globalwebindex

Device

GlobalWebIndex's flagship report on device ownership and usage

FLAGSHIP REPORT 2020

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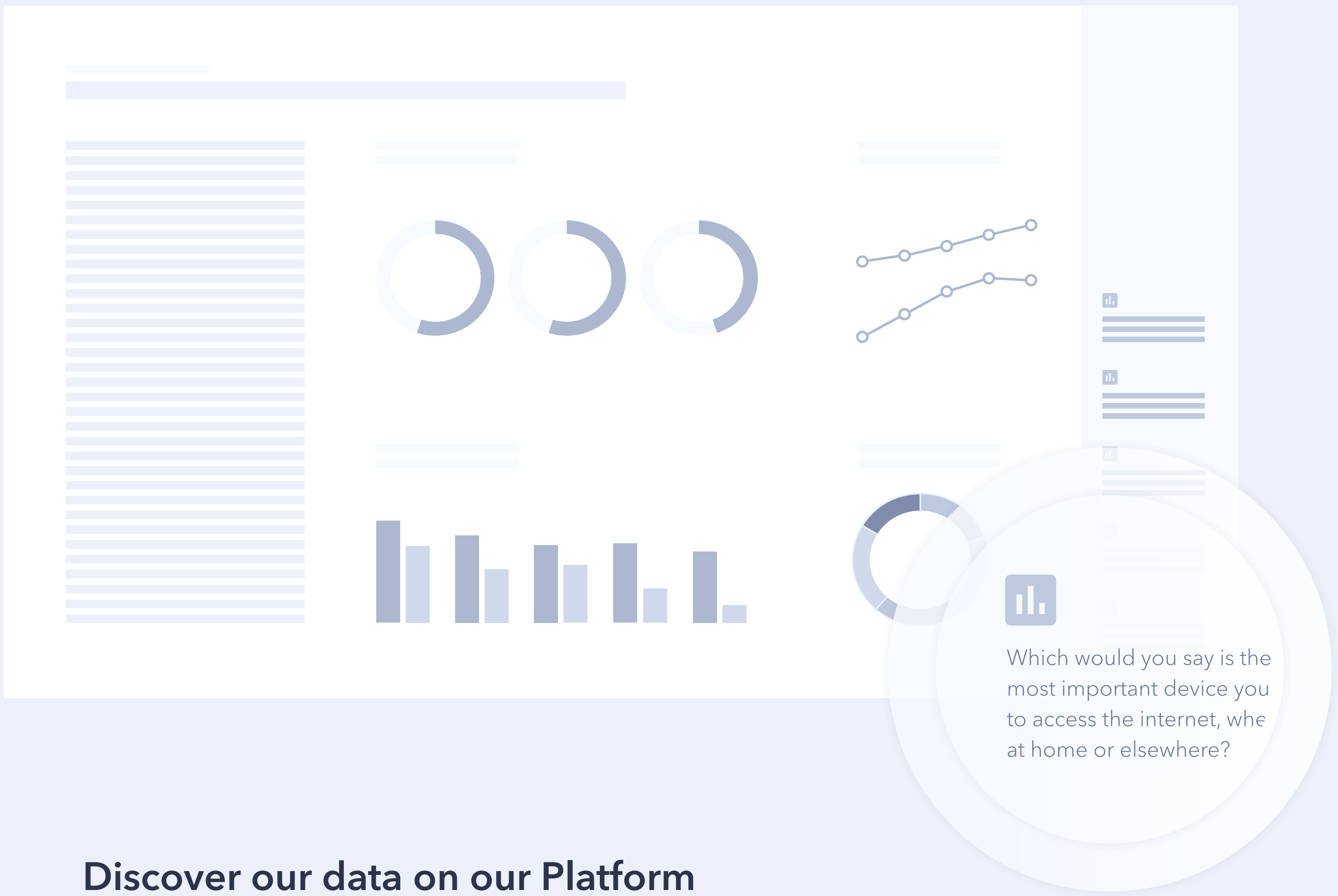
What's inside?

UNDERSTANDING THIS REPORT



Discover our data on our Platform

Each chart from our **ongoing global research** in this report contains a hyperlink that will bring you straight to the relevant question on our Platform, where you can investigate all data by demographics, over time and among custom audiences. You can find the corresponding question to each chart in the right hand column, starting from left to right. Any charts which do not contain a hyperlink are from a GWI custom study. Custom study data is not available to explore on our Platform.

Click to explore further

- Our other reports and infographics
- Explanations of GWI's segmentations or methodology

Introduction

GlobalWebIndex Device Flagship places the spotlight on the latest ownership and usage trends across all major device categories, including smartphones, PCs/laptops, smartwatches, smart homes and VR/AR.

Among others, this report covers the following topics in detail:

- Which devices are the most widely owned and used?
- How does ownership of different devices vary across different demographic groups?
- How much time is being spent on mobiles and PCs/laptops and how does this vary by age and region?
- What behaviors are most likely to be taking place on mobile versus PC/laptop?
- Current engagement with smart home devices and how this is growing.
- Which brands are winning in the smartphone marketplace and what do brands need to do to get users to upgrade their handsets?
- What devices consumers use for gaming and what is the potential for AR and VR technologies?

Methodology

All figures in this report are drawn from GlobalWebIndex's online research among internet users aged 16-64. We only interview respondents aged 16-64 and our figures are representative of the online populations of each market, not its total population. Note that in many markets in Latin America, the Middle-East and Africa, and the Asia-Pacific region, low internet penetration rates can mean online populations are more young, urban, affluent and educated than the total population.

Each year, GlobalWebIndex interviews over 688,000 internet users aged 16-64 via an online questionnaire for our Core dataset. A proportion of respondents complete a shorter version of this survey via mobile, hence the sample sizes presented in the charts throughout this report may differ as some will include all respondents and others will include only respondents who completed GlobalWebIndex's Core survey via PC/laptop/tablet.

When reading this report, please note that we use a mixture of global data from our ongoing quarterly global research, as well as data from custom studies conducted only in the U.S. and UK.

Throughout this report we refer to indexes. Indexes are used to compare any given group against the average (1.00), which unless otherwise stated refers to the global average. For example, an index of "1.20" means that a given group is 20% above the global average, and an index of "0.80" means that an audience is 20% below the global average.

Key insights

01

PCs still have their place

Though **PC/laptop ownership has declined by 19 percentage points since 2015**, these devices aren't irrelevant just yet. Ownership is still just shy of 7 in 10 for all internet users, with highs of 89% in Switzerland to lows of 28% in Morocco.

02

Wearable device ownership is growing

Despite a relatively high selling price, smartwatches and wristbands are climbing in ownership. Once a sign of status, they now offer unique and valuable services to a growing consumer base, and potentially to the healthcare industry more broadly. **In the U.S. and UK, the Apple Watch proves the most popular in both markets.**

03

The smart market is growing

The most popular smart home devices among their owners are speakers (51%) while security and utility products share more or less even ownership. Presently, the UK represents the top market for smart product ownership worldwide, with 19% of internet users here in possession of a smart home device. **We found that 2 in 3 internet users in the U.S. and UK would consider purchasing a smart home product in the next year**, with enthusiasm between the two relatively even.

04

Samsung and Apple face mobile competition

Samsung, owned by over 1 in 3 internet users outside of China, is the most popular mobile handset brand, while 1 in 4 own an iPhone. Huawei and Xiaomi, despite competing outside their home market of China, have taken third and fourth place, respectively. **Intent to purchase Huawei and Xiaomi has increased in the past three years** and, if this continues, they're likely to disrupt mainstream mobile handset fanbases.

05

Smartphones are the new home of subscription TV

When watching any type of TV, the most popular device is still standard television sets. **Mobiles are now more commonly used for watching subscription services than any other method** – 34% of internet users watch these services on TVs, while mobiles are used by 36%. **These figures are mainly driven by users in APAC, where watching subscription services on a TV falls 15 percentage points behind mobiles**, and even five behind PC/laptops.

01

Device

The device landscape

Devices over time

Smartphones have transformed the way we use the internet. **As of 2019, 94% of internet users own a smartphone, having risen 13 percentage points since 2015.** An additional 72% say this is their most important device to access the internet, a sentiment that echoes powerfully for 16-24s, of which 80% say this.

Parallel to this, **PC/laptop ownership has declined by 19 percentage points in the same timeframe**, threatened by the ubiquity of smartphones and their convenience in accomplishing tasks across each device. **But these devices aren't irrelevant just yet, ownership is still just shy of 7 in 10 for all internet users as of 2019**, with highs of 89% in Switzerland to lows of 28% in Morocco.

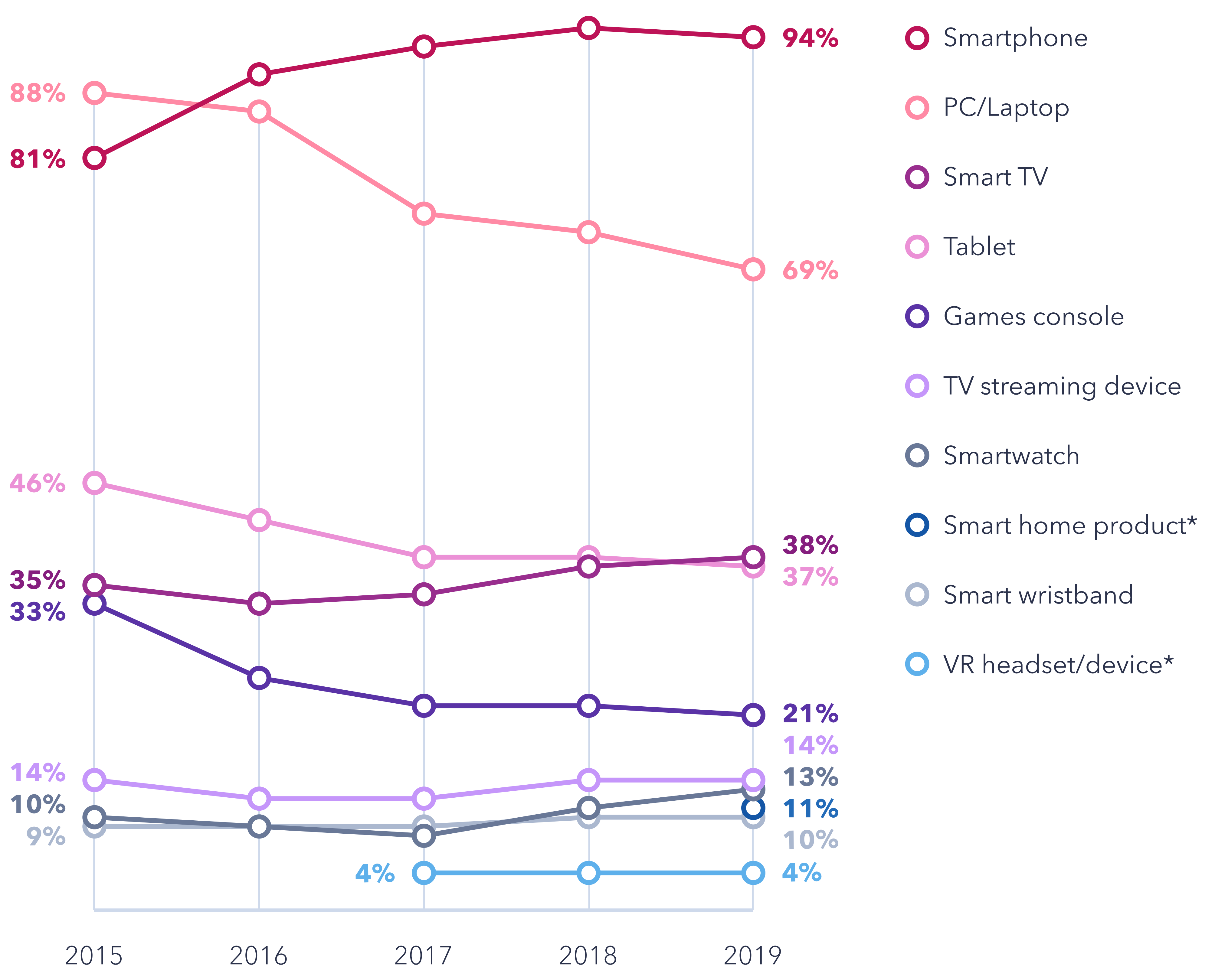
Elsewhere, **tablets – which saw a period of greater ownership in 2015 – have declined also**, sitting at 37% in 2019. Tablets fare well with older audiences, while their younger counterparts show the least engagement with this device – **1 in 4 16-24s own a tablet, rising to 1 in 3 for internet users aged 25-34, and peaking at 4 in 10 for those aged 55-64**. For older users, tablets make an appealing purchase due to their larger screens and simple user interface, with the option to purchase a mobile plan making them more cost-effective than mobiles. But age is just one factor here; those with 2 or more children are 1.3x as likely as the average to own this device, making them popular with families.

For entertainment devices, the likes of which include smart TVs and games consoles, ownership has fluctuated slightly. **Smart TVs, however, are now experiencing a steady rise in ownership** as they become more widely available and affordable. **Games consoles, despite falling 12 percentage points since 2015, are certainly ones to watch**, with 2020's **next generation** console releases likely to cause a resurgence in the popularity of games consoles worldwide.

Lastly, **despite a relatively high selling price, smartwatch and wristband ownership is climbing, having risen by 58% since 2017**. Having now passed the early adoption phase, they're proving popular with health-conscious individuals and status-seekers.

DEVICE OWNERSHIP OVER TIME

% of internet users who own the following devices



* These devices were added to our research after 2016

Question: Which of the following devices do you own? **Source:** GlobalWebIndex 2015-2019 (Averages of waves conducted between Q1 2015 - Q4 2019) **Base:** 197,734 (2015), 211,023 (2016), 370,051 (2017), 474,573 (2018), 598,185 (2019) internet users aged 16-64

The big three

Understandably, of the three main devices (PC/laptops, smartphones and tablets) smartphones are the most commonly used for accessing the internet (91% of internet users say this).

However, **when we look at the extent to which those who own each device actually use them to access the internet, the gap shrinks** – particularly in Europe and North America where PC/laptops came onto the market earlier. **Here, of the 8 in 10 that own PCs/laptops, over 9 in 10 of them are using them to get online**, putting them almost on par with smartphone owners. **Outside of these regions, PC/laptop ownership is comparatively lower, due to users here having arrived later to these devices than elsewhere. But usage is still high, peaking at 91% in LatAm – the same as Europe.** Despite declining ownership overall, these are still important devices to those who continue to use them, and shouldn't be disregarded just yet.

Though PCs/laptops are still popular with older audiences, this is declining, albeit slowly – **92% of PC/laptop owners aged 55-64 use the device to access the web in 2019 compared to 96% in 2015**. Meanwhile, usage of smartphones to access the web has grown dramatically among 55-64-year-old smartphone owners, rising from 71% to 89% over the same timeframe.

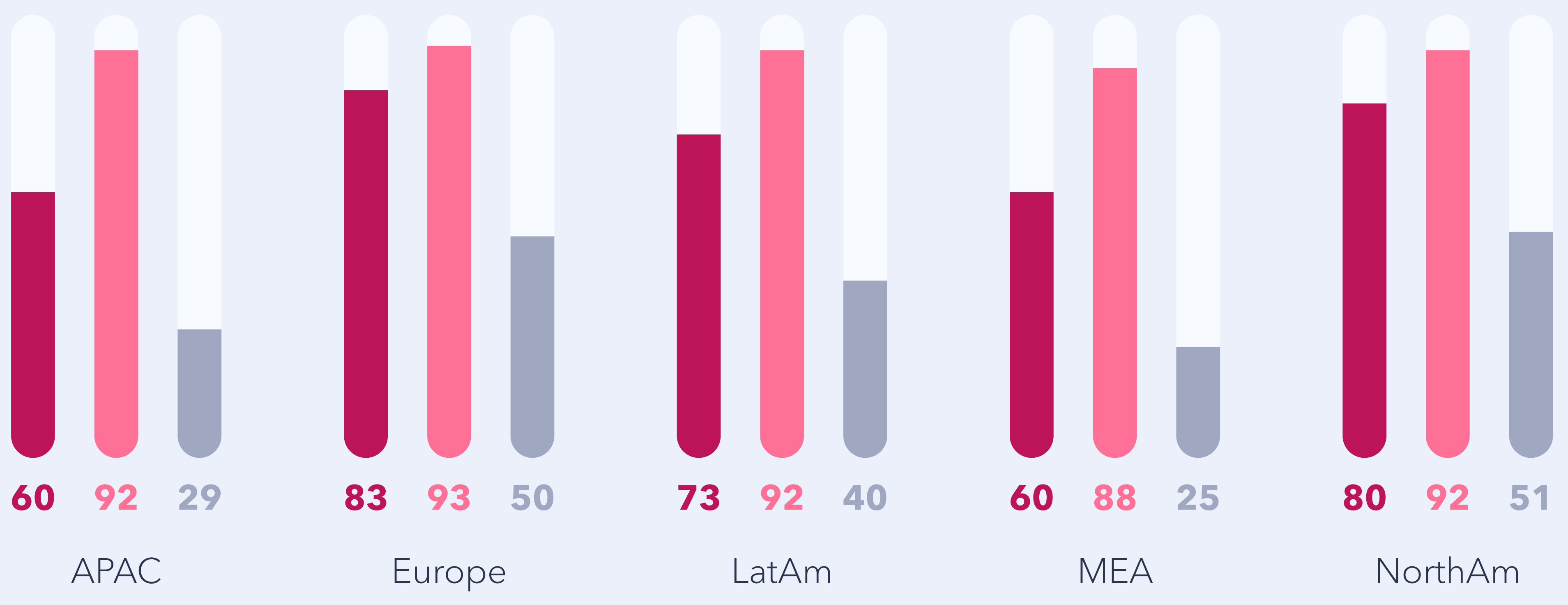
Tablets, having steadily declined in popularity, experience the lowest overall ownership of the three main devices and are used least often when it comes to going online. But they're not irrelevant just yet. In Europe and North America, half of internet users own a tablet, with close to 3 in 4 tablet owners here using them to access the internet. Elsewhere, while usage by tablet owners is prominent, ownership has declined dramatically – falling by 25 percentage points in MEA and 10 in APAC.

The big three

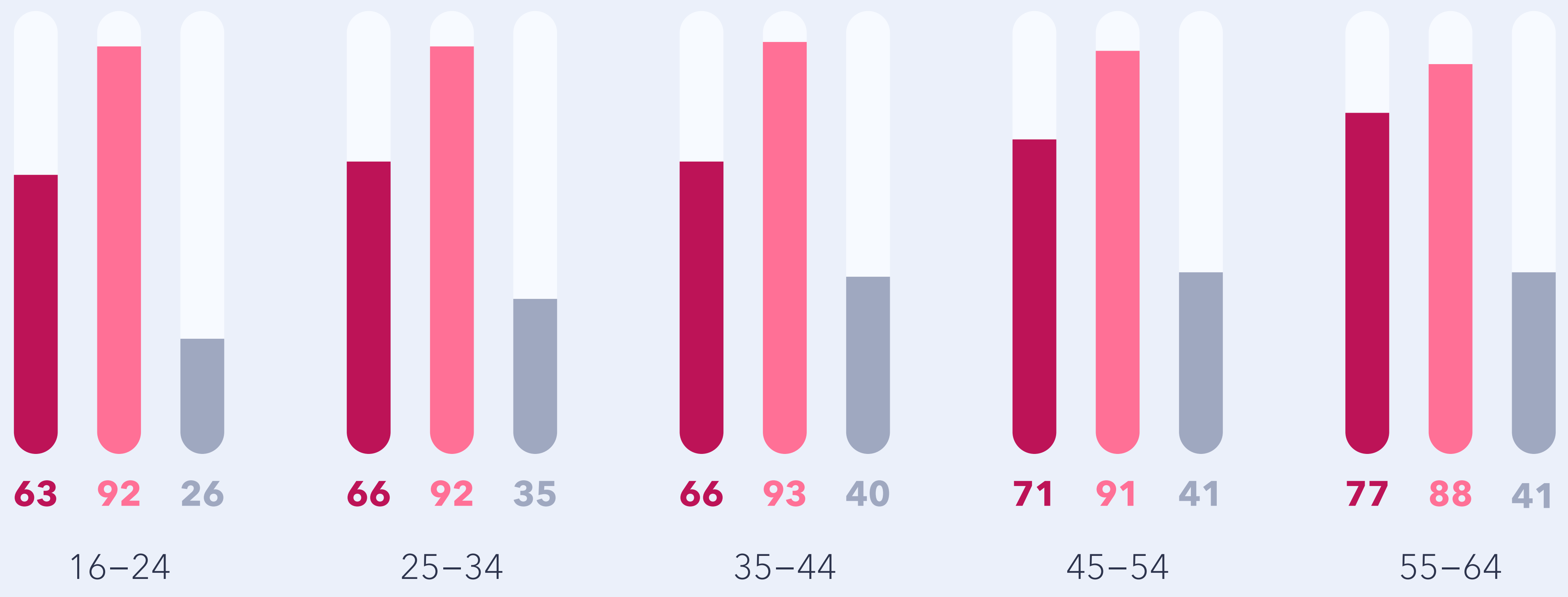
% of internet users who own the following devices

BY REGION

PC/Laptop Smartphone Tablet



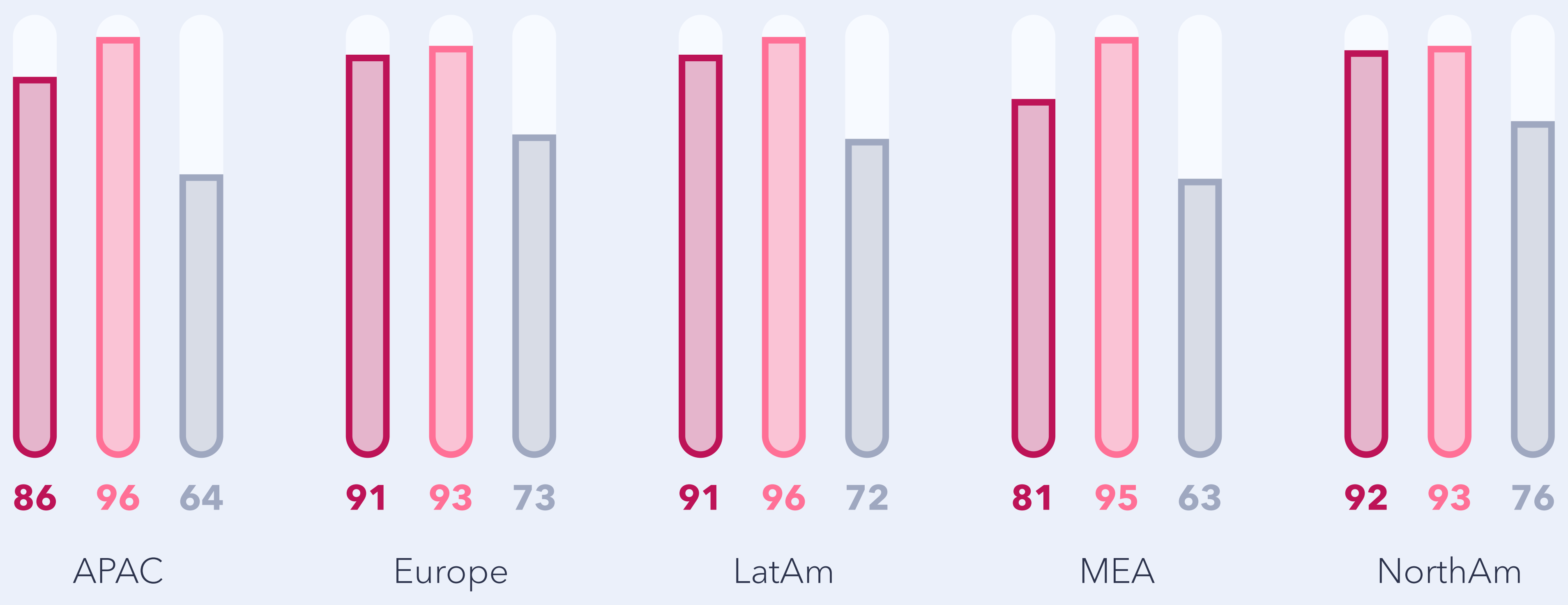
BY AGE



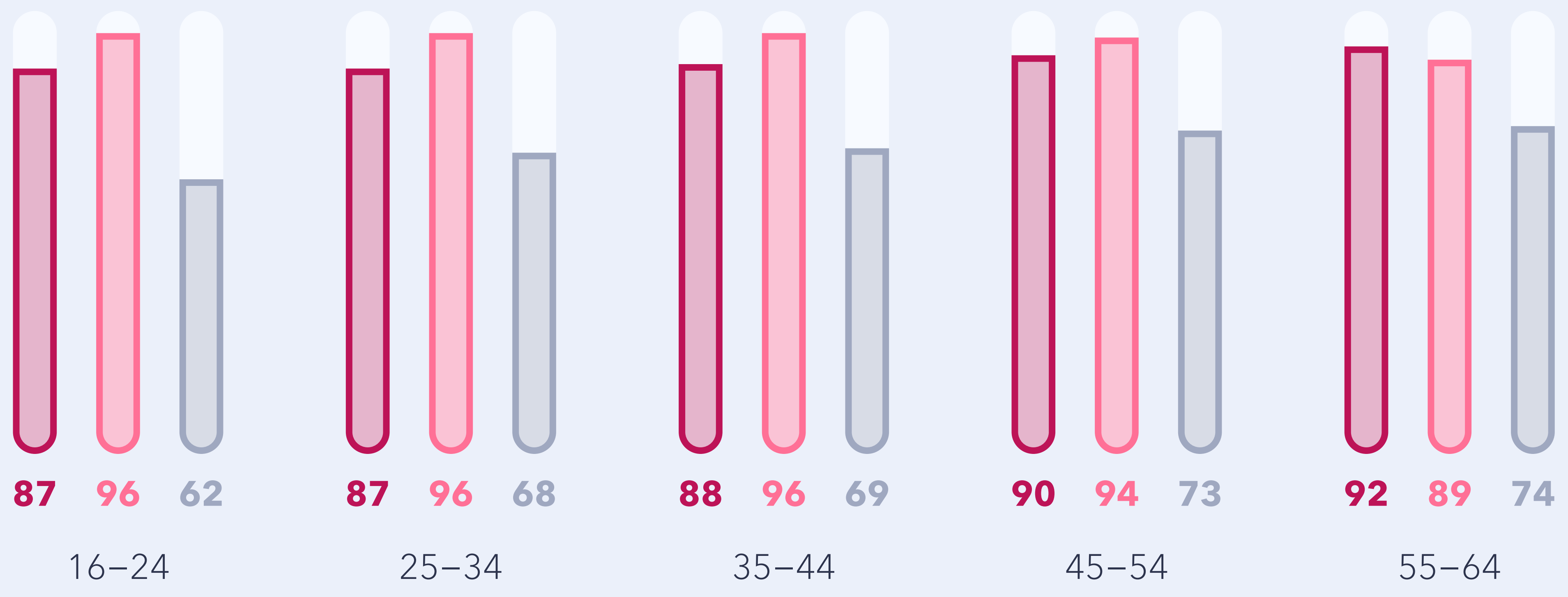
% of internet users who own the following devices and use them to access the internet

BY REGION

PC/Laptop Smartphone Tablet



BY AGE



Question: Which of the following devices do you own? | Which of these do you use to access the internet?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

02

Device

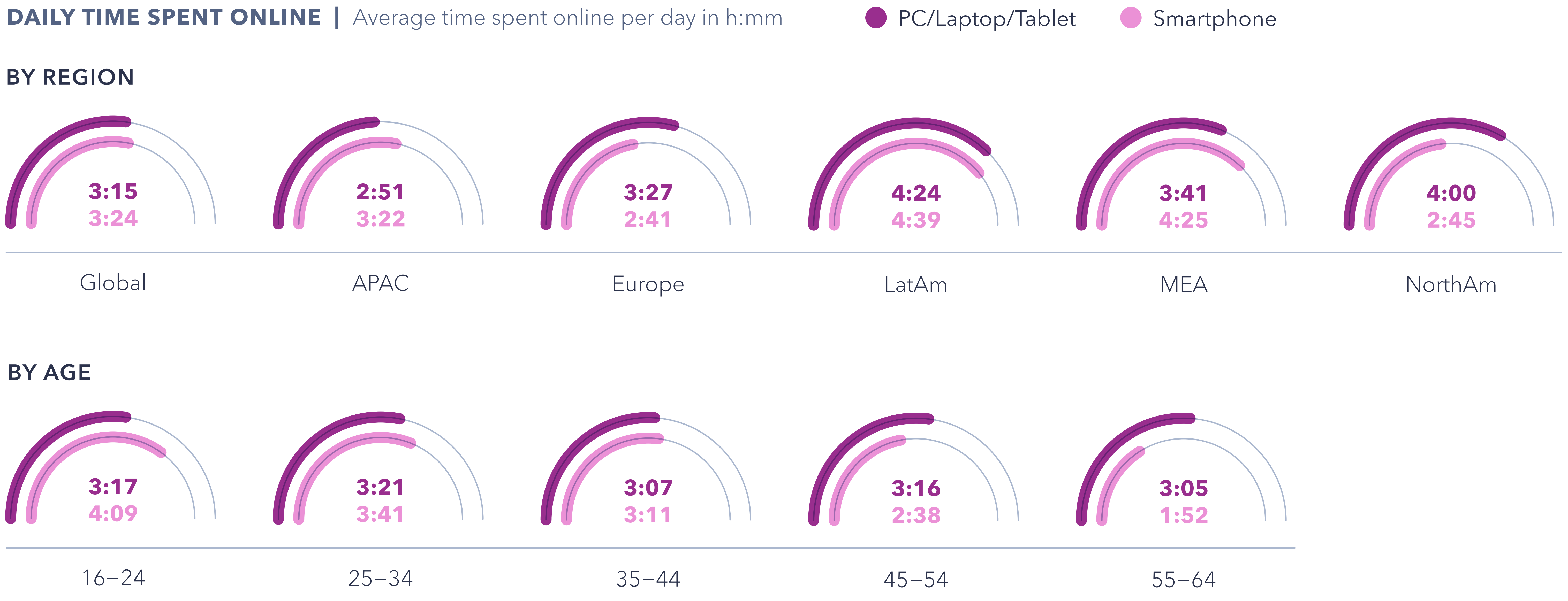
PCs v mobile

PC & mobile engagement

Last year we noted that the mobile tipping point – a stage we've been eyeing for **some time** – has finally been surpassed, with time spent on mobiles in 2019 10 minutes ahead of PCs/laptops, suggesting this gap is only going to keep widening.

Smartphone usage has rapidly increased worldwide, but the PC/laptop decline is slowing down. **Given internet users worldwide still spend 3 hours and 15 minutes on PC/laptops, mobile-only strategies should not be the default, while activities such as watching TV or playing games sustain the continued use of PC/laptops.**

For older internet users – those aged 55-64 – desktops are still especially important, as they spend an hour and 13 minutes more on these devices than on smartphones. Similarly, regions where PC/laptops were introduced later are still using the device more than their early-adopter counterparts. **Those in LatAm, for example, spend more than four hours a day on desktops, an hour more than Europe – who are still PC-first.** It's important to note here, that in regions with early PC/laptop adoption, internet penetration rates are higher – and their internet users older. As such, markets where PCs haven't been established for as long tend to have a younger online population, who spend more time online in general than their older counterparts.



As mobile manufacturers race towards complete global coverage, they're likely to continue encompassing more features in an effort to avoid saturation. We're already seeing them lean towards tablet-smartphone hybrids with the likes of Samsung's **Galaxy Fold** but it's important for these devices to fine-tune the fundamentals. In a custom survey we ran in August 2019, **we found that 77% of internet users in the UK and U.S feel improved battery life is the most important smartphone feature**. This, along with storage (65%) and screen resolution (48%) are examples of mobile technology that will continue to prove essential.

While 5G compatibility (27%) was cited by fewer individuals, the next generation of wireless technology looks to build on the fundamental features of smartphones, whilst ushering in an array of far-reaching features.

Question: On an average day, how long do you spend online on a mobile/PC/laptop/tablet?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

The 5G opportunity

In the UK and U.S., two countries at the forefront of the 5G revolution, 83% of internet users can correctly identify what 5G refers to. Consumers in each market are experiencing 5G for the first time via their smartphones; making this device an important testing ground for the technology. Instinet analyst Jeffrey Kvaal expects "a large increase" in 5G unit sales for 2020, although he thinks most of these sales will come at the expense of 4G devices, rather than a rush of upgrades.

It's important to note that although 5G is currently tied to smartphones, this next generation of wireless technology will be far-reaching. **To its fullest extent, 5G supposedly has the potential to be a "cure-all" to all modern networking problems and even the active ingredient in a technological revolution beyond mobile**; improving home broadband, games consoles, smart home devices and even, in the long-term, city infrastructure.

If you'd like more information on the topic, please see our 5G report.

1 in 4 internet users in the UK and U.S. say they intend to trade in their current smartphone for a 5G-enabled one as soon as it's more affordable/available

Online activities by device

All of the 36 online activities we track are more commonly undertaken on mobile devices. At their forefront are social actions, being firmly mobile-first and moving quickly toward mobile-only – a 54-percentage-point difference for chat services on mobiles (87%) and PC/laptops (33%) best exemplifies this. This isn't surprising, given the ubiquity of smartphones and the ease-of-access they possess. Ecommerce actions are also heavily ingrained in this device too, with searching for products to buy (62%), using an internet banking service (59%) and purchasing products (51%) all easily achievable here.

While mobiles dominate online activities elsewhere in the world, continued PC/laptop use still lies at the heart of commerce in Western markets. Having been the first to use PC/laptops, **internet users in Europe and North America are still turning to them when shopping online, with a 13-percentage-point difference between PC/laptops (54%) and mobiles (41%) in North America**.

Given that commerce activities are leading for PCs in North America, it's possible that security fears surrounding mobiles are driving people to make transactions on PCs instead. **In APAC, however, mobile-first is a sentiment that resonates even among older audiences** – who are still heavily PC/laptop users elsewhere. **Here, even commerce-related actions among 55-64s are mobile-first by some margin** – 37% purchased a product online via PC/laptops, while 45% say they do this by mobile.

ONLINE ACTIVITIES BY DEVICE

% of internet users who have done the following on their PC/laptop/mobile in the past month

Question: In the past month, which of the following things have you done on the internet via PC/Laptop/Mobile?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

Online activities map

ONLINE ACTIVITIES BY REGION | Percentage-point difference between those who do the following activities on mobile vs. PC/laptops

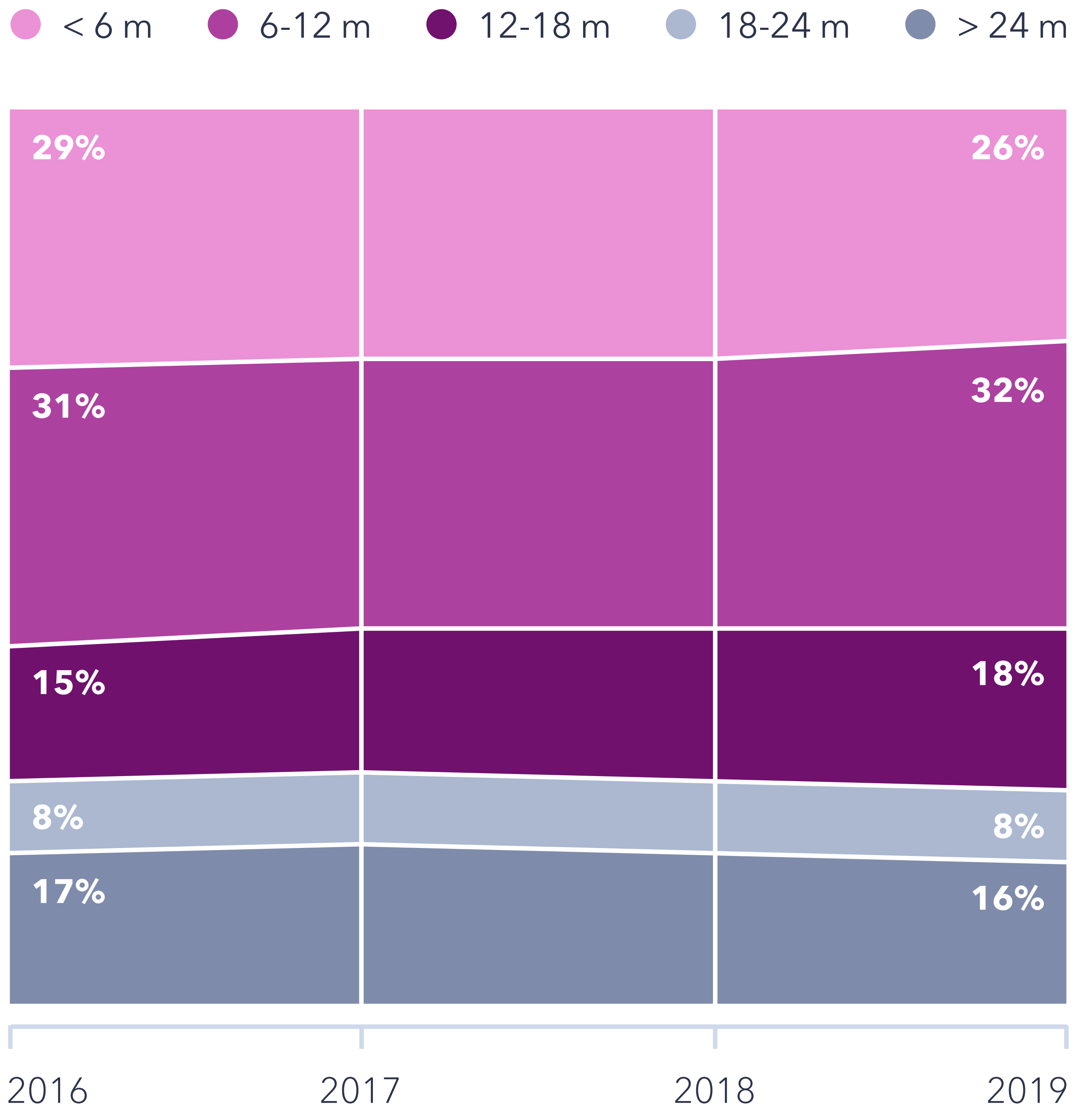
	APAC	Europe	LatAm	MEA	NorthAm
Checked the weather online	35	27	26	38	26
Listened to an online radio station	22	5	8	11	9
Listened to or watched a podcast	19	5	9	13	7
Posted a comment in a forum	20	2	6	12	2
Reviewed a product or service	22	0	4	8	1
Purchased a product online	30	10	2	14	13
Searched for a product to buy	28	2	8	26	5
Sold a product online	17	3	5	7	2
Uploaded/shared a photo	35	26	34	39	24
Uploaded/shared a video	31	14	25	32	15

Question: In the past month, which of the following things have you done on the internet via PC/Laptop/Mobile? **Source:** GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

Mobile purchase & consideration

MOBILE PURCHASE TIMEFRAME

% of internet users who say they intend to buy/upgrade their mobile phone in the following timeframe (in months)



An average of 1 in 4 digital consumers are planning to upgrade or buy a new phone within the next 6 months, a rate that's stayed consistent since 2016.

Samsung, owned by 35% of internet users outside of China, is the most popular mobile handset brand. Apple's iPhone, however, has experienced considerable growth, rising from 13% to 25% since 2012 – a 12-percentage-point climb. Huawei and Xiaomi, despite competing outside their home market of China, are tied in third place with 9% ownership.

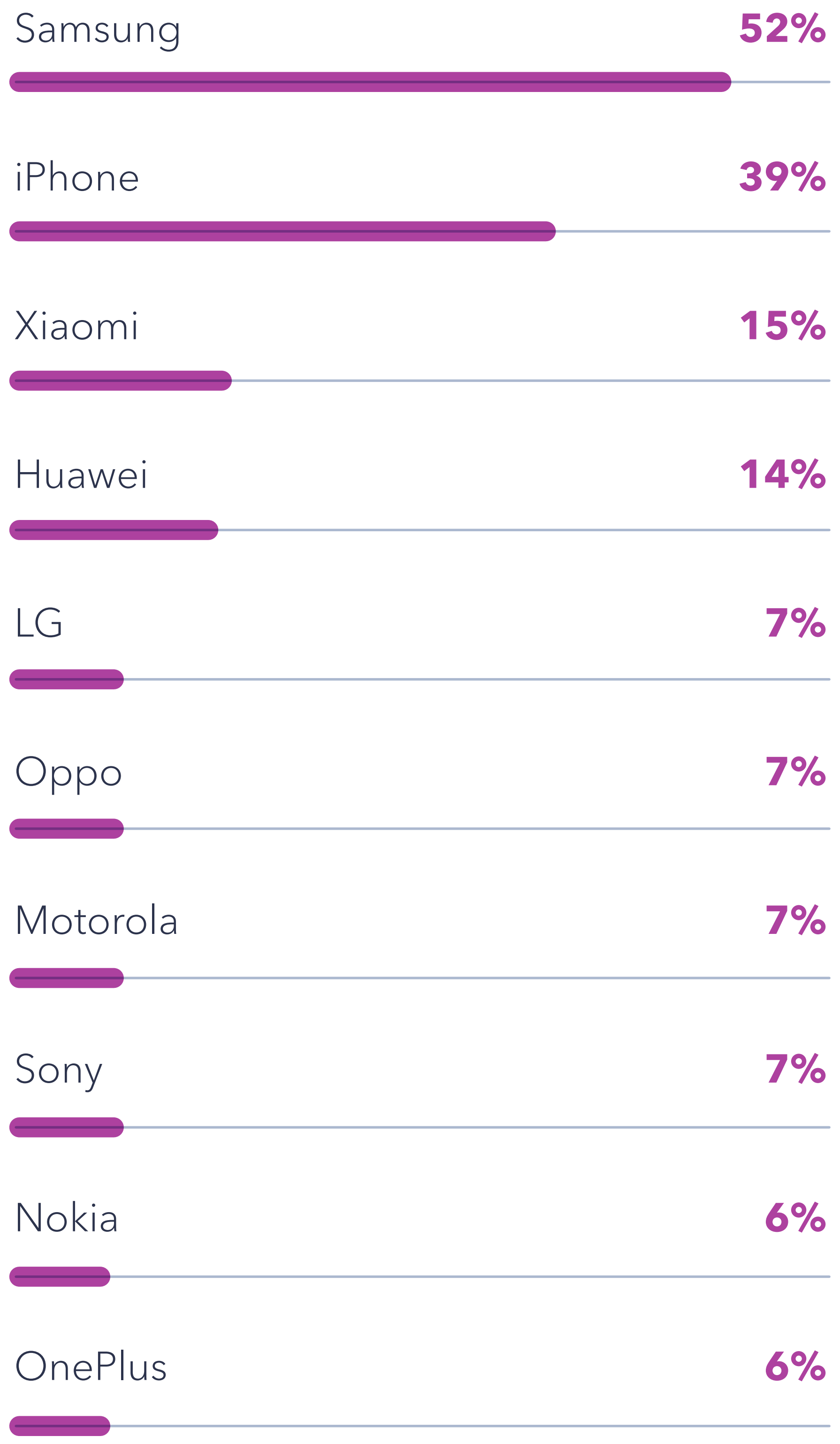
We noted in our **Smartphone Market** report that, **since H1 2017, Huawei is virtually the only brand to show any meaningful growth in current ownership globally** – despite being blacklisted by the Trump administration over claims it posed a threat to U.S. security. While their lower cost may be a key driver here, the race to become leaders in 5G is important also, given the European Union's recent decision to allow Huawei to operate the single market's infrastructure.

Over half of internet users outside of China cite Samsung as their next brand of choice, a figure that's been unwavering since 2016. Apple's iPhone, however, is further behind, with 39% currently considering the brand. The iPhone does fare better with those aged 16-24, with almost half of internet users in this age segment considering the brand, but Samsung is still more popular across all other age groups and world regions – except North America, where the iPhone leads.

Future consideration of Huawei (14%) and Xiaomi (15%) has shown a dramatic climb in the past three years – in 2016 only 8% of internet users outside of China considered Huawei, while Xiaomi garnered interest from 5%. As this interest increases, they're likely to disrupt mainstream mobile handset fanbases – over 8 in 10 iPhone and Samsung owners intend to stick with their brand, with roughly 1 in 10 owners of either now considering Huawei or Xiaomi.

MOBILE PURCHASE CONSIDERATION

% of internet users outside of China who say the following mobile brand would be their top choice when purchasing a new mobile phone



Question: When do you plan to buy a new mobile phone or upgrade your existing phone? **Source:** GlobalWebIndex 2016-2019 (Averages of waves conducted between Q1 2016 - Q4 2019) **Base:** 211,023 (2016), 370,051 (2017), 474,573 (2018), 598,185 (2019) internet users aged 16-64

Question: Which brand(s) would be your top choice when you next upgrade or buy a new mobile phone? **Source:** GlobalWebIndex Q4 2019 **Base:** 121,849 internet users outside China aged 16-64

Market insights

DEVICE OWNERSHIP BY MARKET | % of internet users who own the following devices

	PC/Laptop	Smartphone	Tablet
Argentina	78%	88%	42%
Australia	82%	93%	52%
Austria	88%	96%	55%
Belgium	85%	89%	52%
Brazil	70%	93%	35%
Canada	84%	90%	54%
China	51%	92%	31%
Colombia	77%	93%	42%
Denmark	79%	92%	55%
Egypt	64%	93%	21%
France	84%	92%	50%
Germany	88%	93%	52%
Ghana	45%	80%	17%
Hong Kong	73%	96%	54%
India	63%	89%	23%
Indonesia	76%	95%	22%
Ireland	83%	91%	53%
Israel	84%	93%	37%
Italy	77%	95%	55%
Japan	77%	85%	29%
Kenya	60%	90%	19%
Malaysia	70%	96%	30%
Mexico	74%	92%	47%
Morocco	28%	86%	18%
Netherlands	83%	93%	58%
New Zealand	83%	92%	46%
Nigeria	56%	83%	18%
Philippines	74%	92%	38%
Poland	88%	95%	49%
Portugal	85%	93%	52%
Romania	88%	91%	47%
Russia	88%	92%	41%
Saudi Arabia	58%	91%	36%
Singapore	75%	95%	47%
South Africa	79%	92%	41%
South Korea	83%	93%	35%
Spain	86%	94%	58%
Sweden	78%	93%	55%
Switzerland	89%	93%	55%
Taiwan	78%	96%	44%
Thailand	47%	94%	33%
Turkey	72%	94%	47%
UAE	69%	93%	41%
UK	81%	92%	56%
U.S.A.	79%	92%	50%
Vietnam	66%	94%	34%

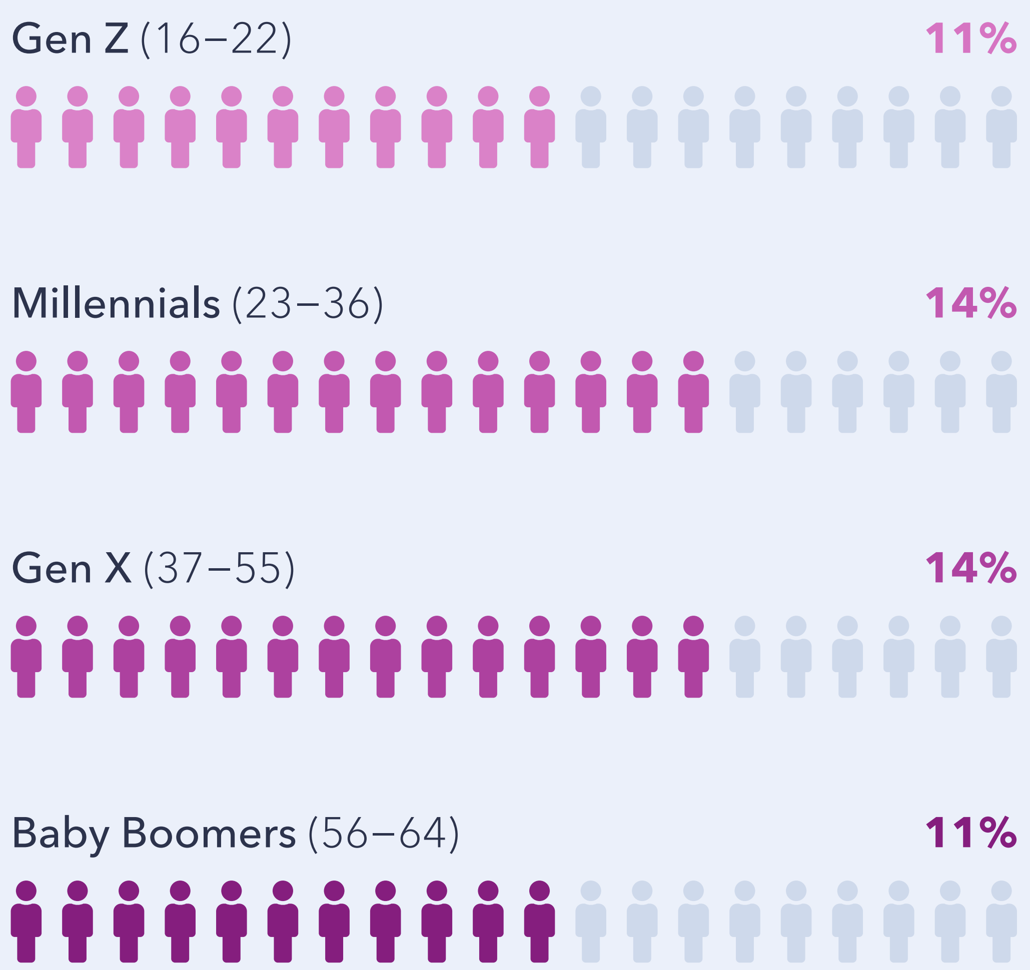
Question: Which of the following devices do you own?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

• **TREND IN ACTION** •

See it, Say it, Search it

IMAGE SEARCHING

% of internet users in each generation who used an image search tool in the last month



Question: Which of the following online sources do you mainly use when you're actively looking for more information about brands, products, or services? **Source:** GlobalWebIndex Jan-Feb 2020 **Base:** 2,229 (UK), 2,050 (U.S.) internet users aged 16-64

One of the fastest growing products at Pinterest, with over 600M searches per month, the visual search market is expected to exceed $25 billion this year. Interestingly, in a custom study run in January this year, we found that, among UK and U.S. internet users, using an image search tool was relatively even across generations – with millennials and Gen Xers the highest at 14% and baby boomers and Gen Zs the lowest at 11%. Given baby boomer and Gen Z engagement is equal here, its cross-generational appeal may further this technology's growth in the future.

Right now, commerce applications are an obvious outlet for visual search, but Facebook hopes to take it further. By intertwining visual search with its augmented reality glasses, wearers will have the ability to recognise faces of individuals they've met, and subsequently forgotten.

14% of internet users in the UK and U.S. have used an image search tool to search for brands, products and services in the past month

03

Device

The smart market

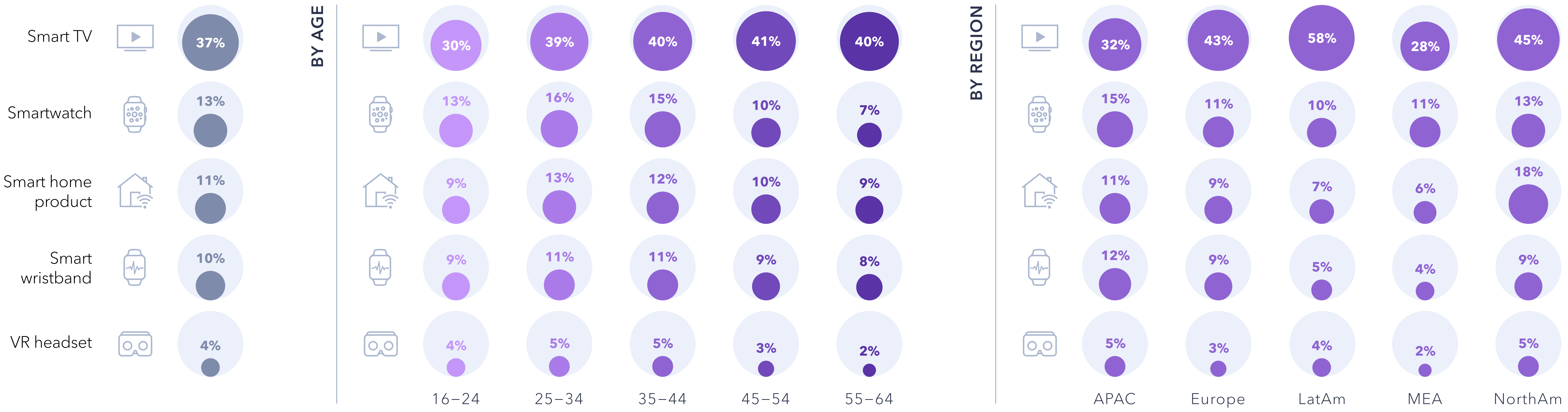
Breakout devices

Though little over 1 in 10 internet users own a smartwatch/wrist device, they're climbing in popularity. They're still young, and with a projected value exceeding **$31 billion** in 2025, they're making an impact. With their slow growth likely down to high price tags, **owners of either of these devices are 33% more likely to be found within the top 25% of earners**. While they initially struggled to compete with the variety of features found on smartphones, instead accompanying them, increased investment in these devices is giving them the chance to replicate, and even someday **replace**, mobiles.

Despite the smart home industry being expected to value **$174 billion** by 2025, the products themselves are taking off slowly, with global adoption currently at 11%. Again, those within higher income segments are more likely to be in possession of these devices – top 25% earners are 35% more likely to own a smart home product than average. But **it's internet users in North America who are at the forefront of these devices. Here, 18% own a smart home product, 1.6x as likely as the average**, and 7 percentage points higher than second-placed APAC.

VR (Virtual Reality), however, is still struggling to catch on. Just 4% of internet users own a VR device, held back by a general lack of practicality and a hefty price tag. While this technology is heavily tied to gaming – an interest shared by 4 in 10 internet users – only 5% of gamers own a VR device, meaning its primary demographic is still content with the gaming devices they have available. In order to break into the mainstream, the challenge lies in branching beyond gaming, adapting to other industries such as retail, travel and education.

UPCOMING DEVICE OWNERSHIP | % of internet users who own the following devices



Question: Which of the following devices do you own?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

Smartwear

DEVICE OWNERSHIP

% of smartwatch/wristband owners who own the following devices

67% SMARTWATCH

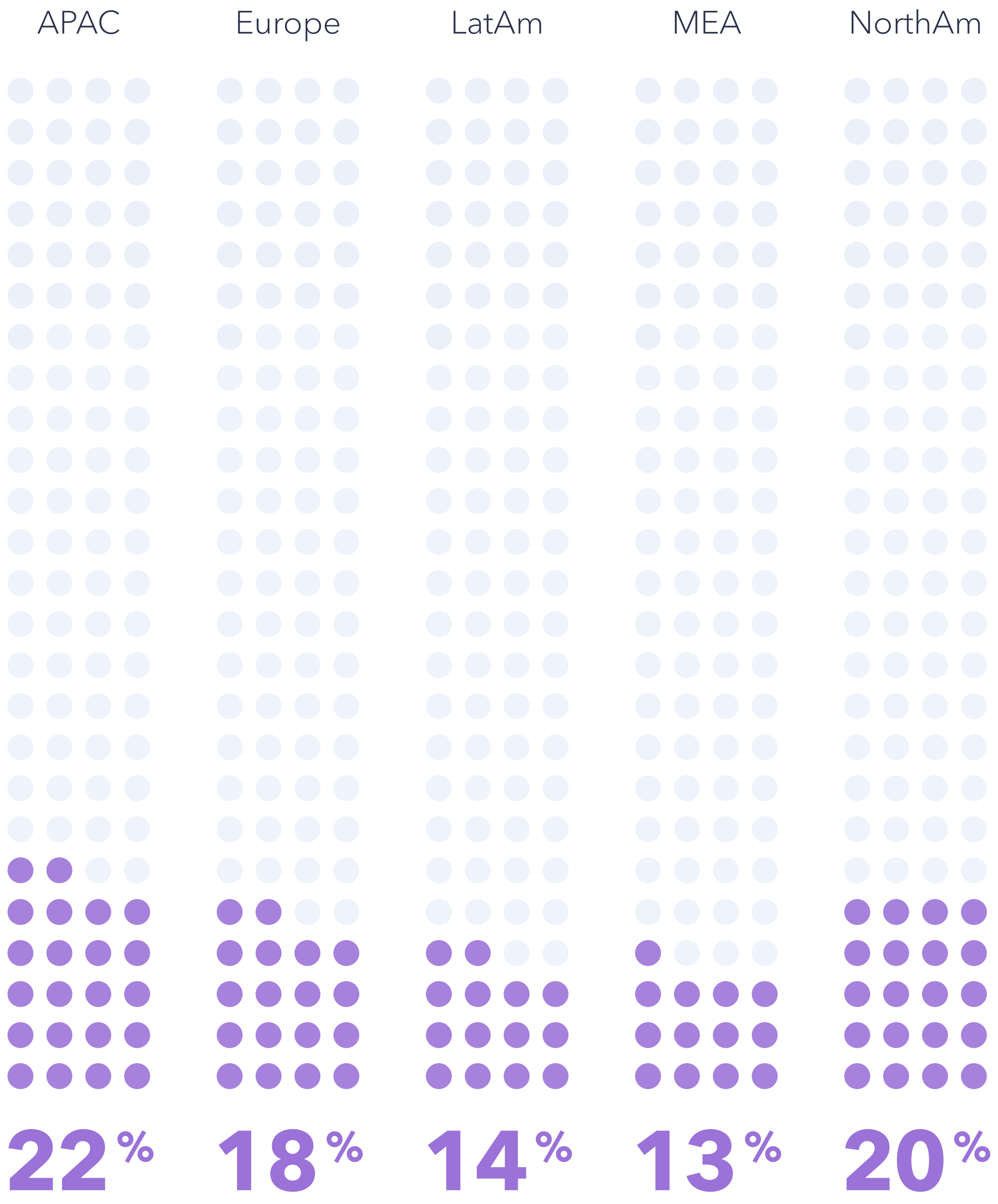
51% SMART WRISTBAND

Regionally, APAC shows the highest prevalence for smartwatch/smart wristband ownership, with 1 in 5 internet users here owning either device. **This is driven particularly by high adoption in Singapore and Hong Kong, where the largest prevalence of this audience can be found – 29% and 28%, respectively.** In APAC, the term "smartwatch" encompasses a range of devices, some of which retail for as little as $20, meaning greater affluence isn't necessary to own either device.

In the U.S. and UK, Fitbit, Apple Watch, and Samsung's Galaxy Watch are the current leading brands for smartwatch/smart wristband owners. Presently, the Apple Watch proves the most popular in both markets observed, especially the U.S. where 37% of this audience own an Apple branded smartwatch. **Apple's product continues to see great success in these markets, having climbed 10 percentage points from 25% to 35% since 2015.** Fitbit, owned by just 4% of smartwatch/smart wristband owners, is likely to see growth after its acquisition by Google. The $2.1 billion deal marks a turning point in Google's wearable device range, given its Wear OS smartwatch had difficulty competing against rival brands.

REGION

% of internet users in each region who are smartwatch/wristband owners



SMARTWATCH OWNERSHIP IN THE UK/U.S.

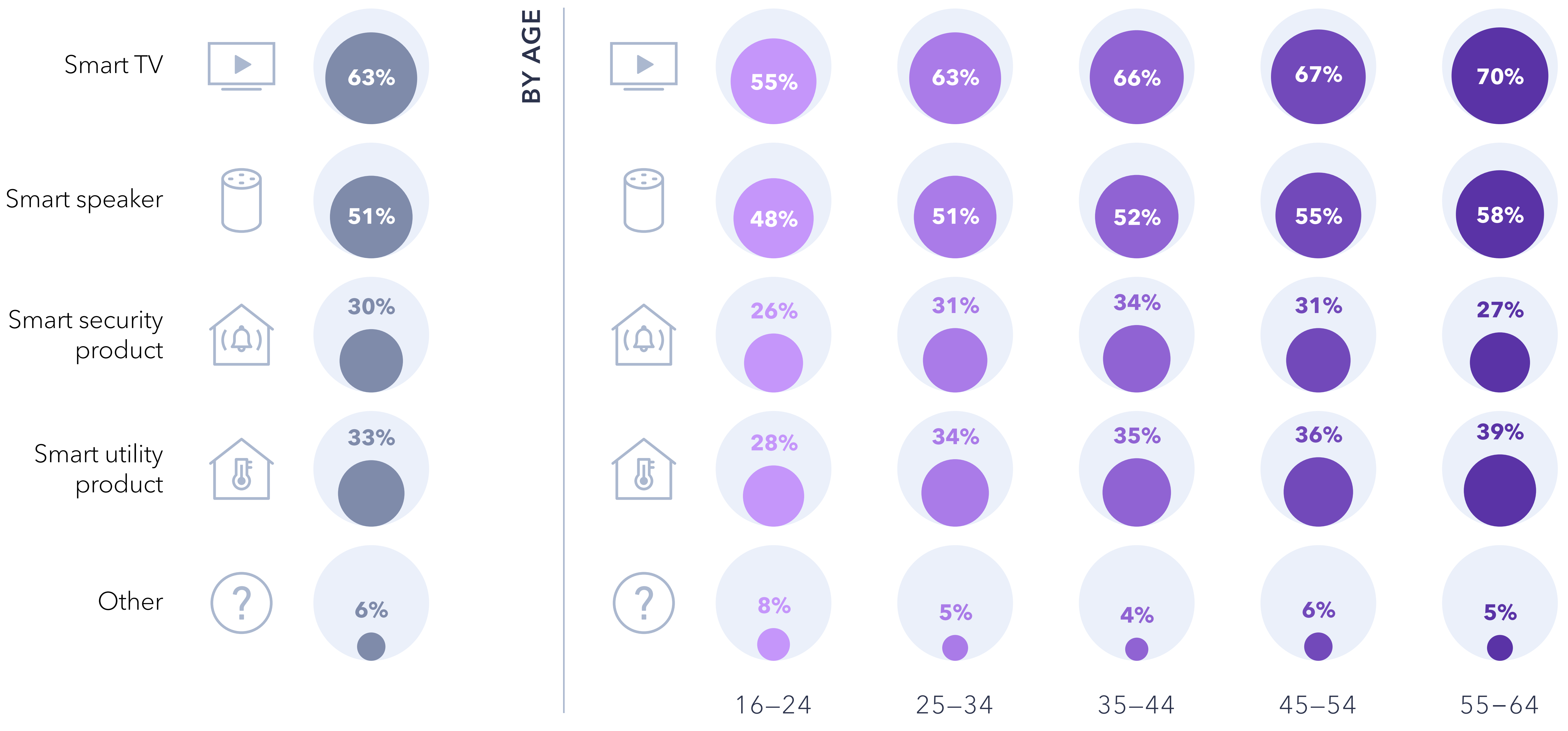
% of smartwatch owners in the UK and U.S. who own the following brand of smartwatch

Question: Which of the following devices do you own? (Smartwatch, smartwristband) | What brand is your smartwatch? **Source:** GlobalWebIndex Q4 2019 **Base:** 35,370 smartwatch/wristband owners, 173,859 internet users aged 16-64 | 4,305 UK/U.S. smartwatch owners aged 16-64

Smart home devices

SMART PRODUCT OWNERSHIP

% of smart home product owners who own the following smart home products



Among smart home product owners, the most popular devices are speakers (51%). The instantaneous Q&A nature of these smart assistant devices has led users to personalize their AI functionality, such as adding an optional **celebrity voice** to your device.

Interestingly, older internet users are more inclined to own these smart speakers than their younger counterparts – 58% of those aged 55-64 own a smart speaker against 48% of 16-24s. A possible reason for speaker popularity here are music-streaming services, a prominent feature on smart speakers.

For example, in 2017, internet users aged 55-64 spent 22 minutes a day on these services, having risen to 38 minutes as of 2019 – and to 57 minutes for smart speaker owners in this demographic. **Compared to TV and news, music-streaming providers have ground to make up in bringing users onboard, as a third of internet users worldwide don't use music-streaming services at all.** The general ease-of-use of smart speakers may also help in converting these holdouts (most of whom are 45-64) to new ways of listening.

Among smart product owners, security and utility products share relatively even ownership, but security devices are more popular with those aged 35-44 than any other age bracket. As the smart surveillance market is **expected** to reach around $10 billion in the next four years, increased affordability of these devices is likely to entice those currently put off by cost, or who simply cannot justify the purchase.

While internet users are warming to smart home products, smart TVs are leading by some margin, with 37% ownership globally and 63% among smart home product owners.

If you'd like more information on the topic, please see our Smart Homes **report**.

Question: Which of these smart home devices do you own?
Source: GlobalWebIndex Q4 2019 **Base:** 20,796 smart home product owners aged 16-64

Smart homes by market

Presently, **the UK represents the top market for smart product ownership worldwide, with 19% of internet users here in possession of a smart home device**, closely followed by the U.S. at 18% and Canada with 16%.

In a custom study run in July 2019, **we found that 66% of internet users in the U.S. and UK would consider purchasing a smart home product in the next year**, demonstrating an increasing demand for these products. Between the two markets, enthusiasm is relatively even, with the U.S. (67%) only slightly higher than the UK (63%).

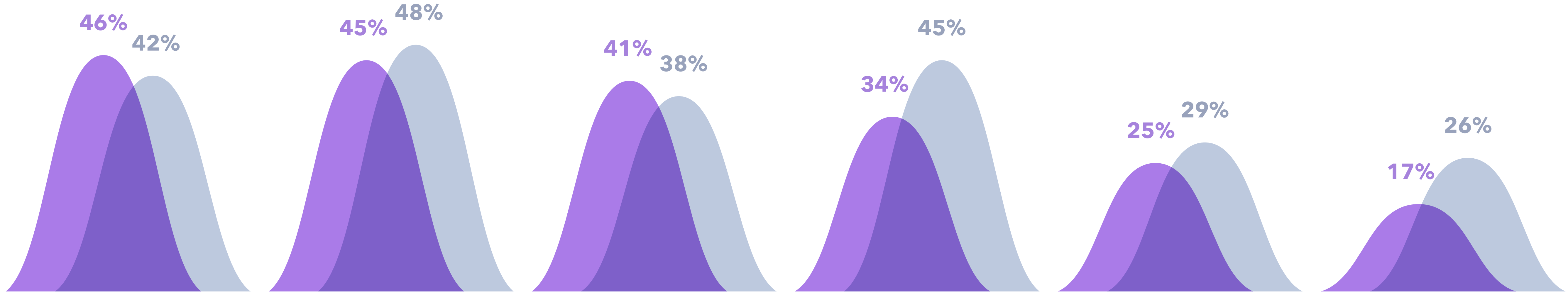
When split across different categories in the smart product market, this enthusiasm is more pronounced, with all smart product categories more prominent in the U.S. – except for energy & lighting, where the UK is slightly ahead. Security & control smart home products, like smart alarm systems or smart doorbells, are far more important to U.S. intenders. Entertainment, however, is where the largest opportunity for the smart home market resides – just under half of intenders say they're planning to buy a smart home product from this category, rising to just shy of 6 in 10 among millennials and Gen Zs.

In the UK and the U.S., 74% of those planning to purchase an entertainment product are considering buying a smart TV in the next year. While these devices have the advantage of accommodating both traditional and online TV viewing habits, they also cooperate with other devices. Through smart TVs, users can stream smartphone content via mirroring/casting, an activity 4 in 10 smart TV owners did in the past month.

SMART HOME CATEGORIES IN THE UK AND U.S.

% of smart home product intenders in the UK and the U.S. who are planning to purchase a smart home product in the following categories

UK U.S.A.



Energy & Lighting	Entertainment	Smart Voice Assistant	Security & Control	Domestic Appliances	Health
Smart Thermostat, Smart Energy Meter, Energy Monitor, Smart Light Control, etc.	Smart TV, Smart Speakers, Smart Remote Control, Smart Projector, etc.	Google Assistant, Amazon Alexa, etc.	Smart Security Camera, Alarm System, Smart Smoke Detector, Smart Doorbell, Smart Lock, etc.	Smart Coffee Maker, Smart Kettle, Smart Fridge, Smart Toothbrush, etc.	Massage Chair, Smart Air Purifier, Fitness Tracker, Medication Monitor, Smart Scale, etc.

TOP SMART HOME MARKETS

% of internet users in the following countries who own a smart home product

19% UK

18% U.S.A.

16% CANADA

16% TURKEY

14% SINGAPORE

Question: You've said you're planning to purchase a smart home product in the next year. Which of the following categories is that most likely to be from? **Source:** GlobalWebIndex July 2019 **Base:** 2,221 (U.S.) and 2,325 (UK) smart home product intenders aged 16-64

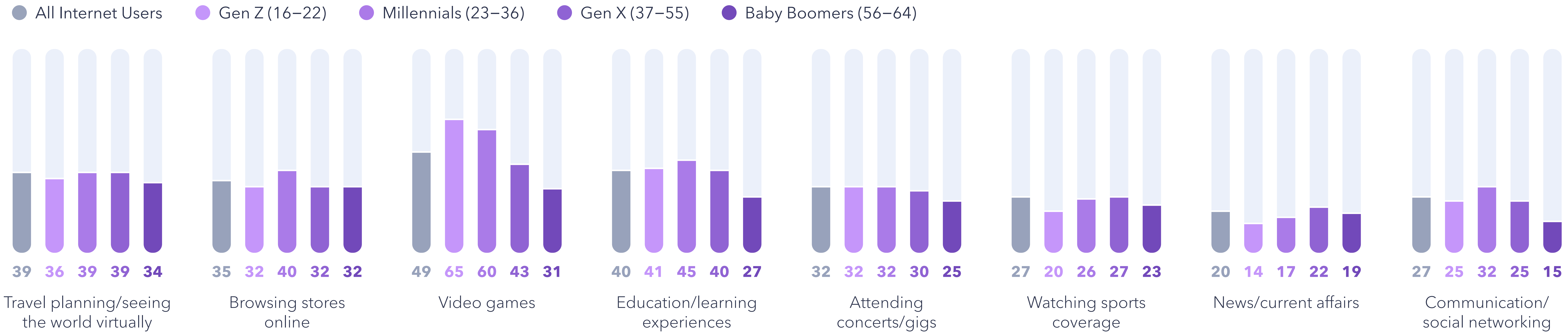
Question: Which of the following devices do you own? (Smart home product) **Source:** GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

VR

1 in 4 baby boomers in the UK & U.S. would like to see VR used for attending virtual concerts/gigs

APPLICATIONS FOR VR

% of internet users in the UK and U.S who would like to use VR for the following



VR, despite its limitless applications, is still finding its feet. This doesn't mean it won't take off – the technology has come a long way since Nintendo's "Virtual Boy" console was a financial failure. To reach the projected **$193 billion** mark by 2022, its applications must be far-reaching, delving into areas outside of gaming.

Presently, the 4% of internet users who own a VR device are 40% more likely to be among the top 25% of earners in their demographic; they skew male (58%) and are mostly between 25-34 years old (33%).

In a custom survey of internet users in the UK and U.S., we found that 49% of respondents would like to use VR for video games – currently found in the likes of **Playstation VR** and **Oculus Rift**. Naturally, this sentiment is very popular with Gen Zs (65%) and millennials (60%), where an interest in gaming is at its highest point. **But second to this, a further 40% would like to see its application in education/training**, not dissimilar to the way sports teams are **experimenting** with the technology. Educational applications see a more equal opinion from a generational standpoint, but the strongest agreement across generations was in relation to travel and commerce.

Roughly 4 in 10 of respondents wanted to see VR incorporated into the travel industry, while 1 in 3 cited its use in browsing stores online. If used in a similar manner to **Google Earth VR**, implementing this technology into travel proves a unanimously popular use of VR across all generations. VR shopping could revolutionize ecommerce, **in a similar manner** to AR (augmented reality), by giving users the ability to experience a retail environment without leaving the house.

Question: Which of the following would you like to use virtual reality/VR for?
Source: GlobalWebIndex January-February 2020
Base: 2,229 (UK), 2,050 (U.S.) internet users aged 16-64

Market insights

BREAKOUT DEVICE OWNERSHIP BY MARKET | % of internet users who own the following devices

Market	Smart home product	Smartwatch	Smart wristband	VR headset
Argentina	8%	9%	4%	4%
Australia	13%	14%	10%	4%
Austria	9%	12%	10%	2%
Belgium	7%	11%	10%	4%
Brazil	4%	9%	6%	3%
Canada	16%	10%	9%	4%
China	13%	15%	16%	5%
Colombia	9%	13%	6%	3%
Denmark	11%	11%	9%	3%
Egypt	6%	7%	2%	2%
France	10%	7%	6%	4%
Germany	10%	12%	11%	3%
Ghana	6%	8%	3%	2%
Hong Kong	11%	19%	14%	5%
India	13%	19%	11%	5%
Indonesia	6%	12%	4%	5%
Ireland	11%	12%	13%	4%
Israel	12%	11%	7%	4%
Italy	10%	11%	6%	3%
Japan	3%	4%	2%	2%
Kenya	4%	11%	2%	1%
Malaysia	7%	15%	10%	3%
Mexico	10%	12%	6%	5%
Morocco	3%	5%	3%	2%
Netherlands	8%	10%	5%	3%
New Zealand	8%	13%	10%	4%
Nigeria	7%	12%	4%	1%
Philippines	4%	8%	3%	2%
Poland	8%	11%	10%	2%
Portugal	4%	13%	11%	3%
Romania	6%	14%	9%	3%
Russia	3%	8%	7%	1%
Saudi Arabia	8%	14%	9%	5%
Singapore	14%	18%	18%	6%
South Africa	7%	13%	7%	4%
South Korea	11%	12%	8%	5%
Spain	9%	15%	17%	5%
Sweden	11%	11%	8%	5%
Switzerland	10%	11%	10%	3%
Taiwan	8%	10%	14%	2%
Thailand	3%	13%	6%	2%
Turkey	16%	15%	7%	4%
UAE	9%	16%	8%	5%
UK	19%	10%	11%	4%
U.S.A.	18%	13%	9%	5%
Vietnam	14%	15%	7%	3%

Question: Which of the following devices do you own?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

• TREND IN ACTION •

The body's the limit

Modern technology allows us to control aspects of our lives in more ways than ever before. We find ourselves tracking our time online, monitoring our heart rate throughout a workout or checking our sleep patterns for that optimum time to open our eyes.

But while all of these can be accomplished from the standard smartphone, **biohacking** – the process of implanting a device into the human body – offers a technology previously considered science-fiction. **Having installed said implant, users can perform a range of actions, effectively turning the body into its own smart device.** This isn't the hypothetical scenario of tomorrow, UK based **BioTeq** already offers this service today, with similar centres found in **Sweden** – wherein an estimated 10 million people have undergone the procedure.

A custom survey we ran in July 2019 shows that as many **as 1 in 4 internet users in the U.S. and UK say they're open to the idea, with a further 1 in 5 saying they'd consider it should the technology pass successful trials**. Naturally, the concept raises concerns, but just what's the biggest fear surrounding this type of device?

Privacy and security, cited by over half of internet users in the UK and U.S., is the main barrier to adoption for biohacking, as well as lack of information (45%) and safety concerns (47%). However, optimism manifests itself in several hopes for this technology, such as the potential health benefits like decreasing the risk of developing genetic diseases (41%) and optimizing bodily functions (34%).

04

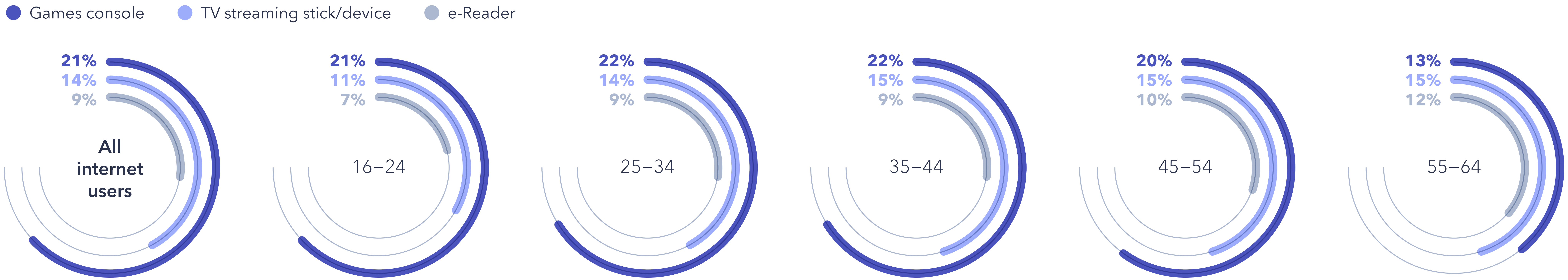
Device

Entertainment devices

Entertainment devices

ENTERTAINMENT DEVICE OWNERSHIP BY AGE

% of internet users who own the following devices



Though optional, entertainment devices are performing strongly among internet users. Just over 1 in 5 own a games console, a category that encompasses not just the modern generation (PS4, Xbox One and Nintendo Switch) but past iterations of these devices too – including the likes of the PS3, Xbox 360 and Nintendo Wii.

While gaming as an interest is most-cited by younger internet users – just under half of 16-24s say this – **the only significant drop off in ownership for consoles is among those aged 55-64**, where only 18% say they're interested in gaming. While a lesser interest in gaming is sure to cause a decline in console ownership here, their array of multimedia features are simply being accomplished by other devices that this audience already own. As such, those who aren't using these devices to game, are unlikely to purchase a console to watch online TV, when there's cheaper options available.

This is further demonstrated by TV streaming devices, owned by 14% of internet users. Given the relatively even ownership across all age groups, this shows that **watching online TV has remained a popular activity, even for older audiences who say they watch this form of TV for around 46 minutes a day in 2019 – a 25-minute increase since 2015**.

E-Readers, on the other hand, are continuing to decline. Since the end of 2015, this device has fallen from 18% ownership to 9% among all internet users. Of those 41% interested in books/literature, 13% own an e-reader, 45% more likely than the average. But **given smartphones and tablets have access to dedicated reading apps, alongside many other capabilities, these devices are unlikely to rebound in the future**.

Question: Which of the following devices do you own?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

The world of gaming

With 82% of internet users gaming on any device in 2019, the activity is alive and well despite a slight decline of 7 percentage points since 2015.

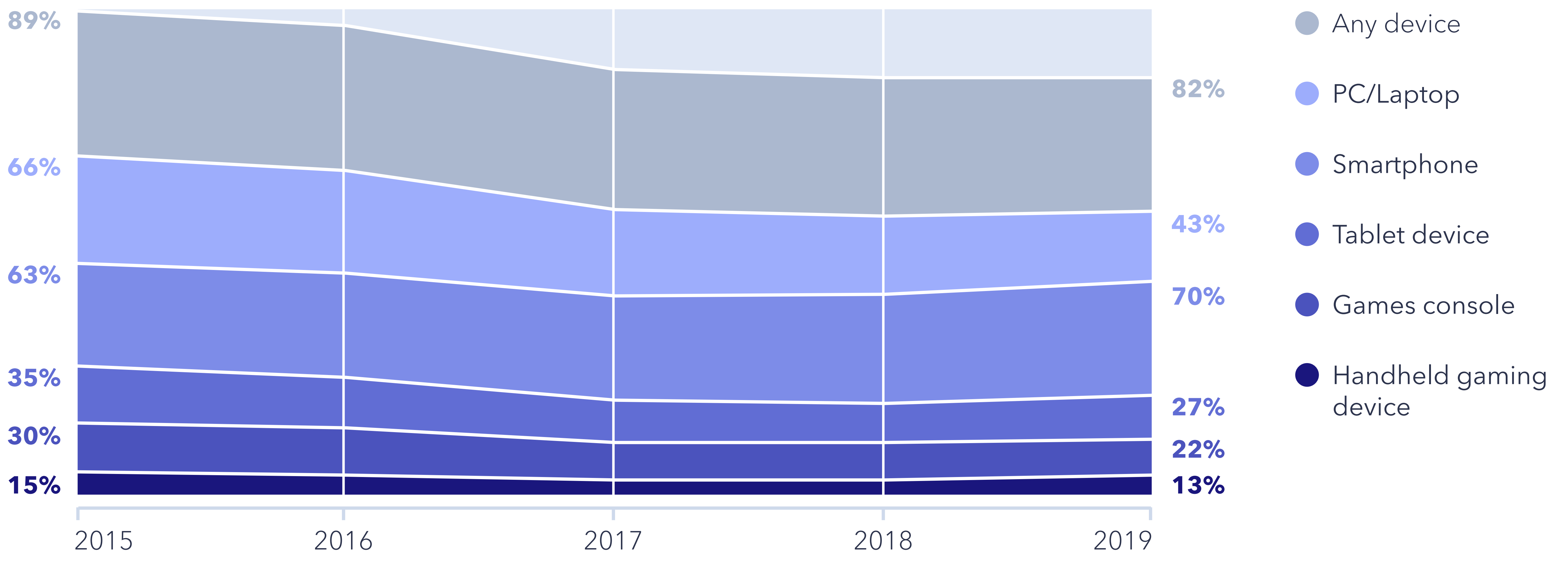
As the activity is moving to other devices, **this decline could be a result of smartphones and tablets' growth in popularity among those who play games – the former of which has become the most prominent gaming device among internet users since 2015**. In addition, console decline may be attributed to Sony and Microsoft's looming 9th generation consoles, with the current consoles, PS4 and Xbox One respectively, having been in circulation for as much as six years.

It's **PC/laptops that have experienced the most dramatic decline – falling 23 percentage points since 2015**. Over the same period of time, console gaming, though less steep, has fallen from 30% to 22%. At the forefront of console gaming are individuals aged 25-34 (32%), while PCs/laptops are mostly used for gaming from those aged 16-24 (46%).

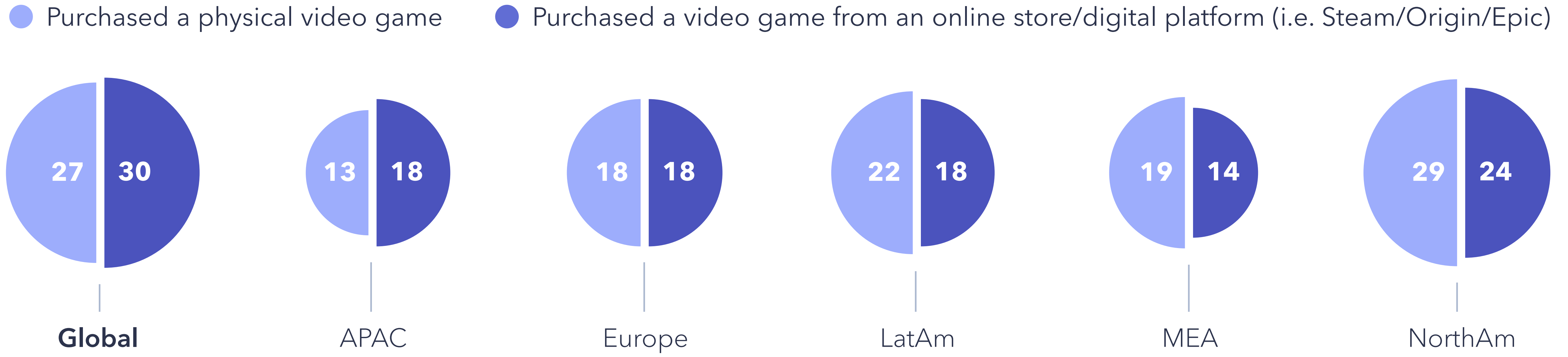
Handhelds have seemingly run their course. With Sony officially discontinuing the PS Vita and Nintendo focusing solely on its handheld-home console hybrid, the device, now used by little over 1 in 10 internet users, is unlikely to regain its popularity.

Though gaming is popular worldwide, LatAm, in particular, presents a promising space for the industry. Here, 85% of internet users are gaming on any device – with over 4 in 10 using games consoles and PCs/laptops, higher than anywhere else in the world. **In addition, 62% of 55-64s say they play games here, making this an important region for an activity that struggles to garner interest among older internet users elsewhere.**

DEVICES USED FOR GAMING | % of internet users who use the following devices to play games



DIGITAL VS PHYSICAL | % of gamers who have done the following gaming activities in the last month

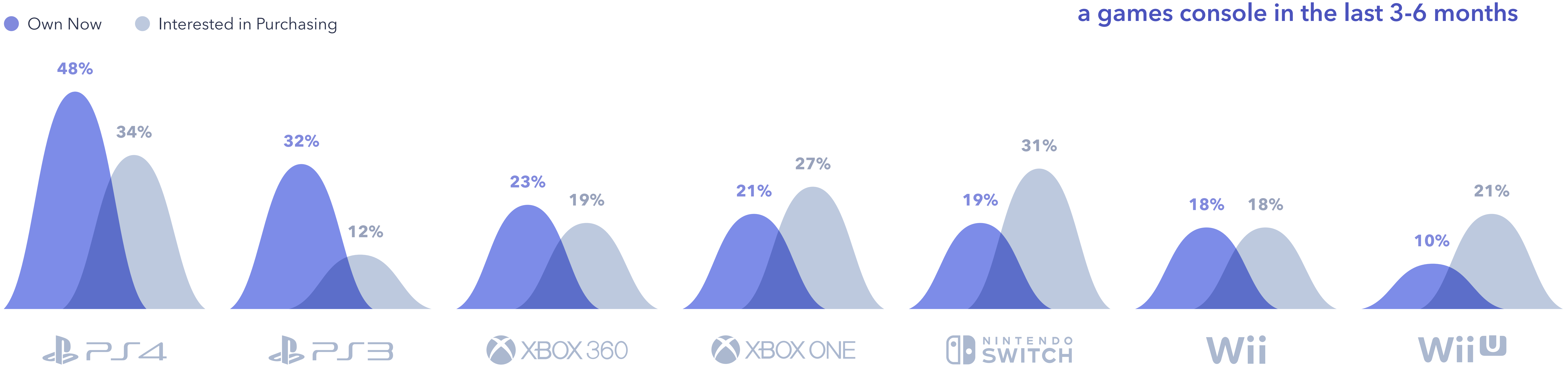


Question: Which of these devices do you use to play games? **Source:** GlobalWebIndex Q4 2019 **Base:** 197,734 (2015), 211,023 (2016), 370,051 (2017), 474,573 (2018), 598,185 (2019) internet users aged 16-64

Question: Thinking about gaming, which of these things have you done? **Source:** GlobalWebIndex Q4 2019 **Base:** 25,204 gamers aged 16-64

Console brands

CONSOLE BRANDS | % of console owning gamers who currently own/are interesting in purchasing the following console brands



Just under 1 in 5 gamers purchased a games console in the last 3-6 months

Console-owning gamers represent 26% of internet users, the majority of which are between the ages of 16-34 – where an interest in gaming is highest. Given modern consoles are becoming increasingly more costly, it's not surprising that console owners are 20% more likely to be in the top 25% of earners in their demographic.

Despite high costs, however, ownership of multiple consoles is relatively commonplace, with Nintendo Switch owners being the strongest example of this. Over half of those who own a Switch also own a PS4, while 1 in 3 own an Xbox One. The Switch's popularity perhaps boils down to its library of exclusive franchises – such as *Mario* and *The Legend of Zelda* series – but also through its portable functionality while other consoles stick firmly to the living room.

As the 8th generation of consoles – such as the PlayStation 4 and Xbox One – enter their final year as brand flagships, attention turns once more to Sony and Microsoft to deliver the much-anticipated 9th generation consoles; the **enigmatic** PlayStation 5 and "**Xbox Series X**", respectively.

For console owning gamers, the PS4 is the most commonly owned gaming console – just under half own this device – and Sony will hope to retain this success on release of the PS5 in late 2020. **Its primary competitor, the Xbox One, sees overall ownership drop to just over 1 in 5 of this audience, while little over 1 in 4 are interested in purchasing the console.** However, a new console gives developers the opportunity to reignite interest as specifications trickle through, with each minor detail capable of significantly impacting gamers' purchase consideration.

Question: Which of these devices do you use for gaming? | Which would you be interested in purchasing? **Source:** GlobalWebIndex Q4 2019 **Base:** 9,211 console owning gamers aged 16-64

• TREND IN ACTION •

The next level

Half of cloud gamers paid for a movie/TV streaming service in the last month, 1.4x as likely as the average gamer

With the 8th generation of consoles coming to an end, Sony and Microsoft work to release their successors in late 2020, hoping to simultaneously ignite, and win, the next console war.

But while new consoles may offer higher frame rate and advanced visuals, without a solid library of games, there's little incentive to purchase these devices. "Cloud gaming" – a subscription based model that offers gaming libraries similar to video-streaming services like Netflix – could play a big role in the next gaming generation.

Though in its infancy, 12% of gamers used a cloud gaming service in the past month via the likes of Sony's **Playstation Now** and Google's **Stadia** console. Given how cloud gaming outsources processing power to remote servers, this effectively levels the playfield across different platforms, defying the need for competitive devices that fought to outperform the opposition in terms of hardware specifications.

Note that cloud gaming offers access to a vast historical library of titles, and gamers are likely to be playing **classic** titles here just as often as they are recent ones.

TV consumption by device

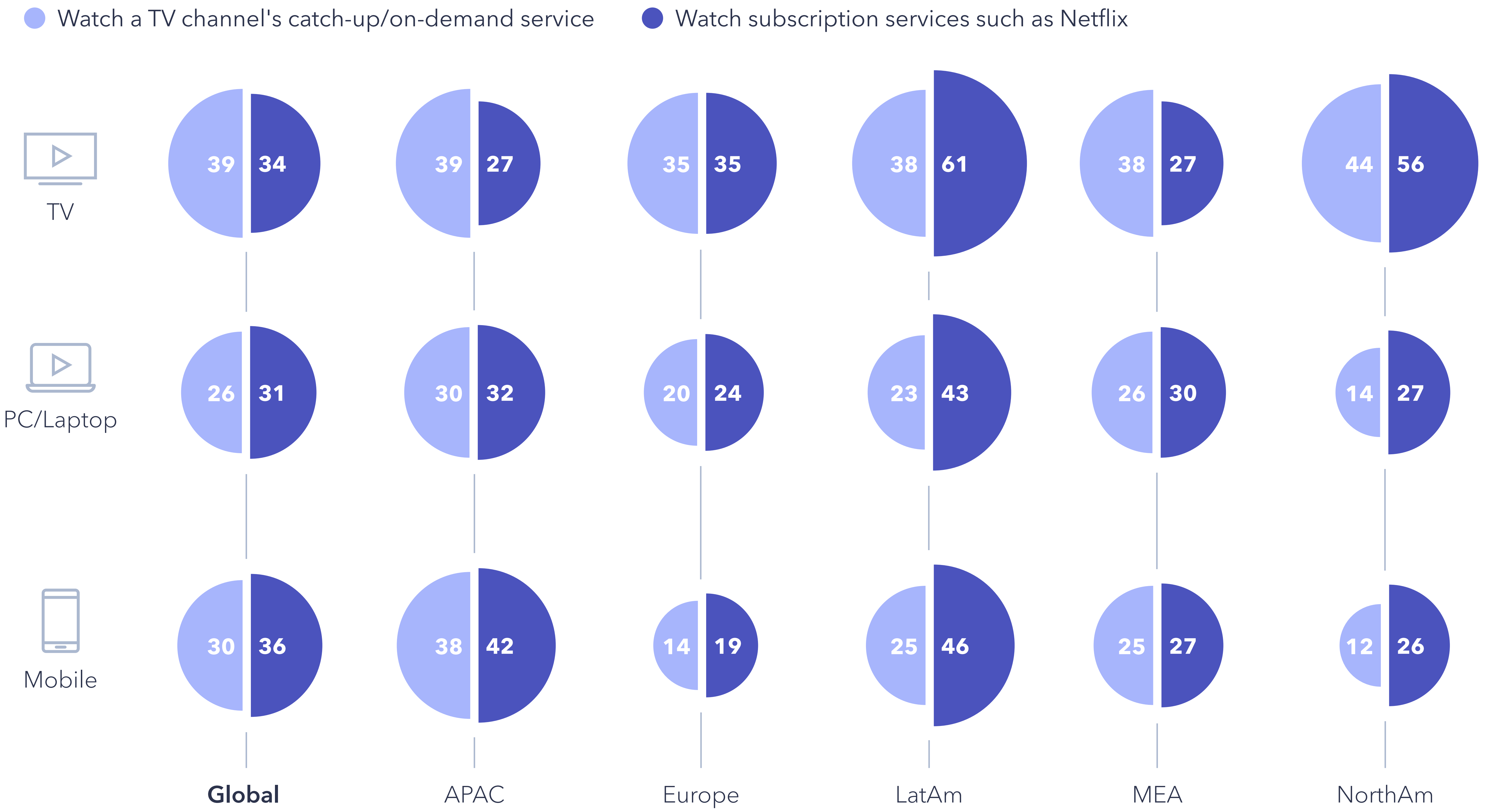
Given today's device landscape shows the switch to mobile is firmly evident across all online activities we track, it's not surprising to see that this extends to TV behaviors too. While for watching any type of TV, the most popular device is still standard television sets (86% say this), mobiles have taken the second spot (66%) after overtaking PC/laptops in early 2019, where watching TV was equal at 62%. **When it comes to watching subscription services, however, mobiles are now more commonly used than PCs/laptops and TVs with over 1 in 3 watching them in this manner.**

We previously noted in our online activities section that PC/laptop usage is still prominent in regions where these devices were introduced earlier, with the same regions displaying that sentiment regarding TV behaviors. **Europe and North America still use large-screen devices over mobiles when watching catch-up TV or subscription services but, interestingly, MEA – a firmly mobile-first region – are using PC/laptops for these activities more than mobile.**

This is particularly prominent in South Africa, where over 42% of internet users are watching subscription services on PC/laptops against 28% on mobile – catch-up TV is also higher on PC/laptops at 31% to mobiles' 22%. A possible explanation lies in the MEA's **expensive** mobile data plans, meaning that viewing online TV on-the-go here is less favorable than other regions.

ONLINE TV BEHAVIORS BY DEVICE

% of internet users who watched online TV via the following devices in the last month

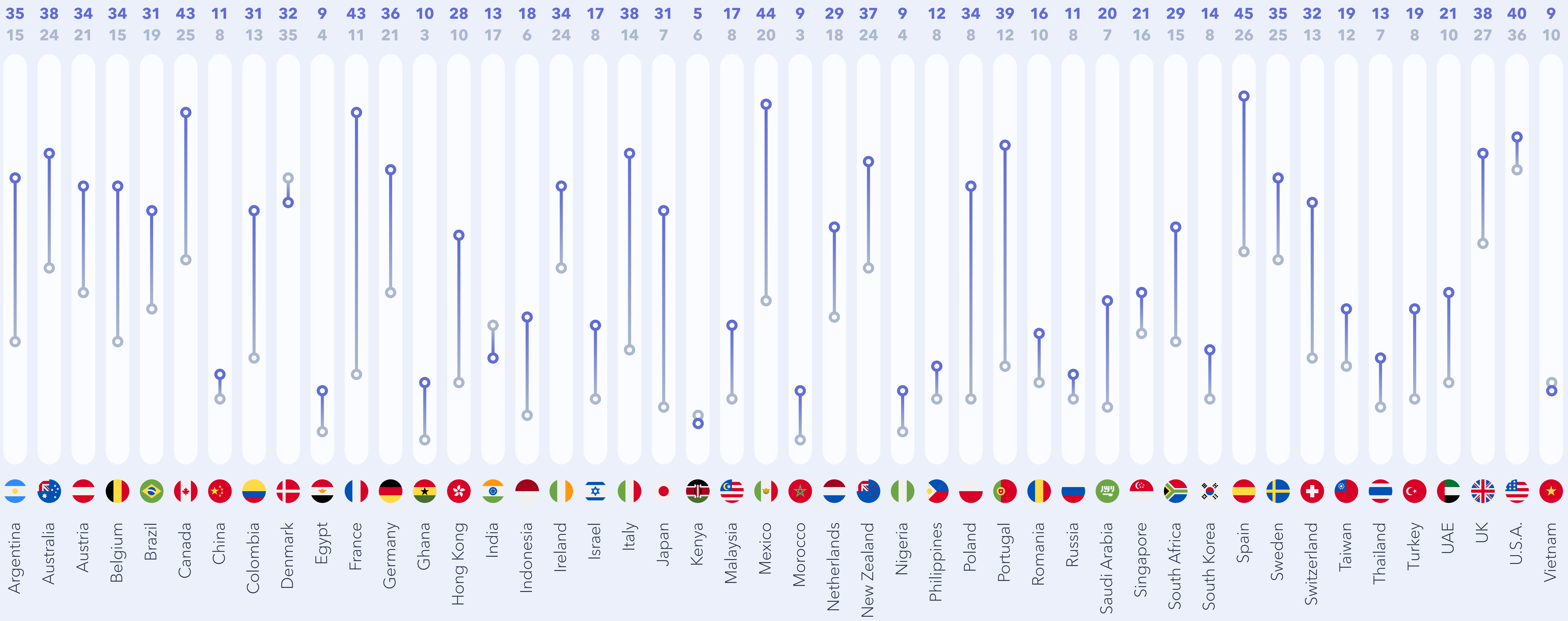


Question: In the past month, which devices have you used to do the following? (Watch a TV channel's catch-up/on-demand service, Watch subscription services such as Netflix) **Source:** GlobalWebIndex Q4 2019 **Base:** 142,017 internet users aged 16-64

Market insights

ENTERTAINMENT DEVICE OWNERSHIP BY MARKET | % of internet users who own the following devices

Games console
TV streaming stick/device



Question: Which of the following devices do you own?
Source: GlobalWebIndex Q4 2019 **Base:** 173,859 internet users aged 16-64

Notes on methodology

All figures in this report are drawn from **GlobalWebIndex's online research among internet users aged 16-64**. Please note that we only interview respondents aged 16-64 and our figures are representative of the online populations of each market, not its total population.

OUR RESEARCH

Each year, GlobalWebIndex interviews over 688,000 internet users aged 16-64 across 46 markets. Respondents complete an **online questionnaire** that asks them a wide range of questions about their lives, lifestyles and digital behaviors. **We source these respondents in partnership with a number of industry-leading panel providers.** Each respondent who takes a GlobalWebIndex survey is assigned a unique and persistent identifier regardless of the site/panel to which they belong and **no respondent can participate in our survey more than once a year** (with the exception of internet users in Egypt, Saudi Arabia and the UAE, where respondents are allowed to complete the survey at 6-month intervals).

OUR QUOTAS

To ensure that **our research is reflective of the online population in each market**, we set appropriate **quotas on age, gender and education** – meaning that we interview representative numbers of men vs women, of 16-24s, 25-34s, 35-44s, 45-54s and 55-64s, and of people with secondary vs tertiary education.

To do this, we conduct research across a range of international and national sources, including the World Bank, the ITU, the International Labour Organization, the CIA Factbook, Eurostat, the US Bureau of Labor Statistics as well as a range of national statistics sources, government departments and other credible and robust third-party sources.

This research is also used to calculate the 'weight' of each respondent; that is, approximately how many people (of the same gender, age and educational attainment) are represented by their responses.

GLOBALWEBINDEX SAMPLE SIZE BY MARKET

This report draws insights from GlobalWebIndex's Q4 2019 wave of research across 46 countries, with a global sample of 173,859 respondents

Argentina	1,546	Morocco	996
Australia	4,041	Netherlands	1,280
Austria	1,275	New Zealand	1,264
Belgium	1,268	Nigeria	1,037
Brazil	5,635	Philippines	3,077
Canada	4,787	Poland	1,833
China	24,334	Portugal	1,251
Colombia	1,320	Romania	1,304
Denmark	1,262	Russia	3,443
Egypt	1,756	Saudi Arabia	1,493
France	5,013	Singapore	2,763
Germany	5,033	South Africa	1,552
Ghana	951	South Korea	1,275
Hong Kong	1,823	Spain	5,091
India	13,047	Sweden	1,263
Indonesia	5,079	Switzerland	1,281
Ireland	1,277	Taiwan	2,286
Israel	1,314	Thailand	3,824
Italy	5,145	Turkey	2,029
Japan	3,292	UAE	1,733
Kenya	1,043	UK	10,090
Malaysia	1,542	U.S.A.	25,040
Mexico	4,351	Vietnam	2,520

Notes on methodology

MOBILE SURVEY RESPONDENTS

From Q1 2017 on, GlobalWebIndex has offered our Core survey on mobile. This allows us to survey internet users who prefer using a mobile or are mobile-only (who use a mobile to get online but do not use or own any other device). Mobile respondents complete a shorter version of our Core survey, answering 50 questions, all carefully adapted to be compatible with mobile screens.

Please note that the sample sizes presented in the charts throughout this report may differ as some will include both mobile and PC/laptop/tablet respondents and others will include **only** respondents who completed GlobalWebIndex's Core survey via PC/laptop/tablet. For more details on our methodology for mobile surveys and the questions asked to mobile respondents, please download this **document**.

INTERNET PENETRATION RATES: GLOBALWEBINDEX VERSUS ITU FIGURES

As GlobalWebIndex's Core Research is conducted among 16-64 year-olds, we supplement the internet penetration forecasts for a country's total population (reproduced above) with internet penetration forecasts for 16-64s specifically. Forecasts for 16-64s will be higher than our forecasts for total population, since 16-64s are the most likely age groups to be using the internet.

INTERNET PENETRATION RATES ACROSS GLOBALWEBINDEX'S MARKETS

GlobalWebIndex's research focuses exclusively on the internet population and because internet penetration rates can vary significantly between countries (from a high of 90%+ in parts of Europe to lows of c.20% in parts of APAC), the nature of our samples is impacted accordingly.

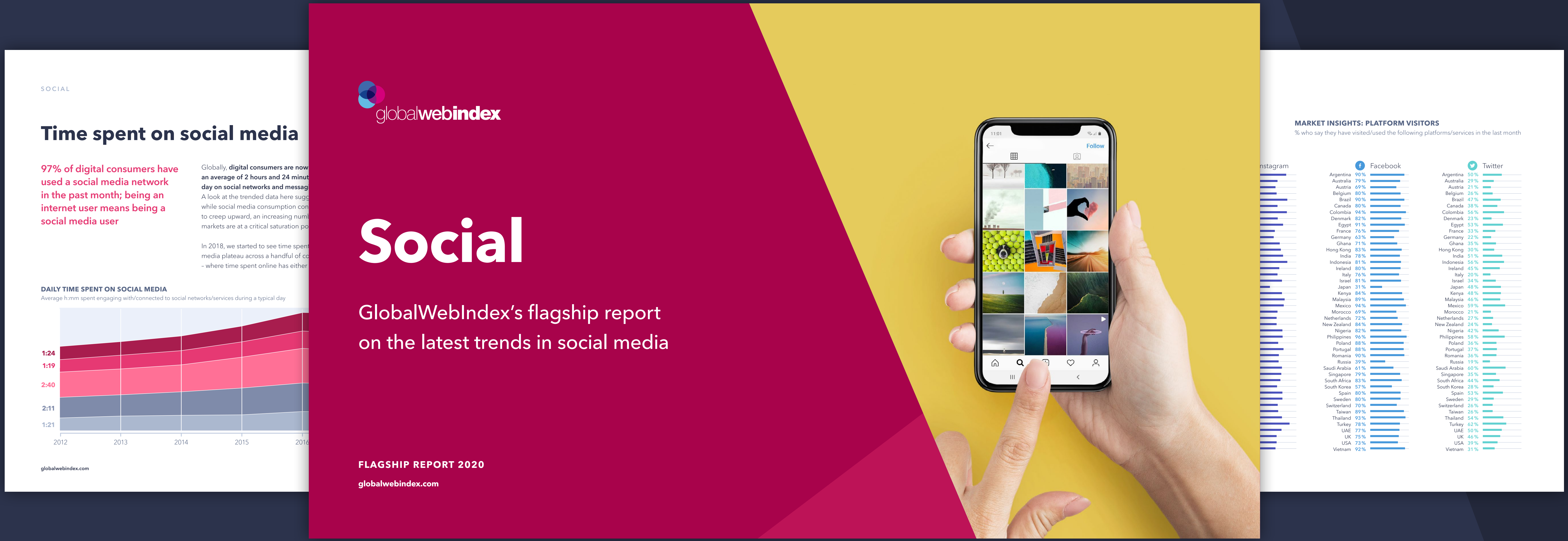
Where a market has a high internet penetration rate, its online population will be relatively similar to its total population and hence we will see good representation across all age, gender and education breaks. This is typically the case across North America, Western Europe and parts of Asia Pacific such as Japan, Australia and New Zealand. Where a market has a medium to low internet penetration, its online population can be very different to its total population; broadly speaking, **the lower the country's overall internet penetration rate, the more likely it is that its internet users will be young, urban, affluent and educated**. This is the case throughout much of LatAm, MEA and Asia Pacific.

This table provides GlobalWebIndex forecasts on internet penetration (defined as the number of internet users per 100 people) in 2019. This forecasted data is based upon the latest internet penetration estimates from the International Telecommunication Union (ITU) for each market that GlobalWebIndex conducts online research in.

INTERNET PENETRATION RATES

GlobalWebIndex's Forecasts for 2019 based on 2017 ITU data

Argentina	78%	Morocco	69%
Australia	88%	Netherlands	93%
Austria	88%	New Zealand	93%
Belgium	89%	Nigeria	36%
Brazil	71%	Philippines	64%
Canada	94%	Poland	79%
China	59%	Portugal	78%
Colombia	66%	Romania	72%
Denmark	97%	Russia	80%
Egypt	54%	Saudi Arabia	83%
France	85%	Singapore	85%
Germany	88%	South Africa	62%
Ghana	48%	South Korea	95%
Hong Kong	91%	Spain	87%
India	42%	Sweden	96%
Indonesia	39%	Switzerland	96%
Ireland	87%	Taiwan	83%
Israel	85%	Thailand	58%
Italy	62%	Turkey	71%
Japan	92%	UAE	95%
Kenya	43%	UK	96%
Malaysia	83%	U.S.A.	80%
Mexico	69%	Vietnam	55%



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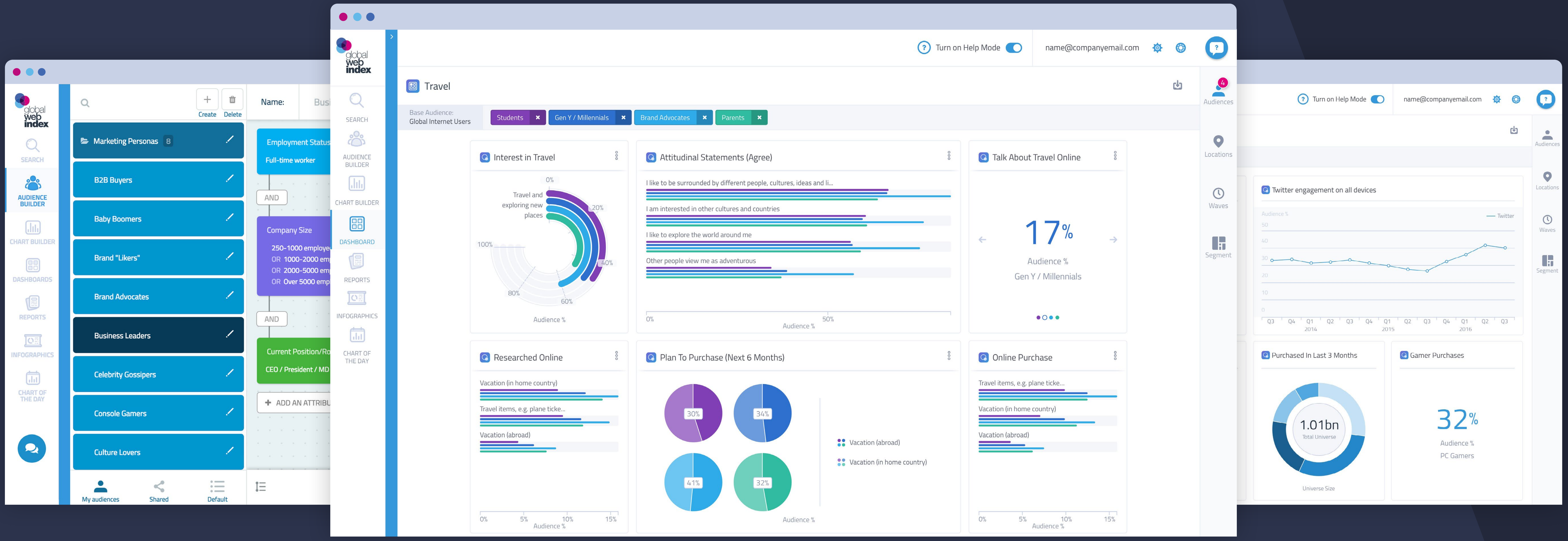

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