



The New World of Mobile Games

Smartphone has become part of our daily life in recent years. According to Ericsson Mobility Report June 2016 published by Telefonaktiebolaget L. M. Ericsson¹, monthly data traffic per smartphone has increased by 40% from 1.0 GB per month in 2014 to 1.4 GB per month in 2015, and is forecasted to have a CAGR of 35% between 2015 and 2021, reaching 8.9 GB per month in 2021. The significant increase in monthly data traffic per smartphone is mainly attributable to advances in mobile communication technologies coupled with a wider selection of mobile applications, for example, mobile games.

In this article, we will bring you an overview of mobile gaming market, together with some analysis on several significant merger and acquisition deals taken place recently. We will then illustrate the upcoming trends of mobile gaming market, including “virtual reality & augmented reality” and “esports”. These two areas are drawing enormous attentions from mobile games developers, investors and consumers. It possesses a huge potential for further exploration. Through this article, we are trying to gain some insights on this rapidly expanding market.

CONTACT US

Email:
info@avaval.com

Website:
www.avaval.com

Hong Kong: +852 3702 7338
Shanghai: +86 21 5306 7311
Beijing: +86 10 6410 6230

 艾華迪集團
AVISTA GROUP

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¹ <https://www.ericsson.com/res/docs/2016/ericsson-mobility-report-2016.pdf>

Mobile Game Industry

With the proliferation of smartphones users and transition from 3G to 4G networks, there are growing consumer interests in mobile games. According to an article published by Newzoo, a global leader in games and mobile intelligence, mobile game revenue (including those generated from mobile phone and tablet) is estimated to reach US\$36.9 billion in 2016, contributing approximately 37% of total global games market revenue². The amount is expected to increase further to US\$52.5 billion by 2019 (Figure 1).

A commonly used measure in the mobile gaming industry is the average revenue per user ("ARPU"). ARPU allows for the analysis of a company's revenue generation and growth at the per-unit level. According to Statista, a leading statistics company on the internet, ARPU in mobile gaming industry has increased by nearly 20% from US\$19.4 per user in 2014 to US\$22.8 per user in 2015, and is

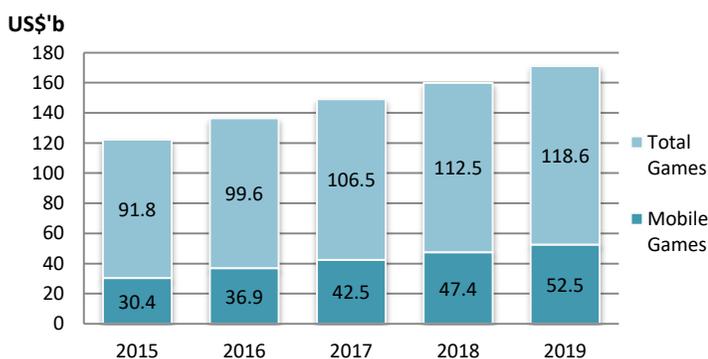
expected to gradually rise to and remains at approximately US\$25 per user between 2016 and 2020³ (Figure 2).

One key player in the global mobile games market is the Candy Crush franchise, King (NYSE:KING), who has continuously maintained over 450 million active players on a monthly basis between April 2014 and June 2015, compared to around 150 million for Gameloft (EPA:GFT) and EA Mobile (NASDAQ:EA) according to PocketGamer.co.uk⁴, a well-known world consumer site for mobile and handheld games. Troubled Zynga (NASDAQ:ZNGA), on the other hand, has been a slowly shedding from an active players base of 120 million in April 2014 down to 75 million in June 2015. Glu (NASDAQ:GLUU) has been steady over April 2014 and June 2015, with around 75 million monthly active user.

Despite gaming industry are forecasted to grow at a compound annual growth rate of 6.6% from 2015 to 2019 by Newzoo,

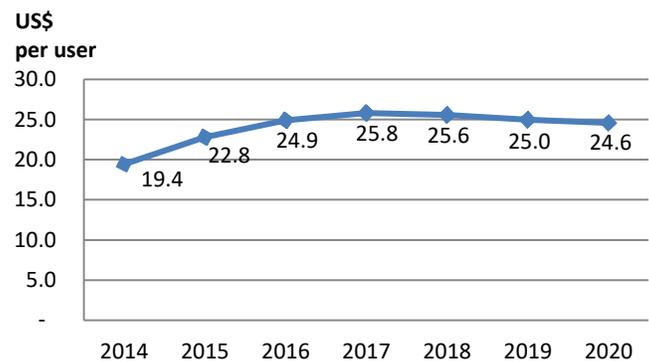
gaming industry has gone through an ice age in 2015, where the total deal value in dollars for mergers and acquisitions ("M&A") dropped 75% to US\$3.7 billion in 2015⁵. A late stage market consolidation was observed, indicated by the historical high amounts of M&A in gaming industry in the first half of 2016, which has hit US\$18.6 billion⁶. The biggest deals were the massive mobile games consolidation of 84% Supercell Oy ("Supercell"), maker of Clash of Clans, by Tencent Holdings Limited (SEHK:700) ("Tencent") for US\$8.6 billion announced on 21 June 2016, and acquisition of 100% King Digital Entertainment plc (NYSE:KING) ("King"), creator of Candy Crush Saga, by Activision Blizzard, Inc. (Nasdaq:ATVI) ("Activision") for US\$5.8 billion closed on 23 February 2016. Below table shows some recent M&A with consideration greater than US\$100 million, but not inclusive, within the mobile gaming industry (Table 1).

Figure 1: 2015-2019 Global Games Market Forecast



Source: Newzoo

Figure 2: 2014-2020 Mobile Games ARPU



Source: Statista

² <https://newzoo.com/insights/articles/global-games-market-reaches-99-6-billion-2016-mobile-generating-37/>

³ <https://www.statista.com/outlook/211/100/mobile-games/worldwide#market-arpu>

⁴ <http://www.pocketgamer.biz/chart-of-the-week/62175/king-zynga-ea-gameloft-glu-dau-mau-revenue-analysis/>

⁵ <http://venturebeat.com/2016/02/01/game-industry-deals-dropped-81-in-value-in-2015/>

⁶ <http://www.digi-capital.com/news/2016/07/record-18-6-billion-games-ma-to-q2-2016/#.v5HTkrh97IU>

Table 1: M&A within the Mobile Gaming Industry in Recent Years

Ann. Date	Acquirer	Target	Consideration (US\$'m)
30-Jan-14	Zynga Game Int'l. Ltd.	NaturalMotion Ltd.	527
26-Mar-14	CJ Games Corp.	Netmarble Co., Ltd.	346
23-May-14	Zhejiang Dragon Pipe Manufacturing Co., Ltd.	EGLS Technology (Beijing) Co., Ltd.	637
5-Jun-14	Bally Technologies, Inc.	Dragonplay Ltd.	100
13-Aug-14	Song Liao Automotive Co., Ltd.	Shanghai Douwan Network Technology Co., Ltd.	232
12-Feb-15	King Digital Entertainment	Z2Live Inc.	132
18-May-15	Multiple acquirer	China Mobile Games and Entertainment Group Limited	719
26-Aug-15	Beijing Jinxing Rongda Investment Management Co. Ltd.	FL Mobile Inc.	613
3-Nov-15	Activision Blizzard	King Digital Entertainment	5,831
17-Dec-15	Tangel Publishing Co., Ltd.	YouAi.inc	323
31-Dec-15	Huawei Technology Co.,Ltd.	PalmJoys Technology Co Ltd	132
18-Feb-16	Vivendi SA	GameLoft S.E.	535
3-Mar-16	Allwin Telecommunication Co., Ltd	Shanghai Snowfish Tech Co., Ltd.	285
14-Mar-16	Baofeng Group Co., Ltd	Hangzhou Lidong Communication Technology Co., Ltd.	150
21-Jun-16	Tencent Holdings Ltd.	Supercell Oy	8,600
30-Jul-16	Multiple acquirer	Playtika Ltd	4,400

Source: S&P Capital IQ, Bloomberg, AVISTA Research

Strategic motives behind these M&A are more or less the same, i.e. to embrace mobile games segment, which is considered to be the largest and fastest-growing area of interactive entertainment with double digit growth predicted in the coming years, by acquiring an in-house team of proven mobile veterans and gaining access to different audience from global or regional market.

Tencent has focused primarily in China for

its mobile games segment. Acquiring Supercell gives Tencent an access to important markets like the United States, Canada, Australia, and United Kingdom, where Supercell's games, for examples Clash of Clans and Clash Royale, have huge player base in⁷. The deal has made Tencent one of the biggest mobile games companies in the West providing it enormous earning potential and reducing its reliant on China market.

Acquisition of King allows Activision to address one of its major areas of weakness: mobile games. After the acquisition, the combined company's portfolio will include some most successful mobile games, console games and personal computer games⁸. This diverse portfolio, spanning different platforms, enables Activision to be well positioned for continuing long-term growth.

⁷ <http://venturebeat.com/2016/06/26/tencent-will-unlock-more-of-chinas-value-and-weave-itself-into-global-gaming-with-supercell/>

⁸ <http://marketrealist.com/2015/11/activision-well-positioned-reach-players-across-categories/>

In addition, buying King would help Activision broaden the reach of its games, in which the combined company will have over half a billion monthly active users in 196 countries according to Bobby Kotick, Activision CEO⁹. It also provides Activision the opportunities for reaching female players, given that 60% of King's players were female¹⁰.

Future of VR and AR

Virtual reality ("VR") and augmented reality ("AR") has garnered attention from different industries. While VR creates a simulated environment and places user inside the virtual world by immersing them, AR simulates artificial objects in the real environment and overlays virtual objects on the user's real world. There are various potential commercial and industrial applications of VR/AR while gaming is one of the more obvious and near-term use for VR/AR¹¹. The recent success of an AR mobile game, Pokémon Go, proved the feasibility of the applications of VR/AR on mobile gaming industry.

Pokémon Go is a mobile game app recently released on 6 July 2016, in which players are tasked with going out onto the street and using their smartphones to find Pokémon. When Pokémon is in the surroundings, the smartphone will digitally superimpose it on the physical space shown on the smartphone's screen with the help of AR and GPS. Pokémon Go has been a massive success that benefiting Nintendo Co., Ltd. ("Nintendo"), a joint owner of The Pokémon Company, from a jump of 86%¹² in its share prices in just little over a week and doubling its market capitalization to US\$42.5 billion¹³ in two weeks times after the release of Pokémon Go, reported by Reuters.

On 20 July 2016, Lenovo Group Ltd. (SEHK:00992) ("Lenovo"), a Chinese

multinational technology company, also announced that it will work together with iDreamSky Technology Limited, one of the largest mobile game publishing platforms in China, to jointly develop a China-made AR mobile game that will be launched around the end of 2016. In anticipation of this, Lenovo's share price has surged by nearly 5%¹⁴. The development of VR/AR games shows no signs of abating.

Money has been invested in VR/AR for years but without a commercial breakthrough until Pokémon Go released and sent a proof of concept of successful AR games¹⁵. According to Digi-Capital, an investment banking firm that provides financial advisory services to VR/AR, mobile and games sectors, a record of US\$2 billion was invested into VR/AR startups and an amount of US\$849 million was saw on VR/AR M&A in the 12 months leading to June 2016¹⁶. An alliance, namely Virtual Reality Venture Capital Alliance, was formed in June 2016 by a bunch of well-known venture capital firms, such as Sequoia Capital and Matrix Partners, and VR companies, such as HTC, with US\$10 billion in funding to invest in VR and AR projects¹⁷. All these suggest that investors are actively seeking opportunities to enter into the market. Currently, there are already four VR/AR unicorns in this early-stage market, including Magic Leap (US\$4.5 billion), Oculus (US\$2 billion), Blippar (US\$1.5 billion) and Mindmaze (US\$1 billion)¹⁸.

Digi-Capital also forecasted that revenue from VR and AR will hit US\$30 billion and US\$90 billion, respectively, by 2020¹⁹, indicating a huge potential in this sector. Despite this, games revenue is expected to be only a small part of AR revenue, with majority being derive from AR hardware and commerce. Games do not seem to be a main focus of AR development. On the other hand, more emphasis is placed on

games segment in VR development, where most of revenue is projected to come from VR games, VR hardware and VR videos. Another more optimistic forecast from Statista predicted that VR gaming sales revenue could reach US\$22.8 billion by 2020²⁰ (Figure 3).

From Esports to Mobile Esports

Esports is another notable development trend in the mobile gaming segment. Esports is a form of competition which is facilitated by electronic systems, particularly digital games. It has been developed for many years and become popular since late 2000s. Many countries have already started to invest in esports and it has gained more world recognitions nowadays. For instance, Russia announced that esports would be officially recognized in the "National Register of Sports" as of 17 June 2016²¹ and, in Korea, The Korea e-Sports Association was found in 2000 under the approval of the Ministry of Culture, Sports and Tourism.

With more emphasis being put on esports, the esports market is growing bigger. According to the 2016 Global Esports Market Report published by Newzoo, the 2016 esports global revenue is expected to reach US\$463 million and exceed US\$1 billion in 2019 (Figure 4).

Apart from China, mobile esports is also becoming popular around the globe. The Clash Royale, one of the mobile esports games, held its first official tournaments on 16 April 2016 in Helsinki, Finland. It attracted around 200 people from around the world to participate in and there was live streaming for the quarterfinals, semifinals and finals on Twitch and YouTube, two of the most popular broadcasting platforms²². There are over 2.6 million views with 65,000 concurrent viewers for the final on Twitch and

⁹ <http://fortune.com/2015/11/03/activision-blizzard-king-digital/>

¹⁰ <http://www.reuters.com/article/us-king-digital-m-a-activision-idUSKCN0SS07Z20151103>

¹¹ <https://www.cbinsights.com/blog/virtual-reality-augmented-reality-funding-applications/>

¹² <http://www.reuters.com/article/us-nintendo-pokemon-niantic-idUSKCN0ZVOI2>

¹³ <http://uk.reuters.com/article/uk-nintendo-pokemon-stocks-idUKKCNOZ0Q7>

¹⁴ http://www.aastocks.com/en/stocks/news/aafn-news/RUM_160720_114526/3

¹⁵ <http://www.latimes.com/business/technology/la-fi-tn-pokemon-go-augmented-20160711-snap-story.html>

¹⁶ <http://www.digi-capital.com/news/2016/07/record-2-billion-arvr-investment-in-last-12-months/#.V5Hfuh97IU>

¹⁷ <http://venturebeat.com/2016/06/29/vr-venture-capital-alliance-forms-10-billion-investment-fund/>

¹⁸ <http://www.digi-capital.com/news/2016/04/arvr-investment-hits-1-7-billion-in-last-12-months/#.V5Hfuh97IU>

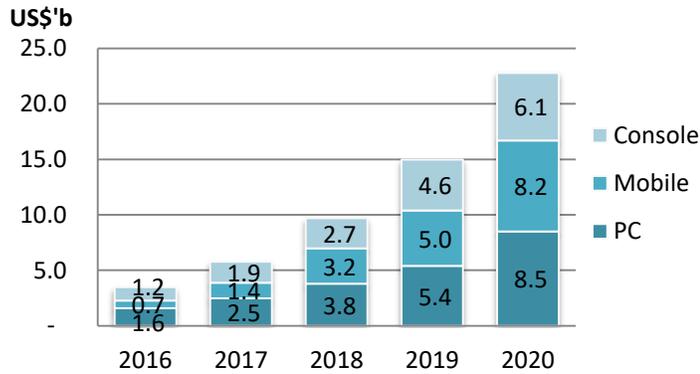
¹⁹ <http://www.digi-capital.com/news/2016/01/augmentedvirtual-reality-revenue-forecast-revised-to-hit-120-billion-by-2020/#.V5Hfuh97IU>

²⁰ <http://www.statista.com/statistics/538801/global-virtual-reality-gaming-sales-revenue-segment/>

²¹ <http://www.gosugamers.net/overwatch/news/35793-russia-to-officially-recognise-esports-from-june-17>

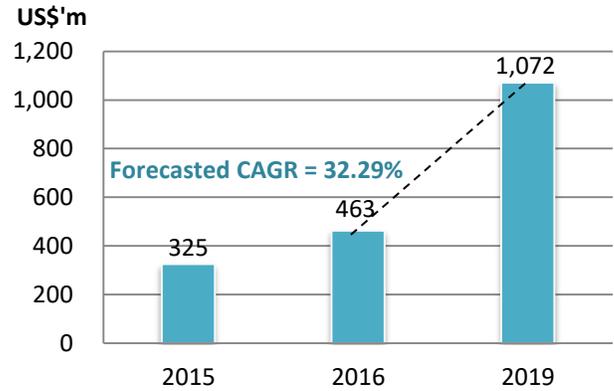
²² <https://clashroyale.com/blog/news/clash-royale-tournament-in-helsinki-4-16>

Figure 3: 2016-2020 Worldwide VR Gaming Sakes Revenue



Source: Statista

Figure 4: 2015-2019 Global Esports Revenue



Source: Newzoo

YouTube got 45,000²³. There are also other mobile esports game tournaments around the world such as The Vainglory Cup Series 2015. Various mobile esports tournaments pop-out in recent years and people start to be aware of and understand what mobile esports is.

Is there any room for further development of esports on mobile in the future? We believe the answer is “Yes”. Mobile platform is found to be the top platform of gaming for youngsters. According to the Kids and Gaming 2015 published by NPD Group, a market research company, time for kids aged 2-17 spent to play games on mobile is more than that on other devices. There are only 45% of kids of that age group are using home computer to play games, representing a drop of 22% since 2013. The use of video game console by kids of that age group has also dropped by 7% to 60%

since 2013²⁴. These indicate gaming on mobile devices are replacing that on the traditional platforms and are becoming more attractive to the younger generation. Together with the continuously growing Esports market and its global recognition, the increasingly use of mobile devices for gaming among younger generation suggested that there are still plenty of rooms for further development of esports on mobile devices. Esports could be one of the development trends of the mobile gaming industry.

What's Next for the Gaming Industry?

There are more and more headlines around mobile gaming innovating in areas such as VR/AR and esports. While these markets are still developing and possess great opportunities for businesses and investors, we shall be cautious when

exploring these potentials. Considerable times and investments are still needed as major breakthroughs have yet to be achieved. On the other hand, companies shall be able to adapt and adjust to the ever changing environment. With the booming technological advancement in mobile platform, various products are expected to be developed to cater for the customers' fast-moving gaming habits. In addition, given the low barrier to entry and the predominant freemium business model for mobile games, we believe that intense competitions and challenges remain in this industry.

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²³ <http://www.pocketgamer.biz/news/63026/inaugural-clash-royale-esport-tournament-draws-millions-of-online-viewers/>

²⁴ <http://www.cnet.com/news/kids-now-pick-mobile-devices-over-pcs-consoles-for-gaming-npd-group/>