Global mobile market report

Key trends
Market sizing & forecasts
Special focus topic: 5G
Top 20 markets

2019

newzoo
1. INTRODUCTION

20.

4. SPECIAL FOCUS TOPIC

35.

ABOUT NEWZOO

32.

5. GLOBAL OVERVIEW

6. RANKINGS

6. KEY GLOBAL TRENDS

10.

24.

641x22}

©2019 Newzoo

GLOBAL MOBILE MARKET REPORT 2019

TABLE OF CONTENTS

FREE 34-PAGE VERSION

FULL 119-PAGE VERSION

$7,500

INCLUDES QUARTERLY UPDATES & DASHBOARD ACCESS

SUBSCRIBE: NEWZOO.COM/GLOBAL-MOBILE-MARKET-REPORT
FOREWORD

SHIFT TO 5G EDGES TOWARD CRITICAL MASS

It gives us great pride to present the 2019 edition of our Global Mobile Market Report. Newzoo is known as the global leader in games analytics, and in this year’s report, we decided to draw from that expertise by focusing on mobile gaming more than in previous years. Mobile is by far the largest segment of the global games market (and will continue to be so beyond 2022), and its size and importance require increasing attention. As part of the mobile gaming ecosystem, we continue our focus on the world’s three billion smartphone users, including how they interact with their mobile devices, content on the platform, and the market at large—the factors that make up the very foundation of the global mobile market.

The year 2019 marks an important inflection point for the mobile business, as the transition toward 5G begins to unfold in markets including the United States, South Korea, and China. The exciting technology leap will eventually result in seamless cloud gaming on mobile. The lower latency that 5G boasts will also allow for a smoother, more comfortable VR/AR experience, improving two major technical barriers to entry for VR and AR alike.

5G will also continue to fuel mobile gaming’s continued march toward competitive and immersive game experiences. On the hardware side, many manufacturers have already joined the fray by launching 5G-ready handsets. Other mobile shareholders are also eager to establish 5G technology leadership, as reflected by the recent partnership between Qualcomm and Tencent. Meanwhile, cloud gaming—powered by 5G—will catalyze hardware innovation even further, requiring greater power efficiency, longer battery life, faster-charging solutions, and gaming peripherals aimed solely at multi-platform gamers. In terms of game content, the market’s increased appetite for complex, core experiences on mobile, as well as titles that blend mechanics from different genres, is ushering in a new dawn for mobile games.

Nevertheless, it is hyperbolic to call 2019 “the year of 5G”. While the year does indeed mark the beginning of the global 5G transition, there are still many obstacles to overcome before its benefits are fully realized and 5G becomes as established as 4G is today. To clarify the topic, this report features an in-depth analysis of 5G’s current trajectory, emphasizing how it will impact the games business. We also analyze six of the overall market’s most exciting trends and present our latest forecasts toward 2022 (for smartphone users, active devices, and app-store revenues) both globally and across 12 key regions.

Ultimately, 5G is at the heart of a new era of mobile gaming and will be a major driving force of change in the years to come. We cannot wait to witness the 5G evolution unfold—as always, keeping our finger on the pulse of the market every step of the way and ensuring you don’t miss a beat.

PETER WARMAN
CEO, NEWZOO
1. INTRODUCTION

SCOPE OF THE REPORT

MOBILE HARDWARE AND MOBILE GAMES

Consumers are at the heart of the games business. Key players in the mobile game value chain deliver game content to end consumers. These key players include publishers/developers, app stores, and mobile devices. In this report, we classify the key players in the value chain into two major markets: the mobile hardware market and the mobile games market. In the mobile hardware market, we look at the smartphone users and active mobile devices; in the mobile games market, we focus on the game revenues generated by direct consumer spending.
KEY TAKEAWAYS

1. Global mobile game revenues will grow to $68.5 billion in 2019, a year-on-year growth of +26.7%. China will be the largest mobile games market, followed by the U.S. and Japan.

2. In 2019, the world’s total number of smartphone users will grow to 3.2 billion, a year-on-year growth of +8.3%. China will have the most smartphone users in 2019 with 851.2 million, followed by India and the U.S.

3. Across the world, there will be 3.8 billion smartphones in active use in 2019, with year-on-year growth of +7.6%.

4. Samsung and Apple are the world’s most popular smartphone brands. Chinese brands, however, continue to be more prominent in China and on a global scale. Oppo, Vivo, Huawei, Xiaomi, and OnePlus are all featured in the global top 10 smartphone brands by active users. There were 236.6 million active tablets by June 2019 across the world. Apple remains the #1 brand globally—by a large margin.
Newzoo provides clients with the most insightful knowledge of the mobile market by combining intelligence from our market forecasts and tracking service. By synthesizing many data points, we provide estimates on a global, regional, and individual country/market level. Below, we describe our approach in more detail to help readers understand what underpins our models, facilitating comparisons with other data sources.

At the highest level, Newzoo focuses on the mobile hardware market and the mobile games market. This report combines data from our market forecasts (smartphone user forecast and mobile game revenue forecast) and tracking service (smartphone and tablet tracking and mobile game genre analysis). These four models are closely linked and form the basis for the most important takeaways in the report. We re-evaluate all our models quarterly, ensuring up-to-date market information for our clients.

**MARKET FORECASTS**

**SMARTPHONE USER FORECAST**

A key part of the report is sizing the smartphone market in terms of active users rather than units shipped. We focus on how many consumers use a smartphone on at least a monthly basis. To calculate this, we have developed a detailed model using several socio-economic development indicators per country. Key indicators are a country’s total population, online population, demographic makeup, and accessibility to wireless networks. Compared to our previous model, we now rely less on GDP per capita inputs per country. We still assume that prosperity and economic growth are key drivers from an increase in smartphone users. However, GDP data can be problematic in that a country can be very wealthy but still have a significant wealth gap among its citizens.

**MOBILE GAME REVENUE FORECAST**

Newzoo’s total mobile game revenue data comes from our predictive global games market model, which uses a top-down approach to market sizing. We incorporate macroeconomic and census data from the IMF and UN, such as household income and GDP per capita. Furthermore, we use transactional and app store revenue data from our data partner Priori Data, our primary consumer research, detailed financial information reported by more than 100 public companies, and third-party research. We also receive valuable input from clients.

We define revenues as the amount the industry generates in consumer spending on mobile games through in-app purchases, subscriptions, or paid installs from apps that are categorized as games by app stores. Our revenue numbers exclude hardware sales, taxes, advertising
revenues earned in and around games, business-to-business services, and the traditionally regulated online gambling and betting industry (e.g., BWIN and William Hill). In terms of countries and regions, we define the market size as the amount companies generate from consumers in that specific territory, as opposed to the amount companies based in a particular territory generate worldwide.

Total mobile game revenues are broken down into revenues from the Apple App Store, Google Play, and an aggregate of all available third-party app stores per region and market. By triangulating data from Priori Data, company financials, and announcements regarding developer payout by Apple and Google, we can split the revenues between Apple’s App Store and Google Play. The remainder of the revenues are generated in third-party app stores from, for example, Amazon Appstore, Samsung Galaxy Store, Garena, and, most importantly, all existing Android app stores in China where Google Play is not available.

**Tracking Service**

**Smartphone and Tablet Tracking**

Newzoo’s Smartphone and Tablet Tracking service is based on a combination of various data sources. We collect and process global monthly device usage data from strategic partners, giving us aggregated data on the number of actively used devices and models around the world, enriched with more detailed information, such as chipset, screen size, or memory size per model. In total, the monthly sample consists of more than 400 million devices. The results are extrapolated to total smartphones and tablets actively used in each country/market and provide key insights into the MAU of brands, models, and spec details (e.g., type of device, battery sizes, screen resolutions, and many more characteristics). We focus on the two dominant mobile operating systems, iOS and Android, and cover 100 countries/markets. Together, these 100 countries/markets cover 98.5% of smartphone users in the world.

**Mobile Game Genre Analysis**

The mobile game genre analysis model provides insights into the performance of different genres across iOS and Google Play based on multiple metrics. The data is gathered through our mobile app analytics partner Priori Data, which tracks more than four million apps across 54 markets. Apple’s App Store and Google Play have slightly different genre classification and tag the genres differently. In order to combine the performance metrics for the two app stores, we created a set of “combined genres” by translating each store-specific genre into a universal genre applicable to both stores. This enables us to combine data on iOS and Google Play. It is important to note that there is overlap between some genres, as a game can be tagged with two or more genres on iOS. Therefore, in some cases, adding up the genres to a total has limitations, as games can be counted multiple times in different genres.
**TERMINOLOGY**

**DEFINITION OF MAIN TERMS**

**Active device.** A device used at least once per month.

**Augmented reality (AR).** A technology that supplements real-life views of users with computer-generated sensory input as images or sounds.

**Cloud gaming.** The ability to play a game on any device without owning the physical hardware required to process it or needing a local copy of the game itself.

**Compound annual growth rate (CAGR).** The constant growth rate over a period of years. In this report, all CAGRs are based on the years 2017–2022.

**Device brand.** The manufacturer or brand name of the device as indicated by the device software.

**Gamer personas.** A new way of segmenting game enthusiasts across playing, viewing, and owning behavior. Gamer personas include the Ultimate Gamer, the All-Round Enthusiast, the Cloud Gamer, the Conventional Player, the Hardware Enthusiast, the Popcorn Gamer, the Backseat Viewer, and the Time Filler. Please refer here to find the definition of each persona.

**Google Play revenues.** Mobile game revenues generated from apps downloaded from Google Play.

**iOS revenues.** Mobile game revenues generated from apps downloaded from Apple’s App Store.

**Mobile game.** A game played on a smartphone or a tablet.

**Mobile game genre.** A classification assigned to a mobile game based on its gameplay interaction. Mobile game genres defined in the report include action, adventure, arcade, board game, card, casino, casual, educational game, family game, music, puzzle, racing, role-playing game, simulation, sports, strategy, trivia game, and word game.

**Mobile game payer.** An individual who spent money on at least one mobile game in the past six months.

**Mobile game player or mobile gamer.** An individual who played at least one mobile game in the past six months.

**Mobile game revenues.** Revenues generated through in-app purchases, subscriptions, or paid installs from apps that are categorized as games by app stores, excluding hardware sales, tax, business-to-business services, advertising, and online gambling and betting revenues.

**Online population.** People within a country or region who have access to the Internet via a computer or mobile device.

**Smartphone.** A device with a screen size under seven inches and an advanced operating system.

**Smartphone devices used.** The total number of smartphone devices used at least once per month by smartphone users.

**Smartphone penetration.** Share of the total population that uses a smartphone.

**Smartphone user.** An individual who possesses his/her own smartphone and uses it at least once per month.

**Tablet.** A device with a screen size of seven inches or larger and an advanced operating system.

**Third-party store revenues.** Mobile game revenues generated from apps downloaded from third-party Android app stores such as Amazon Appstore, Samsung Galaxy Store, Garena, and, most importantly, all existing Android app stores in China where Google Play is not available.

**Virtual reality (VR).** The computer-generated simulation of a three-dimensional image or environment that can be interacted with in a seemingly real or physical way by a person using special electronic equipment, such as a headset with a screen inside or gloves fitted with sensors.
3. KEY GLOBAL TRENDS

TRENDS IN MOBILE HARDWARE

1. CLOUD GAMING: A NEW SILVER LINING FOR MOBILE GAMES?

Mobile will become a key platform for cloud gaming, thanks to 5G and the convenience of smartphones. Today’s mobile-first gamers are increasingly exposed to mid-core, immersive, and competitive game experiences—titles that were previously only available on console and PC. Cloud gaming will make many more of these premium titles available on mobile. It is also likely that the length of play will increase, as play sessions for premium games are typically longer than traditional mobile titles, which focus on short, sporadic bursts of play. While cloud gaming pushes power-intensive CPU/GPU workloads to the cloud rather than the device, lowering power usage during gaming, larger screen sizes, and longer play sessions will simultaneously increase power usage. Ultimately, the widespread adoption of cloud gaming will lead manufacturers to continue investing in longer-lasting batteries and fast-charging solutions.

Larger screen sizes have been a major trend in the global mobile market and are likely here to stay, owing to the slew of cloud gaming services on the horizon. Foldable phones might pique the interest of cloud gamers in particular, as the conversion to tablet-size screens is ideal for gaming. Today, cross-platform games (titles that allow gamers to play the same game against one another on different platforms) are already adapting to the mobile touchscreen play style. Naturally, cloud gaming will give way to even more premium titles on mobile, driving smartphone makers to push further for bigger screens—all to provide players with the best gaming experience on mobile.

Even though many of the device trends are already reflected in the market, the adoption of cloud gaming will accelerate mobile hardware development in these directions.

CLOUD GAMING’S PERIPHERAL OPPORTUNITY ON MOBILE

2. LEADING BRANDS’ BATTLE FOR EMERGING MARKETS

3. BARRIERS TO ENTRY FOR FOLDABLE SCREENS
TRENDS IN MOBILE GAMES

1. A COCKTAIL OF MECHANICS: ASIA’S MOBILE-FIRST MARKET LEADS TO MOBILE GAME EXPERIMENTATION

Driven by its mobile-first culture, Asia has arguably set the standard for mobile game development. More and more, Asia’s mobile gamers are seeking mid-core and core gaming experiences on the platform. This demand has led to more complex, immersive, and competitive games on mobile, with the region’s leading mobile titles featuring gameplay innovation and a mixture of game mechanics—many of which span different genres.

JAPAN LEADS GAME INNOVATION ON MOBILE, WITH CHINA FOLLOWING

Japan is at the heart of the games business and has created some of the biggest IP in gaming: Pokémon, Final Fantasy, Mario, Zelda—the list goes on. Thanks to these strong game development ties, Japan still produces some of gaming’s most innovative concepts, often integrating multiple successful gameplay mechanics into one title. One example can be found in gacha games, which are among Japan’s most popular mobile titles.

Owing to the success of gacha, many of Japan’s biggest titles often include collectible (anime) characters—a feature that can be traced back to games within the RPG and deck-building genres. Similar examples can be found across Japan’s most popular titles. For example, Puzzle & Dragons (launched back in 2012) mainly features RPG and match-3 gameplay; Monster Strike (launched in 2013) includes RPG, physics, and strategy mechanics; Fate/Grand Go (released in 2015) features collectible cards and RPG elements; and Dragon Ball Z: Dokkan Battle (2015) includes collectible cards, puzzle, and action mechanics. Even now, these four titles are among Japan’s biggest games, with each taking a spot on Newzoo’s top five highest-grossing games on iOS. Together, they account for more than 20% of Japan’s iOS game revenues for H1 2019.

China, meanwhile, is following suit. Despite developing into the world’s biggest mobile games market, China still takes many queues from Japan, especially when it comes to entertainment content. Due to this, China is Fate/Grand Go’s top market outside of Japan. It is perhaps unsurprising, then, that the trend of mixing multiple gameplay mechanics is a major development in China too. Still, the market’s developers are dealing with the aftermath of the nine-month licensing freeze from last year. The freeze, coupled with the slower game-approval process, has increased the cost of game development in China significantly. Before the freeze, publishers and developers were freer to experiment with new concepts, and the development cycle was easier to plan. Adding to this pressure, high-quality games and innovative gameplay are vital for appealing to China’s 623 million mobile gamers. These factors have led many of the country’s leading game companies to double down on mixing different gameplay mechanics, with many publishers putting it at the core of their strategic focus.

THE WEST FOLLOWS SUIT

On average, the West’s mobile gamers are less engaged than those in the East. Nevertheless, the mixed-mechanics trend is emerging in the West, especially among its smaller and mid-sized studios, whose titles are typically more open to experimentation than sequel-driven blockbusters. Small Giant Games’ Empires & Puzzles, for instance, is one of the West’s more recent successful mobile titles. The game is a new take for the Western market, learning from Puzzles & Dragons by blending typical mechanics from mobile RPGs with puzzle/match-3 and strategy elements. It ranked among the top 30 grossing iOS games in the U.S. for H1. Other mixed-mechanic success stories in the West include Absolutist’s Hidden Objects: Twilight Town (a hidden-object game with puzzle elements) and Eipix Entertainment’s Farm Slam (a blend of match-3 gameplay and farm-building).

In 2018, Zynga purchased 80% of Small Giant Games’ shares, further confirming that large mobile game publishers are taking note of mobile gamers’ growing appetite for mixed mechanics and immersive titles. While today’s biggest mobile titles in the West largely focus on gameplay from a single genre, we expect to see more innovative and mixed game mechanics becoming the norm, in line with the growing consumer demand.

2. TIME IS MONEY: CHINA’S REWARD PASSES

3. THE PURSUIT OF AR’S KILLER APP CONTINUES

ALL SIX TRENDS COVERED IN THE FULL REPORT.
4. SPECIAL FOCUS TOPIC

THE 5G ARMS RACE RAGES ON

Undeniably, 5G is one of the most exciting developments in mobile technology. In mature markets and many emerging markets, it will become the next standard for mobile network connectivity, offering users far faster speeds and more reliable connections than current options. Last year, and even as recently as the beginning of 2019, much of the mobile business was unconvinced of 5G’s readiness. While it is too hyperbolic to claim that 2019 is the “year of 5G”, it certainly marks the beginning of the market’s transition toward the technology. What’s more, many of the world’s largest mobile markets have already begun to roll out 5G, and a few brands have launched their 5G-ready handsets.

The world’s mobile markets are racing to establish 5G networks. The first countries to deploy the service for commercial use included the U.S., South Korea, China, and the U.K.; nevertheless, coverage is generally limited to a select few cites, or even specific neighborhoods within cities. Other countries will follow suit, with Japan, Germany, and India all on track for a 2020 5G launch. Most countries, however, are aiming for a full national rollout by 2025.

MOBILE 5G HARDWARE

Leading handset makers are all actively involved with 5G smartphones, including Samsung, Huawei, Xiaomi, Vivo, OPPO, and more. Apple is also rumored to launch a 5G iPhone in 2020. All existing 5G devices use Qualcomm’s Snapdragon SoCs, except for Huawei, which designs its own chips based on the ARM architecture. Qualcomm nearly has a monopoly on the high-end smartphone market; it was one of the first companies to bring LTE to market and has been leading the 5G charge.

Apple acquired “the majority” of Intel’s smartphone modem business for $1 billion, hoping to decrease its reliance on Qualcomm modems. Intel’s sale came after the settlement of the long-running Apple-Qualcomm lawsuit. Without Apple as a customer for its mobile modems, Intel was forced to sell the division—potentially a move Apple intended so they could pursue an acquisition. Eventually, this acquisition will let Apple develop its own modems at its own pace, ultimately unlocking integration synergies throughout its product range.

Although Intel decided to leave the 5G modem business, it is still investing heavily in 5G networks, having announced a partnership with Rakuten to develop the first cloud-native mobile network. Qualcomm is moving one step further by partnering with the world’s largest game publisher—Qualcomm and Tencent announced a partnership in July 2019 to optimize Tencent game performance on (forthcoming 5G) Qualcomm phones. Tencent will also release a 5G gaming phone powered by Qualcomm.
CLOUD CONNECTED: HOW WILL 5G IMPACT THE GAMES BUSINESS?

CLOUD GAMING

Even though 5G is still in its infancy and is limited in scope, the technology is already set to affect the games business dramatically. One of 5G’s major use cases is that it allows for a smooth cloud gaming experience on mobile. The year 2019 marks the true dawn of cloud gaming. We have already seen massive players like Microsoft and Google enter the cloud gaming fray by announcing their respective services, Google Stadia and Project xCloud, both of which are launching in the coming months. Likewise, many other stakeholders and big game publishers are gearing up to enter the cloud gaming ecosystem. In May 2019, Sony and Microsoft—traditionally two of the console market’s fiercest competitors—signed a Memorandum of Understanding vowing to work together on cloud gaming solutions. This shows that even these two console veterans are acknowledging the threat posed by Google, whose Stadia platform is challenging the status quo.

While it is true that 4G connections in many markets meet the minimum requirements for cloud gaming (speeds of 10Mbps), 5G is necessary for gamers to play games that are virtually latency-free—a condition that many gamers want and expect; a condition that—until very recently—has made comfortable cloud gaming unachievable. Just as video- and music-streaming were major selling points for consumers upgrading from 2G and 3G to 4G, so too could cloud gaming become 5Gs killer app.

If you are seeking more insights and data into cloud gaming, Newzoo is currently offering a standalone cloud gaming add-on to its 2019 Global Games Market Report. In the add-on report, we dive into subjects ranging from market cap predictions and our take on major services announced, to an impact analysis on the effect cloud gaming will have on various sectors. We examine the current state of the ecosystem, explore potential scenarios, and give our overall outlook on the market. This includes addressing one of the most pressing uncertainties: will cloud gaming fully replace other forms of gaming?

5. GLOBAL OVERVIEW

<table>
<thead>
<tr>
<th>2019</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td>7,672.2M</td>
</tr>
<tr>
<td>Online Population</td>
<td>4,120.7M</td>
</tr>
<tr>
<td>Smartphone Users</td>
<td>3,180.3M</td>
</tr>
<tr>
<td>Mobile Game Revenues</td>
<td>$68.5BN</td>
</tr>
<tr>
<td>Mobile Game Players</td>
<td>2,357.8M</td>
</tr>
<tr>
<td>Mobile Game Payers</td>
<td>885.1M</td>
</tr>
</tbody>
</table>
SMARTPHONE USERS AND ACTIVE DEVICES

In 2019, the global number of smartphone users will total 3.2 billion, a year-on-year growth of +8.3%. China alone will account for more than a quarter of this figure. By 2022, the number of smartphone users worldwide will reach 3.9 billion, a 2017-2022 CAGR of +7.8%. Much of this growth will be driven by emerging regions including the Middle East and Africa, Latin America, and Southeast Asia.

GLOBAL SMARTPHONE USERS PER REGION | 2019

MOBILE GAME REVENUE BREAKDOWN

Global app store revenues from games are set to increase from $56.3 billion in 2017 to $68.5 billion in 2019. Back in 2017, iOS accounted for more than half of these revenues. However, its revenue share relative to other app stores has been shrinking and will continue to do so over time. The emergence of competitive and immersive game experiences on mobile, including battle royale games, MOBAs, and—more recently—Auto Chess games, are helping to drive the market, as are in-app purchases from the giants of mobile gaming.

In 2019, the Google Play Store will account for more than a third of the global revenues. Game revenues from third-party stores will exhibit even more revenue growth towards 2022, which will be driven mainly by China, where Google Play is not available.
MOST POPULAR SMARTPHONE & TABLET BRANDS

There will be 3.8 billion smartphones in active use globally in 2019. As of June 2019, Samsung was the #1 brand, boasting 898.5 million active smartphones (more than a quarter of the global total). Apple was just behind Samsung, boasting 832.9 million active smartphones and a market share of 23.6%. Despite Apple being #2 overall, the world’s five most popular smartphones in June 2019 were all Apple devices. Samsung, however, offers a range of low-budget smartphones that fare well in emerging markets like India—a strong contributing factor to the company’s #1 spot. Chinese companies took #3 (Oppo), #4 (Huawei), and #5 (Vivo). Together, these three made up 31.5% of all active smartphones.

For tablets, Apple was the #1 brand globally by a large margin. With its 160.0 million active tablets, the company took a market share of 67.6%. Apple was the #1 tablet brand in every region except Middle East & Africa, where Samsung’s market share was 10% higher. Globally, Samsung was the #2 brand, with 15.3% of all active tablets. Huawei was #3 with a market share of 5.8%.

TOP 5 SMARTPHONE BRANDS BY MONTHLY ACTIVE DEVICES
IOS & ANDROID | GLOBAL | JUNE 2019

<table>
<thead>
<tr>
<th>RANK</th>
<th>BRAND</th>
<th>ACTIVE DEVICES</th>
<th>MARKET SHARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SAMSUNG</td>
<td>898.5M</td>
<td>25.4%</td>
</tr>
<tr>
<td>2</td>
<td>APPLE</td>
<td>832.9M</td>
<td>23.6%</td>
</tr>
<tr>
<td>3</td>
<td>OPPO</td>
<td>427.9M</td>
<td>12.1%</td>
</tr>
<tr>
<td>4</td>
<td>HUAWEI</td>
<td>384.0M</td>
<td>10.9%</td>
</tr>
<tr>
<td>5</td>
<td>VIVO</td>
<td>300.8M</td>
<td>8.5%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>3,533.4M</td>
<td></td>
</tr>
</tbody>
</table>

TOP 5 TABLET BRANDS BY MONTHLY ACTIVE DEVICES
IOS & ANDROID | GLOBAL | JUNE 2019

<table>
<thead>
<tr>
<th>RANK</th>
<th>BRAND</th>
<th>ACTIVE DEVICES</th>
<th>MARKET SHARE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>APPLE</td>
<td>160.0M</td>
<td>67.6%</td>
</tr>
<tr>
<td>2</td>
<td>SAMSUNG</td>
<td>36.3M</td>
<td>15.3%</td>
</tr>
<tr>
<td>3</td>
<td>HUAWEI</td>
<td>13.8M</td>
<td>5.8%</td>
</tr>
<tr>
<td>4</td>
<td>LENOVO</td>
<td>9.6M</td>
<td>4.1%</td>
</tr>
<tr>
<td>5</td>
<td>AMAZON</td>
<td>6.4M</td>
<td>2.7%</td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td>236.6M</td>
<td></td>
</tr>
</tbody>
</table>

NEWZOO'S GAMER SEGMENTATION™

Consumer engagement with games has changed dramatically over the past 10 years. Personas like ‘casual gamers’ and ‘hardcore gamers’ now tell us very little, only accounting for a fraction of gamers. This is why we spent the past year pouring our consumer insights experience and games market expertise into developing Newzoo’s Gamer Segmentation™. The result is a selection of personas that encompasses all aspects of consumer engagement with games: playing, viewing, and owning. In this section, we use these personas to zoom in on male and female mobile-first gamers who spend most of their time gaming on mobile every week.

For both women and men, the Time Filler persona has the highest share of mobile-first gamers: 50% for women and 30% for men. Time Fillers are consumers who play games to pass the time; for example, by playing a game of Candy Crush or Clash of Clans while commuting. They rarely spend more than a few hours gaming each week and don’t see gaming as a major part of their lives. The Cloud Gamer is the second-most common persona for both genders. These gamers enjoy high-quality game experiences, preferably free-to-play or discounted titles, but only spend on hardware when necessary. Around 16% of female and 21% of male mobile-first gamers are Cloud Gamers, meaning the imminent influx of cloud gaming platforms on mobile—which do not require the consumer to buy expensive hardware—could be a game-changer for this persona group. The Conventional Player is the lowest-indexing persona for both men and women. These players typically gravitate more toward console and PC games.

PERSONAS BY GENDER
AMONG MOBILE-FIRST GAMERS | 2019

<table>
<thead>
<tr>
<th>MALE</th>
<th>FEMALE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ultimate Gamer</td>
<td>12%</td>
</tr>
<tr>
<td>All-Round Enthusiast</td>
<td>7%</td>
</tr>
<tr>
<td>Cloud Gamer</td>
<td>21%</td>
</tr>
<tr>
<td>Conventional Player</td>
<td>4%</td>
</tr>
<tr>
<td>Hardware Enthusiast</td>
<td>4%</td>
</tr>
<tr>
<td>Popcorn Gamer</td>
<td>16%</td>
</tr>
<tr>
<td>Time Filler</td>
<td>30%</td>
</tr>
</tbody>
</table>
FEATURED REGIONS

All data sources are grouped into 12 regions: North America, Latin America, Western Europe, Eastern Europe, Middle East and Africa, China, Japan, South Korea, India, Southeast Asia, Oceania, and Rest of Asia.
6. RANKINGS

TOP 20 COUNTRIES/MARKETS 2019
BY SMARTPHONE USERS

The table below shows the 20 countries/markets worldwide with the highest number of active smartphone users. China has the most active smartphone users by far, boasting 851.2 million by the end of 2019. It will remain the #1 market by smartphone users toward 2022—there will be 995.9 million active users in China by 2022. India takes the #2 spot with 345.9 million smartphone users in 2019, followed by the U.S. with 260.2 million.

<table>
<thead>
<tr>
<th>COUNTRY/MARKET</th>
<th>GLOBAL RANK</th>
<th>POPULATION</th>
<th>SMARTPHONE USERS</th>
<th>SMARTPHONE PENETRATION*</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHINA</td>
<td>1</td>
<td>1,420.1M</td>
<td>851.2M</td>
<td>59.9%</td>
</tr>
<tr>
<td>INDIA</td>
<td>2</td>
<td>1,306.7M</td>
<td>345.9M</td>
<td>26.5%</td>
</tr>
<tr>
<td>UNITED STATES</td>
<td>3</td>
<td>329.1M</td>
<td>260.2M</td>
<td>78.3%</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>4</td>
<td>212.4M</td>
<td>96.9M</td>
<td>45.6%</td>
</tr>
<tr>
<td>RUSSIA</td>
<td>5</td>
<td>143.9M</td>
<td>95.4M</td>
<td>66.3%</td>
</tr>
<tr>
<td>INDIANA</td>
<td>6</td>
<td>289.3M</td>
<td>80.8M</td>
<td>27.7%</td>
</tr>
<tr>
<td>JAPAN</td>
<td>7</td>
<td>126.4M</td>
<td>72.8M</td>
<td>57.2%</td>
</tr>
<tr>
<td>BRAZIL</td>
<td>8</td>
<td>102.2M</td>
<td>80.9M</td>
<td>78.5%</td>
</tr>
<tr>
<td>GERMANY</td>
<td>9</td>
<td>82.0M</td>
<td>65.9M</td>
<td>79.9%</td>
</tr>
<tr>
<td>UNITED KINGDOM</td>
<td>10</td>
<td>67.4M</td>
<td>60.9M</td>
<td>82.9%</td>
</tr>
<tr>
<td>FRANCE</td>
<td>11</td>
<td>66.3M</td>
<td>60.9M</td>
<td>91.9%</td>
</tr>
<tr>
<td>POLAND</td>
<td>12</td>
<td>36.5M</td>
<td>27.6M</td>
<td>54.4%</td>
</tr>
<tr>
<td>TURKEY</td>
<td>13</td>
<td>83.7M</td>
<td>61.6M</td>
<td>73.7%</td>
</tr>
<tr>
<td>VIETNAM</td>
<td>14</td>
<td>37.3M</td>
<td>42.7M</td>
<td>54.3%</td>
</tr>
<tr>
<td>PHILIPPINES</td>
<td>15</td>
<td>104.9M</td>
<td>60.9M</td>
<td>58.0%</td>
</tr>
<tr>
<td>SOUTH KOREA</td>
<td>16</td>
<td>51.3M</td>
<td>36.1M</td>
<td>70.4%</td>
</tr>
<tr>
<td>ITALY</td>
<td>17</td>
<td>59.4M</td>
<td>36.1M</td>
<td>61.0%</td>
</tr>
<tr>
<td>PAKISTAN</td>
<td>18</td>
<td>204.5M</td>
<td>32.5M</td>
<td>15.9%</td>
</tr>
<tr>
<td>SPAIN</td>
<td>19</td>
<td>45.1M</td>
<td>33.5M</td>
<td>74.2%</td>
</tr>
<tr>
<td>BANGLADESH</td>
<td>20</td>
<td>168.1M</td>
<td>31.0M</td>
<td>18.5%</td>
</tr>
</tbody>
</table>

*Share of the total population that uses a smartphone.
GET THE REAL DEAL

THE FULL GLOBAL MOBILE MARKET REPORT

REPORT CONTENT SUMMARY

• METHODOLOGY & TERMINOLOGY
• KEY GLOBAL TRENDS
• SPECIAL FOCUS TOPIC
• THE GLOBAL MOBILE MARKET
• MOBILE MARKET PER REGION
• RANKINGS

REGION SCOPE

• NORTH AMERICA
• LATIN AMERICA
• WESTERN EUROPE
• EASTERN EUROPE
• MIDDLE-EAST & AFRICA
• CHINA
• JAPAN
• SOUTH KOREA
• INDIA
• SOUTHEAST ASIA
• OCEANIA
• REST OF ASIA

ANALYSIS SUPPORT

TIANYI GU
Senior Market Analyst

ORLA MEEHAN
Research Analyst

BENTE DE HEIJ
Client Success Director

SUBSCRIBE TODAY

SUBSCRIBE DIRECTLY:
newzoo.com/global-mobile-market-report
OR GET IN TOUCH:
questions@newzoo.com

6000 EUR
7500 USD
PER YEAR

NEWZOO CLIENT PORTAL

OUR ONE-STOP SHOP
Access to all our reports, dashboards, and custom analysis decks that we create for you in one central place.

QUESTIONS?
Tianyi Gu
Senior Market Analyst
tianyi@newzoo.com

GLOBAL ESPORTS & GAME MARKET REPORTS

NEWZOO CLIENT PORTAL

CONSUMER INSIGHTS
Understand your most valued consumers’ drivers, attitudes, and behavior. Segment your audience across 30 countries/markets using more than 200 variables.

TRACKING DATA
Metrics that come straight from the source. Track your market, optimize marketing, and product development while keeping an eye out for blue-ocean opportunities.

MARKET FORECASTS
Our landmark reports. In-depth market forecasts and trends ensure you never miss an opportunity. Includes quarterly updates and access to our forecast dashboards.

EXPLORE
• Trends
• Industries
• Markets
• Forecasts

CREATE
• Strategies
• Business plans
• New products
• Target groups

OPTIMIZE
• Marketing
• Investments
• Product dev
• Local efforts

Newzoo is the leading global provider of games and esports analytics. We help some of the world’s largest entertainment, technology, and media companies target their audience, track competitors, spot opportunities, and make strategic and financial decisions.

OUR USE CASES (SOLUTIONS)