

**XD Inc.**

Rating **OUTPERFORM**

**Quality Games and Unique Game Community Platform**

7 July 2020

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Sector **Internet**

*XD Inc. (XD) is an influential game developer and operator based in China. As of the end of 2019, XD had a game portfolio of 38 online games and 11 premium games, comprising a diverse array of genres including RPG, CCG and SLG. Boosted by Ragnarok M, Girls' Frontline and Sausage Man, online game average MAUs and average MPUs reached 19.6 million and 0.7 million by the end of 2019. With its game ratings being the most authoritative reference in China's mobile game industry (according to Frost & Sullivan), TapTap mobile app's average MAUs reached 17.9 million by the end of 2019. We project XD's revenue and net profit to shareholders to reach RMB 3.6bn and RMB 511mn in 2020. Initiate coverage with TP of HKD 36.50, OUTPERFORM.*

**Heavy-hitting online games:** XD has successfully launched several heavy-hitting games including Ragnarok M, Girls' Frontline and Sausage Man. Online game average MAUs reached 19.6 million in the end of 2019. In 2018, Ragnarok M generated revenue of RMB 627mn (+34% YoY), which represented about 39.5% of XD's game revenue. XD has a pipeline of 8 online games and 3 of them are scheduled to be released in 2020, including Fantasy World, Project A (Japanese girl-style MMORPG) and Torchlight: Infinity. While the revenue contribution of premium games is still quite insignificant, we believe these games can showcase XD's innovation capabilities and build up fan groups, which can be beneficial to both its online game and TapTap businesses.

**A vibrant game community:** TapTap has become a prominent game community and platform among the younger generation in China, with TapTap mobile app's average MAUs grew to 17.9 million in the end of 2019 from just 0.9 million (2.1 million registered users) in 2016. According to Frost & Sullivan, TapTap ratings have become the most authoritative reference in China's mobile game industry, largely attributed to the impersonal content contribution from experienced gamers within TapTap community and citations by various well-known news or game media.

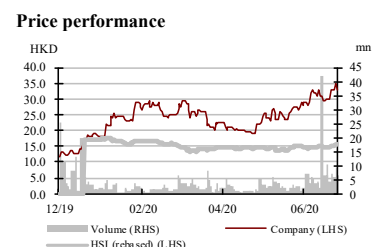
**Risks:** Stricter-than-expected game industry regulations in China; competition from other distribution and game review platforms; the over reliance of game revenue on a small number of games.

**Valuation.** Using a SOTP valuation method, we value XD at HKD 16.6bn with a target price of HKD 36.50. Game business: Valued at HKD 8.8bn, based on 15.0x 2021E P/E and 2021E net profit to shareholders (Game Business) of RMB 520mn. Information service (TapTap): Valued at HKD 7.8bn, based on 35.0x 2021E P/E and 2021E net profit to shareholders (Information service) of RMB 197mn. Our target price of HKD 36.50 implies overall 20.5x 2021E P/E.

Key Data	
Ticker	2400.HK
Price (7 Jul)	HKD 32.75
Target Price	HKD 36.50
Upside	12%

52W High	HKD 36.20
52W Low	HKD 11.26
Mkt. Cap. (HKD mn)	14,895
Total Issued Share (mn)	454
Avg. 3mths t/o (HKD mn)	110

Shareholdings Structure	
Happy Today Holding Ltd.	34.7%
Aiks Danger Inc.	14.9%
Jiexin Holdings Ltd.	8.0%
IGG Inc.	5.4%



%	1m	3m	6m
2400.HK	18.6	46.4	72.6
HSI	4.8	7.0	(8.4)

Source: Bloomberg, Company data, ICBCI estimates

**Investment Summary**

Year ended Dec 31	2017	2018	2019	2020E	2021E	2022E
Revenue (RMB mn)	1,344	1,887	2,838	3,633	4,453	5,242
Change (%)	76%	40%	50%	28%	23%	18%
Gross profit (RMB mn)	603	1,111	1,772	2,380	2,939	3,459
GPM (%)	44.8%	58.9%	62.4%	65.5%	66.0%	66.0%
Operating profit (RMB mn)	134	386	529	768	1,078	1,466
OPM (%)	10.0%	20.5%	18.6%	21.1%	24.2%	28.0%
Adjusted net profit to shareholders (RMB mn)	117	287	405	511	717	972
Change (%)	363%	146%	41%	26%	40%	36%
NPM (%)	8.7%	15.2%	14.3%	14.1%	16.1%	18.5%
EPS (HKD)	-	-	1.1	1.3	1.8	2.4
P/E	N/A	N/A	30.6	25.7	18.4	13.5

Source: Company data, ICBCI Research

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## Investment Summary

### Ongoing structural change in China's online game market

With near 20 years of solid growth, the online game industry in mainland China (China) has transformed from a follower to a global leader in design, development, operation, distribution and monetization, especially in the area of mobile game. Despite facing fierce competition from the two market leaders (Tencent and Company N), small and medium game developers and operators still show capability on production of top-rated (top 100 grossing) mobile games in China. Meanwhile, the increasing number of female game players brought unprecedented opportunities for MOBA games, shooting games and casual games.

### Opportunities arise in overseas markets

With the unexpected suspension of game license approval in 2018, Chinese game developers and operators have been seeking new gamers in overseas market. After more than 10 years of accumulations in R&D and operation experience, Chinese studios are capable of developing and operating some state-of-the-art mobile games by global standards. The market size of Chinese mobile games in overseas locations is expected to further expand at a CAGR of 20.0% from 2018 to 2023, when the overall revenue reaches RMB 119.2bn, based on the estimates by Frost & Sullivan.

### Game business – precise positioning with solid pipeline

XD is an influential game developer and operator in China. As of the end of 2019, XD had a game portfolio of 38 online games and 11 premium games, comprising a diverse array of genres including RPG, CCG, SLG and others. Boosted by several heavy-hitting games including Ragnarok M, Girls' Frontline and Sausage Man, both average MAUs and MPUs of XD online game grew significantly, reached 19.6 million and 0.7 million by the end of 2019. Overseas market (mainly South Korea, Japan and Southeast Asia) is getting crucial for XD, where its revenue contribution has increased from 2% in 2016 to 62% in 2018.

- **Online game.** Boosted by popular games such as Ragnarok M and Sausage Man, XD's online game average MAUs reached 19.6 million in the end of 2019. In 2018, Ragnarok M generated revenue of RMB 627mn (+34% YoY), which represented about 39.5% of XD's game revenue and about a third of XD's total revenue. XD currently has a pipeline of 8 online games, where 3 of them will be released in 2020, including Fantasy World, Project A (Japanese girl-style MMORPG) and Torchlight: Infinity.
- **Premium game.** While the revenue contribution of premium games is still quite insignificant, we believe these games can showcase XD's innovation capabilities and build up fan groups, which can be beneficial to both its online game and TapTap businesses.

### TapTap - a vibrant game community

TapTap has become a prominent game community and platform among the younger generation in China, with TapTap mobile app's average MAUs grew to 17.9 million in the end of 2019 from just 0.9 million (2.1 million registered users) in 2016. According to Frost & Sullivan, TapTap ratings have become the most authoritative reference in China's mobile game industry, largely attributed to the impersonal content contribution from experienced gamers within TapTap community and citations by various well-known news or game media.

While small to medium game developers could suffer from weak brand recognition and low bargaining power over dominant distribution platforms, the innovative free to distribute model of TapTap attracts game developers to distribute games on the platform. TapTap primarily generates information service revenue through providing online marketing service to advertisers such as game developers – the promotion advertisement place on the home page of TapTap. As of the end of 2019, there were

over 11,000 developers on TapTap platform.

### **Financial Summary**

While revenue growth before 2017 was driven by online games such as Heng Sao Qian Jun and Shen Xian Dao, the successful launch of Ragnarok M boosted XD's revenue growth in 2017. With Ragnarok M launched in more countries, the launch of new games and development of TapTap platform, XD's revenue grew 40.4% from 2017 to 2018, reached RMB 1.9bn in 2018. XD continued its fast growth in 2019, recorded net revenue of RMB 2.8bn (+50.4% YoY), boosted by growth in online game revenue as RO was launched in Japan and Europe, Ulala's strong performance in the early months of release and information service revenue from TapTap.

Looking ahead, we expect XD will continue to record fast growth in revenue, primarily driven by its solid online game pipeline and the further monetization of TapTap platform. We estimate that XD's revenue is going to grow at a CAGR of 20.1% from 2020 to 2022, reaching revenue of RMB 3.6/4.5/5.2bn in 2020/2021/2022. With a larger profit contribution from TapTap, we believe there still is room for improvement in net margin for XD, although short term profitability can be negatively impacted by XD's further investment into R&D activities. We expect the company's net profit to shareholder can further reach RMB 511/717/972mn in 2020/2021/2022, representing a net margin of 14.1%/ 16.1%/18.5%, respectively.

## Valuation

Using a SOTP valuation method, we value XD at HKD 16.6bn with a target price of HKD 36.50. Our assumptions include:

- **Game business:** Valued at HKD 8.8bn, based on 15.0x 2021E P/E and 2021E net profit to shareholders (Game Business) of RMB 520mn.
- **Information service (TapTap):** Valued at HKD 7.8bn, based on 35.0x 2021E P/E and 2021E net profit to shareholders (Information service) of RMB 197mn.

Our target price of HKD 36.50 implies overall 20.5x 2021E P/E.

### Exhibit: Sector valuation comparison

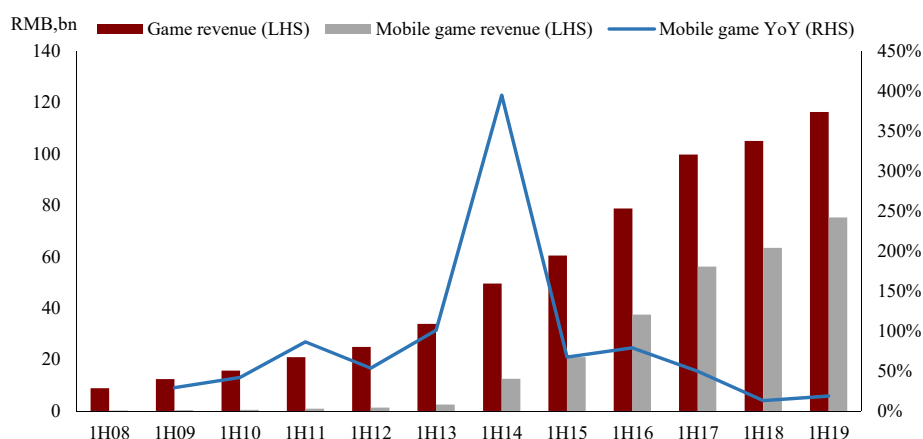
Company	Ticker	MktCap (Loc\$, m)	EV (Loc\$, m)	Last Price (Loc\$)	EPS(Loc\$)		P/E	
					2020E	2021E	2020E	2021E
Tencent	0700.HK	4,915,352	5,017,552	516.0	14.1	16.3	36.6	31.5
Kingsoft	3888.HK	52,507	42,009	38.40	0.3	0.6	110.5	60.7
IGG	0799.HK	8,074	5,766	6.51	0.8	0.9	7.8	7.3
NetDragon	0777.HK	13,083	11,079	23.25	2.4	2.9	9.5	8.0
Bilibili	BILI.US	15,247	14,917	44.14	(1.0)	(0.7)	N/A	N/A
Perfect World Entertainment	002624.CH	73,336	72,215	56.71	1.8	2.2	31.0	26.3
Century Huatong Group	002602.CH	106,228	105,410	17.06	0.7	0.8	25.3	21.4
37 Interactive Entertainment	002555.CH	96,741	93,021	45.8	1.3	1.6	34.6	29.2
Giant Interactive Group	002558.CH	42,229	39,011	20.86	0.5	0.7	38.3	31.8
Weibo	WB.US	9,009	8,344	39.78	2.0	2.7	19.6	14.9

Source: Bloomberg, ICBCI Research; Stock price as of 7th.July.2020; Loc\$ indicates the major currency where the stock is traded;

## Structural Change in China's Online Game Market

With near 20 years of solid growth, the online game industry in mainland China (China) has transformed from a follower to a global leader in design, development, operation, distribution and monetization, especially in the area of mobile game. According to CNG, a research institution dedicated for the online game industry, the overall revenue of China's game market in 1H19 reached to RMB 116.3bn, +10.8% YoY, of which mobile game revenue accounted for RMB 75.3bn, +18.8% YoY. Meanwhile, the PC client game sector recorded revenue of RMB 32.3bn in 1H19, +2.3% YoY.

**Exhibit: China's Game / Mobile Game Market Revenue in the First Half of Last 12 Years**



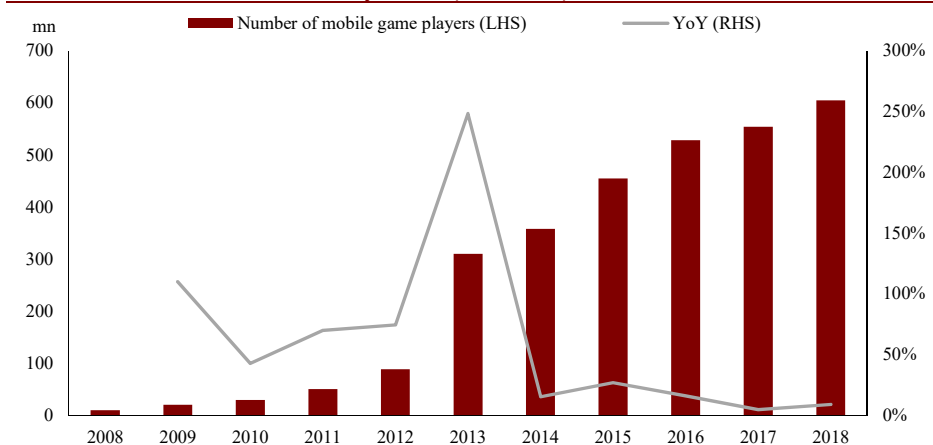
Source: CNG, ICBCI Research

## Maturing Market in China

Due to agency reorganization, Chinese regulator halted the license approval for online games between early 2Q18 and end-2018, leading to the much slower mobile game revenue growth rate of 15.4% YoY, compared to 41.7% YoY in 2017, according to CNG. Since the resumption of license approval process early this year, we have seen the growth rate rebound. However, it is unlikely that the growth rate will climb back to the high level before 2018, due to two key factors:

- High user penetration.** According to CNG, the mobile game user base in China reached to 605 million (+9.2% YoY), ~43% of Chinese total population in 2018. The new players in casual games and mini-program games were the major groups of new gamers in 2018. Given the high penetration rate, we expect to see the overall mobile game user base to remain on the slow growth track in the next 3 – 5 years, mainly driven by the further penetration of smart phone devices and the implementation of 5G networks.

Exhibit: China's Mobile Game Player Size (2008-2018)



Source: CNG, ICBCI Research

■ **High paying ratio.** After adopting the item-based monetization model 15 years ago, China's online game industry has recorded fast revenue expansion along with the rapid rising paying willingness among Chinese gamers. With the rising disposable income in China, users are increasingly willing to pay for online entertainment. According to Frost & Sullivan, the paying ratio of mobile gamers in China exceeded 60% in 2017. Meanwhile, we also notice that over the past two to three years, a large portion of the new gamers are casual game, ACG (animation, comic and game) game and mini-program game players, Given the gameplay nature of these less-intensive games, it is unlikely that the paying ratios of these fast rising game genres will reach to the level of traditional RPG games. Hence, we expect the overall paying ratio with China's mobile game sector will also rise at a slow and steady pace for the next 3 – 5 years.

Overall, China's online game industry, including the mobile game sector, is now at the mature growth stage. We expect the overall market size with China's mobile game sector to remain on a steady growth track in the near future. Frost & Sullivan estimates the overall CAGR of China's mobile game sector to reach 16.6% from 2018 to 2023. Three highest growing segments, role-playing game (RPG), casual game and other game, are expected to record 17.0%, 16.4% and 22.3% CAGR from 2018 to 2023, respectively, according to Frost & Sullivan.

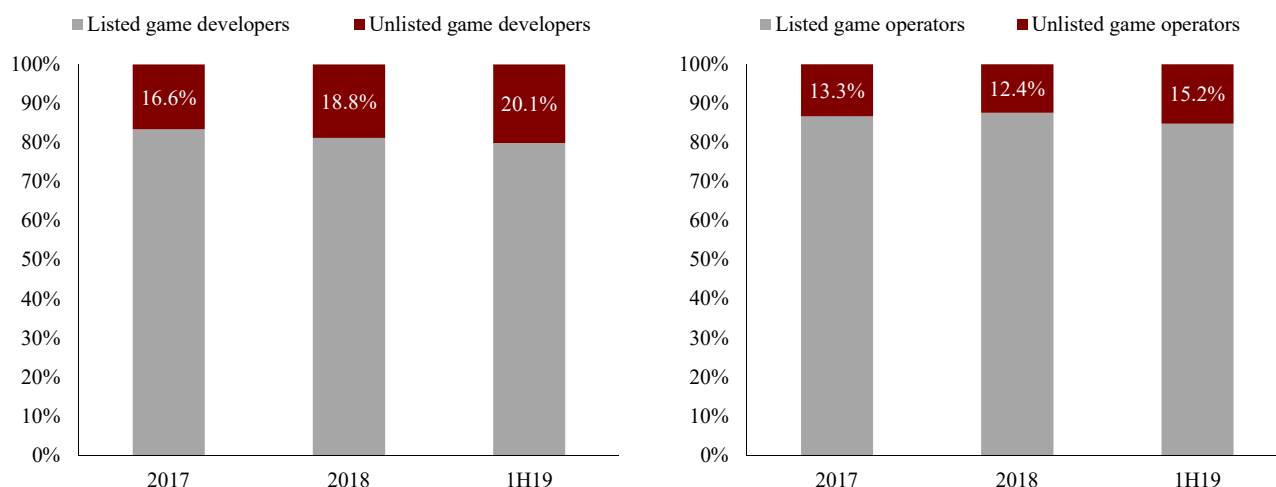
### Opportunities through Structural Shift

While the competitions in each game genre remain very fierce, the top 10 spots are mostly dominated by two market giants: Tencent (700.HK) and Company N. According to CNG, during 1H19, five / six of top 10 mobile games in China are developed / operated by Tencent. Four of top 10 titles are from Company N.

On the other hand, even facing the disadvantage in development, marketing and operation resources compared with the two market leaders, small and medium game developers and operators are also capable of producing top-rated (top 100 grossing) mobile games in China. According to CNG, 20.1% of top 100 grossing game's gross revenue came from unlisted game developers, usually young independent companies, in 1H19, up from 16.6% in 2017. The ratio of top-rated unlisted game operators also increased from 13.3% in 2017 to 15.2% in 1H19, according to CNG.



Exhibit: China's Top 100 Grossing Mobile Game's Revenue Breakdown by Developers / Operators



Source: CNG, ICBCI Research

We also notice that compared to the market five to ten years ago, we see a different gender mixture and user preference among Chinese gamers in 2019. Major new market characteristics include:

- Rising portion of female gamers.** According to CNG, in 1H19, 46.7% of Chinese gamers are female. Comparably, the female player ratio was just around 30% about ten years ago. Historically, traditional Chinese male gamers prefer RPG and action games. Meanwhile, the expanding female game players prefer multiplayer online battle arena (MOBA) games, shooting games and casual games. According to CNG, by June 2019, 55.4%, 43.2% and 32.4% of core Chinese female gamers, who play online games for >2 hours per day, preferred to play games in the above three genres, respectively.
- Shifting preference by younger generation.** Traditionally, among Chinese core gamers, RPG and action games are the most preferred game genres. However, in recent years, as the younger generation, especially players born after 2000, is becoming the new core players, the preference is shifting. According to CNG, by June 2019, the two top game genres by players born in or after 2000 was MOBA and shooting games, attracting 68.3% and 61.9% of polled gamers. Meanwhile, only less than 10% of younger generation had a clear preference for RPG. Of course, the monetization level with RPG and action games are still far ahead of most other games, given the immersive gameplay and the generally longer lifecycle with RPG and action games.

Hence, in this maturing game market with the decreasing benefit from population penetration and the increasing oversight by regulators, we see two major growth areas for the game developers and operators, especially the small and medium companies in China: technology innovation and diversity of game genre, content and feature.

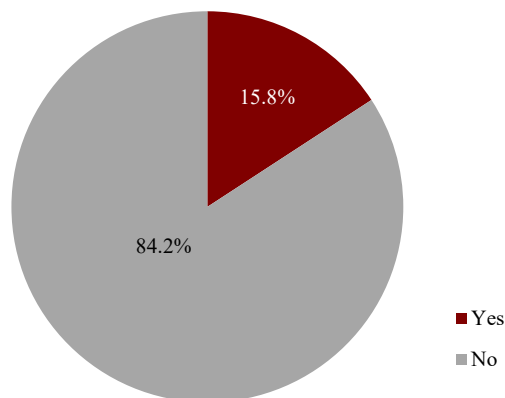
**Technology innovation**

New technologies, including artificial intelligence (AI), virtual reality (VR), augmented reality (AR), holography, 5G network and others, are being gradually applied to mobile games, enriching gameplay and user experience. We also see large upside on user coverage and demand for games with technology innovation. According to a survey by CNG in June 2019, only 15.8% of core Chinese gamers, who play online game >2 hours per day, have played games with VR features. Meanwhile, 58.9% of polled gamers with basic knowledge on cloud-based games are positive to and plan to play cloud-based online games, according to CNG.

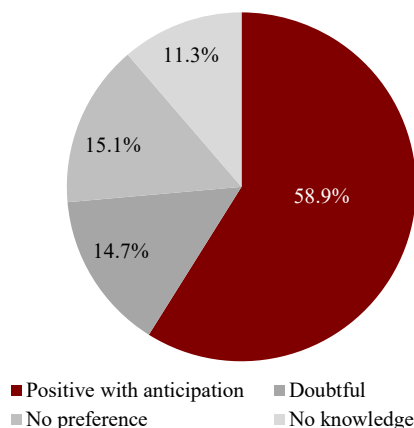


Exhibit: Core Chinese Gamer's View on VR Game and Cloud-based Game

Core Chinese gamer who has played VR game



Core Chinese gamer's attitude towards cloud-based game



Source: CNG, ICBCI Research

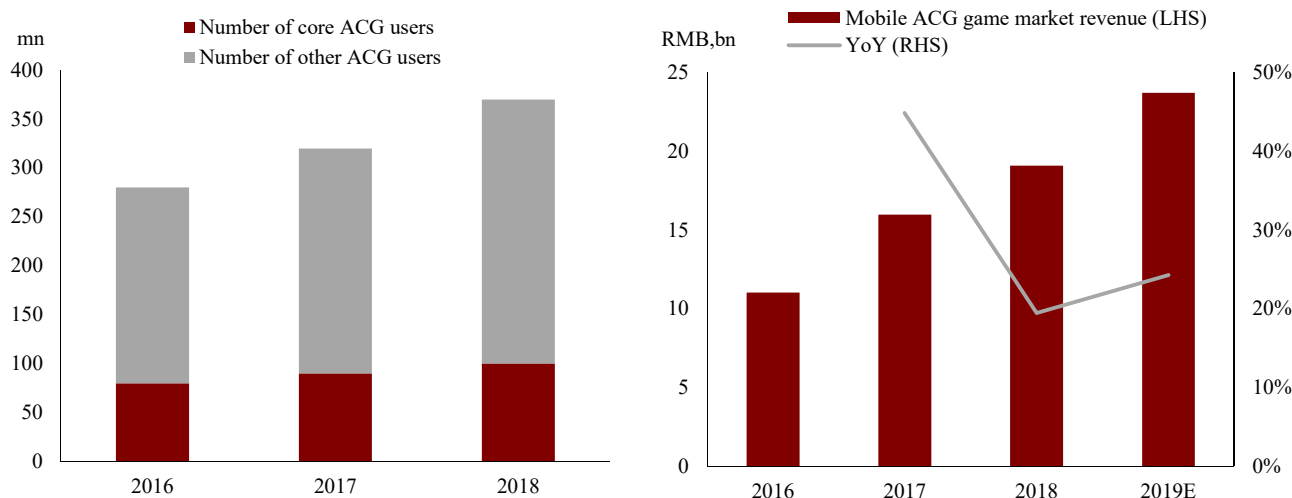
On the other hand, most of these technology innovations, especially AI and VR, are still in the early development or initial implementation stages. Also, some technical difficulties, such as network latency issue for cloud-based games, are beyond the control of mobile game developers / operators or may not be directly solved by the known innovative technologies. Hence, in our opinion, the technology innovation is the major growth engine for China's online game industry in the medium-to-long term.

**Diversity of game genre, content and feature**

Although the mobile game sector has entered into the mature growth stage, some new game genres, as well as some content and gameplay, are still attracting a large amount of new gamers and are recording fast growth. We see the following major growth trends in China's mobile game sector over the next two to three years.

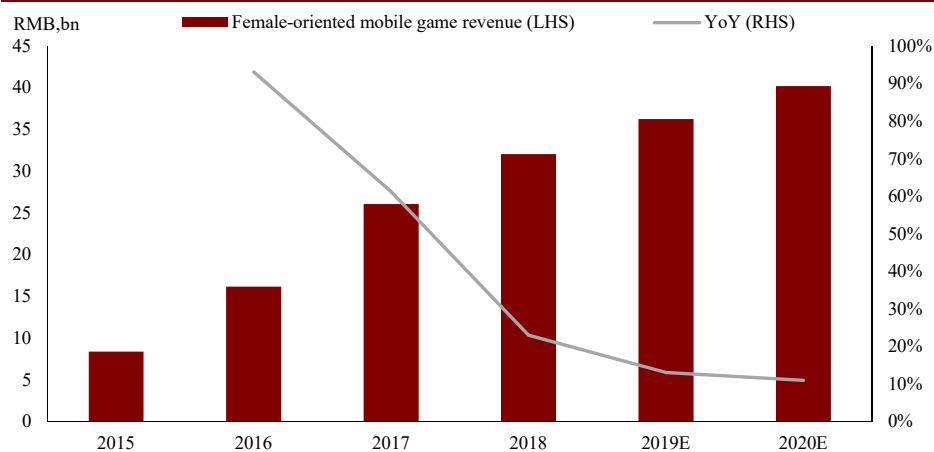
- **Fast rising of ACG game.** Over the past five years, we have witnessed the explosive expansion of ACG market in China. According to CNG, including audience and players, the ACG users in China reached to 370 million, of which 100 million were core fans in 2018. The mobile ACG game market size is expected to reach RMB 23.7bn in 2019, based on the estimates from CNG. Top ACG game, such as *Honkai Impact 3rd*, has achieved month-long top 10 spot in China's mobile game grossing chart in the past three years. With the high popularity of ACG products among younger gamers and the relatively short supply of top quality mobile ACG games and developers, we expect the ACG mobile game segment to achieve much faster revenue growth than the mobile game sector's average growth speed.
- **Large monetization potential with female gamer.** According to CNG, revenue from female mobile gamers in China has reached to RMB 31.9bn in 2018, up by 22.3% YoY, much ahead of the market average. The growth rate is expected to climb slightly to 23.1% in 2019. While in some female-oriented ACG or RPG titles, such as *Mr Love: Queen's Choice*, female gamers have the high average spending, in most other type of games, female players usually spend less than male gamers. In addition, currently, China's online game market is short of high quality female-oriented titles. Hence, we see large monetization upside potential with Chinese female gamers in the next two to three years.

Exhibit: China's ACG User Size and Mobile ACG Game Market Revenue (2016-2019E)



Source: CNG, ICBCI Research

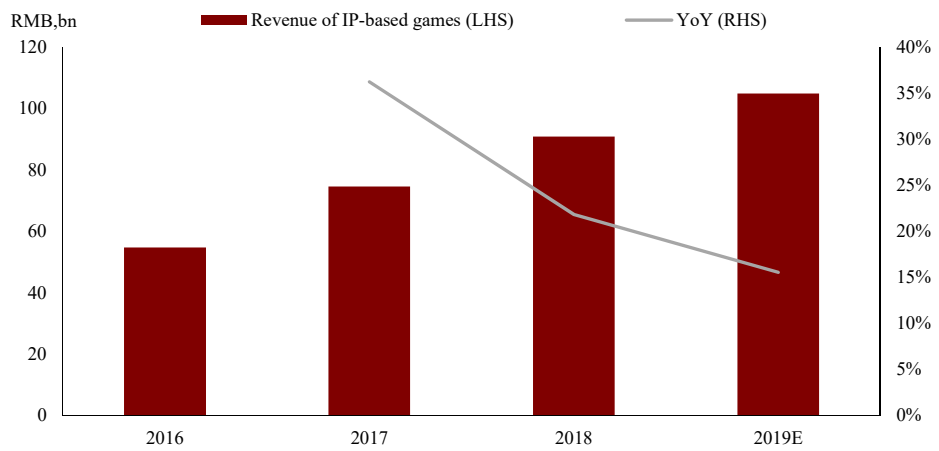
Exhibit: China's Female-Oriented Mobile Game Sector Revenue (2015-2020E)



Source: CNG, ICBCI Research

- IP still matters.** Although we have seen cases of unsuccessful game adaption of famous intellectual property (IP) from other entertainment formats in China in recent years, IP is still one of the important deciding factors in the successful launch of a new online/mobile game, helping developer and operator extend game lifecycle, lower operating expense and improve monetization efficiency. According to CNG, the market size of mobile games based on famous IP in China is expected to reach RMB 105bn in 2019, up by 15.6% YoY. Another important trend is the adaption of famous game IP into other entertainment formats, including animation, comic, music and etc.

Exhibit: Revenue of China's Mobile Games Based on Famous IPs (2016-2019E)



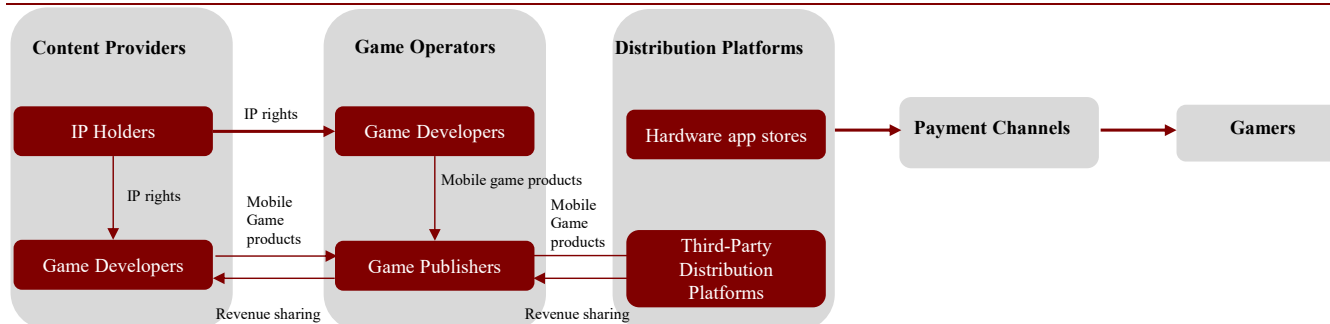
Source: CNG, ICBCI Research

Overall, despite the overall growth deceleration, we still see segments in China's mobile game market with high growth potentials. Game operators and developers with the proper investments and resources in these growing segments will have better chance to ride on the structural change.

### Trends in Mobile Game Distribution

Besides content provider, payment channel and game developers and operators, game distributors are also the essential participants in the value chain of mobile game industry.

Exhibit: Value Chain of Mobile Game Market



Source: Frost & Sullivan, ICBCI Research

Third-party app store was once the dominant method of mobile game distribution. Tencent's Yingyongbao is the largest independent mobile app distribution platform in terms of MAU in China. On the other hand, in recent years, three other distribution channels are fast rising in user and app coverage, taking away market shares from third-party stores in the market of mobile game distribution. These channels include:

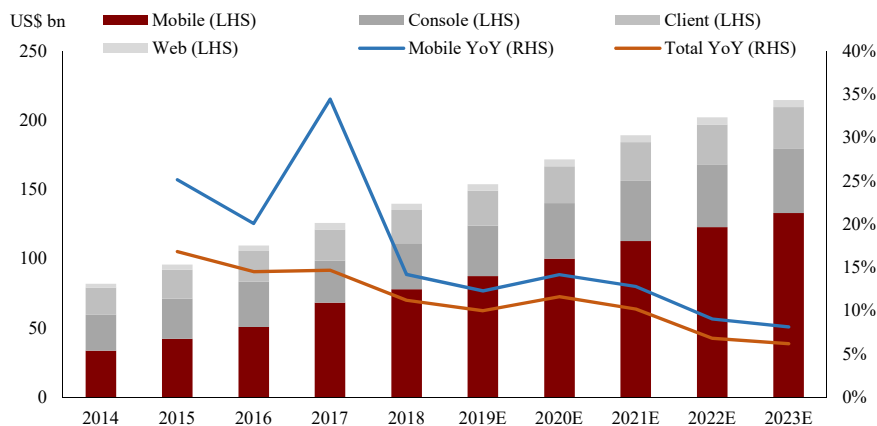
- **Hardware app store:** Preinstalled on smart phones and other smart mobile devices, native app stores from hardware manufacturers are instantly available to users and gamers. Leveraging the deep collaboration with mobile systems, hardware app store has become the leading channel for the mobile app and game distribution in China.
- **Game community platform:** Game community platform mainly provides game-related information, game review, game downloading and gamer interaction.
- **Super app:** The leading non-game apps, including communication tools, social media, video apps and others, also have massive user traffic and plenty of inventories for mobile game promotion and distribution.

In particular, we see the fast rise of game community platform as a highly effective and efficient channel for mobile game distribution. The social functions, as well as the professional review and other high-quality game-related content help the game community platforms to attract the core mobile gamers with the longer time spent, leading to the better marketing ROI for game operators on the game community platforms than the other distribution platforms.

## Opportunities in Overseas Markets

Globally, the overall game market has also been in the steady growth stage for a few years. According to Frost & Sullivan, the global game market size reached to USD 139.9bn in 2018, with 2014-18 CAGR of 14.3%. Among all major game formats, mobile games recorded the fastest growth rate and contributed the largest chunk of revenue, as the sector's revenue climbed to USD 78.0bn in 2018, with 2014-18 CAGR of 23.3%.

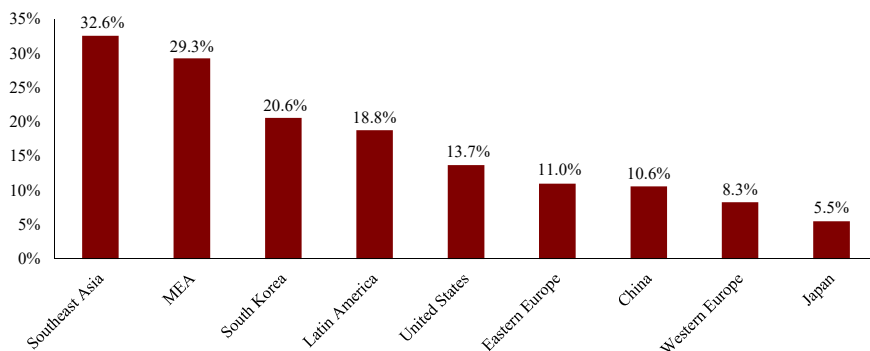
**Exhibit: Market Size of Global Game Industry (2014-2023E)**



Source: Frost & Sullivan, ICBCI Research

The faster-than-average growth with the mobile game sector is expected to continue in the next three to five years. According to Frost & Sullivan, the market size of global mobile game sector is estimated to reach USD 133.0bn by 2023, representing CAGR of 11.3% between 2018 and 2023.

**Exhibit: Mobile Game Sector Revenue Growth Rates by Selected Major Markets (2018)**



Source: Newzoo, CNG, ICBCI Research

Meanwhile, the mobile game markets in different locations are currently in the different growth stages. According to Newzoo, in 2018, Southeast Asian market recorded the highest YoY growth rate of 32.6%, in terms of revenue, among all major mobile game market in the world. Meanwhile, Japanese and Western European markets were the slowest growing markets. We see some unique characteristics with major mobile game markets, including:

- The United States:** As the second largest mobile game market by revenue in the world in 2018, the US mobile game sector is in the mature growth stage. Meanwhile, US game studios are still the developers for some trend-leading games in the world market, given the comparably high salaries with the game development and operation professionals in the US.

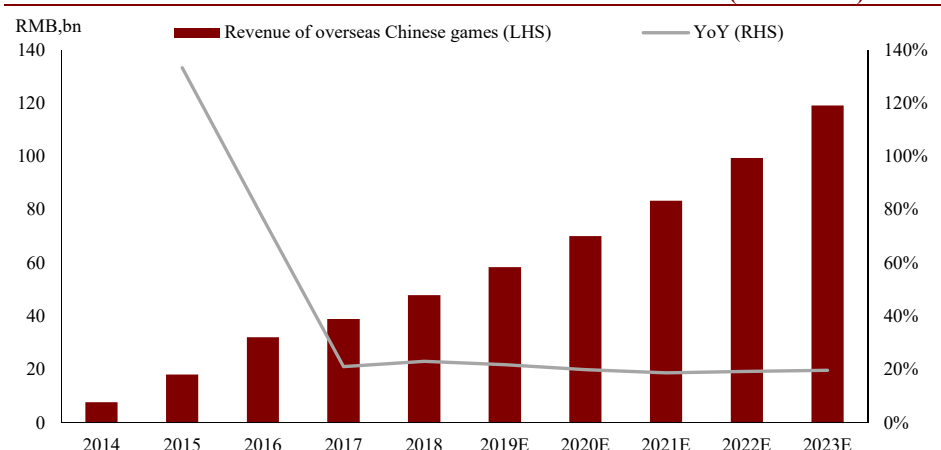
- **Japan:** In recent years, Japanese game developers and operators are best known for popular ACG and casual games. High quality IPs are backbones of Japanese mobile game sector, accumulating a large number of enthusiastic fans.

### Upside in Overseas Markets, Especially for Independent Game Companies

With the unexpected suspension of game license approval in 2Q18 - 4Q18, Chinese game developers and operators have been seeking new gamers in overseas market. In addition, after more than 10 years of accumulations in R&D and operation experience, Chinese studios are now capable of developing and operating some state-of-the-art mobile games by global standards.

According to Frost & Sullivan, the market size of Chinese mobile games in overseas locations quickly increased from RMB 7.8bn in 2014 to RMB 48.0bn in 2018, with a CAGR of 57.5%. The market size is expected to further expand at a CAGR of 20.0% from 2018 to 2023, when the overall revenue reaches RMB 119.2bn, based on the estimates by Frost & Sullivan.

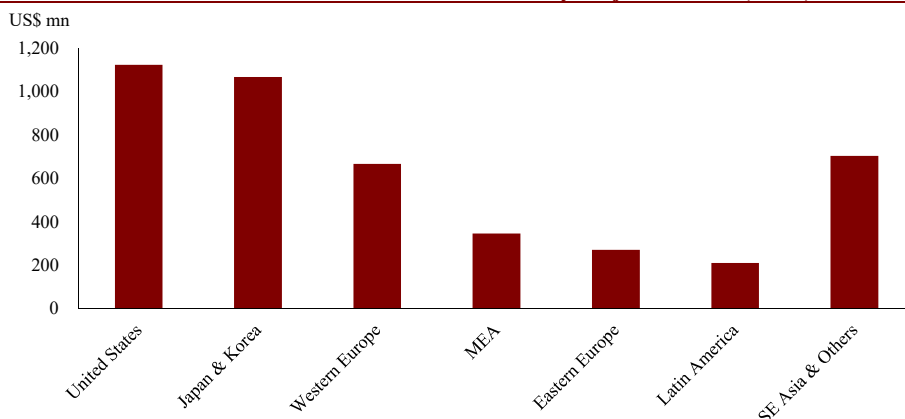
**Exhibit: Market Size of Chinese Mobile Games in Overseas Locations (2014-2023E)**



Source: Frost & Sullivan, ICBCI Research

Meanwhile, by absolute number, the US, Japanese and South Korean markets are still the largest overseas revenue contributors for Chinese mobile game companies. According to CNG, revenue of Chinese games in the US market and the Japanese and South Korean market reached to USD 1.12bn and USD 1.07bn in 1H19, respectively.

Exhibit: Revenue of Overseas Chinese Mobile Games by Major Markets (1H19)

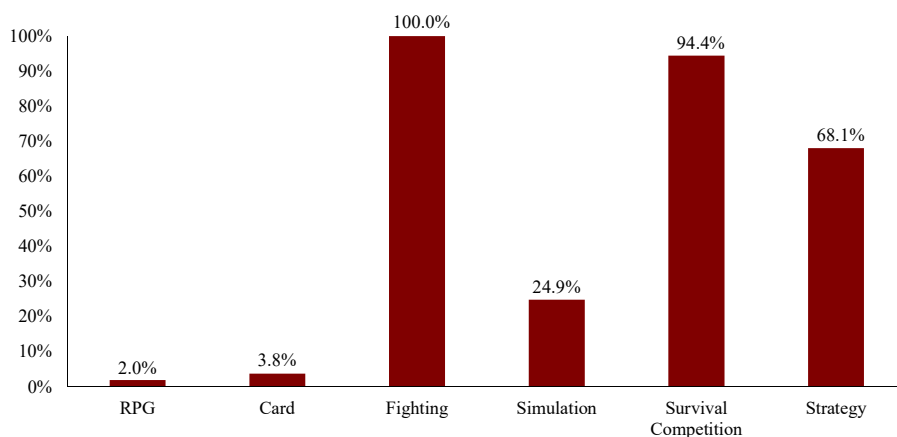


Source: CNG, ICBCI Research

We see some key trends with Chinese game developers and operators in the overseas market.

- The United States:** Given the different cultural environments between the US and China, as well as the different mobile internet ecosystems in the two countries, most mobile games from Chinese developers are not within the mainstream game genres among US gamers. However, we see a growing number of US game studios getting connected with the Chinese online game companies through acquisition or investment. Some titles from these US subsidiaries or investees of Chinese companies have achieved breakout performance and have been ranked top 10 in monthly grossing chart in recent years.
- Japan:** In certain game genres, including fighting game and survival competition game, Chinese games have obtained the dominant market shares in Japanese mobile game market in 1Q19, according to CNG. Usually, these game genres are introduced into Japanese market by Chinese game operators. Meanwhile, in the more mature game genre, such as RPG, or the game genre with strong Japanese culture root, such as ACG, local games are more popular among Japanese gamers, except for a few successful cases from Chinese developers, such as Company N's *Onmyoji*.

Exhibit: Shares of Chinese Mobile Games among Top 100 Grossing Games in Japan by Genres (1Q19)



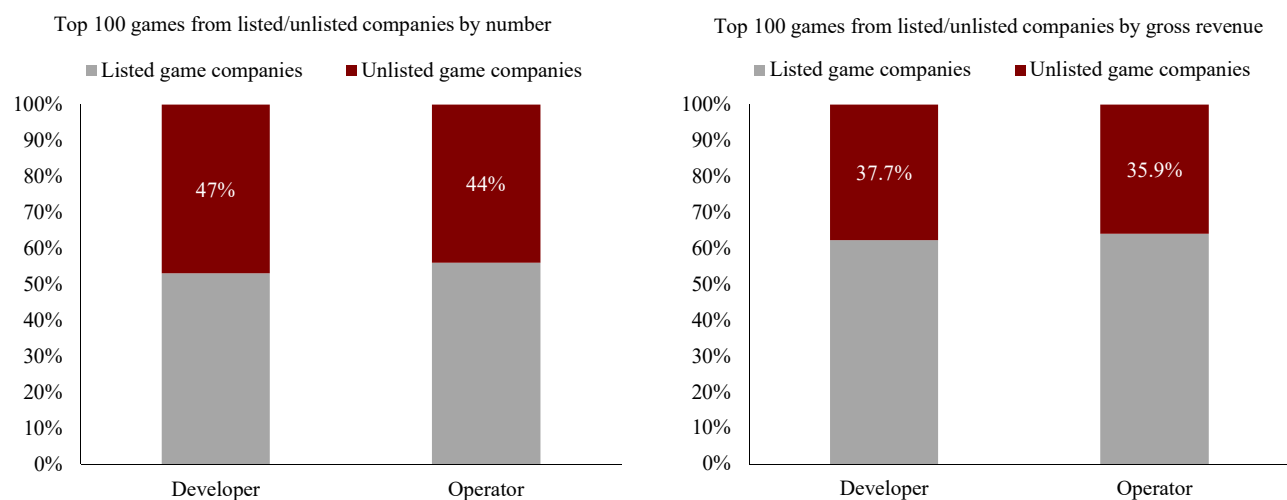
Source: CNG, ICBCI Research



- **South Korea:** Back in early 2000, most Chinese online game developers started the business through following the path of their South Korean counterparts. In recent years, original games from Chinese developers have been constantly ranked as top 10 titles in the mobile game grossing chart in South Korea.
- **Southeast Asia:** Helped by the rising disposable income, the growing penetration of smartphones and the improvement in mobile internet infrastructure, Southeast Asian mobile game market has registered high growth in the past few years. With the strong cultural influence from China, Japan and Korea, games from developers in these countries have gained high traction in Southeast Asia in recent years. Meanwhile, we see two areas of further improvements in Southeast Asian market: (i) the in-game paying ratio by players; and (ii) the unique demand from local gamers.

We also notice that unlisted Chinese game companies have much larger market share in the game export market than in the domestic market in China. According to CNG, in 2018, 37.7%/35.9% gross revenue of top 100 grossing Chinese mobile games exported to overseas markets are from unlisted independent game developers/operators. The domestic numbers were 18.8%/12.4% in 2018.

**Exhibit: Top 100 Export Chinese Mobile Games from Listed/Unlisted Companies (2018)**



Source: CNG, ICBCI Research

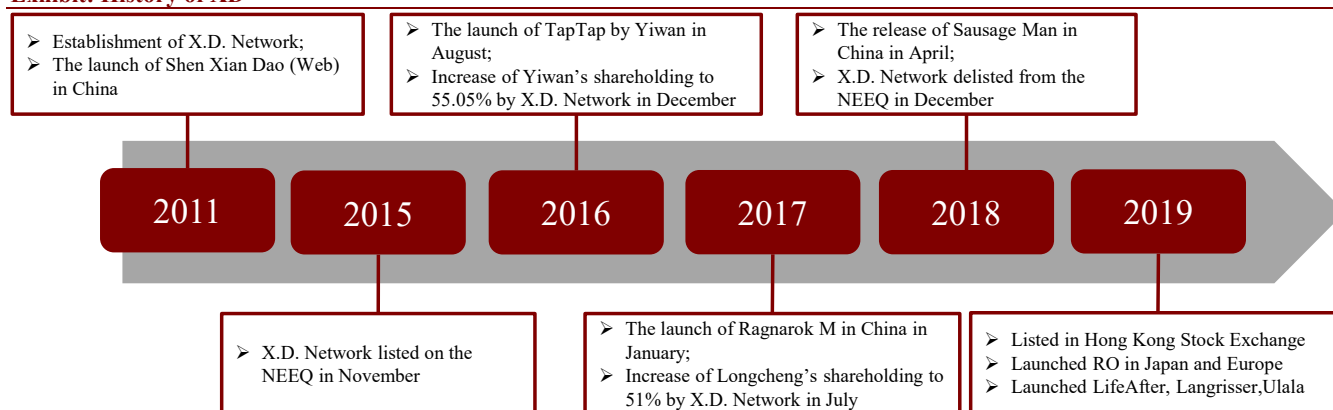
A few unlisted Chinese online game companies have put emphasis on the overseas market in their operation in recent years. Some of them, such as Elex, Happy Element and XD, have found their particular strength in certain overseas markets. As Chinese online game companies are shifting more resources to overseas development and operation, we expect to see more successful launches of Chinese online/mobile games in overseas markets.

## Influential Player in China’s Mobile Game Market

Since its inception in 2011, X.D. Network (a PRC consolidated entity of XD Inc., refer to “XD” for the purpose of this report) has self-developed/licensed various successful games, including Ragnarok M and Sausage Man, to both Chinese and overseas market. As of the end 2019, XD had a game portfolio of 38 online games and 11 premium games, comprising a diverse array of genres including RPG, CCG, SLG and others. According to Frost & Sullivan, XD ranked fifth among PRC game operators whose >50% revenue was derived from overseas market in 2018 in terms of mobile game revenue.

Apart from game business, XD launched TapTap platform through its non-wholly-owned subsidiary-Yiwan in 2016. With TapTap mobile app’s average MAUs reached 17.9 million as of the end of 2019, TapTap has since become a prominent game community and platform in China, being the most authoritative reference in China’s mobile game industry according to Frost & Sullivan. Unlike other major distribution platforms, TapTap does not charge game developers/publishers for high commission fees, but generates revenue through offering online marketing services.

### Exhibit: History of XD



Source: Company data, ICBCI Research

## Experienced Management

The senior management of XD consists of both entrepreneurs who possess abundant industry experience through various start-ups, and professionals with specific knowledge background.

### Exhibit: Management Profiles

Name	Date of joining XD Group	Age	Position/Title	Role and responsibility	Education background & experience
Huang Yimeng	July 2011	37	Chairman of the Board; Chief Executive Officer	Responsible for the overall operations and management	<ul style="list-style-type: none"> <li>High school graduate from Fudan High School in China in 2000</li> <li>Chief executive officer of Shanghai Weixi Network Technology Co.,Ltd from 2005 to 2007</li> <li>Chief executive officer of Shanghai Shaosi Network Technology Co.,Ltd from 2007 to 2011</li> <li>Co-founded X.D. Network in 2011</li> </ul>
Dai Yunjie	July 2011	37	President	Responsible for daily operations, overseas business development and human resources	<ul style="list-style-type: none"> <li>Bachelor’s degree of mechanical engineering and automation from Shanghai University in 2006</li> <li>Chief operating officer of Shanghai Weixi Network Technology Co.,Ltd from 2005 to 2007</li> <li>Chief operating officer of Shanghai Shaosi Network Technology Co.,Ltd from 2007 to 2011</li> <li>Co-founded X.D. Network in 2011</li> </ul>
Shen Sheng	July 2011	42	Chief Technology Officer	Responsible for overall technological policies, research and development and the establishment of technologies platform	<ul style="list-style-type: none"> <li>Studied in international finance from Shanghai Finance College in 1998</li> <li>Chairman of Shanghai Archer Information Technology since 2010</li> </ul>

Name	Date of joining XD Group	Age	Position/Title	Role and responsibility	Education background & experience
Fan Shuyang	February 2012	36	Company Secretary	Responsible for daily operations, corporate governance and legal and compliance affairs	<ul style="list-style-type: none"> <li>Bachelor's degree in automation from Tongji University in 2007</li> <li>Master's degree in electronic business management from University of Warwick in the United Kingdom in 2009</li> <li>Project manager at SEGA Shanghai from 2010 to 2012</li> </ul>
Gong Rui	November 2018	34	Chief Financial Officer	Responsible for overall finance, investments, and strategic development	<ul style="list-style-type: none"> <li>Bachelor's degree in science in Peking University in 2008</li> <li>Master's degree in science in Boston University in the United States in 2009</li> <li>Worked in Bank of China International (BOCI) Asia Limited from 2010 to 2014</li> <li>Worked in China Culture Industry Investment Fund Management Co.,Ltd from 2014 to 2018</li> </ul>

Source: Company data, ICBCI research

## Game Business – Precise Positioning with Solid Pipeline

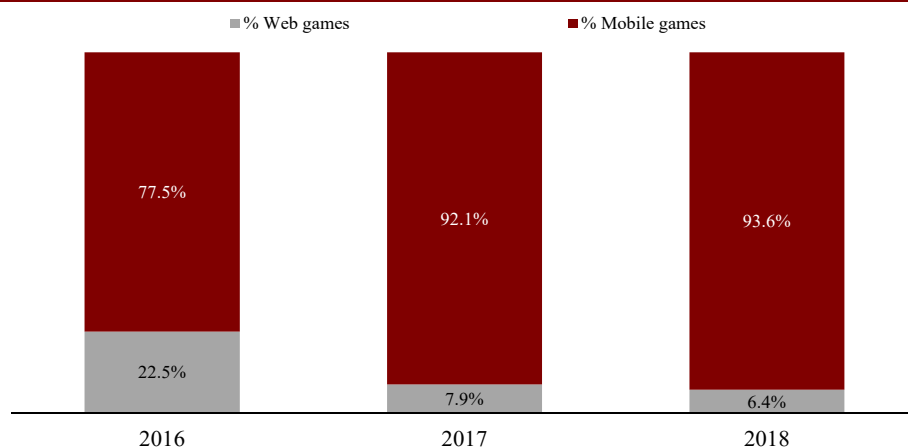
XD is an influential game developer and operator in China. As of the end of 2019, XD had a game portfolio of 38 online games and 11 premium games, comprising a diverse array of genres including RPG, CCG, SLG and others. Boosted by several heavy-hitting games including Ragnarok M, Girls' Frontline and Sausage Man, both average MAUs and average MPUs of XD online game grew significantly, reached 19.6 million and 0.7 million as of the end of 2019.

XD generates most of its game revenue from online games, through monetization methods including sales of virtual items in games, primarily in regions such as China, South Korea, Hong Kong and Southeast Asia. As the overall game industry was constrained by licensing restrictions in China during 2018, we saw XD's overseas game revenue proportion increased to over 60%. Looking forward, as licensing restrictions gradually loosen, we expect to see a more balanced revenue split between China and overseas market.

### ■ Online Games

The online game segment of XD consists of mobile games and web games. Started off the online game business by publishing and operating third party web games, XD later moved on to develop and publish mobile games, as mobile internet and smartphone gained popularity. Likewise, revenue contribution from web games have dropped from 22.5% in 2016 to 6.4% in 2018, reflecting XD's switch of focus from web games to mobile games in its game operating business from 2016 to 2018.

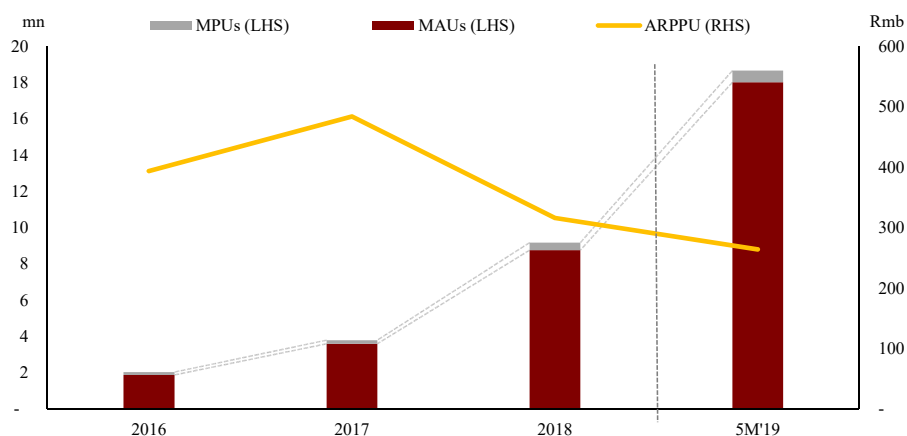
**Exhibit: Online Game - Revenue Mix (2016-2018)**



Source: Company data, ICBCI Research

Boosted by popular games such as Ragnarok M and Sausage Man, online game average MAUs of XD increased exponentially during the past several years, rose from 1.9 million in 2016 to 19.6 million in the end of 2019. However, the paying ratio (defined as MPUs/MAUs) and ARPPU (Average Revenue per month Per Paying User) both declined from 2017 to the five months ended May 30, 2019, largely attributed the increase proportion of game operating revenue from Ragnarok M in overseas market, for which revenue is recognized on a net basis and Sausage Man (11.1 million MAUs as of end of September 2019) which only started monetization in early 2019, and the increased proportion of revenue which was recognized on net basis in 2018.

Exhibit: Online Game – Average MAUs/MPUs/ARPPU Analysis



Source: Company data, ICBCI Research; 5M'19 indicates the five months ended May 31, 2019

Existing Online Games

Among XD's popular online games, most of the games are either in growth stage or maturity stage covering game types such as MMORPG (Ragnarok M), Battle arena game (Sausage Man), CCG (Girls' Frontline), SLG (Heng Sao Qian Jun) and RPG (Shen Xian Dao HD).

Exhibit: Timeline of Top Online Games of XD



Source: Company data, ICBCI Research

Exhibit: Top Online Games of XD

Revenue (Rmb,000's)	2016	2017	2018	5M' 19	Game Type	Source	Remarks
Ragnarok M	-	468,062	627,187	504,226	MMORPG	Self-developed	9M'19 average MAUs 5.3 million
Girls' Frontline	-	256,442	299,862	74,967	CCG	Licensed	
Heng Sao Qian Jun	342,251	175,431	129,621	44,942	SLG	Self-developed	
Shen Xian Dao (Web)	110,766	70,518	76,394	37,641	RPG	Licensed	
Shen Xian Dao (HD)	102,851	70,952	68,270	34,157	RPG	Self-developed	
Sausage Man	-	-	-	-	Battle arena	Licensed	1. 9M'19 average MAUs 11.1 million 2. Started monetization in early 2019

Source: Company data, ICBCI Research

■ Ragnarok M

Ragnarok M, launched in China in January 2017, is currently one of the most popular games in XD, with average MAUs of 5.3 million as of the end of September 2019. Jointly developed by XD, Gravity and Dream Network, Ragnarok M is the mobile version of Ragnarok Online which has already accumulated a large group of fans. The game was also launched in markets such as Hong Kong, Macau, Taiwan, South Korea and Southeast Asia. In June 2019, Ragnarok M was released in Japan. XD, Gravity and Dream Network also launched Ragnarok M in Europe in October 2019.

The role of XD in operating Ragnarok M varies by countries and regions. As the sole publisher and operator of Ragnarok M in China, XD serves as principle and recognizes revenue on a gross basis and Dream Network shares 13.667% of monthly gross billings in China with XD since November 2017. In overseas market, XD serves as agent of game publishers and receives about 22.5%-45% of gross billings from publishers or App Store/Google Play. In 2018, Ragnarok M generated revenue of RMB 627mn (+34% YoY), which represented about 39% of XD's game revenue and about a third of XD's total revenue. Ragnarok M continued its success in 2019, recorded revenue of RMB 504mn during the first five months in 2019.

■ Sausage Man

Sausage Man is a battle arena game with in-game characters in sausage shapes. Launched in China in April 2018, Sausage Man has gained large popularity. The average MAUs reached 11.1 million during the nine months in China ended September 30, 2019, and the cartoon based on Sausage Man has achieved over 3.5 billion views as of the end of September 2019. XD started monetization of Sausage Man in February 2019.

**Exhibit: Ragnarok M (Up) and Sausage Man (Down) Interfaces**

Ragnarok M



Sausage Man



Source: TapTap, ICBCI Research



### ■ Online Game Pipeline

As of the end of 2019, XD had a pipeline of 8 online games and 3 of which were expected to be released by 2020:

1). Fantasy World. Fantasy World is a life simulation social game where player plays as a resident of a small town, similar to the recent popular game Animal Crossing. The game is already at test stage and is planning to release in 2020. The positioning of Fantasy World is similar to the idea to Sausage Man where high DAU and involvement of TapTap overtakes monetization as priority.

2). Project A. While the official name has not been released, Project A is a Japanese girl-style MMORPG which XD has already developed more than one year. Project A is the most heavily invested game for XD since the development of RO and is expected to be released in this year's ChinaJoy.

3). Torchlight: Infinity. Licensed from the popular IP "Torchlight", Torchlight: Infinity is a dark themed mobile game that complete the space of lacking of dark themed high quality mobile game.

Other longer term game pipelines include casual games, RPG games and placement games, all suitable for globalized themes.

### ■ Premium Games

One major difference between XD's online game and premium game is their revenue model. While online games generate revenue from selling of in-game virtual items, premium games generate most of theirs from access fees to play on game devices such as PC, PlayStation 4 and mobile devices. As of the end of September 2019, XD had 12 premium games in operation. Apart from licensed games such as ICEY and Muse Dash, XD also developed RPG games including To the Moon and Heimdallr.

Revenue contribution from premium game to total game revenue has increased from 1% in 2016 to 2.7% in 2018. While the revenue contribution of premium games is still quite insignificant, we believe these games can showcase XD's innovation capabilities and build up fan groups, which can be beneficial to both its online game and TapTap businesses.

As of the end of September 2019, XD had 7 licensed premium games in pipeline and majority of them were casual games and music games.

#### Exhibit: Premium Game – Selection of Pipeline

Game	Expected Launch Date	Genre	Targeted Market
Monster Safari	1H20	SLG	China
EastWard	2H20	RPG	China
Human: Fall Flat	2H20	Casual game	China
Professor Layton and the Curious Village	2H20	Casual game	China

Source: Company data, ICBCI Research

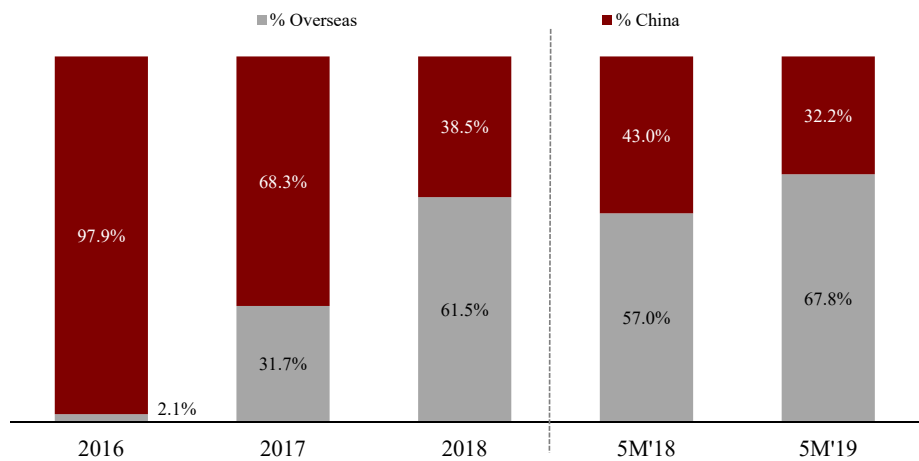
### ■ Overseas Market

As of the end of September 2019, XD provided games to over 100 countries and regions, where 30 of 42 online games and 7 of 12 premium games were launched in overseas markets. Revenue contribution from overseas market to total game revenue increased from 2% in 2016 to 62% in 2018, largely due to the successful launch of the popular games Ragnarok M and Girls' Frontline in South Korea and Southeast Asia, where launched games already had large existing fan base, while domestic market was negatively impacted by game licensing issues. During the first five months in 2019, overseas revenue contribution further climbed to 68%, primarily attributed to the overseas revenue of Ragnarok M.

Judging from XD's online game pipeline where a large proportion of new games are licensed game with specific culture roots, we expect the overseas market will continue to be significant for XD. We expect XD to further extend its cooperation with leading game developers for game publishing in overseas market. Meanwhile, as the game

approval process gradually resumes in China, we expect the domestic revenue contribution will catch up.

**Exhibit: Geographic Game Revenue Analysis**

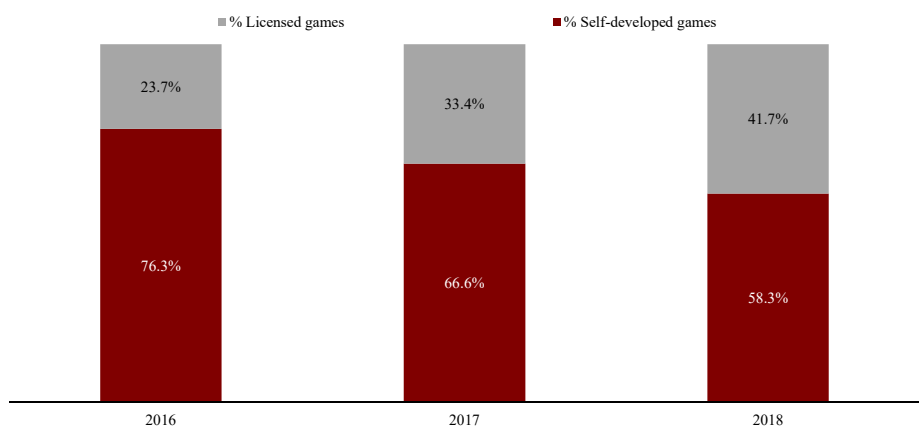


Source: Company data, ICBCI Research

**Self-development or License**

XD operates both self-developed games and licensed games, where self-developed games are primarily developed by its in-house game development studios, and licensed games are sourced from third-party game developers. The revenue contribution of licensed game to total game revenue increased from 23.7% in 2016 to 41.7% in 2018, influenced by several very popular games. Judging from its existing game portfolio and pipeline, we expect to see a more balanced game product portfolio that consists of both self-developed games and licensed games.

**Exhibit: Game Revenue Proportion, Licensed and Self-developed**



Source: Company data, ICBCI Research



■ **Distribution Strategy and Revenue Sharing**

Primary distribution channels of XD include TapTap, www.xd.com, and third-party distribution platforms such as App Store and Google Play Store. For domestic market, in addition to the primary distribution channels, XD also cooperates with Yingyongbao and third party app stores to expand the reach to users. For overseas market, due to difference in user habits and market dominance of Apple (AAPL.US) and Google (GOOG.US), XD primarily cooperates with App Store and Google Play Store to distribute mobile games.

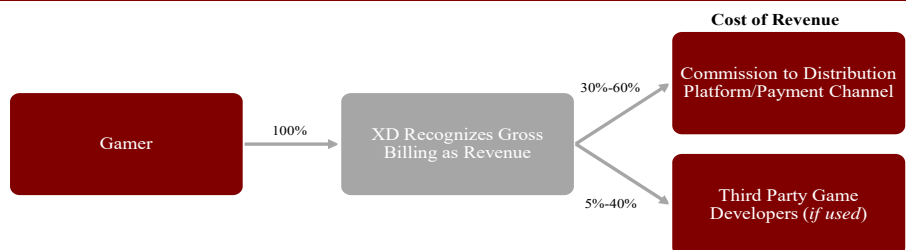
For XD, revenue sharing ratio coincides with the role it plays and level of involvement, i.e. whether it is a game publisher or a service provider to game publisher.

■ **Game Publisher**

Whether it's a self-developed game or a licensed game, as a game publisher, XD takes primary responsibilities of game operation and has rights over game operations such as publishing, payment solutions, promotions, running updates and price determination. When gamers top up and purchase virtual items within game, XD earns revenue through collecting those payments from distribution platforms and payment channel partners.

In accounting treatment, revenues are recognized on gross basis. The commissions charged from distribution platform and payment channels (30%-60% of revenue) and proceeds to third party game developers (5%-40% of revenue, if used) are recognized as cost of revenue.

**Exhibit: XD As a Game Publisher**

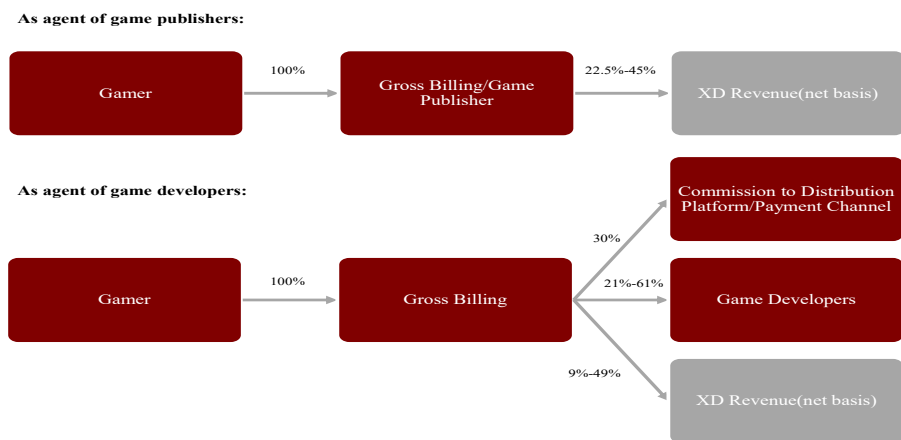


Source: Company data, ICBCI Research

■ **Service Provider to Game Publisher/Developer**

XD also provides services to game publishers and game developers both in China and overseas market. These revenues are recognized on net basis. When acts as an agent of game developers, XD receives around 9%-49% of gamers' gross billings; and 22.5%-45% of gross billings when act as agent of game publishers.

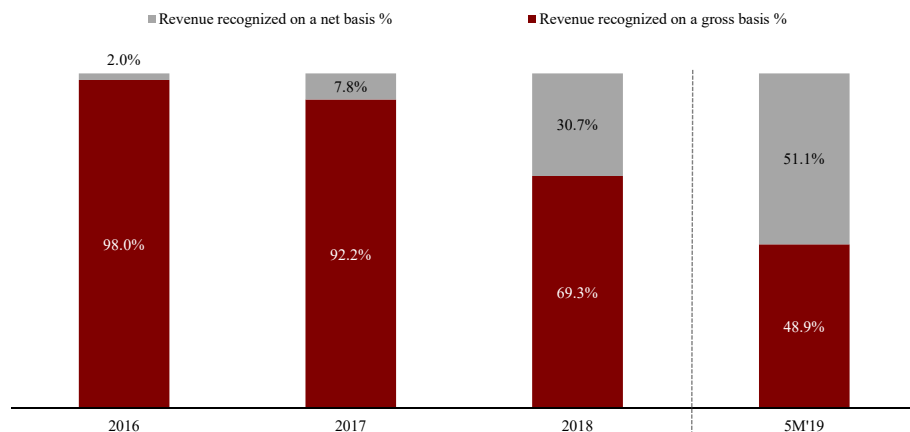
**Exhibit: XD As an Agent of Game Publisher/Developer**



Source: Company data, ICBCI Research

The proportion of net basis revenue has increased sharply from only 2.0% in 2016 to nearly 30.7% in 2018, mainly as a result of the increase revenue from Ragnarok M in overseas market. Looking forward, although the net basis revenue is likely continue to grow due to Ragnarok M to launch in more overseas market, the monetization of Ulala and Sausage Man(gross basis) will offset some effects.

**Exhibit: XD Revenue – Gross Basis & Net Basis**



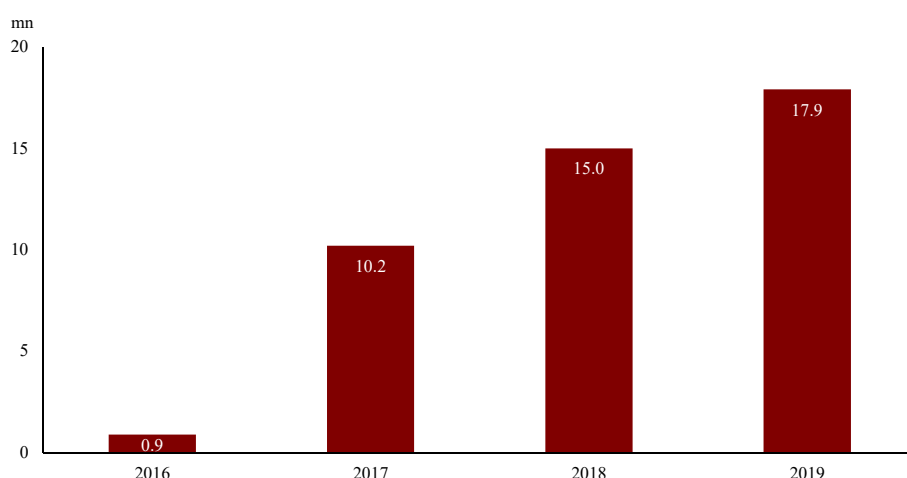
Source: Company data, ICBCI Research

### TapTap Platform - A Vibrant Game Community

Launched in 2016, TapTap has become a prominent game community and platform in China. According to Frost & Sullivan, TapTap ratings have become the most authoritative reference in China’s mobile game industry, largely attributed to the impersonal content contribution from experienced gamers within TapTap community and citations by various well-known news or game media.

Boosted both by well-managed content and several exclusive launch of popular games including Ragnarok M, TapTap mobile app has witnessed exponential average MAUs growth to 17.9 million in the end of 2019 from just 0.9 million (2.1 million registered users) in 2016. Furthermore, TapTap has a very young user base, where more than 84% of its users were born after 1990.

**Exhibit: TapTap – Mobile App Average MAUs (2016-2019)**



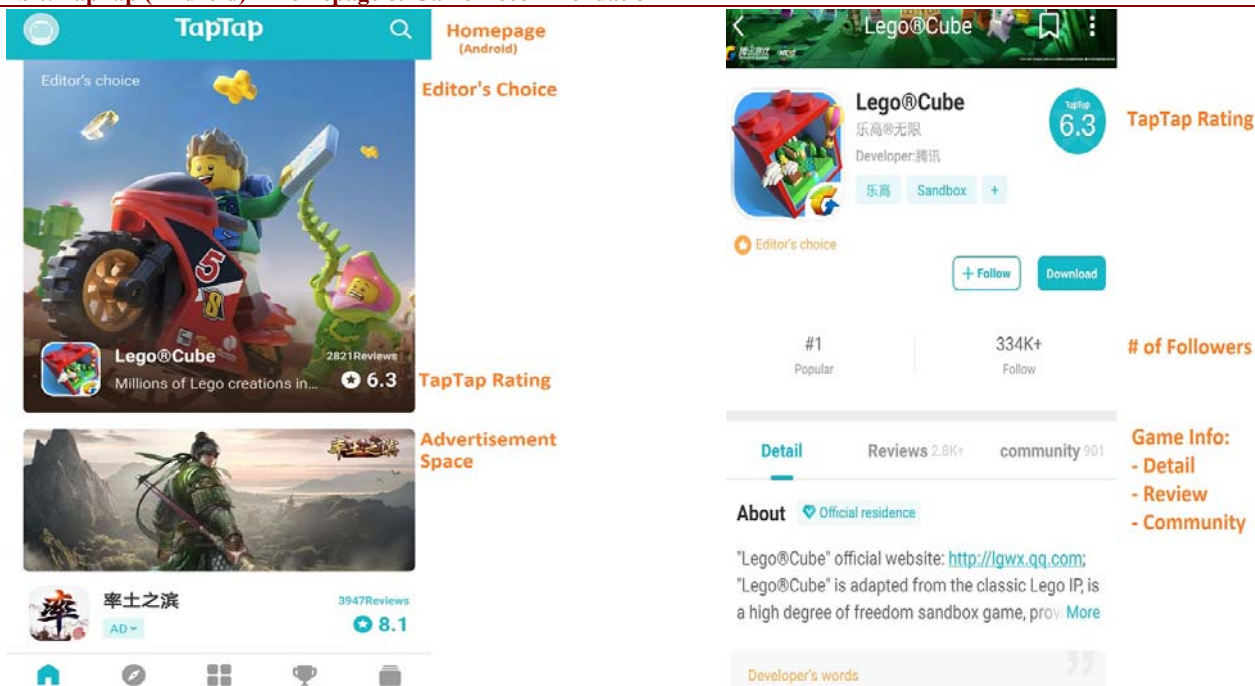
Source: Company data, ICBCI Research

#### ■ TapTap – vibrant game community

Positioned as an engaging game community and game distribution platform, TapTap features game information, game recommendation, game download and social community function where users can publish game reviews and ratings. As of September 30, 2019, TapTap had over 6,500 downloadable mobile games and maintained a large game information database with over 41,000 games. Users can access TapTap through www.taptap.com and TapTap mobile app from iOS and Android system. As of the end of September 2019, over 90% of the MAUs of TapTap mobile app were from android version.

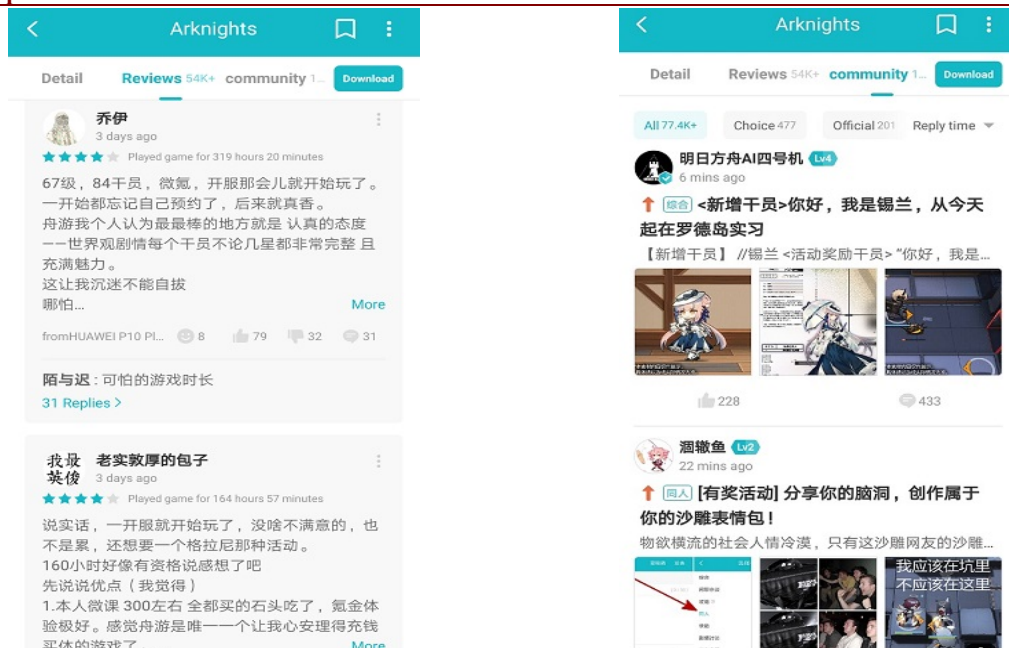
The user-generated content (UGC) forms the foundation of TapTap’s engaging community culture. While gamers can share their views, developers can also receive timely feedbacks and new demands. As of the end of September 2019, the numbers of game reviews and forum posts have increased to 10.6 million and 5.4 million, respectively.

Exhibit: TapTap (Android) – Homepage & Game Recommendation



Source: TapTap, ICBCI Research

Exhibit: TapTap – Review & Forum Features



Source: TapTap, ICBCI Research

■ A linkage between gamers and developers

Unlike large game studios, small to medium game developers suffer from weak brand recognition and low bargaining power over distribution platforms. Fierce competition and high commission rate charged by distribution platforms left minimum profit for the small game developers. In contrast, TapTap adopted a different approach in distributing free-to-play games: free to distribute. For pay-to-play games, an up to 5% of game price is charged as distribution fees.

TapTap primarily generates revenue through providing online marketing service to advertisers such as game developers – the promotion advertisement place on the home

page of TapTap applications. Similar to any other information feed advertisement, advertisers can bid on TapTap through a real-time bidding system based on CPA or CPS pricing, while users each receive different recommendations based on their browser history and personal data captured on TapTap. TapTap provides developers with a set of solution covering distribution, testing, monitoring and online marketing. As of the end of 2019, there were over 11,000 developers registered on TapTap platform.

#### ■ Future development of TapTap

Abundant traffic is crucial for the development of TapTap. Apart from buying user traffic from leading internet platforms such as Baidu (BIDU.US) and Toutiao, TapTap can also grow traffic organically. On the one hand, traffic can be acquired from promoting popular games exclusively on TapTap, similar to the promotion of Ragnarok M. TapTap can also continue to improve and upgrade its content offerings in the platform in order to increase user stickiness, through introduction of experienced content creators and the application of advanced technology such as big data. Additionally, we believe the cost-effective feature of game distribution on TapTap can also attract more developers, which helps form the ecosystem.

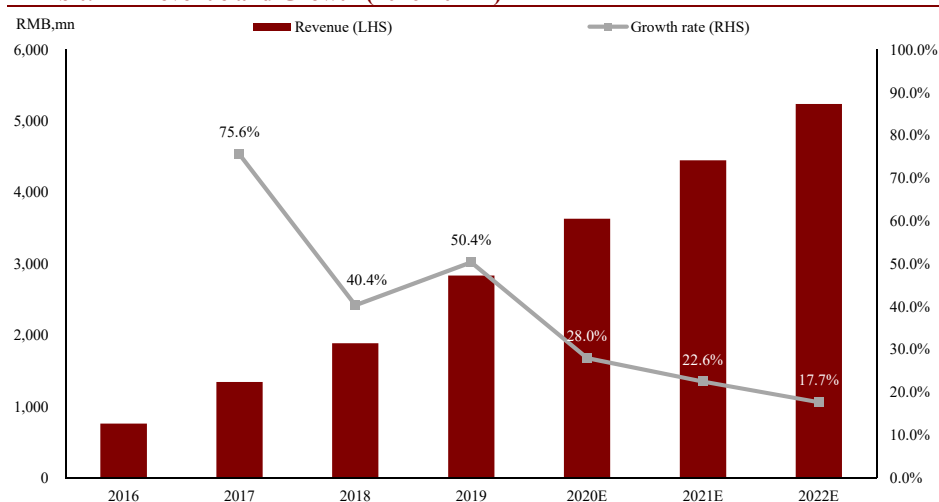
While distribution channels are dominated by Apple's App Store and Google's Play Store (each typically demands nearly a third of gross billings as commission expense from game developers), we see opportunities for TapTap to tap into overseas market, particularly in South Korea and Southeast Asia. We believe the potential flexibility and higher efficiency of information feed advertisement provided by XD is attractive to some game developers.

## Financial Analysis & Forecast

XD recorded strong revenue growth from 2016 to 2017. Total revenue grew 75.6% from RMB 765.5mn in 2016 to RMB 1.26bn in 2017. While revenue growth was driven by online games such as Heng Sao Qian Jun and Shen Xian Dao (both web and HD versions) before 2017, the successful launch of Ragnarok M boosted XD's revenue growth in 2017. In 2017, Ragnarok M recorded revenue of RMB 468mn, represented approximately 35% of XD's total revenue. With Ragnarok M launched in more countries, the launch of new games and development of TapTap platform, XD's revenue grew 40.4% from 2017 to 2018, reached RMB 1.9bn in 2018.

XD continued its fast growth in 2019, recorded net revenue of RMB 2.8bn (+50.4% YoY), boosted by growth in online game revenue as RO was launched in Japan and Europe, Ulala's strong performance in the early months of release and information service revenue from TapTap. Looking ahead, we expect XD will continue to record fast growth in revenue, primarily driven by its solid online game pipeline and the further monetization of TapTap platform. We estimate that XD's revenue is going to grow at a CAGR of 20.1% from 2020 to 2022, reaching revenue of RMB 3.6/4.5/5.2bn in 2020/2021/2022.

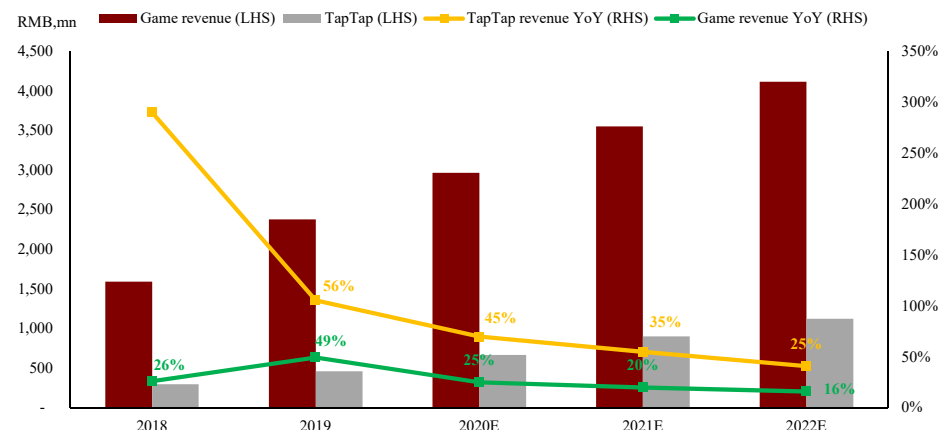
### Exhibit: XD Revenue and Growth (2016-2022E)



Source: Company Data, ICBCI Research

We project the game revenue to grow at a CAGR of 17.8% from 2020 to 2022, primarily driven by Ragnarok M to launch in more countries and regions, the monetization of Sausage Man and the promotion of new games such as Fantasy World and Torchlight: Infinity. With the expansion of TapTap platform, we expect TapTap's unique value will be increasingly recognized by both gamers and advertisers. Thus, we estimate the TapTap revenue will increase at a CAGR of 29.9% from 2020 to 2022.

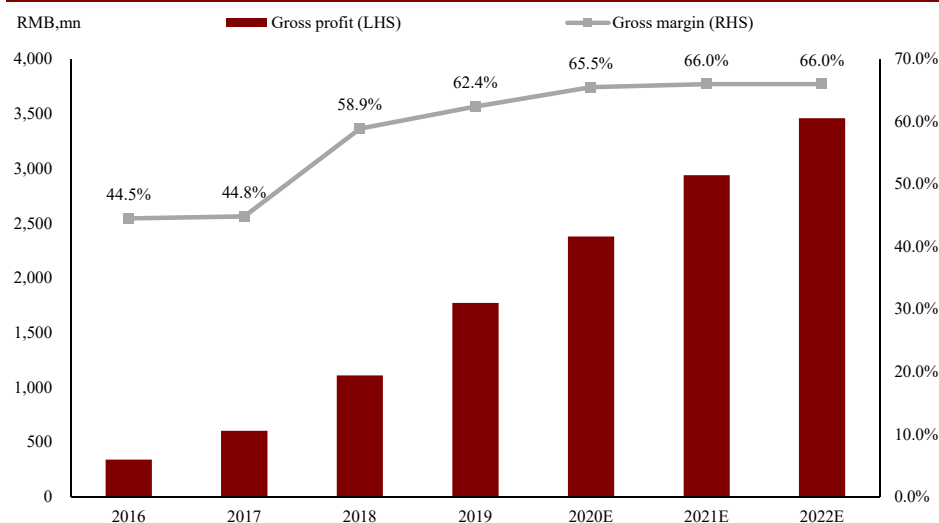
Exhibit: XD Revenue and Growth (2018-2022E)



Source: Company Data, ICBCI Research

On the cost of revenue side, XD's gross margin improved from 44.5% in 2016 to 62.4% in 2019, largely due to the increase of revenue which are recorded on net basis. Looking forward, we expect XD's gross margin to be influenced by the proportionate revenue recognized on gross/net basis in games, and increase revenue contribution from TapTap where scalability kicks in. The gross margin is expected to reach 65.5%/ 66.0%/ 66.0% in 2020/2021/2022.

Exhibit: XD Gross Profit and Gross Margin

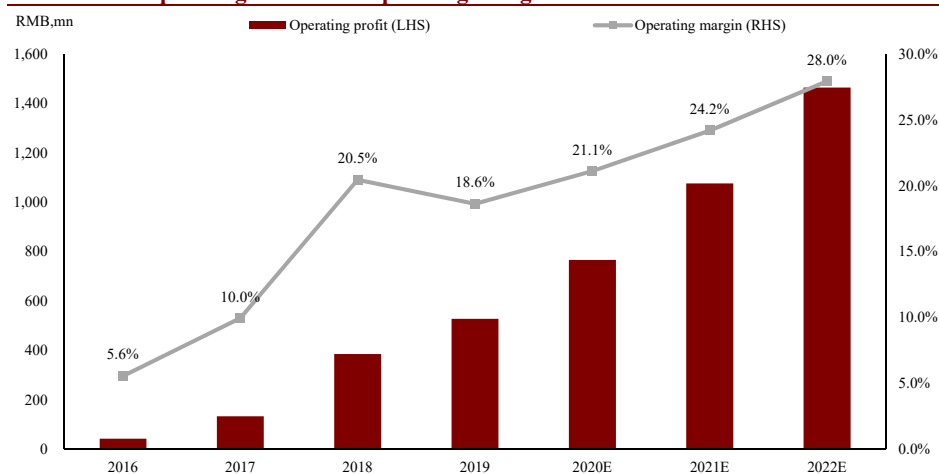


Source: Company Data, ICBCI Research

Expense structure has been quite stable from 2016 to 2019. In order to further promote TapTap platform, we expect selling and marketing expenses ratio to stay at or above its 2018 level. Expenses can be allocated to external advertising agencies for brand marketing and leading internet platform for traffic acquisition. Together with general wage increase, investment into the self-developed games and future development of TapTap, we expect research and development expense to rise. We expect general and administrative expenses ratio to hold steady going forward. Overall, we estimate operating margin to reach 21.1%/ 24.2%/ 28.0% in 2020/2021/2022.



**Exhibit: XD Operating Profit and Operating Margin**

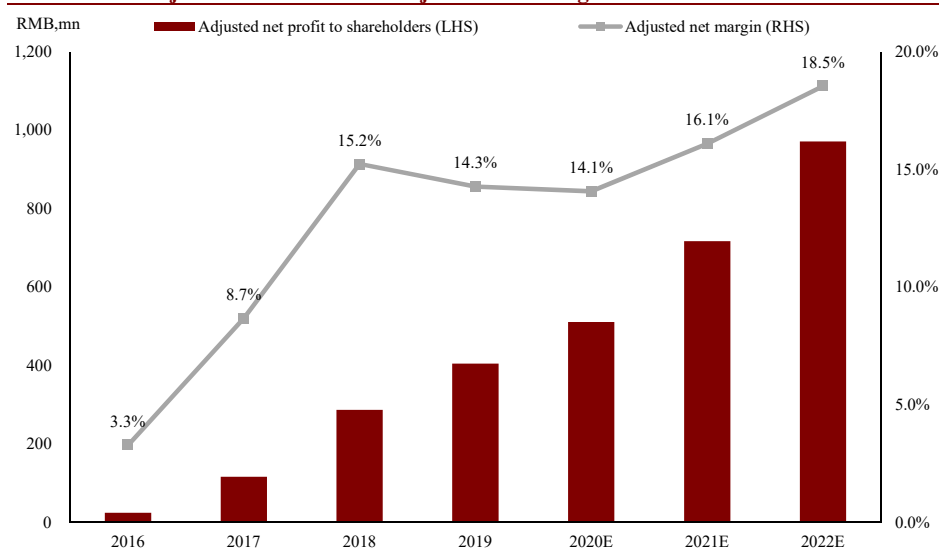


Source: Company Data, ICBCI Research

While operating expense structure was relatively stable, XD benefited from higher gross margin as the revenue contribution from net basis increased, thus net margin increased from 3.1% in 2016 to 18.7% in 2018, amounted to RMB 353mn.

Looking forward, with a larger profit contribution from TapTap, we believe there still is room for improvement in net margin for XD, although short term profitability can be negatively impacted by XD's further investment into R&D activities. We expect the company's net profit to shareholder can further reach RMB 511/717/972mn in 2020/2021/2022, representing a net margin of 14.1%/16.1%/18.5%, respectively.

**Exhibit: XD Adjusted Net Profit and Adjusted Net Margin**



Source: Company Data, ICBCI Research

**Exhibit: Income statement**

Year ended Dec 31 (RMB mn)	2017	2018	2019	2020E	2021E	2022E
Revenue	1,344	1,887	2,838	3,633	4,453	5,242
Cost of revenue	(742)	(776)	(1,066)	(1,253)	(1,514)	(1,782)
Gross profit	603	1,111	1,772	2,380	2,939	3,459
Research development	(117)	(198)	(318)	(454)	(468)	(419)
Sales and marketing	(244)	(448)	(745)	(872)	(1,069)	(1,206)
General and administration	(84)	(107)	(203)	(291)	(330)	(370)
Other operating expenses	(23)	29	23	5	5	1
Operating profit	134	386	529	768	1,078	1,466
Other income, net	9	3	16	4	4	-
Profit before tax	142	389	545	771	1,081	1,466
Income tax	(22)	(37)	(32)	(116)	(162)	(220)
Net profit	121	353	513	656	919	1,246
Net profit to shareholders	117	285	347	511	717	972
Minority interest	4	68	167	144	202	274
Adj. net profit to shareholders	117	287	405	511	717	972

Source: Company data, ICBCI Research

**Exhibit: Balance sheet**

Year ended Dec 31 (RMB mn)	2017	2018	2019	2020E	2021E	2022E
Cash and cash equivalents	578	573	1,337	1,924	2,522	3,651
Trade receivables	216	449	406	545	668	786
Other current assets	178	254	631	982	1,223	1,262
Total current assets	972	1,276	2,374	3,451	4,412	5,699
Fixed assets	29	46	87	92	99	107
Intangible assets	175	192	199	195	181	155
Other long-term assets	134	211	206	217	233	249
Total non-current assets	338	448	492	504	513	511
Total assets	1,311	1,725	2,866	3,955	4,925	6,210
Trade payables	125	101	201	182	223	262
Contract liabilities	105	91	99	120	120	120
Advance from customers	8	9	16	16	16	16
Other current liabilities	88	141	238	170	180	180
Total current liabilities	326	342	554	488	539	578
Total non-current liabilities	27	40	25	45	45	45
Total Liabilities	353	382	580	533	584	623
Total shareholder's equity	958	1,343	2,287	3,422	4,341	5,587
Total liabilities and shareholder's equity	1,311	1,725	2,866	3,955	4,925	6,210

Source: Company data, ICBCI Research

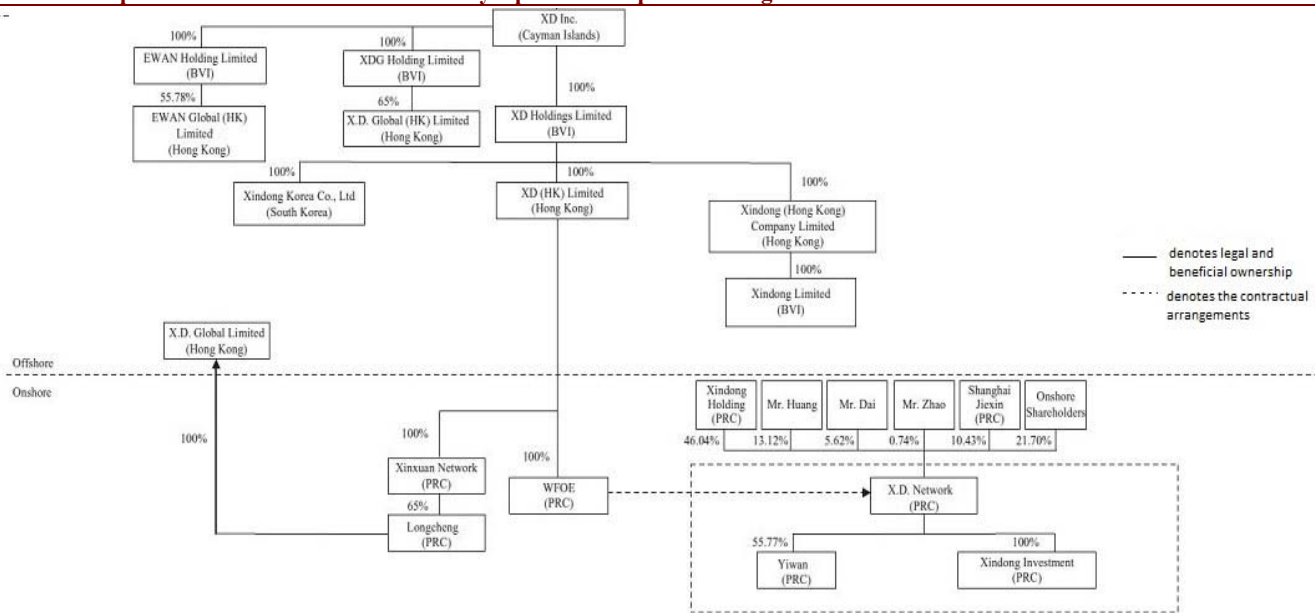
**Exhibit: Cash-flow statement**

Year ended Dec 31 (RMB mn)	2017	2018	2019	2020E	2021E	2022E
Profit before income tax	142	389	545	771	1,081	1,466
Depreciation and amortization	56	74	108	120	140	159
Change in working capital	60	(288)	144	(244)	(129)	(134)
Other operating cash flows	37	(2)	64	(116)	(162)	(220)
Cash flow from operation	296	174	861	532	930	1,271
Capex	(35)	(173)	(140)	(122)	(132)	(142)
Other investing cash flow	(97)	(27)	(329)	(303)	(200)	-
Cash flow from investing	(132)	(200)	(469)	(425)	(332)	(142)
Cash flow from financing	249	1	363	480	-	-
Net increase in cash	413	(25)	755	587	598	1,129
FX adjustment	(13)	20	9	-	-	-
Cash at beginning of the year	178	578	573	1,337	1,924	2,522
Cash at end of the year	578	573	1,337	1,924	2,522	3,651

Source: Company data, ICBCI Research

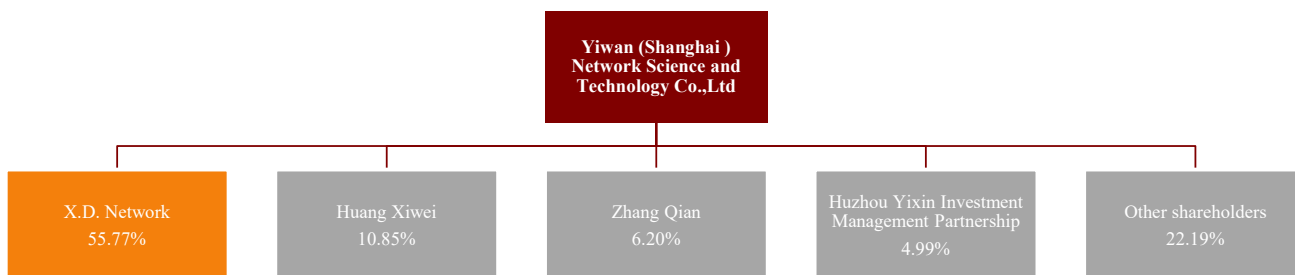
### Corporate Structure

Exhibit: Corporate Structure of XD Immediately Upon the Corporate Reorganization



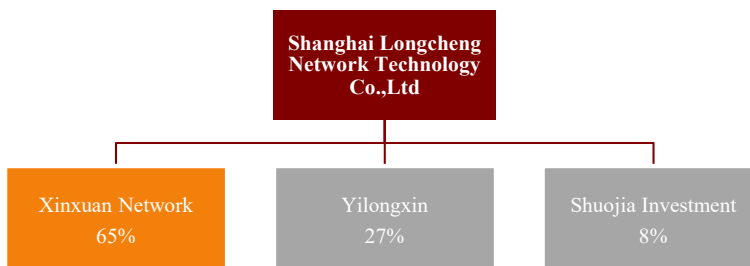
Source: Company data, ICBCI Research

Exhibit: XD's Shareholding of Yiwon (Shanghai) Network Science and Technology



Source: Company data, ICBCI Research

Exhibit: XD's Shareholding of Shanghai Longcheng Network



Source: Company data, ICBCI Research

### Downside Risks

- Restrictions in the game industry in China, includes the stricter-than-expected game approval process
- Fierce competition from third-party distribution platforms and game review platforms
- Challenges in operating in overseas markets
- Failure in renewing license agreements
- The over reliance of game revenue on a small number of games
- Higher-than-expected costs on obtaining traffic

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**Neutral** : Total stock return (including dividends) expected to perform in line with relevant market index to within +/-20% over next 12 months  
**Underperform** : Total stock return (including dividends) expected to trail relevant market index by more than 20% over next 12 months  
**Under Review** : Analyst currently does not have adequate conviction about total stock return (including dividends) relative to relevant market index over next 12 months

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