

Pangle x Newzoo:
Mobile Game Genre Report

Puzzle Games

Comparing & Contrasting
Eastern and Western Markets

Pangle x Newzoo: Mobile Game Genre Report

Introduction

Mobile games are an important part of people's lives. In 2021, **94% of gamers play on a mobile device**, making mobile the biggest gaming platform (by number of players) across the East and West, thanks to the platform's accessibility.

What's more, mobile is also the largest gaming segment by revenues. Newzoo forecasts that the mobile gaming market will generate **\$90.7 billion in consumer spending in 2021** (excluding ad revenues), growing +4.4% year on year. Nearly **64%** of the \$90.7 billion will be generated by the **Asia-Pacific** regions. In fact, mobile is the **#1 gaming platform by revenues** across all key Asian markets. In the West, although console is bigger than mobile in terms of revenues, mobile is the **fastest-growing gaming platform** toward 2024.

To better understand the differences between the Western and Eastern markets in terms of market dynamics, consumer behaviors, and opportunities, Pangle and Newzoo jointly develop a series of mobile game genre reports,

focusing on **Puzzle, Role-Playing, and Arcade**. Mobile game genres have evolved rapidly in the past decade. From casual to core, many new genres have emerged to meet the diverse appetite of mobile gamers across the globe. As a result, new marketing and monetization mechanics have been created to maximize the lifetime values (LTV) of games, such as mobile ad techs and Battle Pass.

In these reports, we look at the top-performing puzzle, role-playing, and arcade titles in **the U.S., the U.K., Japan, and South Korea** and deep dive into the key differences of these titles in terms of **game design, user acquisition, retention, and monetization** strategies in the West vs. in the East. We compare the **demographics** and **consumer preferences** of these genre players in the four key markets. We hope that Pangle and Newzoo's joint genre reports provide insightful information for game developers and publishers to understand the key differences in the Western and Eastern markets and to achieve global success.

51.6%

of global games market revenues will come from mobile in 2021.



Puzzle



Role-Playing



Arcade

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Key Takeaways

Puzzle games in the West vs. in the East

1

Puzzle games are popular across the globe. They generate more revenues in the West than in the East.

The U.S. is the world's biggest mobile puzzle games market in terms of revenues, accounting for **29%** of the global total in 2020. Japan and China are the second- and third-largest markets by revenues, respectively.

2

Classic Match-3 games are the top-performing puzzle subgenre, in the West and East alike.

Many puzzle games are embracing the **meta concept** with narrative and decorating being the most popular. Nevertheless, **classic Match-3** games still lead the top-grossing charts, in both the West and East.

3

More and more puzzle games feature a hybrid monetization, especially in the West.

The monetization mixture of **IAP**, **IAA**, and **subscription** has become increasingly common in the puzzle space. However, compared to popular puzzle games in the West, **Japanese** titles focus more on **IAP**. They usually feature a deeper economy, thanks to the focus on character collection and progression and gacha.



1. Overview of Puzzle Games

Revenue and key market developments



Intro to the Puzzle Genre on Mobile

Its history, development, and recent trends

At the early stage of video games in the 1980s, most classic games were puzzle games. The core puzzle gameplay was to **challenge players' problem-solving skills**. For example, players in Atari's guessing game **Hangman** enjoyed the process of trial-and-error and world completion. The tile-matching game **Tetris** tests spatial recognition ability. Many of these classic puzzle gameplays still influence today's games.

The first **Match-3** game is recognized as **Shariki**, a 1994 ball-matching game, but the genre gained mainstream attention with the arrival of **Bejeweled**, the 2001 PopCap Games version for PC browsers.

With the rising popularity of **smartphones** in the late 2000s, puzzle games were among the first genres that migrated to the mobile platform. The development of smartphones broke the hardware boundaries to enable different game mechanics such as **physics-based elements**. One of the most well-known examples is **Angry Birds** (2009). In 2012, King launched **Candy**

Crush Saga, a F2P Match-3 game that is remarkable throughout mobile game history. It has now spun off into multiple franchise installments and inspired a generation of other variants. Candy Crush Saga remains one of the most popular titles in the West. Later, more Match-3 games were introduced featuring various **meta elements**. **Gardenscapes** (2016) and **Homescapes** (2017) by Playrix combine Match-3 with decoration elements. Inspired by the success of the **Puzzle & Decorate** subgenre, **Project Makeover** (2020) by Magic Tavern further elaborates the game's storyline with fashion themes.

Other popular Match-3 variants include **Collapsing/Blasting**, popularized by games such as **Pet Rescue Saga**, **Toy Blast**, and **Toon Blast**.

Merging is the newest popular Match-3 variant, with titles such as **Merge Dragons** and **Merge Magic** from Gram Games (a Zynga studio) landing in the top-grossing chart in the U.S.

Meanwhile, more and more **games from different genres adding puzzle gameplay** have emerged. The Match-3 mechanic is the most adopted puzzle element in mobile games, such as the Japanese RPG **Puzzle & Dragons** (2012) by GungHo, Small Giant's **Empires & Puzzles** (2017), and the recent 4X strategy game **Puzzles & Survival** (2020) by 37 Interactive.

Despite the increasing popularity of different Match-3 variants, **classic Match-3** remains popular in the West and East alike. Instead of adding meta game elements, the new trending puzzle game **Royal Match** (2021) by Dream Games chooses to design the core Match-3 gameplay and in-game economy creatively with a light decoration element and clean user interface. The success of Royal Match signals a new direction for game developers—polishing and innovating the core gameplay to stand out in the competition.



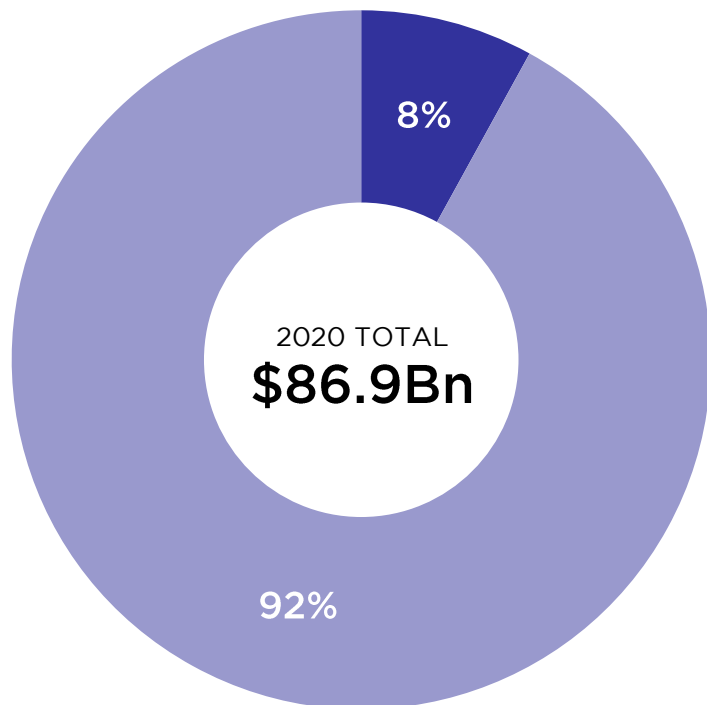
Puzzle Games Contribute to 8% of Global Mobile Game Revenues

The U.S. is the biggest market for the puzzle genre, followed by Japan and China

2020 Global Mobile Game Revenues

Puzzle games vs. Non-puzzle games

- Puzzle Games
- Non-Puzzle Games



\$6.9Bn

Global mobile puzzle game revenues in 2020

Top 3 Markets by Mobile Puzzle Game Revenues in 2020



U.S.
\$2.0Bn



Japan
\$1.2Bn



China
\$0.9Bn

Puzzle Games Thrive on Social Engagement

Live-ops are key to increase player engagement and stickiness

Acquisition

Many “forever” puzzle mobile franchises had **an earlier start on other platforms**, and thus when launched on mobile, there was already an audience that recognized the name. For example, Candy Crush Saga and Cookie Jam were first launched on Facebook as browser games.

In the West and East alike, **social engagement** is one of the most powerful acquisition and retention tools. Early Western franchises leveraged **Facebook** invites to encourage users to bring friends to games, while Japan takes advantage of **LINE**. Disney Tsum Tsum encourages LINE invites by offering coins, gacha tickets, and characters as referral rewards.

Puzzle games leverage **in-app and social media ads** to acquire users, too. Some marketing creatives have even been incorporated the popular elements as minigames by publishers.

IP collaboration is another direction that puzzle game publishers are exploring to expand the games’ reach, as seen in the recent collaboration between Candy Crush Saga and Space Jam: A New Legacy. Property Brothers: Home Design, as a spin-off mobile game of the reality television show, took the IP advantage and became the new hit of puzzle games after its release in 2019.

Retention

Social engagement is one of the most effective tools for retention. Short-term **leaderboards** and **ranking** systems with friends or strangers, including team-based leaderboards, constantly attract players back to the game. **Competitions/tournaments** have become the new norm for puzzle games. For example, Royal Match features recurring King’s Cup in the game and Royal League for players who have completed all levels. Candy Crush Saga even launched its esports event All Stars Tournament in 2020.

Some Match-3 games (e.g., Anipop by Happy Elements in China) reward players with **hidden levels** by completing previous levels with full stars, and players can earn extra in-game rewards by completing hidden levels.

What’s more, **live-ops** are increasingly critical to keeping an existing audience engaged. For puzzle games, this often takes the form of **limited-time offers, holiday themes, and short challenges**. In Japan, holding **limited-time events in collaboration with other IP** from anime, manga, and even other games is a common approach. In these events, players can enjoy collaborated game content and get exclusive characters, by completing the quests or through gacha, during a limited time period. Meanwhile, **Puzzle Pass** is playing an increasingly important role in both monetization and retention for puzzle games (see next slide).

More and More Puzzle Games Feature a Hybrid Monetization

Implementing a mixture of in-app purchases, in-app advertising, and subscriptions

Monetization

In-app purchases are still the major revenue stream for puzzle games. The in-game economy for most puzzle games is **simple** and **straightforward**. There are usually 1-2 main currencies and direct purchase of one currency. Match-3 games utilize pop-ups to turn players into payers when running out of moves.

Recently, puzzle games have learned from core mobile games to add **Battle Pass** as a **subscription**. For example, Homescapes and Hay Day Pop launched Puzzle Pass in 2020. Royal Match features Royal Pass. Merge Dragons! and Angry Birds 2 Blast introduced their own passes, too.

Since mobile advertising became more common in 2014, **in-game ads** have been adopted in an increasing number of puzzle games. For example, Candy Crush players can get bonus spins by watching videos.



Playrix's answer to Battle Pass: Puzzle Pass



“Puzzle games are ideal for increasing revenue by implementing hybrid monetization models, since they benefit from a blend of both IAA and IAP monetization. Their LTV is also relatively easy to increase, and the games generally do well all around the world. We think that hybrid monetization (using IAA and IAP) will become more and more common moving forward, with plenty of room for growth for mobile game developers worldwide.”

— Annaka Tetsuya, Planner & Director at Translimit

2. Deep Dive of Puzzle Games in Key Markets

Player demographics and top performing titles







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Puzzle Games Are the Most Popular Across Markets

In the East, mobile players tend to also enjoy competitive genres such as Battle Royale on mobile

Top 5 Most Popular Genres on Mobile

Mobile game genres played in the past six months

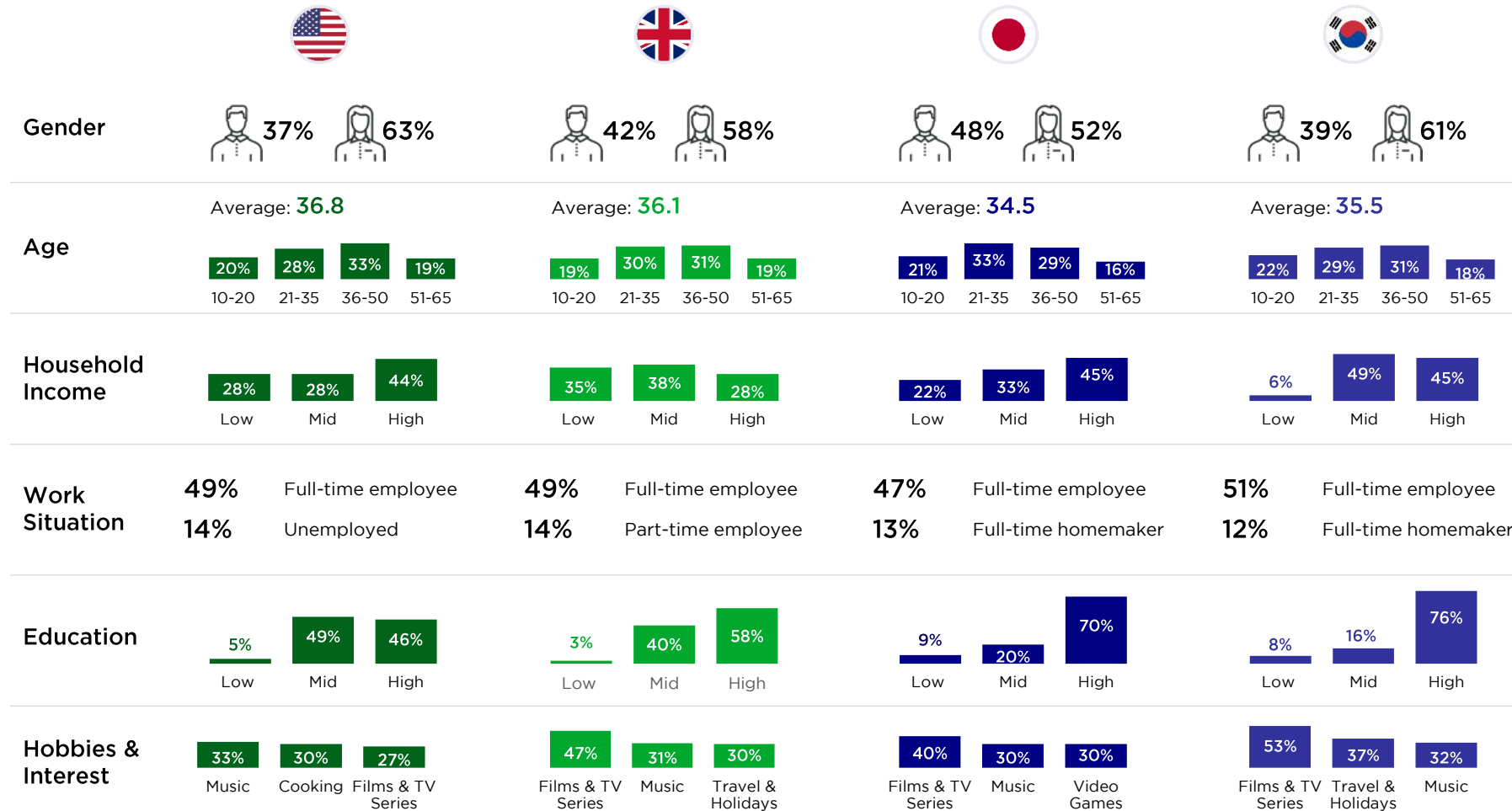
	 U.S.	 U.K.	 Japan	 South Korea
#1	Puzzle	Puzzle	Puzzle	Puzzle
#2	Strategy	Arcade	Role-Playing	Strategy
#3	Casino	Sports	Simulation	Simulation
#4	Shooter	Shooter	Battle Royale	Arcade
#5	Arcade	Strategy	Adventure	Battle Royale



Although puzzle games are generally the most popular across markets, **mobile genre preferences differ in the West and East**. Competitive and immersive genres, such as Battle Royale, are more popular in the East than in the West, where mobile gamers tend to favor more casual genres like puzzle and arcade. In addition, **some of today's popular genres—like Battle Royale—didn't exist on mobile five years ago**, showing how fast the market has evolved in recent years.

Puzzle Games Are More Appealing to Female Gamers

Mobile puzzle gamers skew younger in the East where the majority also have higher (relative) education levels



Across the key markets, mobile puzzle players are similar demographically; they skew female, are full-time employees, and have a mid-to-high income. Key differences between the West and East are that **mobile puzzle players skew somewhat younger in the East and have attained higher educational levels**. In addition, **Japan particularly stands out as players are the most gender-balanced there**, and almost one-third have video games as their favorite hobby and interest.

Puzzle Games Lead the Top Grossing Chart in the West

In Japan and South Korea, role-playing games take the most spots among the top 50

Genre Distribution Among Top 50 Grossing Games

iOS & Google Play | 2020



#1	Puzzle	10
#1	Strategy	10
#3	Casino, Role-Playing	9



#1	Strategy	13
#2	Puzzle	9
#3	Role-Playing	7



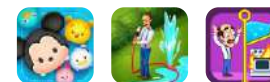
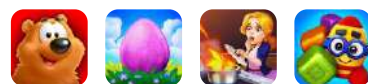
#1	Role-Playing	22
#2	Puzzle	6
#3	Strategy	5



#1	Role-Playing	29
#2	Strategy	6
#3	Sports	4



Puzzle Games among Top 50, 2020

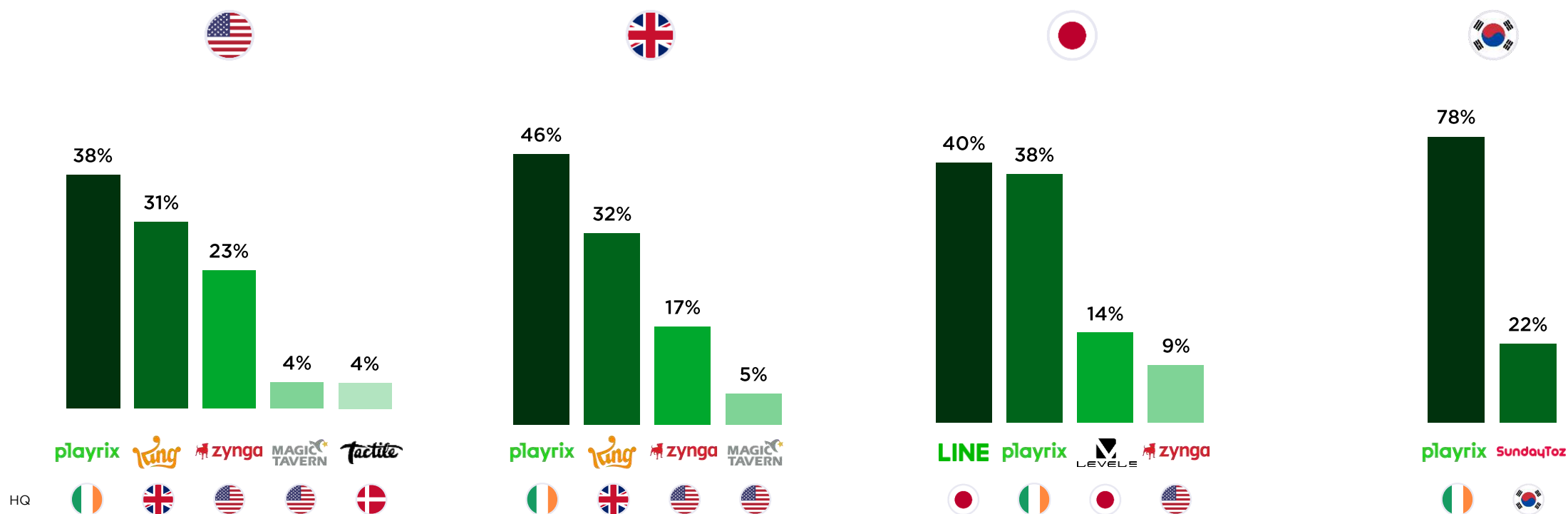


Western Puzzle Publishers Dominate in U.S., U.K., and South Korea

While the Japanese market sees more local companies in puzzle games with LINE taking the lead















Publisher Revenue Share Among Top Grossing Puzzle Games

Puzzle Games Among Top 50 Grossing Games | iOS & Google Play | 2020



Top Puzzle Games Under Each Subgenres Feature Similar Mechanics

Match-3 games in Japan focus more on character collection and progression, creating opportunities for monetization

	Classic Match-3						Puzzle & Decorate					Tile Blast		Merge
														
Tile Matching	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Power-Ups (Temporary)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Levels/Maps	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Puzzle Solving	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Artistry							✓	✓	✓	✓	✓			
Character Collecting					✓	✓								✓
Character Progression (Permanent)					✓	✓								✓
Classes/Factions/Races					✓	✓								✓
Loot (Randomized)														✓
Gacha					✓	✓								✓
Breeding														✓
Grid Placement														✓
Harvesting/Collecting														✓
Units (Controllable)														✓



Developer Chat: Global Leader Translimit Talks Different User Acquisition and Monetization Strategies for East and West

Translimit is a Japanese mobile game developer that's been making big waves in the industry since they were established in 2014. They came into the spotlight when their smash hit **BrainWars** gained worldwide acclaim. Before long, the puzzle battle game was a breakout success, particularly in the U.S. and Asia, hitting **10 million downloads within eight months of being released**. The worldwide success of the game caught the attention of the **LINE Corporation**, who chose Translimit as the first-ever recipient of their “**LINE Game Global Gateway**” game investment fund in October of the same year. Now, Translimit has their sights set on the world once again with their next hit game, **Puzzrama**.

We sat down with **Mr. Annaka**, in charge of user acquisition and monetization, to discuss the different strategies that the global game innovator's adopts in the Eastern and Western markets, and their tips and tricks to maximize performance across the globe.



User Acquisition Across the Globe

Localization of both UA strategy and marketing creatives is important in achieving local success



Annaka Tetsuya
Planner & Director
Translimit



The Eastern and Western mobile game markets are quite different, the U.S. and Japanese markets in particular. With your repeated successes in both markets, Translimit is poised to offer a unique perspective on how to best approach each individual market. Can you tell us a bit about what UA (user acquisition) strategies you've used in the U.S. market to promote Puzzrama?

For both casual and hypercasual games, we mainly use performance-based ads. We do this by setting a specific ROAS (return on ad spend) target to achieve for each bid, getting more conversion value or revenue at the target ROAS set.

We believe that optimizing ads based on ROAS is the optimal way to keep track and improve our UA performance. We also use social media networks and ad networks to further optimize our reach.

Can you give us a breakdown of what you found was the most effective approach to UA in the U.S.?

Our usual UA strategy follows a three-step process.

1. The first step is an initial CPI (cost per install) test in the U.S.. For example, when we soft-launched Puzzrama on Android, we aimed for a CPI of \$0.30 or less. As a general rule, we only continue to develop apps that have a CPI of \$0.35 or less.

2. Once an app has passed the CPI test, we enter the second stage. Here, we will run continuous A/B tests and adjust the game until each user views on average 8 ads on Day 0 (the first day of installation). We also optimize to reach a D1 retention rate of over 30%.
3. We will then keep on improving the apps that have passed these two stages and develop them to strengthen acquisition around the world.

What about creatives? Does Translimit use different creatives for different markets?

During the initial stages of testing out the potential of a game, we develop approximately 20 different creatives to assess its possible performance. If it has good initial performance and the game starts to relatively scale, we increase the amount to roughly 100-200 creatives. Once the creatives have done the rounds and we learn which ones perform best, we cut the number down to about three or four creatives. We then keep running these final ads across each advertisement channel and use them globally.

As for differences between countries, the creatives are mostly the same for all regions, but the wording of each ad has to be localized for their specific country. We've found that the

performance of a creative can drop by as much as 20% without localized text.

Do you have any good tips for developing more successful video creatives?

From our experience, successful creatives have three key features. They generally include numbers, they keep text relatively short, and they include words that deepen the user's understanding of the game.

Many creatives will have sub-par performance and will be discarded. This is completely normal, so don't get discouraged. Just keep A/B testing.

From a UA perspective, how would you say mobile gamers in the U.S. market differ from, say, users in Japan?

Different countries require different degrees of UA localization. The localization for each country requires a different amount of man-hours and resources depending on how important they are to our overall UA strategy. Most of our creative optimization and localization is centered on the U.S. market. For example, since users in that market tend to be more patriotic, it helps to evoke patriotic feelings by using their national flag in our video creatives.

Puzzling Out Different Monetization Strategies in Japan and the U.S.

Monetization in the U.S. is more IAA-focused than in Japan thanks to the higher tolerance of in-game ads of American gamers



Annaka Tetsuya
Planner & Director
Translimit



Japanese and American users tend to approach advertising differently. Do you have any insights into what kinds of differences mobile game developers should expect?

The users' tolerance level for advertisements is very different. In the U.S., there's very little opposition to including in-game ads. Even if we set the ad frequency to display an ad every 30 seconds, we've found that it doesn't negatively impact our retention. If you do the same in Japan, there will be negative responses from users. So, we designed the interval between ads to be longer in Japan.

In terms of ad formats, we've implemented a 3:1 ratio between interstitial video ads and rewarded videos, which is to say that for every 3 interstitial video ads, users get to watch a rewarded video.

What portion of your revenue is IAA vs. IAP? And do you see a major difference between the markets?

Our revenue is split 4:1 between IAA and IAP respectively, but the difference between the two markets is very distinct. As mentioned earlier, users in the U.S. are okay with watching high-

frequency ads. On the flipside, in-app purchases tend not to increase much. So, our monetization strategy in the U.S. tends to be very IAA-focused.

As for Japan, we show roughly half the amount of ads compared to the U.S., but Japanese users tend to be much more open to in-app purchasing. We're able to maintain a profit thanks to the high user spend in the region.

For example, Puzzrama has a function called "contest," which allows players to vote each others best original creation. Amazing works are revealed everyday. We believe that Japanese players are often at the top of these rankings because of their willingness to pay for additional functions, allowing them to edit and beautify their creations. In comparison, players from other countries seem to mostly just enjoy the puzzles in the game, and don't participate in the contests as much.

Japanese players also tend to have longer gaming sessions.

Can you tell us how much Pangle improved Puzzrama's revenue in the Japanese region?

Revenue from rewarded video ads increased by 14%, and revenue from interstitial video ads went

up by 17%. Pangle is characterized by many high-eCPM ads and is widely considered an essential network when distributing in-app ads all over Japan.





About





The destination for games market insights.

We are the world's most trusted and quoted source for games market insights and 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.



Where Apps Thrive.

Pangle is the go-to-place for monetizing apps, attracting users, and pushing boundaries of creativity. Established as the leading mobile advertising platform in Asia, Pangle enables global app developers to maximize earnings through exclusive TikTok For Business demand, and advertisers to reach out to a massive audience.

www.pangleglobal.com

Why Pangle Matters?

Monetization

For developers: the smarter way to earn more

1

Exclusive access to
TikTok For Business ad demand

2

Maximize revenue via
In-app bidding
(support ironSource, MAX and Mopub)

3

Popular ad formats:
Rewarded/Interstitial video
ads/Native ads/Banner ads

4

UA-MO growth loop
support

User acquisition

For advertisers: supercharge your user growth

1

Algorithm driven ad tech

2

In-app event optimization
(purchase, retention, etc.)

3

Support playable ads with
built-in potential

4

Free playable production
and adaptation tools

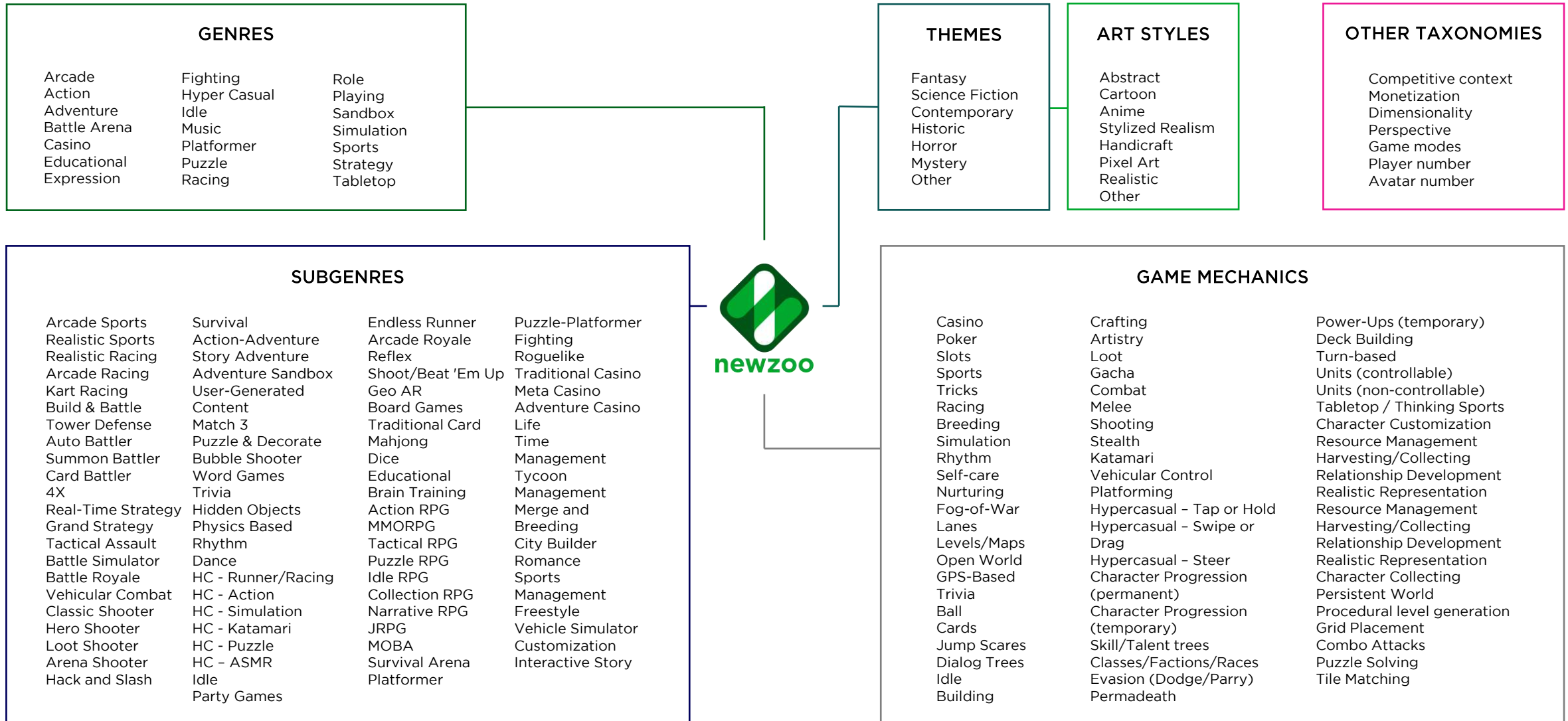


Appendix

Newzoo Games Taxonomy & Consumer Insights Terminology



Newzoo Games Taxonomy



Newzoo Consumer Insights Terminology

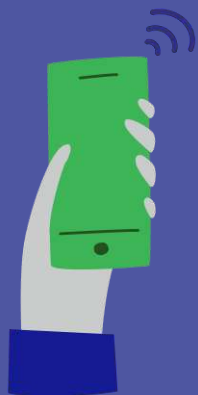
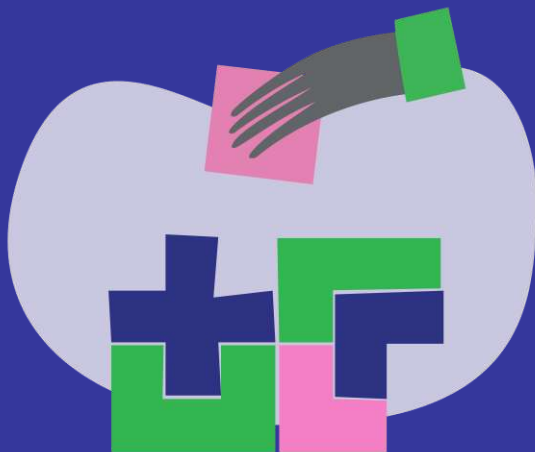
Income and Education Brackets | Newzoo Consumer Insights – Games & Esports 2021

Income Brackets

Country	Time Period	Low	Medium	High
United States	Yearly	< \$40,000	\$40,000 - \$75,000	\$75,000
United Kingdom	Yearly	< £28,000	£28,000 - £49,000	£49,000 >
Japan	Yearly	< ¥4,000,000	¥4,000,000 - ¥7,000,000	¥7,000,000 >
South Korea	Yearly	< 20,000,000 KRW	20,000,000 - 60,000,000 KRW	60,000,000 KRW >

Education Brackets

Country	Low	Medium	High
United States	Elementary school. Middle school, Incomplete Secondary (high school) Education	Secondary (high school) Education, Some College, University, Technical School, or Further Education, Associate's Degree	Vocational or Technical Degree, Bachelor's Degree, Master's Degree, Doctoral or Professional Degree
United Kingdom	Combined Junior and Infant School (Primary school) / Infant School, Junior School, Incomplete Secondary Education (Below GCSE / O Level)	Secondary Education Completed (GCSE / O Level / CSE or equivalent), Secondary Education Completed (A Level or equivalent), Some Vocational or Technical Qualifications	Vocational or Technical Qualifications Completed (e.g., HND, NVQ), University Education Completed (Undergraduate Degree e.g., BA, BSc), Postgraduate Education Completed (e.g., Masters), Doctorate, Post-doctorate or equivalent (Higher Degree)
Japan	中学校を卒業 しました, 中等教育未終了 (中学卒業以下)	中等教育修了 (中学卒業または同等レベル), 大学または職業学校中退	職業資格または専門的資格取得 (職業専門コース、専門学校など), 大学教育修了 (学位: 文学士号、理学士号), 大学院教育 (大学院など), 博士号、博士課程終了後または同等レベル (上級学位)
South Korea	중학교졸업, 중등 교육을 마치지 못함(예: 고등학교 중퇴)	중등 교육 마침(예: 고등학교 졸업), 일부 대학 과정 또는 직업 교육 수료(예: 자동차 정비) 직무 능력 인증 과정 또는 전문가 양성 과정 마침(예: 물리치료사), 대학	직무 능력 인증 과정 또는 전문가 양성 과정 마침(예: 물리치료사), 대학 과정 마침(예: 학사), 대학원 과정 마침(예: 석사), 박사 또는 박사 후 과정 마침(예: 박사)



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