

# Perfect World (SZ:002624)

## Leading R&D capabilities, entered the cloud gaming sector well in advance

China | Game Sector | Company Initiation

9 Nov 2020

### Investment Summary

#### Perfect world is a global leading comprehensive entertainment group

The parent company of Perfect World Co., Ltd. (002624) is Perfect World Holding Group, a global leading comprehensive entertainment group, whose businesses include games, Pictures (Film and Television), education, animation, literature, e-sports, and media etc. The Perfect World game business was established in 2004 and was listed on NASDAQ in 2007. In 2008, the film and television business of Perfect World was established, and in 2015, it was listed in A shares market through reverse takeover and renamed Perfect World Pictures Co., Ltd. In 2016, the game business was delisted from Nasdaq and merge into Perfect World Pictures, Perfect World Pictures was renamed to Perfect World after the merger. After that, Perfect World continued to acquire and invest in related assets of the cinema business. Subsequently, in 2018, the company divested its cinema business from the main body of the listed company. Currently, the major business of Perfect World are games (including e-sports) as well as film and television (production, distribution, etc.).

#### The company's rich reserve in IPs

The company's IP reserves are very rich, mainly divided into original and authorized IP. The company's main original IPs have achieved great success in the PC game era, such as the Perfect World IP. The immense influence and fan base of the IP has sufficient reduce the cost of the "PC to mobile transformation", which enable the company to enter the mobile game market at low cost. On the other hand, the company has also obtained many famous IP game licenses, such as Zhuxian, Jin Yong's novels. The popularity of these authorized IP has become a major inherent advantage for the game.

#### The company has laid a solid foundation in the cloud gaming sector

The popularity of 5G has greatly promoted the development of cloud games. According to the Gamma Data "Cloud Game Industry Survey Report 2020", the market size of China's cloud games in 2019 is about RMB 540 million, and the CAGR in the next two years will exceed 100%. The company has proactively deployed its cloud game business since 2017, and launched its first cloud game in the same year. Later, in 2019, it cooperated with the Tianyi Cloud game platform under China Telecom and published a few cloud games, including Fantasy New Zhuxian (夢幻新誅仙). New Zhuxian (夢幻新誅仙) also won the "Excellent Case of Cloud Game in 2020" by ICT China. The company stated that in the future, it will deepen its strategic cooperation with China Telecom Tianyi cloud gaming platform and other overseas-related technical teams to fully assist the sustainable development of the cloud gaming industry ecosystem. At present, the company has three studios that are focusing on the preparation and development of cloud games, including the highly anticipated Zhuxian 2 (誅仙 2). The company's forward-looking deployment of cloud gaming business has enabled it to occupy the market share of this high-growth segment in advance.

### Valuation

We forecast the EPS of the company in 2020-2022 to be RMB 1.33/1.47/1.77. We have adopted SOTP valuation method to value the company, and has split the expenses base on the revenue of two sectors (Games and Pictures), expect for R&D expenses, where we have allocated all R&D expense to the Game business. We value the company at RMB 68.7 billion, with target price at RMB 35.44, which implies 2020/2021 PE of 26.7x/24.0x/20.0x. We initiate with a "BUY" rating.

### Buy (Initiation)

CMP RMB 28.48

(Closing price as of 5 Nov)

TP RMB 35.44 (+24%)

#### COMPANY DATA

|                       |             |
|-----------------------|-------------|
| O/S SHARES (MN) :     | 1,939       |
| MARKET CAP (RMB MN) : | 55,241      |
| 52 - WK HI/LO (RMB):  | 43.16/18.35 |

#### SHARE HOLDING PATTERN, %

|                             |        |
|-----------------------------|--------|
| Perfect World Holding Group | 25.33% |
| Chi Yufeng                  | 7.69%  |

#### PRICE VS. SZSE



Source: Wind, Phillip Securities

#### KEY FINANCIALS

| CNY mn     | FY19  | FY20E  | FY21E  | FY22E  |
|------------|-------|--------|--------|--------|
| Net Sales  | 8,039 | 10,965 | 12,910 | 15,279 |
| Net Profit | 1,503 | 2,579  | 2,860  | 3,432  |
| EPS        | 1.16  | 1.33   | 1.47   | 1.77   |
| P/E, x     | 24.55 | 21.42  | 19.32  | 16.09  |
| BVPS       | 7.35  | 6.24   | 7.36   | 8.71   |
| P/BV, x    | 3.87  | 4.57   | 3.87   | 3.27   |
| ROE (%)    | 14    | 21     | 19     | 20     |
| ROA (%)    | 9     | 13     | 13     | 14     |

Market closing price as of 5<sup>th</sup> Nov

Source: Company Data, Phillip Securities Est.

#### Research Analyst

Kevin Chiu (+ 852 2277 6514)

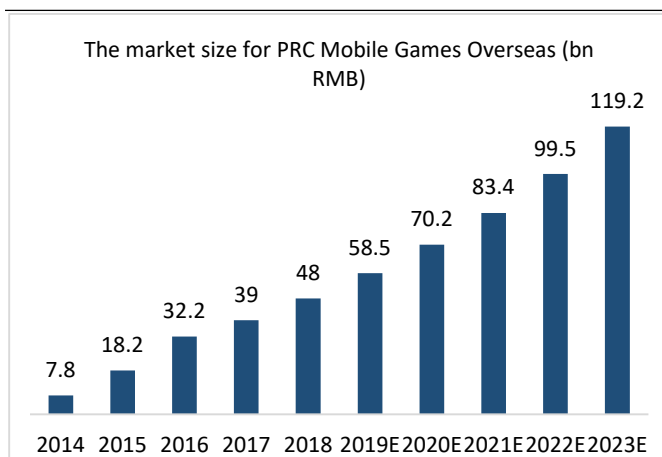
kevinchiu@phillip.com.hk

## Industry Review and Forecast

### The market for PRC Mobile Games Overseas

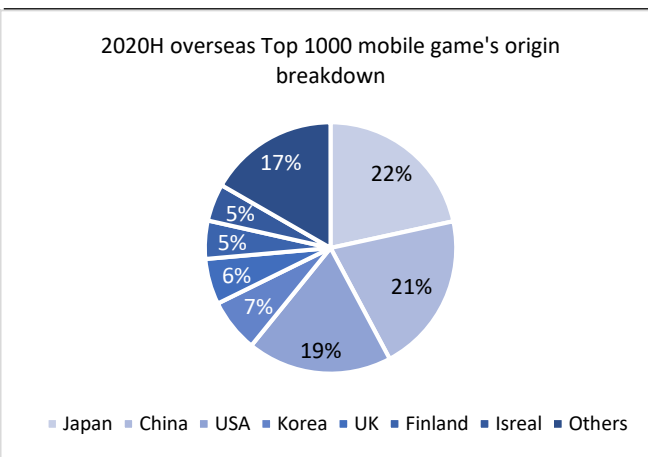
In recent years, many mobile game companies have been focusing on their overseas market business, mainly because the mobile game markets in many overseas regions (especially Southeast Asia) are still in the early stage of development and has great growth potential. In contrast, the Chinese mobile game market is already in the mature stage and its growth has significantly slowed down. Secondly, the Chinese game market is indeed hugely affected by policies. Relevant national departments issued a number of game supervision measures (including tightening supervision on underage gamers and restricted their game time) in 2018-2019, and suspended the pre-approval for games in 2018. Although the current pre-approval procedure has resumed, nonetheless there are still significant policy risks in China's mobile game market. On the contrary, games in majority of overseas markets are only supervised through the "game classification system", where games are classified by the age of suitable players. It can be seen that the regulatory intensity of the overseas game market is obviously lower than that of the Chinese market. As a result, expanding overseas markets will help Chinese mobile game industry participants to reduce this policy risk. According to Frost & Sullivan, the China's overseas mobile game market recorded a significant growth at a CAGR of 57.5% from 2014 to 2018, and is expected to grow at a CAGR of 20.0% from 2018 to 2023. The Chinese mobile games have already achieved good results in overseas market. According to the statistics of the Overseas Research Institute (海外研究院), in the US Google Play Store Top 100 free list and Top 100 best-selling list, apps from China have occupied 15 and 20 places respectively. Further, there are 30 Chinese mobile games in the Top 100 best-selling Korean mobile games in 2019. Further, according to App Annie data, the market share of Chinese mobile games in overseas markets was up by 2.9ppt yoy in 1H20, and reached 21.2%, which is only slightly behind Japan with 21.5%.

Figure 1: The market size for PRC Mobile Games Overseas



Source: Frost and Sullivan, PSHK

Figure 2: 2020H1 overseas Top 1000 mobile games' origin



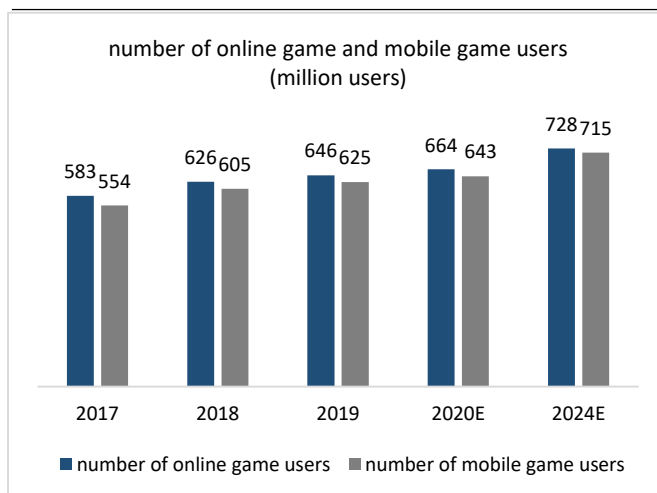
Source: App Annie, PSHK

### The Chinese game advertisement market

In recent years, the growth of users in the Chinese game market has gradually been slow. According to Frost & Sullivan, the CAGR of Chinese gamers/mobile game players from 2019 to 2024 is expected to be 2.4%/2.7%. In 1H20, even under the impact of COVID and quarantine, the growth of users remained slow. According to the "China Game Industry Report for January-June 2020" 《2020 年度 1-6 月中國遊戲產業報告》, the number of gamers in China in 1H20 was 557 million, a yoy increase of only 1.97%. As the growth of number of Chinese gamers begins to slow down, the difficulty of acquiring customers for game companies has increased. On the other hand,

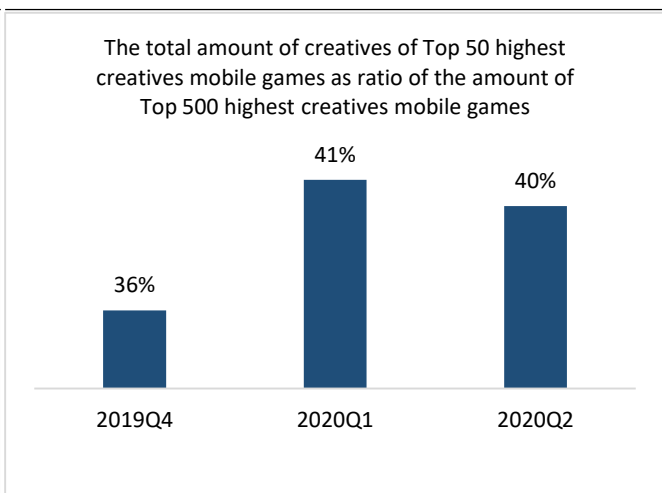
according to Reyun data, the total amount of creatives of the Chinese TOP 50 highest creatives mobile games have accounted for roughly 41%/40% of the total amount of creatives of the Chinese TOP 500 highest creatives mobile game in 20Q1/20Q2, up by 5ppt/4ppt comparing to the 36% in 19Q4. The increase in this proportion means that the Chinese game advertisement market is gradually dominated by the market leaders. According to DataEye-ADX, the Game 《亂世王者》 by Tencent ranked 13<sup>th</sup> on the ranking of highest creatives Chinese game. This is relatively surprising, since the games developed by Tencent don't usually appear in the Chinese game advertisement markets, as they are usually promoted and advertised through the diversified advertisement channels of Tencent. This served as a clear evidence that the market leaders have begun to enter the Chinese game advertisement market. The combination of the increasing customer acquisition difficulties as well as the fact that the market leaders begin to enter the Chinese game advertisement market have driven the cost of game advertisement upward significantly.

Figure 3: The number of online game/ mobile game users



Source: Frost and Sullivan, PSHK

Figure 4: The total amount of creatives ratio between Top 50 and 500

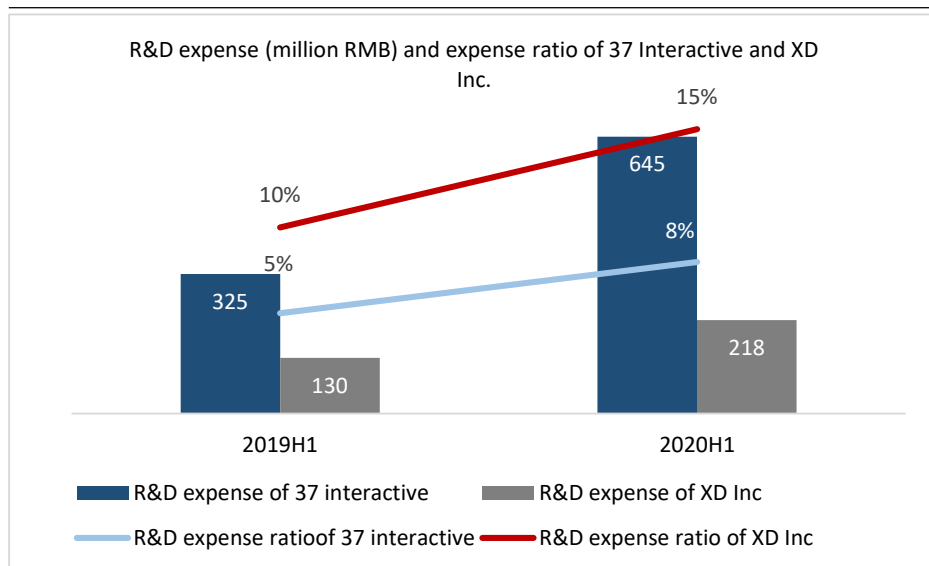


Source: Reyun Data, PSHK

### Developing exquisite games by enhancing R&D capabilities is the general trend in the sector

Game development capabilities and game quality have become particularly important especially in the background of high game advertisement cost. The increase in game advertisement cost will squeeze the living space of non-exquisite games on the one hand, and on the other hand, it has shifted the attention of mobile game developers onto the quality of games in order to acquire customers and retain them, rather than spending significant amount on advertisement. In addition, as players consume more and more rationally, whether mobile game companies can tap the value of its existing users by providing high-quality games will become the key. Further, pre-approval of games by Chinese Government are more stringent than ever. This has further pushed game companies to refine their games in order to increase the games' life cycle to cope with the increasingly stringent pre-approvals. The above reasons have promoted high quality and refinement of the mobile game industry and we believe that that increasing their R&D capabilities will be the only way for mobile game companies to survive. Take 37 Interactive Entertainment (A-shares) and XD Inc (HK-listed) as example, the R&D expense of 37 interactive and XD in 1H20 were RMB 645/218 million, up by 99%/68%. The corresponding R&D expense ratio were also up by 2.7ppt/5.5ppt.

Figure 5: R&D expense and expense ratio of 37 Interactive and XD Inc.



Source: Wind, PSHK

## Company Overview and its Competitive Advantages

### Perfect world is a global leading comprehensive entertainment group

The parent company of Perfect World Co., Ltd. (002624) is Perfect World Holding Group, a global leading comprehensive entertainment group, whose businesses include games, pictures (Film and Television), education, animation, literature, e-sports, and media etc. The group's products are distributed in more than 100 countries and regions around the world such as the United States, Europe and Asia. It has domestic offices in Beijing, Hong Kong, Shanghai, Chongqing, Chengdu, Hainan and other places, as well as overseas offices in countries like the United States, the Netherlands, France, South Korea, Japan and etc. The Perfect World's game business was established in 2004 and was listed on NASDAQ in 2007. In 2008, the picture business of Perfect World was established, and in 2015, it was listed in A shares market through reverse takeover and named as Perfect World Pictures Co.,Ltd. In 2016, the game business was delisted from Nasdaq and merged into Perfect World Pictures, Perfect World Pictures was renamed to Perfect World after the merger. Since then, Perfect World continued to acquire and invest in related assets of the cinema business. Subsequently, in 2018, the company divested its cinema business from the main body of the listed company. Currently, the major businesses of Perfect World are games (including e-sports) as well as pictures (production, distribution of TV series).

Figure 6: Different business segment of Perfect World Holdings Group



Source: Company, PSHK

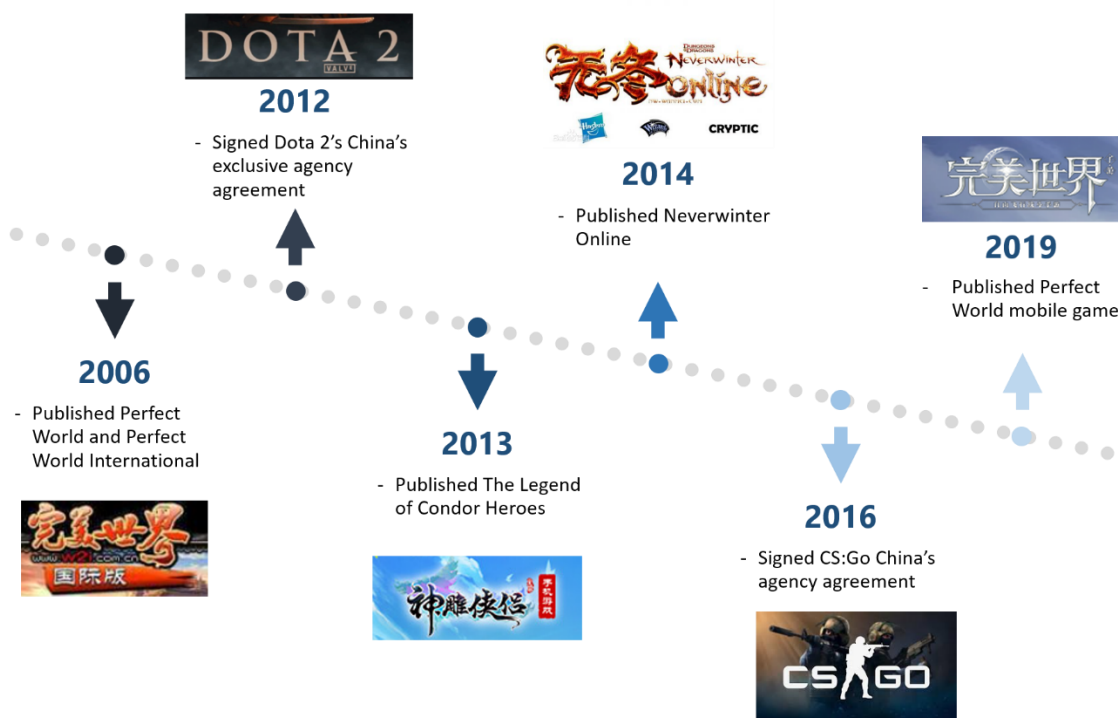
## Perfect World Games

### The company is an industry-leading game company with many years of experience in the development of PC games, web games, console games and mobile games

The company started with the development and operation of PC games. In 2006, it launched the first multiplayer online 3D network PC game, named Perfect World (完美世界), and launched Perfect World International (完美世界國際版) in July of the same year. The international version was the first Chinese online game to enter the Japan market. In 2012, the company and Valve signed an exclusive agency agreement for Dota 2 in China, and in the same year, the company also launched web games such as Ice and Fire (冰火破壞神). In 2013, the Chinese mobile game market was booming,

and the company has entered the mobile game field in the same year and launched the mobile game Divine Condor, Errant Knight (神雕俠侶). In 2014, the company has begun to develop console games, and in the same year launched console game Neverwinter Online (無冬 Online) in cooperation with Microsoft. In 2016, the company and Valve signed a domestic agency agreement for "CS: GO". In 2019, the company launched mobile game Perfect World (完美世界手機版), which was a huge success, with the first month's gross billing exceeding the billion mark. At present, the company has more than 40 mobile games and console games in operation. The core games include PC games ZhuXian 3 (誅仙 3), Swordsman Online (笑傲江湖 Online), Perfect World (完美世界), CS: Go, Dota 2 and Mobile games Perfect World Mobile Game (完美世界手機版), Forsaken World (新神魔大陸), Xin Zhuxian Mobile Game (新誅仙手遊), New Swordsman (新笑傲江湖) and etc.

Figure 7: Milestones of Perfect World Games



Source: Company, PSHK

Figure 8: Core mobile and PC games of the company

|             | Game                                  | Genres | Publish date |         | Game                       | Genres | Publish date |
|-------------|---------------------------------------|--------|--------------|---------|----------------------------|--------|--------------|
| Mobile Game | Forsaken World (新神魔大陸)                | MMORPG | 2020/07      | PC Game | CS: Go                     | FPS    | 2017/09      |
|             | New Swordsman (新笑傲江湖)                 | MMORPG | 2020/01      |         | Crossout (創世戰車)            | STG    | 2017/07      |
|             | Divine Condor, Errant Knight (神雕俠侶 2) | MMORPG | 2019/08      |         | Dota 2                     | MOBA   | 2013/12      |
|             | Perfect World (完美世界)                  | MMORPG | 2019/03      |         | Swordsman Online (笑傲江湖 OL) | MMORPG | 2013/10      |
|             | My Own Swordsman (新武林外傳)              | MMORPG | 2018/05      |         | Zhuxian 3 (誅仙 3)           | MMORPG | 2007/05      |



|             |                                      |        |         |          |                                    |        |         |
|-------------|--------------------------------------|--------|---------|----------|------------------------------------|--------|---------|
| Mobile Game | Legends of the Condor Heroes (射雕英雄傳) | MMORPG | 2017/07 | PC Games | Perfect World International (完美國際) | MMORPG | 2006/12 |
|             | Torchlight (火炬之光)                    | RPG    | 2016/12 |          | My Own Swordsman (武林外傳)            | MMORPG | 2006/07 |
|             | New Zhuxian (新誅仙)                    | MMORPG | 2016/09 |          | Perfect World 完美世界                 | MMORPG | 2005/11 |

Source: Company, PSHK

### Perfect World Mobile Game (完美世界手遊)

The Perfect World mobile game (完美世界手遊) is a MMORPG mobile game, which was launched on March 6, 2019 on all platforms. The game was developed by Perfect World and distributed by Tencent. The Perfect World mobile game was created by the team who had previously developed multiple hit games such as Zhuxian (誅仙) and My Own Swordsman (武林外傳). The game not only inherited the elements of the Perfect World PC game that was launched 14 years ago (such as the classic seamless big world map and characters), the R&D team also made corresponding amendments to the game according to the characteristics of the mobile terminal. In order to create momentum for the game's public beta, Tencent and the company adopted a series of marketing activities on multiple social platforms. The game was ranked first on the IOS free list on the day it was launched, and also ranked first on the IOS best-selling list two days after it was launched, and has been on top of the best-selling list for 17 consecutive days. According to Sensor Tower data, as of March 22, 2019 (22 days after the game was launched), the revenue of the game has exceeded the \$100 million mark in just the App Store China alone. According to App Annie data, the game ranked second in the IOS global game revenue list in March 2019, and its revenue performance was only slightly lower than that of Glory of the King (王者榮耀). According to Sensor Tower data, the game also ranked fourth in the 2019 China IOS mobile game revenue list.

Figure 9: Global IOS revenue ranking in March 2019

| # | 收入排行                            |     |
|---|---------------------------------|-----|
| 1 | Honour of Kings (王者榮耀)          | =   |
| 2 | Perfect World (完美世界)            | 新发布 |
| 3 | Fantasy Westward Journey (梦幻西游) | ▼1  |
| 4 | Fate/Grand Order                | ▼1  |
| 5 | Candy Crush Saga                | ▲1  |

Source: App Annie

Figure 10: China IOS revenue ranking in 2019

| 收入Top10 |                    |
|---------|--------------------|
| 1       | 王者荣耀 (腾讯)          |
| 2       | 梦幻西游 (网易)          |
| 3       | 和平精英 (腾讯)          |
| 4       | 完美世界手遊 (完美世界 & 腾讯) |
| 5       | 阴阳师 (网易)           |
| 6       | 大话西游 (网易)          |
| 7       | QQ飞车 (腾讯)          |
| 8       | 率土之滨 (网易)          |

Source: Sensor Tower

Figure 11: Ranking of Perfect World Mobile Game (完美世界手遊) on IOS best-selling list

iPhone - 中国 - 2019年3月6日 - 2019年4月11日



Source: App Annie

### Forsaken World (新神魔大陸)

Forsaken World (新神魔大陸) is a large-scale MMORPG mobile game developed based on the Unity engine. The main highlight of the game is that it brought the ultra-high-definition picture quality we see on PC games to mobile terminals, which gives players the most realistic combat experience and visual effects. The game also adopts a unique "chronological" narrative method. Hence, every important decision made by players in the game will affect the future development of the game's plot. As a result, compared to other similar MMORPG games, Forsaken World (新神魔大陸) is more immersive. The game was launched on July 2, 2020, while it has undergone 3 tests before published, and the company has made nearly 3,000 adjustments after each test. Hence, the final version is fully in line with the preferences and habits of its users. According to Qimai's data, the game was ranked first on the IOS free list within one hour after it was launched, and continued to occupy the top spot on the list, with its estimated turnover in the first 5 days has exceeded the RMB 100 million mark. This extremely eye catching performance is mainly attributed the company's huge and diversified advertising strategy for the game. First of all, the company has invited a well-known Chinese band "NZBZ" to compose the theme song for the game. Secondly, the company also invited a group of celebrity endorser, including Yang Mi (楊冪), Ren Dahua (任達華) and Chen Xiaochun (陳小春), to promote the game. Yang Mi, being one of the most influencing female celebrity in China, has a huge fan base and the top level of exposure in China. Thirdly, the company has spent a lot on promoting the game through many different channels. According to App Growing data, the game ranked 1<sup>st</sup> among all mobile game in July 2020 in China, in terms of number of advertisements made. According to Sensor Tower data, Forsaken World (新神魔大陸) ranked 7th in China's App Store mobile game revenue rankings in July 2020. Due to the outstanding performance of the game during the month, the company's revenue in the same month rose by 93% (according to Sensor Tower), and ranked 7<sup>th</sup> among all other Chinese game publishers, in terms of revenue generated globally, in July 2020. Up until now, the game is still staying on China IOS best-selling game ranking Top 30 and has never been dropped out of the Top 30. The reason why the game has become one of the hit game in China this year was not only attributed to the company's huge investment on advertisement for the game, but also due to the company's years of experience in MMORPG game development and operation.



Figure 12: the interface of Forsaken World



Source: Zhihu

Figure 13: The top advertisement mobile games in July

7月份 广告投放数手游排行榜Top20

| 排名 | 应用名称    | 应用类别  | 主投平台<br>仅罗列广告投放数Top4的平台 | 广告投放数 |
|----|---------|-------|-------------------------|-------|
| 1  | 新神魔大陆   | 魔幻    | 腾讯广告 巨量引擎 阿里汇川 斗鱼       |       |
| 2  | 三国志战略版  | 战争 三国 | 巨量引擎 WiFi 万能钥匙 斗鱼 知乎    |       |
| 3  | 三国志幻想大陆 | 三国    | 巨量引擎 腾讯广告 斗鱼 阿里汇川       |       |
| 4  | 爱上消消消   | 消除    | 巨量引擎 腾讯广告 快手 网易易效       |       |
| 5  | 班主任模拟器  | 模拟    | 腾讯广告                    |       |

Source: App Growing

Figure 14: the advertisement of Forsaken World



Source: Company's website

Figure 15: Global revenue Top 30 game publisher in July

2020年7月中国手游发行商收入TOP30 | 全球 App Store + Google Play

|    |                    |    |                    |
|----|--------------------|----|--------------------|
| 1  | 腾讯 Tencent         | 16 | 有爱互娱 C4games       |
| 2  | 网易 NetEase         | 17 | 三七互娱 37 Games      |
| 3  | 莉莉丝 Lilith Games   | 18 | 乐元素 Happy Elements |
| 4  | 趣加 FunPlus         | 19 | 沐瞳科技 Moonton       |
| 5  | 灵犀互娱 Lingxi Games  | 20 | 友谊时光 FriendTimes   |
| 6  | 游族网络 YOUZOU        | 21 | 心动网络 X.D. Global   |
| 7  | 完美世界 Perfect World | 22 | 紫龙游戏 Zlong Games   |
| 8  | 友塔游戏 Yotta Games   | 23 | 米哈游 miHoYo         |
| 9  | 天盟数码 IGG           | 24 | 时空幻境 Firecraft     |
| 10 | 龙创悦动 Long Tech     | 25 | 掌趣科技 OurPalm       |
| 11 | 悠星网络 Yostar        | 26 | 哔哩哔哩 bilibili      |
| 12 | 4399游戏 4399 Games  | 27 | 创酷互动 CHUANG COOL   |
| 13 | 壳木游戏 CamelGames    | 28 | 巴别时代 Babeltime     |
| 14 | 博乐科技 Bole Games    | 29 | 智明星通 ELEX          |
| 15 | 青瓷游戏 QingCi Games  | 30 | 龙腾简合 ONEMT         |

以上榜单来源于Sensor Tower 2020年7月全球App Store及Google Play商店之手游收入估算。

SensorTower 全球领先的手游及应用情报平台 www.sensortower-china.com

Source: Sensor Tower

Figure 16: China IOS revenue Top 20 game in July

2020年7月中国App Store手游收入排行榜

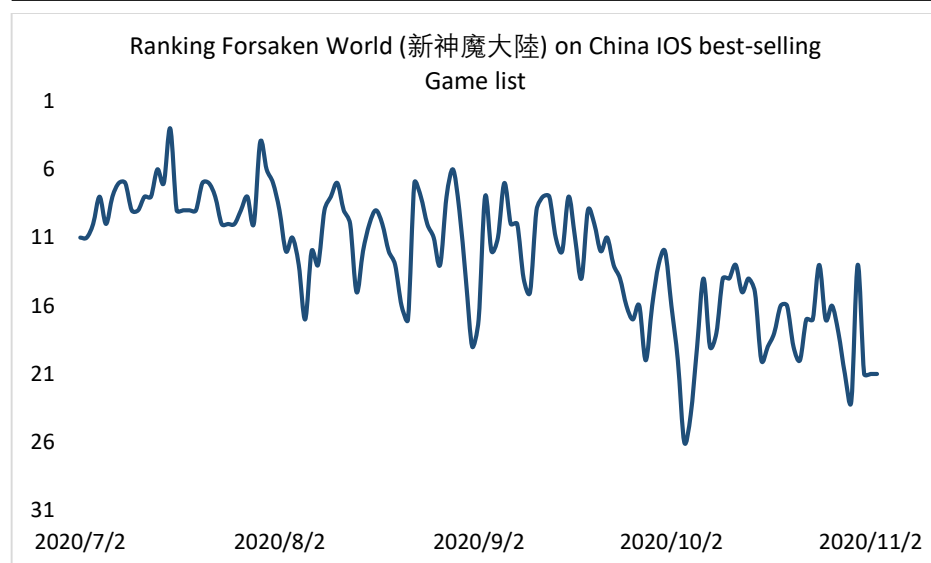
| 手游及发行商                     | 手游及发行商         |
|----------------------------|----------------|
| 1 王者荣耀 腾讯                  | 11 浮生为卿歌 玩友时代  |
| 2 和平精英 腾讯                  | 12 放开那三国3 巴别时代 |
| 3 三国志·战略版 灵犀互娱             | 13 剑与远征 莉莉丝    |
| 4 梦幻西游 网易                  | 14 崩坏3 米哈游     |
| 5 三国志幻想大陆 灵犀互娱             | 15 梦幻西游网页版 网易  |
| 6 最强蜗牛 青瓷游戏                | 16 大话西游 网易     |
| 7 新神魔大陆 完美世界               | 17 神武4 多益网络    |
| 8 光野乱斗 Supercell & 腾讯 & 游族 | 18 QQ炫舞 腾讯     |
| 9 率土之滨 网易                  | 19 QQ飞车 腾讯     |
| 10 阴阳师 网易                  | 20 火影忍者 腾讯     |

以上榜单来源于Sensor Tower 2020年7月中国App Store手游收入估算，不包括第三方安卓渠道。

Tower 全球领先的手游及应用情报平台 www.sensortower.com

Source: Sensor Tower

Figure 17: Ranking Forsaken World (新神魔大陸) on China IOS best-selling Game list



Source: qimai, PSHK

In addition, Forsaken World (新神魔大陸) is the company's first flagship product in cloud gaming. It was launched on China Telecom's Tianyi Cloud game platform. With the support of Feiyun platform, this masterpiece brings game players a high-definition and smooth cross-terminal ultimate experience. With the powerful performance of the cloud GPU processor of the Tianyi cloud platform, players can realize and enjoy the features of cloud games such as download-free, installation-free, click-to-play, high image quality and cross-platform. Forsaken World (新神魔大陸) won the "Excellent Case of Cloud Game 2020" (2020 年度雲遊戲優秀案例) by ICT China on October 15.

### The company's game reserve

The company currently has dozens of games in reserve with a wide range of game genres and types, including MMORPG, RPG, ARPG, JRPG and etc. In addition, the games themes of the reserve games are also very diverse including female orientation, animate, open world, puzzle solving, etc. The variety of game genres and themes will help the company to expand its user group.

Figure 18: the company's core game reserve

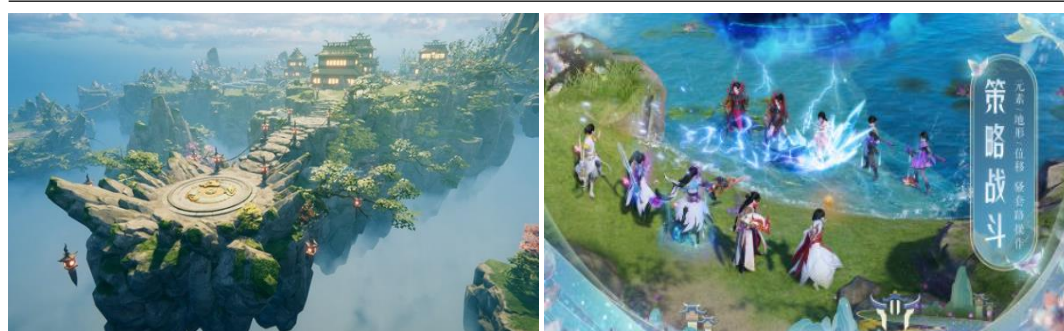
| Platform     | Name  | Genres         | Theme          |
|--------------|---|----------------|----------------|
| PC           | New Zhuxian World (新誅仙世界)                       | MMORPG         | Fantasy        |
| Console      | Perfect World (完美世界)                            | MMORPG         | Fantasy        |
| PC + Console | Torchlight III                                  | RPG            | Adventure      |
| Mobile       | Fantasy New Zhuxian (夢幻新誅仙)                     | Turn based RPG | Open world     |
| Mobile       | One Punch Man (一拳超人)                            | Turn based RPG | Animate        |
| Mobile       | An animated puzzle solving game (Not yet named) | -              | Puzzle solving |
| Mobile       | Tower of Fantasy (幻塔)                           | MMORPG         | Open World     |
| Cloud        | Zhuxian 2 (誅仙 2)                                | MMORPG         | Fantasy        |

Source: Company, PSHK

### Fantasy New Zhuxian (夢幻新誅仙)

Fantasy New Zhuxian (夢幻新誅仙) is the company's flagship turn based RPG mobile game, adapted from the company's famous PC game Fantasy Zhu Xian (夢幻誅仙), and has adopted an open world theme. As compared with the company's previous "Zhuxian" series MMORPG games, the game has obvious upgrade on graphics, sound effects and gameplay. Hence, the game is likely to bring a brand new gaming experience to the Zhuxian fans. In addition, the game is a brand new project produced by the company's star game studio Tianzhiyou studio, which has sufficient experience in developing turn based RPG games. The game has obtained the pre-approval in April 2020. On the other hand, the game is the company's first ever game that is built using the UE4 engine, which has significant differences comparing to the game built using the unity engines. Hence the gross billing of the game is highly anticipated. The current TapTap score on the game is 8.5, with reservation number over 75k.

Figure 19: the interface of Fantasy New Zhuxian (夢幻新誅仙)



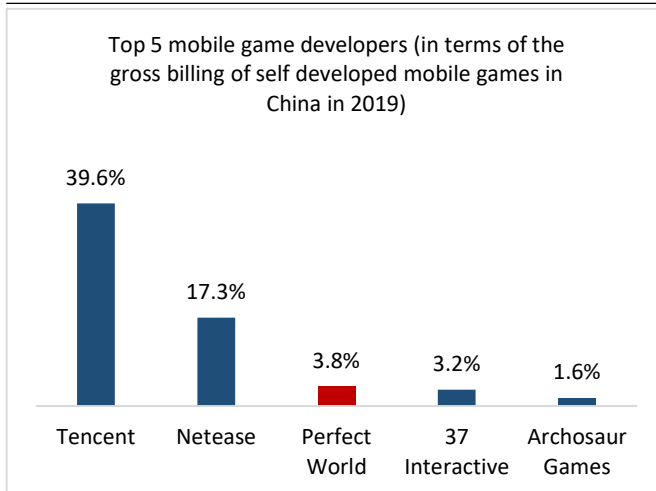
Source: TapTap, PSHK

### The company is a market leader in the MMORPG game genre

The company focuses on game development, especially in the MMORPG game genre segment. The R&D capabilities of the company in MMORPG is highly recognized by the market and it has continuously developed MMORPG hit games, from PC games Perfect World (完美世界) and Zhuxian 3 (誅仙 3) to mobile game Perfect world mobile (完美世界手遊版) and Forsaken World (新神魔大陸). According to Frost and Sullivan, the company is the 3rd largest Chinese mobile game developer in China in terms of total gross billings from self-developed games in mainland China in 2019, with market share of 3.8%. However, in terms of the total gross billings from self-developed MMORPGs in mainland China in 2019, the company actually ranks 2nd in the country, with market share of 5.6%. It is only slightly behind Netease's 33.0% market share and is higher than Tencent's market share of 4.0%. According to Frost and Sullivan, MMORPG games has the highest market share in China among all other game genres and also has the highest growth potential in the future. The expected CAGR from 2019-2024 is 19.7%, way higher than the 11.7% CAGR of the average in the mobile game industry in the same period. Further, MMORPG games also has higher-than-average life cycles, highest ARPU and highest Pay user conversion rate comparing to other mobile game genres. The company is expected to become the main beneficiaries of the high future growth in MMORPG mobile game sector because of the company's forward looking and deep cultivation in the field of MMORPG games.

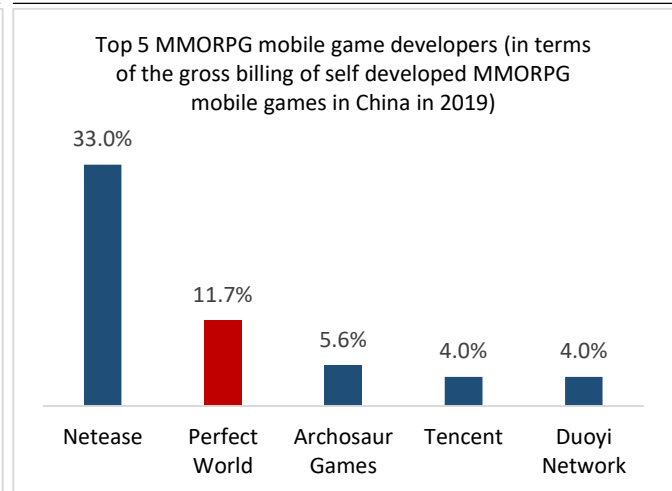
The company's R&D expenses rank first among peers other than Tencent and Netease, with R&D expense in 2018/2019 being RMB 1.41/1.50 billion. In addition, its R&D expense ratio also ranks high among its peers, with R&D expense ratio being 17.6%/18.7% in 2018/2019 respectively, which is higher than the industry average of 12.3%/14.3%. At the same time, the company's R&D personnel as a percentage of total employees has been on the rise in the past, from 47% in 2016 to 66% in 2019. The company's strong R&D capabilities and huge R&D investment have created a strong moat for it, allowing it to survive and grow in the gradually refined mobile game industry.

Figure 20: Top 5 Chinese mobile game developers



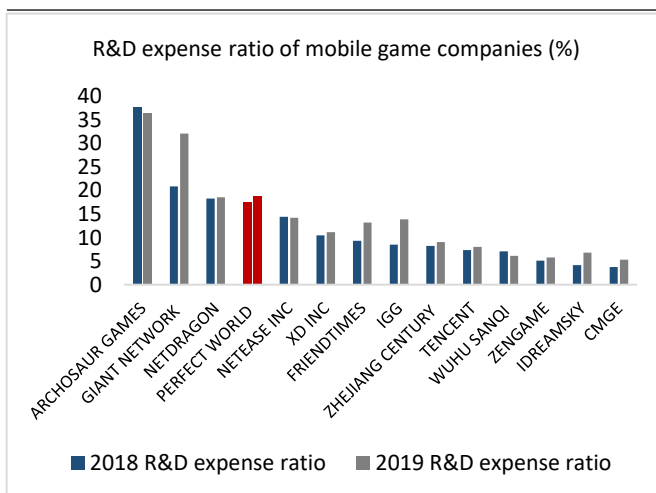
Source: Frost and Sullivan, PSHK

Figure 21: Top 5 Chinese MMORPG mobile game developers



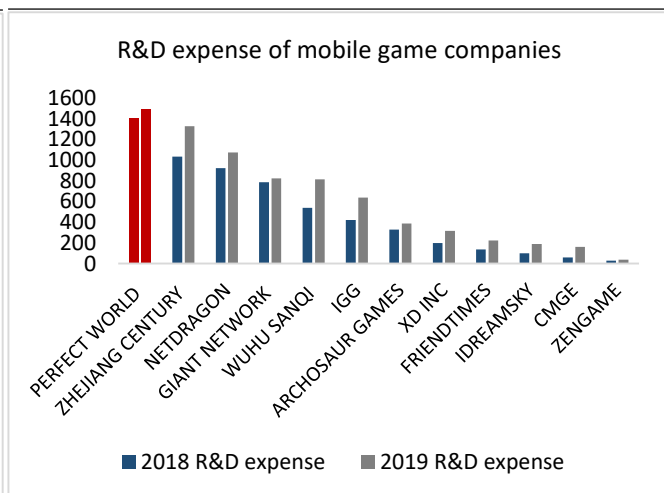
Source: Frost and Sullivan, PSHK

Figure 22: R&D expense ratio of mobile game companies



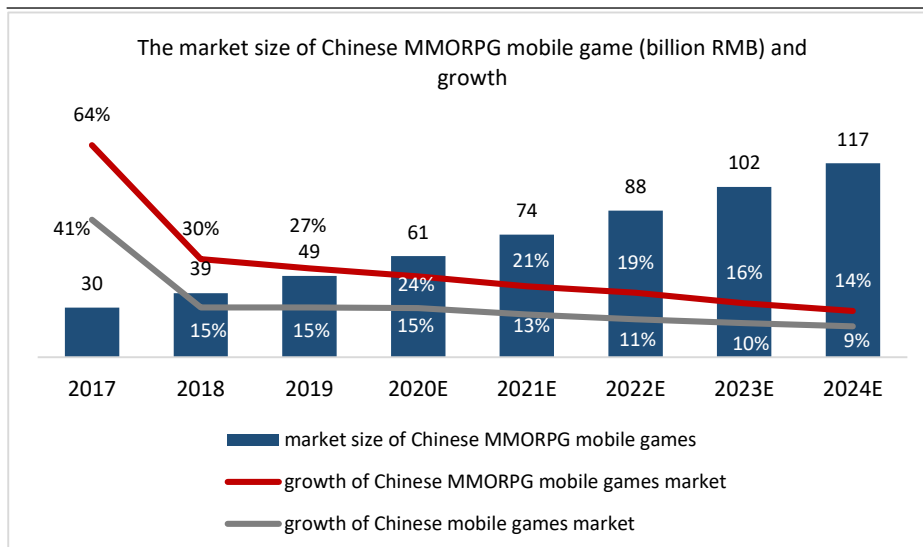
Source: Wind, PSHK

Figure 23: R&D expense of mobile game companies



Source: Wind, PSHK

Figure 24: Market size of Chinese MMORPG mobile game and growth



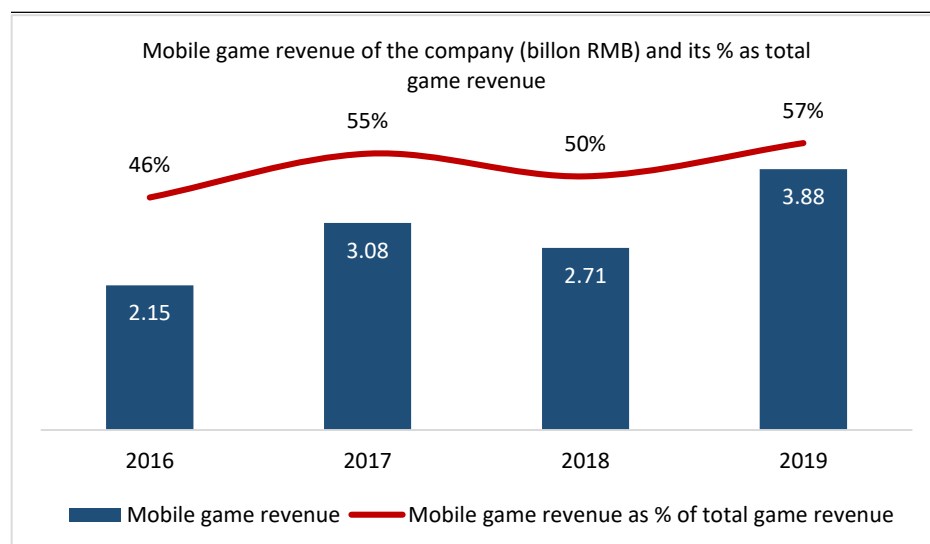
Source: Frost and Sullivan, PSHK



### The revenue proportion from mobile game has been rising in recent years, the company has successfully finished its “PC to mobile” transformation

Compared with the console game, PC game and web game market, the mobile game market will see greater growth in the future. According to Frost & Sullivan, the 2016-2019 CAGR of the mobile game/Console game/PC game/web game market were 23.2%/11.4%/1.8%/-15.9%, and the CAGR for 2019-2024 is 11.7%/7.3%/2.4%/-6.7% respectively. The company has seized the opportunity of high growth in the mobile game market. Since 2013, it has deployed the mobile game field. After obtaining the right to adapt the IP mobile game, it has successively launched many popular mobile games, such as New Zhuxian (新诛仙) and Perfect World mobile games (完美世界手游版). In addition, the company's revenue from mobile game as a percentage of total game revenue has also been increasing yoy for the past few years, from 46% in 2016 to 57% in 2019, this indicates that the company has successfully completed its transformation of “PC to mobile”. The successful transformation is mainly attributed to the company's strong mobile game research and development capabilities, the influence of mobile game IP, and the company's excellent operating capabilities on the mobile game.

Figure 25: Mobile game revenue of the company and its % as total game revenue



Source: Wind, PSHK

### The company's rich reserve in IPs

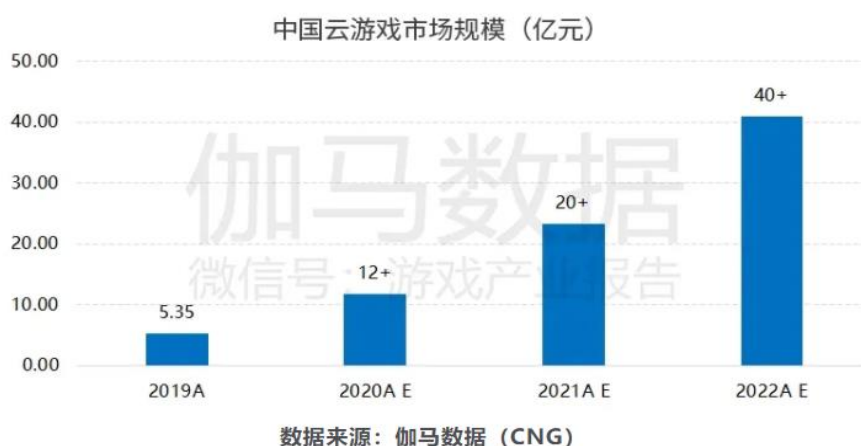
According to Analysys, the revenue generated from IP mobile games accounted for 67% of total revenue of the mobile games. Further, one of the major advantages of IP games is that the fans of its own IP can easily be converted into game players, so the marketing and promotion costs of the IP based games are lower than those of non-IP games. Secondly, this group of fans usually have higher loyalty and stickiness, hence, the average life cycle of IP game is longer than non-IP games. According to Analysys, the average life cycle of mobile games is 6-12 months, while the life cycle of CMGE's IP based games are ranging from 1-4 years. Based on the above reasons, compared with non-IP game companies, IP game companies have the characteristics of more stable revenue and higher liquidity.

The company's IP reserves are very rich, mainly divided into original and authorized IP. The company's main original IPs have achieved great success in the PC game era, such as the Perfect World IP. The immense influence and fan base of the IP has sufficient reduce the cost of the “PC to mobile transformation”, which enable the company to enter the mobile game market at a very low cost. On the other hand, the company has also obtained many famous IP game licenses, such as Zhuxian, Jin Yong's novels. The popularity of these authorized IP has become a major inherent advantage for the game during its launch.

### The company has laid a solid foundation in the cloud gaming sector

The popularity of 5G has greatly promoted the development of cloud games. According to the Gamma Data "Cloud Game Industry Survey Report 2020", the market size of China's cloud games in 2019 is about RMB 540 million, and the CAGR in the next two years will exceed 100%. The company has proactively deployed its cloud game business since 2017, and launched its first cloud game in the same year. Later, in 2019, it cooperated with the Tianyi Cloud game platform under China Telecom and published a few cloud games, including Fantasy New Zhuxian (梦幻新诛仙). New Zhuxian (梦幻新诛仙) also won the "Excellent Case of Cloud Game in 2020" by ICT China. The company stated that in the future, it will deepen its strategic cooperation with China Telecom Tianyi cloud gaming platform and other overseas-related technical teams to fully assist the sustainable development of the cloud gaming industry ecosystem. At present, the company has three studios that are focusing on the preparation and development of cloud games such as the highly anticipated Zhuxian 2 (诛仙2). The company's forward-looking deployment of cloud gaming business has enabled it to occupy the market share of this high-growth segment well in advance.

Figure 26: China cloud gaming market size



Source: Gamma Data

### The company is one of the icon in Chinese e-sports

The company acquired the domestic agency rights of Valve's "Dota 2" and "CS: Go" in 2012 and 2016, and began to deploy its e-sports business. Ever since that, it has successively held several large-scale "Dota 2" and "CS: Go" E-sports professional league in China. The company also assisted Valve to hold the "Dota 2" 2019 International Invitational Tournament (TI 9) in Shanghai in 2019, which was not only the first TI series held in China, but also set the record for the highest prize money of any single e-sports competition at that time. It can be seen that the company, as a major leader in the domestic e-sports industry, has the ability to successfully introduce top international e-sports events into China. According to iResearch, China's e-sports industry has exceeded RMB 100 billion in 2019 and is expected to reach RMB 165.1 billion in 2021. In addition, the current domestic e-sports industry is supported by government policies. Provinces and cities such as Beijing, Shanghai, Guangzhou, and Chengdu have issued policies with the aim to support the growth of Chinese e-sport sector. Among them, Shanghai even has the title of "Global E-sports Capital". We believe that the high attention of the e-sports industry itself coupled with the strong support of local policies will promote the continued high growth of the industry in the future, and the company, as a major representative of the Chinese e-sports industry, is expected to benefit from this in the future.



Figure 27: E-sport tournament hosted by the company



Source: Company

Figure 28: TI 9 in Shanghai



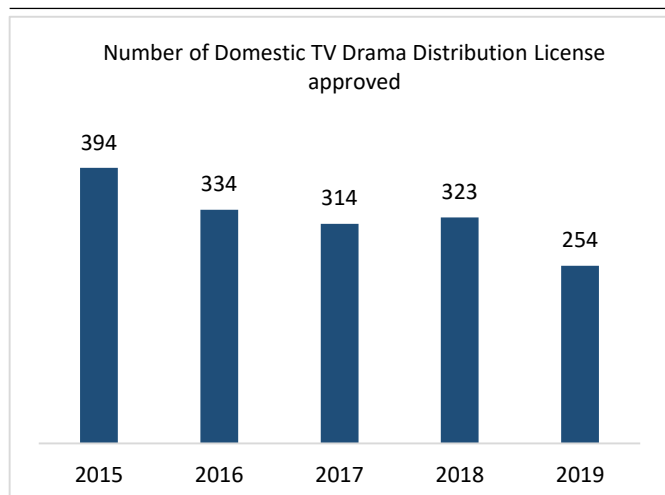
Source: Valve

## Perfect World Pictures

### Perfect World Pictures mainly focuses on TV drama business

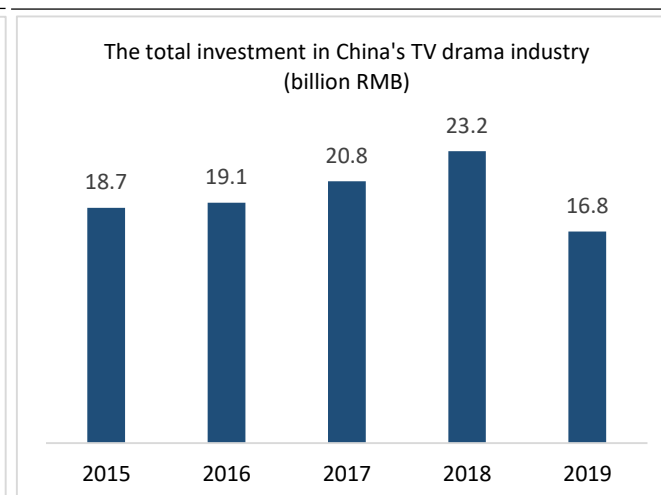
In January 2018, the company sold its cinema business to its parent company, Perfect World Holdings Group Co., Ltd. for approximately RMB 1.7 billion. After that, the company focused on TV drama business, which also accounted for the majority of the company's pictures revenue. In recent years, the number of TV series that have obtained the "Domestic TV Drama Distribution License" has shown a significant downward trend. In 2019, the number of TV series that have obtained the "Domestic TV Drama Distribution License" was only 254, a 36% drop from 394 in 2015. In addition, according to data from the Qianzhan Industry Research Institute, the total investment in China's TV drama industry in 2019 was RMB 16.8 billion, a yoy decrease of 27.6% and the first negative growth recorded in 5 years. The main reason for the decline in investment scale was that the industry's increasing regulatory intensity and restrictions on content topics have made TV dramas more difficult to be financed. Coupled with the exposure of scandals such as "duplicate contracts" (two contracts for apparently the same job, meant to help stars avoid regulatory rules and taxes), the domestic film and television industry has entered a cold winter in 2019. In the downturn of the general environment, the TV drama market has become more competitive, and TV dramas are crowded, which has caused a lot of pressure on the company's TV drama inventory. In 2019, the company had RMB 360 million in inventory impairment, which led to a net loss recorded for Perfect World Pictures. However, the quarantine in 20H1 has driven up the popularity and demand of TV drama in China, and the company has already recognized revenue for 11 TV dramas in 2020Q1-Q3, which is higher than the number of TV drama recognized in the whole 2019 combined. Hence, it can be seen that the inventory problem has been quickly digested in 1H20. We expect Perfect World Pictures to be profitable in 2020.

Figure 29: number of TV drama license approved



Source: State Administration of Radio, Film and Television, PSHK

Figure 30: total investment in China's TV Drama industry



Source: Qianzhan Research

### The company's past TV dramas and Variety Show have received good reputation

The company's past TV dramas have all been recognized by the market, such as "Skate into Love", "Ashes of Love", "Soul Mate", "The Legendary Tavern". The above TV dramas have all received Douban score higher than 7/10. Regarding the variety shows, "go fighting! Season 4" and "Back to Field Season 2" have both won good market reviews and reputation, with Douban scores of 7.6 and 8.1 points respectively.

Figure 31: The company's past core TV dramas and variety shows

| Type         | Name                                 | Launch Year | Douban Score |
|--------------|--------------------------------------|-------------|--------------|
| TV Drama     | Skate into Love<br>(冰糖燉雪梨)           | 2020        | 7.6          |
| TV Drama     | The Legendary Tavern<br>(老酒館)        | 2019        | 7.3          |
| TV Drama     | Soul Mate<br>(七月與安生)                 | 2019        | 7.6          |
| TV Drama     | Ashes of Love<br>(香蜜沉沉燼如霜)           | 2018        | 7.7          |
| Variety Show | go fighting! Season 4<br>(極限挑戰第四季)   | 2018        | 7.6          |
| Variety Show | Back to Field Season 2<br>(向往的生活第二季) | 2018        | 8.1          |

Source: Company, Douban, PSHK

### Well-known content production team

The company has multiple content creation teams, including Xinbaoyuan (鑫寶源), Huamei Time (華美時光), Perfect Pengrui (完美蓬瑞), Perfect Jianxin (完美建信), Jianghe Studio (江河工作室), Liu Ning Studio (劉寧工作室), etc. The team members include well-known directors and producers such as Zhao Baogang (趙寶剛), Teng Huatao (滕華濤), Liu Jiang (劉江), He Jing (何靜), etc. The company's production team has provided it with a wealth of film and television project reserves. According to the company's annual report, the company has a total of 34 film and television project investment plans in 2020, some of which have been launched in the first three quarters of 2020, including "Heroes Fearless" (大俠霍元甲), "Trident" (三叉戟) etc.

## Financial Analysis and Forecast

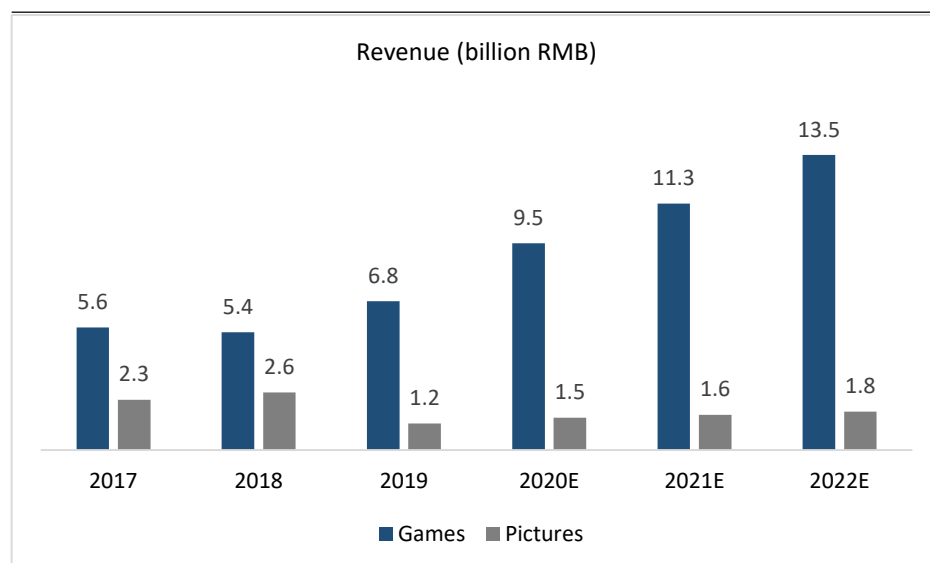
### Revenue

The company's past revenue had a steady upward trend, from RMB 6.17 billion in 2016 to RMB 8.04 billion in 2019, with a CAGR of 9.2% during the period. The company's revenue growth rate in 2019 was only 0.1%, mainly because the company divested its theater line business from the main body of the listed company in 2018. If the theater line business income is excluded, the company's revenue in 2019 will record a growth of 6.8%. The company's revenue can be mainly divided into two major sectors: games and pictures, of which the game business accounts for the majority. In 2019, game revenue was RMB 6.82 billion, accounting for 85% of total revenue. The company's game business mainly consists of four categories, mobile games, PC games, console games and other game revenue. Among the four major game categories, the rapid growth of mobile game revenue is the main driving force of the company's game business growth, and its share of total game revenue has also increased yoy. The company's mobile game revenue in 2019 was RMB 3.88 billion, represented an increase of 43% yoy, and its share of total game revenue was 57%, which also increased by about 7 pcts yoy.

Looking forward, we believe that the company's mobile game revenue will record high growth in 2020-2022, and the growth momentum mainly drives from the company's new online mobile games such as Perfect World mobile game(完美世界手遊版), Forsaken World (新神魔大陸), New Swordsman (新笑傲江湖) and etc, as well as the upcoming Fantasy New Zhuxian (夢幻新誅仙). Further, since the company will deploy more self-publishing in the future, which revenue is recognized as the gross basis of the gross billing of games, hence the revenue increase will be relatively higher in the future. We expect the company's mobile game revenue growth in 2020 to be 60%, and this growth is expected to normalized to about 25% as the "stay-at-home economy" fades. Based on the above reasons, we predict that the company's mobile game revenue in 2020/2021/2022 will be RMB 6.21/7.76/9.70 billion, respectively. On the other hand, the company's revenue from PC and console games in 2020 is also expected to benefit from the "stay-at-home economy" but the growth will be slower than that of the mobile games, mainly because the supplies of new products are less than that of the mobile games. We expect the 2020/2021/2022 revenue for PC and console games to be RMB 2.73/2.98/3.25 billion and RMB 470/490/510 million, up by 13%/9%/9% and 4%/3%/3% yoy, respectively.

As for the Perfect World Pictures (TV series and others), we believe that the company's TV drama business will record positive growth in the next three years. In 2020, with the rise of China's "stay-at-home economy", people's demand for TV dramas and online dramas has greatly increased. In the first three quarters of the year, the company recognized 11 TV drama as income, speeding up the pace of inventory clearance. Therefore, we expect the company's TV drama business revenue will record a relatively high growth in 2020, about 25%. However, with the overall industry downturn (including the tightening of version numbers, increased content supervision, and fiercer competition), the revenue growth rate is expected to normalize to about 10% in 2021 and 2022. Based on the above reasons, we expect the company's TV drama business revenue for 2020/2021/2022 will be RMB 1.33/1.46/1.60 billion respectively.

Figure 32: Revenue Breakdown

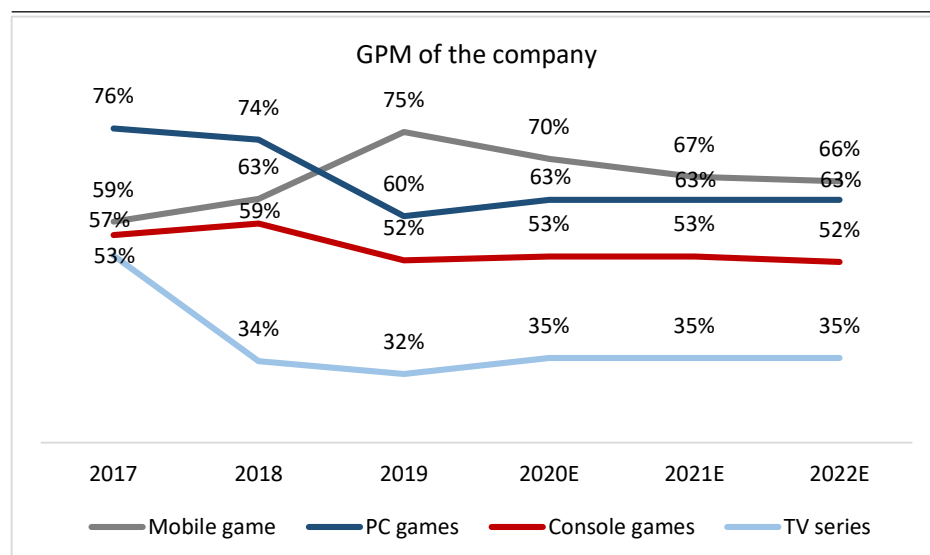


Source: Wind, PSHK

### GPM and expenses ratio

The company's gross profit margin has been on an upward trend since 2017, mainly due to the increase in gross profit margin of the game business and the increase in the proportion of revenue from the game business (game business has higher GPM than pictures). The increase in the gross profit margin of the game business was mainly due to the increase in the revenue proportion of the company's higher gross profit margin sector, mobile game sector, yoy. As for the TV drama business, the gross profit margin fell from 53.1% in 2017 to 32.2% in 2019 due to the downturn in the industry. However, the company's overall gross profit margin in the past can still maintain an upward trend. We believe that the future gross profit margin of the company's mobile game business will decline with the company's increasing number of self-publishing, where revenue is recorded at gross basis of the gross billing (hence lower GPM). The gross profit margin of mobile games for 2020/2021/2022 is expected to be 70.3%/67.1%/66.3% respectively. On the other hand, we expect the company's gross profit margin for PC and console games to remain stable. The gross profit margin of the TV drama business will also increase with the increase in the controllability of the actors' pay and will remain at about 35%.

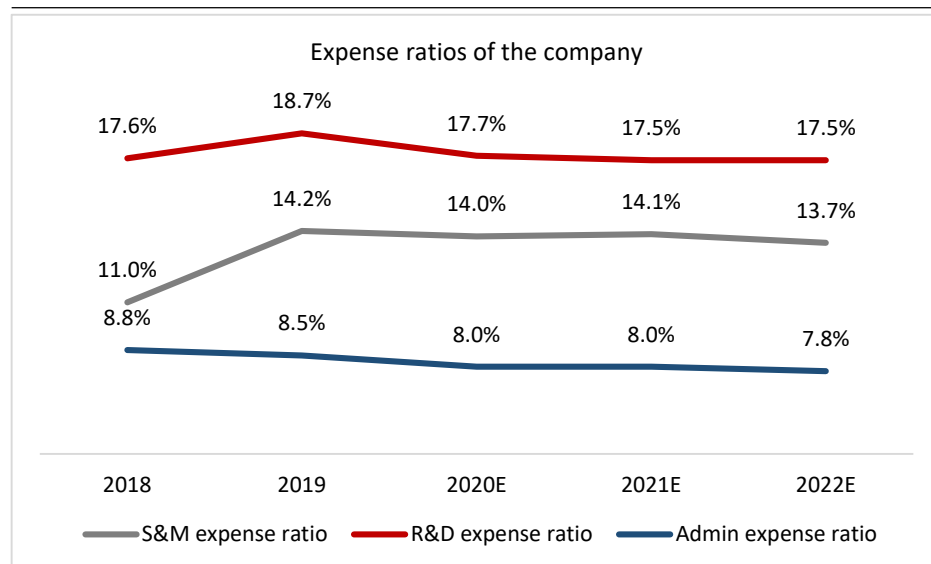
Figure 33: GPM



Source: Wind, PSHK

The company's S&M expense ratio in 2019 was relatively high, about 3.2 pct higher than in 2018. We expect that the company's S&M expense ratio in the next three years will remain at a relatively high level, about 13-14%, mainly due to 1) the increase in the cost of game advertisement 2) the company's recent self-publish strategy of high advertisement (refer to Forsaken World (新神魔大陸) launch in Mainland China, the company's Q3 S&M expense ratio was 21.6%. Nonetheless, since advertisement expenses tend to be higher in the quarter when the game is launched and we can clearly see a huge drop in advertisement for Forsaken World (新神魔大陸) after August, hence we believe the S&M expense ratio in Q4/2020E to be lower than that in Q3.) 3) The company's advertisement investment will increase with the company's future increase in self-publishing ratio. As for the R&D expense ratio, we believe it will remain stable at a level of about 17%-18% in the future. Finally, the company's admin expense ratio is expected to gradually decrease in the future with the company's scale efficiency.

Figure 34: Expense ratios



Source: Wind, PSHK

## Valuation

We forecast the EPS of the company in 2020-2022 to be RMB 1.33/1.47/1.77. We have adopted SOTP valuation method to value the company, and has split the expenses base on the revenue of two sectors (Games and Pictures), expect for R&D expenses, where we have allocated all R&D expense to the Game business.

1) As of 5<sup>th</sup> of Nov, the average PE of A-share listed game companies is 19.9x. Considered that the company's strong R&D capabilities and its market leading position, we will apply a premium to the company. We forecast the Perfect World Games' Net income attributable to parent to be RMB 2.32/2.58/3.13 billion. We value it at RMB 64.6 billion, with respective 2020/2021 PE at 27.9x/25.0x/20.6x.

2) We expect Perfect World Pictures' 2020/2021/2022 net income attributable to parent to be RMB 261/276/303 million. We value Perfect World Pictures at RMB 4.1 billion, based on 15x 2021 PE (average of similar peers).

We value the company at RMB 68.7 billion, with target price at RMB 35.44, which implies 2020/2021 PE of 26.7x/24.0x/20.0x. We initiate with a "BUY" rating. (Market closing price as of 5<sup>th</sup> Nov)

Figure 35: Comps table

| Company             | Stock code       | Closing Price     | Market Cap | PE    |       |        |       | PB   |       |       |       |
|---------------------|------------------|-------------------|------------|-------|-------|--------|-------|------|-------|-------|-------|
|                     |                  |                   |            | TTM   | 2019A | 2020E  | 2021E | TTM  | 2019A | 2020E | 2021E |
| Game Companies      |                  | (listed currency) | (RMB mn)   |       |       |        |       |      |       |       |       |
| A stocks            |                  |                   |            |       |       |        |       |      |       |       |       |
| WUHU SANQI          | 002555 CH equity | 28.48             | 55,241     | 30.9x | 37.0x | 23.3x  | 18.4x | 5.1x | 5.6x  | 4.3x  | 3.5x  |
| GIANT NETWORK       | 002558 CH equity | 18.29             | 37,026     | 36.1x | 33.3x | 33.6x  | 27.9x | 3.2x | -     | 3.2x  | 2.8x  |
| ZHEJIANG CENTURY    | 002602 CH equity | 8.14              | 60,664     | 21.5x | 20.2x | 15.5x  | 12.5x | 2.0x | 2.9x  | 2.4x  | 2.1x  |
| PERFECT WORLD       | 002624 CH equity | 29.25             | 61,783     | 21.7x | 29.1x | 21.0x  | 17.5x | 7.6x | 8.1x  | 6.3x  | 4.9x  |
| G-BITS NETWORK      | 603444 CH equity | 468.98            | 33,703     | 36.0x | 37.3x | 29.2x  | 23.3x | 9.5x | 10.1x | 8.6x  | 6.8x  |
|                     |                  |                   | Average    | 29.2x | 31.4x | 24.5x  | 19.9x | 5.5x | 6.7x  | 5.0x  | 4.0x  |
|                     |                  |                   | Median     | 30.9x | 33.3x | 23.3x  | 18.4x | 5.1x | 6.9x  | 4.3x  | 3.5x  |
| Hong Kong Stocks    |                  |                   |            |       |       |        |       |      |       |       |       |
| TENCENT             | 700 hk equity    | 625               | 5,130,200  | 48.8x | 54.2x | 42.0x  | 33.5x | 9.6x | 12.1x | 9.2x  | 7.3x  |
| NETEASE             | 9999 HK equity   | 146.2             | 432,601    | -     | -     | 18.5x  | 16.0x | -    | -     | 2.8x  | 2.4x  |
| ARCHOSAUR GAMES     | 9990 hk equity   | 17.8              | 12,432     | -     | -     | 19.1x  | 11.0x | -    | -     | 3.4x  | 2.4x  |
| XD INC              | 2400 hk equity   | 39.1              | 15,206     | 34.2x | 30.7x | 31.0x  | 22.9x | -    | 7.2x  | 5.7x  | 4.6x  |
|                     |                  |                   | Average    | 41.5x | 42.5x | 27.7x  | 20.9x | 9.6x | 9.7x  | 5.3x  | 4.2x  |
|                     |                  |                   | Median     | 41.5x | 42.5x | 25.1x  | 19.5x | 9.6x | 9.7x  | 4.6x  | 3.5x  |
| US stocks           |                  |                   |            |       |       |        |       |      |       |       |       |
| EA                  | EA US equity     | 120.74            | 240,325    | 18.3x | 32.0x | 26.8x  | 22.5x | 4.7x | 7.2x  | 5.4x  | 4.4x  |
| NINTENDO            | NTDOY US equity  | 70.04             | 479,024    | -     | -     | 3.6x   | 17.0x | -    | -     | 0.5x  | -     |
| SONY CORP           | SNE US equity    | 86.41             | 723,635    | -     | 13.7x | 19.4x  | 18.8x | -    | 3.0x  | -     | 2.2x  |
| ACTIVISION BLIZZARD | ATVI equity      | 76.26             | 407,358    | 28.4x | 35.9x | 23.6x  | 22.8x | 4.3x | 4.8x  | 4.1x  | 3.6x  |
|                     |                  |                   | Average    | 23.4x | 27.2x | 18.4x  | 20.3x | 4.5x | 5.0x  | 3.3x  | 3.4x  |
|                     |                  |                   | Median     | 23.4x | 32.0x | 21.5x  | 20.7x | 4.5x | 4.8x  | 4.1x  | 3.6x  |
| Content Producer    |                  |                   |            |       |       |        |       |      |       |       |       |
| HUAYI BROTHER       | 300027 CH equity | 4.48              | 12,490     | -     | -     | 235.8x | 31.3x | 3.0x | 2.5x  | 2.4x  | 2.1x  |
| ENLIGHT             | 300251 CH equity | 12.19             | 35,761     | -     | 32.9x | 70.5x  | 32.4x | 4.0x | 3.7x  | 3.8x  | 3.4x  |
| APLHA GROUP         | 002292 CH equity | 7.12              | 9,663      | -     | 79.1x | 82.8x  | 36.0x | 2.5x | 2.4x  | 2.3x  | 2.1x  |
| NEW CULTURE MEDIA   | 300336 CH equity | 4.44              | 3,580      | -     | 40.4x | 19.7x  | 12.1x | 1.9x | 1.4x  | 1.5x  | 1.5x  |
| CIWEN MEDIA         | 002343 CH equity | 7.02              | 3,334      | 57.8x | 19.3x | 20.2x  | 12.2x | 2.1x | 2.0x  | 1.9x  | 1.7x  |
| ZHEJIANG HUACE      | 300133 CH equity | 7.39              | 12,974     | -     | -     | 26.8x  | 20.5x | 2.4x | 2.0x  | 2.3x  | 2.1x  |
|                     |                  |                   | Average    | 57.8x | 42.9x | 76.0x  | 24.1x | 2.7x | 2.3x  | 2.4x  | 2.2x  |
|                     |                  |                   | Median     | 57.8x | 36.7x | 48.7x  | 25.9x | 2.5x | 2.2x  | 2.3x  | 2.1x  |

As of 5<sup>th</sup> Nov Closing Price, US Stocks closing price as of 4<sup>th</sup> Nov

Source: Bloomberg

## Risk

1) The tightening on Game regulations 2) The Games underperform comparing to expectation 3) Games launching are delayed due to unexpected reasons



## Financial Statements

### Key Financial Data

| FYE DEC                     | 2018 | 2019 | 2020E | 2021E | 2022E |
|-----------------------------|------|------|-------|-------|-------|
| <b>Valuation Ratio</b>      |      |      |       |       |       |
| P/E ratio, x                | 21.9 | 24.6 | 21.4  | 19.3  | 16.1  |
| P/B ratio, x                | 4.4  | 3.9  | 4.6   | 3.9   | 3.3   |
| <b>Per share data (RMB)</b> |      |      |       |       |       |
| EPS                         | 1.30 | 1.16 | 1.33  | 1.47  | 1.77  |
| BVPS                        | 6.41 | 7.35 | 6.24  | 7.36  | 8.71  |
| DPS                         | 0.18 | 0.24 | 0.27  | 0.29  | 0.35  |
| <b>Growth &amp; Margin</b>  |      |      |       |       |       |
| Revenue Growth              | 1%   | 0%   | 36%   | 18%   | 18%   |
| Operating income growth     | 16%  | -25% | 88%   | 10%   | 19%   |
| net income growth           | 13%  | -12% | 72%   | 11%   | 20%   |
| Gross Profit Margin         | 56%  | 61%  | 64%   | 62%   | 62%   |
| Operating profit Margin     | 26%  | 19%  | 27%   | 25%   | 25%   |
| Net Profit Margin           | 21%  | 19%  | 24%   | 22%   | 22%   |
| <b>Key Ratios</b>           |      |      |       |       |       |
| ROE                         | 19%  | 14%  | 21%   | 19%   | 20%   |
| ROA                         | 11%  | 9%   | 13%   | 13%   | 14%   |

Market closing price as of 5<sup>th</sup> Nov

### Consolidated Statement of Profit or Loss

| (RMB million)                                  | 2018         | 2019         | 2020E         | 2021E         | 2022E         |
|--|--------------|--------------|---------------|---------------|---------------|
| Mobile game                                    | 2,711        | 3,881        | 6,209         | 7,761         | 9,702         |
| PC games                                       | 2,196        | 2,419        | 2,733         | 2,979         | 3,247         |
| Console games                                  | 463          | 457          | 476           | 490           | 505           |
| Others   | 20           | 60           | 60            | 60            | 60            |
| Total games revenue                            | 5,389        | 6,817        | 9,478         | 11,291        | 13,514        |
| TV series                                      | 1,749        | 1,060        | 1,325         | 1,458         | 1,603         |
| Others   | 896          | 162          | 162           | 162           | 162           |
| <b>Total revenue</b>                           | <b>8,034</b> | <b>8,039</b> | <b>10,965</b> | <b>12,910</b> | <b>15,279</b> |
| Cost of good sold                              | -3,550       | -3,142       | -3,998        | -4,891        | -5,813        |
| <b>Gross profit</b>                            | <b>4,484</b> | <b>4,897</b> | <b>6,968</b>  | <b>8,019</b>  | <b>9,466</b>  |
| Selling and marketing expenses                 | -880         | -1,145       | -1,535        | -1,820        | -2,093        |
| R&D expenses                                   | -1,413       | -1,504       | -1,941        | -2,259        | -2,674        |
| Administrative expenses                        | -704         | -685         | -877          | -1,033        | -1,192        |
| Other income                                   | 130          | 89           | 62            | 62            | 62            |
| Net investment gain                            | 465          | 229          | 229           | 229           | 229           |
| Impairment loss on assets                      | -10          | -707         | 0             | 0             | 0             |
| Others   | -10          | 373          | 0             | 0             | 0             |
| <b>Operating income</b>                        | <b>2,060</b> | <b>1,548</b> | <b>2,906</b>  | <b>3,199</b>  | <b>3,799</b>  |
| Finance income                                 | 69           | 32           | 52            | 60            | 72            |
| Finance cost                                   | -242         | -242         | -199          | -199          | -199          |
| Others non operating gain and loss             | 29           | 7            | 0             | 0             | 0             |
| <b>Profit before tax</b>                       | <b>1,916</b> | <b>1,346</b> | <b>2,759</b>  | <b>3,060</b>  | <b>3,673</b>  |
| Income tax                                     | -156         | 101          | -276          | -306          | -367          |
| <b>Net profit</b>                              | <b>1,759</b> | <b>1,447</b> | <b>2,483</b>  | <b>2,754</b>  | <b>3,305</b>  |
| Minority interest                              | -53          | 56           | 95            | 106           | 127           |
| <b>Net profit attributable to shareholders</b> | <b>1,706</b> | <b>1,503</b> | <b>2,579</b>  | <b>2,860</b>  | <b>3,432</b>  |
| <b>EPS</b>                                     | <b>1.3</b>   | <b>1.16</b>  | <b>1.33</b>   | <b>1.47</b>   | <b>1.77</b>   |

## Consolidated statement of Financial Position

| (RMB million)                            | 2018          | 2019          | 2020E         | 2021E         | 2022E         |
|--|---------------|---------------|---------------|---------------|---------------|
| <b>Non-current assets</b>                |               |               |               |               |               |
| Fixed assets                             | 362           | 364           | 356           | 352           | 348           |
| Intangible assets                        | 87            | 214           | 245           | 280           | 320           |
| Non-current Financial asset              |               | 2,438         | 2,438         | 2,438         | 2,438         |
| Other non current asset                  | 4,746         | 3,482         | 3,756         | 4,018         | 4,290         |
| <b>Total non-current assets</b>          | <b>5,195</b>  | <b>6,497</b>  | <b>6,794</b>  | <b>7,087</b>  | <b>7,395</b>  |
| <b>Current assets</b>                    |               |               |               |               |               |
| Cash and cash equivalent                 | 4,229         | 2,526         | 4,238         | 4,712         | 6,089         |
| Accounts receivable and notes receivable | 1,964         | 2,355         | 2,915         | 3,289         | 4,053         |
| Inventories                              | 2,142         | 1,760         | 853           | 2,299         | 2,220         |
| Other current asset                      | 2,448         | 3,492         | 4,115         | 3,873         | 4,509         |
| <b>Total current assets</b>              | <b>10,783</b> | <b>10,132</b> | <b>12,120</b> | <b>14,174</b> | <b>16,872</b> |
| <b>Total assets</b>                      | <b>15,978</b> | <b>16,629</b> | <b>18,914</b> | <b>21,261</b> | <b>24,267</b> |
| <b>Non current liabilities</b>           |               |               |               |               |               |
| Long-term borrowings                     | 794           | 225           | 225           | 225           | 225           |
| Deferred income                          | 14            | 10            | 22            | 16            | 29            |
| Other non-current liabilities            | 1,941         | 1,466         | 1,466         | 1,466         | 1,466         |
| <b>Total non-current liabilities</b>     | <b>2,748</b>  | <b>1,701</b>  | <b>1,714</b>  | <b>1,707</b>  | <b>1,721</b>  |
| <b>Current liabilities</b>               |               |               |               |               |               |
| Short-term borrowings                    | 1,270         | 1,139         | 1,139         | 1,139         | 1,139         |
| Account payable and notes payable        | 393           | 486           | 697           | 751           | 970           |
| Advances from customers                  | 409           | 606           | 700           | 818           | 972           |
| Other non-current liabilities            | 1,849         | 2,569         | 2,569         | 2,569         | 2,569         |
| <b>Total current liabilities</b>         | <b>3,921</b>  | <b>4,800</b>  | <b>5,104</b>  | <b>5,276</b>  | <b>5,649</b>  |
| <b>Total liabilities</b>                 | <b>6,669</b>  | <b>6,501</b>  | <b>6,818</b>  | <b>6,983</b>  | <b>7,370</b>  |
| <b>Equity</b>                            |               |               |               |               |               |
| Share Capital                            | 1,386         | 1,365         | 1,365         | 1,365         | 1,365         |
| Reserve                                  | 7,053         | 8,150         | 10,213        | 12,501        | 15,247        |
| Minority non-controlling interest        | 870           | 614           | 519           | 413           | 286           |
| <b>Total Equity</b>                      | <b>9,309</b>  | <b>10,129</b> | <b>12,096</b> | <b>14,278</b> | <b>16,897</b> |
| <b>Total Liabilities and Equity</b>      | <b>15,978</b> | <b>16,629</b> | <b>18,914</b> | <b>21,261</b> | <b>24,267</b> |

## Cash Flow Statement

| (RMB million)   | 2018          | 2019          | 2020E        | 2021E        | 2022E        |
|---|---------------|---------------|--------------|--------------|--------------|
| <b>Net profit</b>   | <b>1,759</b>  | <b>1,447</b>  | <b>2,483</b> | <b>2,754</b> | <b>3,305</b> |
| Depreciation and amortization                               | 120           | 116           | 194          | 206          | 227          |
| change in working capital                                   | -1,795        | 117           | 41           | -1,414       | -934         |
| Others  | -215          | 343           | -69          | -77          | -89          |
| <b>Net cash generated from operating activities</b>         | <b>-130</b>   | <b>2023</b>   | <b>2650</b>  | <b>1469</b>  | <b>2509</b>  |
| Capex   | -141          | -449          | -231         | -251         | -276         |
| Others  | 3,117         | -1,545        | -45          | -33          | -42          |
| <b>Cashflow from investing activities</b>                   | <b>2,976</b>  | <b>-1,994</b> | <b>-275</b>  | <b>-284</b>  | <b>-319</b>  |
| <b>Cashflow from financing activities</b>                   | <b>-1,952</b> | <b>-1,427</b> | <b>-662</b>  | <b>-711</b>  | <b>-813</b>  |
| <b>Net increase/(decrease) in cash and cash equivalents</b> | <b>894</b>    | <b>-1,398</b> | <b>1,712</b> | <b>475</b>   | <b>1,377</b> |
| Cash at beginning   | 2,931         | 3,852         | 2,526        | 4,238        | 4,712        |
| Foreign exchange  | 27            | 14            | 0            | 0            | 0            |
| <b>Cash and cash equivalents at the end of the year</b>     | <b>3,852</b>  | <b>2,468</b>  | <b>4,238</b> | <b>4,712</b> | <b>6,089</b> |

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| Total Return | Recommendation | Rating | Remarks                                      |
|--------------|----------------|--------|--|
| >+20%        | Buy            | 1      | >20% upside from the current price           |
| +5% to +20%  | Accumulate     | 2      | +5% to +20% upside from the current price    |
| -5% to +5%   | Neutral        | 3      | Trade within $\pm$ 5% from the current price |
| -5% to -20%  | Reduce         | 4      | -5% to -20% downside from the current price  |
| <-20%        | Sell           | 5      | >20% downside from the current price         |

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