



The Growth of Gamers in Emerging Markets

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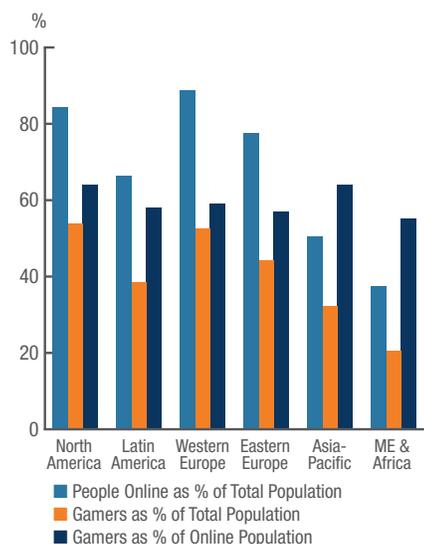
Gaming and Emerging Markets: Ready, Set, Go!

Technological breakthroughs over the past several decades have opened the door for smaller, more powerful, and less expensive circuit boards, which, in turn, have allowed programmers to disrupt entertainment as we know it. Gaming, which began as a collection of experiments in cutting edge college labs in the 1950's made way for the dimly lit arcade era in the 1970s, until home consoles arrived in the 1980s and 1990s. Since then, with the ubiquitous presence of mobile phones, gaming has finally arrived on the world stage as consumers in emerging markets (EM) joined the competition.

We estimate that more people played video games in 2019 than those who played any other sport with the exception of football (soccer). Furthermore, gamers are also watching other popular esports tournaments in growing numbers. For example, more than 44 million people streamed the 2019 League of Legends World Championship, which is more viewers than the 2019 Grammy's and College Football Playoff National Championship combined.¹ The industry

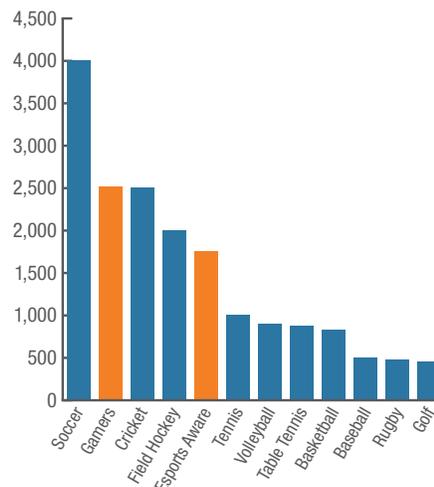
now boasts more than 2.5 billion gamers globally and is estimated to spend a total of \$152 billion on games in 2019 alone (a 9.6% annual growth rate).² Other popular entertainment platforms, such as Netflix, are jumping on gaming's explosive growth by producing content based on gaming driven storylines. We see gaming as a structural shift in entertainment, with various untapped revenue verticals set for deeper monetization.

Gamers as a Percentage of the Population



Source: Newzoo Global Games Market Report 2019, Mirae Asset.

Estimated Global Following 2018 (in millions)



Source: World Atlas 2018, Newzoo Global Games Market Report 2019.

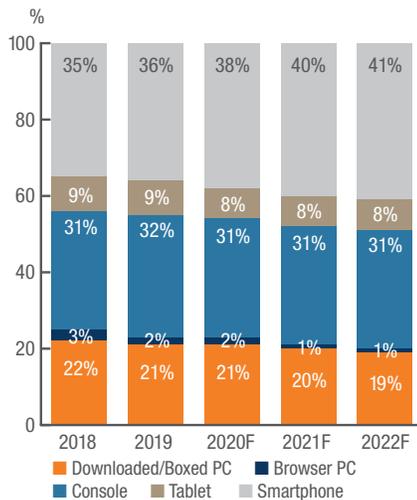
¹Business Insider, 2019; TV By the Numbers 2019

²Newzoo Global Games Market Report 2019

Gaming in the Emerging Markets

Increases in urbanization and improvements in IT infrastructure are natural structural openings for gaming growth in EM. That said, we believe that mobility represents the key driver for gaming growth. As connectivity grows and improves in Latin America, Emerging Europe, the Middle East & Africa, and Asia-Pacific, new and traditional industries are experiencing rapid growth. With smartphone penetration rates climbing across EM, mobile gaming (i.e. smartphone and tablet devices) became the largest gaming segment in 2019, reaching 45% of the global games market (\$68.5 billion), an increase of 10.2% from 2018).

Segment Breakdown of the Global Game Market

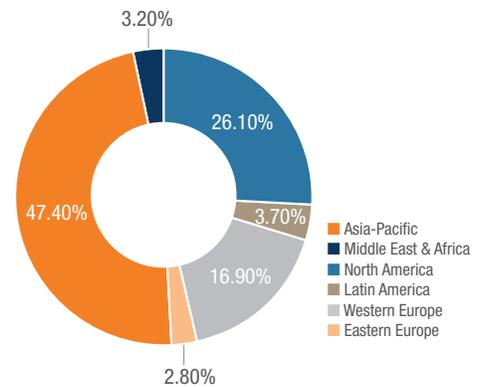


Source: Newzoo Global Games Market Report 2019. F=Forecast. Forecast numbers are projections and not guarantees.

Consumer spending on games is expected to grow to \$196 billion by 2022 (a 9% compounded annual growth rate), and mobile gaming will grow to represent almost half of the entire games market by 2022. As developed market economic growth slows, EM will likely become the primary growth driver as emerging economies continue to experience increasing levels of mobile penetration and internet connectivity. Games made for Facebook, for example, are built using HTML5, which prevents the need to download anything to play, and therefore frees users from device (i.e. console) and network constraints. This should provide greater opportunity for growth in EM, where infrastructure remains limited.

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Share of Global Revenues



Source: Newzoo Global Games Market Report 2019.

The Asia-Pacific region has been the main driver for gaming revenue growth over the past several years, but due to the recent temporary licensing freeze in China, Latin America is now the fastest growing gaming market in the world. The combination of improving infrastructure and hardware, and increasing appetite for games and esports will help Latin America reach an estimated 10.4% compounded annual growth rate between 2018-2022.³ It is also worth noting that in China, more than 65% of consumers aged 18-29 play video games compared to roughly 45% in both Brazil and India, highlighting further scope for penetration and growth outside of Asia.⁴ While younger users still make up the bulk of gamers, as they age we expect a much higher proportion of the global population to play video games. This is a significant structural change and should lead to increased average spend across markets, and higher lifetime customer value to developers, who will be incentivized to create long-lasting franchises that can capture gamers' imaginations.

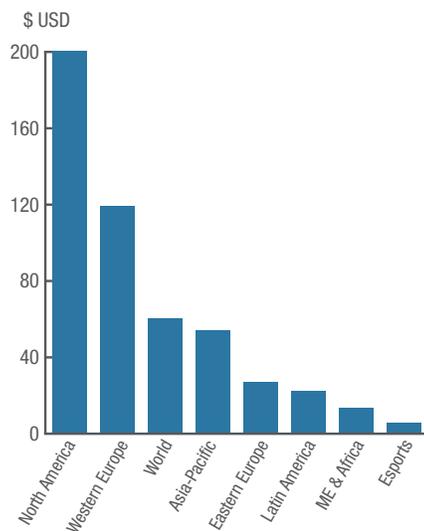
³Newzoo Global Games Market Report 2019

⁴Credit Suisse Emerging Consumer Survey 2018

Mobile gaming helped increase the market size by making gaming more accessible across the world without needing cost prohibitive consoles. Cloud gaming will be the next step in the gaming evolution where people can compete cross-platform and across any geography.

To put things in context, the North American gaming market is expected to generate \$39.6 billion in 2019, and represents around 26% of global gaming revenues from about 198 million total gamers.⁵ This translates to an average revenue of roughly \$200 per gamer, compared to only \$22 per gamer in Latin America, \$13 per gamer in the Middle East & Africa, \$27 per gamer in Eastern Europe and \$54 per gamer in Asia Pacific, pointing to a significant growth opportunity within EM.

Average Revenue Per Gamer



Source: Newzoo Global Games Market Report 2019, Mirae Asset. Based on 2019 data.

New Revenue Opportunities

The emergence of new types of gamers allows for new possibilities for brands and companies to connect with gamers. Today, gamers don't just spend money on consoles or content, but also on other verticals such as live events, professional athletes, and other experiences, which pushes gaming fully into the entertainment business. With improvements in cloud gaming (i.e. players can play a game anywhere, anytime, on any platform) we anticipate companies to move towards subscription based models for content. Mobile gaming helped increase the market size by making gaming more accessible across the world without needing cost prohibitive consoles. Cloud gaming will be the next step in the gaming evolution where people can compete cross-platform and across any geography. As the new cohort of younger gamers matures (i.e. Generation Z and Millennials), we anticipate penetration to continue to grow as more consumers are intrinsically comfortable using technology from a young age. Whether it is casual gaming on a mobile phone on the commute home to play Candy Crush, or playing on the latest hand-held gaming console such as the Nintendo Switch, gaming will likely remain a core part of a consumer's "diet" throughout their life.

COMPANY SNAPSHOT: TENCENT

Unlike traditional video game companies that have built their own franchises/characters from the ground up over many years, Tencent invests in or buys major game makers. They own Riot Games (a LA based team that makes League of Legends) and have a 40% stake in Epic Games (a North Carolina based team that makes Fortnite). In order to access China's massive gaming market, the government requires a local partner. For Activision and Nintendo, that partner is Tencent. In short, to access the Chinese gaming market, you need to work with Tencent.

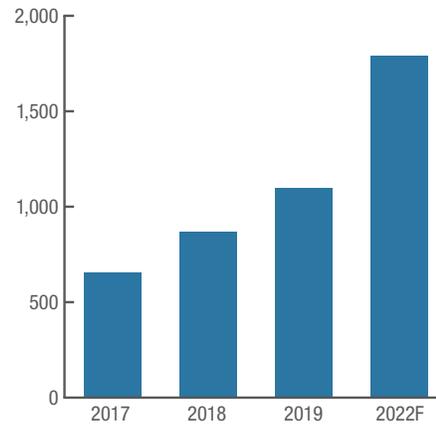
⁵Newzoo Gaming 2019

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Esports

Esport revenues are expected to climb 26.7% year-over-year to \$1.1 billion in 2019, with China leading demand.⁶ 82% of esports revenues come from brand investments, which include media rights, advertising, and sponsorship. Esports audiences also continue to grow rapidly, with 15% expected growth for 2019 to 454 million total esports followers, driven by higher spending esports enthusiasts. Average revenue per enthusiast is also up 9% year-over-year for 2019. Industry growth has been driven by an increase in the number of local esports competitions, with local teams and star players in some cases building training centers where fans can see gaming pros train and compete. Mobile gaming, which has increased in popularity as a result of battle royale (online multiplayer with elements of survival/last man standing) and MOBA (multiplayer online battle arena) genres, provide another tailwind. In China, which is the largest driver behind the growth in esports, six cities are competing to become China's primary esports center, with each city offering different benefits and incentives for organizations to build gaming related infrastructure in their respective city (e.g. office, stadium, hotel, theme park, business center). Tencent, for example, signed an agreement with the Xi'an government, which focuses on tournaments, education and property.

Total Esports Revenues (in millions)



Source: Newzoo 2019 Esports Report. F=Forecast. Forecast numbers are projections and not guarantees.

Esports Audience Growth (in millions)



Source: Newzoo 2019 Esports Report. F=Forecast. Forecast numbers are projections and not guarantees.

COMPANY SNAPSHOT: CD PROJEKT RED

A Polish video game studio best known for their The Witcher series of games which plans to release a second AAA rated video game series next year – Cyberpunk2077. The company also operates its own digital distribution platform, GoG.com. Unlike other video game studios, CD Projekt does not need to release a major new title every year, which has given management additional creative freedom in developing their games. Coupled with their philosophy that believes DRM (digital rights management) is ineffective against software piracy, and that free downloadable content should be an industry standard, CD Projekt Red has been able to garner a cult-like following of avid gamers. Their approach has been successful so far, as shown by the 1,480% share price increase since 2015⁷ and the numerous Game and Studio of the Year awards they have won.

⁶Newzoo 2019 Esports Report

⁷Bloomberg as of 12/31/2014 – 12/31/2019

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