

Market Analysis: Video Gaming

Battling for customers

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Overview

Estimated to total US\$86 billion in 2016 and growing at an annual rate of 6.7%¹, the global video gaming market is not only large but growing rapidly. These figures hint at the attractiveness of investing in the space, and investors who succeed in identifying the next big thing will reap tremendous profits. However, the video gaming ecosystem is extremely complex and not all areas are favorable. In order to identify segments with the most potential for venture investment, this report delineates the video gaming value chain, and analyzes its segments across three criteria: 1) competition, 2) market, and 3) exit opportunities. Segments with fewer competitors are preferred to segments with more competitors; large and growing markets are preferred to small and stagnant ones; segments with more exits are preferred to segments with fewer exits. Through the analysis, two segments: 1) cloud gaming, and 2) game monetization have been selected.

¹ Takahashi, D. (2013, June 6). Mobile growth will fuel the global game market that hits \$86.1B by 2016. Retrieved from <http://venturebeat.com/2013/06/06/global-games-market-to-hit-86-1b-by-2016-as-mobile-charges-ahead/>

Foreword

This market analysis report on gaming by Quest Ventures is a timely look at the ecosystem of video gaming. It looks at emerging technologies and where consumer preferences are likely to head, the key players in specific segments and the market opportunities that they are tapping into.

Estimated to total US\$86 billion in 2016 and still projected to grow at a quick clip, the global video gaming market is attractive to investors. This is a complex market and navigating it and determining where to play our bets remain both a science and an art. On the one hand, statistics point towards strong emergence of handhelds and mobile gaming. On the other hand, we believe that communal gaming – esports – will bring on a different level of experience and demand on producers.



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Cloud gaming

The market for cloud gaming services is growing quickly and estimated to increase fivefold in users to reach US\$460 million revenue by 2015. With no market leader and fewer than ten competitors in the market, there is potential for new ventures to establish themselves. In addition, the recent acquisition of Gaikai by Sony, and establishment of Shinra Technologies by Square Enix signals industry confidence in cloud technology. However, past examples have highlighted the shortcomings of a B2C approach due to the high cost of Internet bandwidth. With Internet prices unlikely to fall soon and uncertain consumer demand, venture capital firms should instead concentrate on cloud gaming startups with B2B plays.

Game monetization

Although gaming specific numbers are unavailable, global revenues from mobile in-app advertising and payments approximated US\$15 billion in 2013. With games accounting for 66% of total app revenues², the market for game monetization software appears to be extremely large. However, the space is very crowded and competitors include both gaming specialists and app monetization generalists. Nevertheless, unlike other apps where traditional methods are appropriate, games have unique requirements that generalists do not offer. Furthermore, even though there are many competitors in the space, current solutions are generally targeted at developed economies. Emerging markets with large gaming populations that have bad access to first world payment solutions are thus underserved. Hence, investing in game monetization startups focused on emerging markets has potential.

Gaming Value Chain

The video gaming value chain consists of five distinct layers: 1) gaming experiences, 2) distribution channels, 3) publishers, 4) enabling technologies and 5) game developers. On one end of the spectrum, high capital costs of producing gaming experiences increases barriers of entry and entrenches current incumbents. As a result, gaming experiences represent the most consolidated layer. On the other end of the spectrum, free development tools allow almost any individual to become a game developer. Hence, due to the low barriers of entry, game developers represent the most fragmented layer.

² Video Games, Esports & Mobile Intelligence: Insights and Articles. (n.d.). Retrieved from <http://www.newzoo.com/insights/distimo-2012-report-games-account-for-66-of-total-revenues-from-apps/>

Gaming Experiences

Consoles

Competition

There are only major three console players in the market namely: 1) Microsoft, 2) Sony and 3) Nintendo. They cater to different categories of consumers with Nintendo targeting casual gamers with the Wii priced at \$99, while Microsoft and Sony both target the hardcore crowd with the Xbox One and PS4 priced similarly at around \$500. These three players dominate the marketplace, and although there were attempts by other console makers such as Ouya to enter the fray, such alternative consoles failed.

Some reasons cited for the failures lie with the poor selection of games, developer support and limited capabilities³.

Market

Although consoles were banned in China until Jan 2014, grey market sales numbered at least 1.2 million units yearly from 2002 to 2009⁴ from the three major players. This is low in comparison to US sales, which constituted about 20 million in 2008⁵. The recent lifting of the console ban might boost sales, but with Chinese consumers accustomed to playing PC games and the growth in mobile, consoles might have a hard time finding a space in the already crowded gaming market. Global unit sales of fourth-generation consoles (Xbox One and PS4) is estimated to be around 18 million units in 2014⁶. At a price of approximately \$400 per unit, consoles sales were around \$7 billion in 2014.

³ Moore-Colyer, R., Honorof, M., Ramirez, L., Honorof, M., Ramirez, L., Scott, H., ... Andronico, M. (n.d.). Tom's Guide. Retrieved from <http://www.tomsguide.com/us/ways-ouya-console-failed,review-1881.html>

⁴ Hanson, L. (2014, January 22). China's Console Ban Is Lifted – But What Does It Mean? Retrieved from <http://www.forbes.com/sites/lisachanson/2014/01/21/chinas-console-ban-is-lifted-but-what-does-it-mean/>

⁵ Breckon, N. (n.d.). 2008 NPD: Nintendo Sells Over 10 Million Wiis in US, New Lifetime Sales Figures for Each Console. Retrieved from <http://www.shacknews.com/article/56788/2008-npd-nintendo-sells-over>

⁶ Orland, K., OrlandSenior, K., & Utc. (2014, October 24). Analysis: Worldwide PS4 sales at least 40 percent better than Xbox One [Updated]. Retrieved from <http://arstechnica.com/gaming/2014/10/analysis-worldwide-ps4-sales-at-least-40-percent-better-than-xbox-one/>

Exit opportunities

Ouya recently announced a partnership with Xiaomi to bring their games into China⁷. However, this deal does not appear to involve the console itself, but rather Ouya's software which might be installed on Xiaomi's new TV setup box. There have been no recent exits for console startups. Thus opportunities seem scarce, but this might be because there have not been many new console startups.

Notable companies

Company name	Description	Products	Price
Sony	Sony targets the hardcore gaming crowd with its Playstation systems.	PS4	\$400
Microsoft	Microsoft targets the hardcore gaming crowd with its Xbox systems.	Xbox One	\$400
Nintendo	Nintendo targets the casual gaming crowd with its Wii systems.	Wii U	\$300
Ouya	Ouya is a crowdfunded indie gaming console that failed due to poor game selection and poor performance among other reasons.	Ouya	\$99

⁷ Times, A. M. T. (2014, August 23). Ouya teams up with Xiaomi to bring Android games to China. Retrieved from <http://www.techtimes.com/articles/13739/20140823/ouya-teams-up-with-xiaomi-to-bring-android-games-to-china.htm>

Handhelds

Competition

Sony with their PSP systems - \$240 and Nintendo with their DS systems - \$120 onwards dominate the handheld market. Similar to the console market, Sony targets hardcore gamers while Nintendo targets the casuals. In addition, Nvidia recently launched a new video gaming handheld - the Nvidia Shield Tablet & Portable that is priced at \$199. It was well-received with critics praising the new handheld as well-built and powerful⁸. Sales figures have not been released, hence it is still too premature to determine the reception among consumers. There are also more niche players in this space such as the GCWZero⁹ which was crowdfunded, and iReadyGo a Chinese handheld can also be used as a phone and costs RMB2000¹⁰.

Market

Dedicated gaming handhelds are undoubtedly facing pressure from smartphones, and sales have plunged as a result¹¹. Chinese companies have tried to innovate in this area by combining the two features. There have been flops in the past, notably Nokia's N-gage gaming phone¹². However, with technological improvements and Chinese appetite for mobile gaming there might be some potential in this area. Quarterly sales of Nintendo's 3DS in 2014 numbered around 2m, suggesting that yearly sales volume is around \$1 billion.

Exit opportunities

Exit opportunities are not very clear.

⁸ Ho, J. (2014, July 29). The NVIDIA SHIELD Tablet Review. Retrieved from <http://www.anandtech.com/show/8296/the-nvidia-shield-tablet-review/10>

⁹ Kickstarter Funded! (n.d.). Retrieved from <http://www.gcw-zero.com/>

¹⁰ (n.d.). Retrieved from <http://mall.snail.com/card/card-item-1999.html>

¹¹ Schmidt, D. (2011, November 16). The end of the dedicated portable device. Retrieved from <http://www.asymco.com/2011/11/16/the-end-of-the-dedicated-portable-device/>

¹² N-Gage (device). (2020, May 30). Retrieved from [http://en.wikipedia.org/wiki/N-Gage_\(device\)](http://en.wikipedia.org/wiki/N-Gage_(device))

Notable companies

Company name	Description	Products	Price
Sony	Sony targets the hardcore gaming crowd with its PSP systems.	PSP	\$240
Nintendo	Nintendo targets the casual gaming crowd with its DS systems.	DS	\$120 onwards
Nvidia	Newly launched Shield systems that come in two variants. These systems target more hardcore gamers and run on Android. In addition, they offer game streaming capabilities (i.e. play PC games on your handheld).	Shield tablet, Shield portable	\$199 onwards
GCW Zero	An open-source handheld running on Android created by an American company that raised \$240k on Kickstarter.	GCW Zero	\$150
Snail Games (China)	A Chinese Android gaming handheld developed by Snail Games.	iReadyGo i5 摩奇 i5	\$150

Cloud gaming

Competition

There is much more competition here than in the previous two categories. In this sector, there is no clear market leader and a variety of business models that range from B2C (Onlive, Gaikai) to B2B (Playcast, G-cluster). On one hand, B2C companies operate on a subscription model, with users paying a subscription to access and play games. The value proposition offered to consumers is that they can rely on the cloud to provide processing power instead of owning the hardware themselves. On the other hand, B2B companies partner with entertainment providers such as TV networks to offer games to their viewers, either on-demand or on a subscription basis. Firms compete on technological prowess (i.e. latency) and game selections. Chinese startups are also active in this scene, with companies like Cybercloud and Gloud already active in the marketplace.

Market

It appears that B2C business models do not work very well due to the lack of infrastructure and high cost of bandwidth for end consumers. Onlive faced challenges initially due to their focus on consumers¹³. "The company had deployed thousands of servers that were sitting unused, and only ever had 1,600 concurrent users of the service worldwide."¹⁴ This suggests that there is not much consumer need for such cloud gaming products. B2B business models do appear to work better. Gaikai focused on partnerships with companies, getting their services and games onto existing distribution channels, instead of directly marketing to consumers or relying on a proprietary service platform.¹⁵ According to Sega's managing director, the market for cloud gaming services is estimated to be around \$460 million in 2015.¹⁶ In addition, user installed base is expected to increase fivefold to nearly 150 million in 2015.¹⁷

¹³ Musil, S. (2012, August 20). OnLive explains layoffs, promises uninterrupted service. Retrieved from

<http://www.cnet.com/news/onlive-explains-layoffs-promises-uninterrupted-service/>

¹⁴ Hollister, S. (2012, August 28). OnLive lost: how the paradise of streaming games was undone by one man's ego. Retrieved from

<http://www.theverge.com/2012/8/28/3274739/onlive-report>

¹⁵ Hollister, S. (2013, July 16). Inside Gaikai: how to make cloud gaming as easy as watching YouTube. Retrieved from

<http://www.theverge.com/2013/7/16/4442372/inside-gaikai-how-to-make-cloud-gaming-as-easy-as-watching-youtube>

¹⁶ Coby, A. S. (n.d.). Sega: Cloud gaming is market's fastest-growing segment. Retrieved from

<http://www.gamespot.com/articles/sega-cloud-gaming-is-markets-fastest-growing-segment/1100-6348685/>

¹⁷ Takahashi, D. (2014, November 24). Cloud gaming could reach a turning point in 2015, analyst says. Retrieved from

<http://venturebeat.com/2014/11/24/cloud-gaming-could-reach-a-turning-point-in-2015-analyst-says/>

Exit opportunities

There seems to be potential in exits for cloud gaming companies. Sony recently acquired Gaikai for \$380 million in 2012¹⁸. Shortly after the acquisition, Gaikai services started appearing on the Playstation systems as Playstation Now, allowing users to stream old PS games on newer systems¹⁹. This suggests that cloud gaming companies make good tech acquisition targets, and with the video gaming industry trying to diversify product offerings, it might be a good time to invest.

¹⁸ Contributor. (2012, July 6). Sony's \$380 Million Gaikai Acquisition Shows LA's Technical Talent. Retrieved from <http://techcrunch.com/2012/07/06/sonys-380-million-gaikai-acquisition-shows-las-technical-talent/>

¹⁹ Sarkar, S. (2014, January 7). PlayStation Now game-streaming service coming summer 2014 (update). Retrieved from <http://www.polygon.com/2014/1/7/5284504/sony-playstation-now-gaikai-based-streaming-service-ps-ps2-ps3>

Notable companies

Company name	Description	Products	Price
Playcast	Playcast is a subscription white-labeled TV channel that allows consumers to play the world's major video games	Playcast	\$10/ month
Gaikai	Acquired by Sony in 2012 for \$380 million, Gaikai provides technology for the streaming of high-end video games. After the acquisition, technology was integrated into the Playstation ecosystem.	Playstation Now	NA
G-cluster	G-cluster is a Finnish cloud gaming provider founded in 2000. They deploy a white-labeled service that allows users to play games across the TV and multiple mobile devices. In October 2014, they announced a partnership with Square Enix Japan.	G-cluster	NA
Ubitus	Ubitus' cloud services bring distinctive interactive media-rich content such as games to customers via devices such as a Smart TV, Google TV, STB, PC, Mac, tablet or smartphone. In November 2014, they announced a partnership with Alibaba to bring their services to China.	Ubitus Gamecloud	NA
Playgiga	Playgiga allows consumers to play games via cloud services on multiple devices. They raised an undisclosed Series A in May 2014.	Playgiga	NA
Gloud 动视云 (China)	Gloud produces an Android app that allows users to stream high quality games via their Android devices. They raised undisclosed Series A in Jan 2014 from 朗玛信息.	Gloud Android app	NA
Cybercloud 视博云 (China)	Cybercloud is a Chinese company developing a cloud gaming platform that allows users to stream games on multiple devices. They partner with TV networks and game developers to provide their services.	1+云游戏	NA
Shinra Technologies	Square Enix's cloud gaming company, established in Sep 2014. Little information on the products, but it appears to be B2C.	NA	NA

Virtual Reality

Competition

Competition in the virtual reality (VR) space is pretty stiff with both large and small companies in the fray. The most famous company is Oculus²⁰, whose main product is the Rift - a VR headset that costs \$350. Cheaper alternatives also exist such as the Carl Zeiss's VR One²¹ that costs \$99. However, technical capabilities differ greatly between the two with the Rift using an internal display while consumers can use their own smartphones as a screen with the VR One. Although the majority of the population is familiar with VR headsets, there are many different types of VR products. Leap Motion and Nimble VR both developed a product that allows users to "bring their hands into the virtual world". Virtuix developed a full-body machine that allows users to use their whole body to "step into the virtual world". In China, ANTVR²² was recently successfully backed on Kickstarter, raising \$260,000.

Market

The market for VR is extremely nascent, with no consumer VR headsets in the marketplace right now. Samsung's Gear VR which is developed in partnership with Oculus seems poised to be the first consumer-grade VR headset to be launched in Fall 2014²³. Although reception among critics have been positive, real consumer need for such headsets still has not been established. In addition, Leap Motion only secured approximately 500,000 units in first year sales at a price point of \$80, having predicted sales of 5m units²⁴. Results suggest that there is low consumer need in the area, with first year sales volume of Leap Motion at only around \$40 million.

Exit opportunities

Although Oculus was acquired by Facebook for \$2bn, this is the exception rather than the norm, with no other VR companies being publically acquired in recent years.

²⁰ VR Headsets & Equipment. (n.d.). Retrieved from <http://www.oculus.com/>

²¹ (n.d.). Retrieved from <http://zeissvrone.tumblr.com/products#>

²² Martindale, J. (2014, May 16). This Chinese VR headset claims to be way better than the Rift. Retrieved from <http://www.kitguru.net/peripherals/jon-martindale/this-chinese-vr-headset-claims-to-be-way-better-than-the-rift/>

²³ Paul, I. (2014, September 30). Samsung Gear VR demo units appear at some Best Buys. Retrieved from <http://www.pcworld.com/article/2689414/samsung-gear-vr-demo-units-appear-at-some-best-buys.html>

²⁴ Etherington, D. (2014, March 20). Leap Motion Lays Off 10% Of Its Workforce After Missing On First Year Sales Estimates. Retrieved from <http://techcrunch.com/2014/03/20/leap-motion-lays-off-10-of-its-workforce-after-missing-on-first-year-sales-estimates/>

Notable companies

Company name	Description	Products	Price
Virtuix	Texas company developing a full-body VR treadmill that allows users to bring their entire body into the virtual world.	Omni (Full-body)	\$499
Oculus	Oculus is a VR company that creates technology that is wearable and affordable. They were acquired by Facebook for \$2 billion in Jul 2014. In 2014, they partnered with Samsung to create the Gear VR headset.	Oculus Rift (Head)	\$350
ANTVR (China)	Chinese company developing an open-source headset and controller combo.	ANTVR (Head)	\$300
Samsung	Samsung partnered with Oculus and leveraged their technology to produce their Gear VR headset.	Gear VR (Head)	\$200
Carl Zeiss	Carl Zeiss is an optical systems company. They developed a low cost VR headset dubbed the VR One that works with smartphones.	VR One (Head)	\$99
Leap Motion	Leap Motion is an American company that manufactures a VR device for hands. Their controller is compatible for Macs and PCs.	Leap Motion Controller (Hands)	\$80
Sony	Sony's VR headset is still in development, without an official launch date.	Morpheus (Head)	NA
Nimble VR	Before being acquired by Oculus, Nimble VR manufactured a VR device for hands.	Nimble Sense (Hands)	NA

Gaming portals

Competition

The gaming portals space is crowded with many different sites that serve a variety of HTML5 and Flash games to their users. These sites generally do not develop their own games, but instead share ad revenue with game developers in order to acquire content. Monetization for both developers and the platform also comes in the form of selling virtual goods and microtransactions. Some sites including Kongregate, Gameforge and 17173 offer social elements like leaderboards and badges to get their gamers to spend more time on the platform. Although many portals serve games directly on the web or mobile, others like QQ Games require gamers to first download a general QQ client before they can play. In addition, some sites like Kongregate offer sponsorships to developers for their games, as long as the developers include a link back to the gaming platform site²⁵. Chinese platforms and American platforms differ significantly in terms of site layout and focus. On the one hand, Chinese portals seem to act more like distribution channels, mostly requiring gamers to download specific game clients, with home pages reflecting such a focus. On the other hand, American portals focus on immediately getting users to start playing games, as can be seen from their home pages. In addition, in China, many large Internet companies are in the space and it might be difficult for a startup to enter the market.

²⁵ (n.d.). Retrieved from <http://www.kongregate.com/pages/help#sponsorships>

Market

The market for gaming platforms seem positive, and recent statistics from Gamestop's annual report show that Kongregate has 3 million monthly unique visitors²⁶. The report also mentions that the majority of the site's revenue comes from microtransactions. Gameforge also reports high number of users and the same trend in microtransactions driving revenues²⁷. Information for other platforms were difficult to acquire, but the longevity of gaming platforms (since the 1990s) suggests that there is demand for these services among consumers. Kongregate revenues were estimated to be around \$4-10 million in 2010²⁸ and Miniclip's is estimated to be around \$30 million in 2010²⁹, suggesting that the total yearly revenue from this market might be around 100s of millions. With the lack of offerings and quality in the casual browser game portal in the Chinese market³⁰ and the potential latent demand, we should further investigate this category.

Exit opportunities

Kongregate was acquired by Gamestop in 2010³¹, Ijji was acquired by Aeria Games in 2010³². This suggests that are opportunities to be acquired by companies who are in the game industry, but want to diversify their revenue streams.

²⁶ GameStop Corp. (n.d.). Retrieved from <http://www.annualreports.com/Company/3158>

²⁷ Takahashi, D. (2018, December 12). Gameforge hits 300M worldwide users for online games. Retrieved from <http://venturebeat.com/2011/08/15/gameforge-hits-300m-worldwide-users-for-online-games/>

²⁸ Staff, M. C. V. (2019, May 15). How much did GameStop pay for Kongregate? Retrieved from <http://www.mcvuk.com/news/read/how-much-did-gamestop-pay-for-kongregate/07424>

²⁹ Miniclip. (2020, June 8). Retrieved from <http://en.wikipedia.org/wiki/Miniclip>

³⁰ Schulz, P. (2012, August 24). East to West: Global Online Gaming trends. Retrieved from <http://www.slideshare.net/pahayah/east-to-west-global-online-gaming-trends>

³¹ We have reduced support for legacy browsers. (n.d.). Retrieved from <http://www.kongregate.com/pages/kongregate-announcement>

³² LeFebvre, R. (2018, December 12). Aeria Games buys game portal Ijji Games and raises money. Retrieved from <http://venturebeat.com/2012/01/05/aeria-games-buys-game-portal-ijji-games-and-raises-money/>

Notable companies

Company name	Description	Products	Price
Tencent (China)	QQ Games is a casual game client owned by China's Tencent. The software is available for multiple platforms, and users can play social games via the client after downloading it.	QQ Games	Free
Gamestop	Kongregate is a web and mobile gaming portal that allows users to play Flash and HTML games. It incorporates social elements and virtual currencies for monetization. It was acquired by Gamestop in 2010 for an undisclosed amount. Kongregate also publishes mobile and web games for developers.	Kongregate	Freemium
Newgrounds	Newgrounds is an online platform that offers not only user-submitted Flash games but other forms of entertainment. Games hosted on Newgrounds are usually casual with low production values.	Newgrounds	Free
Armor Games	Similar to Kongregate, with focus on Flash games.	Armor Games	Freemium
Miniclip	Miniclip is a web and mobile gaming portal that allows users to play Flash and HTML games. In 2010, it attracted 75 million users.	Miniclip.com	Freemium

PC

Competition

The PC space is relatively fragmented with many different companies competing for market share. However, it is important to note that specialty gaming PC companies do not generally manufacture their own parts, but source components from hardware manufacturers like AMD or Intel. Value is created by configuring component parts to optimize performance in games (e.g. overclocking). Competition is stiff, and companies in China produce both gaming desktops and notebooks.

Market

PC gaming is still the dominant money maker in the Chinese gaming market, attributing for \$8.7 billion in revenues in 2013 as compared to \$1.8 billion from mobile games³³. With such high demand for PC games, there is undeniably demand for the hardware that supports these games. A study by JPR estimated the worldwide PC gaming hardware market to be about \$21.5 billion, with enthusiast and performance PCs accounting for 70% of market share.³⁴

Exit opportunities

Voodoo, an American gaming PC company was acquired by HP in 2006³⁵. Recently, in November 2014, Ngame closed a \$10m Series A, led by Fortune Capital. These show that there might be opportunities for gaming PC startups to raise additional VC funding or to be acquired by larger PC manufacturing firms.

³³ (n.d.). Retrieved from <https://www.techinasia.com/chinas-game-market-took-in-13-billion-in-2013-pc-games-generate-way-more-than-mobile/>

³⁴ Jon Peddie Research offers the latest statistics, trends, and reports in the computer industry. (n.d.). Retrieved from http://jonpeddie.com/publications/pc_gaming_hardware_market_report/

³⁵ VoodooPC. (2020, May 31). Retrieved from <http://en.wikipedia.org/wiki/VoodooPC>

Distribution

Online

Competition

The competition for digital distribution of games occurs on a global scale and across 4 verticals: PC, console, handhelds and mobile. For online PC games, firms like Steam (Valve) and Origin (EA) dominate. These companies offer both English and Chinese versions of their sites, although the sites are not fully translated³⁶³⁷. In China, large gaming companies such as Sina, Netease do not have an online distribution arm offering their consumers options to directly download PC games. Instead, they either redirect to the relevant gaming websites or to other distributors like Steam for downloaded PC games³⁸. This lack of interest could be attributed to the fact that most popular English client games might not have Chinese versions. Furthermore, locally developed Chinese games generally do not distribute through stores such as Steam or Origin. In addition, extremely popular locally published games such as World of Warcraft (Blizzard Activision & Netease JV) also have different distribution strategies. For console games, online distribution is often vertically integrated. Console and handheld manufacturers offer their gamers the option to directly download games via the Sony Playstation Store, Nintendo eShop and Xbox Live. For mobile games, digital distribution is mostly conducted through app stores with Google, Baidu, Tencent and Apple all in the space.

³⁶ Steam Store. (n.d.). Retrieved from <http://store.steampowered.com/?l=tchinese>

³⁷ (n.d.). Retrieved from <https://www.origin.com/sgp/en-us/store>

³⁸ (n.d.). Retrieved from <http://games.sina.com.cn/d/d/pc/150968.shtml>

Market

Digital distribution has been gaining traction quickly as Internet penetration improves globally. In the US and EU, aggregate digital distribution has been growing at a 33% CAGR, while in China CAGR is projected to be 10% over the next 3 years.³⁹ In addition, a report by DFC Intelligence states that digital PC sales represent 92% of all PC game sales worldwide. The market for digital distribution seems to be burgeoning and overtaking physical sales extremely quickly. Research by NPD Group estimates the global market for digital distribution to be around \$7 billion in 2013⁴⁰. However, the lack of content in China suggests that foreign business models of distribution companies might not work.

Exit opportunities

In 2013 Linden Lab acquired Desura for an undisclosed amount in a bid to diversify⁴¹. In addition, online distribution startups might be attractive to large Chinese Internet companies due to their lack of digital distribution capabilities.

³⁹ PetersonContributor, S. (n.d.). Digital game sales growing 33%. Retrieved from <http://www.gamesindustry.biz/articles/2013-03-29-digital-game-sales-growing-33-percent>

⁴⁰ \$15.39 Billion Spent on Video Game Content. (n.d.). Retrieved from <https://www.npd.com/wps/portal/npd/us/news/press-releases/research-shows-15.39-billion-dollars-spent-on-video-game-content-in-the-us-in-2013-a-1-percent-increase-over-2012/>

⁴¹ Press Releases. (n.d.). Retrieved from <http://www.lindenlab.com/releases/linden-lab-acquires-desura>

Offline

Competition

Competition in the offline distribution occurs across a variety of retailers, both specialty and non-specialty.

Market

Offline distribution is contracting, and a large shift to digital distribution is occurring. Even distribution of console games which has traditionally occurred offline is moving online⁴². Hence, the market for offline distribution appears to be in decline with the NPD Group expecting double digit declines YoY for physical games⁴³.

Exit opportunities

Exit opportunities are unclear.

⁴² SinclairNorth, B. (n.d.). Nintendo seeing digital shift. Retrieved from <http://www.gamesindustry.biz/articles/2014-11-06-nintendo-seeing-digital-shift>

⁴³ EditorFriday, B. S. N. A. (n.d.). Up to 25% of PS4, Xbox One game sales are digital - Analyst. Retrieved from <http://www.gamesindustry.biz/articles/2014-11-14-up-to-25-percent-of-ps4-xbox-one-game-sales-are-digital-analyst>

Publishers

Mobile

Competition

In China, there is substantial competition for mobile publishing with both large Internet companies like Tencent and independent houses like CMGE (San Guo Zhi), Yodo1 (Cut the Rope), iDreamSky (Fruit Ninja), Chukong (Where's My Water) competing for market share. All companies with the exception of CMGE are full-service publishing platforms that help Western developers localize, monetize and distribute their games in China. CMGE on the other hand concentrates on locally developed mobile games. Tencent (Candy Crush Saga) is also a mobile gaming publisher, partnering with King to bring Candy Crush to China exclusively through its Weixin/ QQ platforms. Other publishers who do not have vertically integrated distribution channels work with a variety of partners to distribute the mobile games that they publish.

Market

As the appetite for mobile games in China increases, so does the number of foreign developers wanting to tap into the market. However, it appears that the market is already saturated with many players that court both local and foreign mobile game developers. Furthermore, hit game developers already have established relationships with mobile publishers in China. As publishing is a B2B business, startups wanting to offer such services have to tap existing relationships in order to succeed. In addition, knowledge and partnerships with various distributors are important in order to succeed as a publisher. These reasons seem to suggest that it would be difficult for a new player to enter the mobile publishing business. One possible way to circumvent existing relationships is for publishers to identify relatively unknown developers that have games with potential and publish them, entering at an earlier stage of the process and taking on more risk. A positive example would be iDreamSky, whose revenues grew from \$3.1 million in 2012 to \$40.7 million in 2013. The explosive increase suggests that there is still a lot of potential for growth in this segment.

Exit opportunities

In 2013, Yodo1 raised \$5m in Series A round led by Singtel Innov8⁴⁴.

⁴⁴ Cutler, K.-M. (2013, April 18). Chinese Gaming Publisher Yodo1 Raises \$5M In Round Led By Singapore's SingTel Innov8. Retrieved from <http://techcrunch.com/2013/04/17/yodo1/>

PC

Competition

The competition for PC publishing in China is high with many large companies in the fray. Foreign companies usually operate via joint ventures (JV) with Chinese publishers to bring their games into the region. One notable example is the NetEase and Activision Blizzard JV, which allowed NetEase to gain substantial revenues through the World of Warcraft franchise⁴⁵. Regulations make entering the Chinese market with a regular (i.e. non-web) PC game extremely difficult, and developers have to go through a stringent approval process⁴⁶. Rampant piracy results in Western games often being localized through unofficial language add-ons⁴⁷.

Market

As a result of piracy and regulations, we see that most foreign PC game developers who enter the market are MMORPGs that combat piracy through subscription or freemium models. As a benchmark, Perfect World's online game operating revenues were \$401 million in 2012. However, this number includes both the publishing and development arm.

Exit opportunities

Exit opportunities are unclear.

⁴⁵ Caplinger, D. (2014, November 13). NetEase Earnings Climb; Latest "World of Warcraft" Installment on Tap. Retrieved from <http://www.fool.com/investing/general/2014/11/13/netease-earnings-climb-latest-world-of-warcraft-in.aspx>

⁴⁶ Jou, E. (2014, May 7). China Wants To Make It Easier For People To Publish Games. Retrieved from <http://kotaku.com/china-wants-to-make-it-easier-for-people-to-publish-gam-1571775912/all>

⁴⁷ (n.d.) Retrieved from <http://www.newzoo.com/2014/introduction-chinese-games-market/>

Console

Competition

In the past, console game publishing was vertically integrated with the console manufacturer. However, manufacturers such as Microsoft have recently introduced self-publishing programs to empower developers to create more content for consoles⁴⁸. This has spawned independent publishers such as Devolver Digital who might not provide financing to developers but instead help developers navigate the publishing process⁴⁹. In China, console game publishing is extremely nascent, with authorities only recently lifting the 14 year ban on consoles in September 2014. Hence, there are few competitors in the market⁵⁰. With the launch of Xbox One in China, Perfect World, Snail Games and Tencent are a few of the publishers working with foreign console game developers to bring their games to the region.

Market

The market for console game publishers seem attractive. Although official sales numbers have been low so far, there is a booming console grey market in China with an estimated 2-3 million units sold at retail prices in 2009⁵¹. Furthermore, there are few local developers of console games as a result of the ban. Thus, it appears that there is a huge need for publishing and localization services in order for foreign developers to tap into this market. However, there are both business and regulatory risks in the console industry. Firstly, gamers are unaccustomed to playing console games⁵². Secondly, there are regulations surrounding the type of content that console games can have⁵³. Although there are both business risks and regulatory risks, the potential of the market combined with developers' need and lack of competition makes this an attractive sector to investigate.

⁴⁸ Independent Developers Program for Xbox One: Xbox. (n.d.). Retrieved from <http://www.xbox.com/en-us/Developers/id>

⁴⁹ Kuchera, B. (2014, April 15). From gatekeepers to guns for hire: The new role of indie game publishers. Retrieved from <http://www.polygon.com/2014/4/15/5610458/indie-game-publishers>

⁵⁰ Jou, E. (2014, August 1). Check Out The Xbox One's China Exclusives. Retrieved from <http://kotaku.com/check-out-the-xbox-ones-china-exclusives-1613859101>

⁵¹ ElliottTuesday, P. (n.d.). China's grey market console base "2-3 million units". Retrieved from <http://www.gamesindustry.biz/articles/chinas-grey-market-console-base-2-3-million-units>

⁵² Bloomberg. (n.d.). Retrieved from <http://www.businessweek.com/articles/2014-01-08/the-end-of-chinas-game-console-ban-wont-save-nintendo>

⁵³ Villapaz, L. (2014, April 23). China Releases Video Game Console Censorship Guidelines For Foreign Companies Operating In Shanghai Free Trade Zone. Retrieved from <http://www.ibtimes.com/china-releases-video-game-console-censorship-guidelines-foreign-companies-operating-1575316>

Exit opportunities

There have been no exits in the past. However, there is potential to be acquired by gaming companies looking to move into adjacent industries, or even for IPOs in a similar vein to iDreamSky.

Enabling Technologies - Software & Middleware

Game development

Competition

There is a lot of competition in game development software and middleware. This segment can be broken down into: 1) full-suite game engines and 2) specialized game engine modules. On one hand, full-suite game engines such as Unity combine different modules (physics, artificial intelligence, audio, etc.) into one platform, and provides developers with a comprehensive solution. On the other hand, specialized game engines such as the Havok physics engine provide developers with a single function that can be combined with engines from other providers. Besides differences in functionality, game engines also span a spectrum of platforms and genres. Niche game engines such as RPGMaker and Arcade Game Studio provide solutions for developers intending to create games in those genres. Platform specific engines such as XNA for the Xbox, provides developers an environment for creating platform specific games. Pricing models for game engines include one-time fee, subscription, licensing and free. Firms offer both open source (Cocos 2d-x), licensed (Unreal Engine), one time fee (Unity), and free (XNA) solutions to game developers.

Market

The market for game engines consists of both established and independent game developers creating games for various platforms. In recent years, development tools has become more accessible to independent developers as gaming companies attempt to expand the games available on their platforms. The availability of such tools lowers barriers of entry into game development, which is a potential reason behind the increasing number of developers⁵⁴. The low barriers and growing popularity of mobile games appear to suggest sustainable demand for niche gaming engines that cater to the mobile development crowd. However, although there seems to be demand for engines, the presence of established players in the market combined with the difficulties a startup will face in creating a proprietary engine makes this segment a difficult one to enter. Exact revenues of game engine companies are unavailable. However, Unity Technologies, with 45% market share announced that revenues grew 130% year on year⁵⁵.

⁵⁴ (n.d.) Retrieved from <http://www.fiercedeveloper.com/story/evans-data-mobile-developers-now-number-8-7-million-worldwide/2014-06-20>

⁵⁵ (n.d.) Retrieved from <http://www.insidemobileapps.com/2012/03/12/unity-revenues-up-130-percent-more-than-50-percent-of-business-is-now-mobile/>

Exit opportunities

Game engine companies have been acquired by companies in the same industry but adjacent verticals. One example is the acquisition of Corona a 2d mobile game engine developer in 2014 by Fuse Powered a mobile payments firm for an undisclosed sum. In the same year, Bitsquid, an interactive engine was acquired by Autodesk for an undisclosed sum.

Game monetization

Competition

Although game monetization may occur across a variety of methods, one-time payments are relatively straightforward to implement - developers/ publishers charge a single fee to provide gamers access to their games. This section will instead focus on middleware that aid freemium games in monetization. There are two main ways to monetize a freemium game: 1) in-game ads, and 2) in-game payments. Both types of firms generally operate on a revenue-sharing basis with game developers.

The space for in game advertisements is very fragmented with no dominant player. These companies generally do not cater only to games. Instead, they offer solutions for products with ad inventory to sell/ manage. Companies such as Vungle and Beachfront specialize in newer formats such as video ads, while mature formats such as interstitials and static banner ads are offered by companies such as Fusepowered and Playhaven. Bigger companies like Airpush offer multiple ad formats. Ad monetization companies mostly compete via proprietary algorithms that aim to optimize revenue from inventory. Mo9 is a unique Chinese business that allows players to pay after consumption of virtual goods.

In game payments are generally controlled by the distribution channels. For example, Apple and Google both offer in-app payment SDKs that developers must use when integrating in-app payments for apps that are distributed in their app stores. These SDKs are secure ways for consumers to make payments using specified methods. For 3rd-party app stores without payment restrictions, developers have the option of integrating solutions from companies such as Fortumo and OKPay. These companies offer payment solutions such as carrier billing or bank transfers that might not be offered by Google or Apple's payment SDKs.

Markets

Likewise, the market for mobile monetization can be broken down into two categories: 1) in-game ads and 2) in-game payments. A report by IDC and App Annie estimates the revenue generated by in-app ads to be around \$8 billion in 2013⁵⁶, and in-app payments in iOS App Store to be around \$7.7 billion (author's estimate)⁵⁷. With games accounting for 66% of total app revenues⁵⁸, the market for game monetization software appears to be large. As freemium models gain traction, revenues from both categories might grow further in the near future. However, rates differ across regions, with India estimated to experience the highest growth at 8.7x from 2013 to 2017. The popularity of ad formats also differs across developers, with newer formats gaining popularity in 2014.

Exit opportunities

There appears to be opportunities in exits for game monetization companies with Science Inc. a holding company acquired Playhaven a in-app advertising company in September 2014 for an undisclosed amount. Yahoo acquired Flurry for \$240 million in 2014.

Video Game Analytics

Competition

Competition in video game analysis is high with both: 1) video gaming analytics specialists and 2) analytics generalists. On one hand, specialists such as Ninja Metrics and Unity focus more on user analytics and often provide such capabilities out of the box. On the other hand, generalists such as Google Analytics and Mixpanel require more configuration for video gaming applications. These companies generally operate on a subscription basis, and charge according to the amount of data being processed by the software, usually calculated via MAUs (Monthly Active Users).

⁵⁶ (n.d.) Retrieved from https://s3.amazonaws.com/files.appannie.com/reports/App_Annie_and_IDC_Mobile_App_Advertising_and_Monetization_Trends_2012-2017/App_Annie_and_IDC_Mobile_App_Advertising_and_Monetization_Trends_2012-2017.pdf?mkt_tok=3RkMMJWWfF9wsRonu6rAZKXonjHpfsX76%2B4qWa%2BwIMI%2F0ER3fOvrPUfgjl4ATMFII%2BSLDwEYGJlv6SgFSrFEMbFI3rgPUxU%3D

⁵⁷ Perez, S. (2013, March 28). In-App Purchase Revenue Hits Record High: Accounts For 76% Of U.S. iPhone App Revenue, 90% In Asian Markets. Retrieved from <http://techcrunch.com/2013/03/28/in-app-purchase-revenue-hits-record-high-accounts-for-76-of-u-s-iphone-app-revenue-90-in-asian-markets/>

⁵⁸ Video Games, Esports & Mobile Intelligence: Insights and Articles. (n.d.). Retrieved from <http://www.newzoo.com/insights/distimo-2012-report-games-account-for-66-of-total-revenues-from-apps/>

Market

The size of the video gaming analytics software market is uncertain and there is a lack of research in the space. However, since there are approximately 200m video gamers in the USA⁵⁹, and DeltaDNA charges \$1,800/month for analyzing 500k MAUs, a conservative estimate for the global video gaming analytics market would be below \$500 million.

Exit opportunities

Exit opportunities are unclear for specialist companies. However, for generalist companies there appears to be interest in the market. Generalist company, Flurry was recently acquired in June 2014 by Yahoo for \$240 million.

⁵⁹ Snider, M. (2012, September 5). NPD: Total number of U.S. video game players drops. Retrieved from <http://content.usatoday.com/communities/gamehunters/post/2012/09/npd-total-number-of-us-video-game-players-drops/1#.VJfJIsAo>

Game Developers

Mobile

Competition

Competition in mobile game development is extremely stiff, with both established companies and independent developers in the space. Both production values and genres of games vary widely. Likewise, cost for mobile game development range from tens of thousands to millions of dollars⁶⁰. In addition, although business and monetization models differ widely, there has been a shift to freemium models. A study by IDC and App Annie showing that freemium business models receive the most revenue followed by in-app advertising models⁶¹.

Market

Mobile has undoubtedly boomed in recent years, and is projected to double in revenue from \$17.5 billion in 2013 to reach \$35.4 billion by 2017⁶². However, despite the growth, it is important to note that successes are rare with 92% of all Chinese mobile games losing money⁶³. Investing in mobile game developers are thus a risky affair, but with potential for huge payoffs.

Exit opportunities

Successful developers with breakout games might go on to be acquired by larger companies. For example, in 2012, \$210 million acquisition of Funzio by Gree, \$325 million acquisition of Playcrab by Ourpalm. Recent years have also seen successful mobile game developer IPOs, including: 1) King - maker of Candy Crush Saga, 2) Forgame - maker of 风云天下OL, 3) Ourpalm - maker of 3D Ultimate Racing.

⁶⁰ How much does a mobile game cost to develop? (2019, February 23). Retrieved from <http://teamcooper.co.uk/blog/how-much-does-a-mobile-game-cost-to-develop/>

⁶¹ (n.d.) Retrieved from https://s3.amazonaws.com/files.appannie.com/reports/App_Annie_and_IDC_Mobile_App_Advertising_and_Monetization_Trends_2012-2017/App_Annie_and_IDC_Mobile_App_Advertising_and_Monetization_Trends_2012-2017.pdf?mkt_tok=3RkMMJWWfF9wsRonu6rAZKXonjHpfsX76%2B4qWa%2BwIMI%2F0ER3fOvrPUfGjI4ATMFI%2BSLDwEYGJlv6SgFSrfEMbFI3rgPUxU%3D

⁶² Takahashi, D. (2018, December 12). Mobile games revenue will double by 2017 as growth spreads worldwide (exclusive). Retrieved from <http://venturebeat.com/2014/07/23/mobile-games-revenue-will-double-by-2017-as-growth-spreads-worldwide-exclusive/>

⁶³ (n.d.). Retrieved from <https://www.techinasia.com/report-92-of-chinese-mobile-games-lose-money/>