

CMGE

Initiation of Coverage

High-growth mobile game operator moving upstream to fully tap its IP potential

High growth in a promising segment, our new Buy, PT of HK\$4.4

Mobile game has become the main driver of the game market. Along with the acceleration of 5G deployment, new technologies such as AR/VR will bring more innovative experiences to the mobile games. We believe mobile game is the most promising market segment and will continue its rapid growth in the coming years. CMGE has been focusing on mobile games since founded and had achieved a CAGR of 73% on revenue in FY17-19, much higher than the industry average. On the back of abundant high-quality IP reserves and new games (28 pre-approvals as of Q1) intended to hit the market this year, we expect CMGE's revenue and core net profit to grow by 44%/44% YoY to RMB4.4bn/RMB801mn in FY20E. We initiate CMGE with Buy and PT of HK\$4.4, as we see a big room for valuation expansion. The stock is now trading at 6.8x FY20E P/E, at a deep discount to mid-sized peers' of 11.0x and large-sized peers' of 18.3x, respectively.

IP strategy offers CMGE an edge in game monetization

In general, IP-based games have higher player loyalty and stickiness, which can prolong the game lifecycle. The life cycle of CMGE games is higher than the average life cycle of current mobile games on the market and 11 out of its published games have a lifecycle of over three years. On the other hand, given the stable and loyal audience, IP games can save meaningful marketing expenses, which are eventually accretive to margins. We found CMGE has a higher paying user's conversion rate (defined as avg. MPU/MAU) and higher profitability per user (defined as adj. EBIT/MAU) than its major rivals. As of 2019, CMGE had 31 licensed IPs and 68 proprietary IPs, which was the 2nd largest IP reserves amongst all Chinese mobile game publishers after Tencent Game. Given its strong exposure to IP, we expect CMGE's operating margin and core net profit margin will rise to 21.7%/18.3% in FY20E and further expand to 23.6%/20.0% in FY22E.

Moving upstream by building in-house development capabilities

To fully tap its IP potential, CMGE has been actively seeking to move upstream by building in-house development capabilities with the help of its abundant user knowledge from game operating. As of 2019, CMGE has acquired two subsidiaries and invested in 14 independent content providers and 3 innovative game developers. In view of the extraordinary success of World of Legend – Thunder Empire (傳奇世界之雷霆霸業) in FY19, a game developed in-house by the CMGE's wholly-owned subsidiary, we expect self-developed games will attract more users to further drive the growth. CMGE plans to launch 9 new self-developed games this year and total gross billings is expected to grow by 45% YoY to RMB5.5bn in FY20E.

Valuation and risks

Our PT of HK\$4.4 comprises: 1) HK\$4.1 for gaming publishing; 2) HK\$0.3 for its strategic investment. The valuation of HK\$4.1 for its gaming publishing implies 11.0x FY20E P/E, in line with that of mid-sized peers. Key risks to our PT include: 1) uncertainty about IP licenses; 2) possibility of goodwill impairment; 3) failure in building in-house game development capabilities; 4) uncertainty about game permits and approvals.

Stock code: 302.HK

Rating: Buy

Price target (HK\$)	4.4
Current price (HK\$, 5 May 2020)	2.6
Total upside/downside %	72%
Market cap (HK\$ m)	5,965
Market cap (US\$ m)	769
Avg daily turnover (HK\$ m)	91

Source: Bloomberg, AMTD research estimates

Key forecasts

(RMB m)	2019	2020e	2021e	2022e
Total gross billings	3,765	5,462	7,008	8,548
yoy %	57%	45%	28%	22%
Revenue	3,036	4,368	5,365	6,459
yoy %	90%	44%	23%	20%
Core net profit	557	801	1,016	1,291
yoy %	142%	44%	27%	27%
Core EPS (RMB)	0.29	0.34	0.43	0.55
yoy %	131%	15%	27%	27%
Adj. EBIT margin	21%	22%	22%	24%
Core NPM	18%	18%	19%	20%

Source: Company data, AMTD research estimates

Valuation

	FY19	FY20e	FY21e	FY22e
P/S	1.8	1.3	1.0	0.8
P/E	7.9	6.8	5.4	4.2
EV/EBITDA	6.7	4.4	3.4	2.7
Dividend yield	1.3%	3.7%	4.6%	5.8%
ROE	9%	21%	22%	24%

Source: Bloomberg, AMTD research estimates

Share price performance (HK\$)



Source: Bloomberg

Brian Li
Analyst

+852 3163 3384

brian.li@amtdgroup.com

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Investment risks

Uncertainty regarding the license of IPs and games

CMGE publishes games developed by third parties, many of which are developed based on their licensed IPs. Most of the IPs are licensed for 2-5 years and renewable upon agreement between both parties. CMGE also gets licensed games directly from game developers and the licensing agreements generally have a term of 3-5 years, some with automatic renewal under circumstances. There is a possibility that CMGE cannot successfully license games developed by third-party game developers and IPs from their owners. This failure will negatively impact CMGE's game portfolio and pipeline, and consequently the results of operations.

Possibility of goodwill impairment adversely affects financial results

CMGE builds its in-house game developing team by acquiring two subsidiaries to exert greater influence on the game design and development process and access to better game content. Fair value of consideration for acquiring Wenmai Hudong and Softstar are RMB760mn and RMB213mn and the value of goodwill is determined based on a number of assumptions made by the management. If any of those assumptions does not materialize, or if the performance of CMGE's business is not consistent with such assumptions, CMGE will be required to write down the value of goodwill and recognize corresponding impairment losses.

Failure in developing games in-house to attract new players

CMGE possesses in-house game development capabilities after acquisition of two subsidiaries, but whether the group can successfully develop new game largely depends on its ability to attract, retain and motivate talented game development personnel, minimize launch delays and cost overruns in the development of new games as well as effectively monetize games without degrading gameplay experience. Besides, in-house development requires a substantial initial investment and a significant commitment of future resources to produce updates and expansion packs. There is possibility that CMGE may fail to launch self-developed games.

Failure in obtaining game permits and approvals

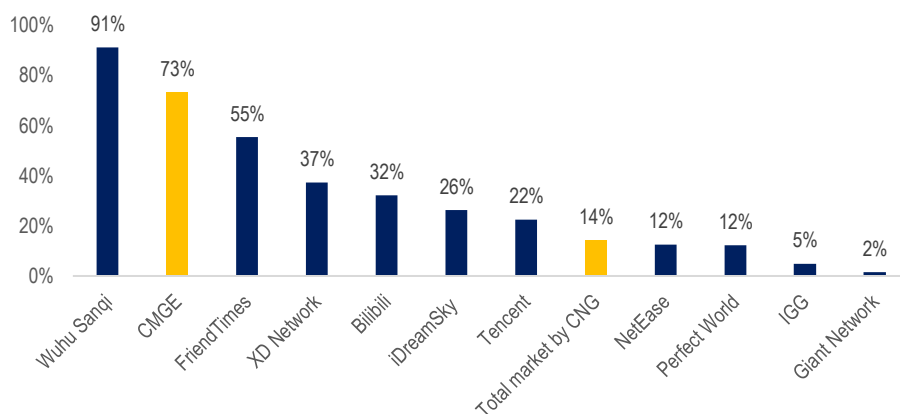
All online mobile games must be approved by NPPA. Failure to obtain or maintain any of the required permits or approvals or if CMGE's practice is later challenged by government authorities, the company may be subject to various penalties, including and without limitation to, fines, being ordered to rectify the situation, confiscation of illegal revenues and discontinuation or restriction of business operations. Moreover, as mobile games are at an early stage of development in China, new laws and regulations may be adopted and existing laws and regulations may be amended from time to time that require licenses and permits beyond those CMGE currently have.

Leading IP driven mobile game operator

High growth game operator within the most promising segment

According to CNG, the actual sales revenue of the Chinese game market in 2019 was RMB233.02bn, up 8.7% YoY and of which the actual sales revenue of the mobile game market grew by 13.0% YoY to RMB151.37bn. Thanks to the expansion of network bandwidth and the continuous improvement of mobile phone performance, mobile game revenue growth has been outpacing the overall game market for the past few years. In the future, we believe that with the full deployment of 5G networks, the application of new technologies such as AR/VR will bring more innovative experiences in the form of mobile games, and mobile games will continue to maintain rapid growth.

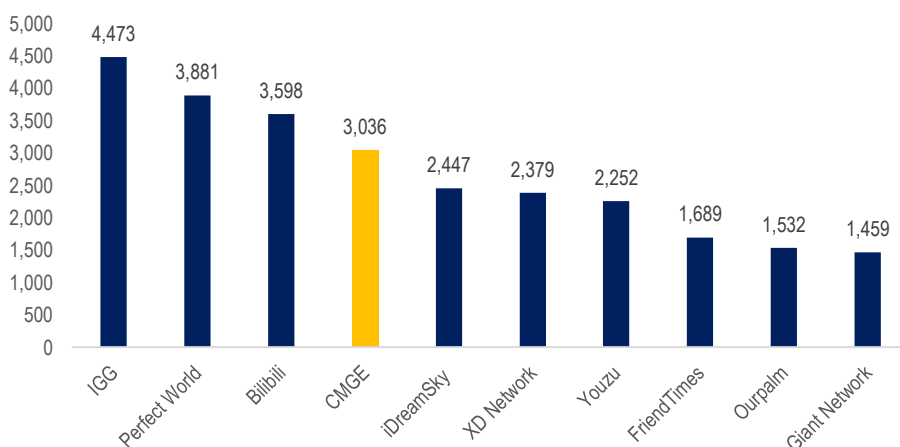
Figure 1: mobile game revenue CAGR comparison in 2017 – 2019



Source: Company data, CNG (伽馬數據), AMTD Research

CMGE has been focusing on mobile games since founded. The revenue CAGR in FY17-19 reached 73%, much higher than the industry average, and ranking second among all mobile game operators. In 2019, CMGE’s mobile game revenue exceeded RMB3bn, ranking fourth among the remaining competitors except for the three major operators – Tencent, NetEast, and Wuhu Sanqi, with a market share of approximately 2%.

Figure 2: mid-sized game operators’ mobile game revenue comparison in 2019 (RMB mn)



Source: Company data, AMTD Research

Building in-house development capabilities to attract more users

In order to attract more MAUs/MPUs and achieve high gross billings, it is critical to self-develop high-quality games. To fully tap its IP potential and leverage its abundant deep knowledge in users acquired from game operating, CMGE has been actively seeking to move upstream to build its in-house development capabilities by M&A. As of 2019, CMGE has acquired two subsidiaries (100% interest in Wenmai Hudong and 51% equity interests in Beijing Softstar) and now possesses ability to develop hard-core mobile games which can attract more users and improve monetization.

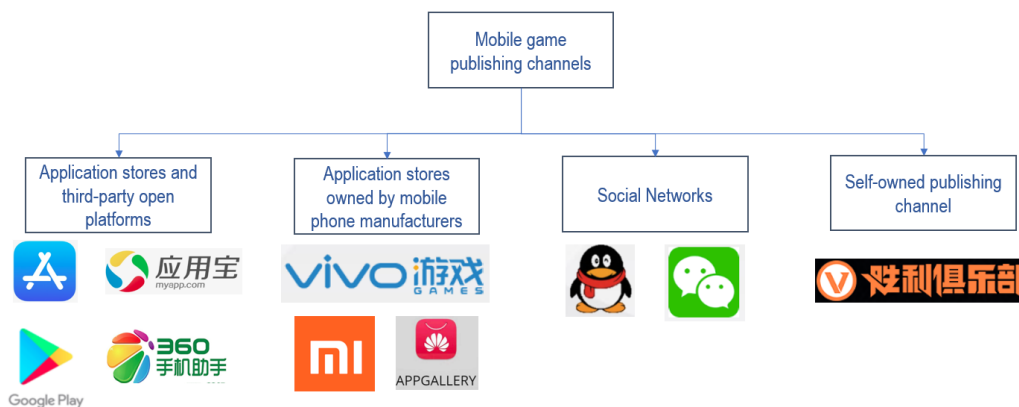
CMGE's wholly-owned subsidiary Wenmai Hudong is experienced in development of "Legend" themed games and MMORPG. "Legend", an IP with nearly 20 years history still has a large number of loyal users who are able and willing to pay for games and in-game items. In 2019, World of Legend – Thunder Empire (傳奇世界之雷霆霸業), a game developed in-house by Wenmai Hudong, recorded peak gross billing in a single month of over RMB200 mn, and nearly 1.3 mn average MAUs. This game's stable long-term retention rate made it a popular product in the "Legend" mobile game category in 2019. With more "Legend" IP-based games to come in 2020, we believe CMGE's gross billing will show strong growth.

Extensive distribution network with a focus on mobile game

Unlike other players in game industry who have switched their business orientation from Web/PC games to mobile games, since founded CMGE has been focusing on mobile games which turns out to be the most promising segment. With more than 10-year experience in mobile game publishing, CMGE has established its strong publishing channel network with over 400 third-party publishing channels, including application stores and third-party open platforms, application stores operated by mobile phone manufacturers, and social network platforms. CMGE has maintained good relationships with these leading players, including App Store, Huawei AppGallery and Mobile QQ.

Besides third-party publishing channels, CMGE also acquired their own publishing platform VClub (勝利俱樂部) in 2018 where they can collect gross billings directly from payment channels and no need to share channel fees. Therefore, the more games are published through VClub, the higher gross margin CMGE can achieve.

Figure 3: CMGE's mobile game publishing channels



Source: Company data, AMTD Research

Leading IP-based game operator on back of strong IP reserves

CMGE is a leading IP-based game operator and publisher. Its IP games' total gross billings achieved a strong CAGR of 49% in FY17-19 and accounted for 56.1% of total gross billings in FY19. According to Analysys, CMGE had the second largest IP reserve amongst all Chinese mobile game publishers after Tencent Game as at the end of 2019, and it launched the largest number of IP-based mobile games in 2019. As at 31 December 2019, the Group had a vast IP reserve comprising 31 licensed IPs and 68 proprietary IPs.

Licensed IPs such as One Piece (a Japanese manga serialized from 1997), Dragon Ball Z (a Japanese anime television series aired in 1989) and Naruto (a Japanese manga series published in 1997) are top IPs which have huge fans worldwide. Proprietary IPs from the acquisition of Beijing Softstar including Legend of Sword and Fairy which is a role-playing video games published in 1995 and has been regarded as one of the most iconic Chinese RPG series ever made.

Figure 4: CMGE's major IP reserves as of 31 December 2019

Game Name	Genres	Launch Time	IP Source	IP Name
Games in Operating				
決戰沙城(Jue Zhan Sha Cheng)	MMORPG	2014	Licensed	Jue Zhan Sha Cheng (決戰沙城)
新仙劍奇俠傳(New Legend of Sword and Fairy)	CCG	2015	Own	Legend of Sword and Fairy (仙劍奇俠傳)
決戰沙城之 屠龍(Jue Zhan Sha Cheng Zhi Tu Long)	ARPG	2016	Licensed	Jue Zhan Sha Cheng (決戰沙城)
火影忍者-忍者大師(Naruto – Ninja Master)	CCG	2016	Licensed	Naruto (火影忍者)
航海王強者之路(One Piece – the Road of the Strong)	CCG	2016	Licensed	One Piece (航海王)
妖精的尾巴 – 最強公會(Fairy Tail – the Strongest Guild)	TRPG	2017	Licensed	Fairy Tail (妖精的尾巴)
新仙劍奇俠傳 H5(New Legend of Sword and Fairy H5)	TRPG	2017	Own	Legend of Sword and Fairy (仙劍奇俠傳)
軒轅劍三手遊版(Xuan Yuan Sword III Mobile)	TRPG	2017	Own	Xuan Yuan Sword (軒轅劍)
擇天記(Fighter of Destiny)	MMORPG	2018	Licensed	Fighter of Destiny (擇天記)
傳奇世界之雷霆霸業(The World of Legend Thunder Empire)	MMORPG	2018	Licensed	The World of Legend (傳奇世界)
龍珠覺醒(Dragon Ball – Awakening)	CCG	2019	Licensed	Dragon Ball Z (龍珠 Z)
大富翁 H5(Monopoly H5)	SLG	2019	Own	Monopoly (大富翁)
大富翁 10(Monopoly 10)	SLG	2019	Own	Monopoly (大富翁)
家庭教師(Reborn!)	ARPG	2019	Licensed	Reborn! (家庭教師)
熱血戰歌之創世(War Song – the Creation)	MMORPG	2019	Licensed	The World of Legend (傳奇世界)
Games to be launched				
真•三國無雙霸(Dynasty Warriors: Hegemony)	ARPG	2020	Licensed	Dynasty Warriors: Hegemony (真•三國無雙霸)
SNK 巔峰對決(SNK Top Battle)	CCG	2020	Licensed	SNK All Stars (SNK 全明星)
修真聊天群(Chat Group of Truth Chasers)	Idle	2020	Licensed	Chat Group of Truth Chasers (修真聊天群)
叛逆的魯路修(Code Geass)	ARPG	2020	Licensed	Code Geass (叛逆的魯路修)
飛劍問道(Flying Sword)	MMORPG	2020	Licensed	Flying Sword (飛劍問道)
畫江湖之杯莫停(Hua Jiang Hu:Bei Mo Ting)	ARPG	2020	Licensed	Hua Jiang Hu: Bei Mo Ting (畫江湖之杯莫停)
航海王熱血航線(One Piece: The Voyage)	ARPG	2020	Licensed	One Piece (航海王)
SNK 全明星(SNK All Stars) (海外版)	CCG	2020	Licensed	SNK All Stars (SNK 全明星)
全明星激鬥(The King of Fighters: All Stars)	CCG	2020	Licensed	SNK All Stars(SNK 全明星)
斗羅大陸(Soul Land)	MMORPG	2020	Licensed	Soul Land (斗羅大陸)
雷霆霸業 2(Thunder Empire 2)	MMORPG	2020	Licensed	The World of Legend (傳奇世界)
魔域重生(Zork Reborn)	MMORPG	2020	Licensed	Zork (魔域)
新射雕群俠傳(The New Legend Of The Condor Heroes)	CCG&SLG	2020	Licensed	Condor Heroes (射雕英雄傳)
軒轅劍- 蒼之曜(Xuan Yuan Sword – Cang Zhi Yao)	ARPG	2020	Own	Xuan Yuan Sword (軒轅劍)
仙劍奇俠傳 7(Legend of Sword and Fairy 7)	TRPG	2020	Own	Legend of Sword and Fairy (仙劍奇俠傳)
仙劍客棧 2(Legend of Sword and Fairy Lodge II)	SLG	2020	Own	Legend of Sword and Fairy (仙劍奇俠傳)
仙劍:九野(Legend of Sword and Fairy – the Magnificence)	CCG	2020	Own	Legend of Sword and Fairy (仙劍奇俠傳)
軒轅劍劍之源(Xuan Yuan Sword – the Origin)	MMORPG	2020	Own	Xuan Yuan Sword (軒轅劍)

Source: Company data, AMTD Research

IP-based games are easier to get pre-approvals as they are from cultural products or art work which are widely acknowledged. Besides, leveraging on its abundant game operating experience, CMGE is able to obtain online game pre-approvals for its games to support its pipeline. After the lifting of game pre-approvals suspension in December 2018 (Please find more details on “Appendix - Industry overview – Regulation”), CMGE obtained pre-approvals for 23 of its games in 2019, significantly more than the pre-approvals obtained by other market players in China. In the first quarter of 2020, CMGE has further obtained pre-approvals for 5 of its games.

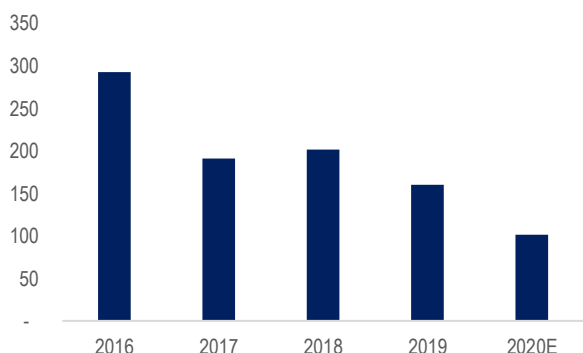
Excellent game monetization offered by IP strategy

IP game has longer life cycle than non-IP game

Compared to other categories of online games, mobile games have a shorter average lifecycle of around six to twelve months. In general, IP-based games have higher player loyalty and stickiness, and more developed contents and storylines, which prolongs the lifecycle of such games compared to non-IP based games. The majority of CMGE’s games are mid-core to hardcore games such as MMORPGs and CCGs, which are two of the most suitable game genres to be developed based on IPs.

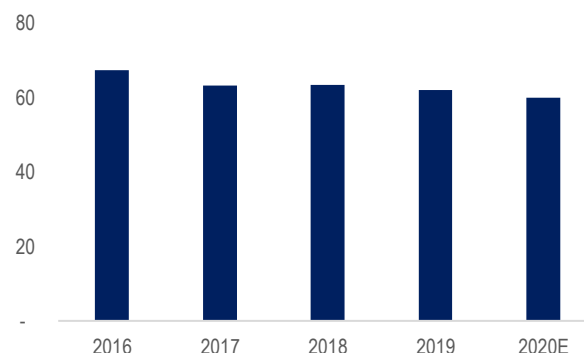
With the help of rich operation experience and deep understanding of game players, CMGE continues to extend the life cycle of IP games. According to Analysys, the life cycle of CMGE games is one to four years, which is much higher than the average life cycle of current mobile games on the market. 11 out of its published games have a lifecycle of over three years. In particular, “One Piece – the Road of the Strong” and “Naruto – Ninja Master” have been released for more than 4 years and are still in a stable stage. We expect that they can still contribute stable and meaningful revenue to the company next year, and by the end of 2020E, the total revenue of these two games since their launches is expected to be more than RMB900mn and RMB300mn, respectively.

Figure 5: revenue of One Piece – the Road of the Strong (RMB mn)



Source: Company data, AMTD Research estimates

Figure 6: revenue of Naruto – Ninja Master (RMB mn)

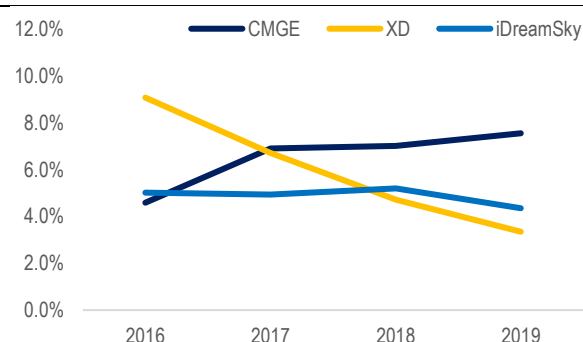


Source: Company data, AMTD Research estimates

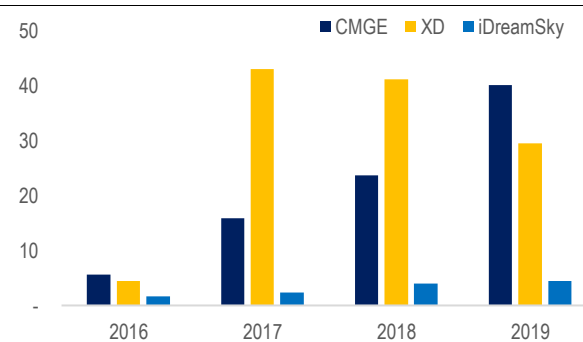
IP game accretive to margins by reducing acquisition cost

IP is centered on cultural value and fan stickiness, and usually has a stable and loyal audience. Compared with non-IP games, IP games can save a lot of marketing expenses because: 1) IP themes are usually easier to attract game players who are the fans of the theme; 2) IP game has longer lifecycle; 3) due to high loyalty, IP game players are more willing to pay. Therefore, IP games can achieve relatively higher profit.

We found that compared to iDreamSky, another mobile game publisher, CMGE had higher paying users conversion rate (defined as avg. MPU/MAU). From the profitability of per MAU (defined as adj. EBIT/MAU), CMGE’s adj. EBIT/MAU is significantly higher than that of iDreamsky and has surpassed that of XD network, which is a game-specialized social media platform.

Figure 7: paying users conversion rate (avg. MPU/MAU)

Source: Company data, AMTD Research

Figure 8: adj. EBIT per MAU (RMB '000)

Source: Company data, AMTD Research

*Note: adj. EBIT excludes one-off expenses and SBC

Visionary investments to build a long-lasting IP game ecosystem

Build up in-house game development capabilities

Aside from acquisition of two game developers, CMGE has also directly invested in 14 independent content providers and invested in 3 innovative game developers in the form of convertible bonds. These companies are highly regarded and their games are prevalent among players which have generated stable gross billings after launch. For example, Shanghai Fengguo Network Information (上海蜂巢網絡科技有限公司) is the developer of Naruto - Ninja Master (火影忍者 - 忍者大師) and Shanghai Langkun Digital Technology Co., Ltd. (上海朗鵬數碼科技有限公司) is the developer of Fighter of Destiny (擇天記), SNK All Star (SNK 全明星) and One Piece: The Voyage (航海王熱血航線).

Figure 9: Some of CMGE's portfolio companies as of 31 December 2019

Company Name	CMGE's interest in the portfolio company	Relationship with CMGE
Shanghai Fengguo Network Information (上海蜂巢網絡科技有限公司)	43.47%	Mobile game development
Guangzhou Leiyu Information Technology Co., Ltd. (廣州市雷娛信息科技有限責任公司)	20.00%	Mobile game development
Shenzhen Haituo Shidai Technology Co., Ltd. (深圳海拓時代科技有限公司)	25.00%	Mobile game development
Tianjin Fenzhi Huyu Technology Co., Ltd. (天津紛至互娛科技有限公司)	32.00%	Mobile game development
Shanghai Langkun Digital Technology Co., Ltd. (上海朗鵬數碼科技有限公司)	23.50%	Mobile game development
Beijing Qiwen Internet Technology Co., Ltd. (北京奇文網絡科技有限公司)	32.50%	IP licensing and mobile game development
Shenzhen Zhichengqianli Investment Enterprise (Limited Partnership) (深圳市志成千里投資企業(有限合夥))	49.26%	Investment

Source: Company data, AMTD Research

Set up fund to source high quality IPs and build IP game ecosystem

In addition, CMGE invested in CPC Fund as LP and held 25.7% of the limited partnership interests. CPC Fund cultivates industry segments such as internet literature, dramas and movies as well as motion pictures, manga and animations. By investing in CPC Fund, CMGE establishes close relationships with portfolio companies including some leading internet literature/animation/(online)film platforms which not only own IPs but also are IP incubators. As of 2019, CMGE licensed four IPs from its portfolio companies of CPC Fund such as Code Geass (叛逆的魯路修). Besides, CPC has invested in game developers, distribution platforms as well as game guild operators. This diversified portfolio of CPC Fund, together with all the content providers directly invested by CMGE, contributes to the establish of a game eco-system to enhance CMGE's capability in developing and distributing IP-related games.

Figure 10: CPC's portfolios include IP-incubating platforms and vertical platforms



Source: CPC Fund website, AMTD Research

Financial overview

In the next few years, benefiting from leading edge in IP games, deepening cooperation with leading social media platforms and more self-developed game new launches, we expect CMGE's MAUs and user conversion rate will maintain a steady growth. Total gross billings and revenue will grow at a CAGR of 31.4% and 28.6% in FY19-22E respectively. Thanks to improving operating leverage, operating margin and core net profit margin will rise to 23.6% and 20.0% in FY22E. Thus, core net profit will grow at a higher CAGR of 32.4% in FY19-22E. On the other hand, given its strong cash flow in the coming years, we expect CMGE will maintain a stable dividend policy.

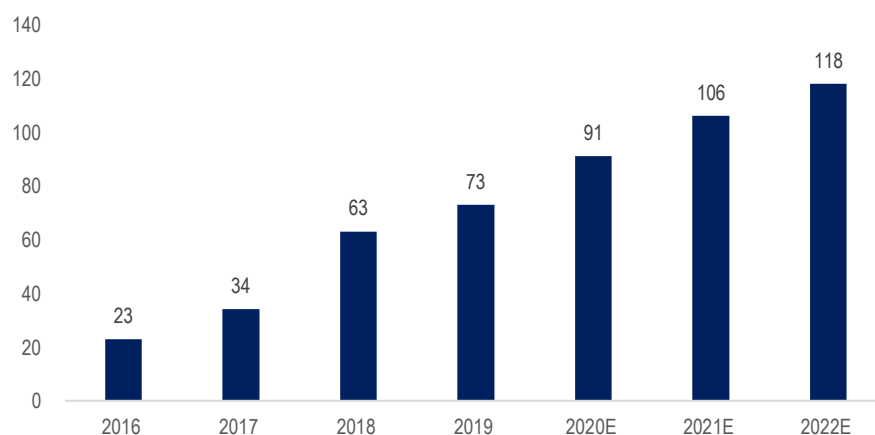
Game classification

From a financial perspective, CMGE games fall into three categories:

1. games exclusively licensed to third-party publishers: by leveraging the traffic from those large platforms, those games usually have higher MAU and gross billings. After deducting all costs and expenses paid to large platforms, CMGE books operating profit directly, normally 20-25% of total gross billings. Therefore, those games have higher gross billings and operating profit contribution to the company. Currently CMGE has cooperated with ByteDance and Tencent.
2. games developed by CMGE and its subsidiaries: CMGE has strengthened its in-house development arm by acquiring Wenmai Hudong and Beijing Softstar in 2018. The most direct benefits on financials are: 1) revenue growth, as 100% of gross billings can be booked as revenue; 2) margin improvement due to the cost savings synergies from acquisitions of game development companies.
3. games published by CMGE and developed by third-party content providers: at present, this type of games account for the largest number of total games launched. Due to the rising proportion of self-developed games, we expect the proportion of this type of game will gradually decline. However, it will still maintain a considerable proportion, mainly because this type of games provides the company necessary flexibility and agility to meet market demand. In general, after deducting 15-25% of the development cost, the remaining part of gross billings is booked as the company's revenues.

CMGE launched 33 new games in 2019, and 73 games were still active as at the end of 2019. In 2020E, CMGE is expected to launch another 38 new games to continue to drive the business growth, in particularly, including 9 new self-developed games, and 2 games exclusively licensed to ByteDance, and 1 game exclusively licensed to Tencent according to CMGE's 2019 annual report.

Figure 11: the number of games active at the period end



Source: Company data, AMTD Research estimates

Figure 12: major games launched and pipeline by type

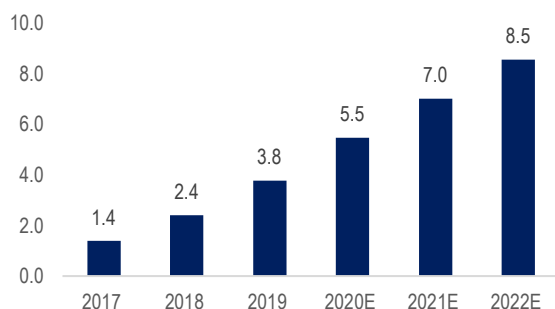
Type Name		Genres	IP	Launch time	avg. MAUs 1H2019	Revenue (RMB '000) 1H2019	Exclusive licensee
1. games exclusively licensed to 3rd publishers							
Candleman	蠟燭人	Indie Game	Non-IP	2018	N.A.	N.A.	Tencent
Fighter of Destiny	擇天記	MMORPG	IP	2018	N.A.	N.A.	Tencent
The National Gunlord The Frontier	全民槍神:邊境王者	STG	Non-IP	2019	N.A.	N.A.	Tencent
Dynasty Warriors: Hegemony	真·三國無雙	ARPG	IP	2020	N.A.	N.A.	Tencent
One Piece: The Voyage	航海王熱血航線	ARPG	IP	2020	N.A.	N.A.	ByteDance
The King of Fighters: All Stars	全明星激鬥	CCG	IP	2020	N.A.	N.A.	ByteDance
2. games developed by CMGE							
The World of Legend Thunder Empire	傳奇世界之雷霆霸業	MMORPG	IP	2018	1,981,249	771,765	
The Attack – Advanced Version	攻沙加強版	MMORPG	Non-IP	2018	N.A.	N.A.	
War Song – the Creation	熱血戰歌之創世	MMORPG	Non-IP	2019	N.A.	N.A.	
Thunder Empire 2	雷霆霸業 2	MMORPG	IP	2020	N.A.	N.A.	
Legend of Sword and Fairy – the Magnificence	仙劍:九野	CCG	IP	2020	N.A.	N.A.	
Legend of Sword and Fairy 7	仙劍奇俠傳 7	TRPG	IP	2020	N.A.	N.A.	
Legend of the Holy Dragon	聖龍傳奇	MMORPG	IP	2020	N.A.	N.A.	
Zork Reborn	魔域重生	MMORPG	IP	2020	N.A.	N.A.	
3. games developed by 3rd parties							
One Piece – the Road of the Strong	航海王強者之路	CCG	IP	2016	490,016	72,208	
The Land of the Dawn	曙光之境	MMORPG	Non-IP	2018	1,328,064	115,046	
The Story of the Flying Mortal H5	凡人飛仙傳 H5	ARPG	IP	2018	1,876,686	99,843	
Dragon Ball – Awakening	龍珠覺醒	CCG	IP	2019	982,408	91,375	
Martyn Palace	烈焰皇城	MMORPG	IP	2019	N.A.	N.A.	
Age of Myth Genesis	創世之爭	SLG	Non-IP	2020	N.A.	N.A.	
Xuan Yuan Sword – the Origin	軒轅劍:劍之源	MMORPG	IP	2020	N.A.	N.A.	
The New Legend Of The Condor Heroes: Iron Blood and Loyal Heart	新射雕群俠傳:鐵血丹心	CCG	IP	2020	N.A.	N.A.	
Life and Death Sniper: Zombie Frontier	生死狙擊之殭屍前線	STG	IP	2020	N.A.	N.A.	
Soul Land	斗羅大陸	MMORPG	IP	2020	N.A.	N.A.	
Incredible True Chasers	不思議修真	CCG	Non-IP	2020	N.A.	N.A.	
Big Sailing Era 6	大航海時代 VI	ARPG	IP	2020	N.A.	N.A.	

Source: Company data, AMTD Research

Gross billings, MAU, and ARPPU

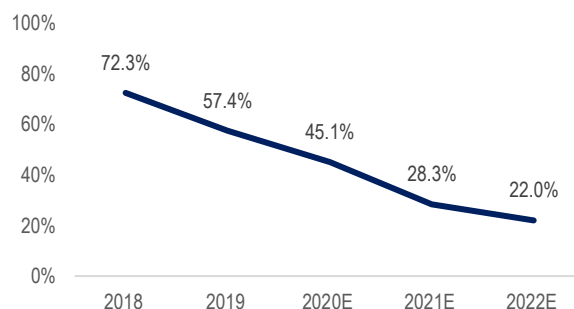
We estimate that CMGE's total gross billings will grow by 45.1%/28.3% YoY to RMB5.5bn/RMB7.0bn in FY20E/21E, mainly driven by robust MAU growth helped by new game launches, and rising ARPPU (defined by total gross billings/MPUs) boosted by improving conversion rate and operating efficiency.

Figure 13: CMGE's total gross billings (RMB bn)



Source: Company data, AMTD Research estimates

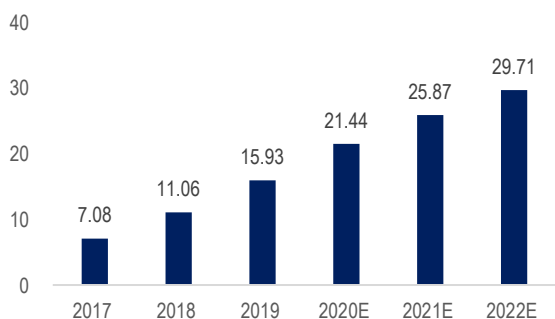
Figure 14: growth rate of total gross billings, YoY



Source: Company data, AMTD Research estimates

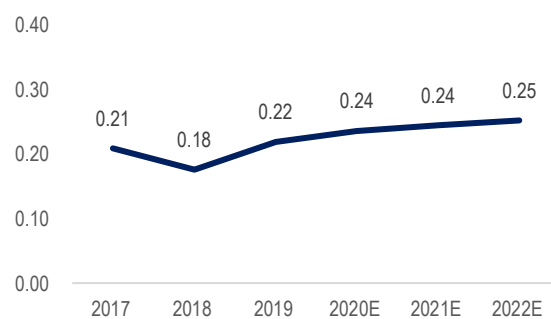
For MAU, we believe that CMGE will maintain a rapid growth in 2020, mainly because it will continue to strengthen cooperation with the leading social media platforms, such as Tencent and ByteDance, which could boost MAU substantially. "Fighter of Destiny (擇天記)", which was exclusively licensed to Tencent, had average MAUs of 1.3mn and contributed RMB49.6mn revenue in 2018. In 2020, CMGE planned to launch another three new games on Tencent and ByteDance. We project CMGE's MAUs will reach 21.44mn/25.87mn in FY20E/21E, implying an average MAU per game of 0.24mn.

Figure 15: CMGE's average MAUs (mn)



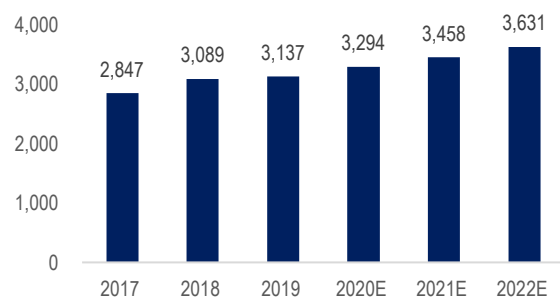
Source: Company data, AMTD Research estimates

Figure 16: CMGE's average MAUs (mn) per game

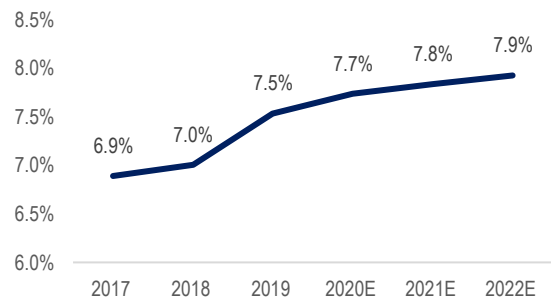


Source: Company data, AMTD Research estimates

On the other hand, we expect ARPPU, which we define as total gross billings/MPUs here, will maintain stable growth. After the acquisition of Wenmai Hudong and Beijing Softstar, CMGE's capabilities especially in developing hard-core games has improved significantly, which could help boost user conversion rate and ARPPU accordingly. Such as "The World of Legend – Thunder Empire (傳奇世界之雷霆霸業)", which was developed by Beijing Wenmai Hudong, recorded average MAUs of 2mn and MPUs of 312k in 1H19, implying a user conversion rate of 15.8% and much higher than that of other games which were being operated by CMGE. As more self-developed games are expected to be launched going forward, we project a steady growth of conversion rate in coming years and ARPPU will reach RMB3,294 and RMB3,458 in FY20E/21E.

Figure 17: CMGE's ARPPU (RMB) defined by gross billings/MPUs

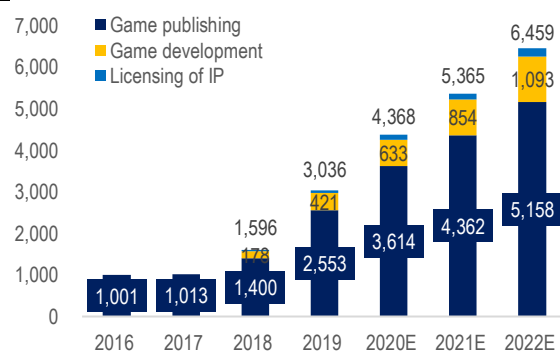
Source: Company data, AMTD Research estimates

Figure 18: CMGE's user conversion rate (MPUs/MAUs)

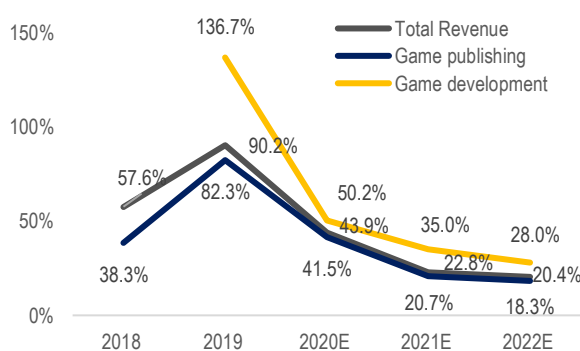
Source: Company data, AMTD Research estimates

Revenue and gross margin

We project CMGE's total revenue will grow by 43.9%/22.8% YoY to RMB4.4bn/RMB5.4bn in FY20E/21E, mainly driven by game publishing. In addition, after the acquisition of Wenmai Hudong and Beijing Softstar, game development has become a new driver for the company and will contribute RMB633mn and RMB854mn of revenue in FY20E/21E.

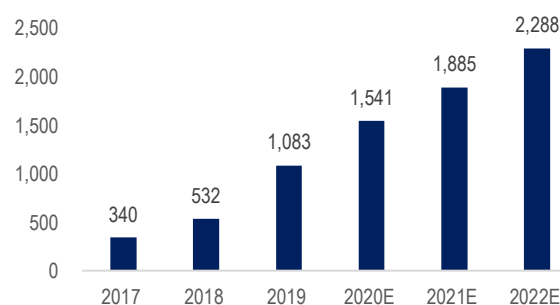
Figure 19: CMGE's total revenue and breakdown (RMB mn)

Source: Company data, AMTD Research estimates

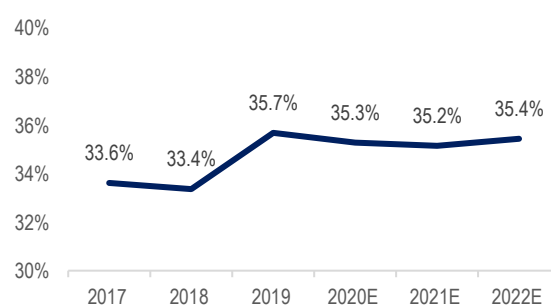
Figure 20: growth rate of CMGE's revenue, YoY

Source: Company data, AMTD Research estimates

On the cost side, commissions charged by channels accounted for more than the 90% of total cost of sales in FY17-19. In September 2018, CMGE acquired its own publishing platform, namely VClub (勝利俱樂部). For its games published on VClub (勝利俱樂部), CMGE collects gross billings directly from payment channels and thus have a higher gross margin. Apart from this, other favorable factors accretive to gross margin include: 1) cost savings synergies from in-house game development; 2) rising proposition of exclusively licensing games; and 3) introduction of IP peripheral products. We expect CMGE's gross margin will be 35.3% and 35.2% in FY20E-21E, and gross profit will reach RMB1.5bn and RMB1.9bn in FY20E/21E, respectively.

Figure 21: CMGE's gross profit (RMB mn)

Source: Company data, AMTD Research estimates

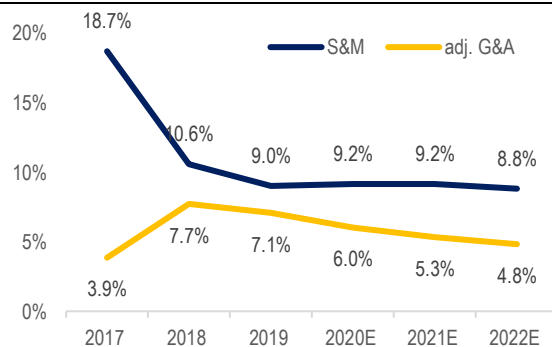
Figure 22: CMGE's gross margin

Source: Company data, AMTD Research estimates

Expenses and operating margin

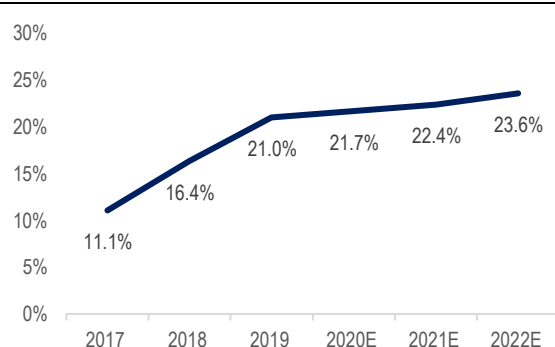
In general, with the increase in the number of games and expanding player base, operating leverage will improve gradually as shown in declining S&M and G&A to revenue ratios. In addition, as for those games exclusively licensed to third-party publishers like Tencent and Bytedance, CMGE books operating profit directly, normally 20-25% of total gross billings, which is also accretive the EBIT margin. Meanwhile, after acquisition of two subsidiaries with strong game developing capabilities, cost saving synergies will help to reduce R&D expenses as well. We project CMGE's S&M and adj. G&A to revenue ratios will be 9.2%/9.2% and 6.0%/5.3% in FY20E/21E, and adj. operating margin will improve to 21.7%/22.4% in FY20E/21E.

Figure 23: CMGE's S&M and adj. G&A to revenue ratios



Source: Company data, AMTD Research estimates

Figure 24: CMGE's adjusted operating margin



Source: Company data, AMTD Research estimates

Core net profit and EPS

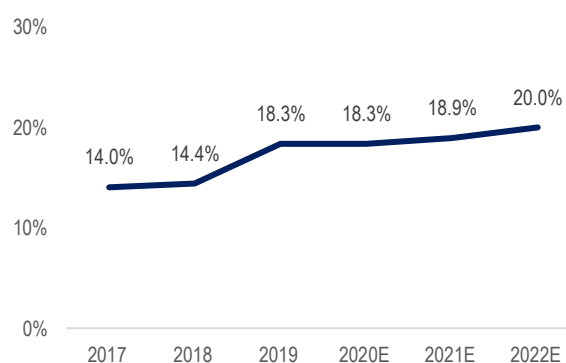
As a matter of fact, apart from game publishing, CMGE has a lot of game-related investments, which generate some non-cash profit/loss each year. In order to better track the performance of its game publishing business, we calculate CMGE's core net profit by deducting any fair value changes of its financial investments as well as IPO expenses and adding back SBC from its reported net profit. Given the strong game pipelines, we expect CMGE to continue its strong momentum in following years. Core net profit is expected to grow strongly by 43.8%/26.8% YoY to RMB801mn/RMB1,016mn with a core net margin of 18.3%/18.9% in FY20E/21E. Core EPS will grow 15.5% YoY to RMB0.340/share in FY20E and increase to RMB0.432/share and RMB0.548/share in FY21E/22E.

Figure 25: CMGE's core net profit (RMB mn)

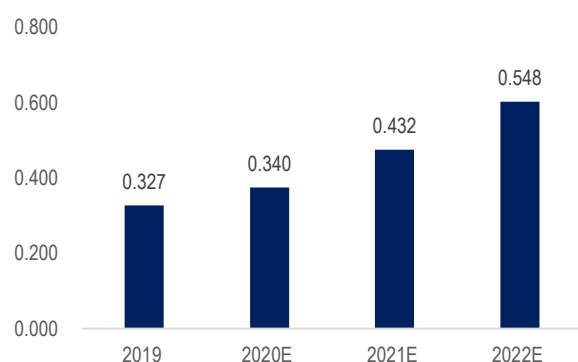


Source: Company data, AMTD Research estimates

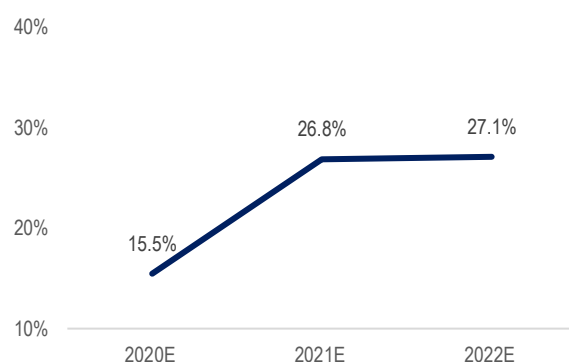
Figure 26: CMGE's core net profit margin



Source: Company data, AMTD Research estimates

Figure 27: CMGE's core EPS (RMB/share)

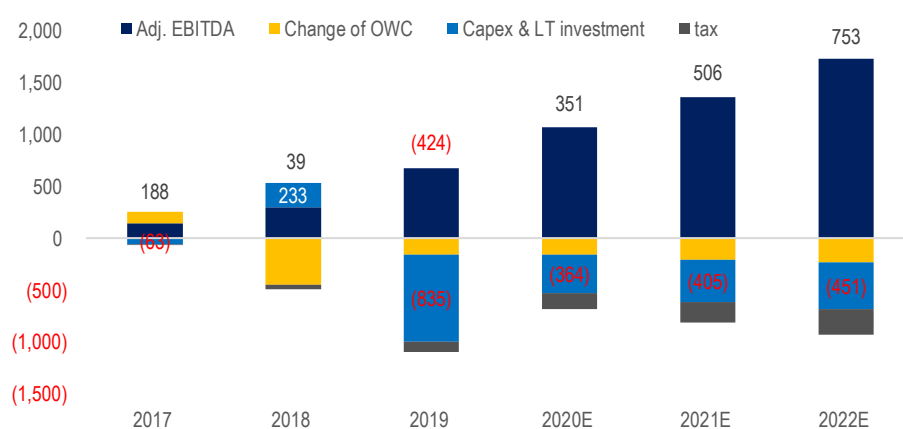
Source: Company data, AMTD Research estimates

Figure 28: CMGE's core EPS growth, YoY

Source: Company data, AMTD Research estimates

Cash flow and dividend

Game business should essentially have a positive cash flow because once the game is launched, it can generate stable cash inflow with little additional expense. We expect game publishing will contribute stable growing cash inflow to the company with the help of expanding operating margin. On the other hand, to strengthen its edge in IP field, CMGE actively looking for financial and strategic investment; therefore, we see financial investment as business-related strategic investment. In FY19, CMGE reported negative FCF as it entered an agreement to set up business-related equity fund. We project CMGE will spend RMB405mn/RMB451mn on capex and LT investment in FY21E-22E, on top of that, CMGE will still maintain a decent FCF growth.

Figure 29: CMGE's FCF (RMB mn)

Source: Company data, AMTD Research estimates

In addition, expecting improving cash flow in the coming years, CMGE has decided to pay a dividend of HKD0.0355 (equivalent to RMB0.0313) per share for the year ended 31 December 2019, implying a dividend payout ratio around 24% based on the reported EPS. We expect CMGE will maintain a stable dividend policy in the following years.

Financials

Figure 30: CMGE's P&L (RMB' 000)

	2016	2017	2018	2019	2020E	2021E	2022E
No. of games active (EOP)	23	34	63	73	91	106	118
avg. total MAU	13,115,117	7,076,510	11,058,128	15,930,745	21,440,000	25,865,000	29,705,000
avg. total MPU	600,242	487,549	774,532	1,200,298	1,658,271	2,026,387	2,353,965
User conversion rate	4.6%	6.9%	7.0%	7.5%	7.7%	7.8%	7.9%
Total gross billings	1,437,468	1,388,190	2,392,528	3,765,104	5,461,763	7,007,916	8,547,829
Game publishing	1,001,163	1,012,791	1,400,454	2,553,189	3,613,681	4,361,817	5,158,404
Game development	0	0	177,946	421,254	632,859	854,060	1,093,018
Licensing of IP	0	0	17,804	61,858	121,629	148,908	208,029
Total Revenue	1,001,163	1,012,791	1,596,204	3,036,301	4,368,169	5,364,785	6,459,451
Cost of Sales	(651,773)	(672,336)	(1,063,734)	(1,953,103)	(2,826,830)	(3,478,896)	(4,170,902)
Gross Profit	349,390	340,455	532,470	1,083,198	1,541,339	1,885,889	2,288,549
Gross margin	34.9%	33.6%	33.4%	35.7%	35.3%	35.2%	35.4%
Sales/Marketing/Advertising Expenses	(225,705)	(189,407)	(148,054)	(230,321)	(331,356)	(399,619)	(454,825)
Adj. General and Administrative Expenses	(50,040)	(39,046)	(147,672)	(577,451)	(262,847)	(286,829)	(311,031)
Adj. operating expenses	(275,745)	(228,453)	(271,306)	(445,113)	(594,203)	(686,447)	(765,855)
Adj. EBIT	73,645	112,002	261,164	638,085	947,136	1,199,442	1,522,694
Adj. EBIT margin	7.4%	11.1%	16.4%	21.0%	21.7%	22.4%	23.6%
Total Financial Costs	(765)	(1,220)	(10,053)	(15,072)	(30,943)	(30,943)	(30,943)
Interest Income	460	687	1,228	18,589	18,589	18,589	18,589
Fair value change	32,597	165,435	105,861	54,277	54,277	54,277	54,277
Share of JV & associates	(3,278)	2,002	13,630	8,416	8,837	9,279	9,743
Profit Before Income Taxes	208,062	265,051	356,047	343,623	999,883	1,252,631	1,576,347
Income Tax Expense	(19,563)	(56)	(40,074)	(100,410)	(149,982)	(187,895)	(236,452)
Minority/Non Controlling Interest	0	0	(4,928)	5,135	5,135	5,135	5,135
Net Income	200,573	307,464	311,045	248,348	855,035	1,069,871	1,345,030
Core net Profit	167,976	142,029	229,604	556,730	800,758	1,015,594	1,290,753
Core net profit margin	16.8%	14.0%	14.4%	18.3%	18.3%	18.9%	20.0%
Core EPS (RMB)			0.128	0.295	0.340	0.432	0.548
Core EPS (HKD)			0.145	0.327	0.374	0.474	0.603

Source: Company data, AMTD Research estimates

Figure 31: CMGE's P&L, YoY

	2017	2018	2019	2020E	2021E	2022E
avg. total MAU	-46.0%	56.3%	44.1%	34.6%	20.6%	14.8%
avg. total MPU	-18.8%	58.9%	55.0%	38.2%	22.2%	16.2%
ARPPU defined by gross billings/MPUs	18.9%	8.5%	1.5%	5.0%	5.0%	5.0%
Total gross billings	-3.4%	72.3%	57.4%	45.1%	28.3%	22.0%
Game publishing	1.2%	38.3%	82.3%	41.5%	20.7%	18.3%
Game development			136.7%	50.2%	35.0%	28.0%
Licensing of IP			247.4%	96.6%	22.4%	39.7%
Total Revenue	1.2%	57.6%	90.2%	43.9%	22.8%	20.4%
Cost of Sales	3.2%	58.2%	83.6%	44.7%	23.1%	19.9%
Gross Profit	-2.6%	56.4%	103.4%	42.3%	22.4%	21.4%
Sales/Marketing/Advertising Expenses	-16.1%	-21.8%	55.6%	43.9%	20.6%	13.8%
General and Administrative Expenses	-22.0%	278.2%	291.0%	22.4%	9.1%	8.4%
Adj. EBIT	52.1%	133.2%	144.3%	48.4%	26.6%	27.0%
Total Financial Costs	59.5%	724.0%	49.9%	105.3%	0.0%	0.0%
Interest Income	49.3%	78.7%	1413.8%	0.0%	0.0%	0.0%
Profit Before Income Taxes	27.4%	34.3%	-3.5%	191.0%	25.3%	25.8%
Income Tax Expense	-99.7%	71460.7%	150.6%	49.4%	25.3%	25.8%
Net Income	53.3%	1.2%	-20.2%	244.3%	25.1%	25.7%
Core net Profit	-15.4%	61.7%	142.5%	43.8%	26.8%	27.1%
Core EPS (RMB)			131.0%	15.5%	26.8%	27.1%
Core EPS (HKD)			125.4%	14.2%	26.8%	27.1%

Source: Company data, AMTD Research estimates

Figure 32: CMGE's balance sheet (RMB' 000)

	2016	2017	2018	2019	2020E	2021E	2022E
Cash and Equivalents	120,460	245,762	144,445	771,090	926,575	1,185,766	1,625,863
Trade Receivables	282,227	164,478	472,431	789,903	908,027	1,115,198	1,342,750
Prepayments and other assets	8,920	7,822	294,545	365,897	477,946	588,195	705,196
Prepayments for investment	43,876	116,547	0	0	0	0	0
Current assets	649,774	534,614	921,938	2,562,445	2,948,104	3,524,713	4,309,363
Property Plant & Equipment	7,957	5,313	6,245	4,815	5,215	5,615	6,015
Goodwill	324,842	324,842	1,118,617	1,118,617	1,118,617	1,118,617	1,118,617
Intangible assets	28,608	35,102	117,545	154,973	201,776	259,279	324,902
Investment in JVs & associates	32,722	58,002	171,928	127,538	277,538	427,538	577,538
Financial assets at fair value	203,176	85,788	538,701	725,137	875,137	1,025,137	1,175,137
Prepayments for investment	21,514	46,945	106,484	472,286	472,286	472,286	472,286
Non-current assets	639,452	580,913	2,091,266	2,645,679	2,997,459	3,359,939	3,730,539
Total assets	1,289,226	1,115,527	3,013,204	5,208,124	5,945,563	6,884,652	8,039,902
Bank borrowings	0	10,000	51,422	442,036	442,036	442,036	442,036
Trade payables	71,072	101,210	111,230	169,756	237,811	344,278	457,267
Other payables and accruals	82,697	45,327	133,062	223,746	223,746	223,746	223,746
Current liabilities	585,795	203,162	424,627	989,916	1,057,971	1,164,438	1,277,427
Payable for business combination	0	0	691,096	457,110	457,110	457,110	457,110
Non-current liabilities	13,812	4,712	725,848	506,594	511,614	516,191	520,768
Total Share Capital	0	0	0	1,641	1,641	1,641	1,641
Retained Earnings (Accumulated Deficit)	(112,744)	(167,591)	146,018	261,801	926,165	1,754,210	2,791,895
Other Reserves	802,363	1,075,244	1,604,040	3,340,636	3,340,636	3,340,636	3,340,636
Attributable shareholders' equity	689,619	907,653	1,750,058	3,604,078	4,268,442	5,096,487	6,134,172
Minority/Non Controlling Int (Stckhldrs Eqty)	0	0	112,671	107,536	107,536	107,536	107,536
Total Shareholders Equity	689,619	907,653	1,862,729	3,711,614	4,375,978	5,204,023	6,241,708

Source: Company data, AMTD Research estimates

Valuation

SOTP

We derive our PT of HK\$4.4 from SOTP, which comprises 1) HK\$4.1 for game publishing; 2) HK\$0.3 for strategic investment. CMGE's stock is currently trading at 6.8x FY20E P/E and 4.4x FY20E EV/EBITDA, at a deep discount to mid-sized peers' average of 11.0x FY20E P/E and 8.1x FY20E EV/EBITDA, respectively.

Figure 33: sum of the parts summary

Business	Method	Financials & Assumptions			No. of	Per	Per	%
					shares	share	share	
					(mn)	(RMB)	(HK\$)	
Game publishing	P/E	EPS	Multiple					
		(RMB/shr)						
		0.340	11.0x			3.7	4.1	93%
Strategic investments	P/B	Book value	Multiple	Discount				
		(RMB mn)						
		875	1.0x	30%	2,353	0.3	0.3	7%
Total							4.4	

Source: AMTD Research estimates, assuming HKD/CNY of 0.91

Game publishing – P/E multiples

We apply P/E multiples to value CMGE's game publishing business. Investors normally offer premium on those giant game operators because they have large platforms that can easily attract massive audience. Therefore, from a conservative perspective, we choose those game operators with similar size as CMGE as comparables. The mid-sized peers' stock is now trading at an average of 11.0x FY20 P/E. Based on this multiplies and our forecast of RMB0.340 per share core EPS for FY20E, we derive CMGE's game publishing business value of HK\$4.1 per share, assuming HKD/CNY of 0.91.

Strategic investments – P/B multiples

To strengthen its edge in IP field, CMGE actively looking for financial and strategic investment to drive future. We use 1x P/B and 30% of liquidity discount to get the value of those investment assets at HK\$0.3 per share.

Comparables

Figure 34: Comparables

Ticker	Company	Price (LC)	Mkt cap (USD mn)	EV/Sales				Sales growth				P/E			EV/EBITDA			EBITDA growth		ROE	
				FY19	FY20E	FY21E	'19-20	FY19	FY20E	FY21E	'19-20	FY19	FY20E	FY21E	'19-20	FY19	FY20E				
Mid-sized																					
302 HK	CMGE	2.56	769	1.5x	1.0x	0.8x	44%	7.9x	6.8x	5.4x	0.4x	6.7x	4.4x	3.4x	53%	8.9	21.1				
6820 HK	FriendTimes	2.12	598	1.9x	1.4x	1.1x	37%	9.2x	7.5x	5.9x	0.3x	7.0x	5.3x	4.3x	33%	44.2	30.9				
1119 HK	iDreamsky	4.50	737	2.2x	1.8x	1.6x	8%	13.7x	8.4x	7.5x	0.1x	11.3x	6.0x	5.2x	90%	10.5	16.8				
799 HK	IGG	4.89	785	0.7x	0.8x	0.7x	-11%	4.7x	5.8x	5.5x	n.a.	2.5x	2.7x	2.5x	-9%	50.1	30.0				
2400 HK	XD Network	19.02	1,050	2.1x	1.7x	1.4x	38%	17.1x	12.8x	10.2x	0.4x	9.5x	6.6x	5.2x	45%	23.5	25.5				
002174 CH	Youzu	18.60	2,340	4.9x	3.5x	3.0x	23%	19.2x	12.6x	11.1x	0.2x	11.6x	10.7x	9.4x	9%	5.4	22.6				
300315 CH	Ourpalm	5.64	2,202	8.7x	6.1x	5.2x	52%	40.3x	18.0x	15.0x	0.1x	17.4x	17.1x	13.7x	1%	17.2	18.3				
Mean:				3.4x	2.6x	2.2x	25%	17.4x	10.9x	9.2x	0.2x	9.9x	8.1x	6.7x	28%	25.2	24.0				
Median:				2.2x	1.8x	1.5x	30%	15.4x	10.5x	8.8x	0.2x	10.4x	6.3x	5.2x	21%	20.3	24.0				
Large-sized																					
EA US	EA	119.61	34,648	5.7x	5.5x	5.1x	3%	25.0x	23.9x	20.6x	4.8x	2.4x	15.9x	14.1x	-85%	28.9	28.2				
ATVI US	Blizzard	68.53	52,801	7.5x	7.1x	6.6x	7%	35.5x	27.0x	23.6x	0.9x	21.7x	19.2x	16.5x	13%	12.4	12.6				
700 HK	Tencent	406.00	500,289	9.6x	7.8x	6.4x	22%	36.8x	31.5x	25.6x	1.9x	23.3x	22.0x	18.2x	6%	24.7	21.7				
NTES US	NetEase	339.23	43,809	4.3x	3.8x	3.4x	2%	22.3x	19.5x	17.2x	1.3x	16.1x	13.8x	12.2x	17%	39.8	21.4				
BILI US	BILIBILI	27.51	9,503	9.2x	6.0x	4.4x	53%	n.a.	n.a.	n.a.	n.a.	n.a.	112.2x	54%	n.a.	n.a.					
002555 CH	Wuhu Sanqi	36.16	10,814	5.5x	4.4x	3.7x	34%	36.2x	27.6x	23.4x	0.9x	28.3x	21.3x	18.2x	33%	32.5	29.6				
002624 CH	Perfect World	47.29	8,658	7.5x	5.8x	5.0x	24%	40.9x	25.4x	21.7x	0.4x	20.7x	22.5x	19.1x	-8%	16.7	20.1				
Mean:				7.0x	5.8x	4.9x	21%	32.8x	25.8x	22.0x	1.7x	18.8x	19.1x	30.1x	4%	25.8	22.3				
Median:				7.5x	5.8x	5.0x	22%	35.8x	26.2x	22.5x	1.1x	21.2x	20.3x	18.2x	13%	26.8	21.4				
Mean:				5.4x	4.3x	3.7x	22%	25.1x	18.3x	15.6x	1.0x	14.3x	13.6x	19.3x	15%	25.5	23.1				
Median:				5.5x	4.4x	3.7x	23%	23.7x	18.7x	16.1x	0.4x	13.9x	14.8x	13.7x	13%	24.1	22.1				

Source: AMTD Research estimates, Bloomberg, prices of A share stocks as close of 30 Apr 2020, prices of H share and US stocks as close of 5 Mar 2020

DCF

We cross check with 10-year DCF to value CMGE. We think DCF is appropriate as it take into account the cash flow. We derived CMGE's equity value of HK\$4.4 per share, in line with our PT from SOTP. Key business assumptions are: 1) revenue will grow at a 10-year CAGR of 14.6% in FY19-28E; 2) gross margin and adj. EBITDA margin will rise slightly to 36% and 26% in FY28E; 3) FCF will grow at a 9-year CAGR of 14.8% in FY20E-28E; 4) long-term growth rate of 3.0%; 5) WACC of 12.1%.

Figure 35: DCF valuation

DCF	2018	2019	2020E	2021E	2022E	2023E	2024E	2025E	2026E	2027E	2028E
(RMB mn)											
Game publishing	1,400	2,553	3,614	4,362	5,158	5,674	6,071	6,375	6,566	6,763	6,966
Game development	178	421	633	854	1,093	1,361	1,639	1,909	2,148	2,330	2,434
Licensing of IP	18	62	122	149	208	283	377	491	625	776	949
Total revenue	1,596	3,036	4,368	5,365	6,459	7,318	8,088	8,776	9,339	9,869	10,349
YoY %	58%	90%	44%	23%	20%	13%	11%	9%	6%	6%	5%
Gross profit	532	1,083	1,541	1,886	2,289	2,593	2,874	3,127	3,337	3,536	3,718
<i>margin</i>	33%	36%	35%	35%	35%	35%	36%	36%	36%	36%	36%
Operating expenses	(235)	(412)	(514)	(576)	(617)	(706)	(780)	(847)	(901)	(952)	(998)
Adj. EBITDA	297	671	1,027	1,310	1,672	1,887	2,093	2,280	2,436	2,584	2,720
<i>margin</i>	19%	22%	24%	24%	26%	26%	26%	26%	26%	26%	26%
(-) tax	(40)	(100)	(150)	(188)	(236)	(283)	(314)	(342)	(365)	(388)	(408)
Change of OWC	(451)	(159)	(162)	(211)	(232)	(278)	(333)	(400)	(480)	(567)	(652)
(-) Cape & LT Investments	233	(835)	(364)	(405)	(451)	(489)	(529)	(566)	(590)	(601)	(604)
Free cash flow	39	(424)	351	506	753	836	917	972	1,000	1,029	1,057
YoY %			-183%	44%	49%	11%	10%	6%	3%	3%	3%
(RMB mn)											
Terminal value			11,586								
Long-term growth rate			3.0%								
WACC			12.1%								
Total present value of free cash flows			3,647								
Present value of terminal value			4,138								
Enterprise value			7,785								
(+) Cash and short-term investments			2,155								
(-) Noncontrolling interests			108								
(-) Total debt			442								
Implied equity value- Dec 2020 (RMB mn)			9,390								
Implied equity value - Dec 2020 (HKD mn)			10,319								
No. of shares (mn)			2,353								
Valuation per share (HKD)			4.4								

Source: AMTD Research estimates, assuming HKD/CNY of 0.91

Appendix

Industry overview

Games category

1. Console/PC/Mobile games
Depending on the platform on which games are played, games can be classified into PC games, mobile games and console games (games that are run on consoles specifically developed for them, and with which gamers usually interact through a controller). PC games can be further categorized into boxed/downloaded PC games (games that needed to be downloaded for playing on the PC) and browser PC games. Mobile games can be further categorized into tablet games and (smart)phone games.
2. Casual/Midcore/Hardcore games
With huge amounts of complexity and depth, hardcore games usually require a significant investment of both time and effort on the part of the player. Midcore games are lighter and more accessible compared to hardcore ones. And casual games target a wider and mass market audience with less complex playing method.
3. IP-based/Non-IP Games
IPs refer to intellectual property rights relating to cultural products or art works, such as icons or characters from popular animations, novels, and motion pictures, which have a significant fan base, market acceptance and commercial value. IP-based games refer to games that are developed based on IPs from such cultural products or art works.
4. MMORPG/ CCG/ MOBA/ STG/ LTG/ SLG
Games can also be categorized to different genres based on their content and form as shown in the following tables.

Figure 36: Genres of games by content

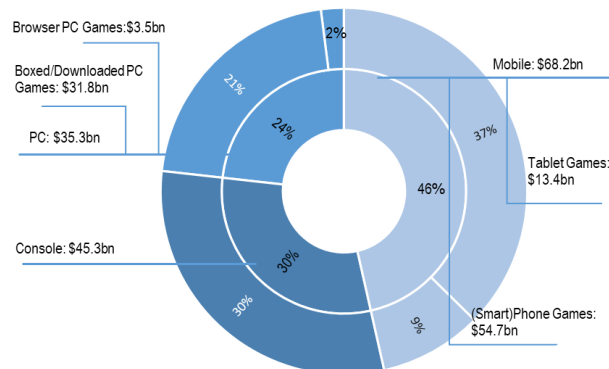
Games	Features
MMORPG - massive multiplayer online role-playing games	A vast number of players play their selected game character in the virtual world, and interact with each other. MMORPGs have a well-developed value system and community, and a wholesome storyline, enabling them to have a longer and more stable lifecycle. In addition, amongst all genres of games, MMORPGs have the highest player retention rate. MMORPGs tend to be more hardcore, have more diverse game content, and give players a stronger sense of immersion. Depending on the battle types, MMORPGs are typically divided into TRPG (turn-based roleplaying game) and ARPG (action role-playing game).
CCG - collectible card games	Players strategize their moves to collect cards to accomplish victory. CCGs generally offer a wide variety of cards, and their lifecycles can be easily prolonged by updating in-game cards offered. Compared to other genres of games, CCGs tend to have higher player stickiness.
MOBA - multiplayer online battle arena games	Players are divided into two teams and battle against each other. Players' characters begin each battle with the same level of combating skills, and players may purchase virtual items to improve the combating skills of their characters.
STG - shooting games	Players control objects or characters to shoot targets.
LTG - light games	Tend to be lighter compared with other game genres. Players' gameplay time for LTGs is relatively short, and the tempo is relaxing, graphics are cute and gameplay methods are easier.
SLG - simulation games	Simulate common scenarios in the real world to train players' ability to improve, analyze and forecast. SLGs with a high level of simulation can be used for professional training, whilst SLGs with a low level of simulation are more suitable for entertaining purpose.

Source: Company Data, AMTD Research

Global Games Market

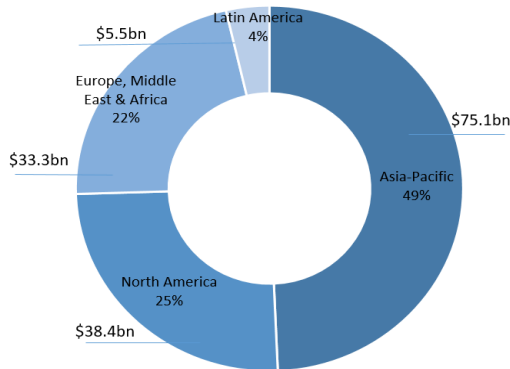
According to Newzoo, 2019 global games market will reach USD148.8bn, larger than both the movie and music industries combined, making it a major industry in entertainment. Mobile games will account for 46% of the global games market and 48% of all consumer spending on games in 2019 will come from the U.S. and China.

Figure 37: 2019 Global games market by device & segment (USD)



Source: Newzoo.com/global games report, AMTD Research

Figure 38: 2019 global games market by region (USD)

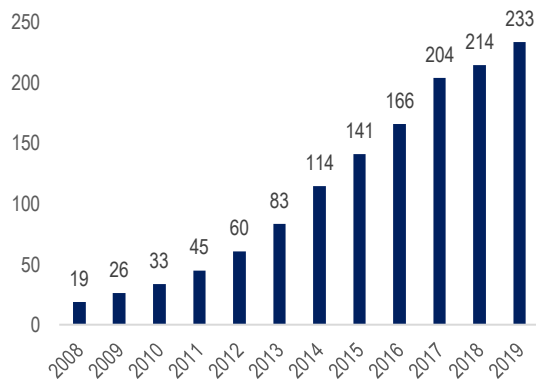


Source: Newzoo.com/global games report, AMTD Research

Chinese Games Market

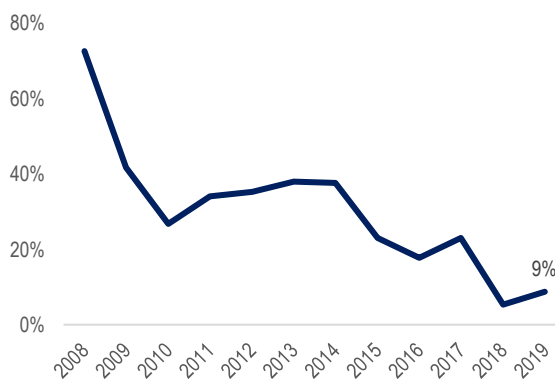
Chinese game market reached RMB233bn in 2019 according to CNG and has been increasing for consecutive ten years. CAGR from 2008 to 2013 and 2014 to 2019 is 35% and 15.3% respectively. Mobile games market is the largest segment in Chinese games market.

Figure 39: Chinese games market size (RMB bn)



Source: CNG, AMTD Research

Figure 40: Chinese games market, YoY

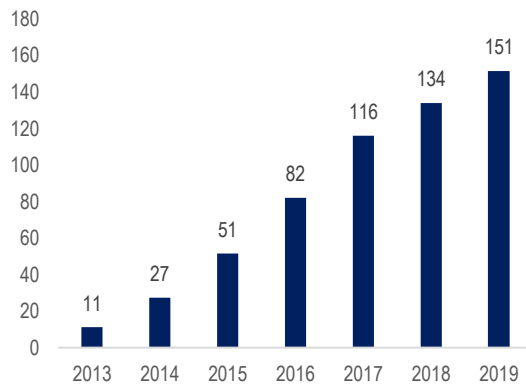


Source: CNG, AMTD Research

Chinese Mobile Games Market

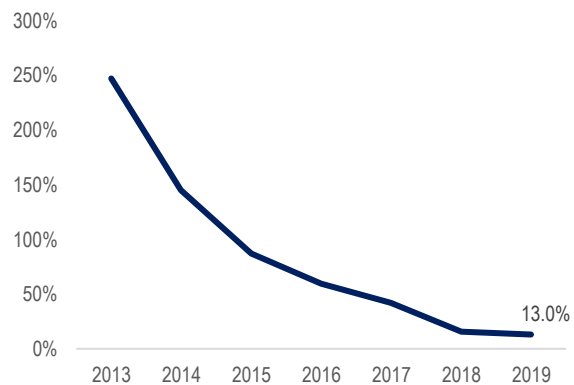
Chinese mobile games market took off in 2013 thanks to the popularization of smart phones and the development of mobile internet infrastructure. In 2019, Chinese mobile games market exceeded RMB151.4bn, up 13% YoY and maintained the growth momentum. High-quality products and innovation will be the long-term trend of mobile games market.

Figure 41: Chinese mobile games market size (RMB bn)



Source: CNG, AMTD Research

Figure 42: Chinese mobile games market, YoY



Source: CNG, AMTD Research

Key drivers of Chinese mobile games market

- 1. Expanding internet coverage and lower communication cost.** According to the Department of Information and Communication Development, internet coverage is expected to be further expanded to remote villages and border areas in order to bring convenience to local people. The three telecommunication operators in China responded to such plan by lowering broadband and communication prices. The expanding internet coverage, as well as lower broadband costs, allows people to access mobile apps quickly at a more affordable price, driving the China's mobile game market.
- 2. Increasing paying willingness.** The Chinese government's push for upgrading the culture and entertainment industries has laid a solid basis for people to pursue related activities. In light of growing disposable income in recent years, consumers in China have been demonstrating a high willingness to pay for entertainment activities, especially mobile entertainment activities. Such activities include mobile games, which can be played during fragmented leisure time.
- 3. Demand from gamers for diversified and quality games.** Demand from gamers of different age groups may also stimulate the mobile game market. The post 1990 generation shows high consumption capability, compared with previous generations, and are considered major users of mobile games. They are fond of trying out various types of games for diversified and fun experience in gameplay and demand mobile games with high-quality and innovative elements. In addition, middle-age and older people are also showing growing interest in games, which can enrich their daily life and retirement. Games featuring simple gameplay, or allowing multiplayer, tend to attract them.

Value Chain of Mobile Game Market

In addition to gamers, there are generally four different types of participants engaged in the whole value chain of the mobile game market:

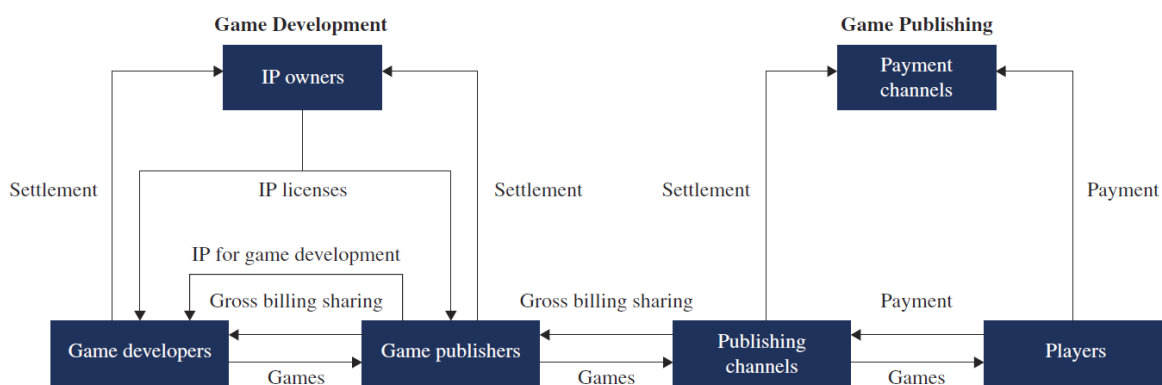
Content providers include content creators or intellectual property holders who own the intellectual property of a mobile game, and game developers which usually consist of professional teams responsible for the development and design of the game content, prelaunch testing, ongoing post-launch calibration of the mobile game, and the provision of technical support for gamers in relation to the game, among other matters;

Game Operators are mainly responsible for the marketing and promotion of the game;

Distribution platforms include hardware app stores and third-party distribution platforms, which are in charge of sales and distributions of the mobile game to end users;

Payment Channels are mainly online third-party payment services providers such as Alipay, WeChat Pay and Apple Pay in China, and Apple Pay and Google Pay overseas.

Figure 43: Value Chain of Mobile Game Market



Source: Company Data, AMTD Research

Regulation

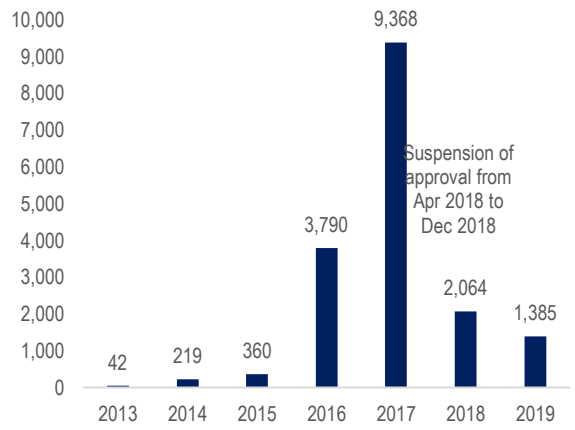
Limit but stable number of approvals released by NAPP since Jun 2019

Prior to March 21, 2018, the primary regulators for China’s online game industry were the State Administration of Press, Publication, Radio, Film and Television (“SAPPRFT”). On March 21, 2018, control over press, publication and film moved to NAPP (National Administration of Press and Publication) (國家新聞出版署).

On March 29, 2018, under the SAPPRFT’s unofficial notice to game approval applicants, game approval procedures were suspended. On August 30, 2018, eight government departments, jointly issued the “Shortsightedness Prevention Plan” which saw the NAPP limit the number of new video game approvals and set new restrictions on video game playtime for children and adolescents.

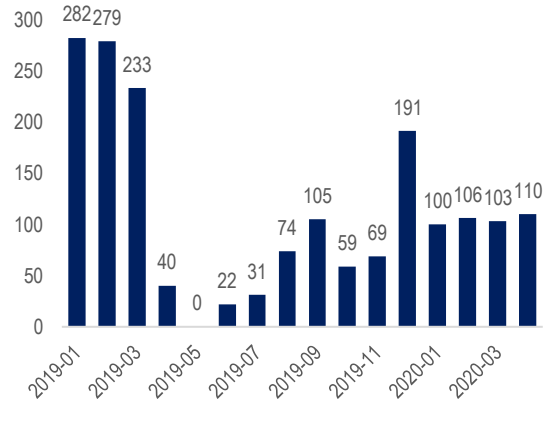
On April 19, 2019, following a period of regulatory uncertainty, including a nine-month suspension of game approvals, the NAPP released new game approval application documents. Since then, we can see resumption of game approvals from NAPP.

Figure 44: 2013-2019 number of game approvals by NAPP



Source: NAPP, AMTD Research

Figure 45: Number of game approvals by NAPP per month



Source: NAPP, AMTD Research

Business overview

Primarily as IP-based games operator, CMGE enters into IP licensing business and later further expand its game development pillar after acquired Softstar and Wenmai Hudong in 2018.

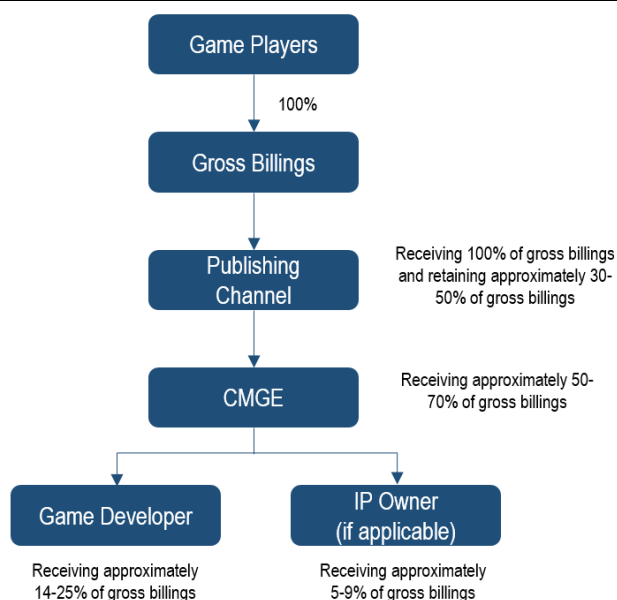
Game publishing

CMGE provides game publishing services to mobile game developers and recognizes revenue on a portion of the gross billings of the games according to the gross billing sharing arrangements with third-party game developers from whom CMGE licenses developed games or with whom CMGE cooperates in developing games based on its licensed or proprietary IPs. CMGE records game publishing revenue on the amount of the gross billings paid by game players net of the amount remitted to third-party game developers.

Game development

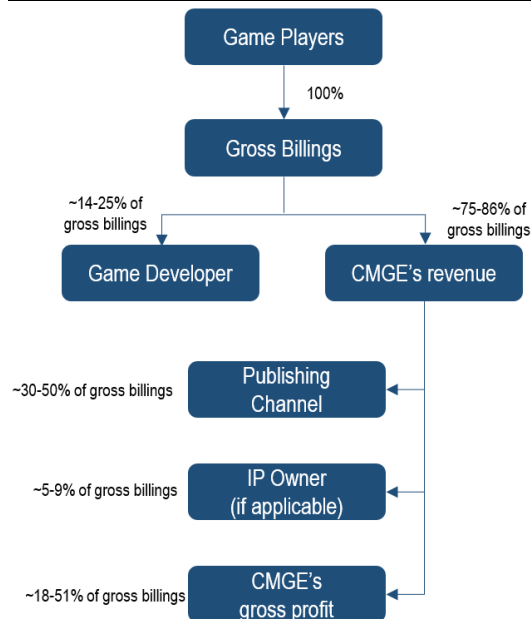
CMGE possesses in-house game development capabilities after acquiring Wenmai Hudong and Beijing Softstar. CMGE may choose to publish self-developed games itself or license them third-party game publishers. For the exclusively-licensed games, CMGE is entitled to fixed percentages of the gross billings according to the arrangement with no other game publishing or promotion expenses.

Figure 46: Fund flow of game publishing business



Source: Company data, AMTD Research

Figure 47: Gross billing sharing process



Source: Company data, AMTD Research

IP licensing

After acquisitions of Wenmai Hudong and Beijing Softstar, CMGE owns five series popular IPs, including Legend of Sword and Fairy (仙劍奇俠傳), Xuan Yuan Sword (軒轅劍), Monopoly (大富翁), Stardom (明星志願) and Empire of Angels (天使帝國), comprising 68 video and PC game IPs in total. During the Track Record Period, CMGE licensed its IPs to third parties for the development and operation of mobile games and TV series, and other offline applications. For example, in December 2018, CMGE entered into an IP licensing agreement with Tencent, pursuant to which it granted a five-year exclusive license over the IP Legend of Sword and Fairy III (仙劍奇俠傳 III) to Tencent for the development and operation of a TV series.

Company background

Established in 2011 and headquartered in Shenzhen, CMGE Technology Group has been listed on the Hong Kong Stock Exchange (0302.HK) since 2019. CMGE is a leading IP-based game operator and publisher with a large publishing network including 400 channel partners and its proprietary channel (Vclub). In terms of products, CMGE has launched 107 games among which 73 are still active, also CMGE has obtained pre-approvals for 23 of its games in 2019 and secured a stable pipeline in 2020.

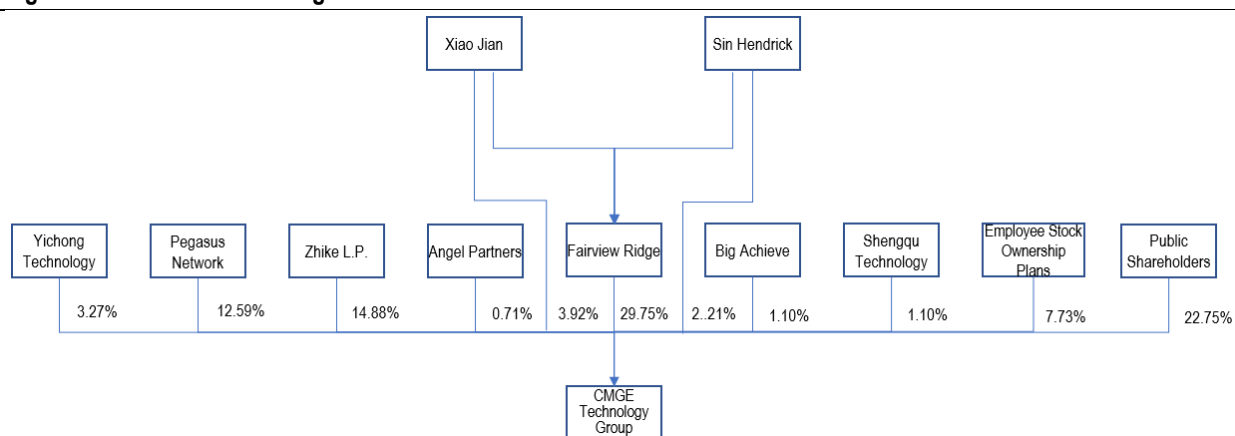
Beside game publishing, CMGE also enters into game development business by acquiring two subsidiaries and IP licenses leveraging on its strong IP reserves in 2018.

Key milestones in the company's business

2011	<ul style="list-style-type: none"> Mr. Xiao, Mr. Sin co-founded CMGE Group
2012	<ul style="list-style-type: none"> CMGE Group successfully listed its ADSs on Nasdaq under the symbol "CMGE", and became China's first listed mobile game company in a U.S. stock exchange
2013	<ul style="list-style-type: none"> CMGE Group started publishing mobile game developed by third parties Launched two popular card games, WuXia Q Chuan (武俠 Q 傳) and Three Kingdoms' Power Advanced Version (三國威力加強版).
2015	<ul style="list-style-type: none"> CMGE Group was taken private by a consortium of passive financial investors and was delisted from Nasdaq Launched New Legend of Sword and Fairy (新仙劍奇俠傳) and achieved gross billings of more than RMB10 million on the first day of launch
2016	<ul style="list-style-type: none"> Launched One Piece - the Road of the Strong (航海王強者之路) and Heaven Sword and Dragon Saber (倚天屠龍記) and achieved gross billings of RMB62.5 million and more than RMB98 million, respectively, in the first month after their launch.
2017	<ul style="list-style-type: none"> Launched Eternal Myth (神話永恆) and achieved gross billings of RMB8.18 million and RMB70 million on its first day of launch and in the first month after launch CMGE Mobile Tech was named a Global Top 50 Publisher by Apple
2018	<ul style="list-style-type: none"> Acquired two game developers, namely Beijing Softstar and Wenmai Hudong Launched Fighter of Destiny (擇天記) and achieved gross billings of more than RMB170 million in the first month after launch.
2019	<ul style="list-style-type: none"> Listed in Hong Kong Stock Exchange

Shareholding structure

Figure 48: CMGE shareholding structure as of 31 December 2019



Source: Bloomberg, AMTD Research

Board of directors and management team profile

Figure 49: Board of directors and management team profile

Name	Age	Position	Responsibilities	Date of Joining	Experience
Mr. XIAO Jian (肖健)	39	Executive Director, Chairman and Chief Executive Officer	Overall business operation, management and strategic planning of the Group	January 2011	Mr. Xiao was the chief operating officer of CMGE Group from January 2011 to April 2012 and has been the chief executive officer of CMGE Group since April 2012 and a director since August 2012. Prior to that, Mr. Xiao also founded Huiyou Digital (Shenzhen) Ltd. (匯友數碼(深圳)有限公司) in July 2007, a mobile game developer in China, which was subsequently acquired by V1 Group, a new media company listed on the Stock Exchange (stock code: 0082) in October 2009. Mr. Xiao graduated from South China Normal University (華南師範大學) in February 2009 with a bachelor's degree in law through online education, and from Beijing University of Aeronautics and Astronautics (北京航空航天大學) in July 2014 with a master's degree in software engineering.
Mr. SIN Hendrick (洗漢迪)	45	Executive Director and Vice Chairman	Overall business operation, management and strategic planning of the Group	January 2011	Mr. Sin has been a director and vice chairman of CMGE Group since January 2011. From March 2009 to October 2012, Mr. Sin was an executive director of V1 Group, a new media company listed on the Stock Exchange (stock code: 0082), during which Mr. Sin was also the chief financial officer from May 2009 to October 2012. Mr. Sin has been serving as an independent non-executive director of Evergreen Products Group Limited, a hair product manufacturing company whose shares are listed on the Stock Exchange (stock code: 1962) since June 2017. From July 2013 to August 2015, Mr. Sin was an independent non-executive director of Healthoo International Technology Holdings Limited (formerly known as AID Partners Technology Holdings Limited), a company listed on the Stock Exchange (stock code: 8088). Mr. Sin graduated from Stanford University in June 1997 with a master's degree in engineering-economic systems and operations research. Mr. Sin received his triple bachelor's degrees in computer science/mathematics, economics and industrial management from Carnegie Mellon University in May 1996.
Mr. MA Yuntao (馬雲濤)	44	Non-executive Director	Provide professional advice to the Board	October 2015	Mr. Ma has been serving as a director of CMGE Mobile Tech since October 2015. Mr. Ma founded and has been serving as the general manager of Orient Hontai Investment (Chengdu) Company Limited (東方泓泰資本投資(成都)有限公司) since October 2014. Before that, Mr. Ma has worked as a director of the investment banking department at Citi Orient Securities Co., Ltd. (東方花旗證券有限公司) from July 2012 to September 2014, and a director of the investment banking department at Orient Securities Co., Ltd. (東方證券股份有限公司) from July 2006 to June 2012, respectively. Mr. Ma graduated from Shandong Technology and Business University (山東工商學院) (formerly known as China Coal Economy College (中國煤炭經濟學院)) in July 1997 majoring in foreign economic accounting and obtained his master's degree in business administration from Guanghua School of Management of Peking University (北京大學) in July 2006.
Mr. TANG Yanwen (唐彥文)	37	Non-executive Director	Providing professional advice to the Board	August 2018	Mr. Tang has been working at Lansha Information Technology (Shanghai) Co., Ltd. (藍沙信息技術(上海)有限公司) since September 2006 and has been serving as its co-chief executive officer since June 2018. Since September 2006, Mr. Tang has consecutively served as a director of its legend studio and a vice president from September 2006 to August 2016, and its chief operating officer and chief producer from August 2016 to June 2018. Since January 2018, Mr. Tang has also served as one of the five directors of Shengyue Technology, its wholly-owned subsidiary, Shengqu Technology, was one of the Pre-IPO Investors of the Company. Mr. Tang graduated from Shanghai Normal University (上海師範大學) in July 2005 with a bachelor's degree in applied psychology.
Ms. NG Yi Kum (伍綺琴)	62	Independent Non-executive Director	Provide independent professional advice to the Board	September 2019	Ms. Ng has over 12 years of experience in serving listed companies. Ms. Ng graduated from the Hong Kong University of Science and Technology with a master's degree in business administration in 1995. She is a fellow member of the Institute of Chartered Accountants in England and Wales, an associate of the Hong Kong Institute of Chartered Secretaries, a fellow member of the Association of Chartered Certified Accountants and the Hong Kong Institute of Certified Public Accountants, and a member of the American Institute of Certified Public Accountants.
Mr. TANG Liang (唐亮)	41	Independent Non-executive Director	Provide independent professional advice to the Board	September 2019	Mr. Tang has been serving as a director of Tencent Music Entertainment Group, a company listed on the New York Stock Exchange (stock symbol: TME) since April 2014, the chairman of China Investment Financial Holdings Fund Management Company Limited (中投中財基金管理有限公司) since April 2015, a director of CAS Health Industry (Beijing) Co., Ltd. (中科健康產業(北京)有限公司) since December 2016, the chairman of Hefei CICFH Industry Investment Management Co., Ltd. (合肥中投中財產業投資管理有限公司) since December 2016, the chairman of Hefei China Film CICFH Investment Management Co., Ltd. (合肥中影中投中財投資管理有限公司) since March 2017 and a director of Zhongke Zhiyun Technology Co., Ltd. (中科智雲科技有限公司) since June 2018. Mr. Tang graduated from Peking University in July 2000 with a bachelor's degree in law. Mr. Tang received a master's degree in litigation law from Peking University in July 2002, a master's degree in law from Yale University in June 2003 and a master's degree in science of law from Stanford University in June 2005.

(Cont'd) Name	Age	Position	Responsibilities	Date of Joining	Experience
Mr. HO Orlando Yaukai (何 猷啟)	28	Independent Non- executive Director	Provide independent professional advice to the Board	September 2019	Mr. Ho has been serving as a director of Koo Tech Limited (酷奧科技有限公司) since October 2014, a director of UNIR Australia Pty Ltd Group since August 2014, a director of Tung Wah Group of Hospitals (東華三院) since April 2016, and a general manager of Guangzhou Luhu Golf & Country Club (廣州麓湖高爾夫球鄉村俱樂部) since March 2016. Mr. Ho is a member of the Standing Committee of the 12th Guangxi Zhuang Autonomous Region Committee of the Chinese People's Political Consultative Conference (中國人民政治協商會議第十二屆廣西壯族自治區委員會常務委員), and was also a member of the 11th Guangxi Zhuang Autonomous Region Committee of the Chinese People's Political Consultative Conference (中國人民政治協商會議第十一屆廣西壯族自治區委員會) from December 2014 to January 2018. Mr. Ho has been serving as the executive vice-chairman of the Hong Kong CPPCC Youth Association (香港政協青年聯會) since May 2016 and served as the executive vice-president of the same institution from May 2014 to April 2016. In addition, Mr. Ho has been the chairman of the Hong Kong Guangxi Sports Association (香港廣西體育總會) since March 2014 and was the executive vice president from November 2013 to February 2014. Mr. Ho is also the executive vice-chairman of the Hong Kong Guangxi Youth Organizations (香港廣西青年聯會) since March 2014, the executive vice-president of the Federation of Hong Kong Guangxi Community Organization (香港廣西社團總會) since November 2013, the vice-chairman of the Hong Kong Volunteers Federation (香港義工聯盟) since November 2015 and the honorary president of the Anti-Drug Army of Hong Kong Limited (香港禁毒兵團) since January 2015. Mr. Ho graduated from Bentley University in the United States with a bachelor's degree in science in corporate finance and accounting in October 2013.

Source: Company data, AMTD Research

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Overweight	Industry sector expected to outperform the market over the next 12 months
Neutral	Industry sector expected to perform in-line with the market over the next 12 months
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Stock Rating

Buy	Stock with potential return of over 20% over the next 12 months
Hold	Stock with potential return of -20% to +20% over the next 12 months
Sell	Stock with potential loss of over 20% over the next 12 months

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AMTD Global Markets Limited

Address: 23/F - 25/F, Nexxus Building, No. 41 Connaught Road Central, Central, Hong Kong
Tel: (852) 3163-3288 **Fax:** (852) 3163-3289

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