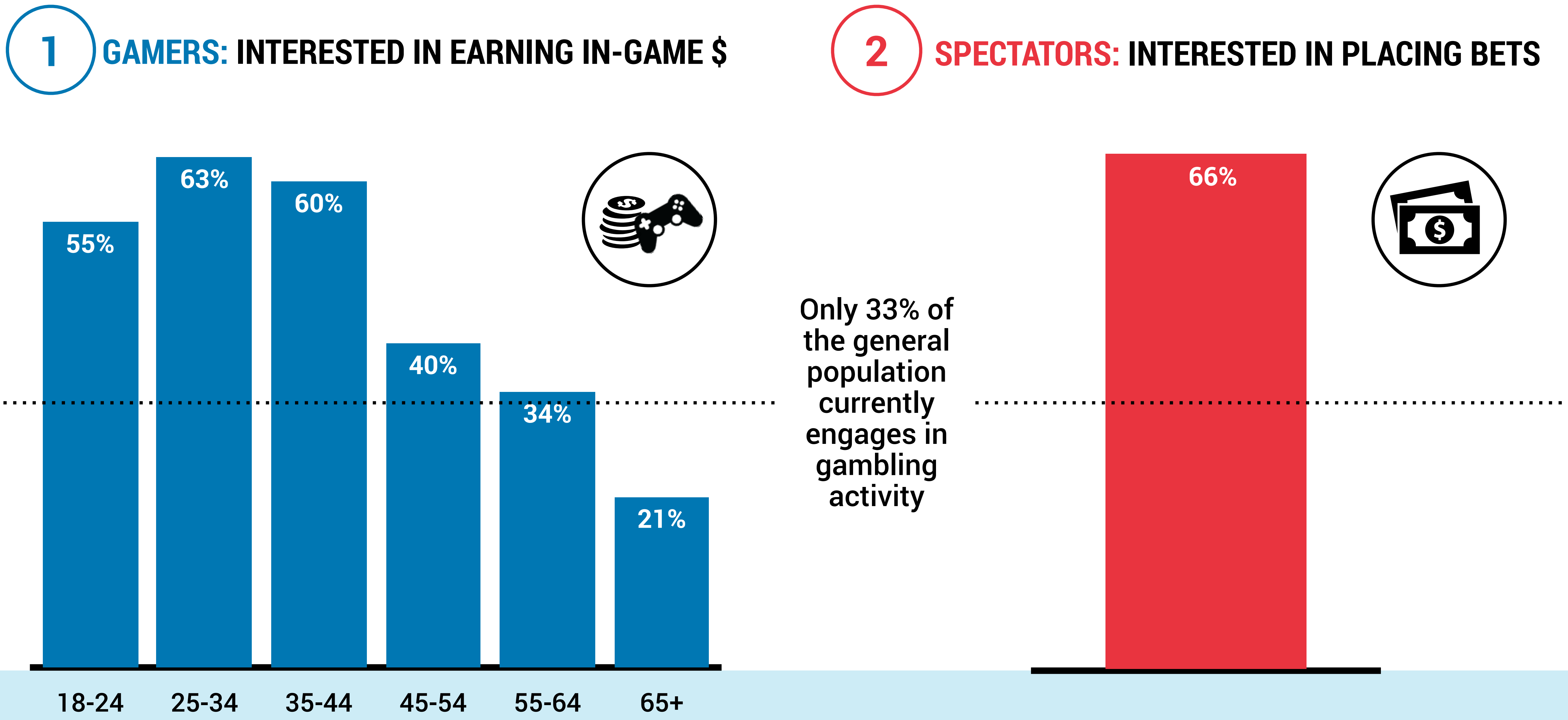
+

2 **AS A SPECTATOR (PASSIVE)**
similar to traditional sports, enthusiasts can bet on the outcome of others competitive game

Higher ARPU driven by deeper engagement

Both gamers and spectators are interested in either earning in-game dollars or placing bets

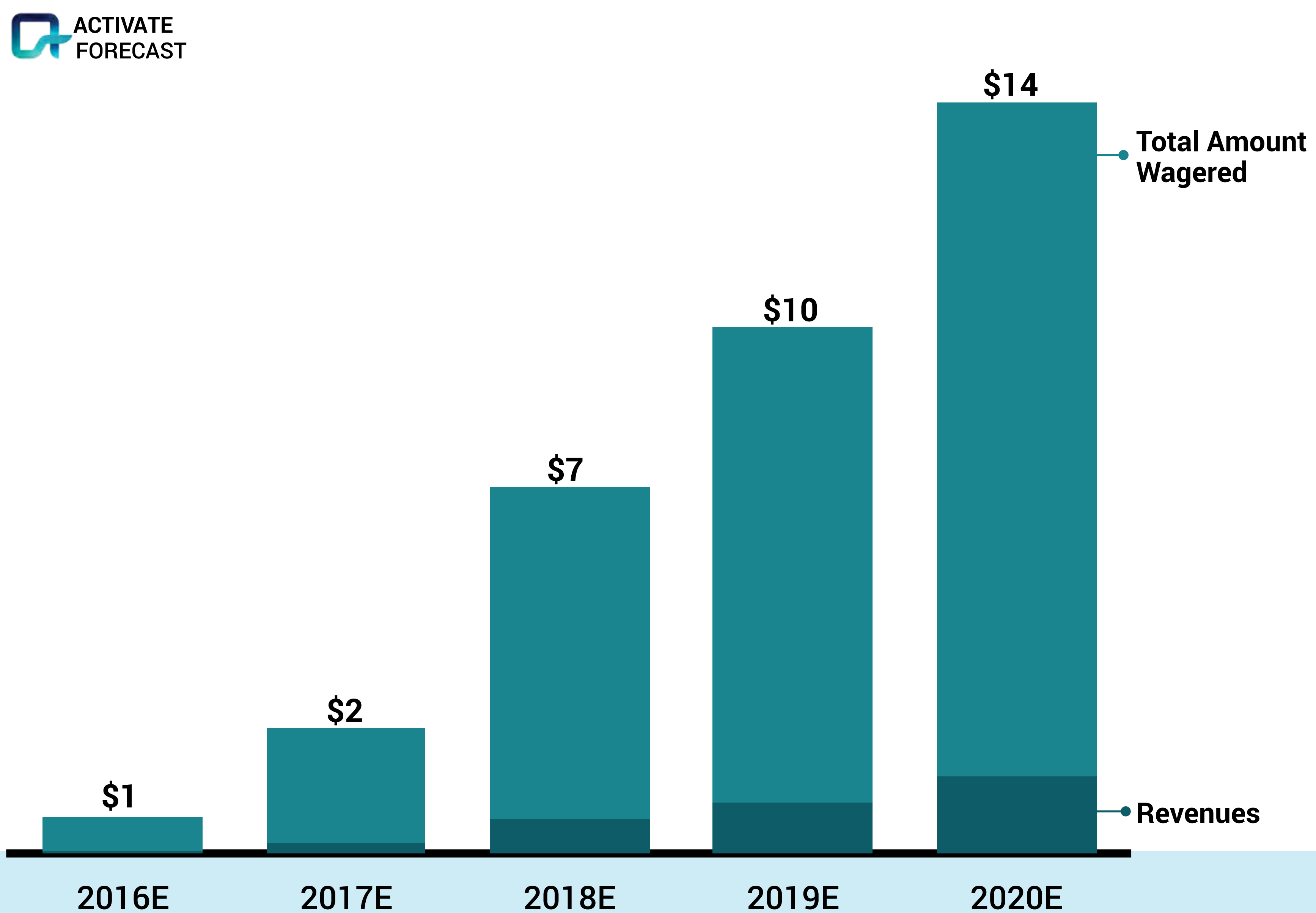
GAMBLING INTEREST FOR VIDEO GAMERS & ESPORTS SPECTATORS, 2016, PERCENT



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

Spectator bets for eSports competitions will reach $14B by 2020

ESPORTS BETTING: AMOUNT WAGERED VS. REVENUES, GLOBAL, 20016E-2020E, BILLIONS,



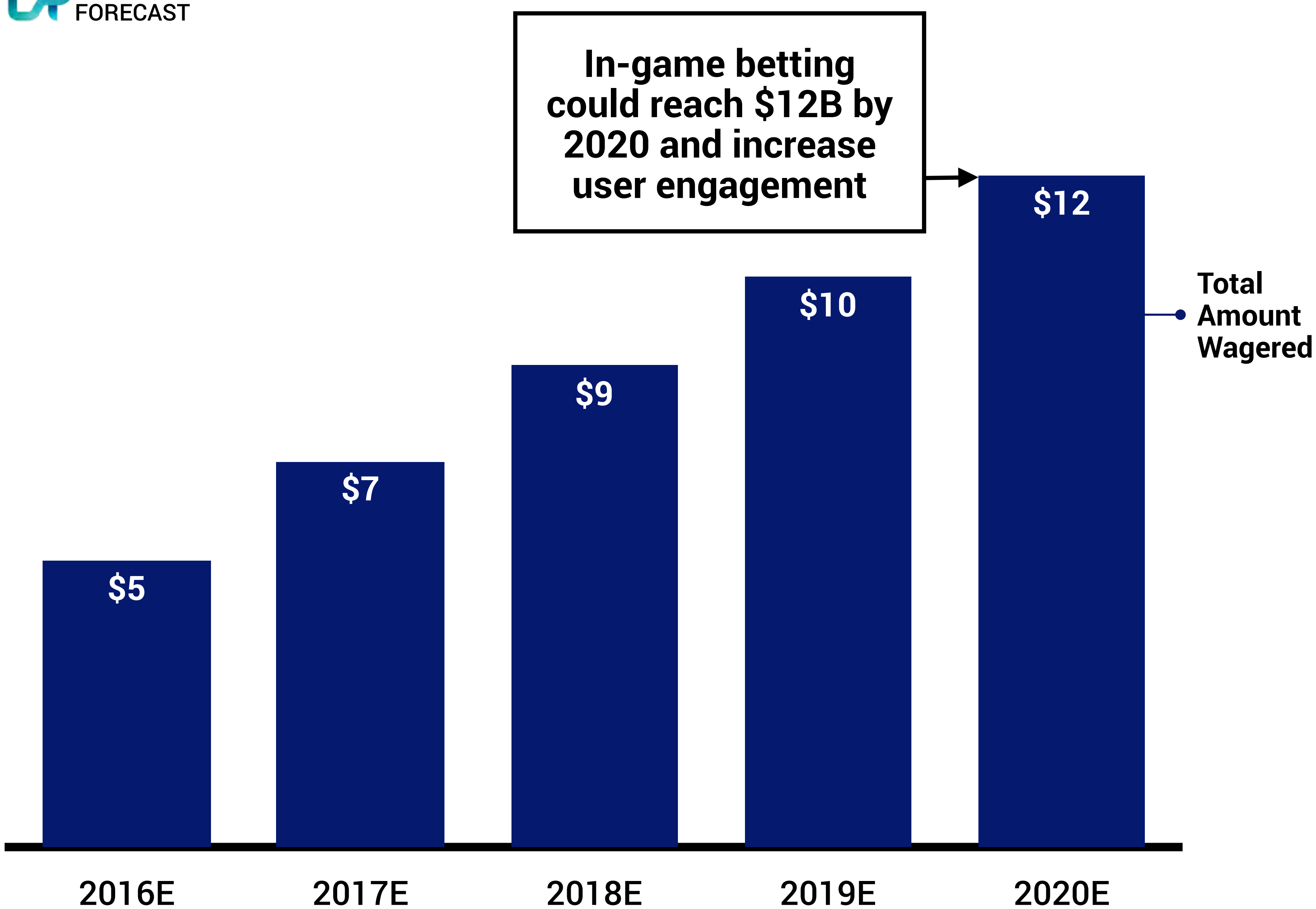
5-10%
of all sports betting will be on eSports by 2020

Sources: Activate analysis, H1 Gambling Capital, Narus Advisors/Eilers & Krejcik Gaming, Newzoo, SuperData Research

Betting by gamers within games could represent a new monetization model for video-game publishers

AMOUNT WAGERED FOR IN-GAME ACTIVITIES, GLOBAL, 2016E-2020E, BILLIONS, USD

ACTIVATE FORECAST



OPPORTUNITY

In-game betting could add

$1-2B*

revenue to global video gaming revenues

EXAMPLE PUBLISHERS (OF M-RATED GAMES) LIKELY TO WIN

Microsoft, EA, Activision, T2, Ubisoft, Bandai Namco, Valve, Bethesda

*Assumes gross win ratio of 10-20%
Sources: Activate analysis, H1 Gambling Capital, Narus Advisors/Eilers & Krejcik Gaming, Newzoo, SuperData Research

eSports will likely follow the trajectory of other organized sports to consolidate with one key difference: it will be much faster!

ESPORTS VS. NFL

NFL

Football is professional
first player gets paid to compete

1890

Regional leagues form
from the growth of associations and clubs

30 YEARS

1920

Initial consolidation
14 teams combine as the American Professional Football Conference

Multiple rivals appear
including:

AAFC
1946

1950

1960

One league
NFL and AFL agree to merge in 1966, becoming the NFL as we know it today

NFL

BEGINNINGS | **CONSOLIDATION** | **UNITY**

1998

<20 YEARS

2016

Tournaments emerge
StarCraft

Associations form
ESL
MLG Major League Gaming
KeSPA Korea e-Sports Association

Consolidation begins

IeSF International e-Sports Federation
International e-Sports Federation (Global)

WESA World eSport Association
World eSports Association (Global)

PEA
Profesional eSports Association (North America)

What comes next?

International eSports Olympics Committee

eSports

eSports are consolidating in less than half the time

activate

Sources: Activate analysis, ESL, eSports Earnings, IeSF, KeSPA, Narus Advisors/Eilers & Krejcik Gaming, NFL, WESA

What will need to happen for eSports to reach its potential?

- INTEGRATION WITH TECH AND MEDIA PLATFORMS
- COHESIVE SCHEDULING OF EVENTS
- LEAGUE CONSOLIDATION
- GLOBAL TELEVISION AND SPONSORSHIP DEALS
- STARS MOVING INTO THE MAINSTREAM
- GROWTH IN GAMBLING

Source: Activate analysis

The 9 Most Important Insights for Tech and Media in 2017

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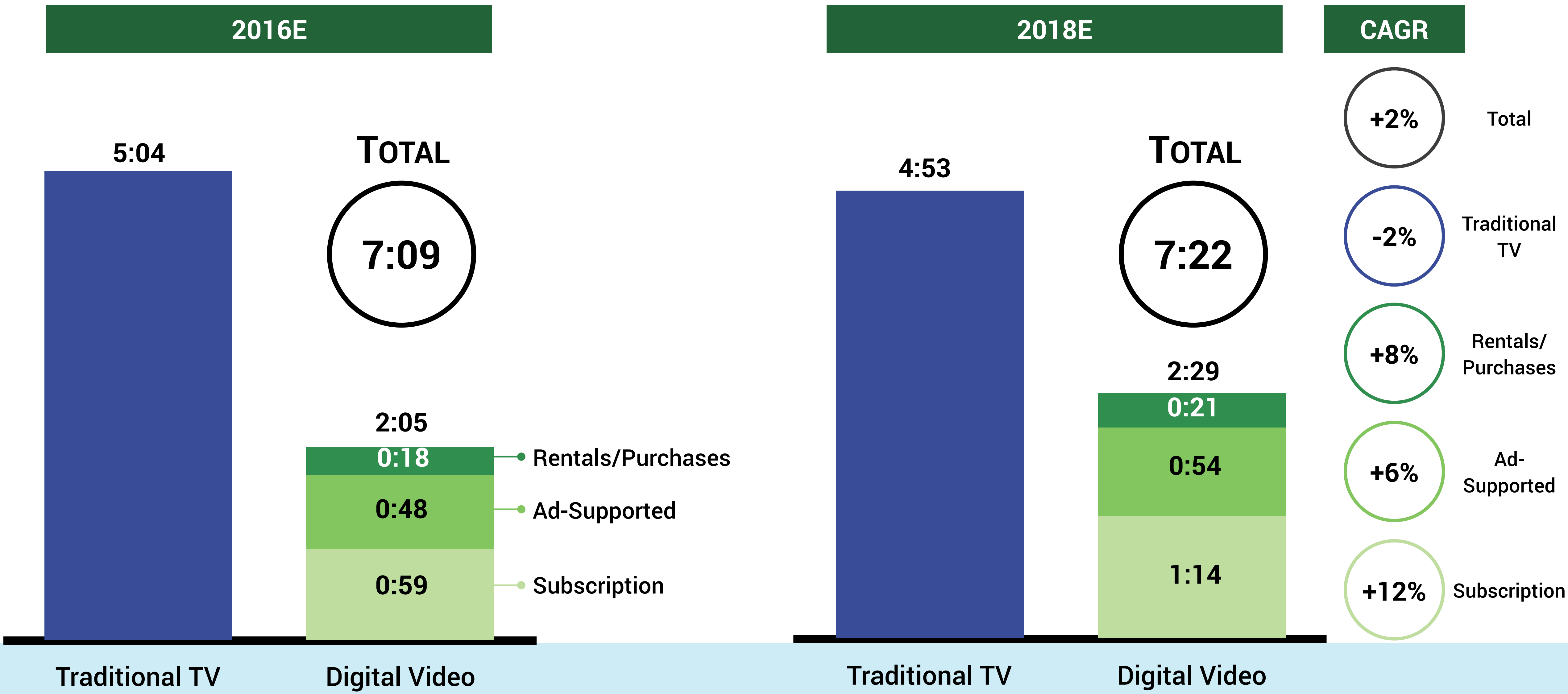
- eSports is the Next Tech Phenomenon
- **You Already Know the New Winners in Pay TV**
- Video Streaming: The Bundle is the Future
- Audio: Smart Speakers, Gray Music
- Post-Household America: A New Era of Users

Consumer attention will continue to shift toward digital alternatives

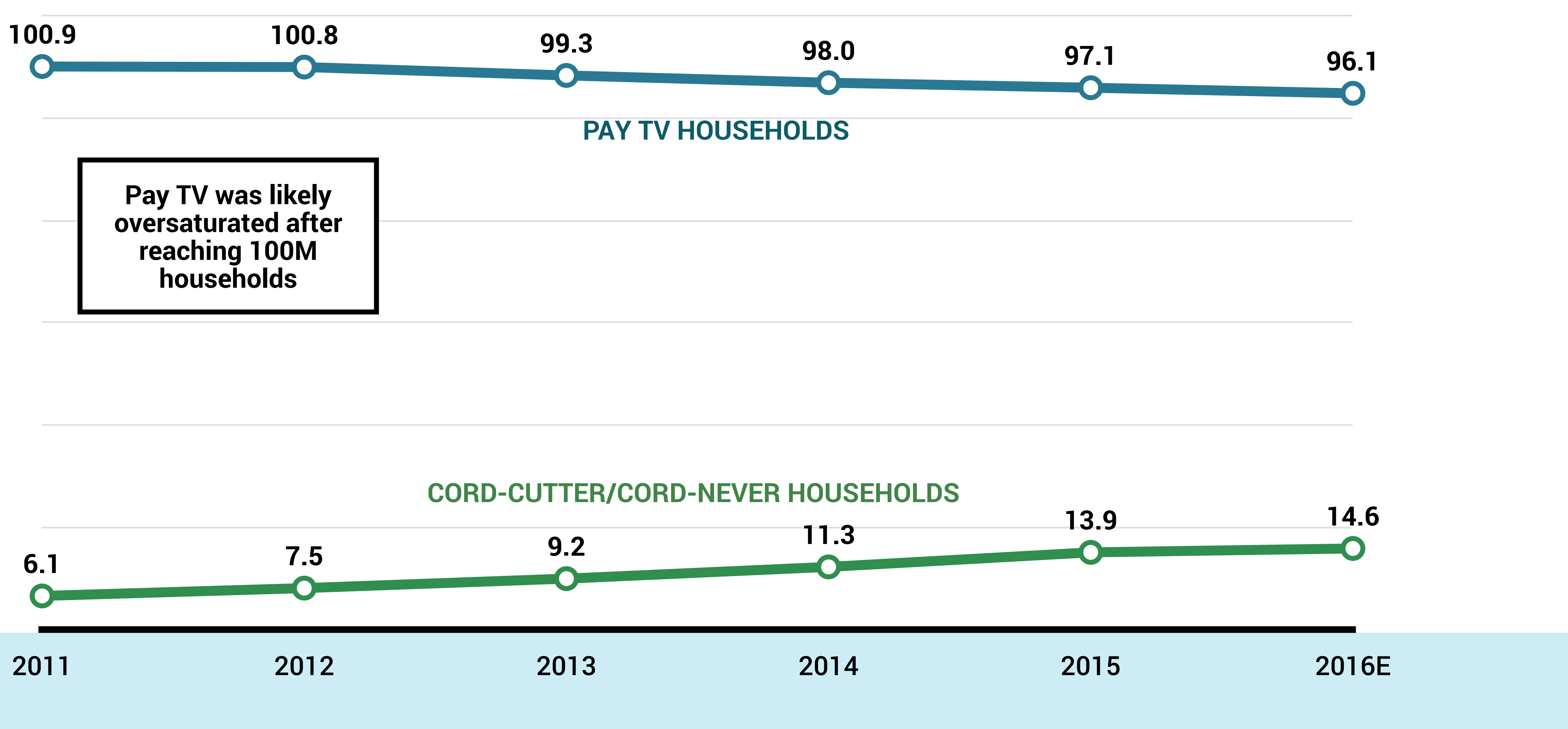
DAILY VIDEO TIME SPEND, BY TYPE, U.S., 2016E-2018E,

ACTIVATE FORECAST



But fears of widespread cord-cutting remain overblown, with Pay TV subscriptions declining only marginally

HOUSEHOLDS WITH PAY TV VS. SUBSCRIPTION OTT, U.S., 2011-2016E, MILLIONS



Sources: Activate analysis, Experian, Leichtman Research Group, U.S. Census Bureau

Younger consumers still demand Pay TV content, and are likely to pay when they can no longer access it for free using shared passwords

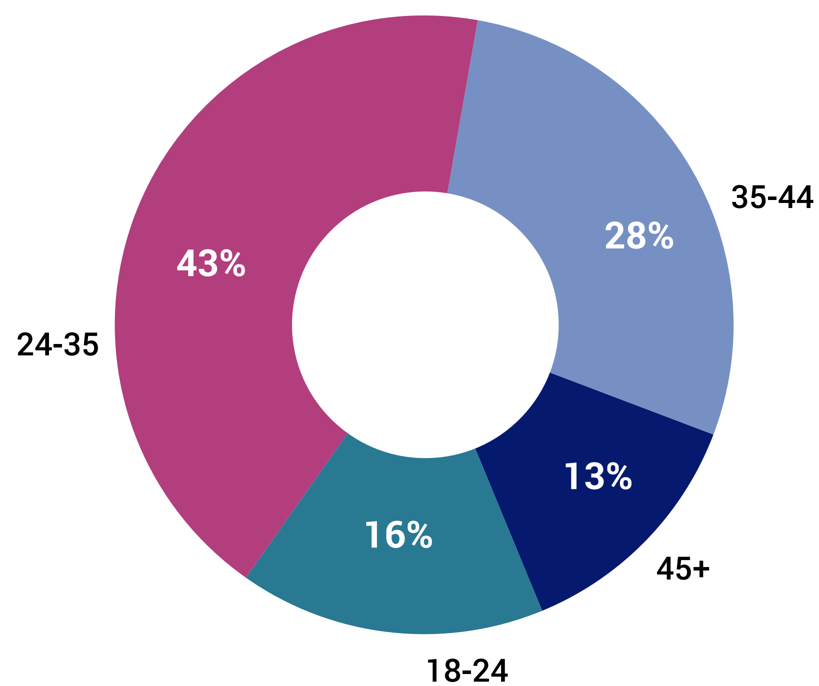
PASSWORD SHARING DEMOGRAPHICS AND BEHAVIORS OF USERS SHARING PASSWORD, U.S., 2016, PERCENT

ACTIVATE CONSUMER INSIGHT

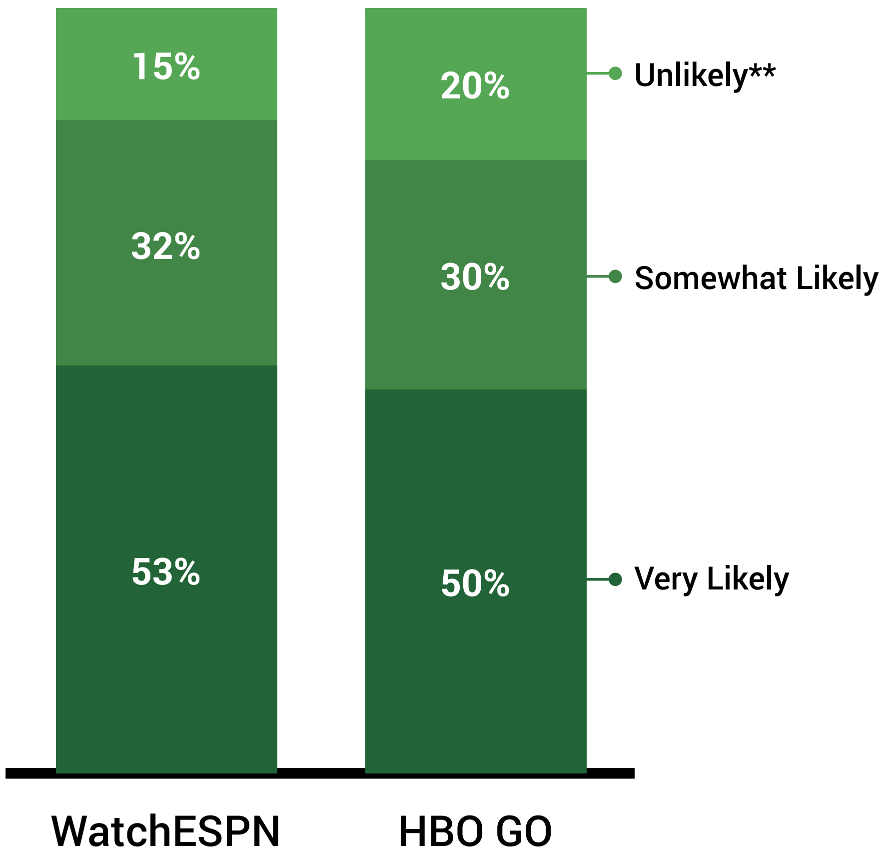
14%

of American users access TV Everywhere* applications using someone else's password

AGE OF THE PASSWORD SHARERS, 2016



LIKELIHOOD OF PAYMENT WITHOUT PASSWORD, 2016

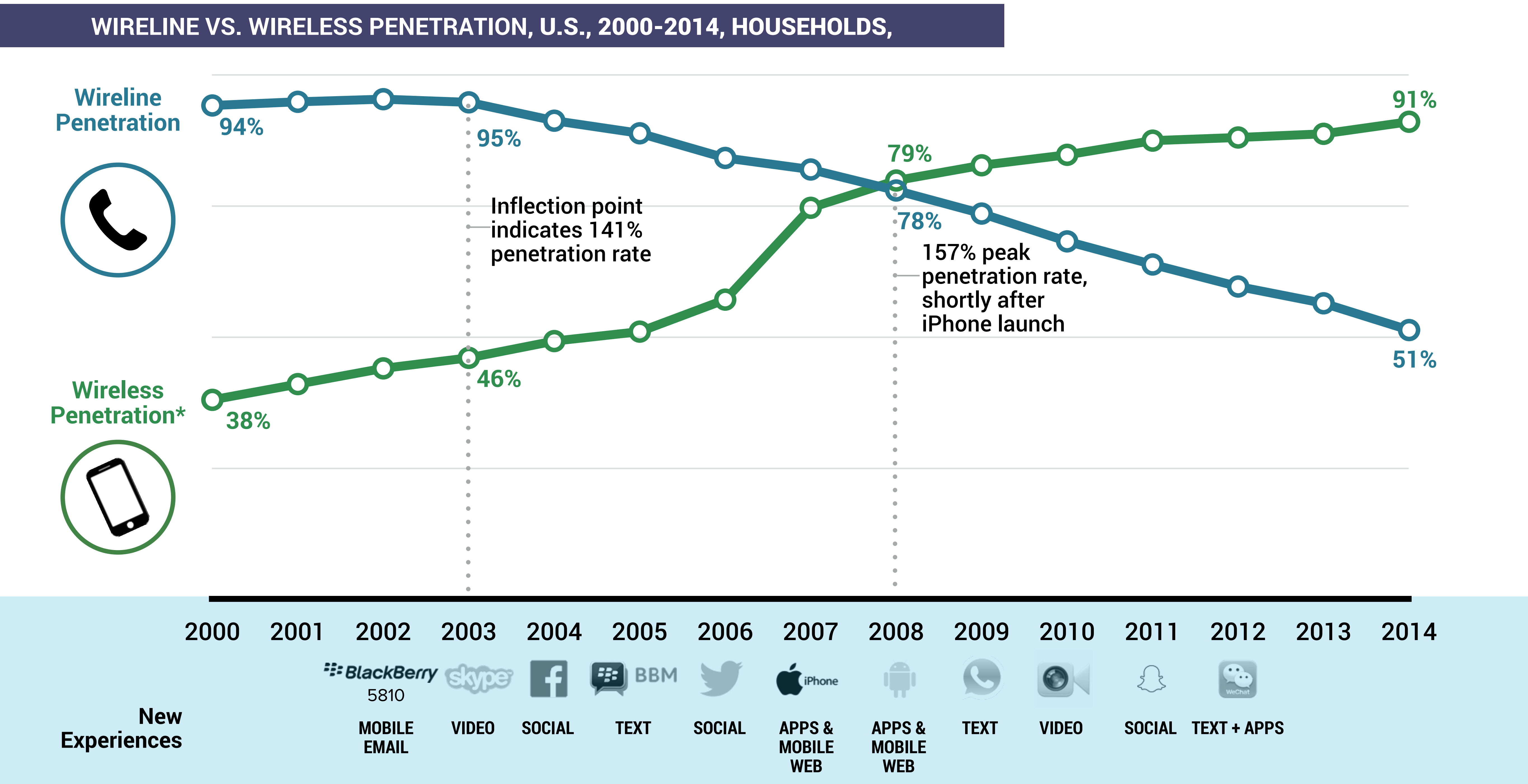


*Pay TV service that allows subscribers to watch content online
**Includes all respondents selecting "Unsure", "Somewhat Unlikely," and "Very Unlikely."
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

A handful of virtual Pay TV players are poised to enter the market

	AVAILABLE		ANNOUNCED		LIKELY		
SERVICE	PlayStation Vue	sling	hulu	DIRECTV	YouTube	amazon	Apple
PARENT(S)	Sony	Dish	Disney, Fox, Comcast, Time Warner	AT&T	Alphabet	N/A	N/A
MONTHLY PRICE(S)	\$30-\$40 (Slim) \$40-\$75 (Standard)	\$20-\$40	\$30-\$40 (est.)	\$30-\$40 (est.)	\$20-35 (est.)	Unknown	Unknown
LAUNCH YEAR	2015	2015	2017	2017	2017	Unknown	Unknown
SUBSCRIBER BASE	~100,000	~800,000	N/A	N/A	N/A	N/A	N/A
APPARENT STRATEGY	• Increase sales for Playstation 4 games and consoles • Draw attention to other digital offerings	• Capture Pay TV cord-cutters • Maintain consumer relationship with Pay TV cord-cutters	• Capture cord-cutters using established SVOD brand • Build on existing advantages in stacking and ad-revenue sharing with existing networks	• Protect television market share • Attract cord-cutters and younger subscribers, even at a lower margin	• Build on established web video presence to reach digital-native cord cutters • Continue shift to more premium experience	• Disrupt traditional providers by providing expansive IP solution • Build on extensive IP delivery infrastructure and deep cash reserves	• Disrupt traditional providers by providing expansive IP solution • Build on extensive IP delivery infrastructure and deep cash reserves

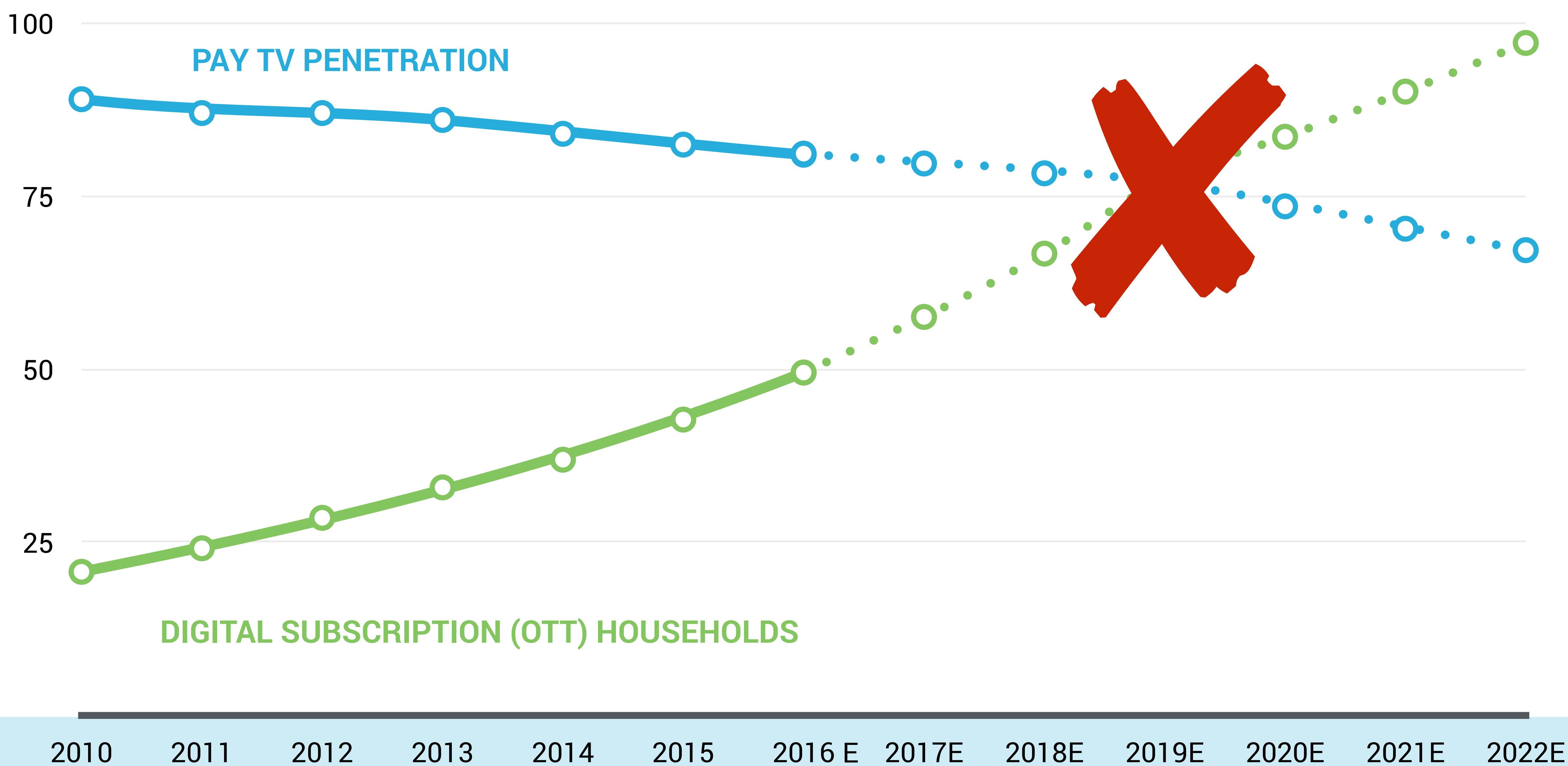
However, this is not a simple technology transition



*Does not include data-only connections
Sources: Activate analysis, CDC, CTIA, FCC, Gartner, Interviews, SNL Kagan

Cord-cutting is highly unlikely to follow the same pattern as telephones

PAY TV AND SUBSCRIPTION OTT HOUSEHOLD PENETRATION RATES, U.S., 2010-2022E, PERCENT



Sources: Activate analysis, Experian, Leichtman Research Group, U.S. Census Bureau

What will need to happen for virtual Pay TV services to replace cable and satellite television?

Efficient Customer Acquisition

\+ Quality Programming

\+ Competitive Pricing

\+ Channel Buffet

\+ Better User Experience

\+ Reliable Delivery

= **New Pay TV Alternative**

New entrants to the virtual Pay TV space face significant customer acquisition challenges that established MVPDs can overcome

Higher Customer Acquisition Cost

- New entrants face low consumer awareness
- MVPDs have a billing relationship as well as knowledge of customer preferences and contracts with existing Pay TV and broadband customers
- Poor app store economics make discovery of virtual Pay TV apps highly difficult

Higher Churn

- New entrants without an ecosystem of services will have difficulty creating stickiness
- Established players can bundle offerings and offer discounts to departing customers to increase consumer retention
- Virtual Pay TV players like Sling have seen high churn numbers over recent quarters

Strategic Pricing Disadvantages

- Incumbents can use pricing as a customer acquisition lever by offering certain products as loss-leaders or offering first-year teaser rates
- New players will gradually have to charge higher prices in order to cover higher programming costs, limiting consumer acquisition strategies

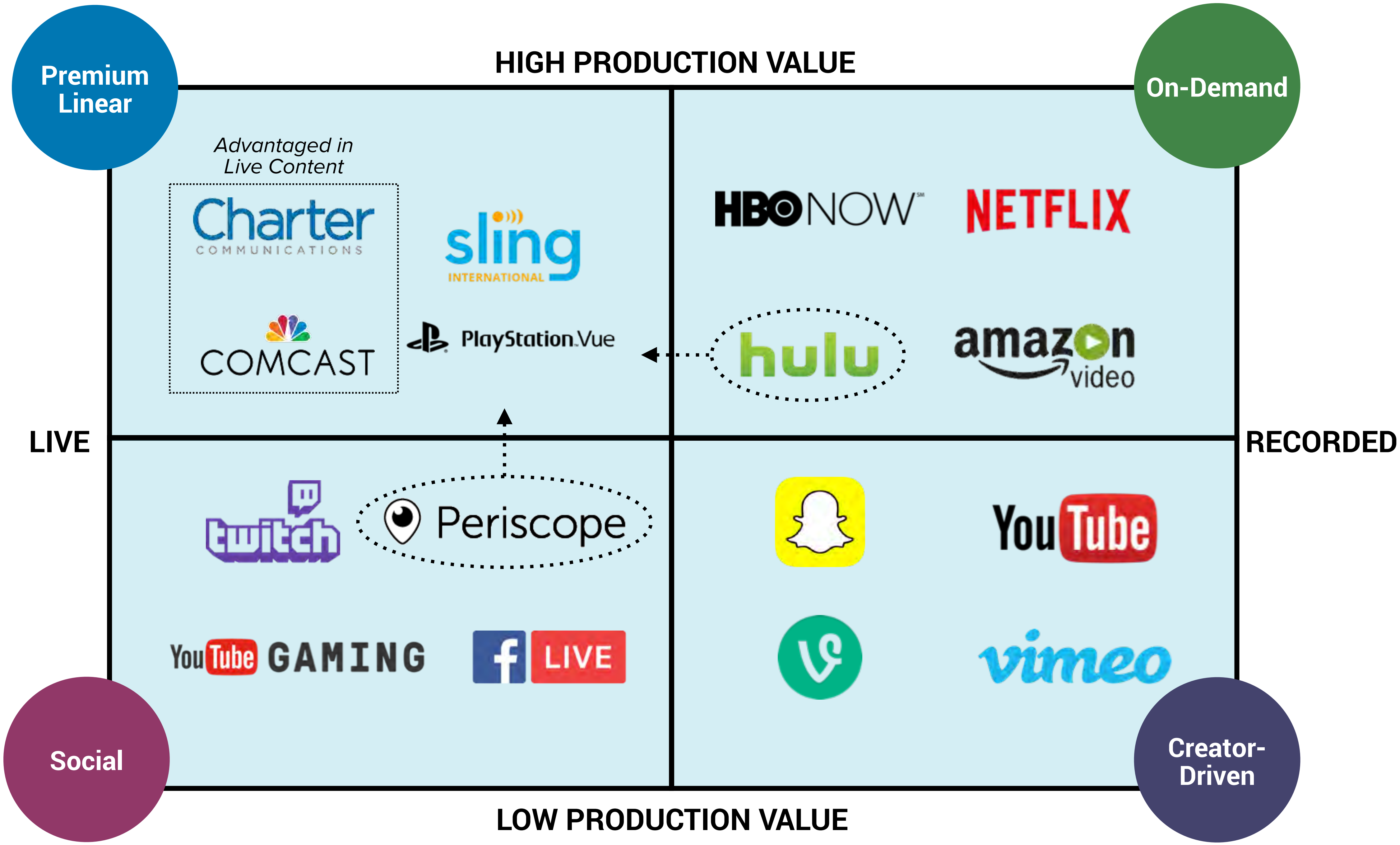
Content Packages and Bundles

- Incumbents have access to a greater number of licensed channels to create a range of packages from skinny bundles to highly customized packages

Source: Activate analysis

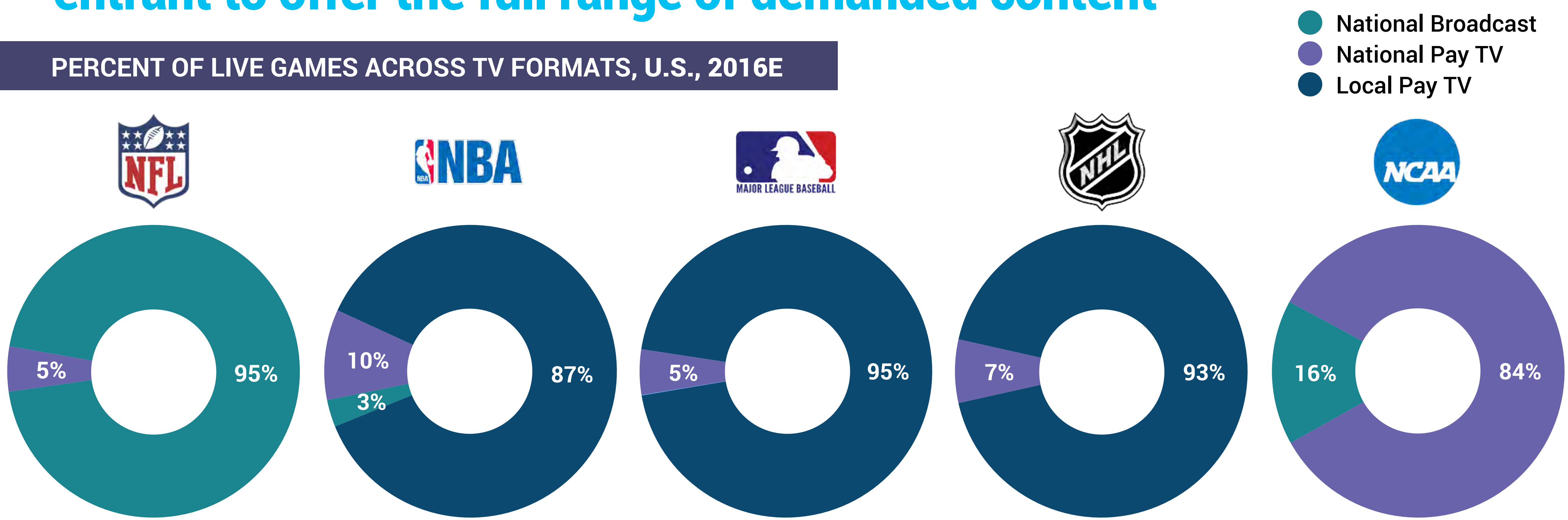
Pay TV holds an advantage in live, high-demand programming, although streaming alternatives are attempting to enter the space

ACTIVATE VIDEO CONTENT MATRIX



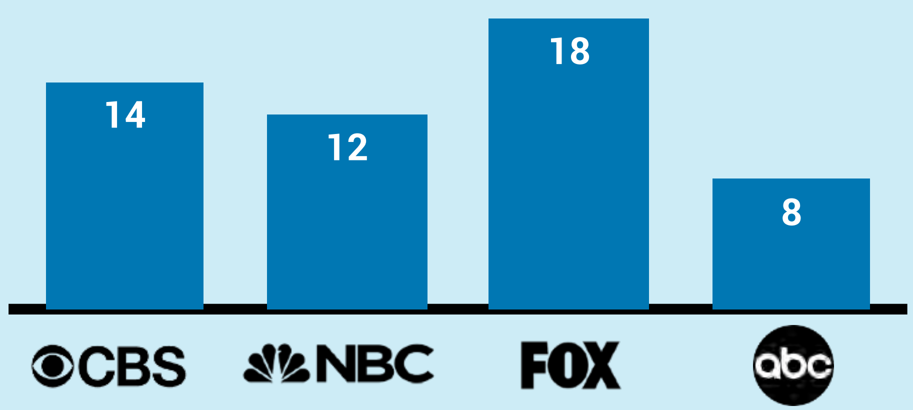
Live sports are essential for a Pay TV package, but are highly fragmented across markets, limiting the ability of a new virtual entrant to offer the full range of demanded content

PERCENT OF LIVE GAMES ACROSS TV FORMATS, U.S., 2016E



PlayStation Vue

Number of cities with live streaming access

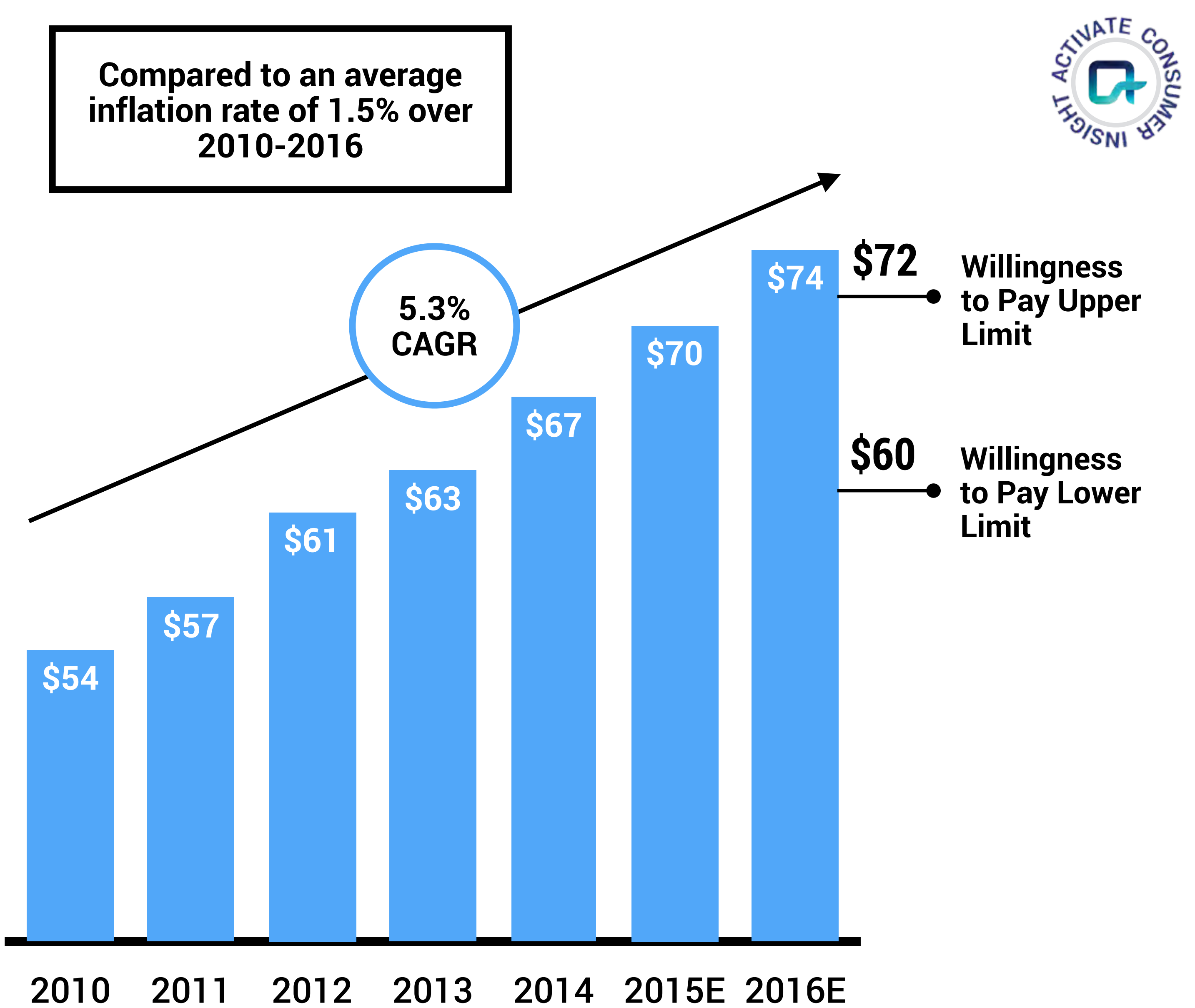


CBS ALL ACCESS

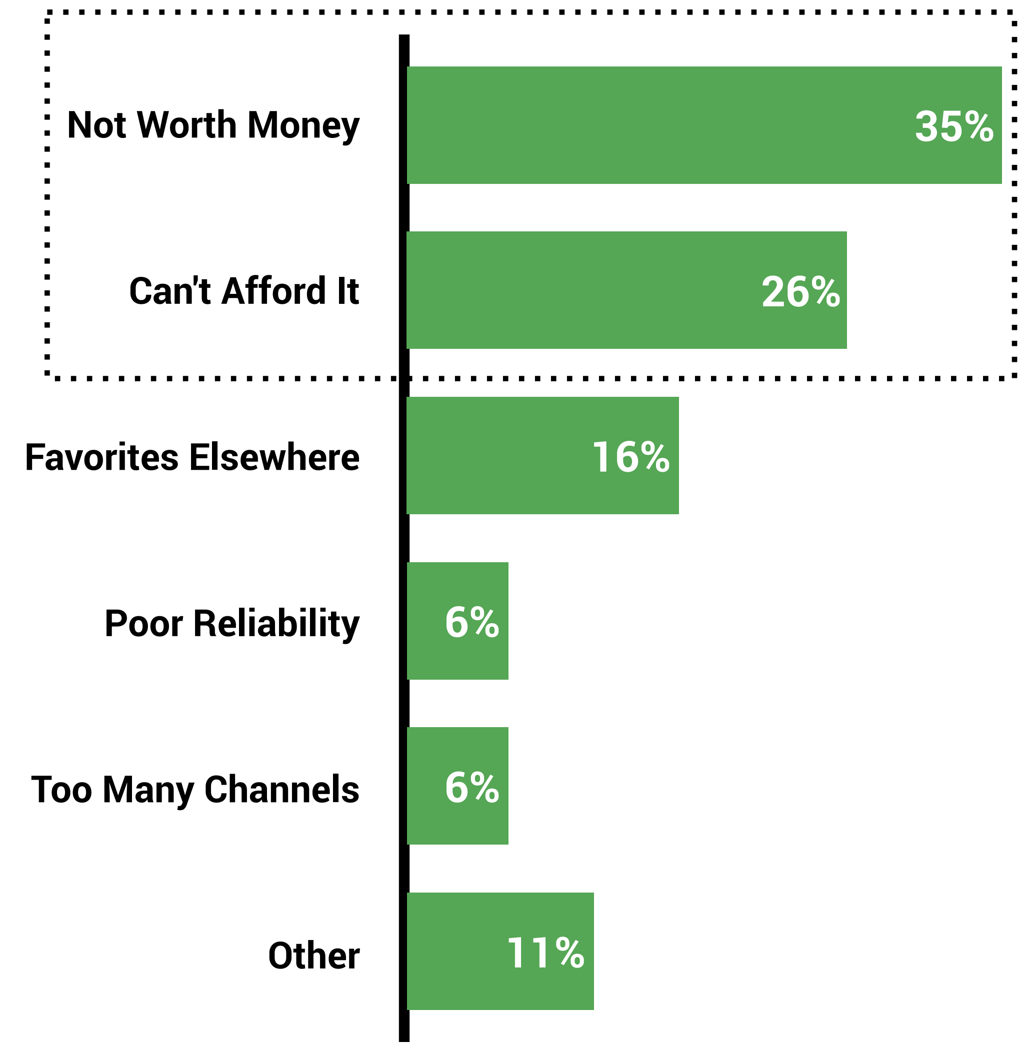
CBS All Access offers live streaming for only select college sports events

Pay TV prices have reached the upper bound of consumer willingness to pay

PRICE OF EXPANDED BASIC CABLE, U.S., 2010-2016E*, USD



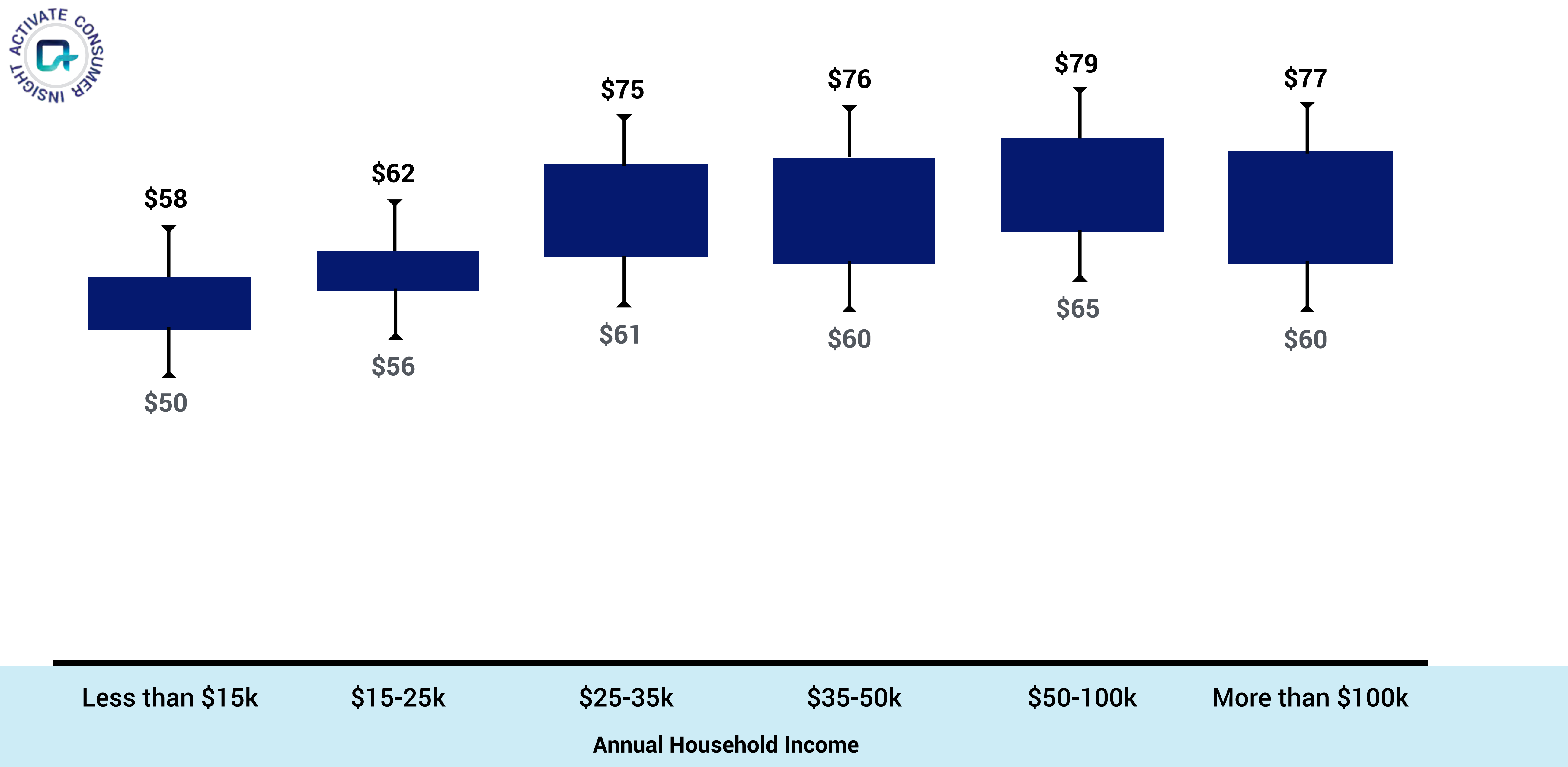
PRIMARY REASON FOR NOT HAVING PAY TV, 2016



*Monthly prices, 2015 and 2016 extrapolated from historical trends
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), FCC

Consumers subscribe to Pay TV at all income levels, suggesting that lower-priced packages alone will not significantly impact demand for Pay TV

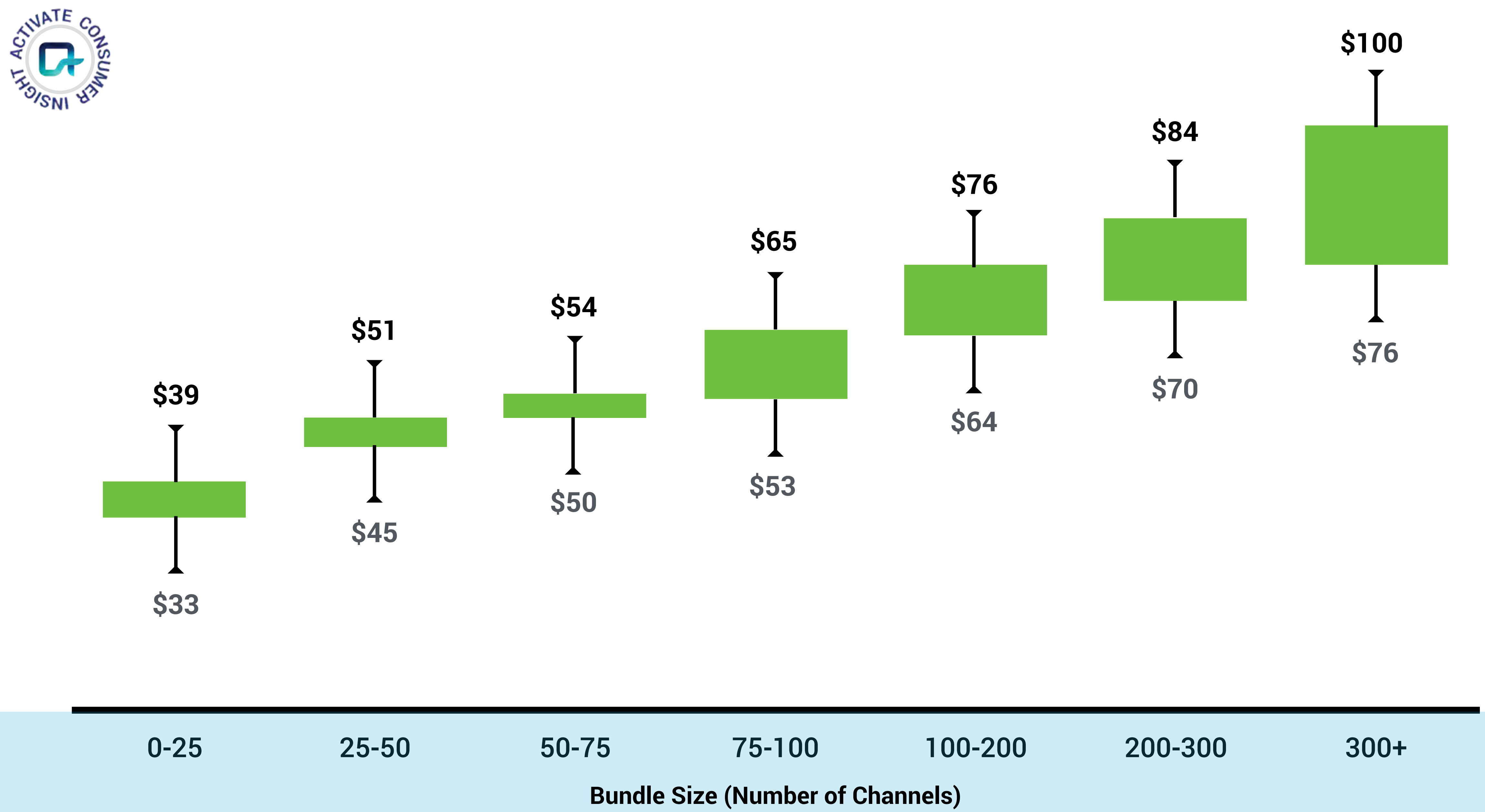
WILLINGNESS TO PAY RANGE FOR MONTHLY SUBSCRIPTION BY INCOME, PAY TV SUBSCRIBERS, U.S., 2016, USD



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

In fact, our research indicates that content breadth is a more important value driver — consumers want the content buffet

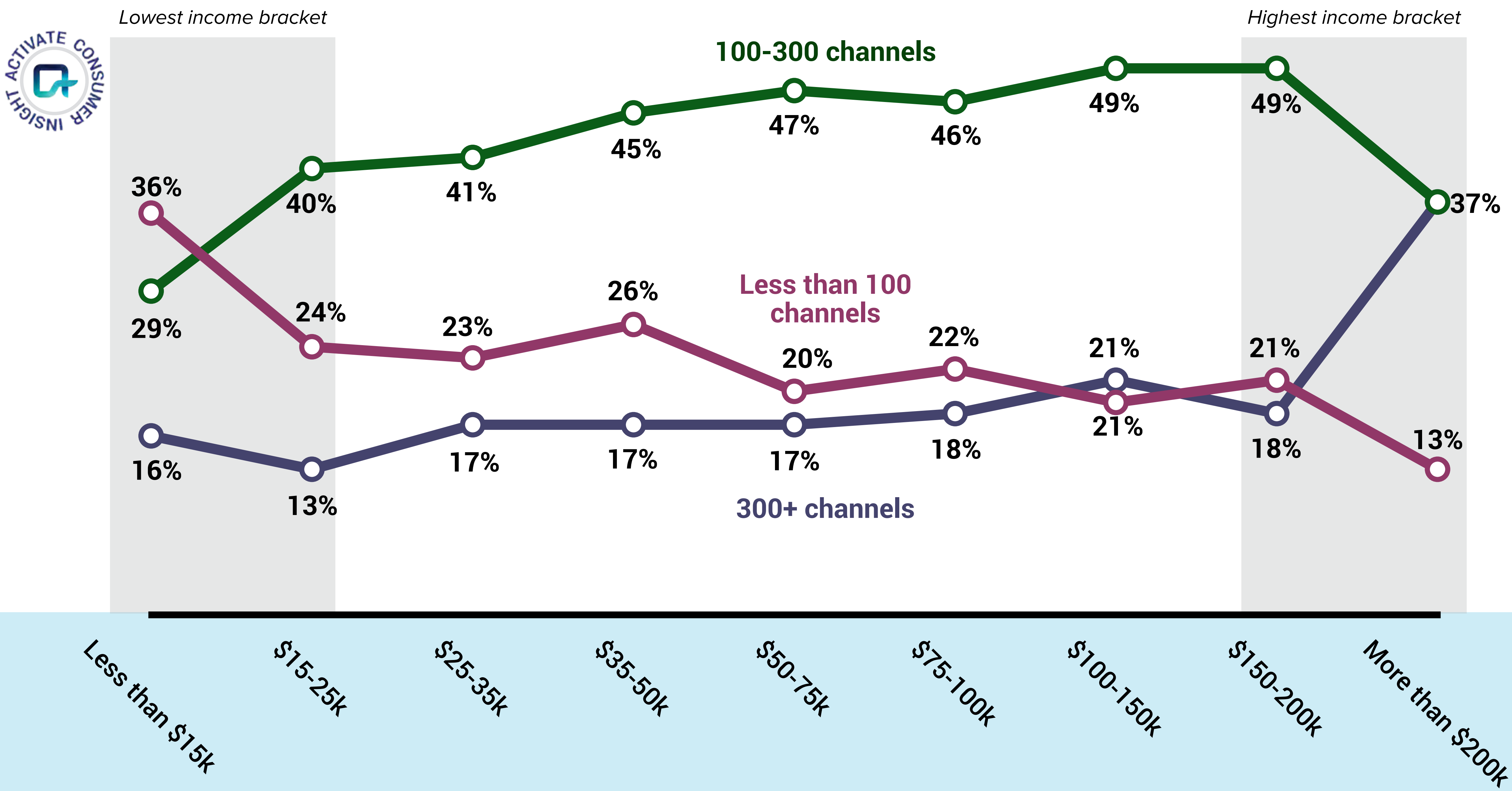
WILLINGNESS TO PAY RANGE FOR MONTHLY SUBSCRIPTION BY BUNDLE SIZE, PAY TV SUBSCRIBERS, U.S., 2016, USD



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

Outside the extremes of income distribution, consumers prize the option value of larger bundles

CHANNEL BUNDLE PENETRATION BY INCOME LEVEL, PAY TV SUBSCRIBERS, U.S., 2016, SIZE OF BUNDLE, PERCENT USERS



This is why skinny bundles are getting fatter; in order to appeal to various consumer segments, previously slim packages are adding more channels

	verizon	PlayStation Vue	sling TELEVISION
	$65	**$40-75**	**$20-40**
Skinny	*Custom TV - Sports & More* 60+ Channels (no HBO)	*Access - $40 / month* 60+ Channels (no HBO, regional sports)	*Orange - $20 / month* 25+ Channels (no broadcast, HBO, regional sports)
Expanded	*Custom TV - Essentials* 80+ Channels (no ESPN, Turner, HBO)	*Elite - $75 / month* 100+ Channels (includes HBO & Showtime)	*Orange + Blue - $40 / month* 40+ Channels (no broadcast, HBO, regional sports)

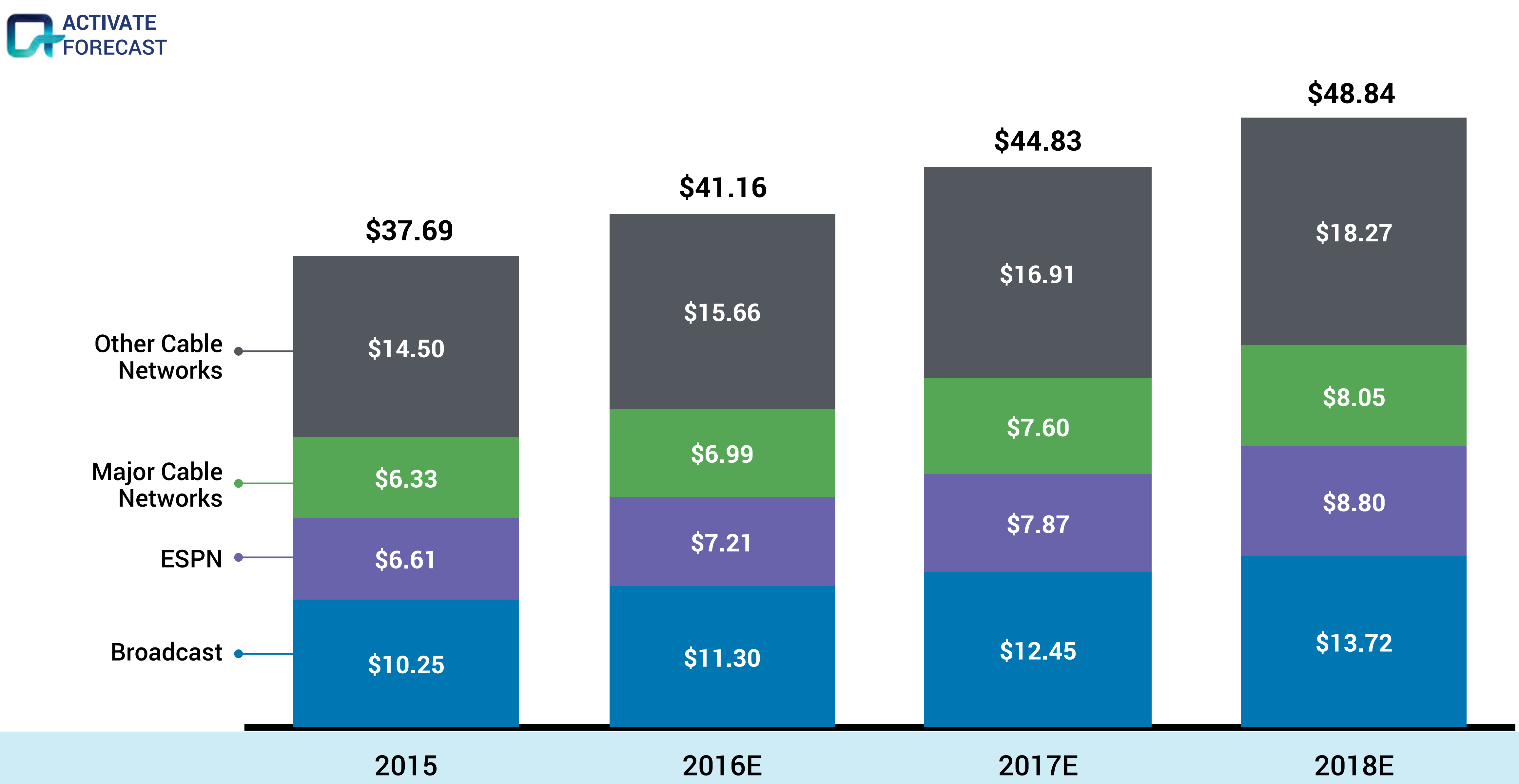
activate

Sources: Activate analysis, AT&T, Charter, Comcast, Time Warner Cable, Verizon

WSJ.D LIVE

Overall, the costs to the operator of assembling a comprehensive television package will continue to rise, favoring scaled players

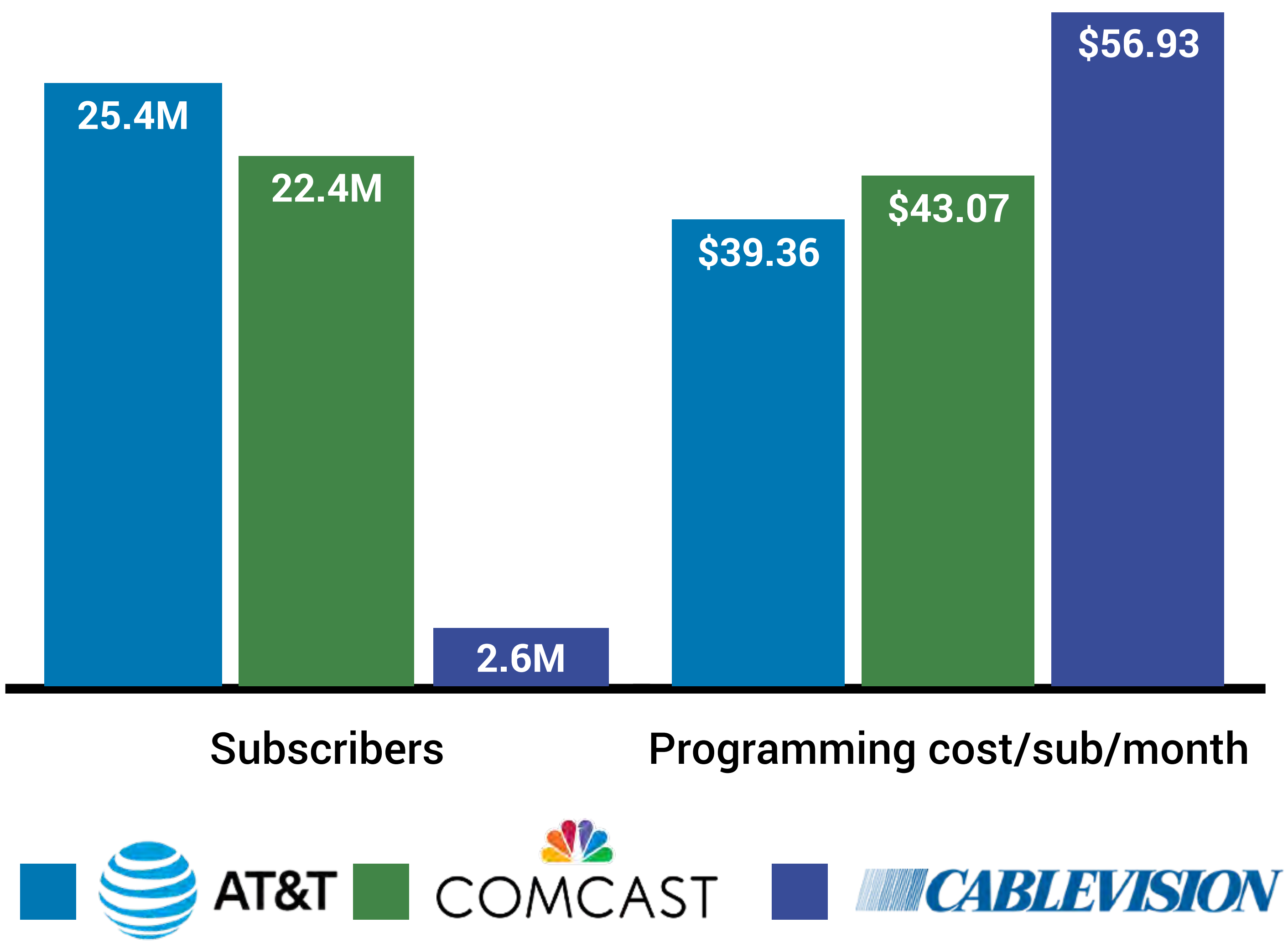
AVERAGE NETWORK AFFILIATE FEES PER SUBSCRIBER, U.S., 2015 - 2018E, USD



Note: Based on analysis of a 60-70 channel non-broadcast bundle containing popular networks including ESPN, TNT, TBS, and USA. Major cable networks is comprised of 6 channels (ESPN2, TNT, Disney, TBS, USA, Nick).
Sources: Activate analysis, CNBC, Forbes, MoffettNathanson, SNL Kagan

The old winners are likely to be the new winners; once established MVPDs enter the market, they will leverage their wide reach into a cost advantage over smaller players

SUBS & PROGRAMMING COSTS / SUBSCRIBER / MONTH, U.S., 2016E, USD

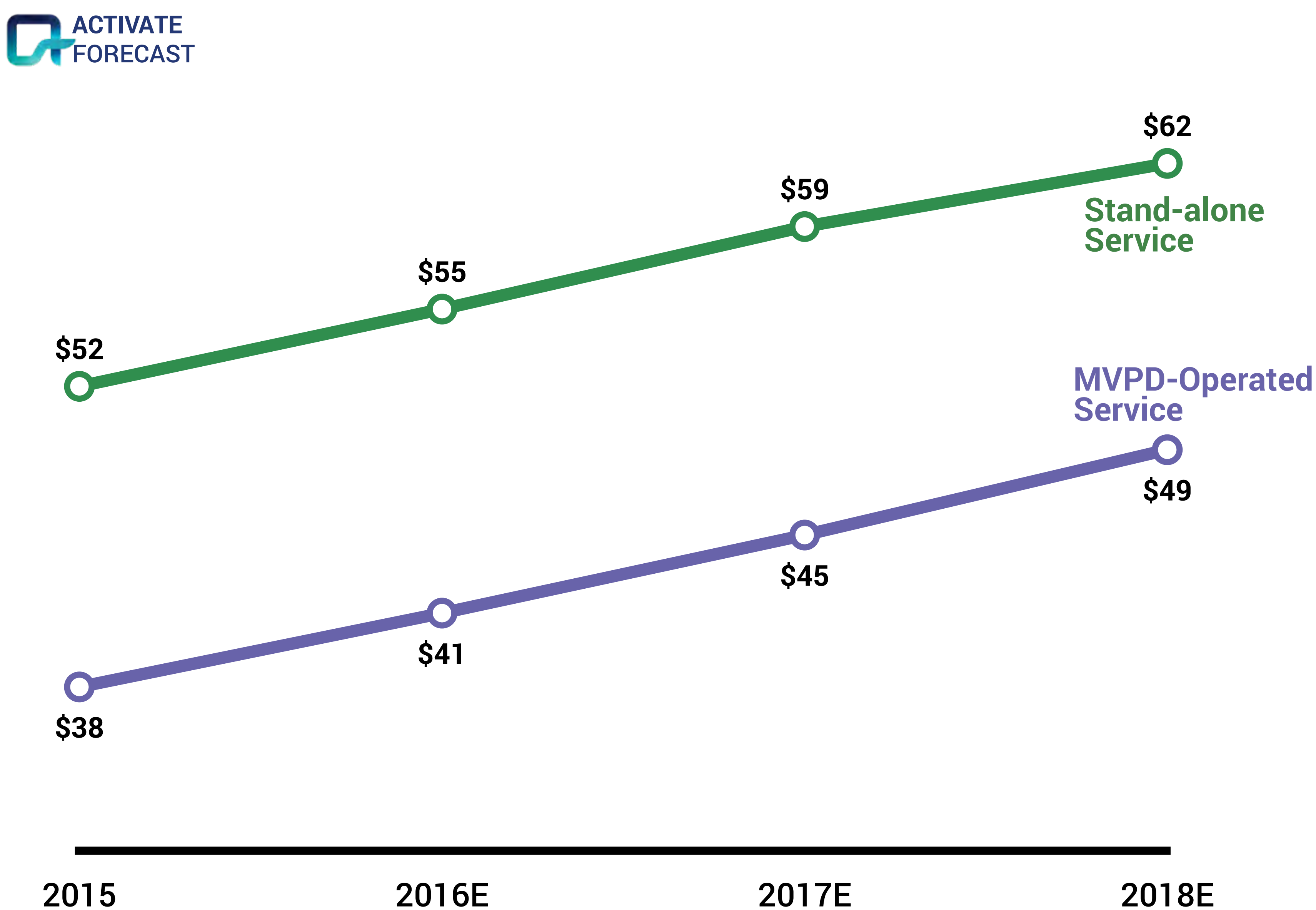


NETWORKS CURRENTLY PARTNERED WITH DIRECTV NOW

Playstation Vue and Sling have recently added larger, higher-priced bundles, emphasizing the need for a comprehensive bundle of channels

New entrants to the virtual Pay TV space will find it difficult to undercut traditional price points without scale

VIRTUAL PAY TV PROGRAMMING COSTS PER SUBSCRIBER, U.S., 2015 - 2018E, USD

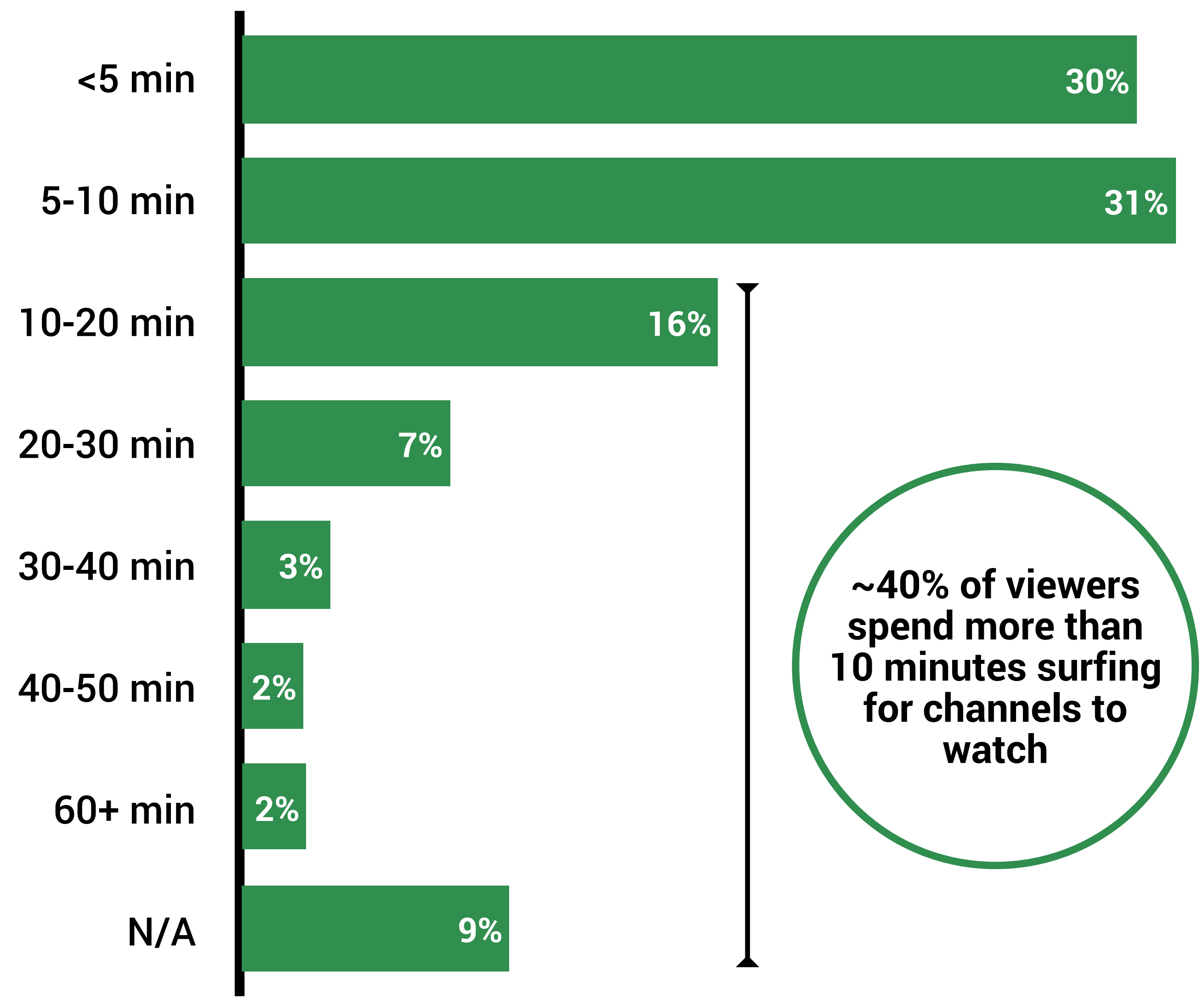


- Programming costs drive higher ARPU requirement, particularly for low-scale players
- Prices steadily approach expanded basic cable average under traditional Pay TV infrastructure
- Reliability concerns may justify consumer decisions to opt for higher-priced cable or DBS packages
- Bundling power may enable further reduction in initial price points for MVPD-operated virtual Pay TV services

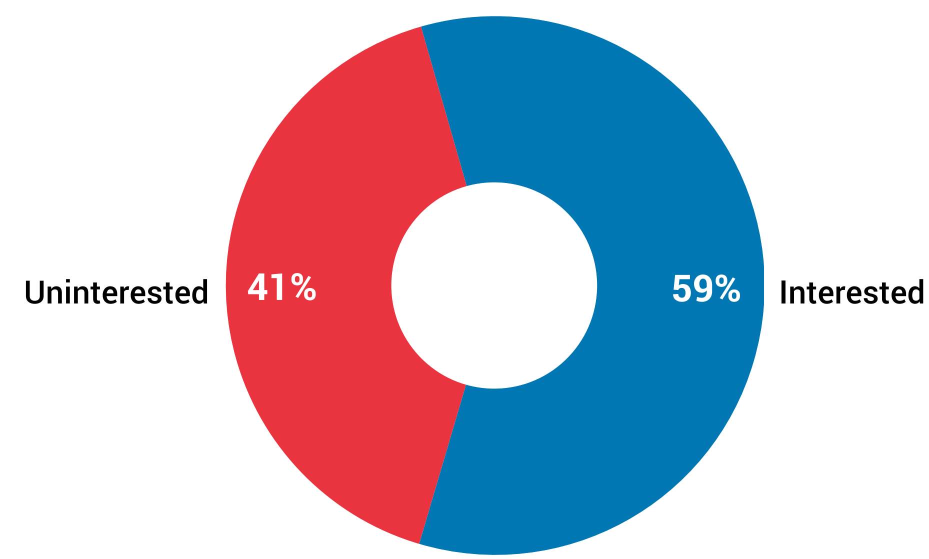
Sources: Activate analysis, AT&T, Charter Communications, Cablevision, Comcast, Time Warner Cable, UBS

Through advanced user interfaces, Pay TV has the ability to overcome challenges from new technology entrants

AVERAGE CHANNEL-SURFING TIME, U.S., 2016, PERCENT OF RESPONDENTS



INTEREST IN CATEGORY-BASED GUIDE, AMONG PAY TV SUBSCRIBERS, 2016



xfinity X1

Offers curated, category and recommendation-based search and discovery, bringing together various video sources

Sources: Activate analysis, Comcast, Digitalsmiths

Best-in-class user experience, based on simple guides and targeted recommendations, will be necessary in order to defeat traditional Pay TV services

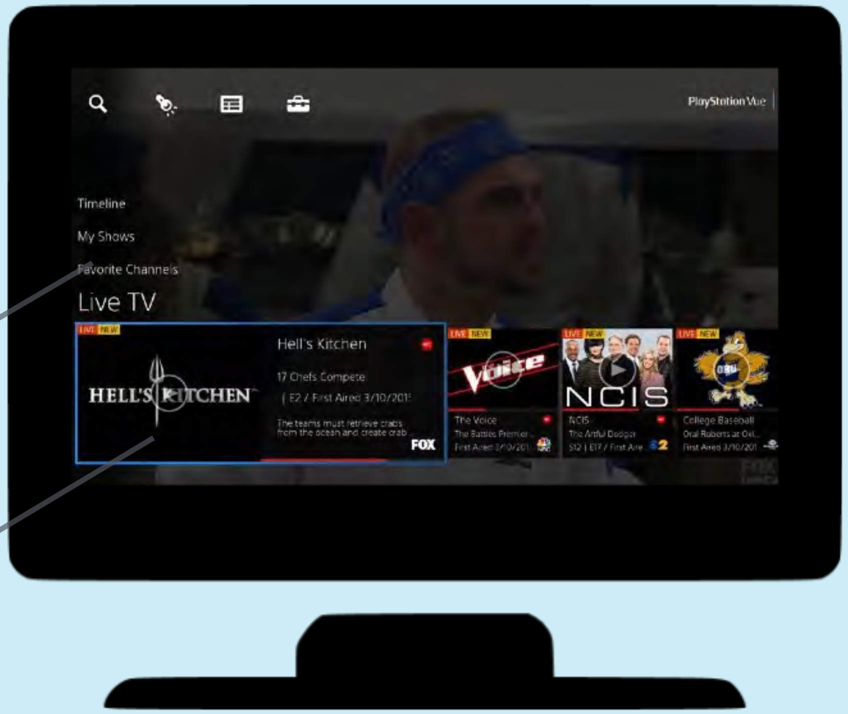
KEY ELEMENTS OF USER EXPERIENCE

In-Stream Channel Guide
Explore other channel options without having to exit back to original menu

Live/On-Demand Synthesis
Integration of library catalog titles and live broadcasts maximize content buffet

Broadcast Curation
Live TV recommendations adapt to viewer tastes and behavior

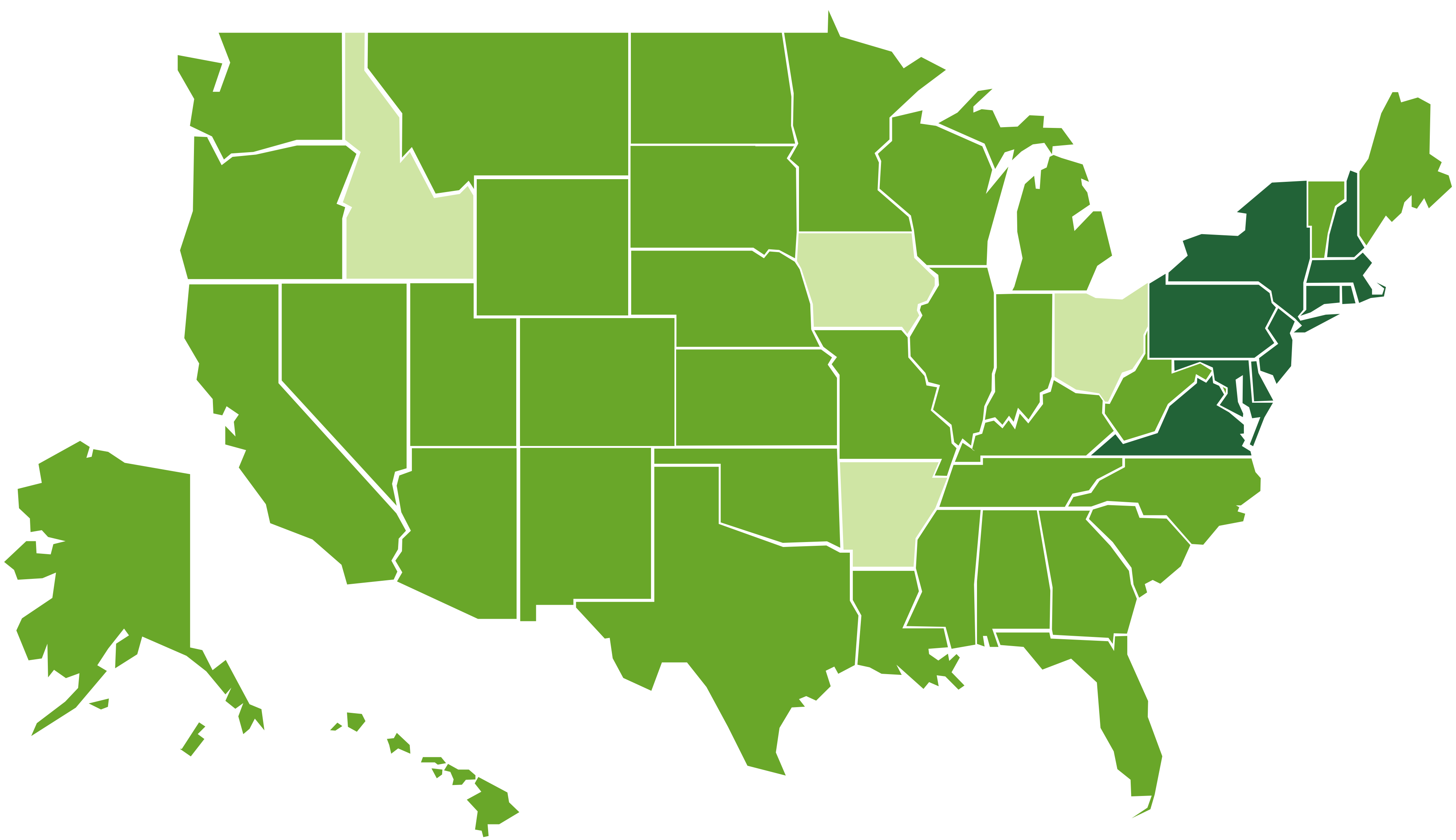
Vue's reliance on PlayStation controller impedes UX



Sources: Activate analysis, , PlayStation Vue, Sling

Only half of the US has access to the minimum download speeds recommended for virtual TV services, presenting a structural obstacle to overcome for further expansion

HOUSEHOLDS WITH ACCESS TO DOWNLOAD SPEEDS OF 10+ MBPS, U.S., 2016, PERCENT OF



10 Mbps

Minimum advertised speed required for PS Vue

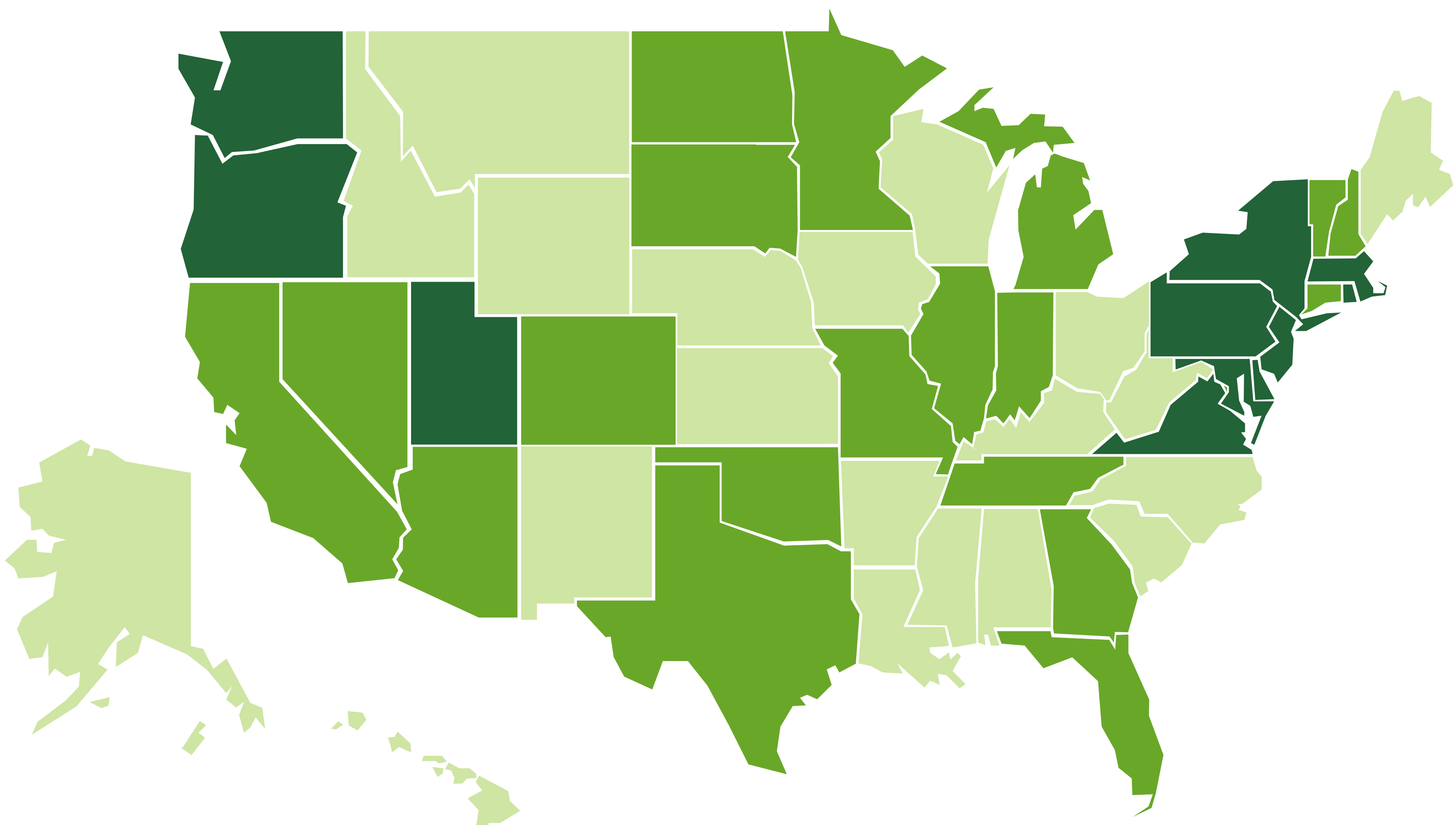
KEY

- 60-70%
- 40-60%
- <40%

Sources: Activate analysis, Akamai, SNL Kagan, U.S. Census Bureau

Meanwhile, only 12% of the US has access to the download speeds that an average household would need to support multiple virtual Pay TV streams

HOUSEHOLDS WITH ACCESS TO DOWNLOAD SPEEDS OF 25+ MBPS, U.S., 2016, PERCENT OF



25 Mbps
Sling's recommended speed for households running internet on 2+ devices

KEY

- 60-70%
- 40-60%
- <40%

Sources: Activate analysis, Akamai, SNL Kagan, U.S. Census Bureau

Established tech players with ecosystem advantages are best positioned to rival MVPDs in the virtual Pay TV space

● Strong ● Limited ● Weak

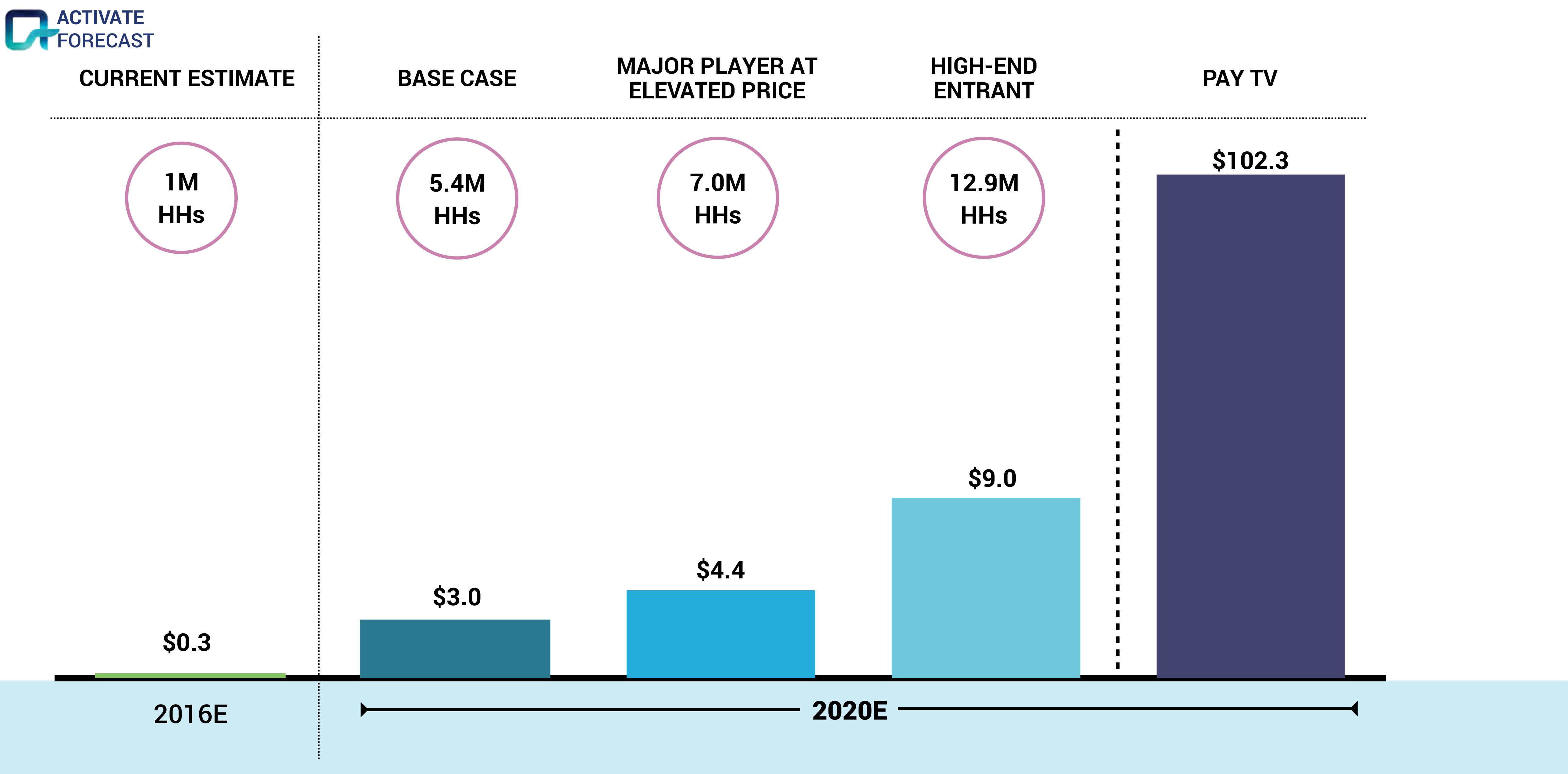
	MVPD VIRTUAL PAY TV	STAND-ALONE VIRTUAL PAY TV	ESTABLISHED TECH PLAYERS
Customer Acquisition	Strong	Weak	Strong
Quality Programming	Strong	Limited	Strong
Channel Buffet	Strong	Limited	Strong
Competitive Pricing	Strong	Weak	Limited
Superior User Experience	Limited	Limited	Strong
Reliable Delivery	Weak	Weak	Weak

activate

Source: Activate analysis, Company data

Overall, virtual Pay TV may not see significant growth in the short-term unless the major Pay TV and technology players pursue aggressive strategies to build their virtual Pay TV businesses

VIRTUAL PAY TV REVENUE AND HOUSEHOLD PROJECTIONS, U.S., 2016E-2020E, BILLIONS USD, MILLIONS HH*



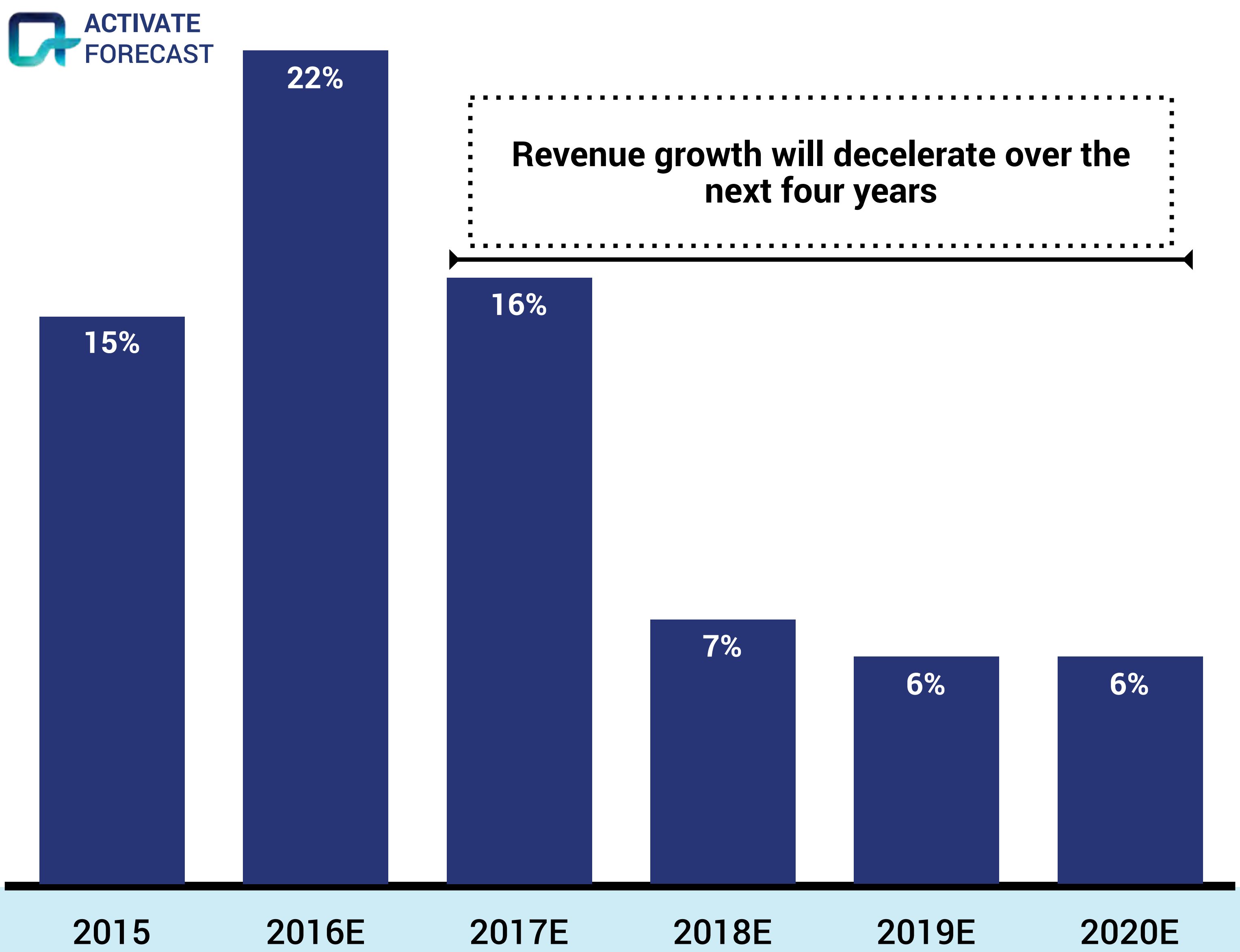
*HH projections rounded to nearest half-million.
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study, AT&T, Business Insider, Dish, Hulu, J.P. Morgan, MoffettNathanson, PwC, SNL Kagan, Sony, Trefis, UBS, The Verge

The 9 Most Important Insights for Tech and Media in 2017

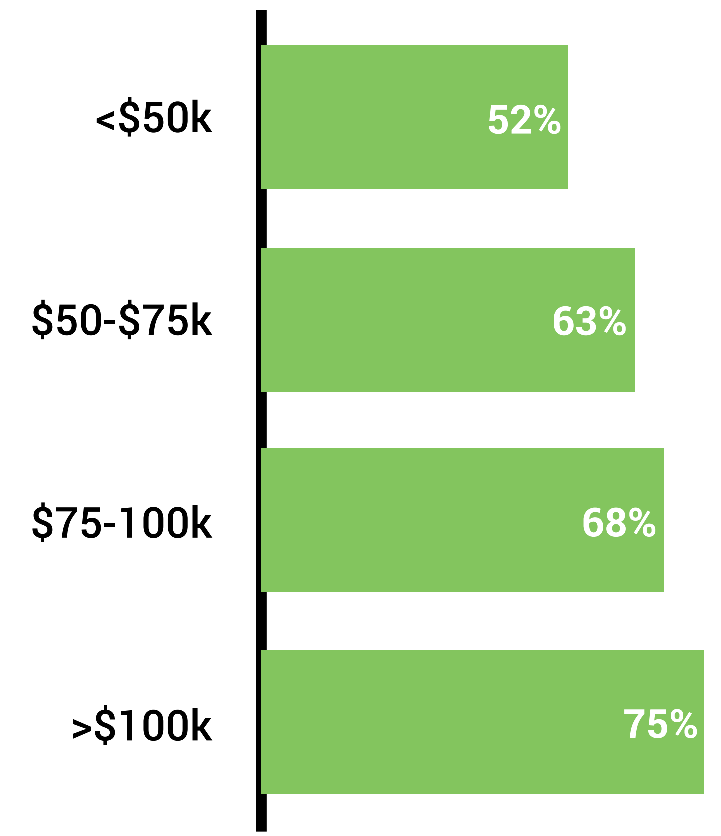
- Super-serve the Super-users and Chase the Attention Unicorns
- Subscriptions will Feed the World (or at least Internet and Media Businesses)
- Learn to Live with the Discovery Oligopoly
- The Bot Battles are about Winning the Great Messaging War
- eSports is the Next Tech Phenomenon
- You Already Know the New Winners in Pay TV
- **Video Streaming: The Bundle is the Future**
- Audio: Smart Speakers, Gray Music
- Post-Household America: A New Era of Users

Video streaming is becoming saturated in connected households across income brackets, leading to decelerated year-over-year growth

SVOD YEAR-OVER-YEAR REVENUE GROWTH, U.S., 2016E-2020E, PERCENT



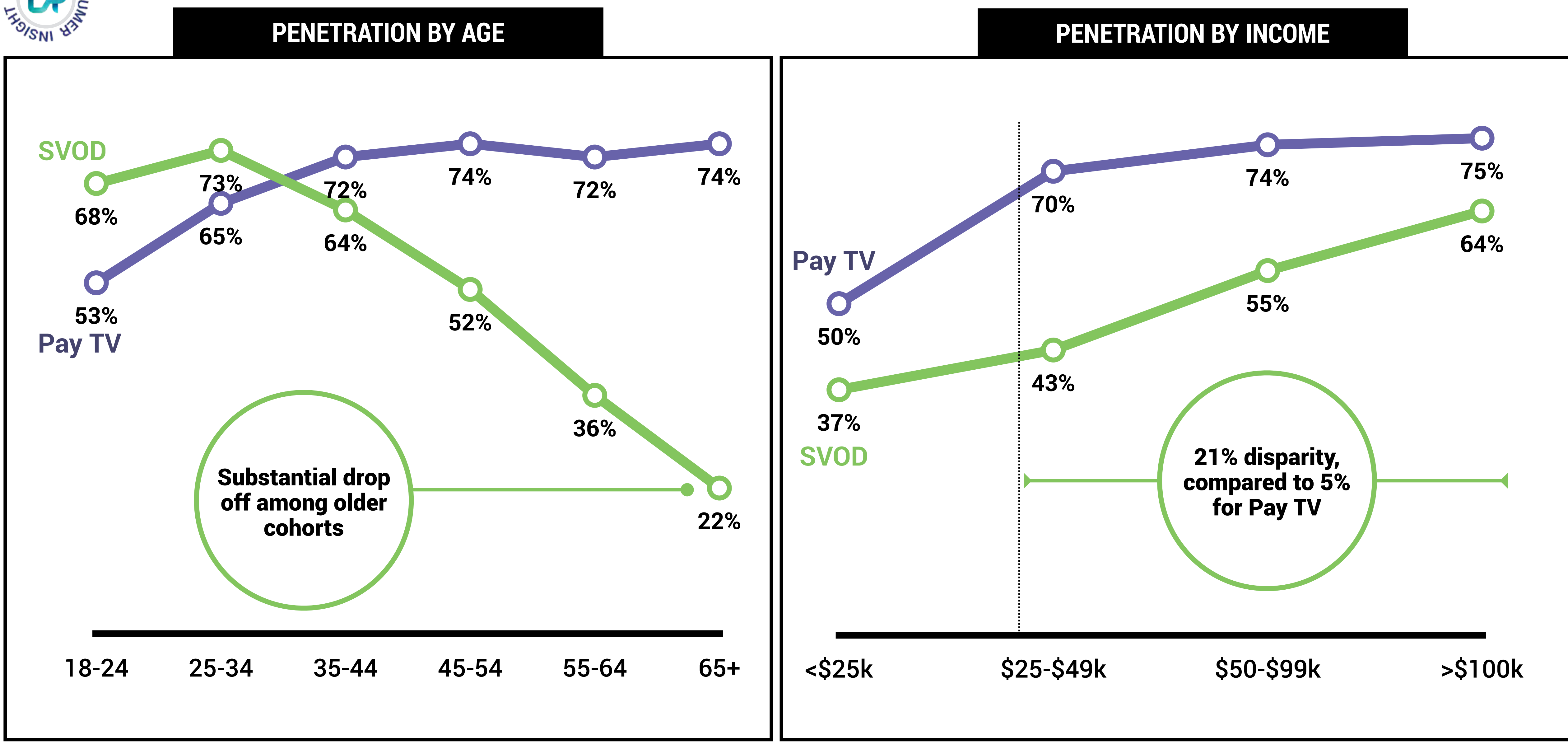
SVOD PENETRATION IN BROADBAND HOMES, BY ANNUAL INCOME, 2016



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (N=4,000), Digital TV Research, Nielsen, PwC, SNL Kagan, Strategy Analytics

Barring strategic adjustments, streaming services will struggle to find growth among older, lower-income users

SVOD AND PAY TV PENETRATION BY AGE AND INCOME, U.S., 2016, PERCENT OF POPULATION



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

Password sharing draws potential future consumers, but much of it takes place within the family, limiting the addressable opportunity

SVOD PASSWORD SHARING, U.S., 2016, PERCENT

ACTIVATE CONSUMER INSIGHT

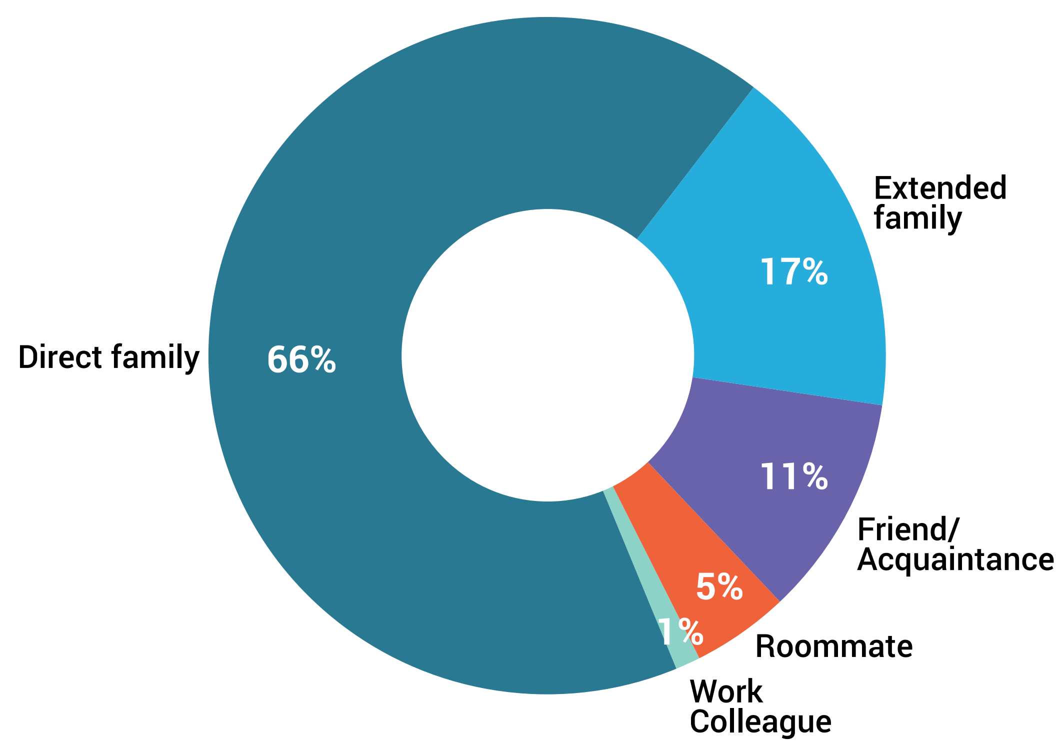
35%

of American SVOD users access streaming services using someone else's password

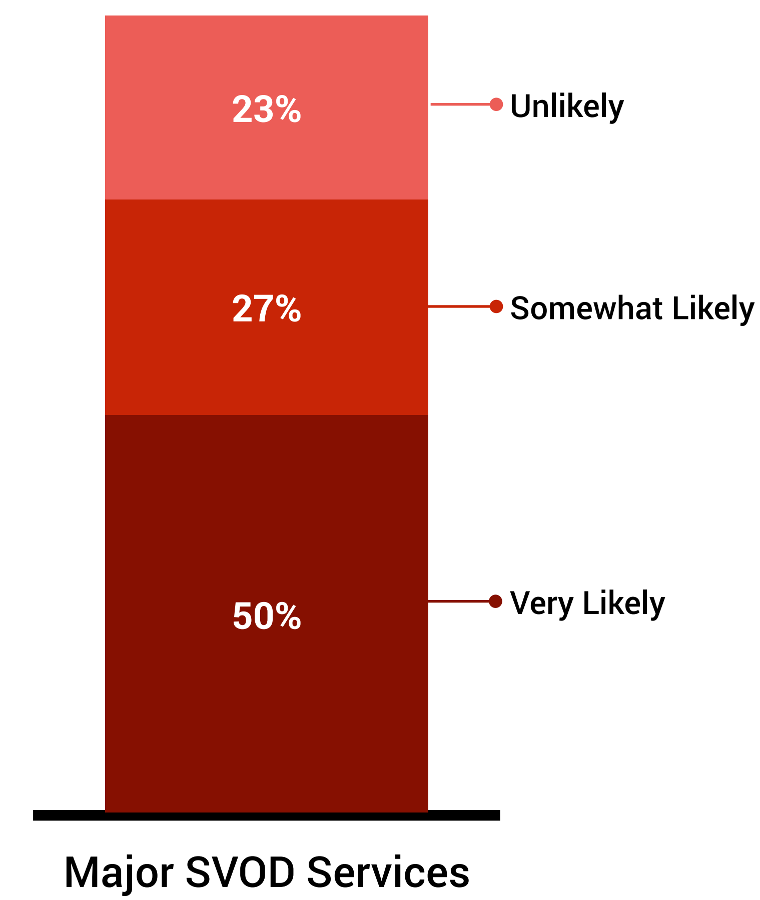
$500 million

total addressable opportunity

SOURCES OF SHARED SVOD PASSWORD, 2016



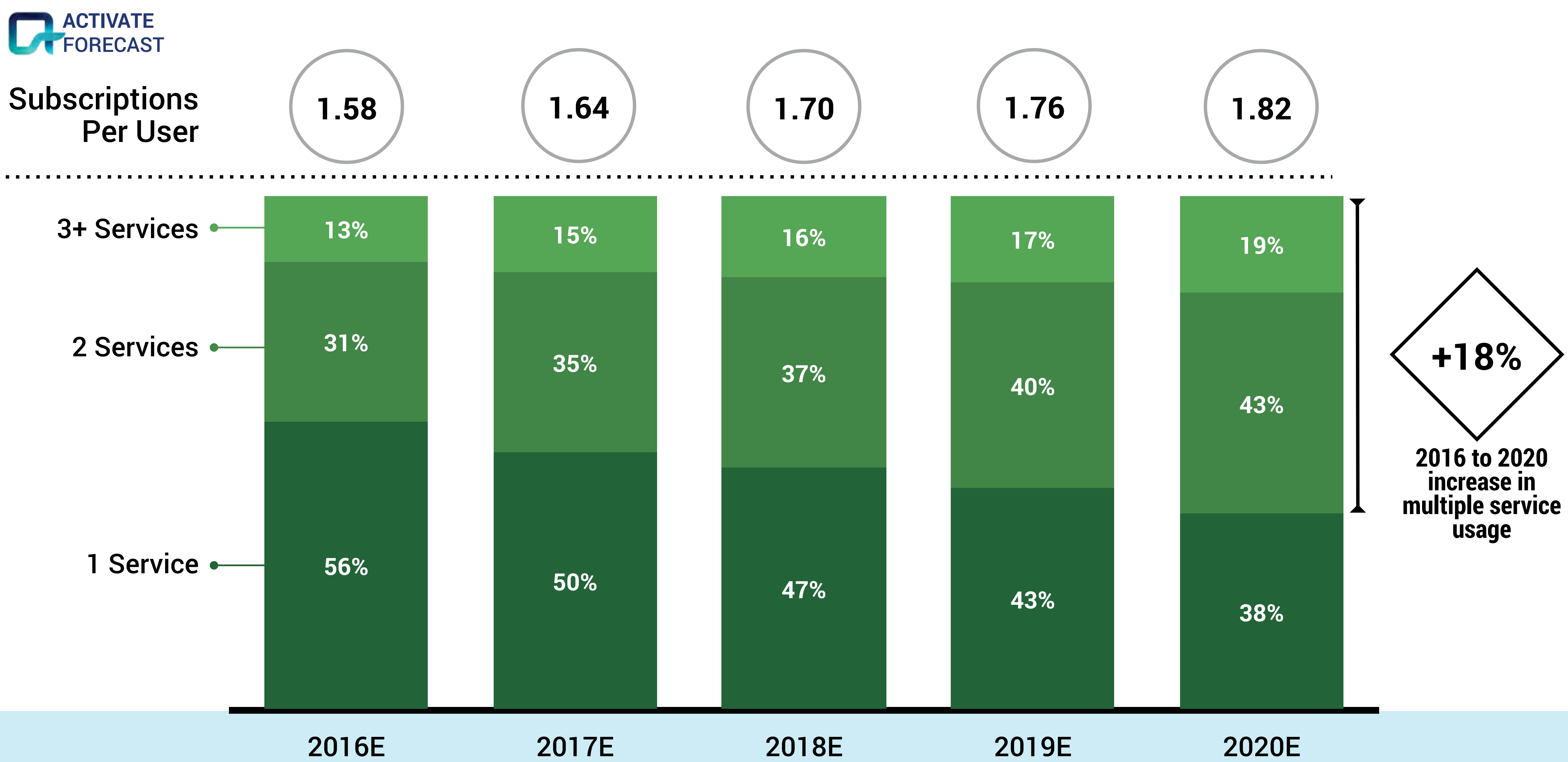
LIKELIHOOD OF PAYMENT WITHOUT PASSWORD*, 2016



*Likelihood of payment without access to shared password
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000)

Current users will drive growth as they double down on services, with multiple-service users becoming the majority by 2018

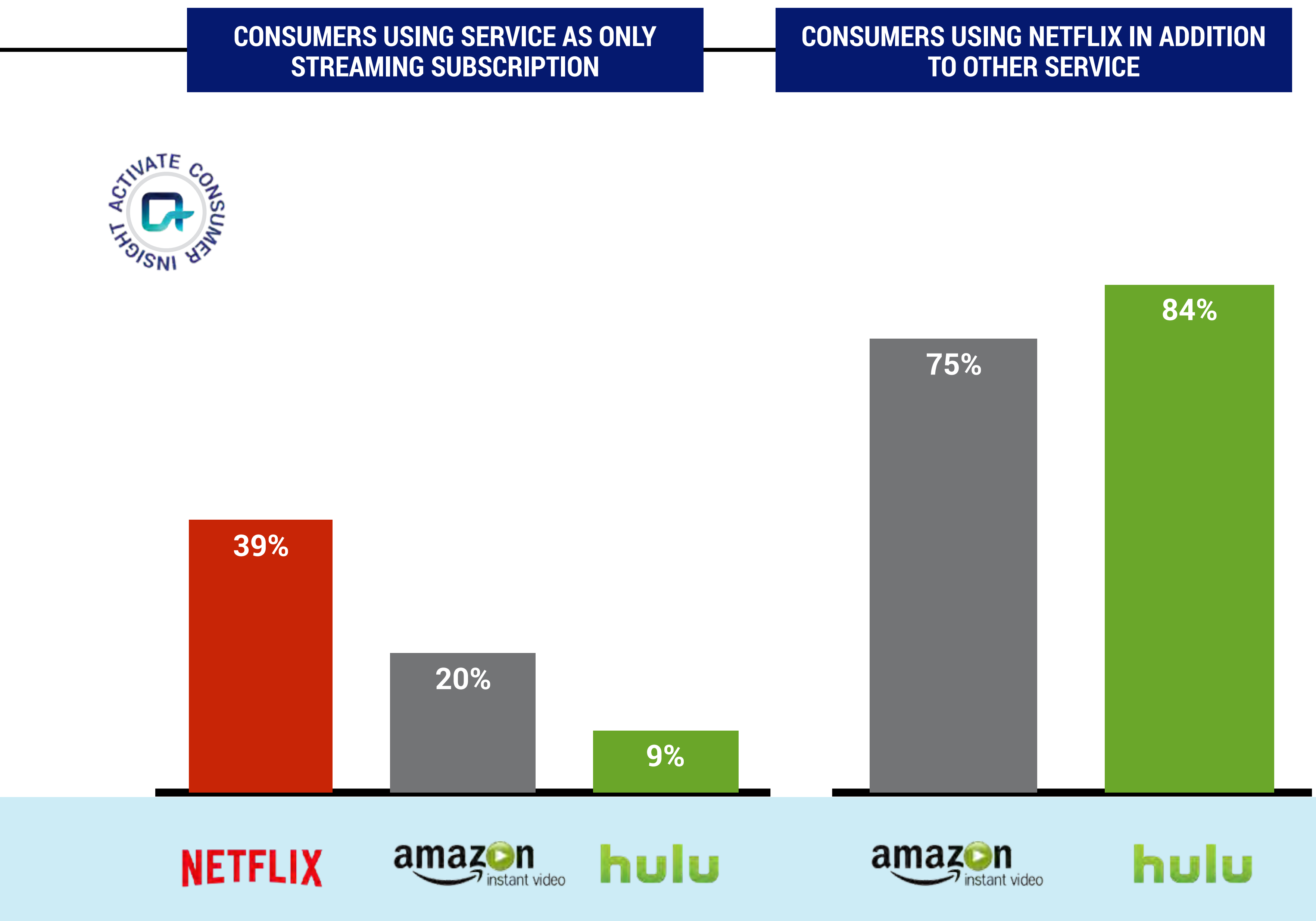
SVOD SUBSCRIBERS BY NUMBER OF SERVICES, U.S., 2016E-2020E, MILLIONS



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=2,064), Parks Associates, Strategy Analytics

As subscribers double down on services, they will place a strong value on Netflix as the must-have service

SHARE OF SUBSCRIBERS USING INDIVIDUAL SERVICES, U.S., 2016, PERCENT



- Hulu and Amazon will need to continue to diversify their libraries
- Netflix will be the foundation upon which consumers build synthetic streaming video bundles

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=2,148)

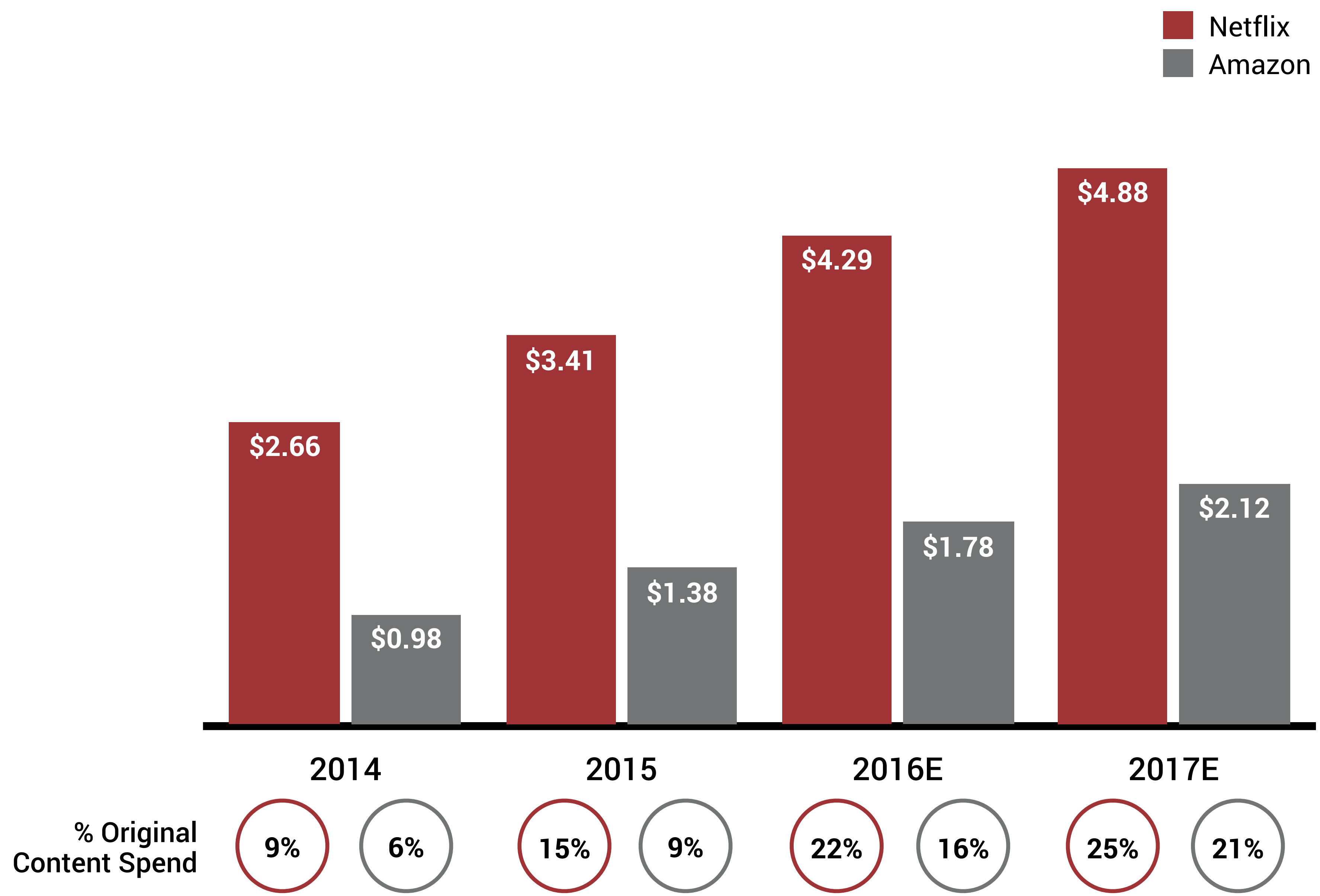
Streaming platforms will drive up licensed content costs as they bid for exclusive rights to valued content

SELECT EXCLUSIVE CONTENT DEALS, U.S. SVOD SERVICES, 2010-2016

CONTENT CATEGORY	NETFLIX	amazon instant video	hulu
Major Studios (select titles)	Walt Disney Pictures (e.g., Star Wars, Avengers)	WB (e.g., The Matrix, Lethal Weapon)	SONY (e.g., Dawson's Creek, The Shield)
Major Dramatic/ Comedy Shows	DEXTER THE WALKING DEAD F·R·I·E·N·D·S	THE AMERICANS SUITS MR. ROBOT	FARGO VIKINGS Seinfeld
Children's Film TV Studios	DreamWorks	nickelodeon PBS	Disney Channel
Indie (select titles)	SUNDANCE FILM FESTIVAL (e.g., Tallulah)	SUNDANCE FILM FESTIVAL (e.g., Manchester by the Sea)	IFC

Streaming services are focusing on originals to hedge against licensing costs, and will come to resemble premium networks rather than broad aggregators

AMORTIZED ANNUAL STREAMING CONTENT COSTS, AMAZON AND NETFLIX, 2014-2017E, BILLIONS USD

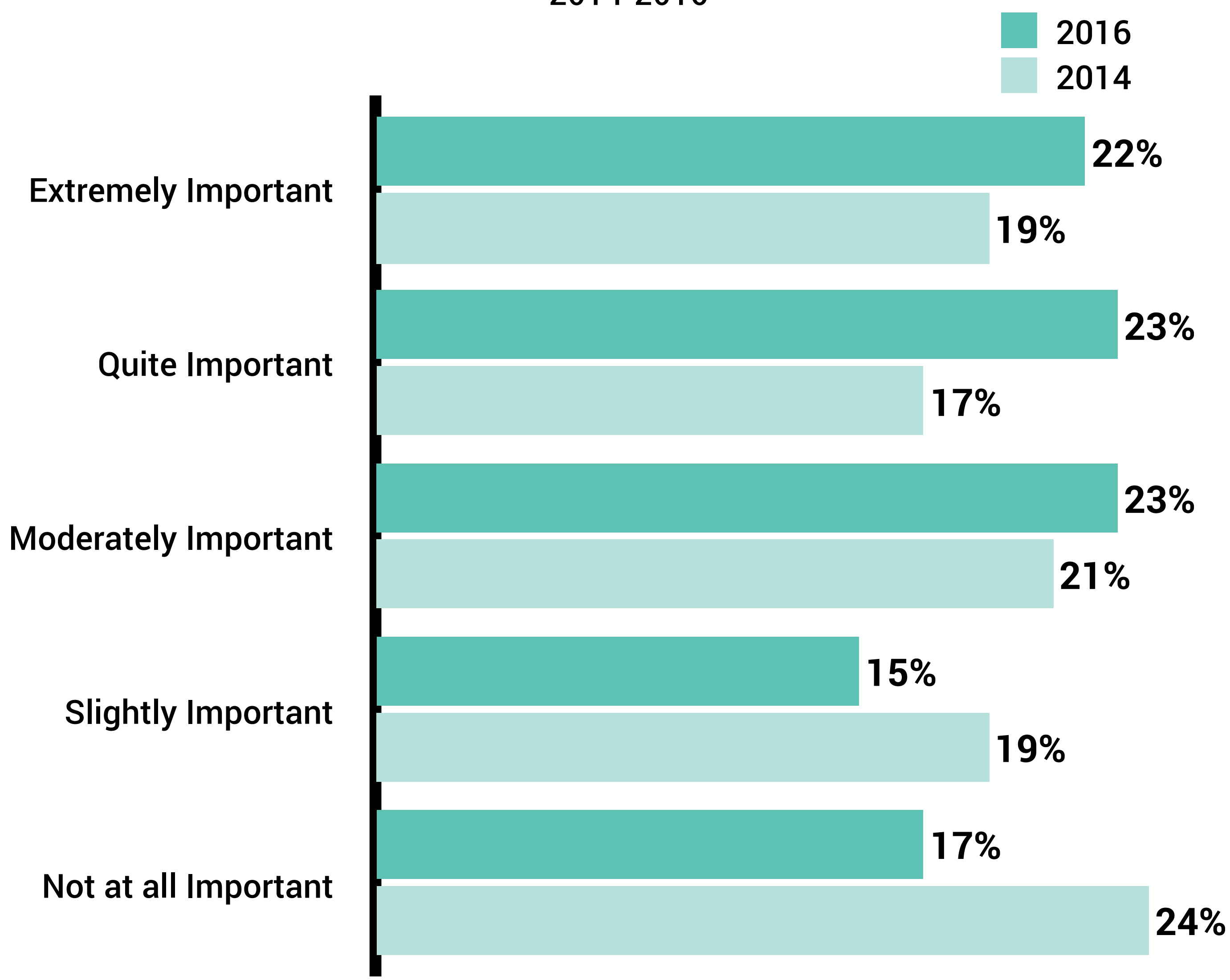


- Increased investment in originals **mirrors similar HBO strategy** beginning in late 2000s:
  - Increased originals investment leads to **5% annual programming cost growth**
  - Addition of **40 million international subscribers** (2009-2015)

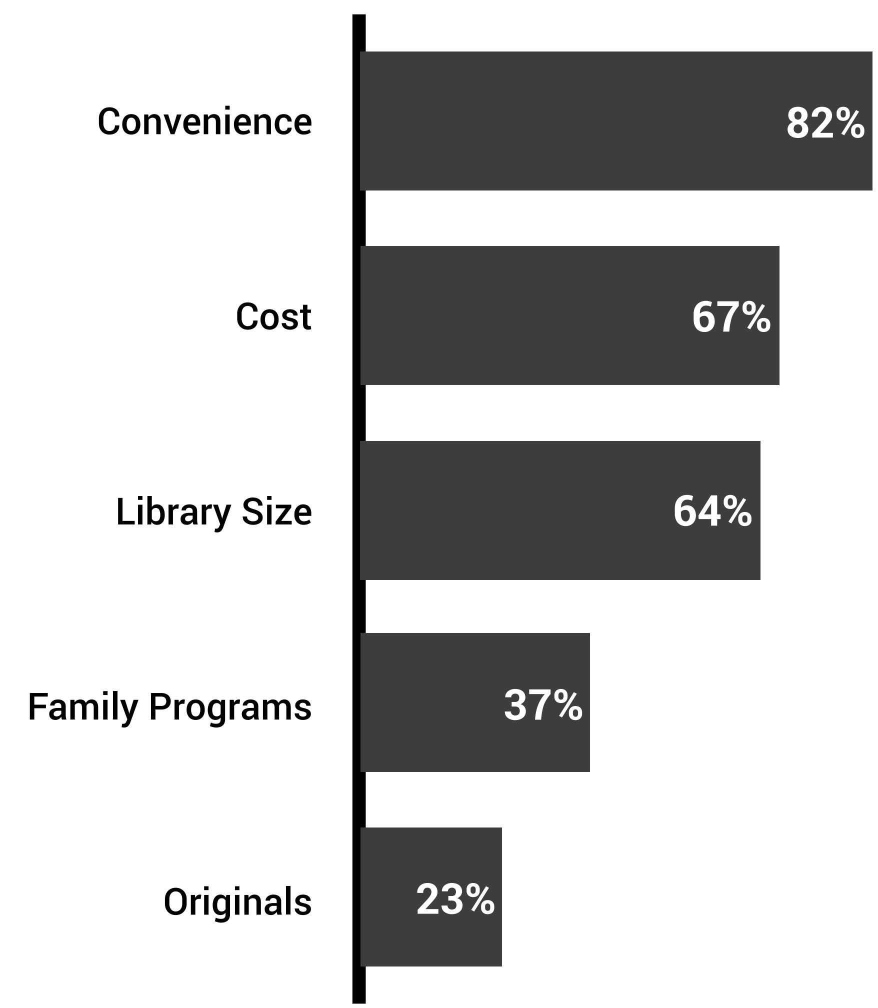
Originals are a retention strategy, not a customer acquisition vehicle; even though subscribers come for licensed content, they are staying for originals

IMPORTANCE OF ORIGINAL CONTENT FOR ACQUIRING AND MAINTAINING NETFLIX SUBSCRIPTION, 2014-2016*,

IMPORTANCE OF ORIGINAL CONTENT FOR KEEPING NETFLIX, 2014-2016

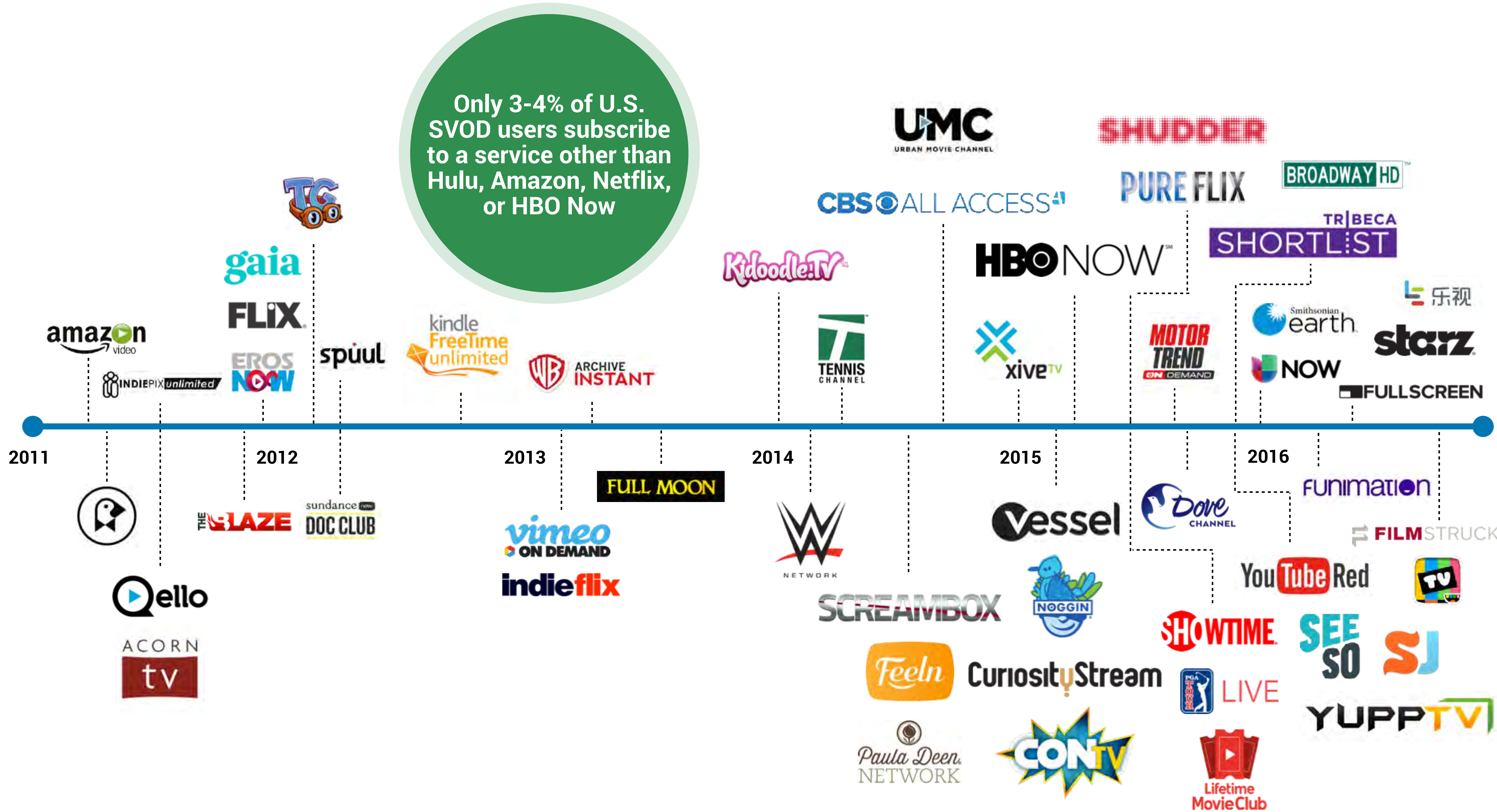


REASONS FOR NETFLIX SUBSCRIPTION, 2015



*2014 data as of September 2014, 2016 data as of August 2016.
Sources: Activate analysis, Cowen and Company, eMarketer, RBC Capital Markets

Dozens of niche services have launched, despite the fact that the lion's share of viewing goes to the major platforms

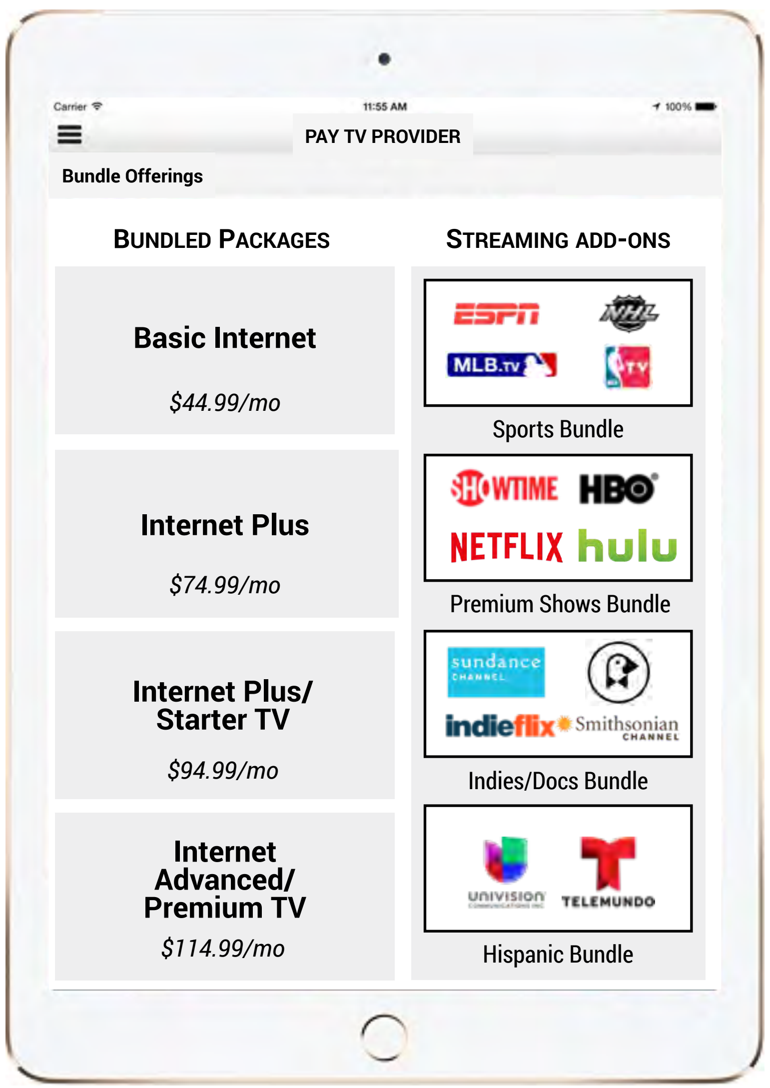


*2016 count is for services released as of August 2016.
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), GfK, SNL Kagan, Parks Associates, Video Advertising Bureau

Major streaming platforms will bundle niche services to improve discovery and content breadth, and Pay TV providers will also sell these new "digital bundles"

POTENTIAL PAY TV DISTRIBUTION

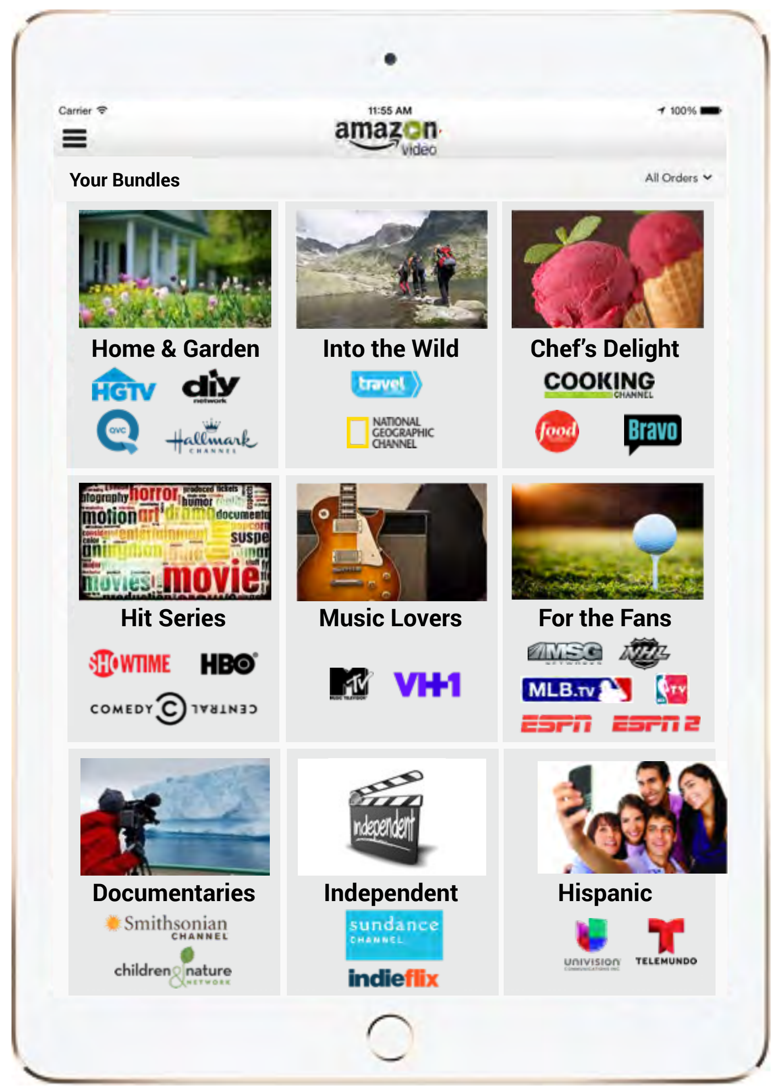
Streaming bundles sold alongside Pay TV subscriptions



Time Warner Cable COMCAST fios by verizon

POTENTIAL SVOD DISTRIBUTION

Bundled niche offerings on platforms like Amazon (Amazon Channels)



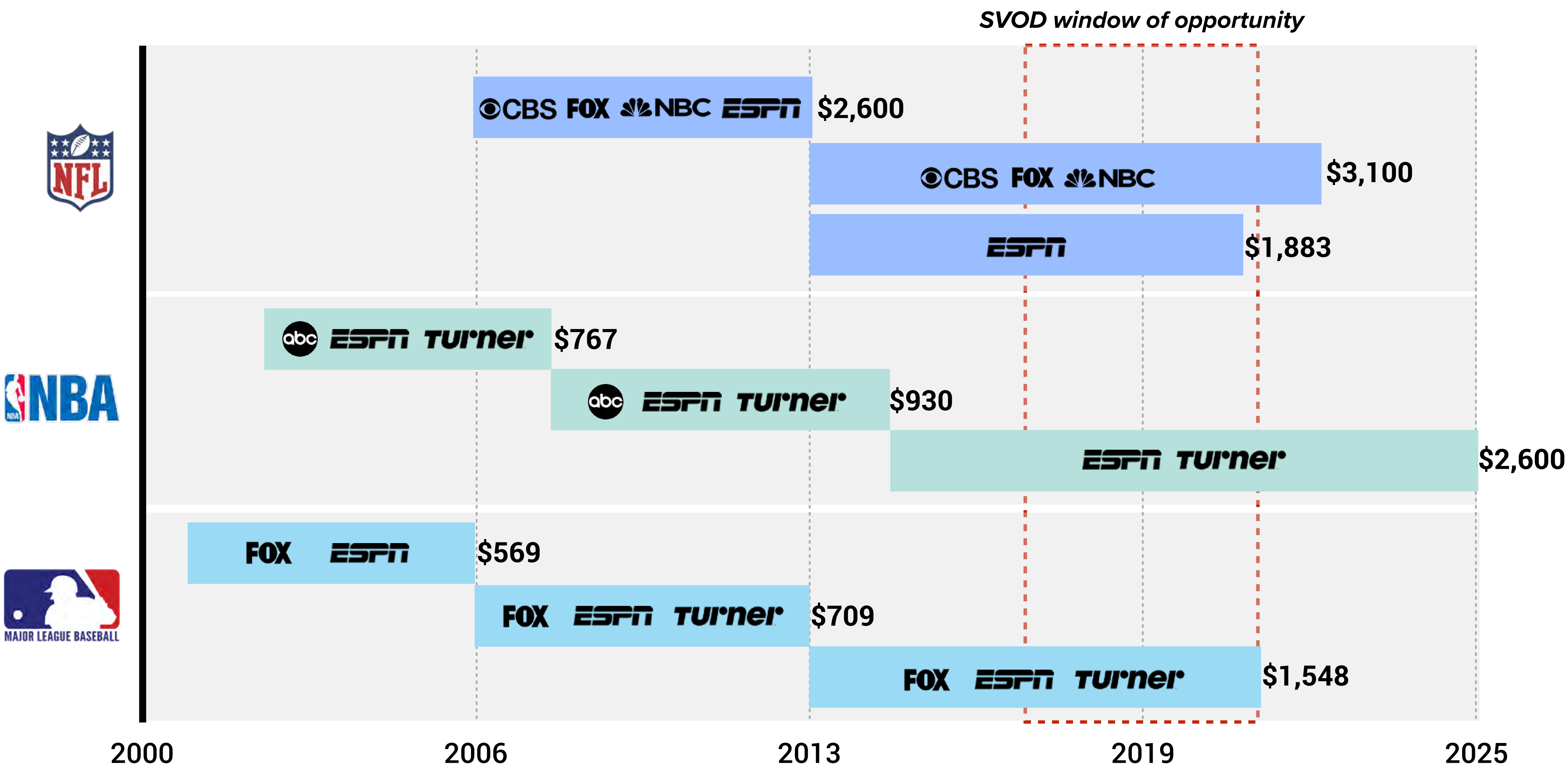
amazon instant video

- Niche services agree to revenue share with aggregating provider
- Aggregator enables viewership within proprietary API and discovery of partnered niche services
- Services are discounted, which is essential given prohibitive cost of aggregating individual OTT services for broadcast, sports, and major cable networks
- Discounts may enable expansion beyond wealthier demographics through lower niche and bundled price points

Source: Activate analysis

A deep-pocketed streaming player could change the rules after a number of sports agreements expire in 2019

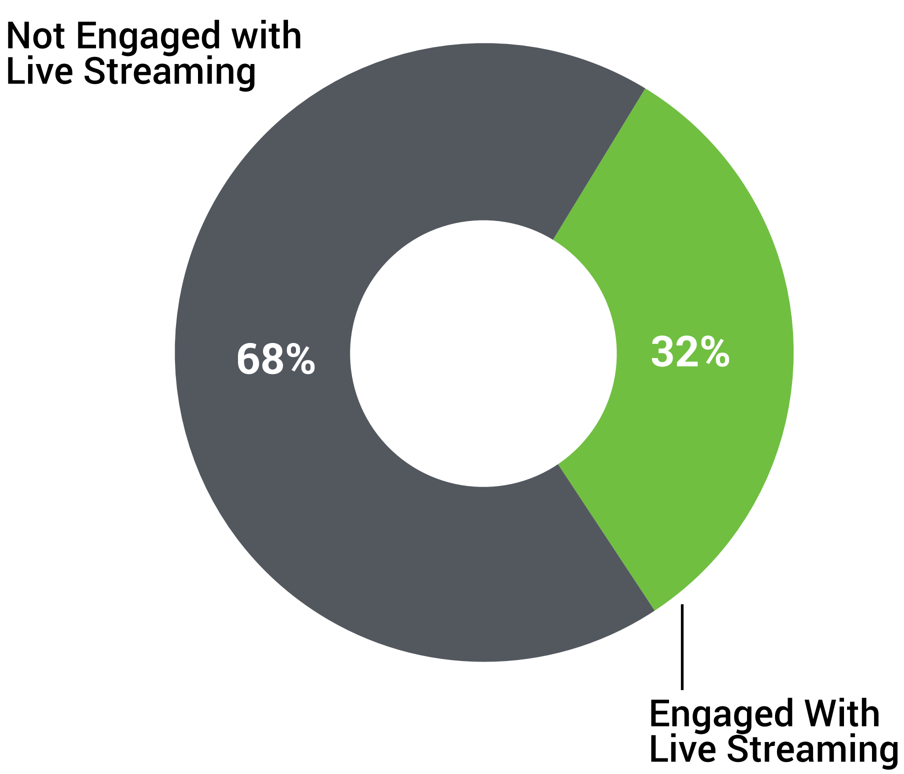
CONTENT RIGHTS TIMELINES PER SPORT, U.S., 2000-2025, USD



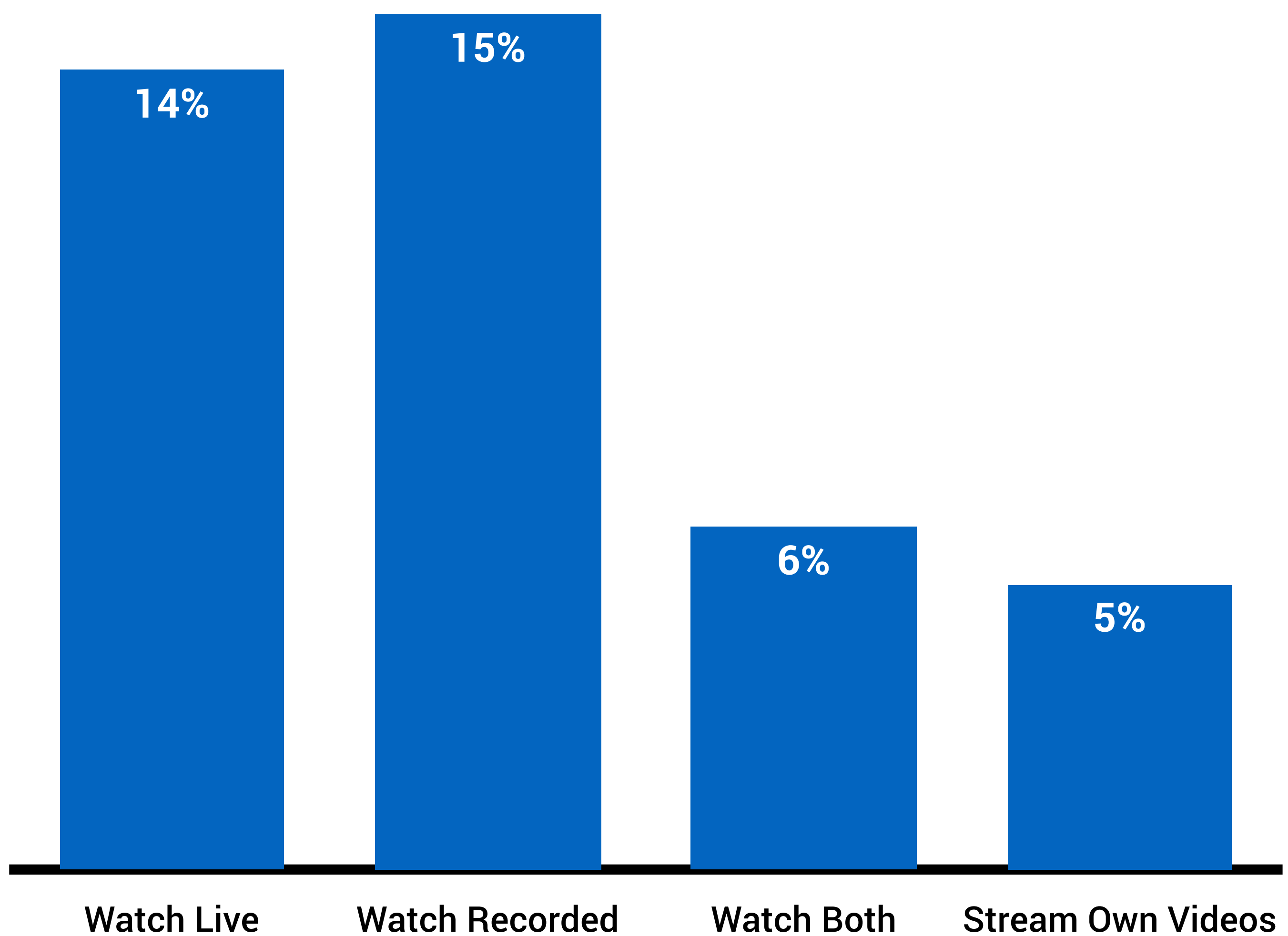
Web video platforms are attempting to move into live programming, including sports, but user engagement remains low

LIVE VIDEO ENGAGEMENT, U.S., 2016, PERCENT OF USERS

ENGAGEMENT WITH LIVE VIDEO PLATFORMS, 2016



TYPES OF LIVE VIDEO ENGAGEMENT, 2016

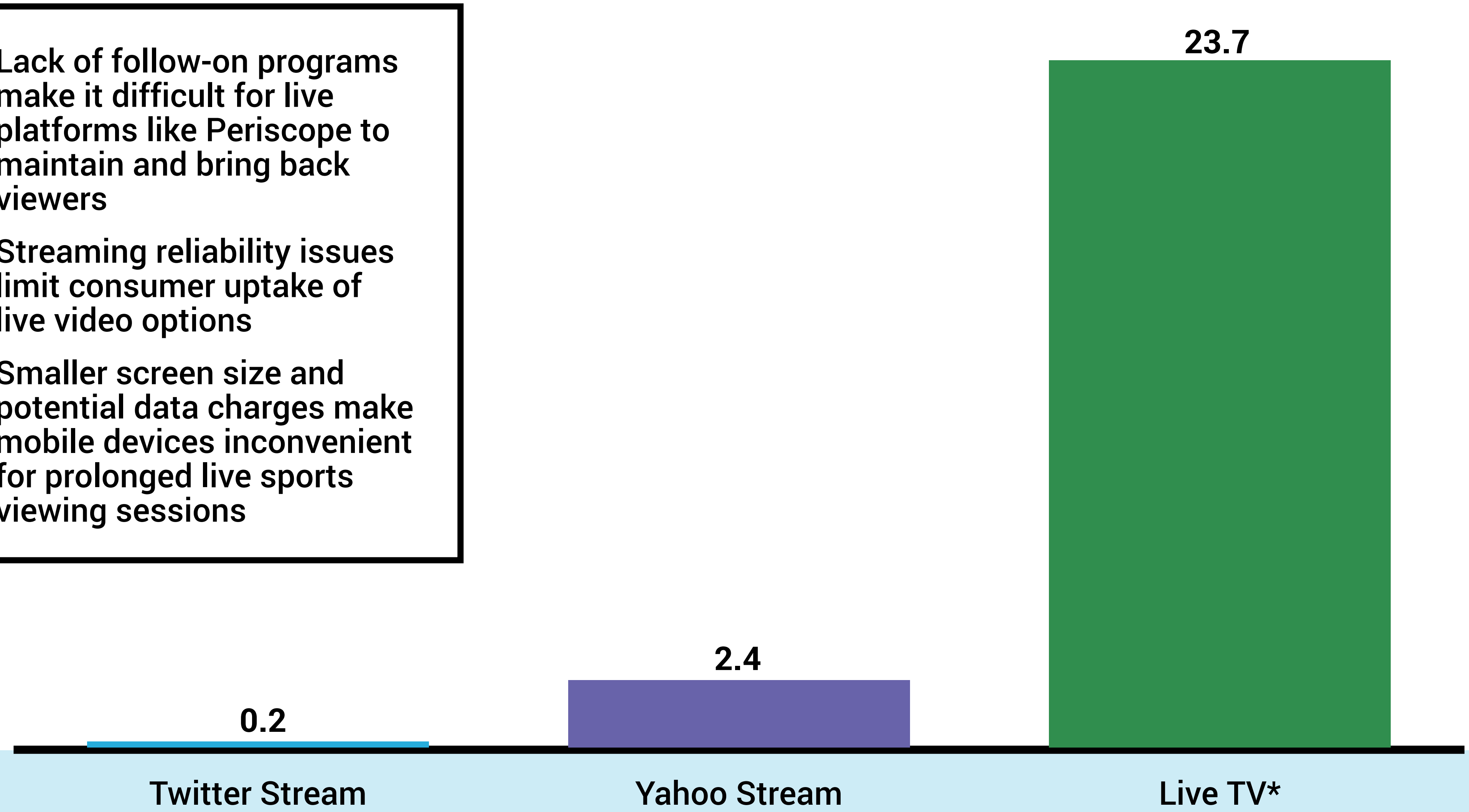


Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,003), Wall Street Journal

Web video services will find it difficult to maintain repeat audiences through sporting events like NFL games, suggesting limited potential to break into the Pay TV stronghold

NFL VIEWERSHIP BY PLATFORM, U.S., 2015-2016 SEASON,

- Lack of follow-on programs make it difficult for live platforms like Periscope to maintain and bring back viewers
- Streaming reliability issues limit consumer uptake of live video options
- Smaller screen size and potential data charges make mobile devices inconvenient for prolonged live sports viewing sessions



*2015 average viewership for Sunday Night Football.
Sources: Activate analysis, eMarketer, Trusted Media Brands, USA Today, Wall Street Journal

Growing specialization makes streaming services unlikely to kill cable, but bundling and sports rights could change the game

Strong · Limited · Weak

	MVPD VIRTUAL PAY TV	STAND-ALONE VIRTUAL PAY TV	ESTABLISHED TECH PLAYERS	SUBSCRIPTION STREAMING
Customer Acquisition	Strong	Weak	Strong	Strong
Quality Programming	Strong	Limited	Strong	Limited
Channel Buffet	Strong	Limited	Strong	Limited
Competitive Pricing	Strong	Weak	Limited	Limited
Superior User Experience	Limited	Limited	Strong	Strong
Reliable Delivery	Weak	Weak	Weak	Weak

Sources: Activate analysis, Company data

The US population segments into six groups of video consumers

AMERICAN ADULTS BY VIDEO SERVICE ACCESS, U.S., 2016, MILLIONS

20-25M	15-20M	15-20M	70-80M	40-50M	50-60M
FRUGALISTS	PRAGMATISTS	CUSTOMIZERS	TRADITIONALISTS	MULTI-USERS	SUPER-USERS
USES: BROADCAST & WEB VIDEO	USES: ONE SVOD SERVICE & WEB VIDEO	USES: MULTIPLE SVOD SERVICES & WEB VIDEO	USES: PAY TV & WEB VIDEO	USES: ONE SVOD SERVICE , PAY TV & WEB VIDEO	USES: MULTIPLE SVOD SERVICES, PAY TV & WEB VIDEO

INCREASING CONSUMER SPEND

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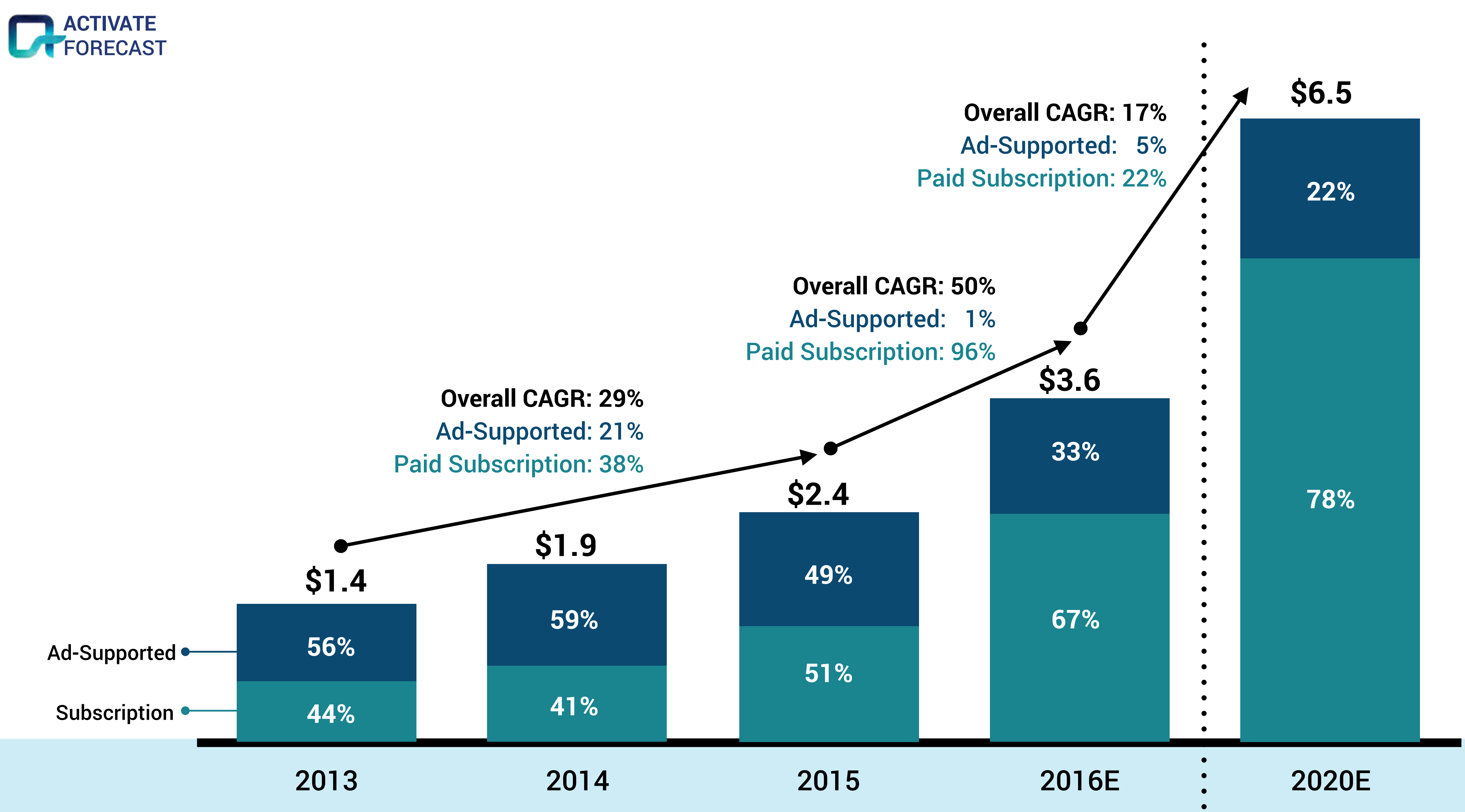
The vast majority of music streaming revenues will be subscriptions for on-demand services

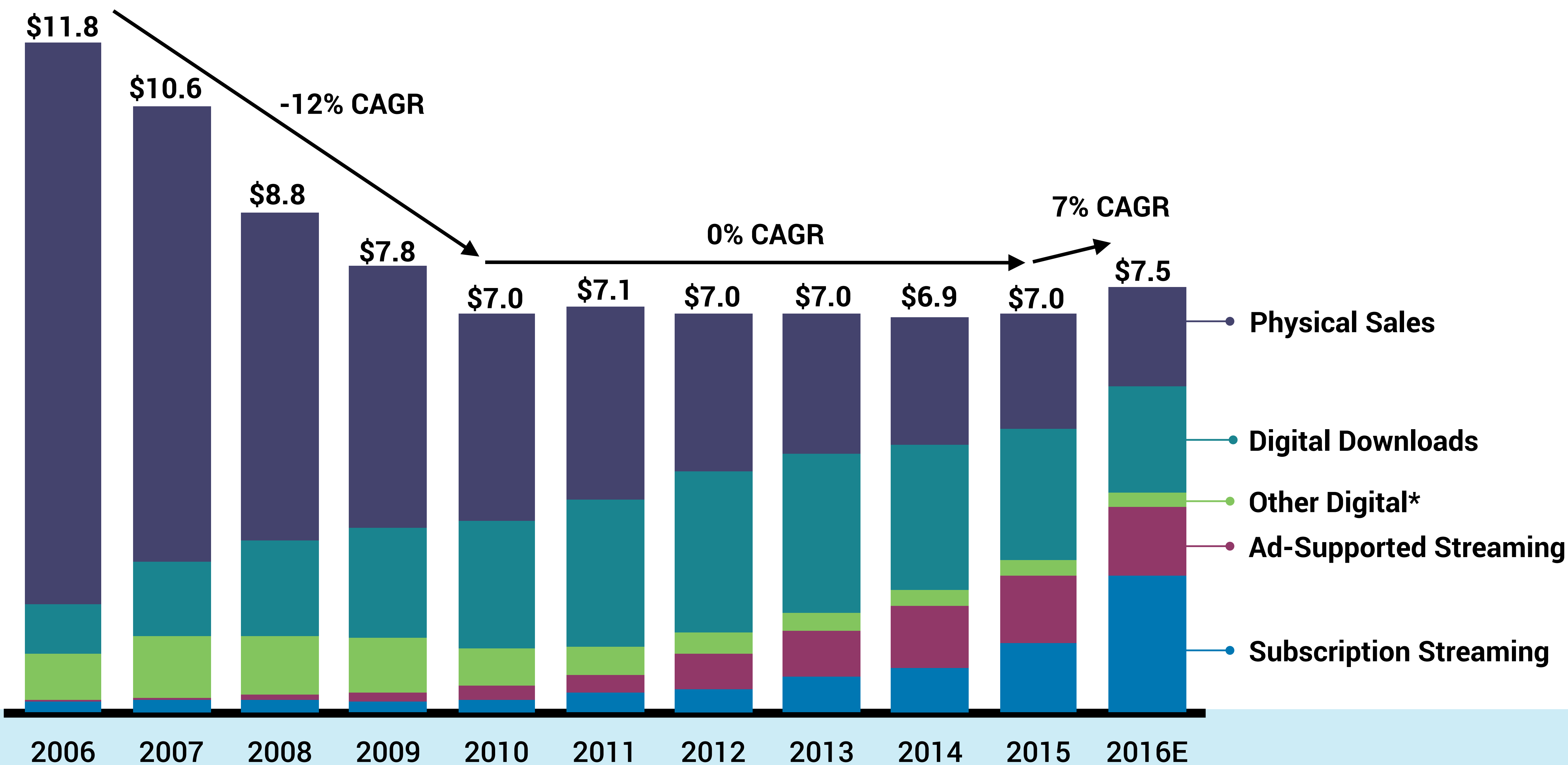
STREAMING MUSIC REVENUES, U.S., 2013-2020E, BILLIONS



*Includes Pandora and Sirius XM as well as on-demand ad based platforms (e.g., free Spotify, YouTube).
Sources: Activate analysis, GlobalWebIndex, RIAA

Paid subscription streaming is likely to provide revenue growth to the music industry after years of stagnation

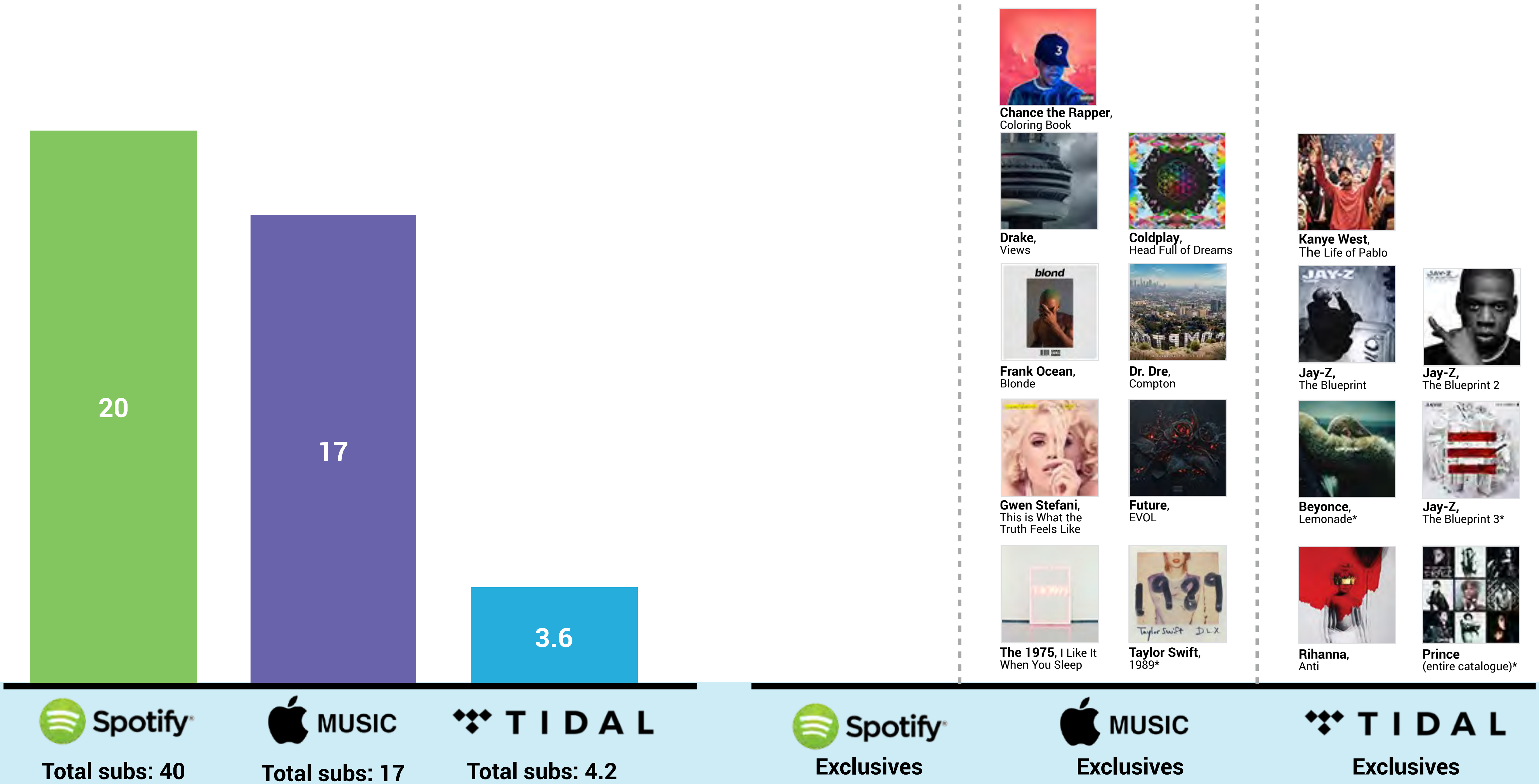
MUSIC INDUSTRY REVENUES, U.S., 2013-2020E, BILLIONS



*Other Digital includes categories such as ringtones and music video downloads.
Sources: Activate analysis, RIAA

Both Apple Music and Tidal have lined up exclusive artists and releases, but Spotify has added the most subscribers – without exclusives

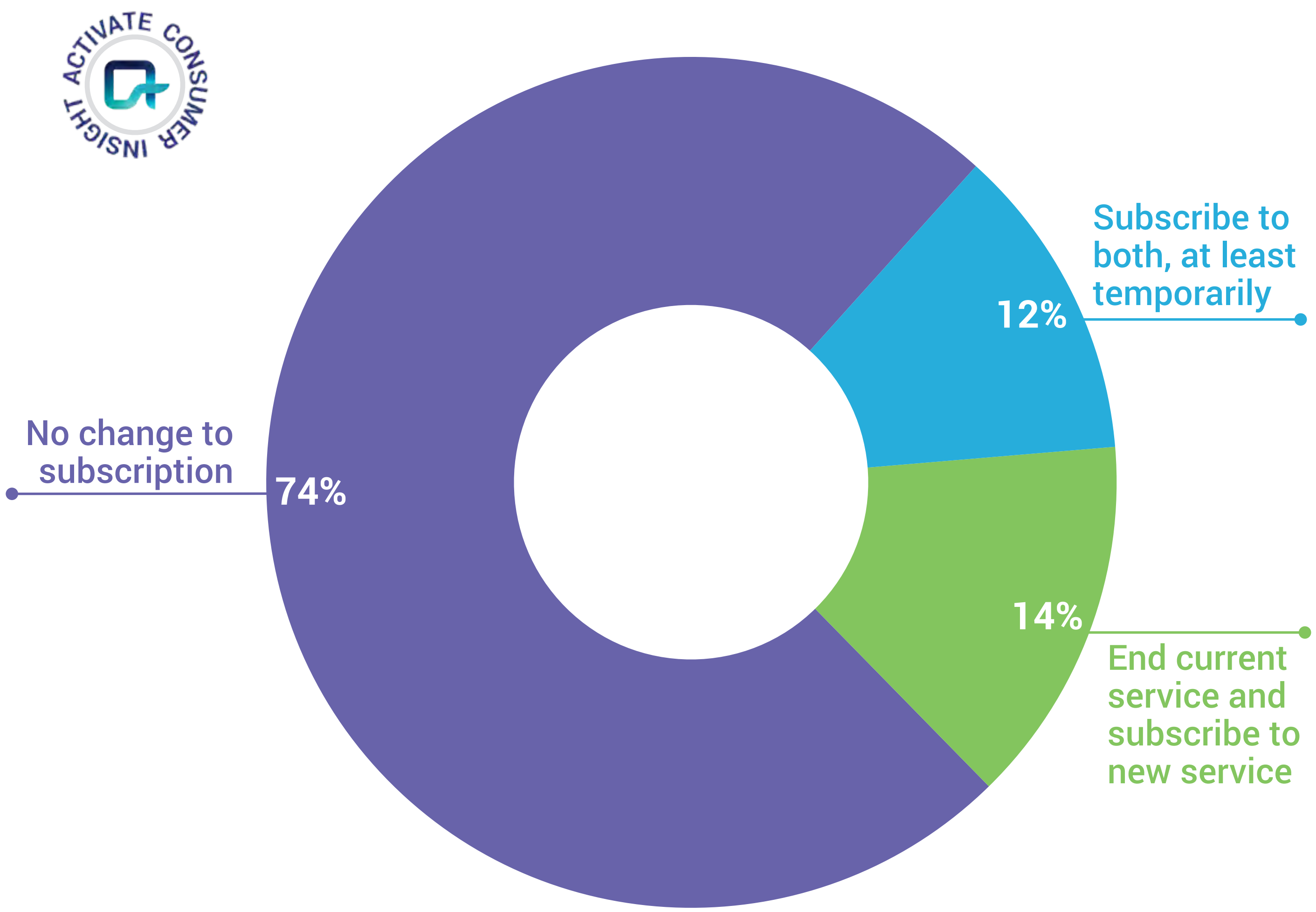
NEW PAID GLOBAL SUBSCRIBERS, JUNE 2015 - SEPTEMBER 2016, MILLIONS



*Permanent exclusive
Note: Exclusives do not include curated channels, singles, or video
Sources: Activate analysis, Apple, MusicBusinessWorldWide, Spotify, Tidal, Time

In fact, our research shows that for the majority of consumers, exclusives do not drive decisions about subscriptions

USER RESPONSE TO EXCLUSIVE RELEASE FROM A FAVORITE ARTIST ON A STREAMING SERVICE TO WHICH THEY DO NOT SUBSCRIBE, U.S., 2016, PERCENT OF RESPONDENTS

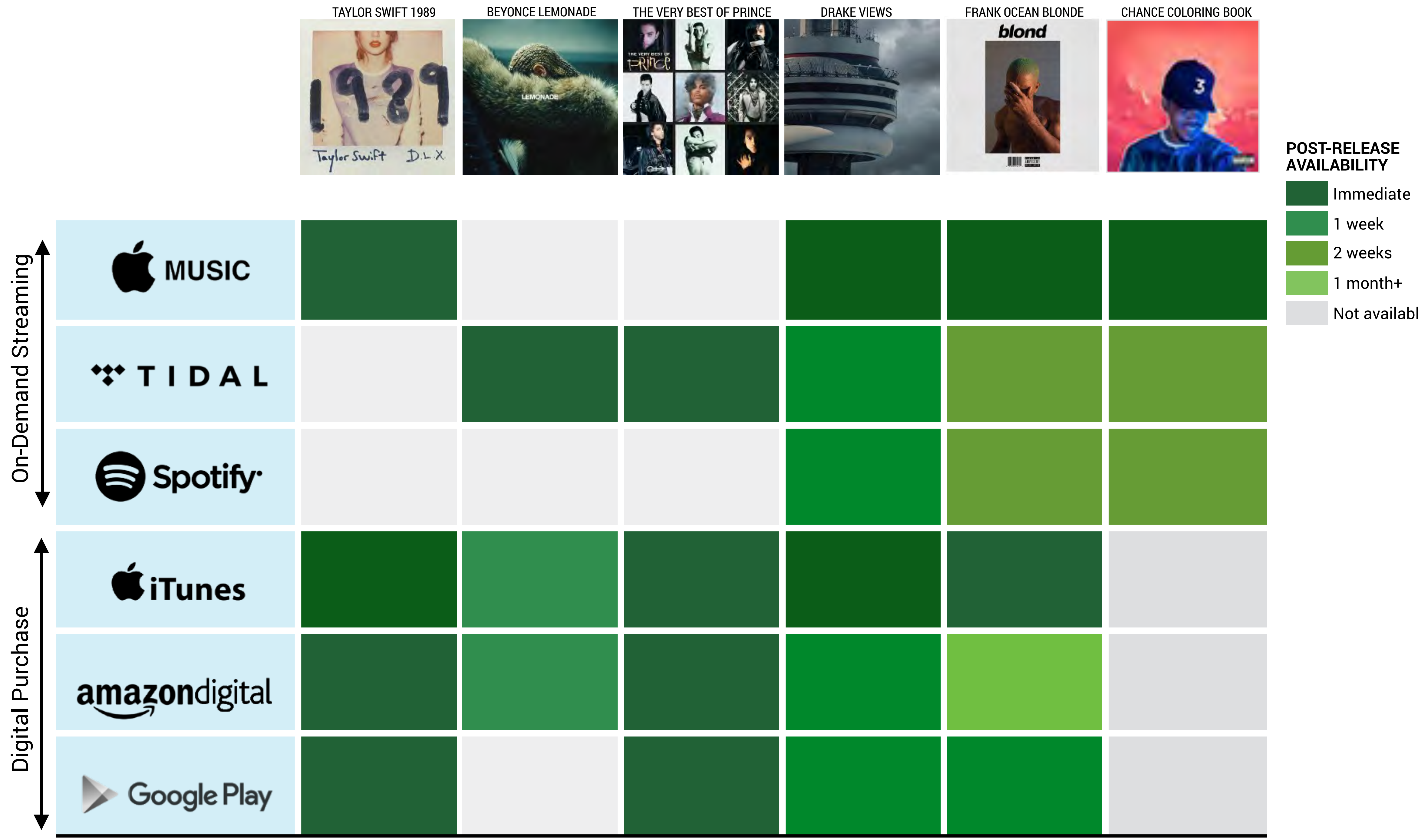


FACTORS THAT WILL DIFFERENTIATE

- Personalized playlists, built over time, will drive loyalty to a service
- The strength of the user experience (e.g., curation, recommendations) ensures stickiness
- In the future, product improvements that reduce friction (e.g., superior/ simpler voice integration) will also become a driver of loyalty

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=965)

Exclusives are not really exclusive, but rather windowed - often available on other streaming services within weeks and for purchased download simultaneously

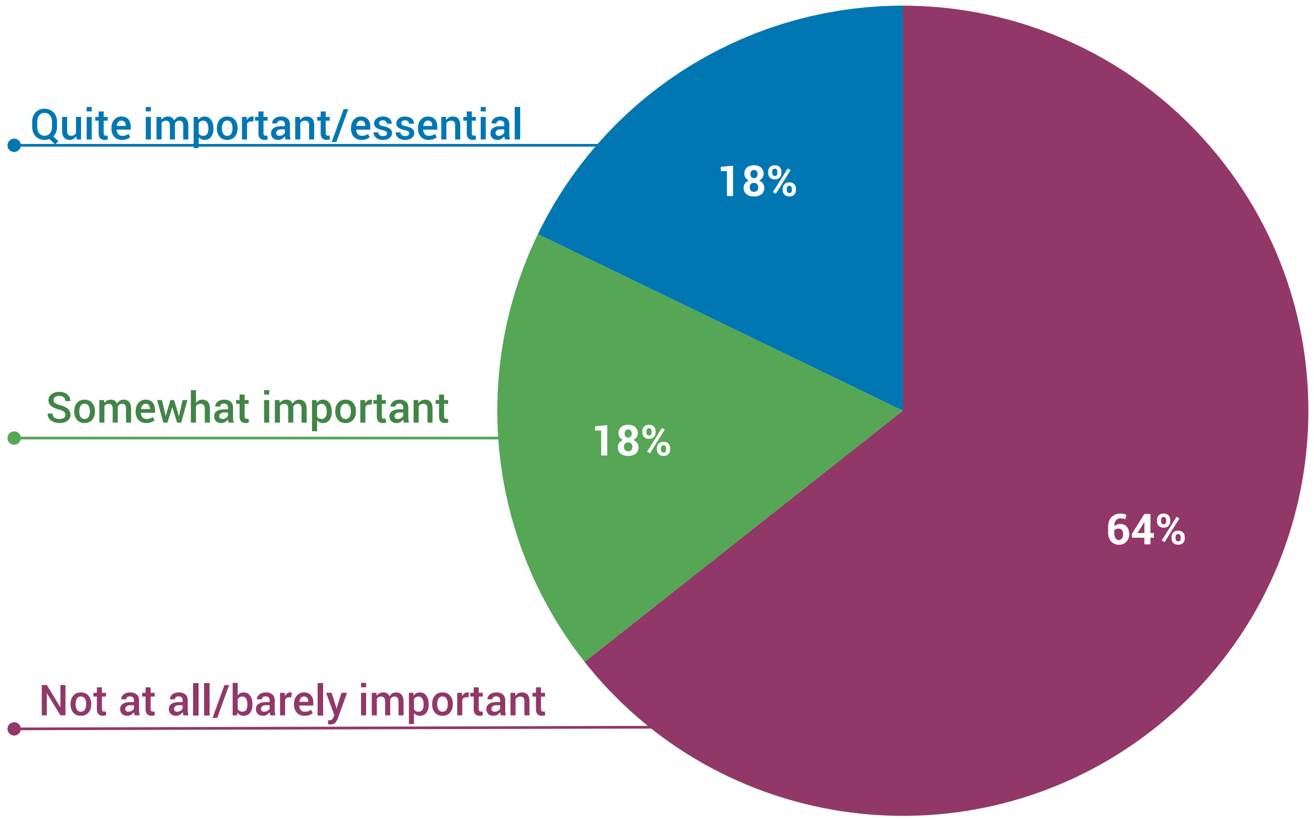


Sources: Activate analysis, Apple Music, Consequence of Sound, New York Times, Pandora, Spotify, Tidal

Most listeners do not select a music service based on the manufacturer of their primary device or operating system

LOYALTY TO PRIMARY DIGITAL DEVICE ECOSYSTEM, U.S., 2016, PERCENT OF RESPONDENTS

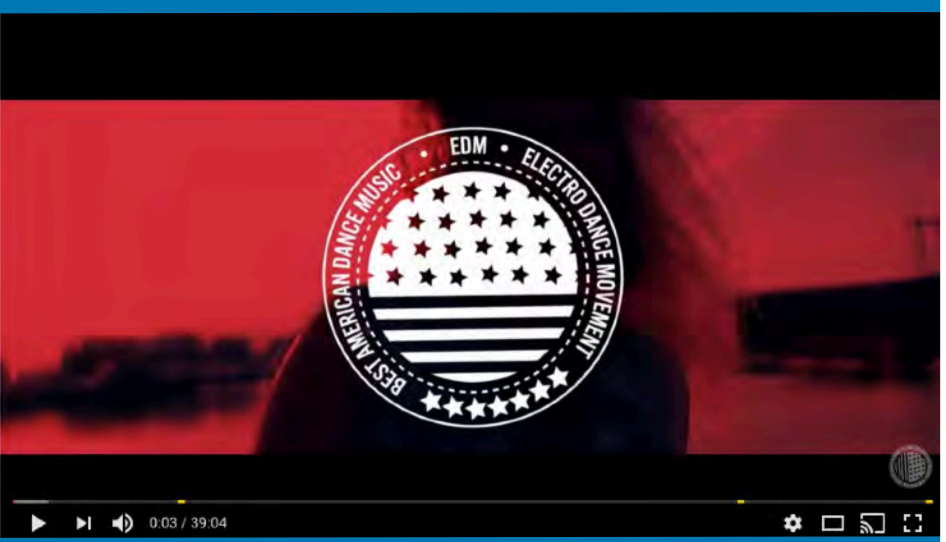
Level of importance that a music streaming service is from the same product family as primary digital device (e.g., smartphone):



- Apple Music's monthly subscriber churn (6.4%) is nearly triple that of Spotify (2.2%), further indicating that platform is not an advantage
- This may change in the future, however, if price points and platform integration favor a device-dependent subscription (e.g., reduced Amazon Streaming Unlimited price for Echo owners)

700 million people a month listen to "Gray Music" - non-catalog music which is largely unavailable for licensed download or streaming

Remixes



NEW ELECTRO & HOUSE 2015 REMIX:
49 million views on YouTube

Live Performances

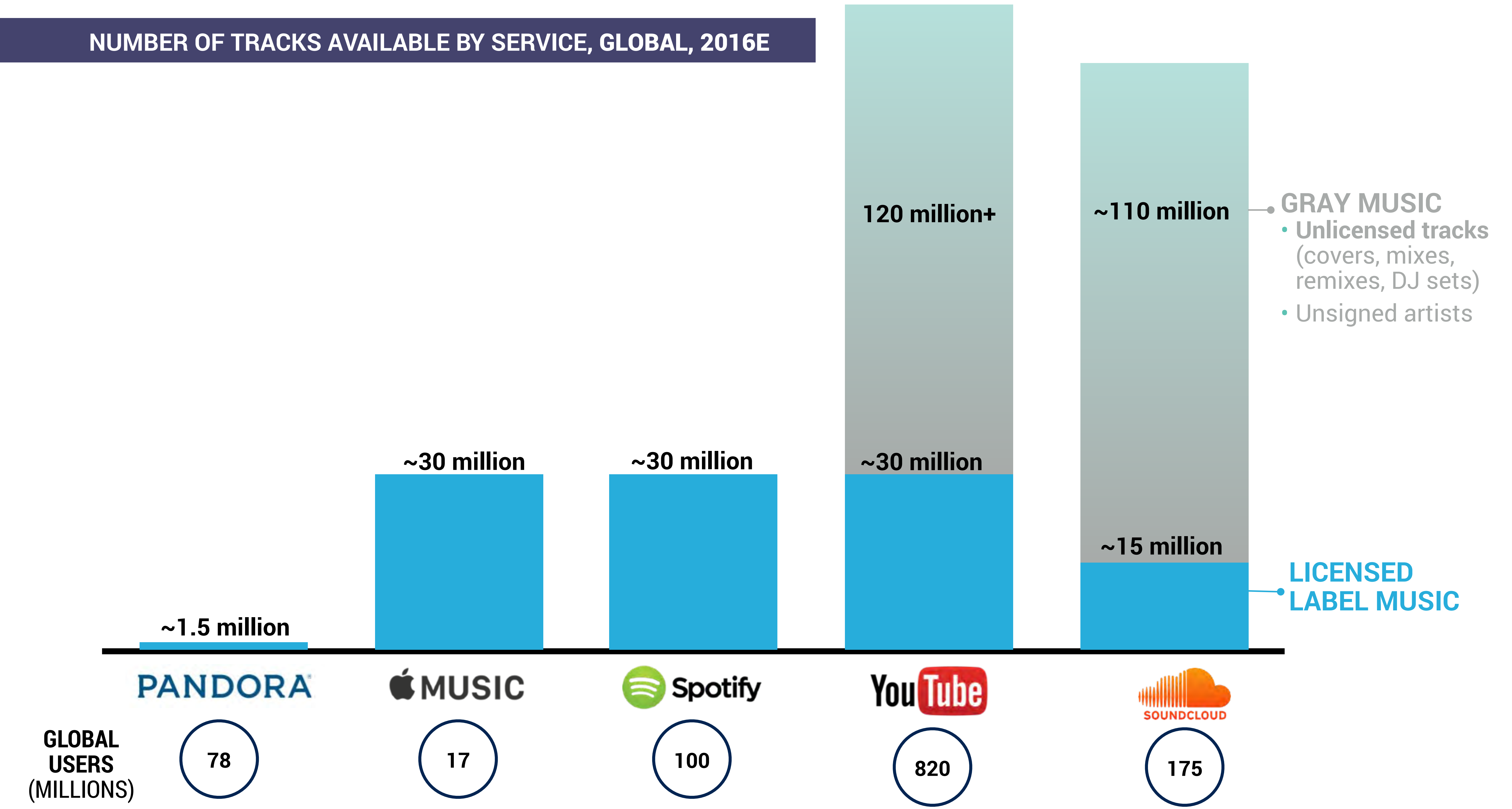
ADELE LIVE AT THE BRIT AWARDS:
118 million views on YouTube

Mixtapes

HIP HOP FUNK MIXTAPE:
13 million views on YouTube

Sources: Activate analysis, TechCrunch, YouTube

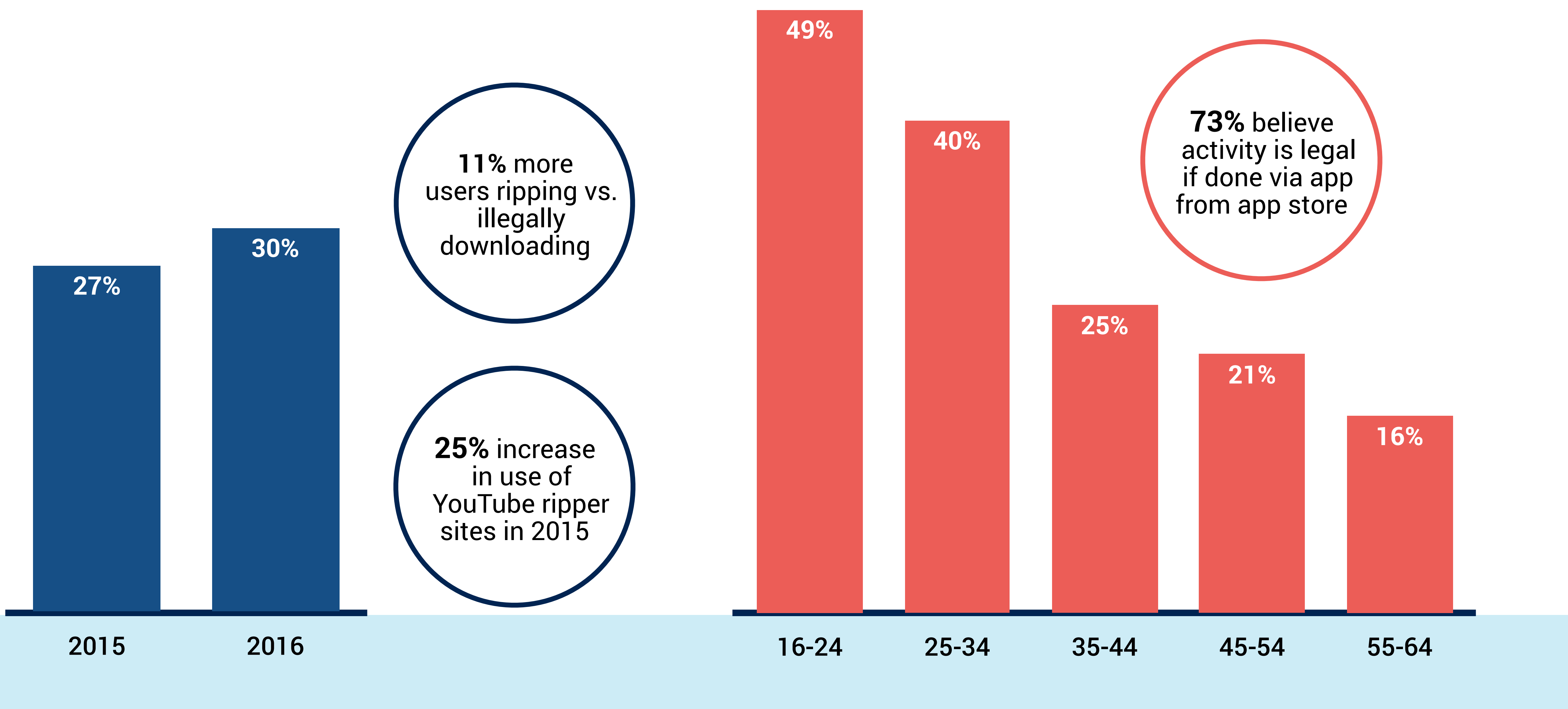
Gray Music and other unlicensed content is likely to become an important differentiator between services



Note: YouTube usership estimated for music
Sources: Activate analysis, Apple, Digital Music News, GlobalWebIndex, IFPI, Pandora, SoundCloud, Spotify, TechCrunch

Gray Music and exclusives are driving stream ripping — particularly widespread among Millennials

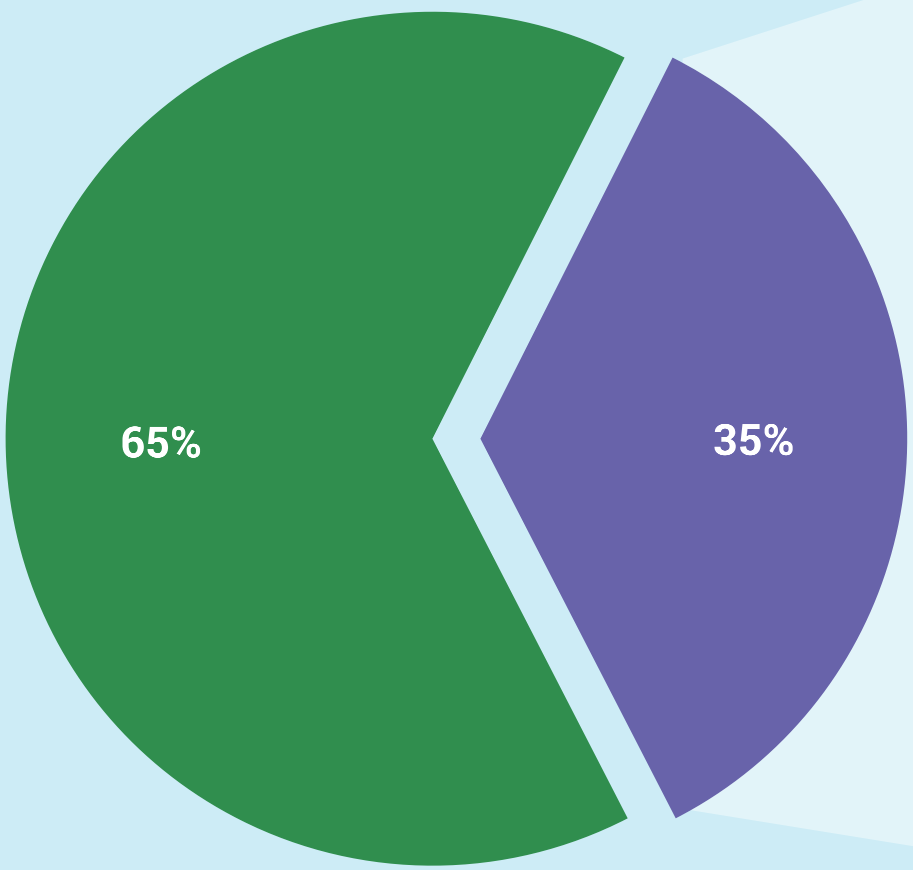
PERCENTAGE STREAM RIPPING, OVERALL AND BY AGE GROUP, GLOBAL, 2016



Sources: Activate analysis, Alexa, IFPI, MusicWatch, MUSO, Wall Street Journal

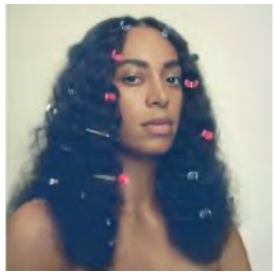
Exclusive content drives music piracy in all forms - and music pirates are more likely than average Internet users to pay for streaming music services

MUSIC BUYERS WHO HAVE ALSO ILLICITLY DOWNLOADED MUSIC IN THE PAST YEAR, U.S., 2015



57 million Americans acquired music illicitly in 2015

vs.



	BEYONCE: LEMONADE	SOLANGE: A SEAT AT THE TABLE
BILLBOARD CHART DEBUT	#1	#1
STREAMING EXCLUSIVE	Tidal	None
INITIAL ONLINE PIRACY	#1 on multiple torrent piracy charts within 24 hours	Negligible

Other major exclusive releases have also driven piracy:

Kanye West's "The Life of Pablo" was pirated 500k times in the first day of its Tidal-exclusive release in February

Frank Ocean's "Blonde" Apple Music exclusive was pirated 750k times in under a week after its August release

Sources: Activate analysis, MusicBusinessWorldwide, MusicWatch, RIAA, TorrentFreak

Music piracy continues to adopt new technologies that then define the next wave of music experiences

GENERATION 1: P2P FILE SHARING	GENERATION 2: TORRENTS	GENERATION 3: STREAM RIPPING
SUBSEQUENT LEGAL SERVICE A la carte purchase of songs (e.g., iTunes Store, 2003)	**SUBSEQUENT LEGAL SERVICE** Unlimited music streaming services (e.g., Spotify, U.S. launch in 2011)	**SUBSEQUENT LEGAL SERVICE** Expect incorporation of off-label music onto streaming services
METHOD Users upload and download from a centralized service	**METHOD** Users download and upload files simultaneously	**METHOD** Services extract audio from a streamed source (e.g., YouTube)
KEY DRIVERS OF BEHAVIOR Physical records still the norm, hard to purchase individual tracks	**KEY DRIVERS OF BEHAVIOR** Ability to easily create wide libraries and download large files at rapid speeds	**KEY DRIVERS OF BEHAVIOR** Access to gray music content not otherwise available, and/or early uploads of exclusives

Sources: Activate analysis, EFF, PC World, RIAA, Tru Optik

It is imperative for today's music industry and streaming services to provide legitimate access to Gray Music or risk training users on behaviors that empower new players

	LISTENERS	GRAY MUSICIANS	RIGHTS HOLDERS	STREAMING SERVICES
PRESENT	Inability to stream or purchase unlicensed music pushes users to stream ripping services with poor user experiences, and encourages belief in ripping's legality	Rights-holder takedown requests limit ability to promote music on legitimate platforms, affecting reach and potential monetization	Lack of compensation mechanism for use of intellectual property requires investment in policing and litigation, and limits revenue	Inability to identify and compensate rights holders prevents hosting gray music, limiting user listening and discovery in popular genres
		- DJs who remix - Unsigned artists	- Labels - Artist owners	
FUTURE	Widespread music availability on legitimate services enables listeners to easily listen and/or discover, driving down ripping	Ability to manage legal issues opens up opportunities for wider distribution and discovery of artists' music	Defined compensation structure ensures appropriate payment and reduces resources devoted to enforcement	Larger library encourages subscriptions and widens the range of potential interested subscribers

Sources: Activate analysis, Interviews

Streaming services will increasingly develop artists by introducing tools that will help artists track, market, monetize, and eventually create music

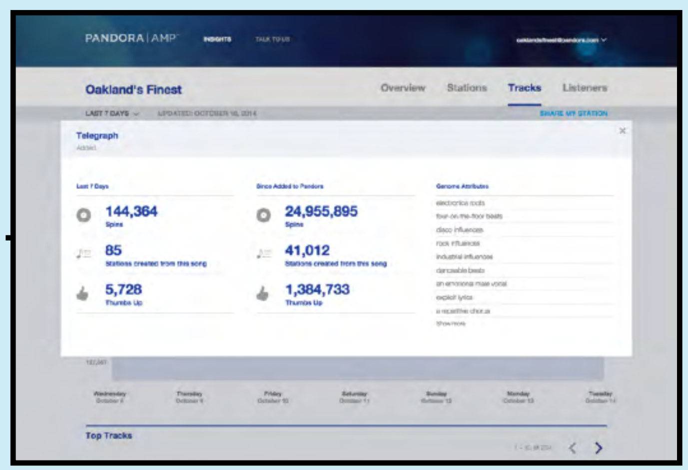
TODAY'S LEADERS

SOUNDCLOUD

Purchase Links

Offer secondary monetization source for artists

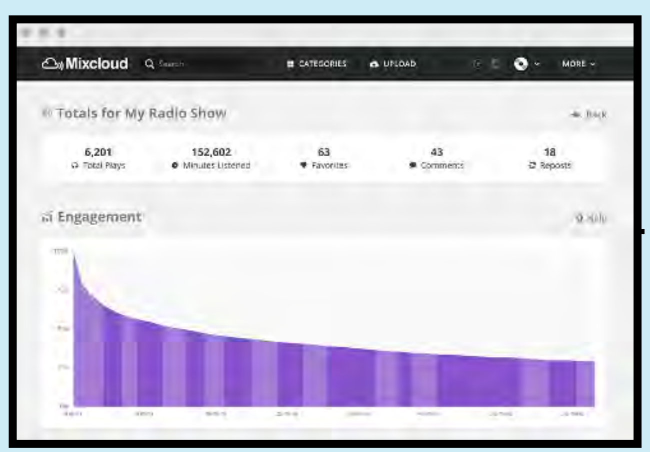
PANDORA



Artist Marketing Platforms

Allow musicians to record audio messages to reach out to their fans (e.g., when coming out with a new song)

mixcloud

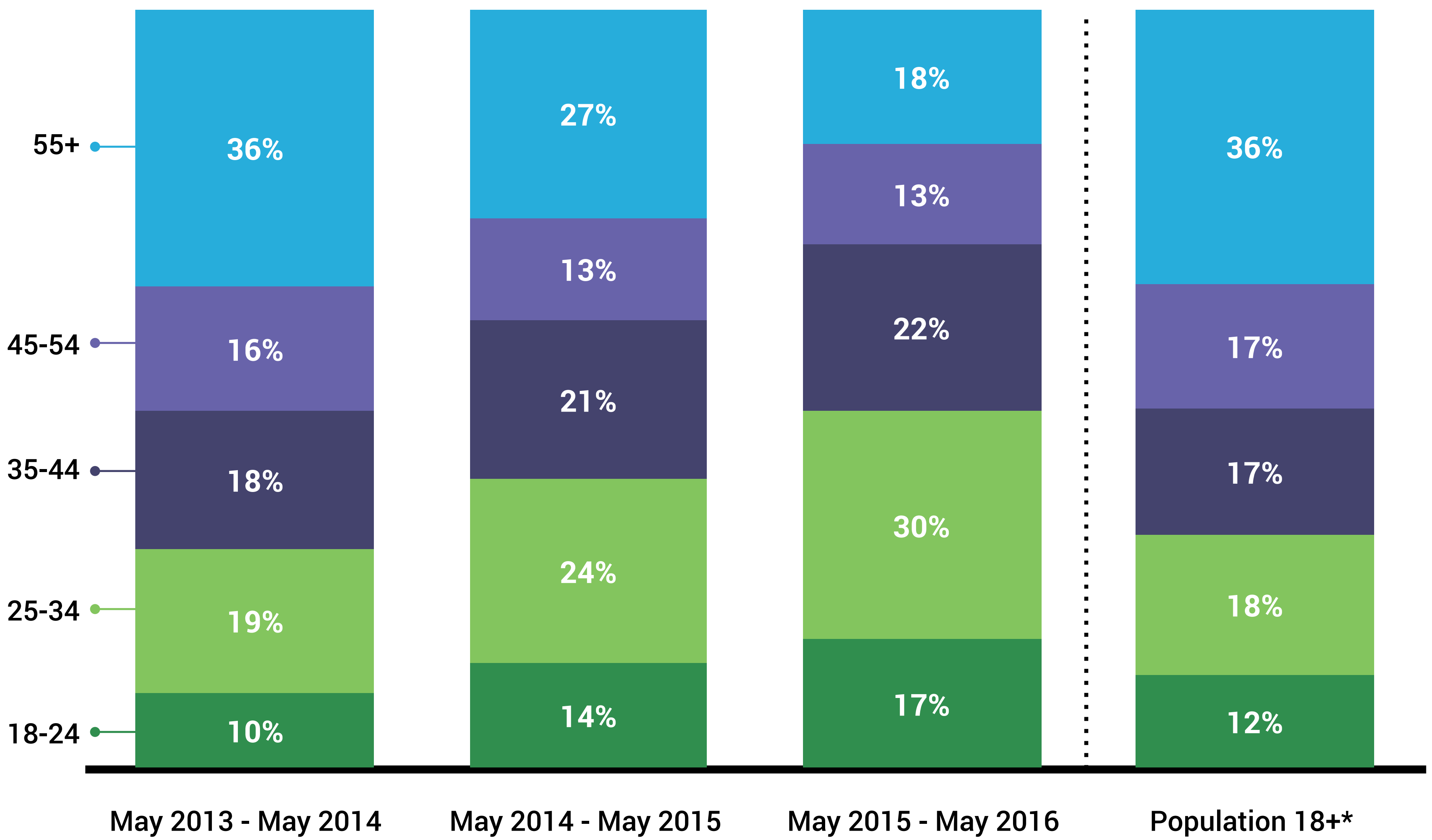


Tracking Metrics

Break down listening by country, city, and user source

As streaming penetration increases, Millennials are leading all age groups in embracing home audio products after years of lagging

HOME AUDIO REVENUE BY AGE GROUP VS. SHARE OF TOTAL POPULATION 18+, U.S., 2013-2016, PERCENT



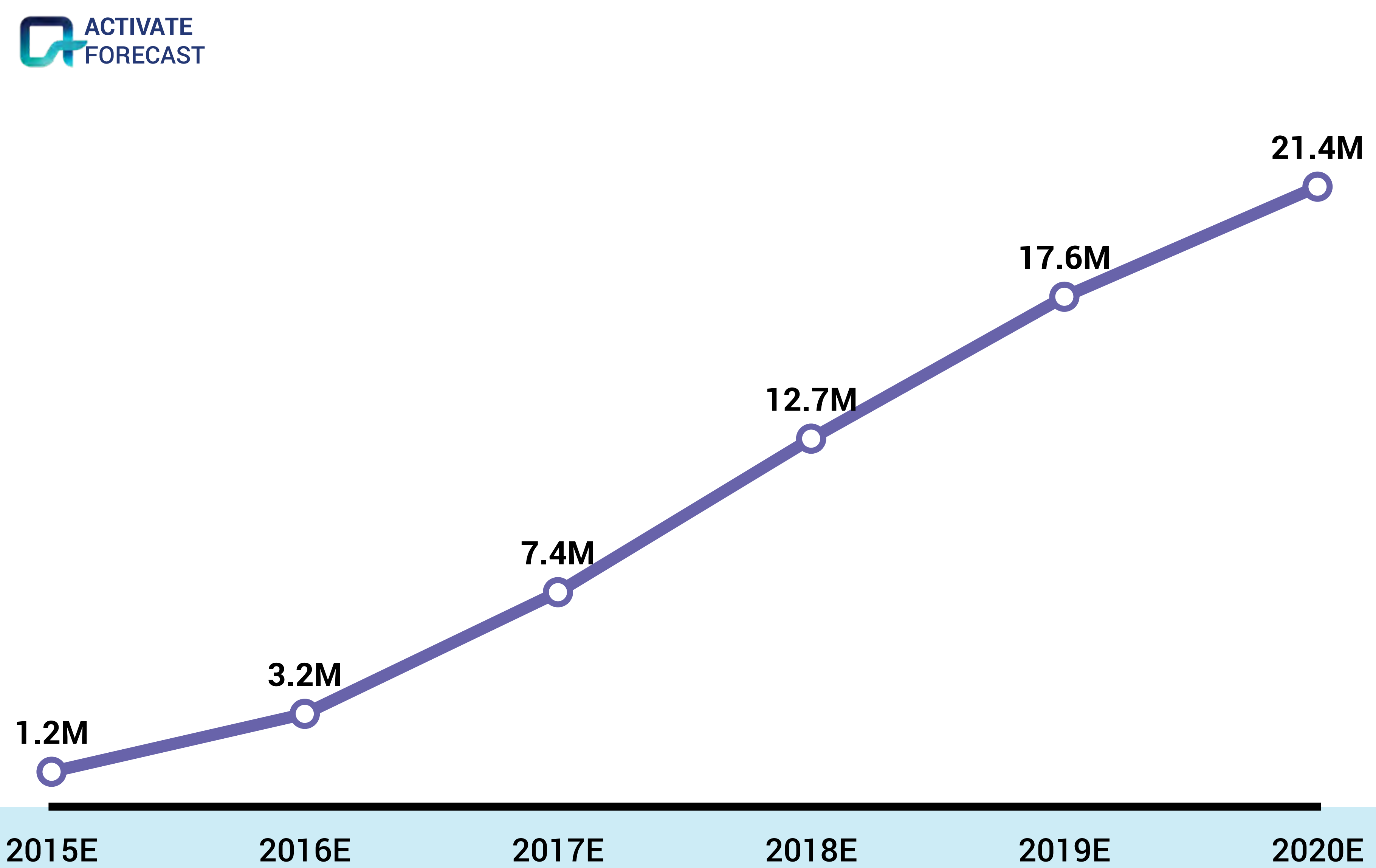
Millennials aged 18-34 grew from 29% to 47% of the total **home audio market** in only two years

32% of consumers aged 18-34 indicate that they intend to **purchase a soundbar system** in the next year

*Population data for 2016.
Note: Number don't add up to 100% due to rounding
Sources: Activate analysis, Dealerscope, Kaiser Family Foundation, NPD. Home Audio Revenue includes A/V receivers, home speakers, home CD players, home theater audio systems, and soundbars

Smart speakers are essential to the adoption of both music streaming services and voice bots, and could be the most important new product category since smartphones

HOUSEHOLD PENETRATION OF SMART SPEAKERS, U.S., 2015E-2020E, MILLIONS



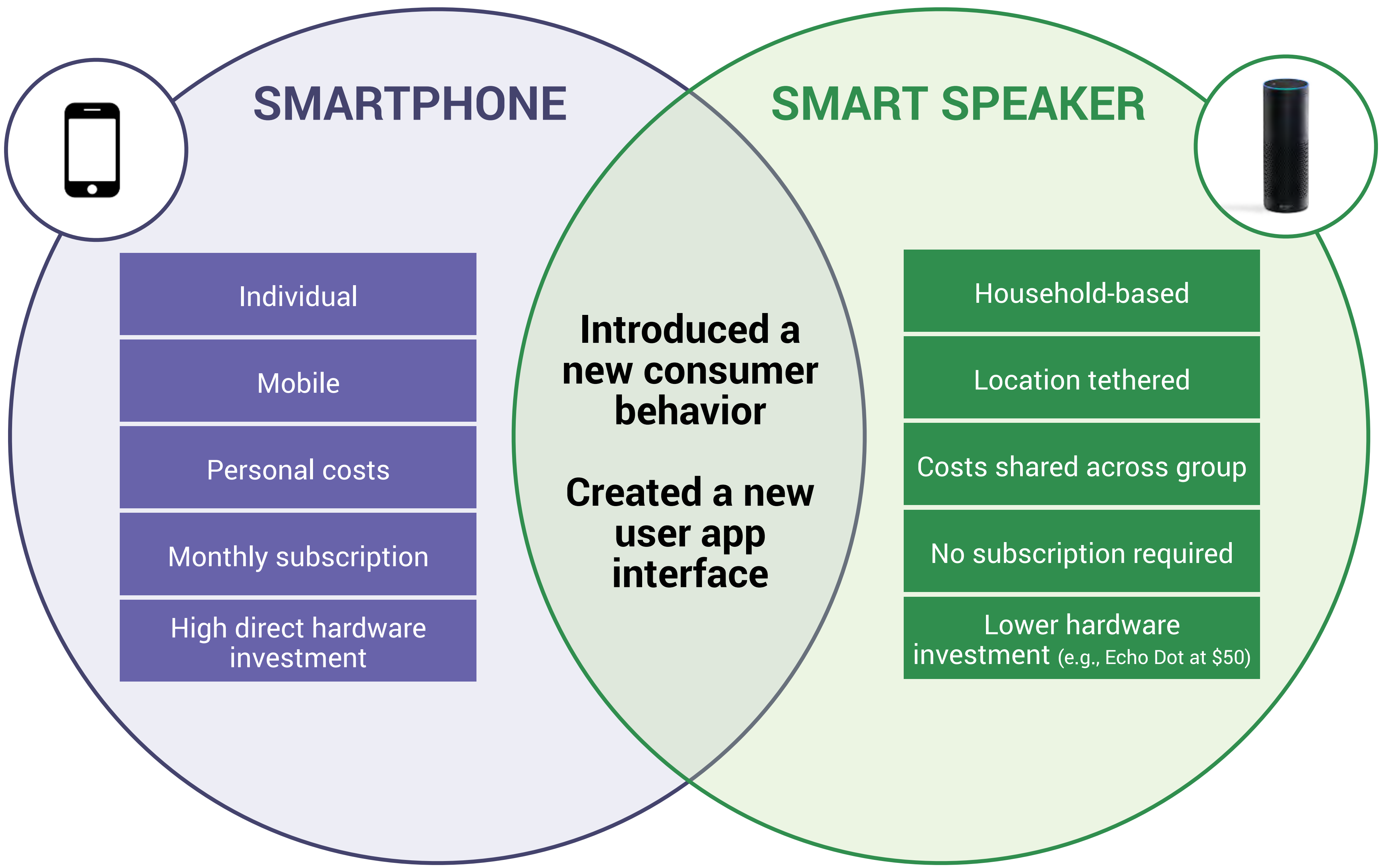
Echo sales have been on pace with first year iPhone unit sales, despite being a household (vs. individual) unit

High consumer usage of voice assistance in autos (51%) and homes (39%) indicates increasing comfort with voice assisted technology

Google's introduction of Home will further drive market penetration; Apple also expected to launch a similar product

Sources: Activate analysis, 1010data, App Annie, Business Insider, Consumer Intelligence Research Partners, Creative Strategies, IHS, ITU, JCHS, NPD

Smart speakers could reinvent consumer behavior at home, similar to how smartphones reshaped mobile consumer behavior

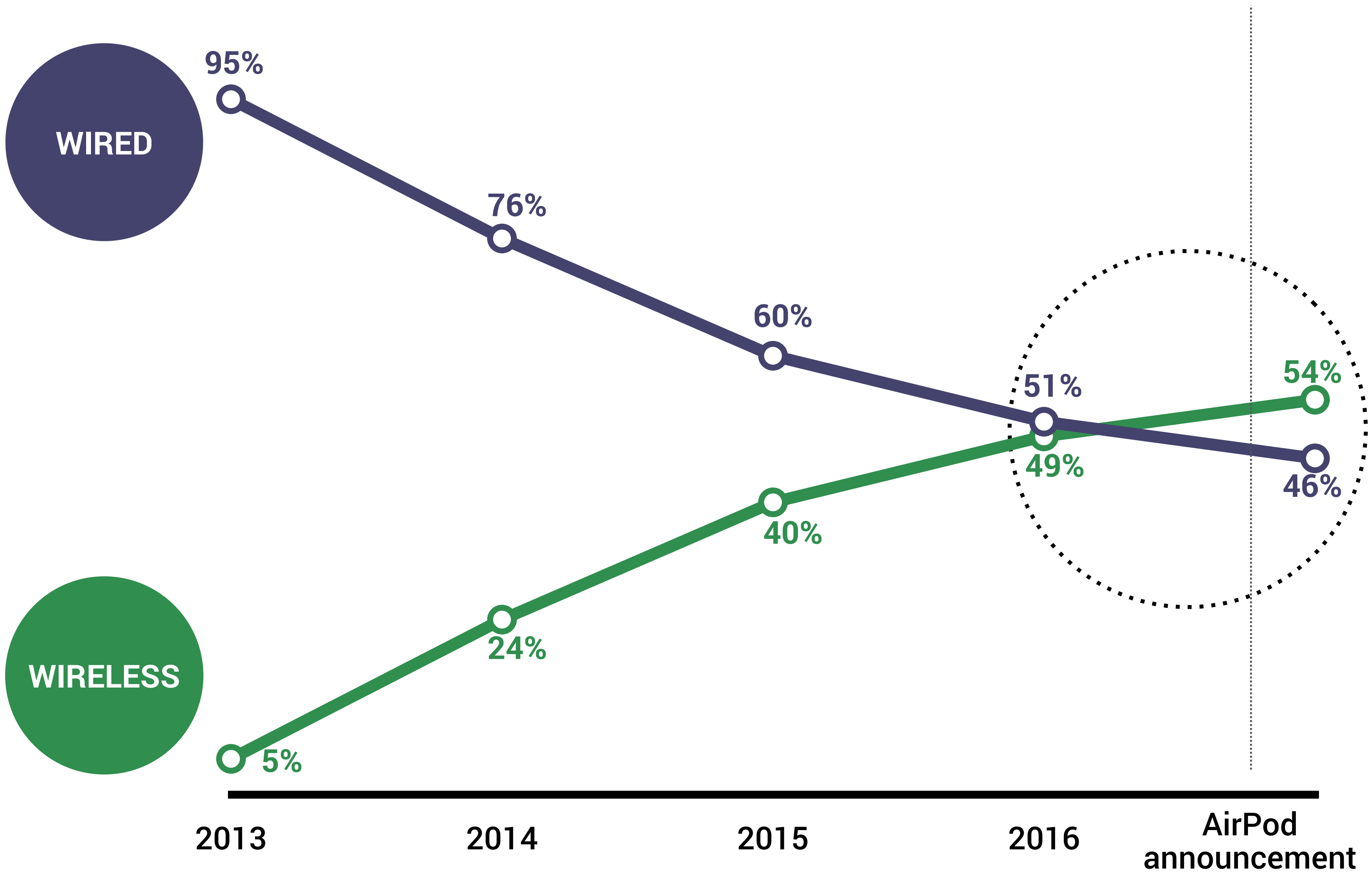


OPEN QUESTIONS FOR SMART SPEAKERS

- To what extent will the app development ecosystem be open? Will skills be as vibrant as apps?
- How will makers drive usage towards their proprietary services?
- Which companies will introduce new devices?

The shift to wireless headphones is well underway, and this consumer behavior explains why the new iPhone does not have a headphone jack

SHARE OF HEADPHONE REVENUE, WIRED VS. WIRELESS, U.S., 2013-2016, PERCENT

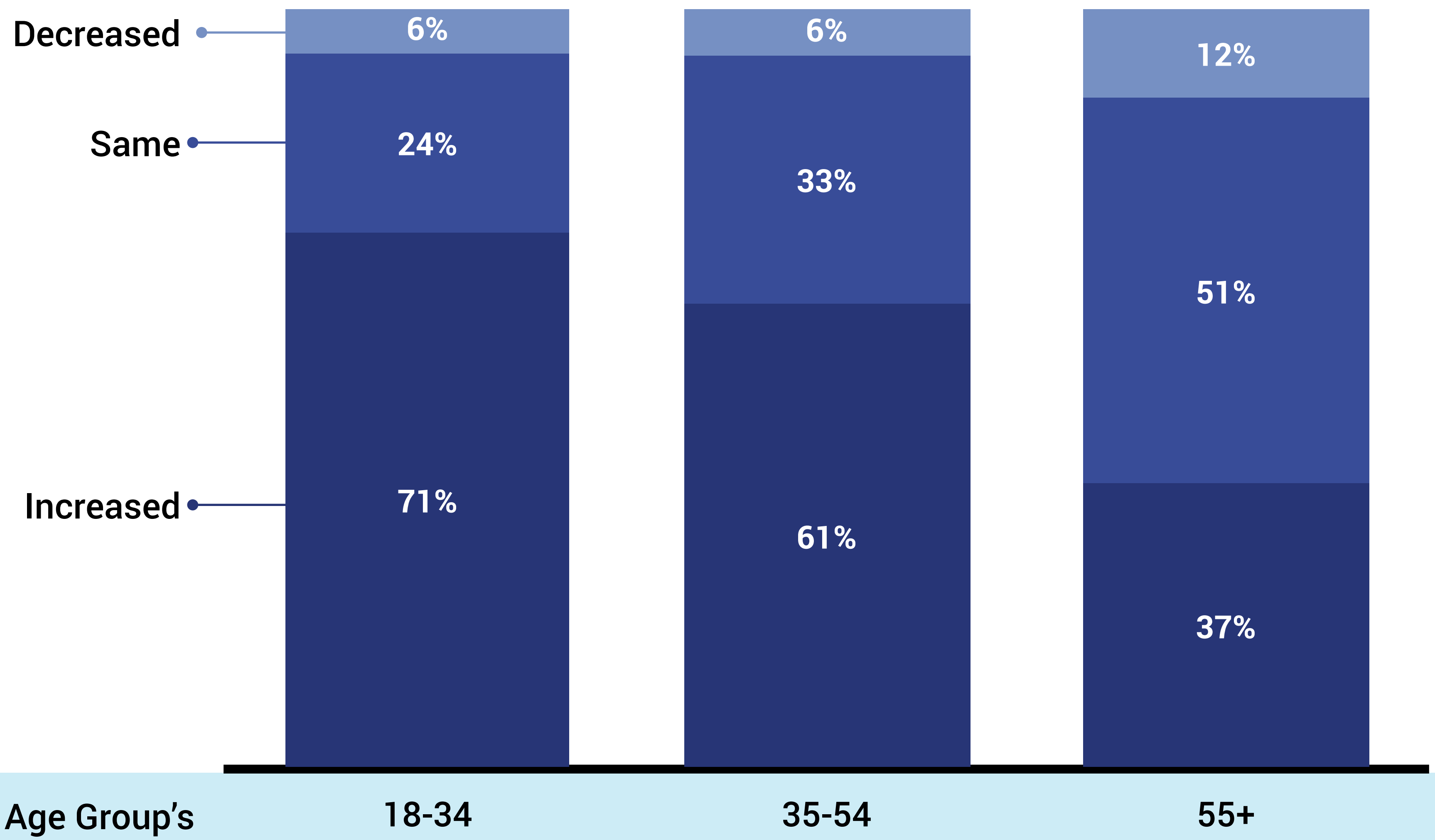


- Consumers lead product development in audio - we expect that smart platform and device developers will continue to follow user preferences for listening devices
- Similar to smart speakers, acceleration of wireless adoption will link the user to services beyond audio (e.g., IoT, apps, etc)
- Wireless headphones could evolve into the mobile version of smart speakers

Sources: Activate analysis, DigitalMusicNews, NPD, StatisticBrain

Podcast listening is mainstream - more Americans listen to podcasts each week than watched the Academy Awards in 2016

PODCAST LISTENER TIME SPENT VS PRIOR YEAR, U.S. 18+, 2016, PERCENT



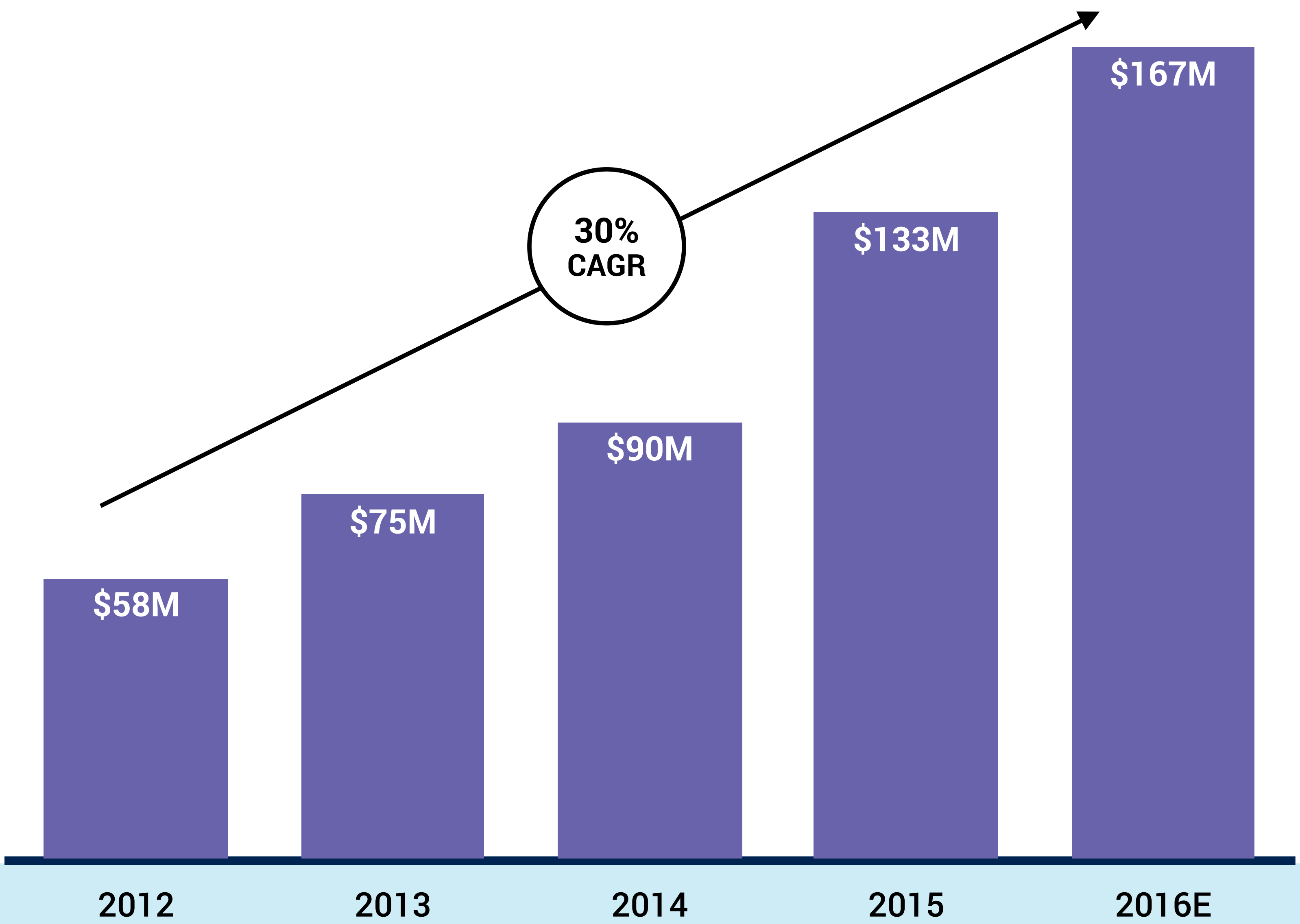
Age Group's Percentage of Total Podcast Listenership	18-34	35-54	55+
	48%	38%	14%

- 57 million listen to podcasts monthly
- 35 million listen weekly
- Weekly listeners average five hours of podcasts each week

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,212), Edison Research, Nielsen

The intimacy of the podcasting format is encouraging advertisers to wade in, but dollars will remain relatively low

PODCAST ADVERTISING SPEND, U.S., 2012-2016E, USD MILLION



- Absence of standardization and metrics have kept podcasting from monetizing
- Independent ad networks and podcast companies are forming, but with limited success due to a lack of scale
- Stand-alone subscription services will not be the answer in podcasting, although format will continue to grow through subscription music streaming services

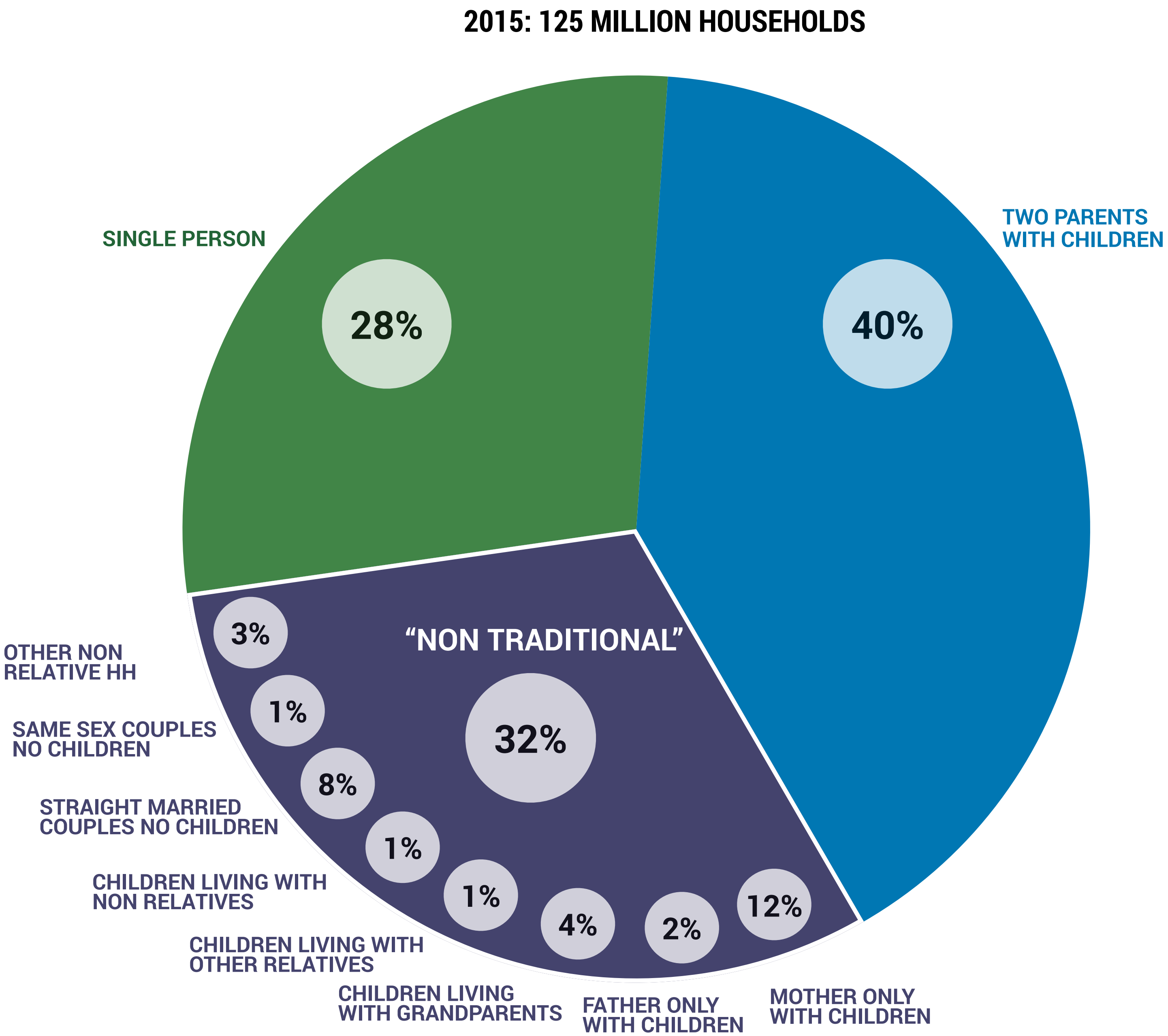
Sources: Activate analysis, Bridge Ratings, Edison Research, Fiksu, IAB

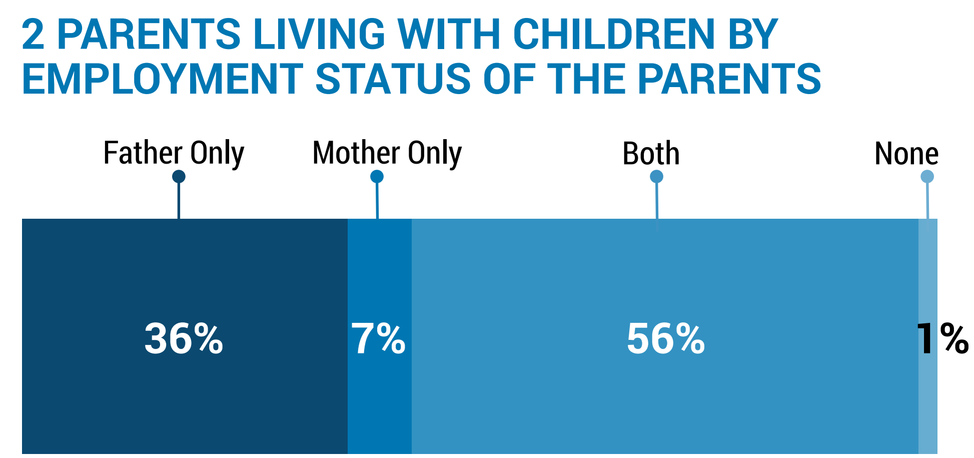
The 9 Most Important Insights for Tech and Media in 2017

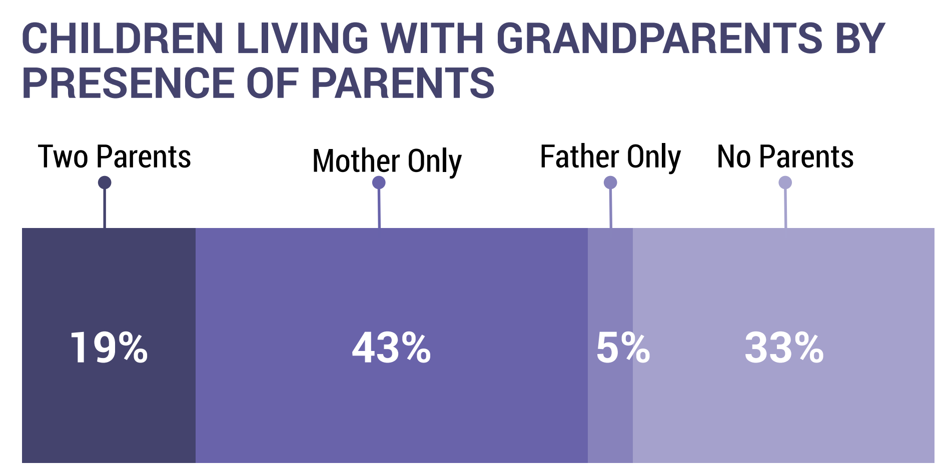
- Super-serve the Super-users and Chase the Attention Unicorns
- Subscriptions will Feed the World (or at least Internet and Media Businesses)
- Learn to Live with the Discovery Oligopoly
- The Bot Battles are about Winning the Great Messaging War
- eSports is the Next Tech Phenomenon
- You Already Know the New Winners in Pay TV
- Video Streaming: The Bundle is the Future
- Audio: Smart Speakers, Gray Music
- **Post-Household America: A New Era of Users**

Today's American Household is more complex than you think: 32% have non-traditional structures

HOUSEHOLD FAMILY ARRANGEMENTS, U.S., 2015, PERCENT

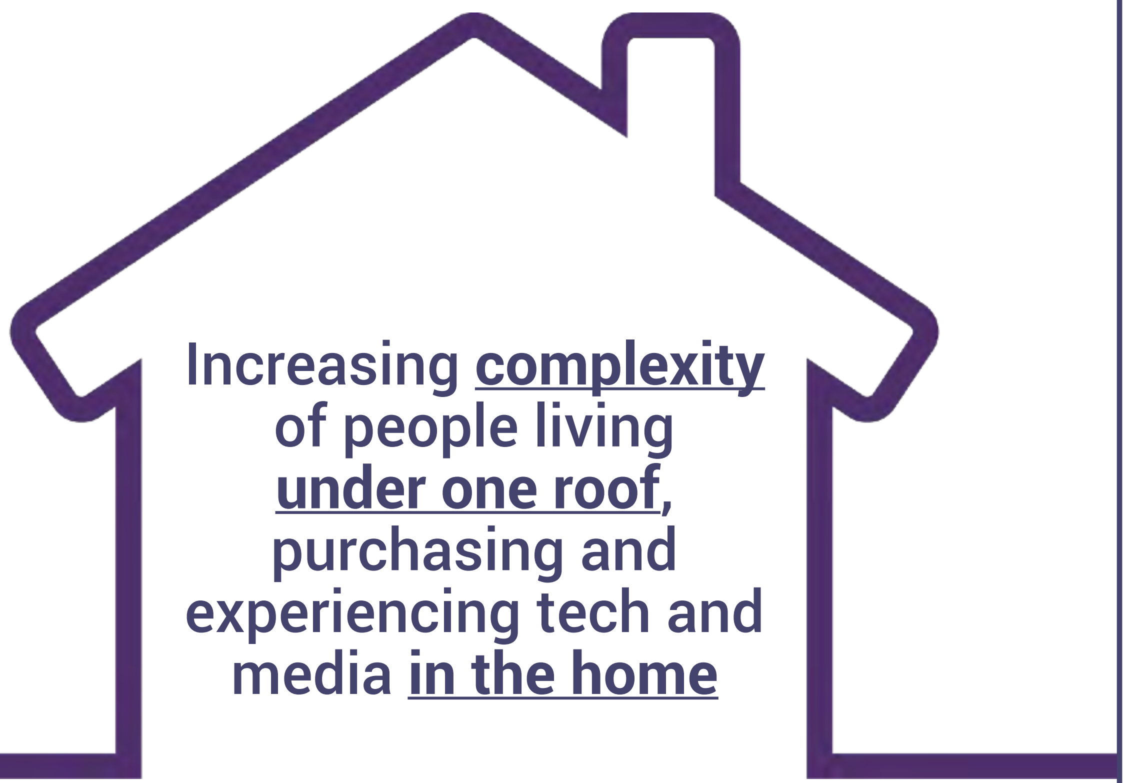




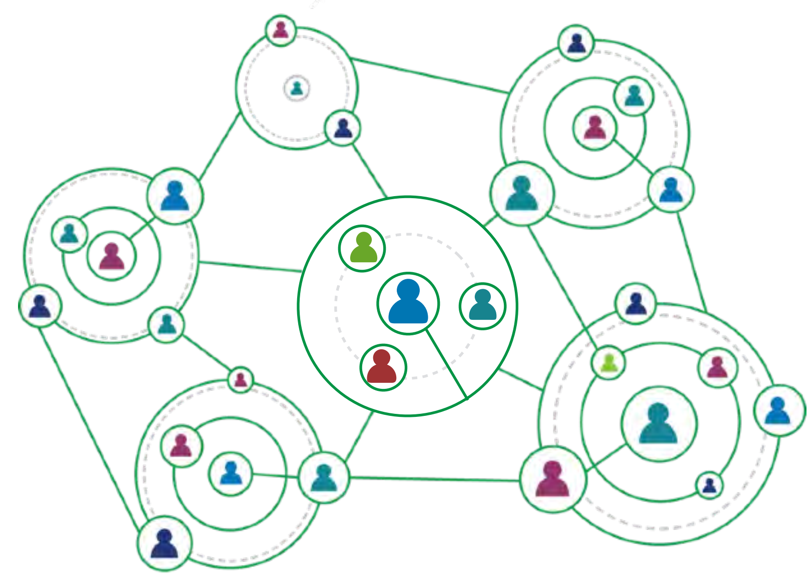


Sources: Activate analysis, American Community Survey, NY Times, U.S. Census Bureau

Post-Household America: more complexity under one roof + people using social connections to substitute for a household — Tech and Media need to move beyond addressing households



COMPLEX HOUSEHOLD
(Under one roof)



People are linking their tech and media experiences and purchasing power through chosen families – social circles beyond their their immediate family and home

POST HOUSEHOLD
(Beyond the home)

Source: Activate analysis

Tech and media companies need to address new behaviors in both complex households and in post-household groups of people

COMPLEX HOUSEHOLD BEHAVIORS	
Living arrangements	• Millennials living with parents longer and pushing milestones later in life • Grandparents moving back in with children • Non relative roommates • Single parents
Tech and media consumption behavior	• Fragmented content and consumption preferences • Multicultural / multilingual requirements & preferences • Individual and shared consumption • Insufficient bandwidth to enable multiple family users • Home Mobile usage - now greater at home than out of the home
Accounts and subscription	• Individual and shared purchasing • Multiple accounts under one roof • Single and shared subscriptions / accounts
Payments	• Individual and shared payments for tech and media • Multiple payment term and method preferences (e.g., prepay, auto-bill, financing)

POST-HOUSEHOLD BEHAVIORS	
Close social circle	• Account sharing (e.g., Prime, iCloud Family Sharing) • Extending family plans among friends, instead of family (e.g., Software/SaaS, Wireless) • One subscription paid by multiple people pooling cash
Authentication and identity	• Password sharing with social circle — instead of with family members • Multiple user identities accessed from a single device
Virtual family room	• Shared viewing among people who are not in the same place or under the same roof • Screen sharing • Experience faster broadband at other people's homes
Communication	• Extended and virtual families mimic co-location using messaging apps • Second screen

Source: Activate analysis

Tech and media companies can implement a number of strategies to better serve Post-Household Americans

	COMPLEX HOUSEHOLDS	POST-HOUSEHOLD
USER EXPERIENCE: *Adapt interface and content to diverse users*	• Adjust content and interface to cultural and language preferences • Adjust to variety of platforms • Adapt interface to position on adoption curve	• Ensure quality simultaneous streams • Enable sharing on social and messaging platforms
PRICING / PACKAGING: *Offer multiple ways in which people can purchase and share tech and media*	• Adjust product packaging to reflect number of users • Embed multiple identity management • Create easy account transfer features	• Offer flexible friends and family plans optimized for fluid social circles • Create paid password sharing features • Embed multiple identity management
PAYMENT: *Allow for multiple payers and payments*	• Enable bill splitting within the house • Individualize payment of shared subscriptions	• Enable bill splitting beyond the roof • Flexible cash pooling solutions • Simplify money transfers

There are four principal groups of Post-Household Americans that present the biggest opportunities for tech and media

VIRTUAL FAMILIES	Members of a household are increasingly diverse (chosen families, multiple generations, roommates, living remotely), each with unique tech and media needs	**Over 60M** PEOPLE LIVE IN MULTIGENERATIONAL HH **25%** OF ADULT RENTERS HAVE ROOMMATE(S)
BOOMERS AND SENIORS	Boomers are a large and affluent group, and would consume additional tech and media if their preferences were addressed Seniors are heavy media users and would consumer additional tech and media if their preferences were addressed	**Over 75M** BOOMERS **Over 45M** SENIORS
MILLENNIALS	Millennials will follow prior generations' tech and media behaviors, but have demanding expectations, which so far have not been met	**Over 75M** MILLENNIALS **Under 33%** ARE MARRIED OR COHABITING IN THEIR OWN HH
MULTICULTURAL	While Hispanics are starting to see a range of content and services, other non-English speakers do not have the same array of options	**Over 65M** DON'T SPEAK ENGLISH AT HOME **Over 25M** HAVE LIMITED ENGLISH PROFICIENCY

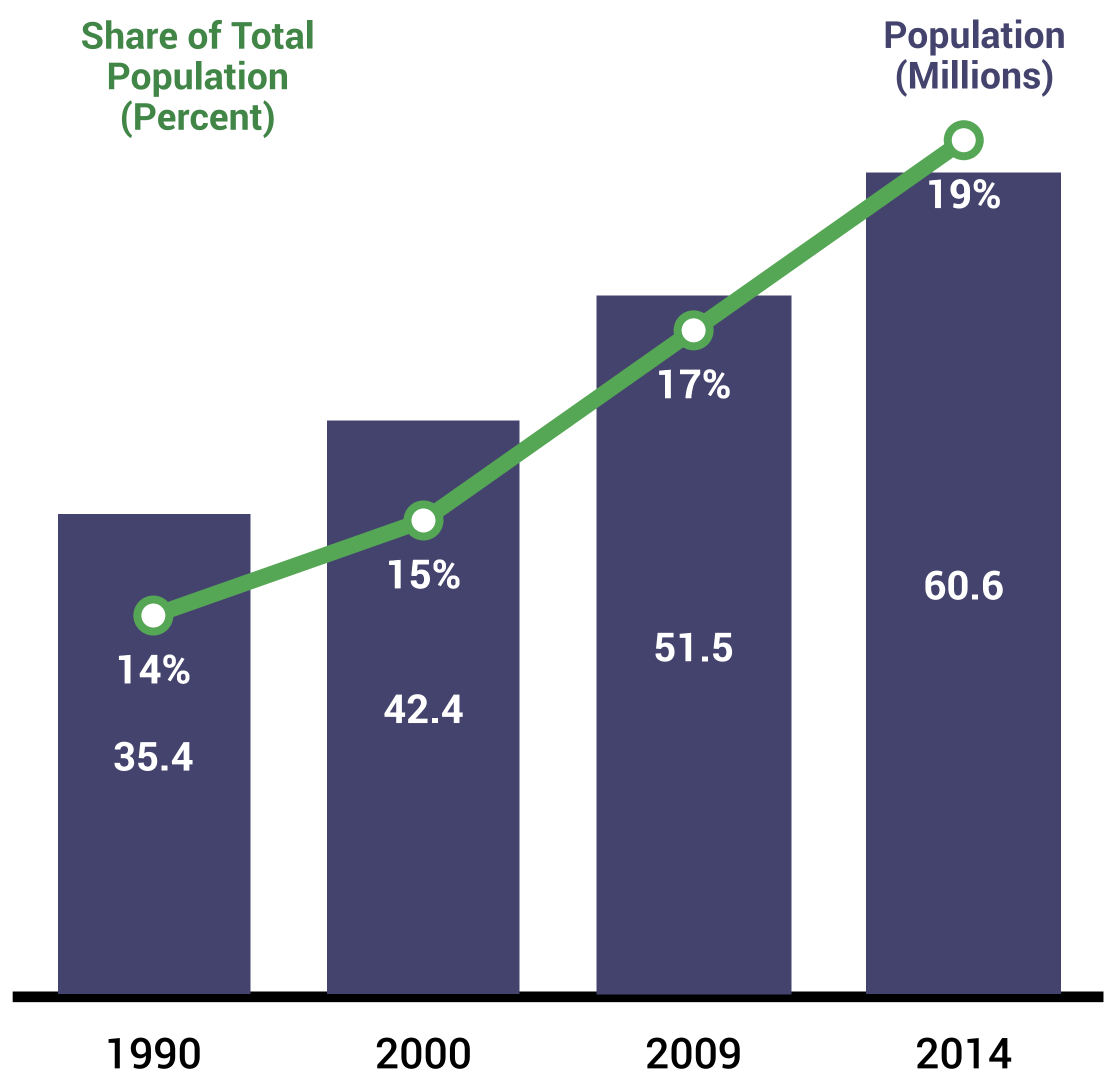
The following pages outline the specific needs and opportunities to serve these Post-Household segments

Sources: Activate analysis, Pew Research, Prince Market Research, rent.com, U.S. Census Bureau

Post-Household opportunity - Virtual Families: today's households include additional family members and/or roommates that increase complexity in meeting their needs

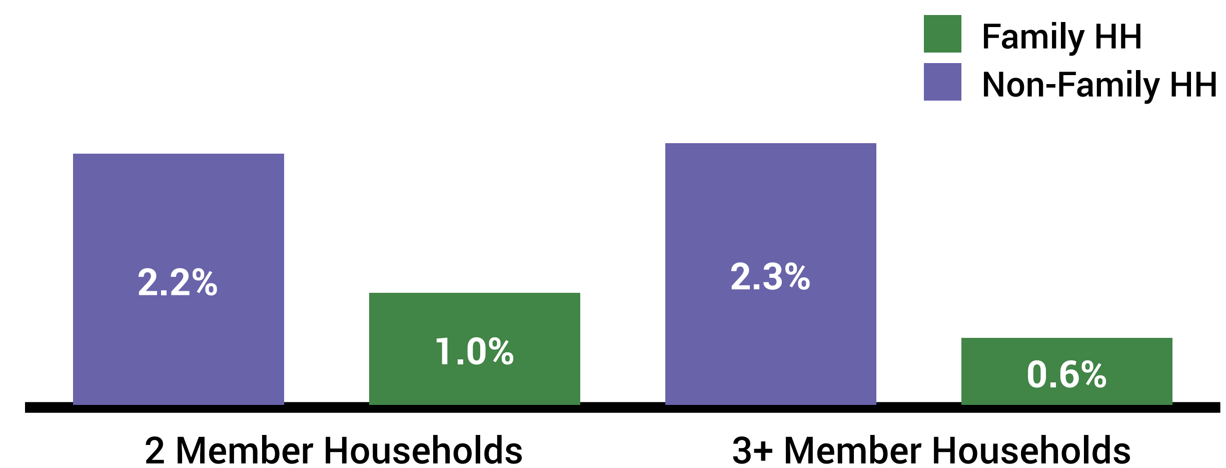
MULTIGENERATIONAL HOUSEHOLDS, U.S., 1990-2014,

POPULATION LIVING IN MULTI-GENERATIONAL HOUSEHOLD, MILLIONS

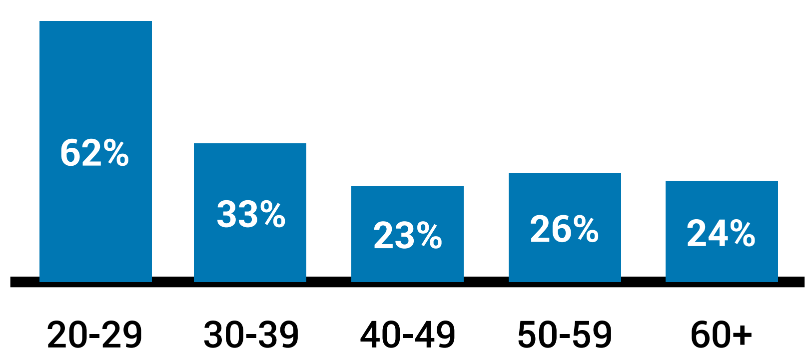


HOUSEHOLDS ALSO INCREASINGLY INCLUDE NON LEGAL RELATIVES, AS REFLECTED IN ROOMMATE LIVING ARRANGEMENTS ACROSS AGE GROUPS

FAMILY* VS NON-FAMILY** HOUSEHOLD GROWTH, U.S., 2010-15, CAGR PERCENT



RENTERS LIVING WITH ROOMMATES BY AGE GROUP, U.S., AUG 2016, PERCENT

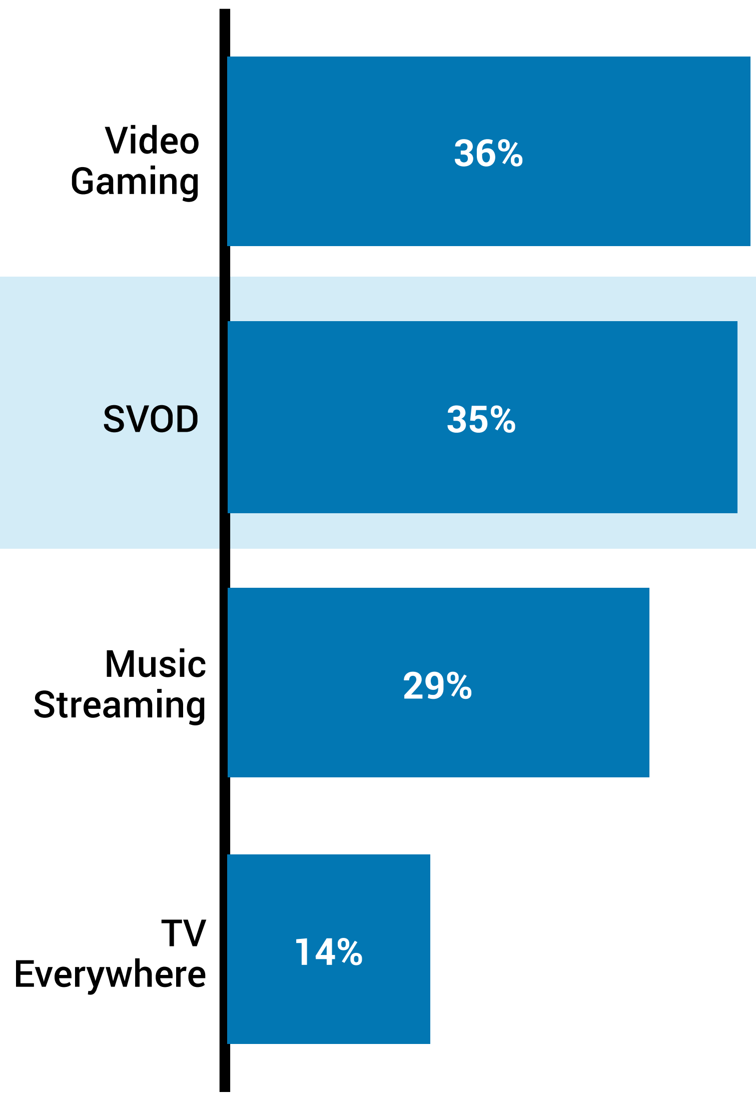


A quarter of adults have a roommate, even into the middle age and beyond

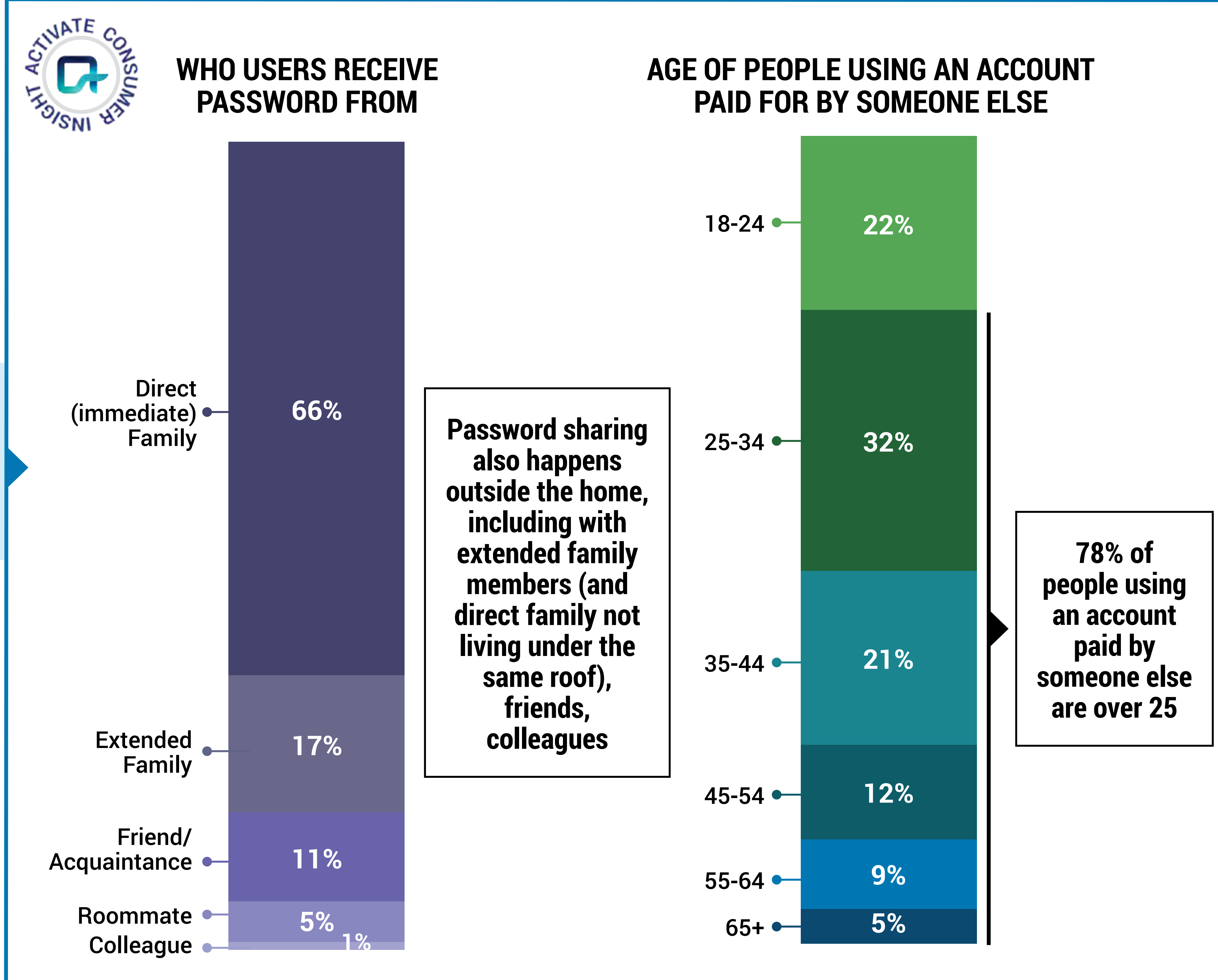
*defined as a household in which at least one person is related to the head of household by birth, marriage or adoption
**defined as a household consisting of non-relatives, excluding those by marriage
Sources: Activate analysis, Bloomberg, BuzzFeed, CNN, iTunes, Pew Research, Rent.com, Thrillist, Zumper, U.S. Census Bureau

Virtual families can extend to include individuals not living under the same roof, who still share tech and media

SHARE OF USERS USING AN ACCOUNT PAID FOR BY SOMEONE ELSE
U.S., 2016, PERCENT



CASE STUDY: PASSWORD SHARING IN SVOD, U.S., 2016E, PERCENT



activate

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000 LHS, n=840 RHS)

Tech and media companies will have to make significant changes to their go-to-market and execution strategies to serve users who are part of Virtual Families

CHANGES THAT TECH AND MEDIA COMPANIES WILL NEED TO MAKE TO SERVE VIRTUAL FAMILIES	
PRODUCTS/ SHARED ACCOUNTS	• **Rethinking product line-up and pricing structure to better take into account the number of users (one to many and many to one)**
PAYMENTS	• **Enabling bill splitting in bill pay (multiple payers for one bill)** • **Allowing multiple means of payment for a single service**
CUSTOMER ACQUISITION	• **Offering easy account ownership transfer (e.g., roommates moving in/out)** • **Incentivizing users to bring other household members to services (e.g., referral bonus, temporary passwords, etc.)**
TIME AND CONNECTIVITY	• **Ensuring ability to connect multiple devices**

EXAMPLES OF BUSINESSES DOING THIS TODAY

PRODUCTS / SHARED ACCOUNTS

One Account - Multiple Users

amazon Prime

kindle

NETFLIX

T-Mobile ONE

One User - Multiple Accounts

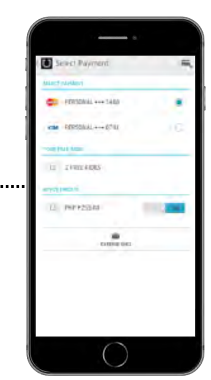
"Finstas"

Dropbox

Personal and Business Accounts

PAYMENTS

One User - Multiple Payments



Personal and Business Accounts

Multiple Users - One Payment

venmo

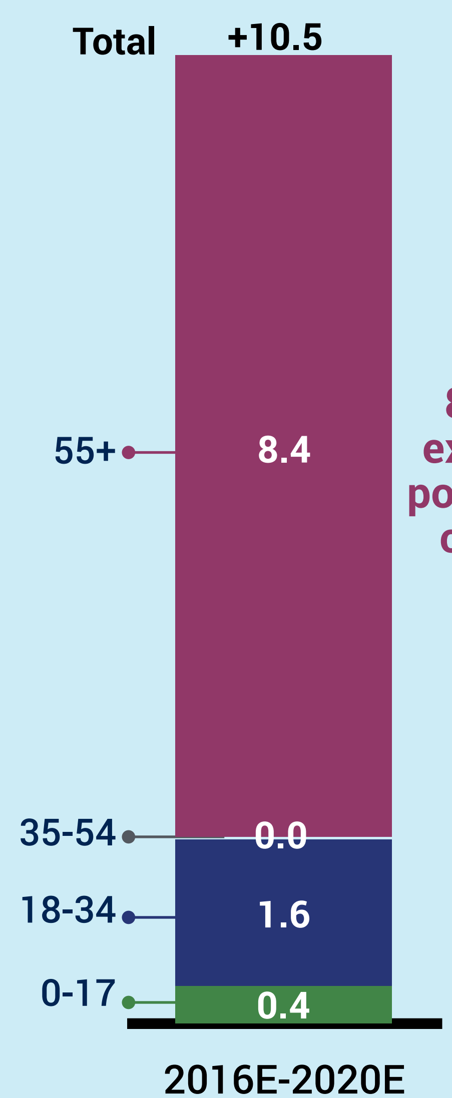
Divvy

SIMPLE

Shared Bank Accounts

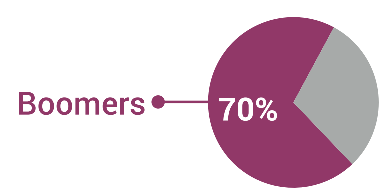
Post-Household opportunity - Boomers: the 75 million (and growing) Boomers currently under-index in tech and media services, despite being both affluent and heavy consumers of media

POPULATION INCREASE BY AGE, U.S., 2016E-2020E, MILLIONS



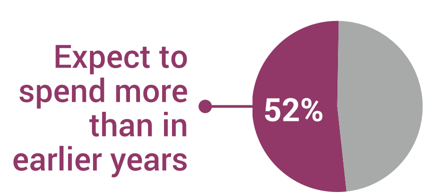
80% of expected population change

EST. SHARE OF US WEALTH

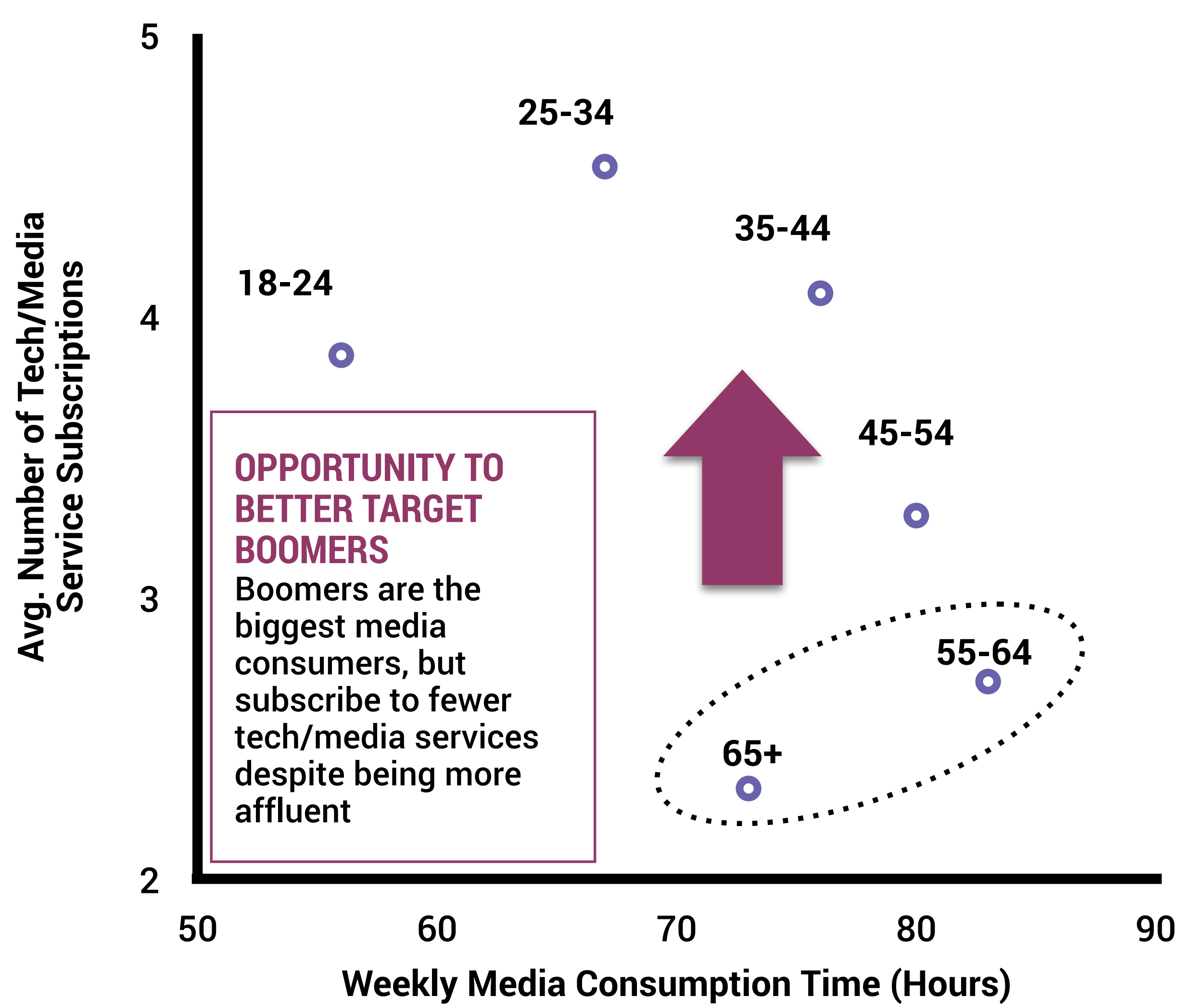


Boomers $46 trillion of wealth (+ $15 trillion to be inherited in upcoming years)

US BOOMERS SPENDING INTENTIONS



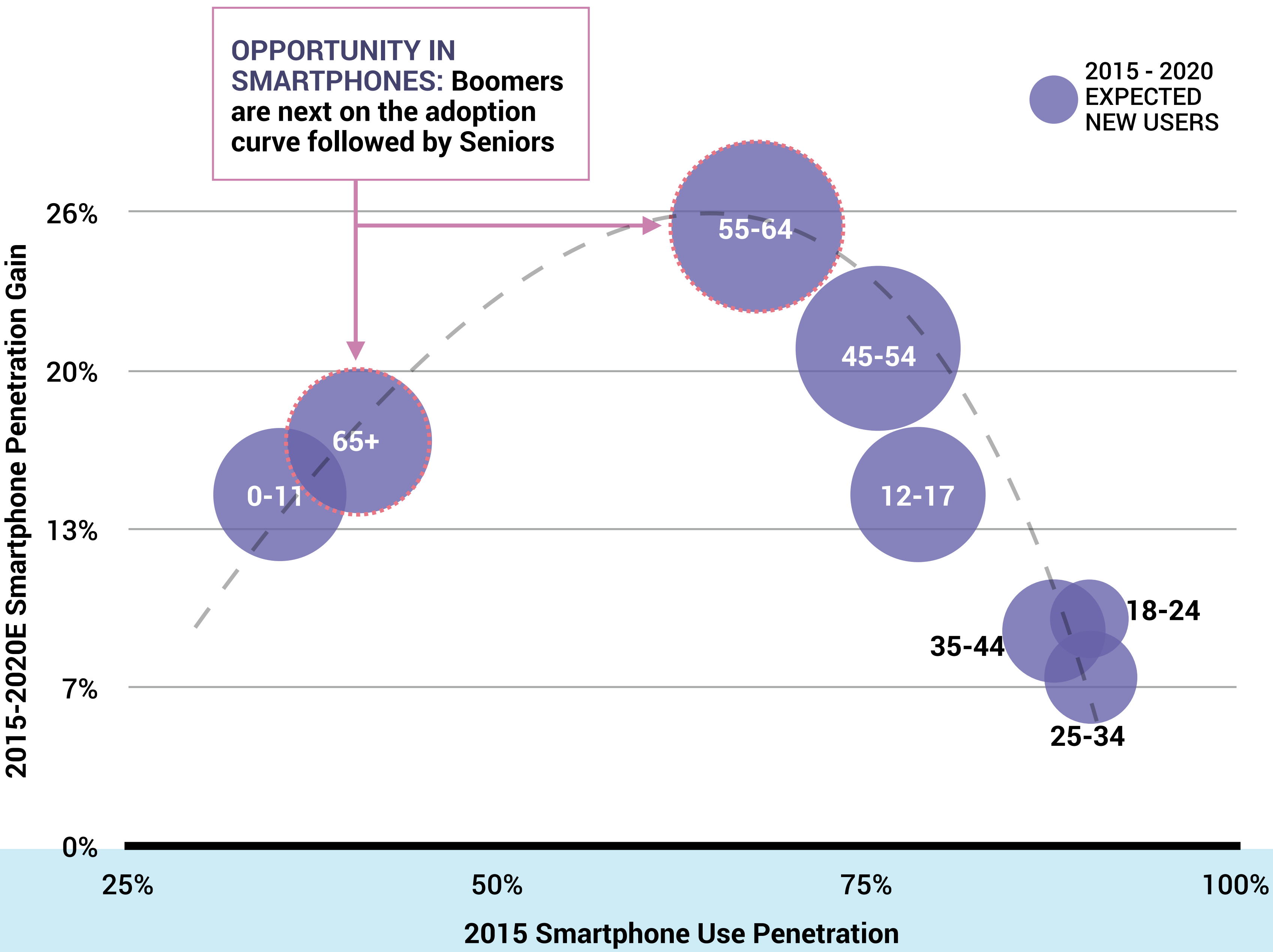
MEDIA CONSUMPTION RELATIVE TO NUMBER OF TECH/MEDIA SERVICE SUBSCRIPTIONS (2016)



Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), Deloitte Digital Democracy Survey, Fortune, Influent50 Research, MarketingResearch, Nielsen, U.S. Census Bureau

Tech and media companies should serve Boomers and Seniors as late adopters, and adjust the user experience to their expectations – this is a significant revenue opportunity for tech and media companies

SMARTPHONE PENETRATION, U.S., 2015-2020E, PERCENT



Target Boomers and Seniors as late adopters: smartphones will show the way

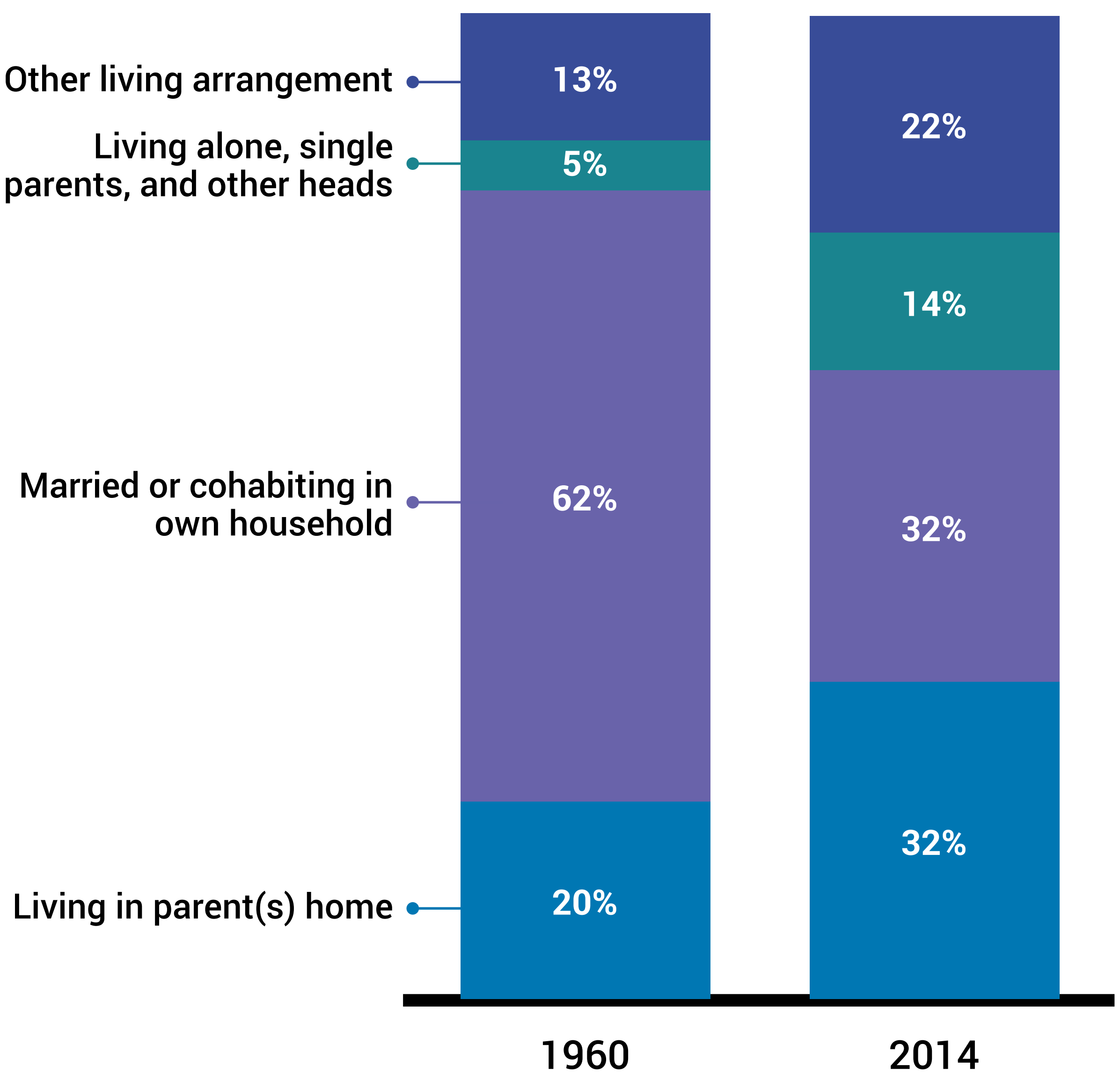
- **Other consumer tech products will present opportunities (e.g., wearables - 29% of Apple Watch owners are 55+)**
- **Adjust user experience (e.g., higher privacy protection, authentication using biometrics to ease dexterity issues, loyalty programs)**
- **Introduce higher-end offerings such as luxury versions of technology products, appealing to their loyalty and higher willingness to pay**

Sources: Activate analysis, eMarketer, Fortune, NY Times, Pew Research, U.S. Census Bureau

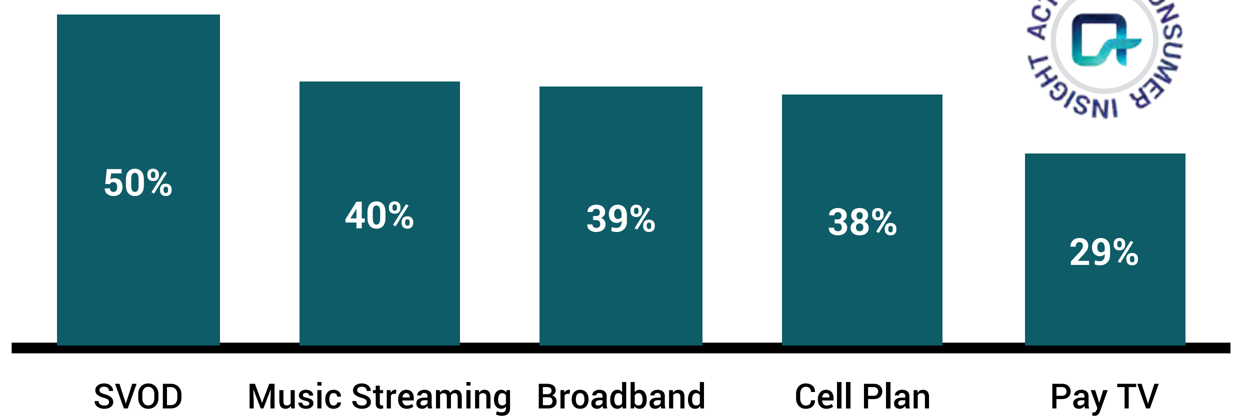
Post-Household opportunity - Millennials: this age group pursues major milestones later in life, including tech/media independence

MILLENNIALS BY LIVING ARRANGEMENT, U.S., 1960-2014,

NOTABLE INCREASE IN MILLENNIALS LIVING IN THEIR PARENTS' HOME



SHARE OF CONSUMERS GETTING THEIR FIRST OWN SUBSCRIPTION AFTER 35 YEARS OLD (PERCENT, 2016)



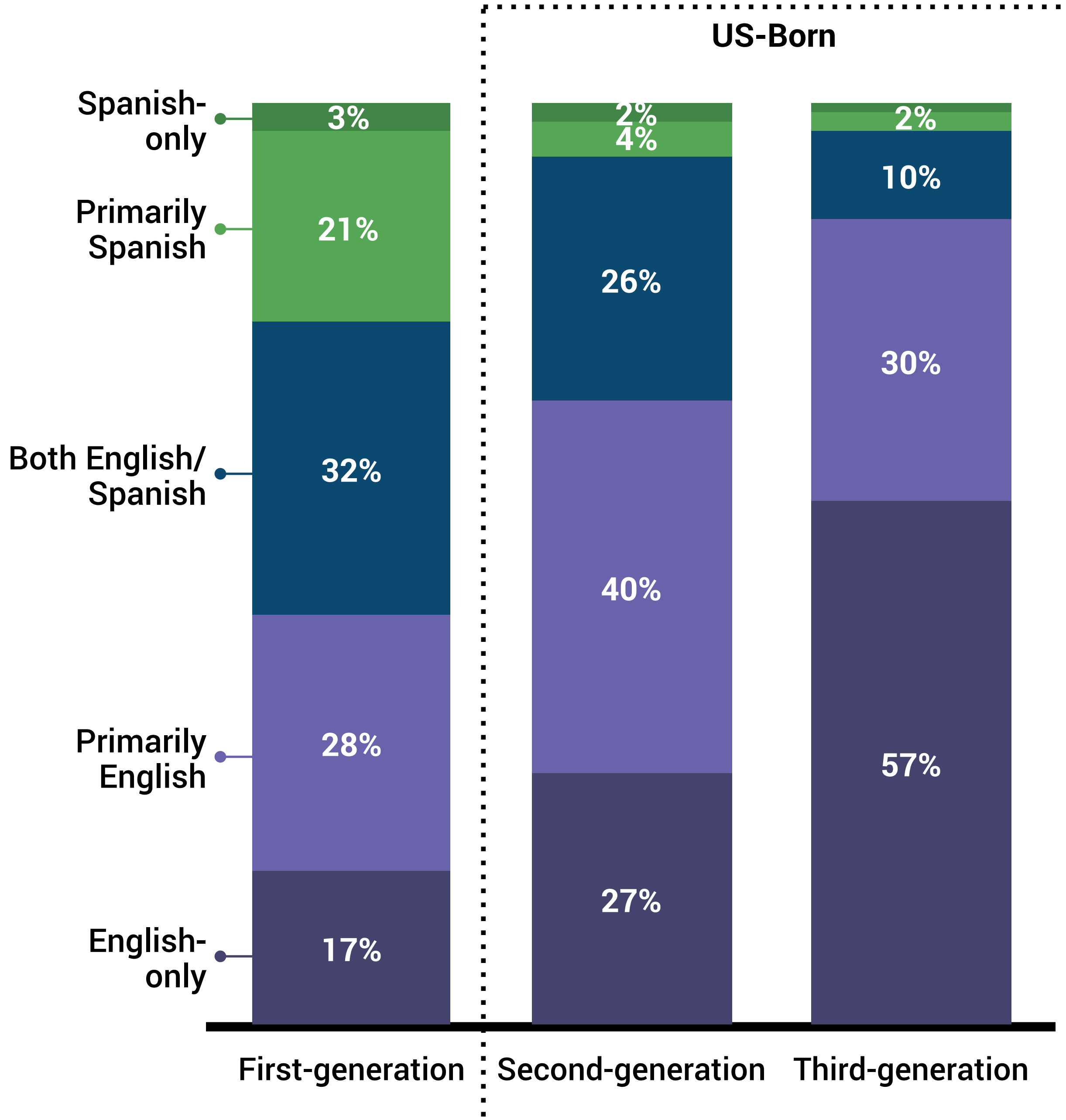
CONVERTING MILLENNIALS INTO PAYING SUBSCRIBERS WILL REQUIRE TECH AND MEDIA COMPANIES TO:

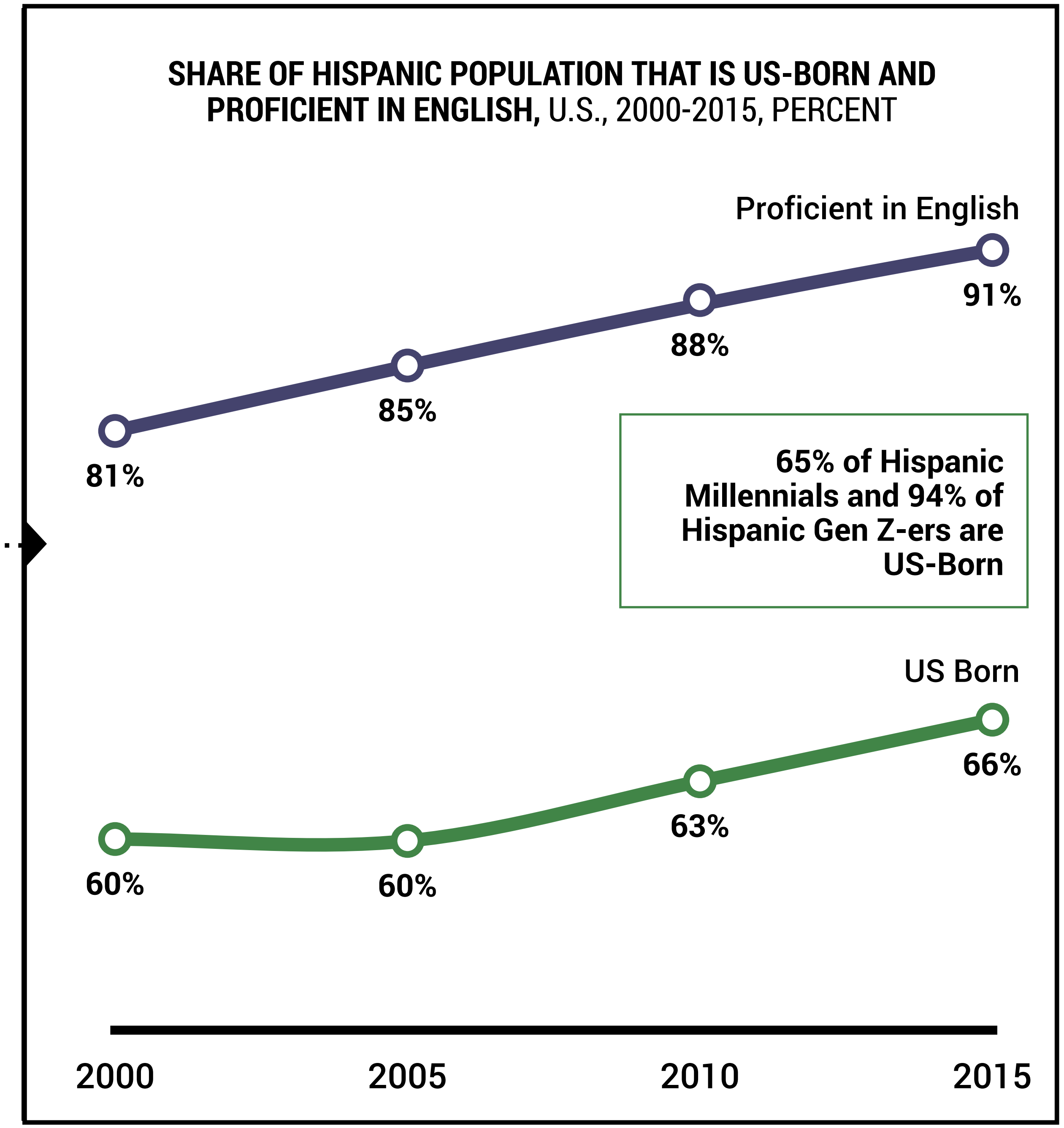
- Review product architecture and pricing structure, focusing on first time subscribers (e.g., "My First"…)
- Focus on user experience: frictionless accessibility across platforms and devices
- Allow people who they share services with to help them get their own services (e.g., partial parental sponsorship)

Sources: Activate analysis, Activate Consumer Tech and Media Survey 2016 (n=1,003), NY Times, Pew Research, U.S. Census Bureau

Post-Household opportunity - Multicultural / Hispanics: serving US-born Hispanics with English content may an effective approach, even as their demand for Spanish language content thrives

ONLINE VIDEO LANGUAGE PREFERENCE OF HISPANICS BY GENERATION, U.S., 2016, PERCENT

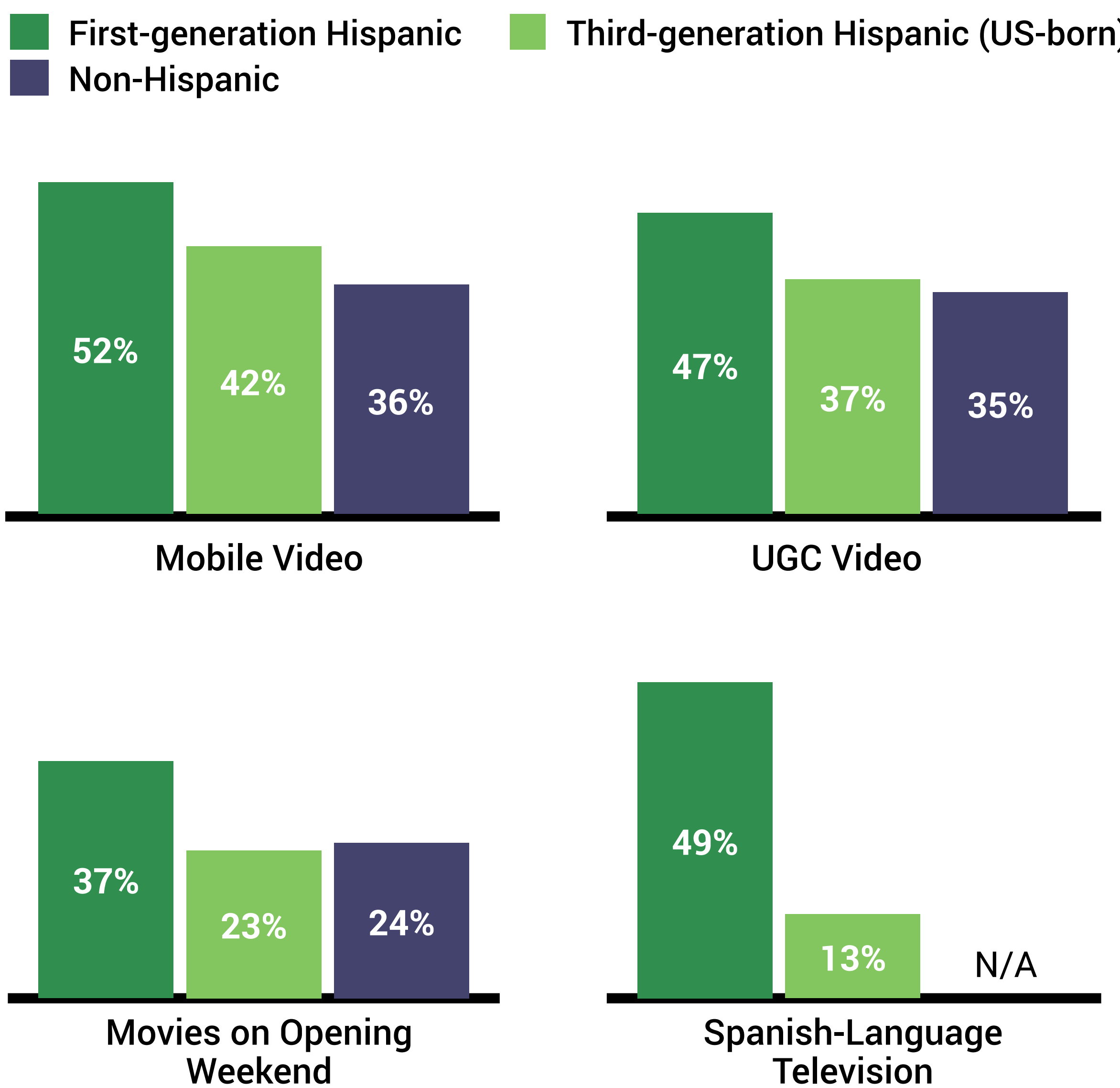




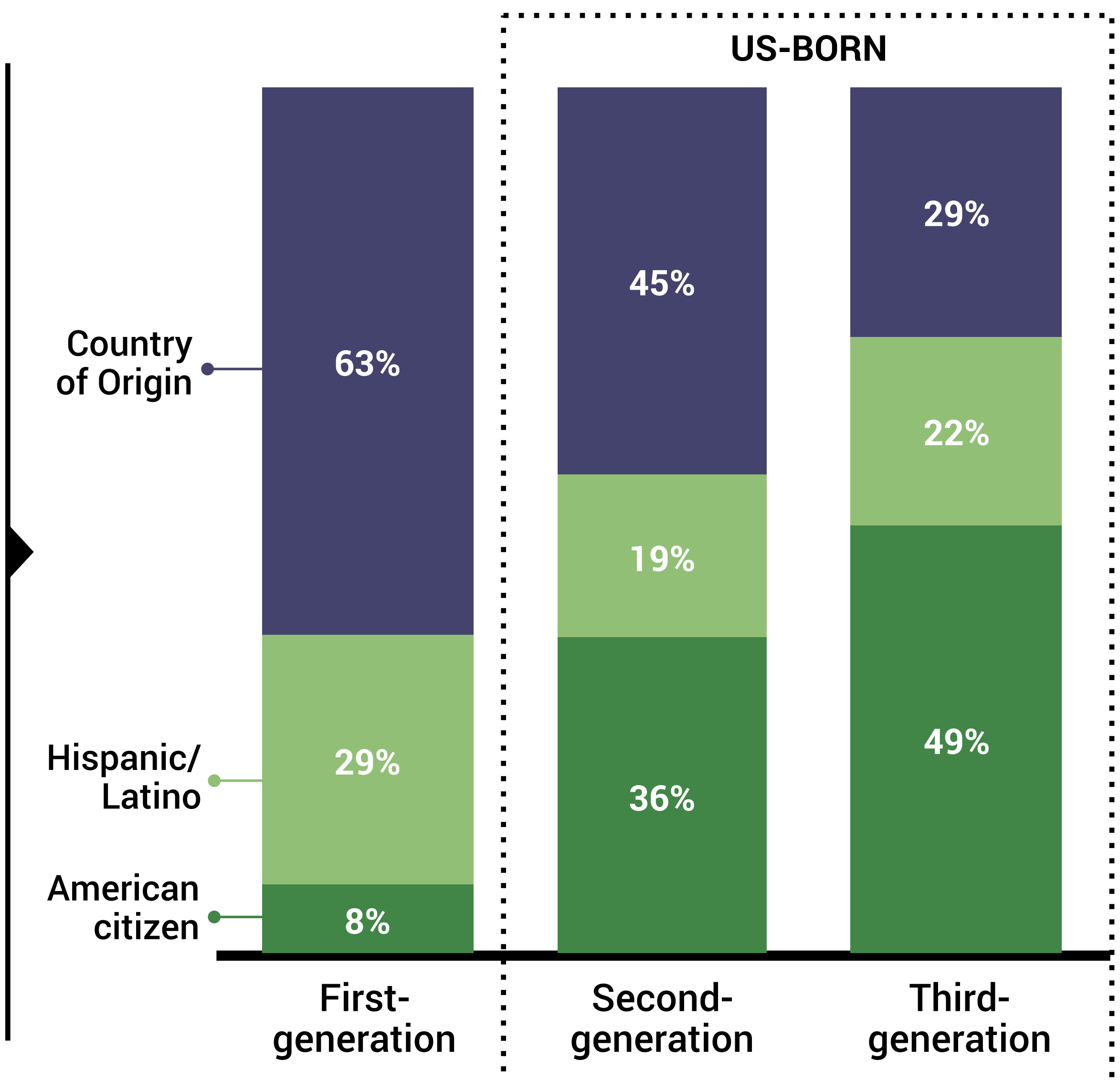
Note: Media language preference is across TV, Radio, Internet, Newspapers, and Magazines.
Sources: Activate analysis and interviews, Google, Pew Research, PwC

US-born Hispanics mirror the tech and media habits of non-Hispanics; companies should take into account their multiple cultural affinities: as Americans, as Hispanics and as influenced by country of origin

DAILY TECH & MEDIA PREFERENCES OF FIRST/THIRD GENERATION HISPANICS AND NON-HISPANICS, U.S., 2016, PERCENT



SELF-IDENTIFICATION OF HISPANICS, U.S., 2016, PERCENT

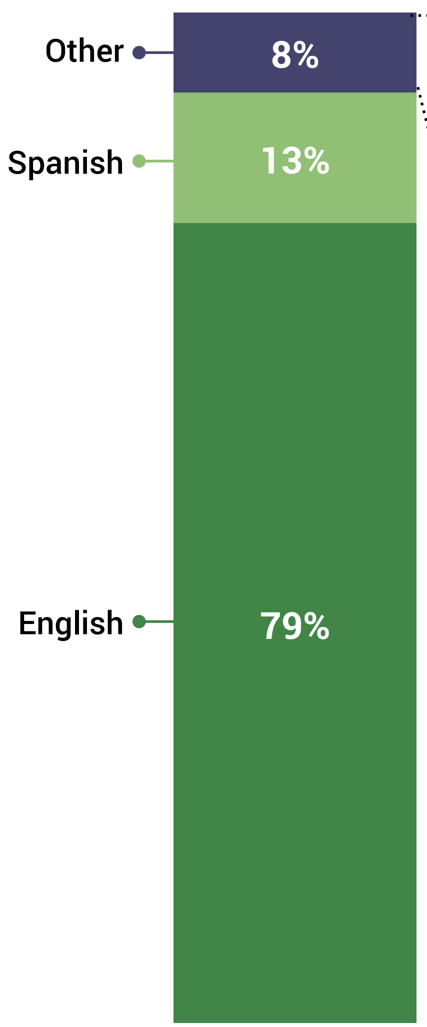


Sources: Activate analysis, Google, Pew Research, PwC

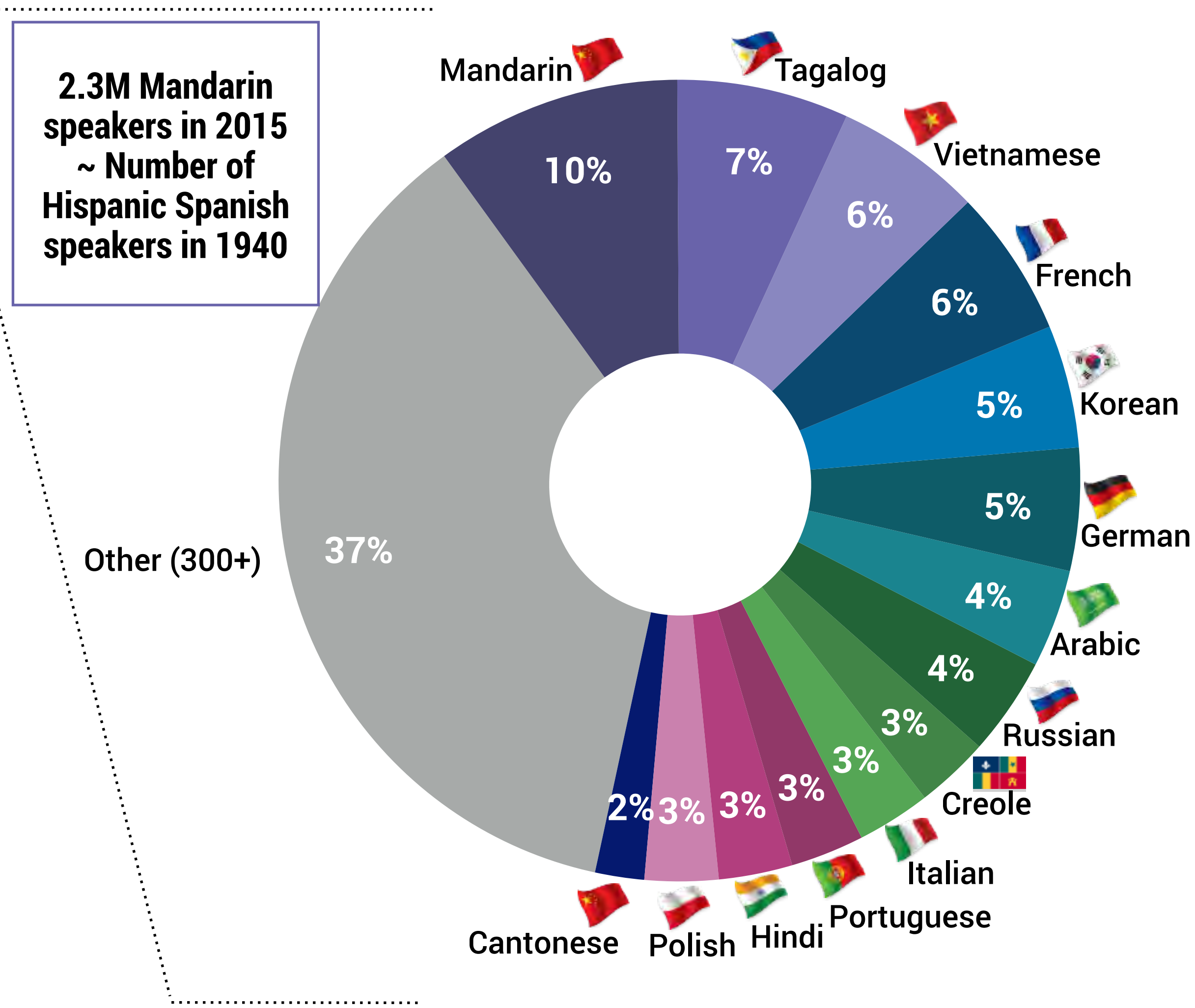
Post-Household opportunity - Multicultural / Non Hispanics: 25 million Americans speak a language other than English or Spanish at home, but are a highly fragmented population

POPULATION BY LANGUAGE SPOKEN, U.S., 2015, PERCENT

US POPULATION BY LANGUAGE SPOKEN AT HOME, PERCENT, 2015



FOCUS ON NON ENGLISH NON SPANISH SPEAKERS, PERCENT, 2015



Over 25 million people speak a language other than English or Spanish at home

Other than English or Spanish, 6 languages had 1 million speakers, 14 languages had over 0.5 million speakers and over 300 other languages are spoken in the US

- **3 million Chinese speakers, including 2.3 million Mandarin speakers and 0.5 million Cantonese speakers**
- **Over 1.6 million Tagalog speakers**
- **Over 1.4 million Vietnamese speakers**
- **Over 1.3 million French speakers**
- **Over 1.1 million Korean speakers**
- **Over 1.0 million German speakers**

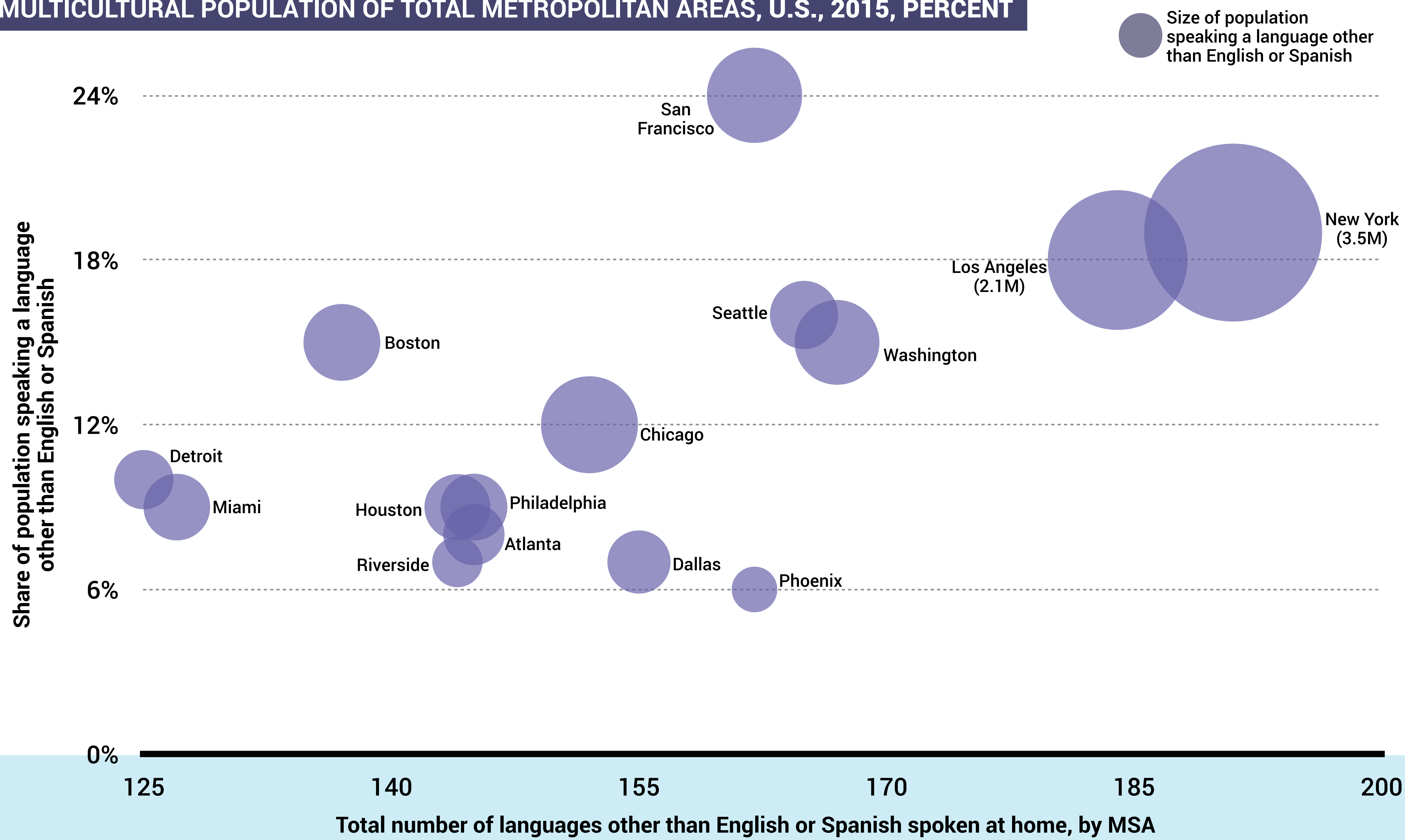
Over 25 million people speak English "less than very well" in the US (65% of which speak Spanish at home)

- **44% of people speaking Spanish at home speak English less than very well (vs. 38% on average for people speaking a language other than English or Spanish)**

Sources: Activate analysis, U.S. Census Bureau

Non English / non Spanish speakers are very geographically dispersed even outside major markets, and language fragmentation varies greatly

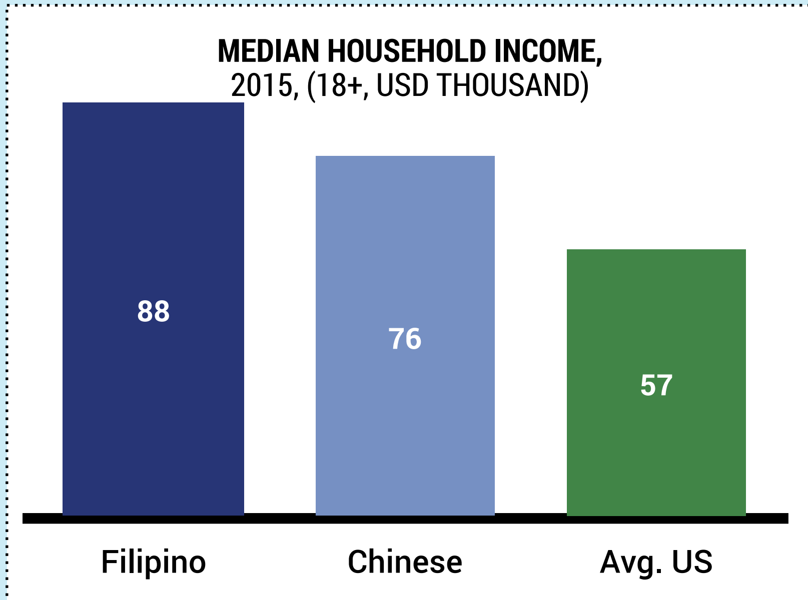
MULTICULTURAL POPULATION OF TOTAL METROPOLITAN AREAS, U.S., 2015, PERCENT



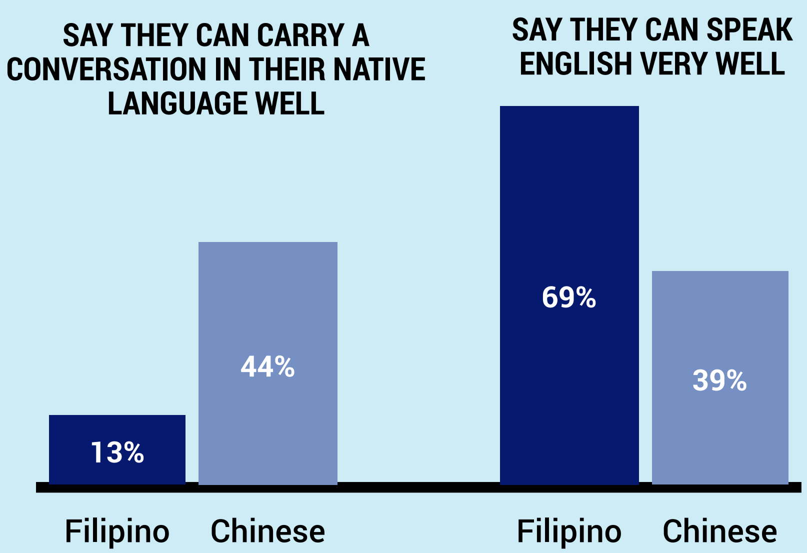
Sources: Activate analysis, U.S. Census Bureau

Each community has a distinct relationship with English and to general interest American media; the same formula for tech and media access does not apply to all

CHINESE AND TAGALOG SPEAKERS APPEAR TO HAVE VARYING LANGUAGE PREFERENCES AND RELATIONSHIPS WITH U.S. CULTURE…



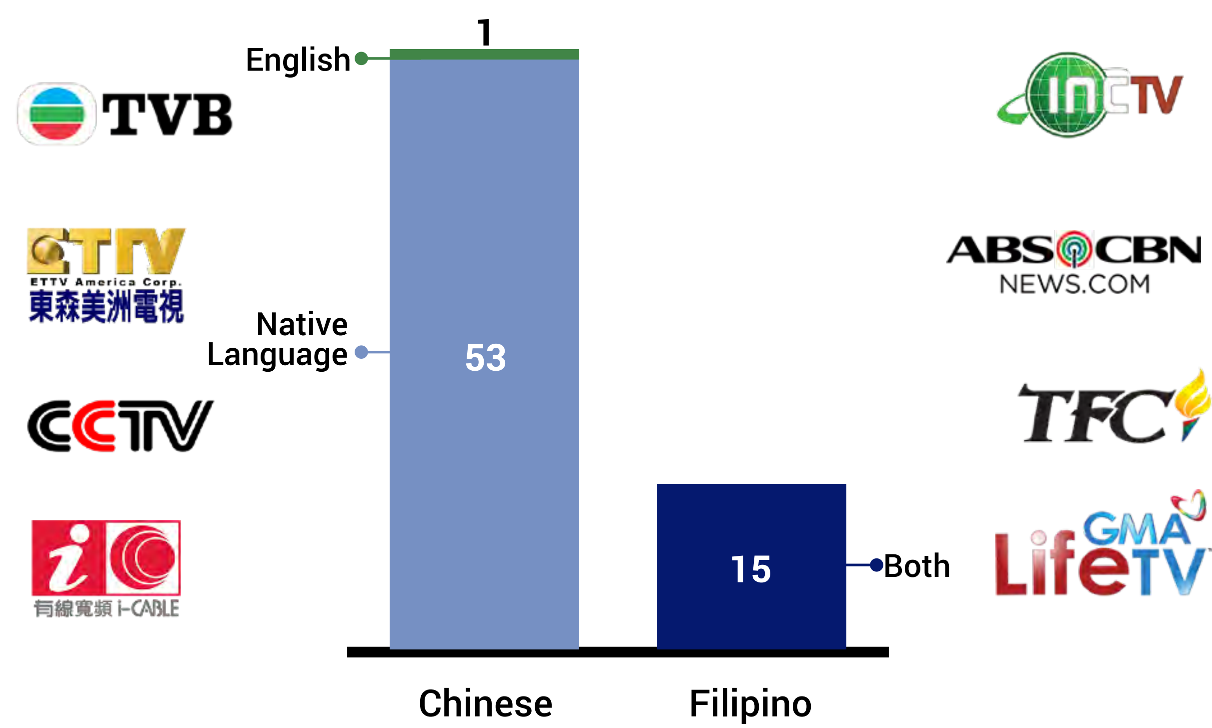
The more affluent US Chinese and Filipino communities are attractive targets for tech and media



Opportunity to target US Filipino with English language Filipino video content

LANGUAGE AND COMMUNITY ARE NOT THE SAME THING, TECH AND MEDIA OFFERING HAVE TO REFLECT THAT

CHANNELS AVAILABLE ON TOP CABLE SERVICE PROVIDERS* BY LANGUAGE



TARGETING CONSUMERS WHOSE DOMINANT LANGUAGE IS NEITHER ENGLISH NOR SPANISH WILL REQUIRE:

- Content adjustments, with cultural references pulling from both the US and their country of origin
- Factoring in inherent international behaviors: sign-ins from abroad, foreign means of payment, etc.

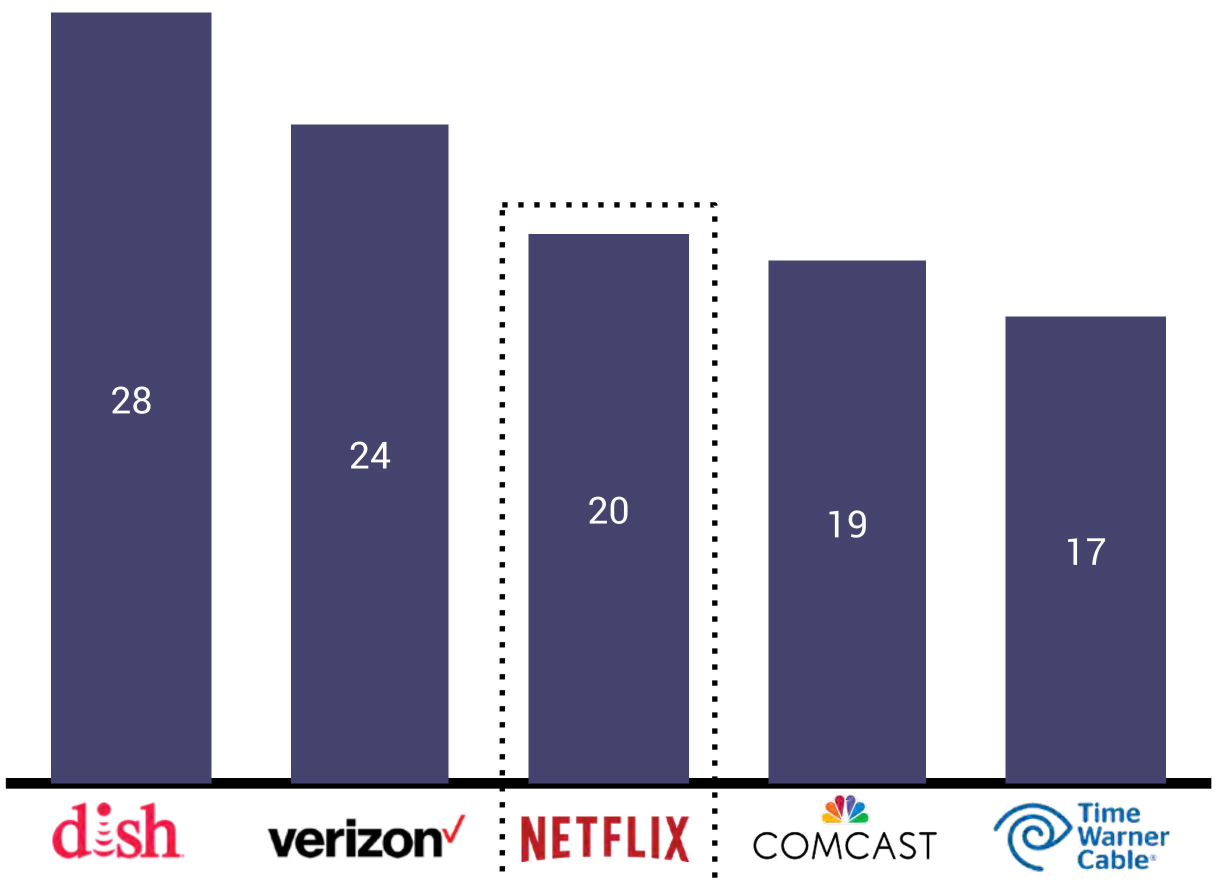
*Comcast, Dish, DirecTV, Time Warner Cable, Verizon.
Sources: Activate analysis, American Association of Community Colleges, Bureau of Labor Statistics, Department of Labor, Pew Research, U.S. Census Bureau

The first wave of video services targeting multicultural users has already launched in the US

MASS VIDEO SERVICES (CABLE, NETFLIX) ARE AGGREGATING CONTENT IN A VARIETY OF LANGUAGES, SERVING MULTIPLE NICHE AUDIENCES

NICHE OTT PROVIDERS ARE PICKING A PARTICULAR OR RELATED CULTURES AND DELIVERING TO THAT COMMUNITY BROADLY

NUMBER OF LANGUAGES OTHER THAN ENGLISH FOR WHICH CONTENT IS OFFERED, U.S., 2016

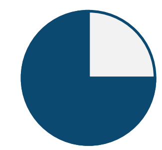
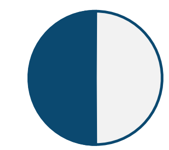
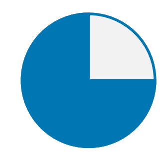
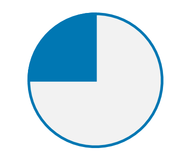
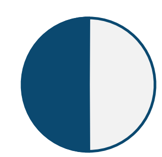
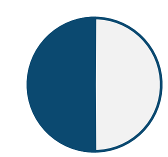
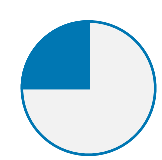
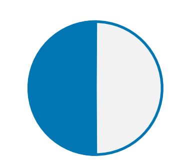


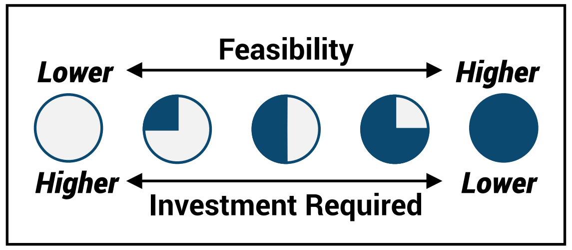
Netflix also creates original content in languages other than English, written with local cultural references (e.g., Marseille - France, Hibana - Japan, Chef's Table - multiple countries)

	ON-DEMAND	LIVE
HISPANIC	NOW	YiP TV
INDIAN	YUPP FLIX EROS NOW	YUPPTV
ASIAN	R viki crunchyroll	KORTV GLOBAL

Sources: Activate analysis, Comcast, Dish, FierceCable, SNL Kagan, Time Warner Cable, Verizon

Incremental dollars from serving tech and media to Post-Household America are substantial – growing to $10 billion on its own

ESTIMATED POTENTIAL MARKET OPPORTUNITY PER YEAR, USD BILLION		**FEASIBILITY**	**INVESTMENT REQUIRED**
BOOMERS AND SENIORS	$4 - 5		
VIRTUAL FAMILIES	$3 - 4		
MULTICULTURAL	$2.5 - 3.5		
MILLENNIALS	$0.5 - 1.0		



Note: Total market size discounted for feasibility, investment required and overlaps among groups
Source: Activate analysis

Serving everyone means reaching out to the 50M under-served: those who currently face obstacles to a quality tech and media experience

QUALITY EXPERIENCE

WHAT IT TAKES TO HAVE A QUALITY TECH AND MEDIA EXPERIENCE

- Own a broadband connection
- Own one or more reliably connected devices (tablet, computer, etc.) and refresh them
- Reliable, fully banked, finances
- Strong English skills
- Have legal and economic status
- Able to influence purchasing decisions to have content preferences served

AMERICANS WHO LACK A QUALITY EXPERIENCE

MANY AMERICANS DON'T MEET AT LEAST ONE OF THESE REQUIREMENTS

- 34 Million (M) people don't have access to broadband* at home
- 32M people are cellphone dependent to go online
- 18M households don't have a computer at home
- Over 20M people are unbanked, and an additional 40-50M may be under-banked
- 4M people don't speak English
- 11M people are undocumented

~50 Million Americans are under-served by tech and media companies

*as defined by the FCC (speed over 25MBPS/3MBPS).
Sources: Activate analysis, American Community Survey, Federal Reserve, Gates Foundation, Huffington Post, NTIA, Pew Research, U.S. Census Bureau

Tech and media companies will need to strengthen the major pillars of their user experience to reach the under-served

TECH AND MEDIA STRATEGIES TO REACH THE UNDER-SERVED

PRICING STRUCTURE / PACKAGING	PAYMENT	CONTENT CHOICES	CONNECTIVITY/ ACCESSIBILITY	AUTHENTICATION / IDENTITY
Offer basic / low price packages to bring into adoption Consider alternative models (e.g., ad supported) Subsidize where appropriate	Offer more flexible payment terms and methods	Ensure breadth of content reflecting cultural and language diversity	Help gain connections in and out of the home (e.g., sponsored data)	Allow flexible authentication (possible identification constraints)

Source: Activate analysis

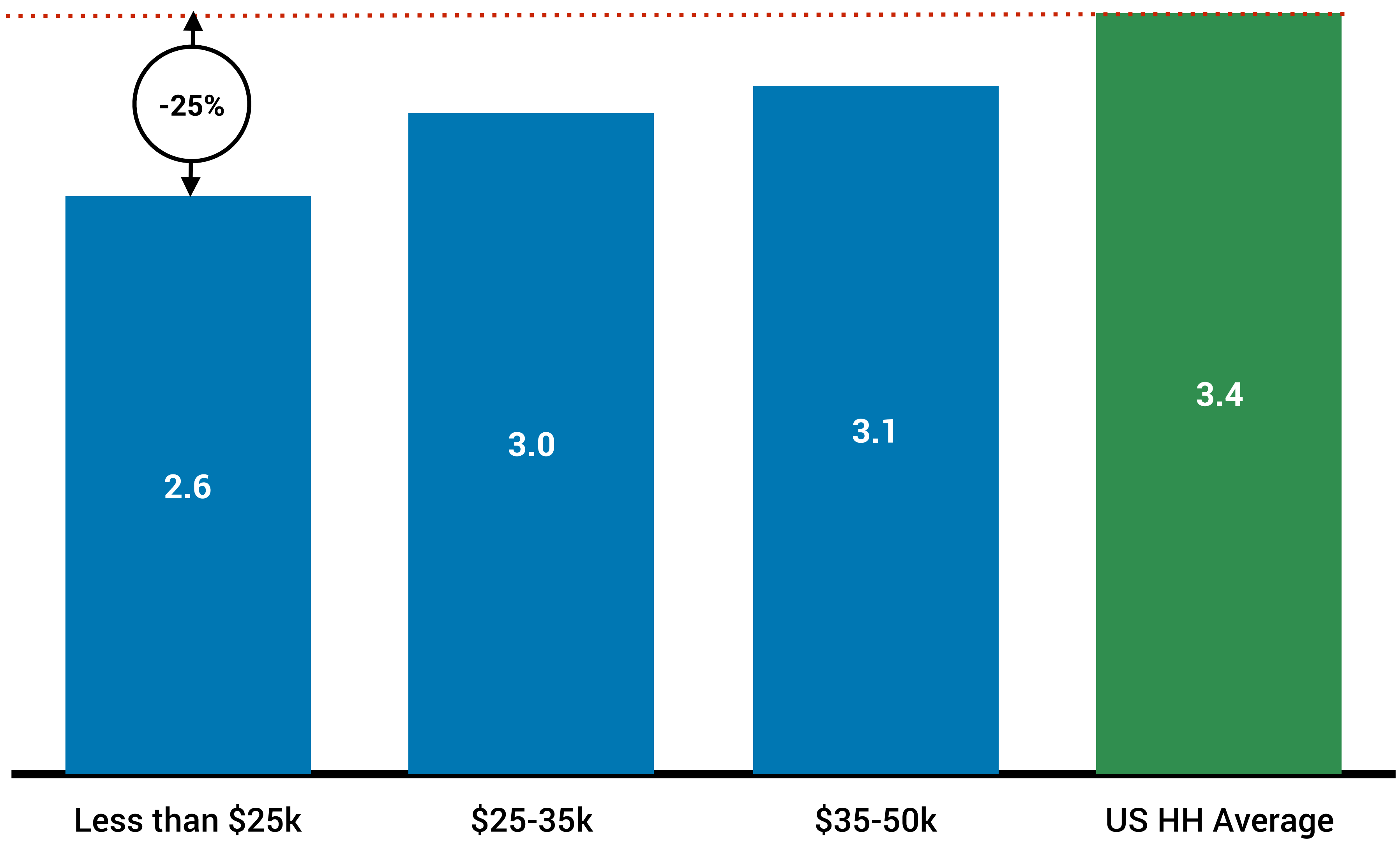
There are four principal groups of under-served Americans

LOWER INCOME	Beyond economic constraints, lower income households face additional hurdles when trying to access tech and media
UNBANKED/ UNDER-BANKED	Partial or lack of access to banking services limits ability to consume tech and media services
UNWIRED/ UNDER-WIRED	Partial or lack of access to an internet connection at home
UNDOCUMENTED IMMIGRANTS	Undocumented immigrants face numerous consumption constraints due to the way tech and media services are provisioned

Source: Activate analysis

Serving Lower Income Households: the lowest income households subscribe to 75% as many services as the average household, despite 40% as much gross income

AVERAGE NUMBER OF SERVICES SUBSCRIBED BY INCOME BRACKET, U.S., 2016



As expected, lower income households subscribe to fewer services than average, but still have a tech and media budget focused on necessities (e.g., cell phone, home internet)

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,590), Bureau of Labor Statistics Consumer Expenditure Survey 2015, U.S. Census Bureau

The top tech and media product consumption varies by income bracket, but pricing structures that serve lower income households achieve significant penetration

TOP FIVE TECH AND MEDIA SERVICES BY INCOME BRACKET, U.S., 2016E, PERCENT

ACTIVATE CONSUMER INSIGHT

% Penetration of service by income bracket

	UNDER $25K	$25-35K	$35-50K	US HOUSEHOLD AVERAGE
1	Stand-alone home internet 52%	Cell Plan 61%	Cell plan 64%	Cell Plan 65%
2	Cell plan 49%	Stand-alone home internet 46%	Bundle (double, triple) 47%	Streaming video (e.g., Netflix) 52%
3	Streaming video (e.g., Netflix) 37%	Streaming video (e.g., Netflix) 44%	Stand-alone home internet 44%	Stand-alone home internet 47%
4	Bundle (double, triple) 31%	Bundle (double, triple) 44%	Streaming video (e.g., Netflix) 43%	Bundle (double, triple) 43%
5	Streaming music service 19%	Stand-alone Pay TV 21%	Stand-alone Pay TV 27%	Stand-alone Pay TV 26%

TAKEAWAYS

- Services with higher penetration within lower income households typically have:
  - Lower prices (e.g., Netflix vs. Pay TV)
  - Several price tiers (e.g., cell plan)

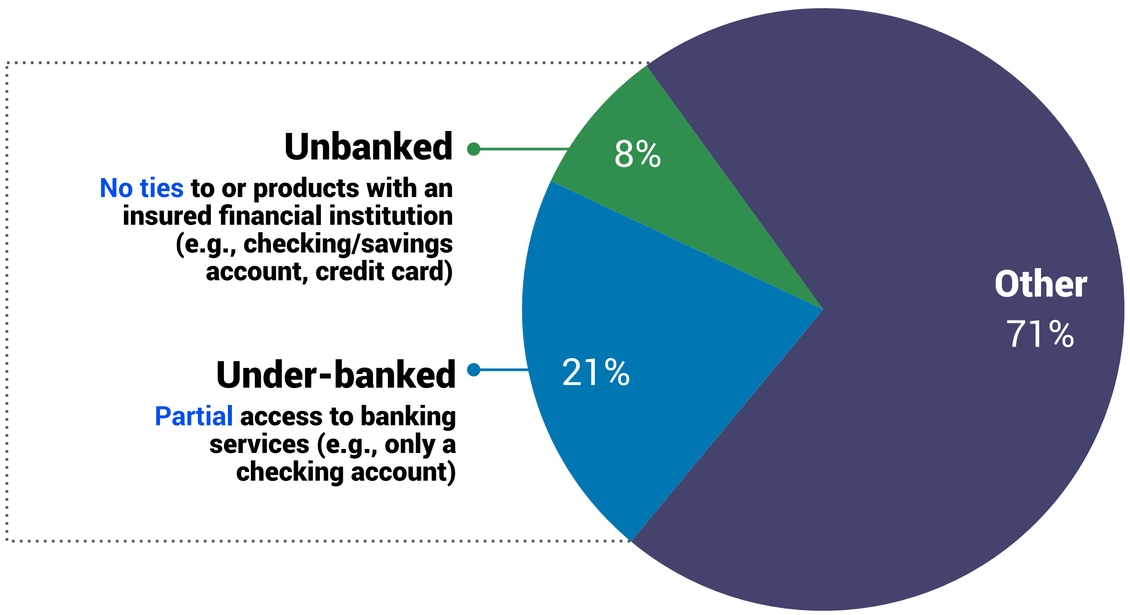
Pricing strategies, in addition to more flexibility and subsidies in payment terms, and high value perception should allow tech and media to better serve lower income households

activate

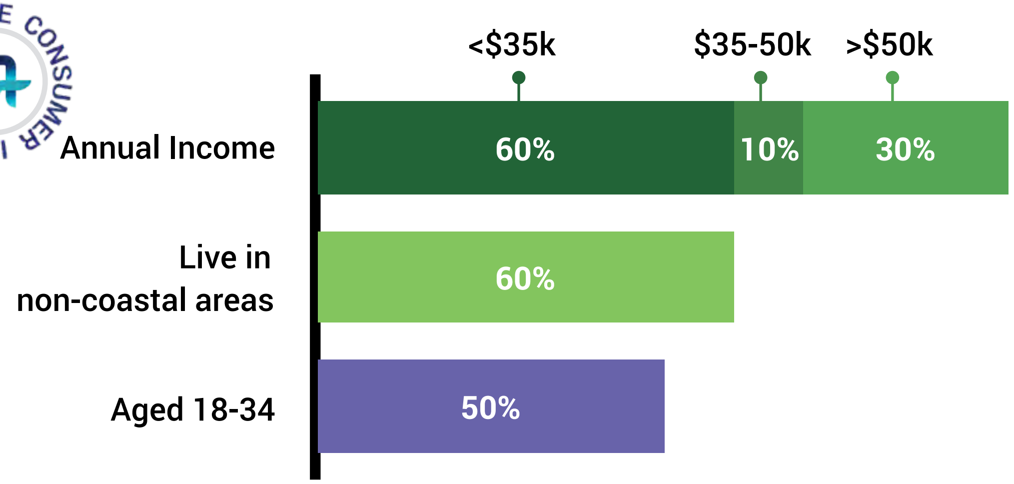
Note: Cell plan may not include prepaid
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=1,590), Bureau of Labor Statistics Consumer Expenditure Survey 2015, U.S. Census Bureau

Serving Unbanked / Under-banked: 30% of the US population lacks access to key financial products, preventing access to much of tech and media

CONSUMERS BY ACCESS TO BANKING, U.S., 2015, PERCENT



DEMOGRAPHICS OF THE UNBANKED, U.S., 2016, PERCENT



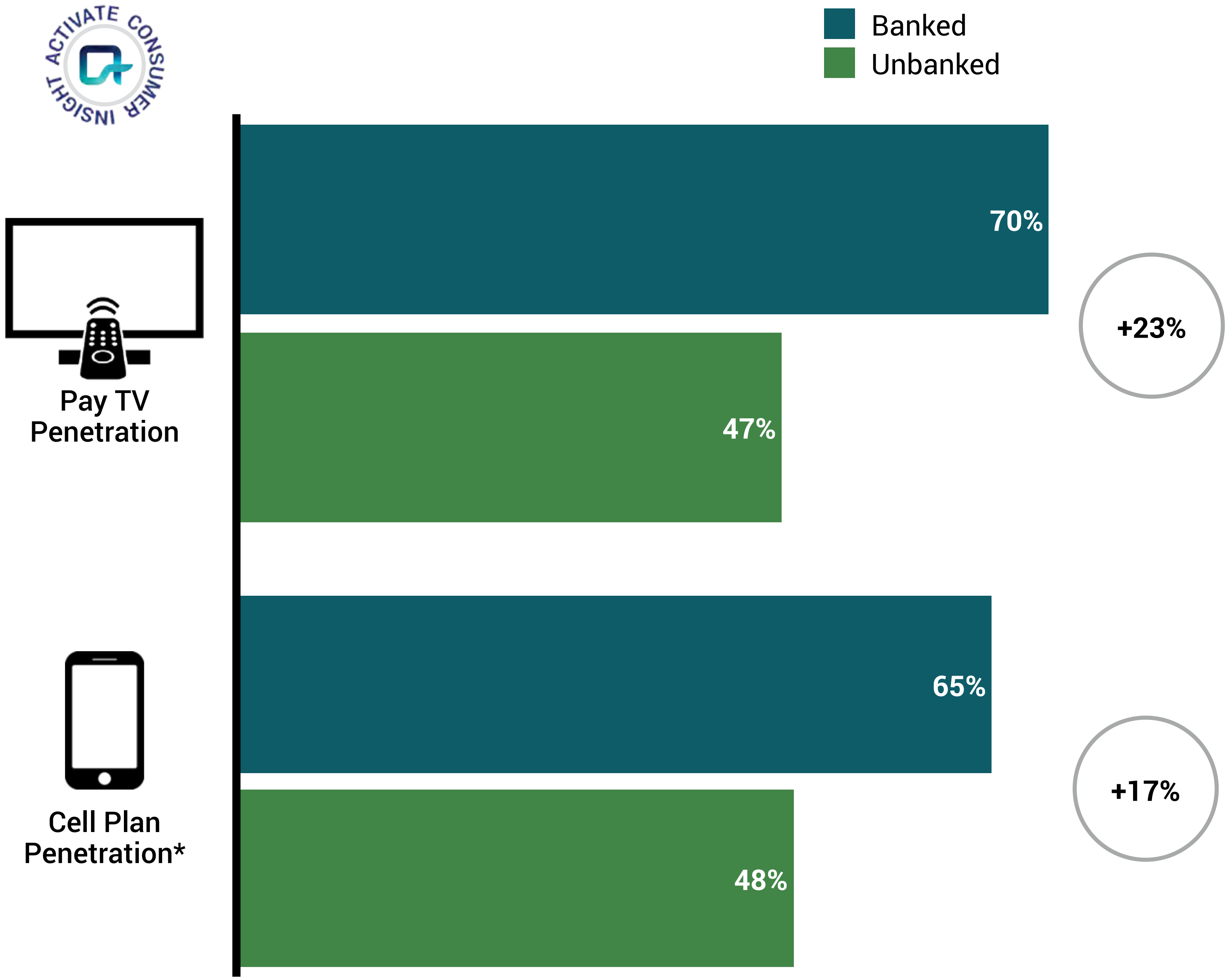
UNBANKED/UNDER-BANKED CONSUMERS MUST OVERCOME HURDLES TO ACCESS MEDIA/TECH SERVICES

	EXAMPLES
CREDIT / DEBIT CARD REQUIREMENTS	• Major app stores require a credit / debit card to sign up and make purchases • Not all SVOD services accept prepaid cards
PROHIBITIVE TRANSACTIONAL EFFORT	• Customers that can only pay their cable bills in cash must physically visit cable companies' facilities every month • Customers are also restricted from purchasing from many eCommerce sites, which results in additional transportation to visit theaters, purchase DVDs, etc.
PAYMENT TERMS AND FEES	• Long term subscription requirements typically excluded due to low visibility on income and fear of fees (late fees, overdraft fees for underbanked consumers) • Prepaid service are often more expensive (up to 20% more)

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=200), Business Insider Business Intelligence, Consumers and Mobile Financial Services 2016 (Board of Governors of the Federal Reserve), Emerging Payment Alternatives for the Unbanked and Underbanked 2015 (Federal Reserve Bank of Richmond)

To serve consumers with limited access to banking, tech and media companies will need to design new payment terms and create new pricing structures

SERVICE PENETRATION BY ACCESS TO BANKING, U.S., 2016E, PERCENT



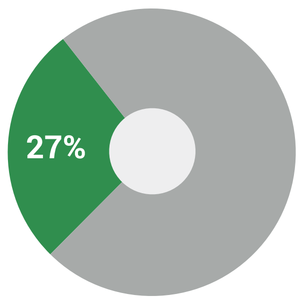
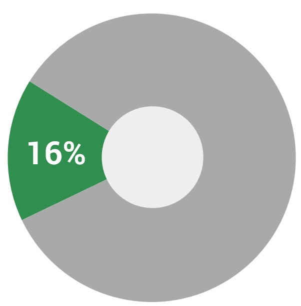
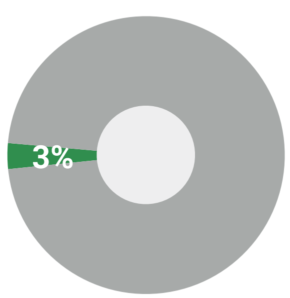
CHANGING PAYMENT MODELS WILL ENABLE TECH AND MEDIA SERVICE PROVIDERS TO BETTER SERVE THE UNBANKED AND UNDERBANKED:

- More flexible subscription terms
- Consider fee forgiveness / alleviate fear of unexpected fees
- Allow authentication based on means accessible to unbanked
- Accept means of payments beyond credit/debit cards

*Actual penetration of cell phone use likely higher due to availability of pre-paid services.
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (Banked n=3,800; Unbanked n=200)

Tech and media companies should create and promote alternative payment options to support unbanked and under-banked users

DESPITE GROWING AVAILABILITY, ADOPTION OF ALTERNATIVE MEANS OF PAYMENT REMAINS LIMITED

	PENETRATION WITHIN UNBANKED	EXAMPLES	CURRENTLY ACCEPTED BY
PREPAID DEBIT CARDS	 27%	AMERICAN EXPRESS serve 	NETFLIX Netflix currently the only SVOD service accepting prepaid cards
MOBILE PAYMENTS	 16%	PayNearMe	COMCAST verizon Comcast and Verizon accept cash payments notably using PayNearMe
MOBILE WALLETS	 3%	PayPal	NETFLIX hulu Hulu and Netflix currently the only SVOD services accepting PayPal

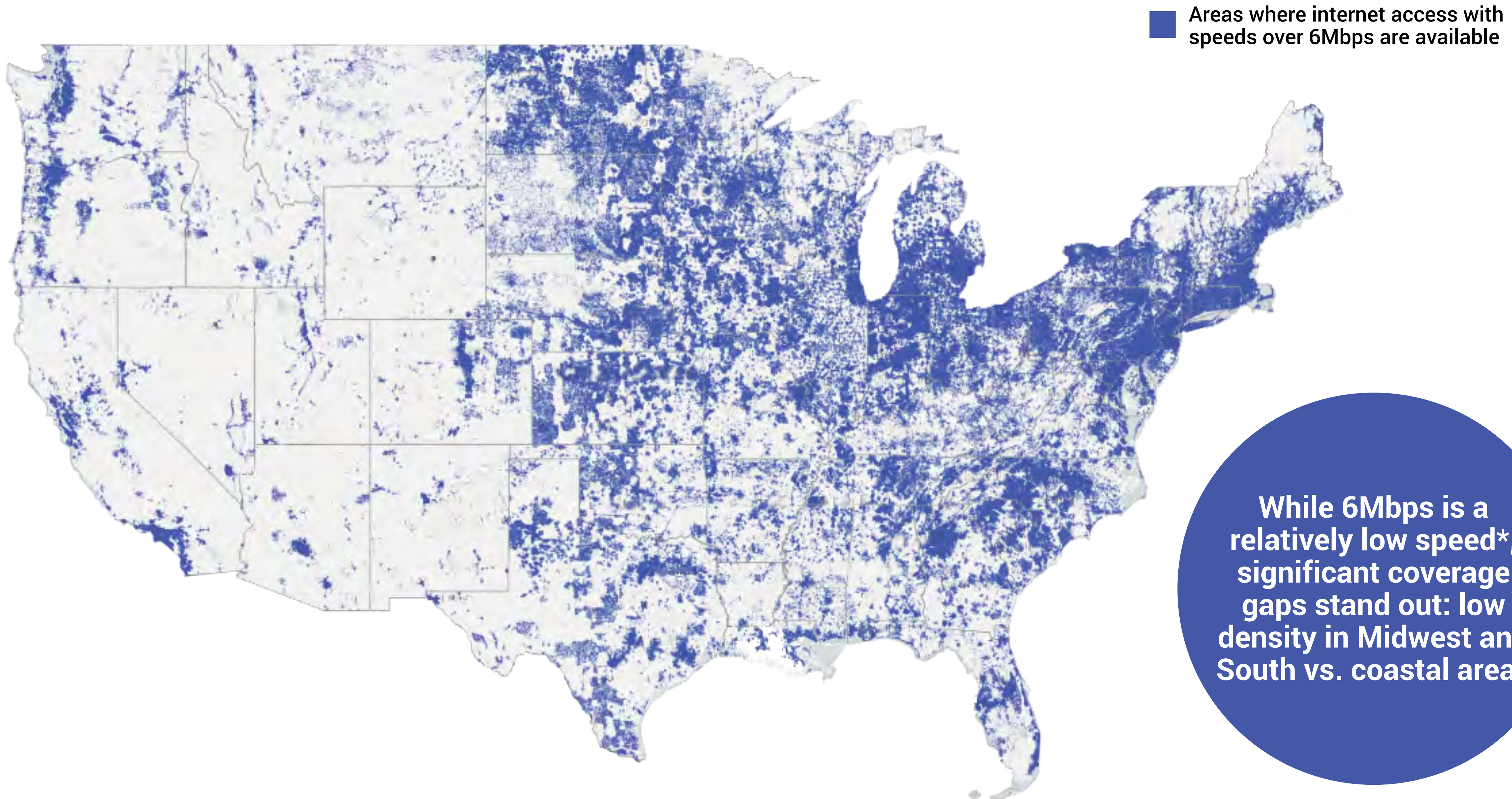
PENETRATION OF ALTERNATIVE MEANS OF PAYMENTS REMAINS LOW DUE TO:

- Lack of ease towards monitoring virtual balance and perceived lack of convenience (vs. cash)
- Fear of overdraft and other fees (despite consumer protection laws)
- Possible lack of awareness or understanding of available products
- Reliability concerns (e.g., RushCard went down in late 2015, leaving 8 million customers with no access to money for 2 weeks)

Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=200), Business Insider Business Intelligence, Consumers and Mobile Financial Services 2016 (Board of Governors of the Federal Reserve), Emerging Payment Alternatives for the Unbanked and Underbanked 2015 (Federal Reserve Bank of Richmond), the Finance Buff, Kansas Federal Reserve Board, Wall Street Journal

Serving the Unwired/Under-wired: many regions are prevented from accessing tech and media due to connectivity constraints

AVAILABILITY OF INTERNET ACCESS SPEED OVER 6MBPS, U.S., 2016E

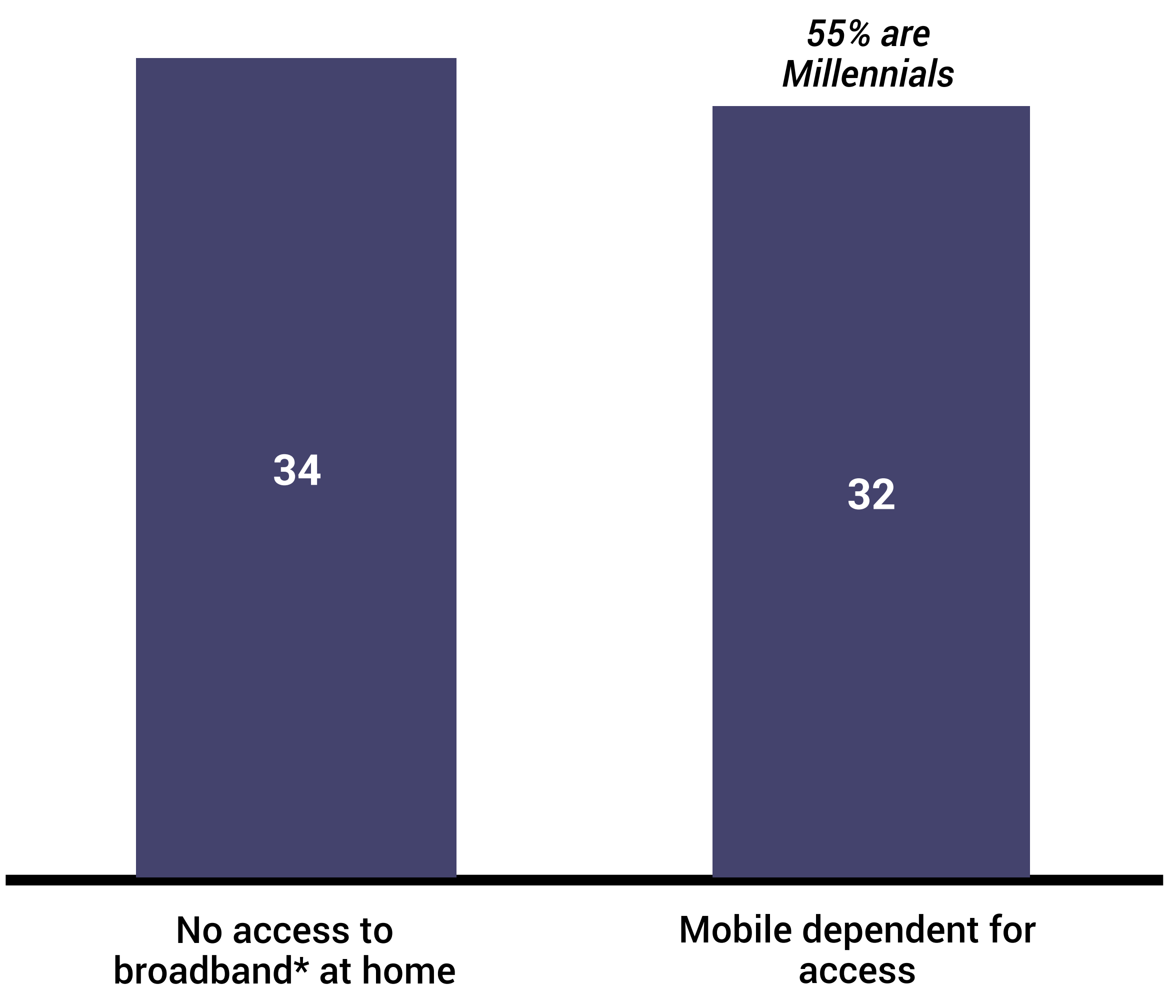


While 6Mbps is a relatively low speed*, significant coverage gaps stand out: low density in Midwest and South vs. coastal areas

*Speed online allowing a single standard quality video stream.
Sources: Activate analysis, FCC

Broadening internet access across the country will onboard a large group of people

POPULATION WITH INTERNET ACCESS CONSTRAINTS, U.S., 2016E, MILLIONS



Other public internet access points include: work, hotels, public hotspots, neighbors

EXAMPLES OF INTERNET ACCESS INITIATIVES

COMCAST — INTERNET ESSENTIALS from Comcast

Affordable internet offered by Comcast

facebook

Facebook to bring "Free Basics" to the US (free access to certain internet sites)

Google — Project Fi

Affordable wireless service provided by Google

Sprint

Sprint to provide 1M free wireless devices and service to disadvantaged students

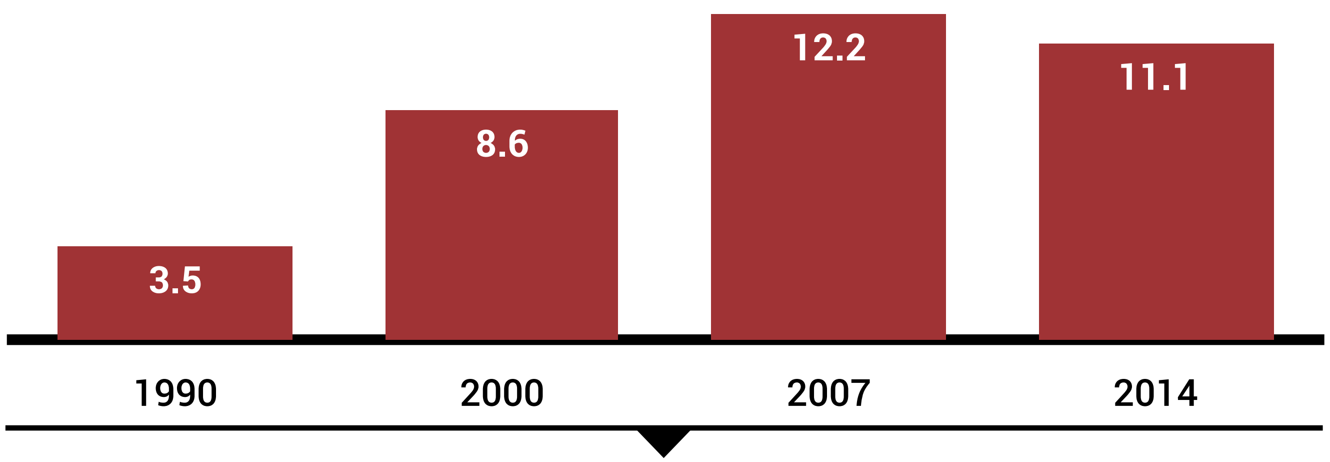
MAJOR CONSTRAINTS WHEN RELYING ON PUBLIC INTERNET

- Location of access outside the home
- Constraints on access speed, duration, etc.
- Not using own device undermines the experience
  - No content personalization (e.g., cookies erased)
  - Danger of using sensitive information (e.g., banking)
  - Limited platform trust (e.g., to use paying services like SVOD)

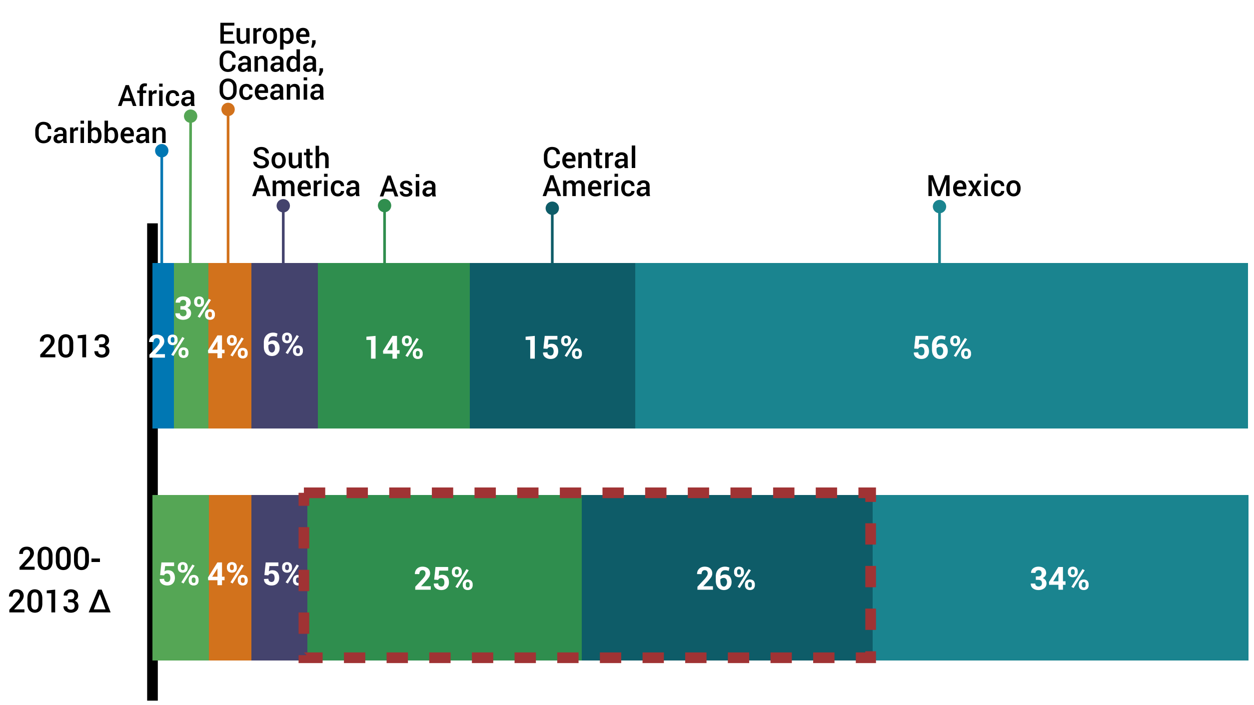
*No access to fixed advanced telecommunications capability: 25 Mbps/ 3 Mbps service.
Sources: Activate analysis, Activate 2016 Consumer Tech & Media Research Study (n=4,000), FCC, Gates Foundation, NY Times, Pew Research, Sprint

Serving Undocumented Immigrants: Over 11 million Americans are undocumented, ~70% of whom are employed, thus accounting for 5% of the U.S. workforce

UNDOCUMENTED IMMIGRANTS, U.S., 1990-2014, MILLIONS

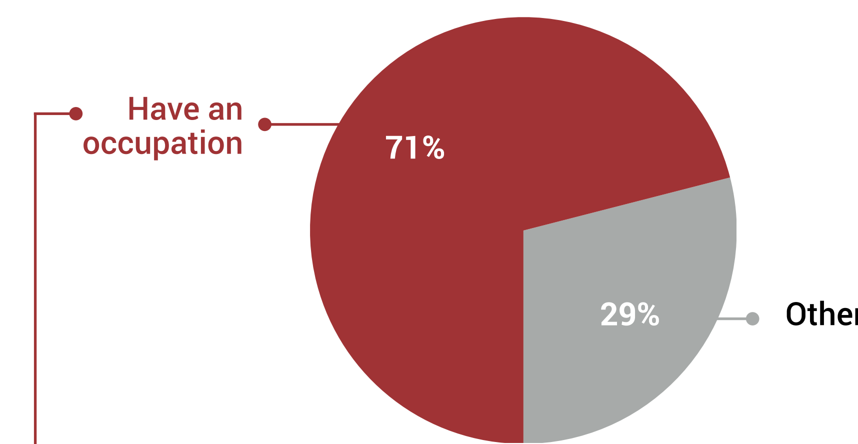


UNDOCUMENTED IMMIGRANTS BY ORIGIN, PERCENT

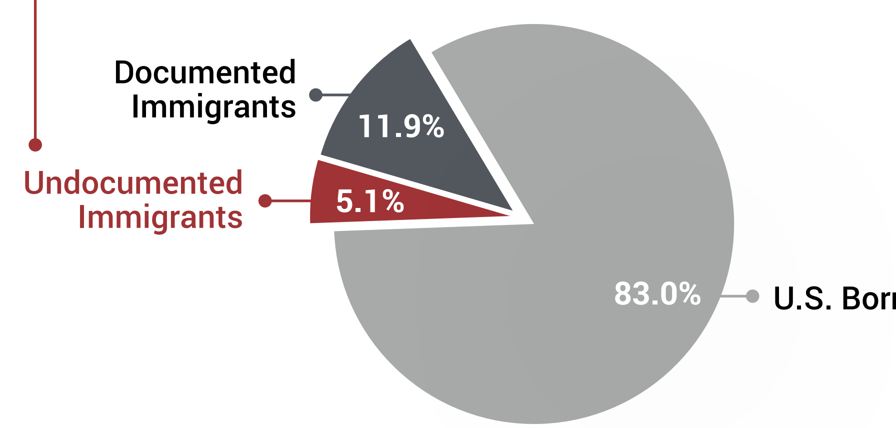


UNDOCUMENTED IMMIGRANTS EMPLOYMENT SITUATION

UNDOCUMENTED IMMIGRANTS BY EMPLOYMENT STATUS, 2012, PERCENT



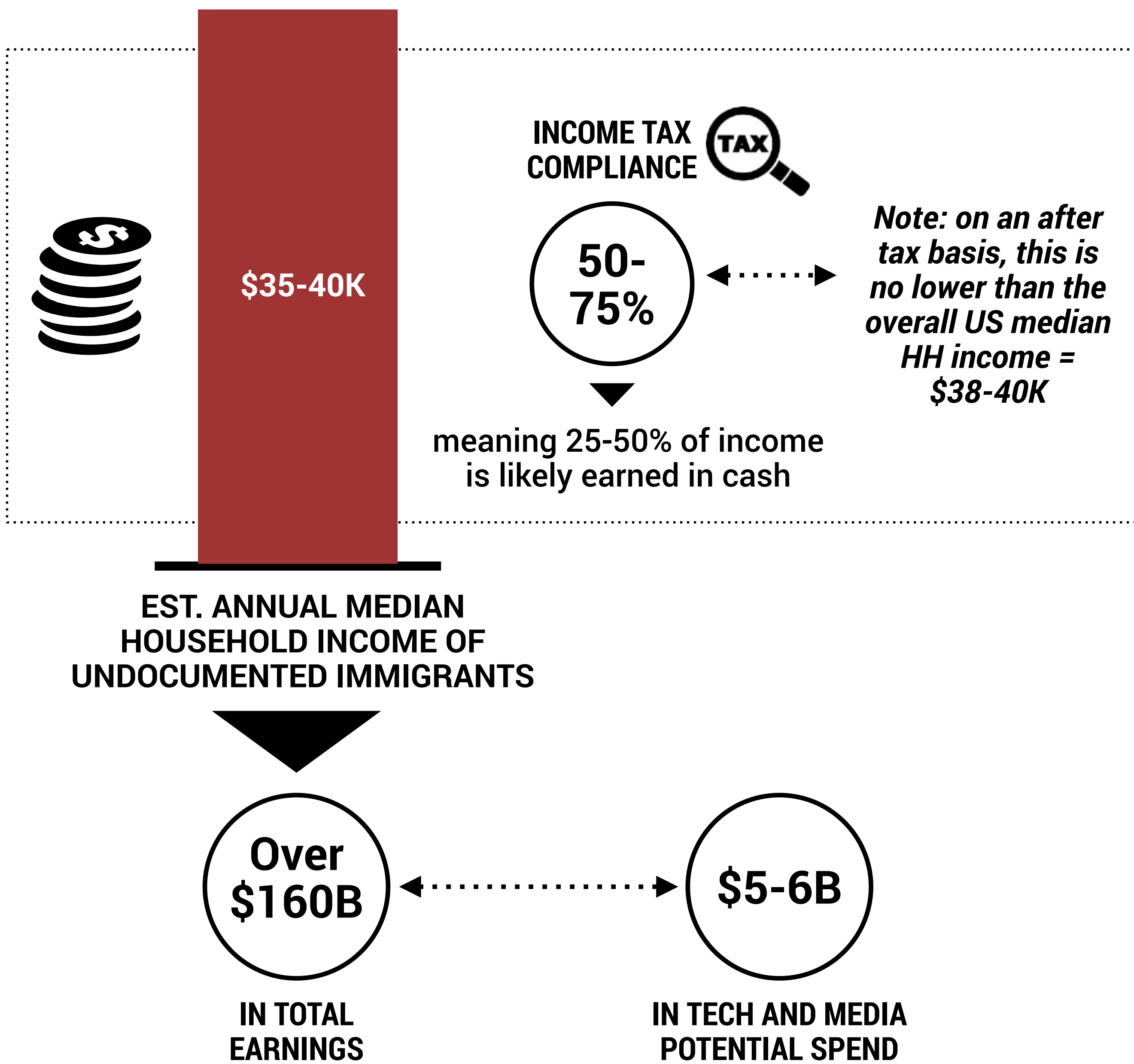
U.S. WORKFORCE BY IMMIGRATION STATUS, 2012, PERCENT



Note: Numbers may not add to 100% due to rounding
Sources: Activate analysis, American Action Forum, American Community Survey, Migration Policy Institute, Pew Research, The Atlantic, U.S. Census Bureau

To serve the undocumented, tech and media companies will need to adjust content offerings, connectivity, payment and authentication

UNDOCUMENTED IMMIGRANT ESTIMATED INCOME, U.S., 2015, USD



TECH AND MEDIA FIRMS NEED TO FACTOR IN THE FOLLOWING WHEN SERVING UNDOCUMENTED IMMIGRANTS

- **Multi-cultural/ Content:** while Hispanics still account for 71% of all undocumented immigrants, other groups (e.g., Asians) are becoming more prevalent and media content should be adjusted
- **Connectivity:** high likelihood of mobile-only access commanding format adjustments. Initiatives broadening WiFi access will enable them to consume more services
- **Payment methods:** high reliance on cash means accepted payment methods must be made more flexible (cash, foreign transactions and means) as well as money transfers in general (e.g., remittances)
- **Authentication/ Identity:** likely reluctance to share detailed identification information and limited ID (e.g., ITIN only) implies need for alternative forms of identification

Sources: Activate analysis, American Community Survey, The Atlantic, FedSmith, Institute on Taxation and Economic Policy, Migration Policy Institute, Pew Research, U.S. Census Bureau

Activate: We are the leading strategy consulting firm for technology, media, entertainment and information companies

Activate works with CEOs, senior management teams and principal investors to drive growth and position their companies to win the dynamic tech and media ecosystem.

We help our clients develop strategies to grow their businesses and capture the opportunities from the innovation and invention reshaping these industries.

GROWTH STRATEGY

Define overall strategic plans and roadmaps for growth.

Identify and exploit new opportunities.

Take advantage of innovation, platforms, businesses, content and technology.

DIGITAL STRATEGY

Formulate strategies and identify opportunities to enable tech and media companies to create new and engaging user experiences, products and services that underpin new growth businesses, revenue streams and audiences.

NEW BUSINESSES AND PRODUCTS

Create new businesses as 'virtual startups' within large companies. Leverage content, technology and experiences to take advantage of the native capabilities of devices and platforms.

PRICING

Develop new pricing structures and strategies to grow revenues from consumers and b-to-b customers. Activate's areas of expertise include: advertising, subscription, packages and fees, ticketing, payments, eCommerce, and products.

SALES AND MARKETING EFFECTIVENESS

Position the sales force to grow revenue: organization, incentives and coverage model; advertiser revenue management; new category and customer development; consumer and b-to-b marketing.

STRATEGIC DUE DILIGENCE

Bring industry expertise and track record in enhancing business performance to help strategic acquirers and private equity firms assess assets and determine how to create value.

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