

An Exploratory Study of the Korean Online Game Industry: A Comparative Analysis of Historical Development Stages

- 1998~2019 -

Junkwan Lee* · Jong-Gu Lee**

Abstract

Online game is rising star in entertainment industry. Being one of the fastest growing business in the world, online game that blends technology and entertainment certainly depicts character of twenty first century. Over the past two decades, online game market lead the digital contents industry through out the world. In early era of online games, Korea was one of few countries that lead the industry owing to well-developed Internet network infrastructure throughout the Korea in late 90s. This certainly gave advantage for Korean online game developers and publishers an early start. Expansion of personal computers and particularly PC-bang culture prospered Korean online game market. Along with this wave, Korean government supported online game cultures in many aspects, of one which they have found government agency that provides business consulting for game industry. Government affiliated agencies also established e-Sports association that helped Korean consumers to perceive online games as a legitimate and sound culture.

Anyhow, up until the pervasion of smartphone, PC-based online games dominated the market, which as of 2017 smartphone-based online games in Korea have overcome the total sales from PC-based. Meanwhile, as consumers demand to play their favorite games in any devices they prefer, the barrier between platforms faze, opening up a new era of integration which game developers

* Lecturer, School of Management, KyungHee University, First Author.

** Professor, The Graduate School of Education, KyungHee University, ss83@khu.ac.kr, Corresponding Author.

adopts every devices possible with original game content.

In this paper, authors apply exploratory investigation, looking back the twenty years of online games in Korea, distinguishing steps of online game development in four stages. Comparative analysis of those stages were followed to deliver history of online game development and insights for future researchers.

〈Key Words〉 Game, Online, Wireless, Offline, PC, Smartphone, Platform

I. Introduction

We often see people from movies or TV shows saying that ‘Life is a game,’ but what is the game? Although life is more complex in terms of various external forces that we can not fully explain, games especially online role playing games reflect smaller version of our life accounting everyone is the player in our own world for our survival. Games can be used as a metaphor to help us simplify our life achievement, for an example if one works in a finance field, intern is equivalent to level 1, millionaire to level 10, and highest level can be interpreted as richest in the world. Simplest form of game, rock, scissor, and paper that brings mere enjoyment, to online game which now is considered as the most intellectual content in history of human kind requiring storytelling, music, graphic, and high-end technology, is getting ready to substitute our actual life. All this advancements owe to Internet technology. No wonder it is called virtual reality.

Here, online games refer to games that need Internet connection to play. Although online games can be played alone or against computer, having an interaction with other human players through Internet network in real time is the key factor that distinguishes online games from others. Although many of previous studies separate online games by devices; PC, smartphone or tablet PC, this study considers any games that use Internet connection to play as online games. Authors believe this is more rational categorization as where in past, game contents were only designed for specific platforms, but nowadays game contents simply adopts new devices. Lineage developed

by NCsoft for an example, were provided in PC package game which users can play in offline condition, but also in online condition through PC, smartphone, and tablet PC that linked thousands of players to play simultaneously. Development of Internet technology enabled us to interact with people across the globe, online games are at the center of digital contents that forms our new way of life. In this paper, authors will explore the beginning to up to date history in online games in accordance with the environmental factors which shaped game industry in South Korea.

〈Table 1〉 Korean Online Game Market

Unit: 100,000,000KRW

Year	PC-based	Mobile-based	Total	Growth(%)
2000	1,915	100	2,015	-
2001	2,682	358	3,040	50.9
2002	4,522	1,004	5,526	81.8
2003	7,541	1,458	8,999	62.8
2004	10,186	1,617	11,803	31.2
2005	14,397	1,939	16,336	38.4
2006	17,768	2,390	20,158	23.4
2007	22,403	2,518	24,921	23.6
2008	26,922	5,021	31,943	28.2
2009	37,087	5,257	42,344	32.6
2010	47,673	3,167	50,840	20.1
2011	63,369	4,236	67,605	33.0
2012	67,839	8,009	75,848	12.2
2013	54,523	23,277	77,800	2.6
2014	55,425	29,136	84,561	8.7
2015	52,804	34,844	87,648	3.7
2016	46,786	43,301	90,087	2.8
2017	45,409	62,102	107,511	19.3

Source : White Paper on Korean Games by Korea Creative Content Agency, 2000~2018.

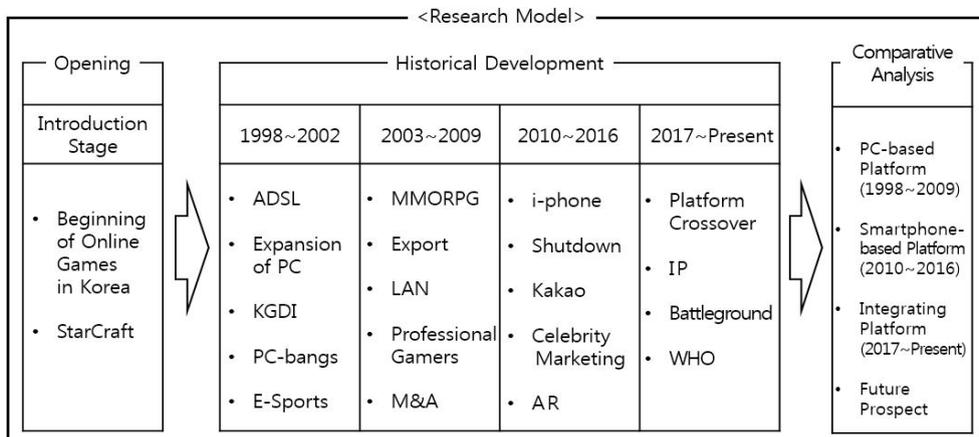
Demand for a real-time strategy online game, StarCraft, developed and published by Blizzard Entertainment opened up a new cultural era of PC-bang (literal meaning: room for personal computers) in South Korea (henceforth Korea), a space designed only for playing online personal computer games. Besides the popularity of StarCraft in Korea, expansion of ADSL (Asymmetric Digital Subscriber Line) networking technology which was first introduced by Bellcore in 1988, towed PC-bang phenomena(Huhh, 2008). Table 1 shows the total volume of Korean online game market and figure 1 illustrates total volume of Korean online game export from 2015 to 2018.

This research aims to look back the history of Korean online game market, investigating events that shaped the game industry, to deliver insights for upcoming era. Internet technology enabled games to transform as one of the highly intellectual contents in the history of man kind. Here, authors distinguish four stages from the evolution of online games to the present, drawing on technology, government policies, business models, and users' characteristics. Furthermore, by comparing each stages authors suggest future prospects

〈Figure 1〉 Korean Online Game Exports



〈Figure 2〉 Research Model



for online games that accounts both domestic and the world. Figure 2 illustrates exploratory research model for the historical development stages in Korean online games.

II. Historical Development of Online Games

1. Early Stage : 1998~2002

Game holds undoubtedly the longest history in entertainment field. We as a social creature that instinctively wants to interact with others led us unite, share, and create happiness. Game is in the center of it all as it brings people to interact while having fun. Before the evolution of online games, there was so called PC-package-games. When owning a personal computer in Korean household became prevalent in early 1990, game developers (or publishers) saw great potential for this new platform. However, due to limited Internet speed only using telephone line caused playing games through online with others simultaneously impossible. In beginning, PC was more like a substitute for typewriter. So due to limited infrastructure, game companies created games that could mainly be played against computer. This idea is not different than existing arcade games where consumers could play game against a computer or with people next to them.

When PC game was limited to PC-package which was in the form of CD, it could mainly be purchased through software PC shops. The cost for buying such game CD costed around \$50 per game, but due to initial investment for buying PC were expensive compare to buying Nintendo or Playstation, PC games were only popular among young early adopters. However main experts point out that this minority culture became major after present of StarCraft created by Blizzard, which was first published in 1998 by LGsoft in Korea. StarCraft has one of the highest sales record of PC games in Korea. Short after release of StarCraft, ADSL, telecommunication line only designed for Internet became proliferated over the Korea, online

game opened up the new market which changed our life forever.

Evolution of online games spurred in late 1990, Korean government encouraged business regarding information technology and invested large capital to build network line only designed for Internet use. This policy helped Korean game companies to take advantage of such high-speed Internet network to develop and publish online games.

Korean game industry started to gain recognition as a independent sector apart from other digital contents. This phenomena was also captured in government movement where the jurisdiction of game industry was once under the umbrella of Ministry of Health, which now became part of the Ministry of Culture, Sports, and Tourism. In 1999, Korea Game Development and Promotion Institute (hereafter KGDI) was found under the umbrella of the Ministry of Culture, Sports and Tourism Korea, which was designed to give business consulting for game developers and publishers. This new institute and along with amendments to the Act of Law on Records and Video Products aided involving parties to build human resource infrastructure, and business modeling structure. It certainly guided Korean policies towards game industry such as rating system (or screening system), however this turnout to be a degrading factor for game developers as it delayed publishing which turned out, only giving time for foreign game companies to adjust in this new fast developing market.

With help from KGDI, more than 200 game companies were able to connect to foreign market, and participates in game show like E3. Korean government saw online game as future cash cow due to increasing numbers of PC-bangs in late 1990. PC-bang, designed only to play online games, mostly StarCraft in late 1990s proved to be a potential money maker. In 2001, registered number of PC-bangs in Korea were up to 23,548. Also at this time, number of gamers gained spotlight as the StarCraft tournament attracted lot of fans. Government grabbed this opportunity and found Korean e-sports Association that controlled online game league. This association did help giving pro-gamers an official job which made them socially recognizable, which became turning point for changing people's perception from prevalent good-for-nothing image to a decent worker.

E-sports however like all other games, will be restricted by number of sponsors and volume of money involved in (Rambusch, Jakobsson, and Pargman, 2007).

In the beginning of 2000, computer memory card was up to 1 Gigabyte, and upgraded server system could handle more traffics simultaneously than ever. In past, sudden increase of traffic caused server failure, but new server technology opened up a new era for game developers that they could service games internationally. It is at this stage that online game publishers saw potential opportunities in foreign market. In 2001, Korean private sector, Global Online Games Association signed memorandum of understanding with one of Japan's association similar to that of Korean for exporting Korean online games to Japan market (Lee, 2001).

2001 is the year that marked history of online games in Korea that domestic sales of online games for the first time exceeded all other forms of games, sits on throne above all including arcade, video games, PC-package games and etc. Online games raised profits from applying partial charging model; free to play, but need to buy items for better performance. Online games sales recorded more than 50% of the total pie, towing Korean game industry. Meanwhile, there have been a movements that genre of games are shifting from massively multiplayer online role-playing game (hereafter MMORPG) to casual games which attracted more older and expanded to female game player. Although MMORPG or FSP games have dominated the market, but this was because the main gamers were teenagers. But as people in their twenties to thirties were attracted, they preferred more casual games that had far lower hurdle than other genres. In 2002, game developers concentrated on creating easy casual games for smartphones, this trend was in accordance to expansion of mobile devices. However, due to limited technology (speed, memory, graphics, data cost and etc), big game companies were skeptical about the market for time being, which attracted lot of small firms for creation of mobile games. Anyhow, as of 2003, online games dominated more than 60% of total Korean game market which led the growth of game industry.

2. PC stage : 2003~2009

MMORPG games were booming through PC-bangs that were equipped with Internet speed of over 10Megabytes, which allowed a infrastructure for game developers to develop 3D games that were specifically designed for games that required lot of memories to run. MMORPG game players at that time felt it was almost necessary to go to PC-bangs when they wanted to play such games. However, casual 2D games could be easily operate from home computers, which did not require high-end memory or graphic cards, people could easily access those game portal webs to enjoy simple casual games or so called web board games. As more people from different age or sex background participate in this trend, it had positive affect in terms of changing people's perception of games from such negative notion that online games are for good-for-nothing people to the extent that games can be used as a good stress-relief. As online games are intended to play among anonymous, it decided how people react. For an example, when certain players did not perform well on their team, cursing became prevalent. It obviously brought less guilt comparing to cursing at people who they know. In this PC-based stage, lot of scholars tried to define the correlation between overuse of online games and violence (Anderson, 2004; Grusser, Thalemann, and Griffiths, 2006).

Year 2003 is notable as increasing export of online games finally beat the total volume of games imported. Online games being main players for the export, overcome the total import which were primarily video games. Now people recognize the importance of online games more than ever, government and private entities invested more on Internet network infrastructure that as of 2004, Internet communication using telephone so called modem completely disappeared in Korea. As of 2006, average Internet speed in Korea reached 20 Megabytes per second using LAN; fiber optic cable line only designed for fast speed Internet, which was the fastest in the world.

In this time period, total volume of online game market in Korea have reached more than 2 billion dollars, due to growing export to foreign

market, nearly 95% of the export was raised from online games. This drew attention from foreign firms as Korean online game industry was good destination for investment. Game publisher EA (Electronic Arts) have invested in 0.1 billion dollars in Neowiz (Lim, 2007), a Korean game publisher. At this time period, many partnerships were formed between Korea and other countries including U.S., Japan, and China.

Partnerships also led to numbers of mergers and acquisition among Korean companies in order to secure their ground against big collaborated mega firms such as above. In order to secure competitiveness for instance, T3 Entertainment, known from creating casual game 'Audition', acquired HanbitSoft. As First Person Shooter (hereafter FPS) games gained popularity across the nation, it helped broadened the user categories to 30s and 40s. This genre of game did not required players play games continuously like MMORPG where the game never ends. Less than 5 minutes to play one game that resets one play after another, attracted light game players to join. Ever since Korea e-Sports (electronic sports) Association first launched in early 2000, their work now became very important as more and more casual game users were growing. They were able to secure sponsors from big companies in Korea to provide game tournaments on regular basis which were aired through TV broadcasting. This helped Korean gamers to gain reputation as their game playing videos spreaded out the world through Internet communities in forms of users' generated contents. Certainly through out this time period, professional gamer became one of favorable job for young teenagers. Even in military (Korean male have to serve country for 2 years mandatory) opened a job opening for professional game players to serve Korea, working as a professional team which is created by military. Air force accumulated up to 10 members in 2008, using this professional gamer team as a promotional tool for potential appliers.

With growing popularity of online games in this period, one of the most famous game league, 'StarCraft Professional League' festival was held in beach at Busan, attracting major crowd of more than 100,000 people in a single day. It was the moment that proved online gaming culture became

part of major league. As of 2007, Korean game exports were USD 781 million or double the imports (USD 389.55million(Game White Paper, 2008). Along with above momentum, strong cooperation between Korea and China was also noticeable. This partnership was guided by both government agencies that both countries signed memorandum of understanding, first assignment was to cooperate to find solutions for securing professional human resources. As both countries share similar policies regarding game industry, they launched Korea-China Game Festival to address the issues of negative perception towards online games.

3. Smartphone Stage : 2010~2016

In this time period, growth rate of the PC based online game market slowly decreased while smartphone based online games gained momentum rapidly becoming a hot-shot. Before Apple's i-phone was launched in Korea in 2009, Korean made smartphones were not actually smart at all. In past, only few companies dominated Korean phone manufacturing business. Also, telecommunication service provided by KT, SKT, and LGT dominated distribution of digital contents in a closed platform. Closed platform means that telecommunication companies joining with phone manufacturing companies to limit Internet access by giving consumers no any other options except to use their designated Internet platform. This gives telecommunication companies to have full control over the contents portfolio, which allowed them to have ultimate power over contents developers or publishers. However it all changed due to i-phone launching in Korea. It only took 2 years since Apple first launched i-phone in Korea at 2009, enabling nearly half of the Korean population to adopt smartphone that was either an i-phone or other equivalent smartphones; since i-phone launched in Korea, Korean phone manufacturer adopted Google's Android operating system.

This actually changed the whole paradigm of digital contents industry. Before, it was only up to telecommunication companies to decide what and how are they going to expose such contents, but since the launch of

i-phone, contents publishers can easily upload their contents to App Store, Google Play Store, or even, simply customize their contents for mobile display as now consumers can navigate freely using Safari, Chrome or any other web browsers. By all means, this accelerated mobile contents industry to look for new cash cows especially for smartphone game developers and publishers. Obviously this changed-market opened up new opportunities for many small ventures, and in 2011, the market share of smartphone based online games grow more than 30 percents. It became a turning point that online game market is towed both by PC and smartphones.

As negative perceptions of online games grew parallel to the growing popularity of games, especially accidents including homicides committed by teenagers in Korea induced lot of controversy throughout the nation. There was a debate whether their action was affected by playing violent online games or not. Finally in 2011, congress passed the bill that took extreme measures to implement shutdown system. Shutdown system limits illegals to access PC based online games from midnight to 6 A.M. Social organizations claimed this violates human rights of youth (Lee, 2001), however this law only applied to online games that uses PC as a device, and is still in vague phase for smartphone-based online games.

Compare to PC, specifications of smartphones were no match in terms of graphics, memory, and speed, therefor mobile game developers focused on developing casual games that could be easily run in mobile devices and could be controlled with limited touch of display. At this stage, Kakaotalk, a instant messenger app created by Kakao, launched mobile games service based on their platform. Their first big hit 'Anypang' was a casual board game, not directly connected with others when playing, but able to compete with friends who are already registered in their messenger by revealing points they have acquired from playing against the computer software. This game attracted more people from young to old, and males/females. Because Kakao already had a large pool of members through Kakaotalk instant messenger, it served as a effective platform to advertise new contents. Kakao became a game publisher, and for those of game developers who needed Kakao's large pool of members quickly

serviced through Kakao by paying 21% commission fee from the total sales.

Due to high commission fee of Kakao, game publishers especially big companies choose to setup their own platform for launching mobile games. Not only the expensive fee of Kakao but success of Kakao game caused similar platform to uprise (Heo, Jeong, and Kim, 2015). Also as smartphone device become more sophisticated in terms of graphics and memory, and faster 3 generation wireless speed than ever, pre-dominant casual mobile games shifted to role playing game genre. RPG games which need large resources to be developed compare to casual board games, big companies such as Nexon and Netmarble expanded their business by investing serious money into developing and publishing RPG games which led polarization in mobile game industry. Now small ventures have hard time surviving in mobile platform ever than before.

At this time period, foreign smartphone game, Clash of Clans launched in Korea investing almost million dollars just for TV commercials. Suddenly it became a hit, ranking one of top sellers in open market platform. This opened up a new stage for mobile game publishers to invest heavily on celebrity endorsement. Many famous actors and actress promoting mobile games could be easily spotted in TV commercials in TV prime time. Success of Clash of Clans also welcomed other foreign game publishers to entering in Korean game market.

Increasing popularity of smartphone games brought widening users' pool, welcoming all ages, however players' interface was limited due to small touch screen that only allowed one or two fingers to operate. To overcome this limit, many mobile games have tried to develop features that could only be operated in smartphone, such as swiping, turning screen from vertical to horizontal or vice versa. This features were not possible when playing PC games where mostly used controlling devices are keyboard and mouse. So in the context of mobile game developing, developers always tried to find a unique operating system that could only be found in features of smartphone.

In 2016, Niantic launched Pokemon Go, a game that uses location based Augmented Reality (hereafter AR). By using camera and GPS feature in

smartphone, players can see the real world through smartphone display (camera feature), but also able to see the characters from Pokemon that overlaps the reality, making users feel that the characters exist in real world environment at certain location (GPS feature). Pokemon Go became the first AR game that caught mainstream popularity (Alha et al, 2019). However, according to previous studies (Rasche et al., 2017), AR function was not the main reason why it made game popular, but it was because of the intellectual property of Pokemon that already had a large pool of fans. By 2017, online games using mobile devices exceeded market share of PC-based.

4. Integrating Stage : 2017~Present

Authors name year 2017 to present as an integrating stage because since 2017, devices whether it is PC, tablet PC or smartphones, does not matter much as it once used to be, the barriers of these platforms becoming more blurred as many games now crossover platforms. It became the era of 'destruction of platforms.' App players now let game players to enjoy their favorite smartphone games through PC, makes them to operate game by using keyboard and mouse. As consumers expect to play their favorite games on multi-devices, Korean game companies employ their own PC game title or acquire intellectual properties (hereafter IP) of other foreign game titles and launch customized version for mobile devices. This integrating stage brought new business opportunities, such as Korean online game company Nexon, employed their own game title, only this time re-launching for different devices. Not only that, they are providing multi-version in terms of graphics; 2D and 3D.

Selling rights of IP of games can enable both parties; sellers and buyers to do business in the most simplest form. Sellers can charge 5 to 10% royalty from the total sales accrued by buyers and not worry about anything. It is very similar to character license business as licensee can use the character for their desired product or service. With popularity of IP business in this era, Chinese game companies compete over popular

Korean online games. Longtu, Chinese game publisher for an example, acquired IP of Korean PC-based online game called 'Crossfire' and launched mobile version for Chinese market.

Another noteworthy point in the time period in Korean online game market is definitely the popularity of 'Player unknown's Battleground' (hereafter Battleground). Game developed by Bluehole Studio located in Korea, has become a big hit throughout the world. This PC-based online battle-royal style game have pulled game user back to PC while mobile games are dominating the market. This proved that consumers do not really care for whether devices are smartphone or PC as long as games are unique and fun. It is also noteworthy that this game made users to pay full charge before playing. This is old business model same as selling game CDs in PC-package era. Until Battleground, free to play but paying while acquiring items, was the most common business model.

In this integrating stage, another notable fact is that the World Health Organization (hereafter WHO) raised agenda regarding game disorder, asserting that playing online games consistently can make people into game addicts, which can harm daily life. Yet this is still a controversy among related parties whether game addiction really cause such worrying outcomes (Irmak and Erdogan, 2019; Daniel, 2019).

III. Comparative Analysis of Each Stage

It has been close to 20 years since the evolution of online game industry since late 1998 in Korea. Authors defined the early stage of online games from 1998 to 2002 because of the networking infrastructure change, mainly from model to ADSL, the cable that was only designed for Internet access. Thanks to this technology, Korean consumers felt it was necessary to own such an expensive machine. Internet cable so called LAN, opened up a whole new world for cyber network for the years to come. Further, this technology raised demand for higher version of hardwares which concerns better memory and graphic cards, eventually led the advancements of PC

market. Koreans captured an opportunity from this transition, creating a culture of PC-bang that changed the entertainment culture of Koreans forever. From little kids playing games with their friends in PC-bang after school, to grown-ups gathering up for a drink and heading to PC-bang as a destination for entertainment activity, PC-bangs have really shaped how Koreans could spend their leisure time.

PC stage, compare to earlier stage where offline PC package games and online games were equally played by Korean consumers, transformed every offline game players to play online games. In this stage, games that were only designed for offline settings lost their users severely. Almost every game players have been turned to play online games, simultaneously common Koreans realized that this online game industry is the real thing. Online games were first introduced by PC, obviously this platform had an advantage over other devices such as smartphone or tablet PC. Growth of Korean online game market owes to PC-based games at this stage. Korean game developers and publishers had advantage in online game development due to fastest and most reliable Internet connection in the world, letting them to create high-tech games like 3D. This eventually enabled them to lead the whole online game market especially in Asia. At this stage, the total volume of exporting games overcome the total volume of importing games. While importing games were focused at consoles, PC-based online games lead exporting.

In early smartphone stage, Korean online game market ranked fourth in worldwide as shown figure 3. In this time period, casual online games were dominant due to limited hardware in terms of memory or graphic cards, but soon smartphone technology caught up PC's. So by late this stage, between 2016 and 2017, MMORPG games that required high-end hardware

〈Figure 3〉 Online Game Market Worldwide (USD)



finally entered in smartphone, destructing the boundaries of PC-based and smartphone-based online games. Advancements of Internet network infrastructure for PC which Korea once proud of, waned as infrastructure for wireless technology became prevalent across the globe. So the competition became more fierce in smartphone-based online games. At this stage, many foreign smartphone games entered Korean market, investing lot of money on advertisements. Smartphone stage, compare to PC stage, gave lesson to the online game industry, that intellectual property has become major factor when designing a game. It meant, as the technology of online games reached to a point where there is nothing new, people in the industry realized that augmented factors such as character, design, music became more important in consumers' decision making. Pokemon Go developed by U.S. firm employed intellectual property of Nintendo, had great success at this stage.

Lastly the integrating stage from 2017 to present have unique factors compare to previous stages. Before, online games could be studied through understanding each devices or platforms. However, platforms are no longer important factors that distinguishes online games, instead boundaries of such platforms fades away as online game developers and publishers recognize devices are just platforms. As we can play rock, scissor, and paper in a room, boat, or airplane, so it is online games. Game publishers can simply adopt new platforms and integrate users into their game, letting consumers to choose a device they want to use. In this stage period, whether the game is PC-based, smarphone-based, or console-based does not mean much as players choose a game and simply decide which devices he or she will use to play.

IV. Conclusion and Prospects

Over the 20 years online games are undoubtedly fastest growing entertainment business not only in the world, but especially in Korea as well. It will likely to keep gaining momentum as the technologies further develop. The beauty

of online game is that consumers can easily access Internet using whatever devices they prefer to connect and interact with people from all around the world. Unlike other contents that have language barrier, games are sitting on top of everything else, in fact it is the only digital content that unites all ages, genders, and nations. This paper have shown that in past, online games were limited to devices, but current trend proves that in future there will be a destruction of platforms, meaning that online games will no longer be limited to types of devices.

Unique characteristic of online market that requires technologies is that more often that these technologies become open to public as a form of open application interface, aid developers to employ any software technologies out there. This implies that in future, the competition will not be focused at core technologies that operate games, but it will be the intellectual properties; characters from cartoon, movies, TV, music, stories that will differentiate the games. It is very common for market that turns red, companies in competitive market have to look for upgrading their products with augmented factors such as package, after-service, guarantee, and design. In future, this developing process will be applied heavily on online games. This means that twenty years history of online games have made this entertainment a mainstream, it will be more competitive thus resulting a market polarization. Now online game industry follows footstep of any other industries in that matter, but only faster.

“본 논문은 다른 학술지 또는 간행물에 게재되었거나 게재 신청되지 않았음을 확인함”

Reference

- Alha, K., Koskinen, E., Paavilainen J., and J. Hamari(2019), Why do people play location-based augmented reality games: A study on Pokemon Go, *Computers in Human Behavior*, 93, 114-122.
- Anderson, C. A.(2004), An update on the effects of violent video games, *Journal of Adolescence*, 27, 113-122.
- Chosun Ilbo, 2019. 05. 03. B1; source from Korea Creative Content Agency(2018), Korean Game Exports 2018.
- Daniel T, S.(2019), The “ABCDE” of video gaming control: Arguments, basic research, conceptual models, documented lessons, and evaluation, *Journal of Behavioral Addictions*, 1-4.
- Grusser, S. M., R. Thalemann, and M. D. Griffiths(2007), Excessive Computer Game Playing: Evidence for Addiction and Aggression? *CyberPsychology & Behavior*, 10, 2, 290-294.
- Heo T. I., Kim, T. G., and H. W., Jeong.(2015), Proposal of popular Profitable Model of Kakaogame, *Journal of Digital Convergence*, 13(1), 455-461.
- Huhh, J. S.(2008), Culture and business of PC bangs in Korea, *Games and Culture*, 3(1), 26-37.
- Irmak, A. Y., and Erdogan, S.(2019), Predictors for Digital Game Addiction Among Turkish Adolescents: A Cox’s Interaction Model-Based Study, *Journal of addictions nursing*, 30(1), 49-56.
- JoonAng Ilbo, 2019.5.13.B1; source from Korea Creative Content Agency (2018), Worldwide Game Market Analysis 2017.
- Lee D. H.(2011), “Youth have a right to play: issues concerning Shutdown”, Digital Daily, <http://www.ddaily.co.kr/news/article/?no=74597>
- Lee T. S., (2001), “GOGA, MOU with Hyundai Sega”, Digital Times, http://www.dt.co.kr/contents.html?article_no=2001020802012658551001
- Lim, W. G., (2007), EA invest 0.1 billion dollars, acquiring 13.5% share of Neowiz, Hankook GyungJae, <https://www.hankyung.com/it/article/2007032014421>

- Rambusch, J., Jakobsson, P., and D. Pargman.(2007), “Exploring E-sports: A case study of game play in Counter-strike.” 3rd Digital Games Research Association International Conference, DiGRA 2007.
- Rasche, P., Schlomann, A., and Mertens, A.(2017), Who is still playing Pokémon go? A web-based survey, *JMIR Serious Games*, 5(2).
- White Paper on Korean Games, Korea Creative Contents Agency, (2000~2018).

한국 온라인 게임 산업의 전개 과정과 시대별 특징 분석에 관한 연구

- 1998년~2019년 -

이준관* · 이종구**

요 약

온라인 게임 시장이 성장세를 타면서 스타(star) 산업으로 급부상하고 있다. 온라인 게임 산업은 20여년의 짧은 산업사에도 불구하고 수익성과 성장성 측면에서 가파른 행보를 보이고 있다. 글로벌 산업사에서 20여년의 비교적 짧은 역사를 가지고 있는 온라인 게임 산업은 21세기 첨단 기술과 엔터테인먼트 성향의 문화가 융합해서 만들어낸 합작품이라는 점에서 향후 글로벌 시장에서 더욱 비약적인 성장을 할 것으로 전망된다. 엔터테인먼트 산업을 견인하는 ‘온라인 게임 시장’에서 한국 시장의 존재감은 수년간 미국, 중국과 1위를 다툰 정도로 압도적이었다. 이것은 2000년 초기 잘 설계된 인터넷 네트워크 기반 시설과 이를 기반으로 파생된 PC방 문화에 기인한다. 더불어 2002년 노무현 대통령 시절, 정부의 정책으로 IT 산업에 많은 자금과 인력자원이 투자됐고, 이는 온라인 게임 산업 성장의 발판이 됐다. 이 시기에 한국 정부 산하 기관에서 온라인 게임을 ‘e-Sports’라고 명칭, 국민들에게 온라인 게임은 하나의 스포츠라는 인식을 심어주었다. 이로 인해 온라인 게임을 바라보던 사람들의 부정적인 시각을 긍정적으로 바꾸는 변화를 이끌어냈다.

온라인 게임 시장의 성장은 ‘기술력 발전’과 게임 플랫폼 ‘기기 중심’으로 이루어졌다. 초기 10년간 가정용 컴퓨터를 시작으로 이후 스마트 폰의 등장과 보급은 게임 산업 성장을 가속화시켰다. 하지만 다양한 플랫폼 기기 등장으로 최근 온라인 게임에서는 ‘플랫폼 파괴’가 시작됐다. 이는 어느 특정 기기에 국한되지 않고 다양한 플랫폼을 통해서 동계임을 연속적으로 즐길 수 있는 것으로 게임 기술력에서 새로운 국면을 맞이하게 된 것이다. 이전에 게임을 PC 게임, 스마트폰 게임, 태블릿 게임 등으로 구분했다면, 이제는 ‘온라인 게임’으로 통합되고 있으며 이 추세는 가속화될 것으로 전망된다.

본 연구에서는 온라인 게임의 태동기부터 현재까지 한국 온라인 게임 시장의 변천사를 네 단계로 구분했다. 지난 20년을 네 단계로 구분한 이유를 포함해 각 단계에서 핵심이 되는 역사적 사건을 정치적, 기술적, 문화적, 그리고 사업적인 시각에서 다각도로 살펴봤다. 온라인 게임 산업의 전개 과정과 더불어 각 단계를 비교 연구함으로써 향후 방향을 전망했다. 그리고 이를 통해 후속연구자들과 실무자들에게 하나의 선행연구로서 한국 온라인 게임 산업의 기초가 되는 정보를 제공하려 한다.

〈주제어〉 게임, 온라인, 무선인터넷, 오프라인, 컴퓨터, 스마트폰, 플랫폼

* 경희대학교 경영학과 박사수료, 강사, 제1저자.

** 경희대학교 교육대학원 교수, ss83@khu.ac.kr, 교신저자.