

Overweight (Initiate)

Initiation Report
May 2, 2017

Mirae Asset Daewoo Co., Ltd.

[Internet/Game/Advertising]

Jee-hyun Moon
+822-3774-1640
jeehyun.moon@miraeasset.com

Game

Battle for the crown

Initiate coverage on game sector at Overweight

We initiate our coverage on the game sector with an Overweight recommendation. The game industry is undergoing consolidation, spurred by the increasing scale of individual mobile titles and a wave of M&A deals. We believe rising entry barriers to game development will set the stage for a “battle for the crown,” with competition between new titles and M&As becoming concentrated among top-tier firms.

We see strong potential for a re-rating in the sector. As industry consolidation unfolds, we think the market will assign valuation premiums to leading gaming companies. We also expect multiple expansions to extend into small/mid-cap stocks as the proliferation of development studio systems and rise in M&A deals reveal their development capabilities and intellectual property.

2017: More mobile releases and increased market concentration

Global gaming companies are expected to release an increased number of new mobile titles in 2017. NCsoft, which was previously geared towards domestic PC games, has continued to roll out new mobile titles since late 2016, sending a number of them to the top of the charts. The company's next new title is expected to be *Lineage M*. In the mobile space, we are seeing a clear shift away from casual trends to those that are more sophisticated in genre (MMORPG) and larger in scale.

Looking at some of the key trends among major gaming companies, we note that larger companies are currently piling up cash, while smaller companies are focusing on new releases and entry into augmented reality (AR) and virtual reality (VR).

NCsoft has increased its cash reserves through the sale of idle property, while Netmarble Games is likely to raise cash from its IPO. Backed by an abundance of cash, we believe the two companies will turn to M&As to better compete with other major firms and bring scale to their mobile titles. More recently, DoubleU Games leaped to the number two position in the social casino game market through an acquisition. Meanwhile, mid-sized mobile game developers, including Com2uS and Gamevil, are beefing up their new releases and also developing games using third-party intellectual property.

Our top picks are NCsoft and Netmarble Games

We recommend NCsoft (036570 KS) and Netmarble Games (251270 KS) as our top picks in the sector.

We initiate our coverage on NCsoft with a Buy rating and 12-month target price of W500,000. Our investment recommendation is premised on the following points: 1) Top-line growth should accelerate on the back of the expansion of the mobile game business; 2) revenue from PC games and royalty income are likely to support profit margins; 3) following the launch of *Lineage M*, new title momentum should continue with the release of the PC online game *Lineage Eternal*. If *Lineage M* proves to be a hit, it would provide proof that the company's leadership in PC online games could transfer into the mobile space.

We initiate our coverage on Netmarble Games with a Buy rating and 12-month target price of W200,000. Our investment recommendation is based on the following points: 1) We believe the company is on track to become one of the top global mobile game companies, with record-breaking earnings likely to continue; 2) the longevity of its mobile titles and well-balanced revenue across genres and regions are characteristics that differentiate the company from other mobile game stocks and should therefore act as sources of a valuation premium; 3) following last year's release of *Lineage II: Revolution*, the company is planning to roll out 17 new titles this year. We think the company could also see additional revenue from overseas game publishing and M&As.

C O N T E N T S

I. Investment recommendation: Overweight	3
1. Initiate coverage on game sector at Overweight	3
2. Our top picks are NCsoft and Netmarble Games	4
II. Game sector analysis	6
1. Major share price determinants	6
2. Revenue model	11
3. Market trend analysis	13
4. Global game companies	17
III. Game industry outlook	20
1. Deepening bipolarization	20
2. Complete adaption to the mobile era	25
3. Increase in M&A	27
4. Risks	29
IV. Investment strategy & valuation	33
1. Investment strategy	33
2. Valuation comparison with global peers	35
NCsoft (036570 KS)	36
Netmarble Games (251270 KS)	42
Com2uS (078340 KQ)	48

I. Investment recommendation: Overweight

1. Initiate coverage on game sector at Overweight

We initiate our coverage on the game sector with an Overweight recommendation. The game industry is undergoing consolidation, spurred by the increasing scale of individual mobile titles and a wave of M&A deals. We believe rising entry barriers to game development will set the stage for a “battle for the crown,” with competition between new mobile game titles and M&As becoming concentrated among top-tier firms.

The domestic game industry can be divided into the following three growth stages:

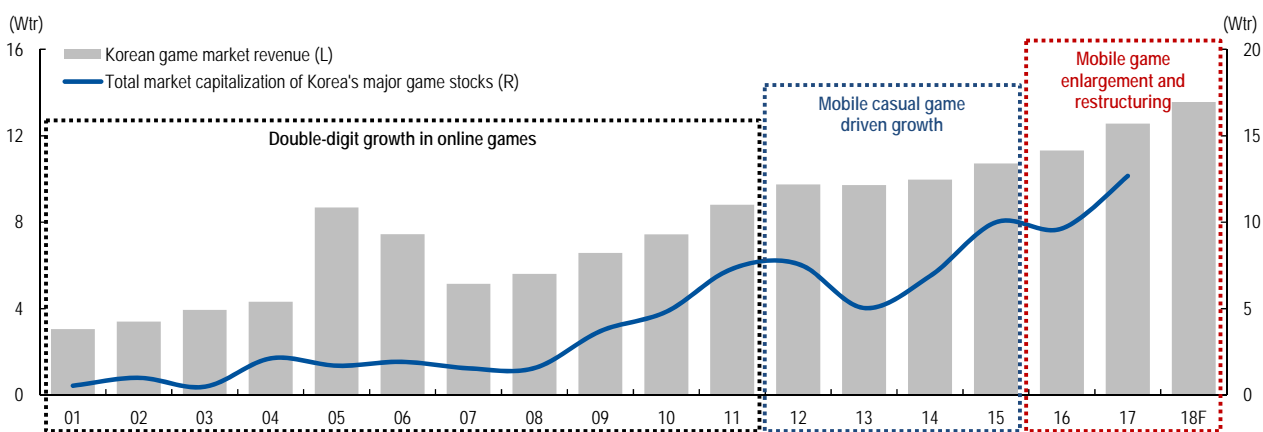
1) Rapid growth of online games in the 2000s: NCsoft, Nexon, Hangame (currently NHN Entertainment), and Neowiz Games grew, as game genres expanded to include web board, casual, RPG, and MMORPG games.

2) Mobile casual games-driven growth in 2012-15: Casual game developers, including SundayToz (*Anipang*) and Devsisters (*Cookie Run*), fared well, thanks to the proliferation of smartphones. Of note, the number of concurrent users surged on the launch of social games via Kakao Game. As such, game firms that hold only one game title were increasingly being listed on the stock market.

3) Expansion of large-scale mobile games and industry restructuring since 2016: With mobile games becoming more sophisticated in genre (MMORPG) and larger in scale, the mobile game user base has expanded on the inflow of PC-online game users. In particular, the increase in the scale of individual game titles is likely to reshape the game industry, allowing top-tier firms with formidable R&D staffs and financial resources to gain the upper hand. Furthermore, we expect to see the proliferation of development studio systems, and increases in M&A deals and overseas expansion.

We see strong potential for a re-rating in the sector. As industry consolidation unfolds, we think the market will assign valuation premiums to leading gaming companies. We also expect multiple expansions to extend into small/mid-cap stocks, as the proliferation of development studio systems and rise in M&A deals reveal their development capabilities and intellectual property.

Figure 1. Korean game sector’s market cap and revenue: Expansion of large-scale mobile games and industry restructuring



Note: Combined market cap is based on the market caps of NCsoft, Com2uS, NHN Entertainment, Webzen, DoubleU Games, and Neowiz Games, as of end-April of each year; Netmarble Games is not included, as it is not a listed firm; combined revenue includes those of PC-online, mobile, console, PC CD, arcade, and internet cafe games
 Source: KOCCA, Thomson Reuters, Mirae Asset Daewoo Research

2. Our top picks are NCsoft and Netmarble Games

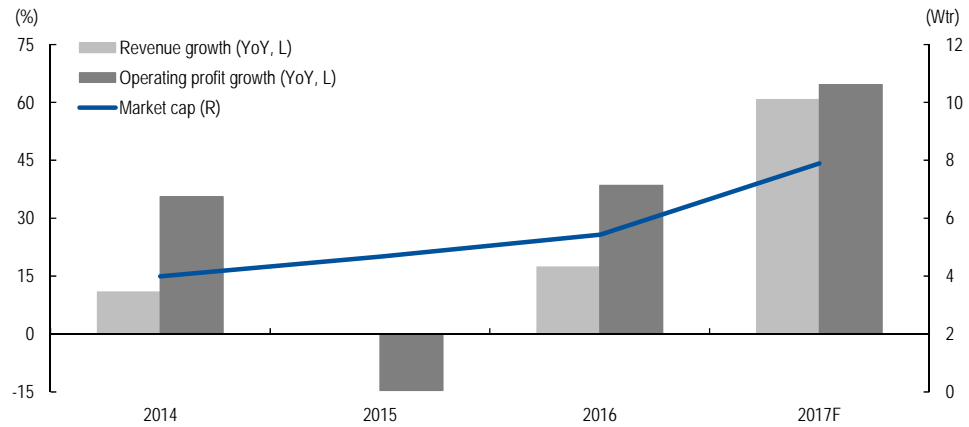
Global gaming companies are expected to release an increased number of new mobile titles in 2017. NCsoft, which was previously geared towards domestic PC games, has continued to roll out new mobile titles since late 2016, sending a number of them to the top of the charts. The company's next new title is expected to be *Lineage M*. In the mobile space, we are seeing a clear shift away from casual trends to those that are more sophisticated in genre (MMORPG) and larger in scale.

Looking at some of the key trends among major gaming companies, we note that the larger companies are currently piling up cash. NCsoft has increased its cash reserves through the sale of idle property, while Netmarble Games is likely to raise cash from its IPO. Backed by an abundance of cash, we believe the two companies will turn to M&As to better compete with other major firms and bring scale to their mobile titles.

We recommend NCsoft (036570 KS) and Netmarble Games (251270 KS) as our top picks in the sector. We initiate our coverage on NCsoft with a Buy rating and 12-month target price of W500,000. Our investment recommendation is premised on the following points: 1) Top-line growth should accelerate on the back of the expansion of the mobile game business; 2) revenue from PC games and royalty income are likely to support profit margins; 3) following the launch of *Lineage M*, new title momentum should continue with the release of the PC online game *Lineage Eternal*. If *Lineage M* proves to be a hit, it would provide proof that the company's leadership in PC online games could transfer into the mobile space.

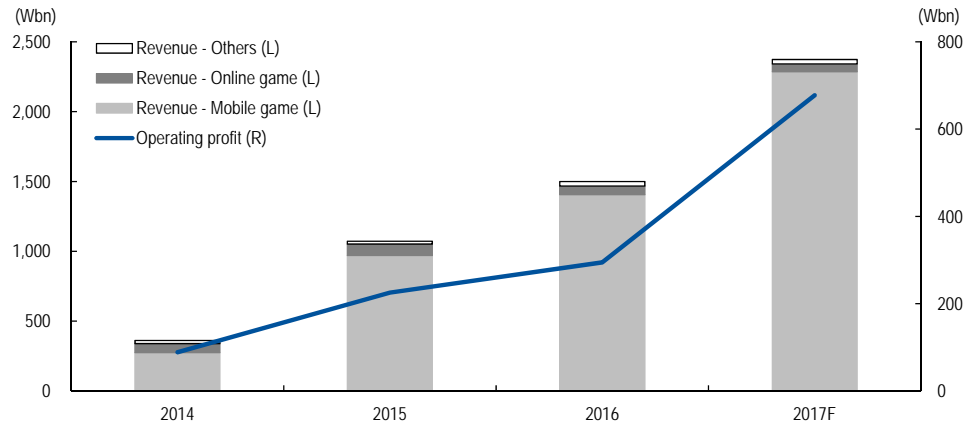
We initiate our coverage on Netmarble Games with a Buy rating and 12-month target price of W200,000. Our investment recommendation is based on the following points: 1) We believe the company is on track to become one of the top global mobile game companies, with record-breaking earnings likely to continue; 2) the longevity of its mobile titles and well-balanced revenue across genres and regions are characteristics that differentiate the company from other mobile game stocks and should therefore act as sources of a valuation premium; 3) following last year's release of *Lineage II: Revolution*, the company is planning to roll out 17 new titles this year. We think the company could also see additional revenue from overseas game publishing and M&As.

Figure 2. NCsoft's 2017F revenue and OP: Rapid growth likely on new mobile games and royalty revenue growth



Note: Market cap as of end-April in 2017 and year-end for 2014-16
 Source: NCsoft, Mirae Asset Daewoo Research

Figure 3. Netmarble Games: Record-breaking earnings likely in 2017



Source: Netmarble Games, Mirae Asset Daewoo Research

II. Game sector analysis

1. Major share price determinants

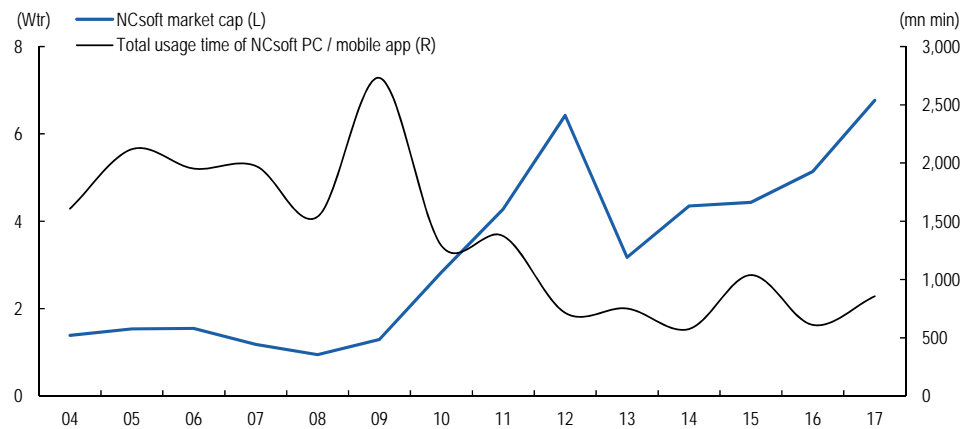
1) Quantitative variable: Usage data

We think usage data is an important variable for game stocks. Usage data is closely related to revenue, as game companies charge users directly for content usage, based on microtransactions or monthly fixed-rate schemes. Indeed, NCsoft, a major PC online game developer, and SundayToz, a leading mobile casual game developer, have displayed high correlation between their respective times spent on games and share performances.

Both monthly fixed-rate and microtransaction schemes have merits and demerits. Monthly fixed-rate plans can generate steady revenue, despite a relatively limited user base, as they charge for use itself, not the amount of time spent on games. Game companies often incorporate microtransactions, including item sale, in their monthly fixed-rate plans. For NCsoft which adopts monthly fixed-rate plans, time spent on its domestic PC games appears to have declined, while its revenue has been steady.

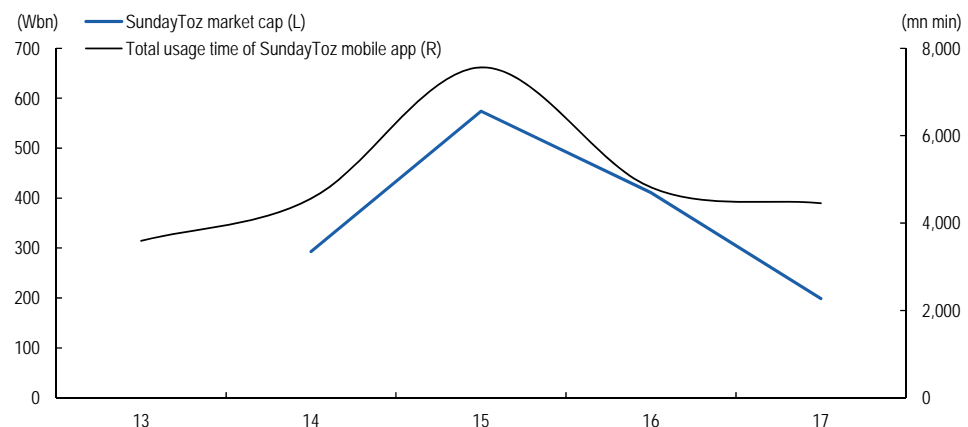
For microtransaction schemes, the user base is relatively wide, but average revenue per paying user (ARPPU) can be lower, as users pay only for game items. As such, revenue can be weak, despite massive usage data. As most mobile games are charged for based on microtransactions, their revenues are not necessary in line with usage data, including game downloads in mobile app markets.

Figure 4. NCsoft: Time spent on games and market cap



Source: KoreanClick, Thomson Reuters, Mirae Asset Daewoo Research

Figure 5. SundayToz: Time spent on games and market cap



Source: KoreanClick, Thomson Reuters, Mirae Asset Daewoo Research

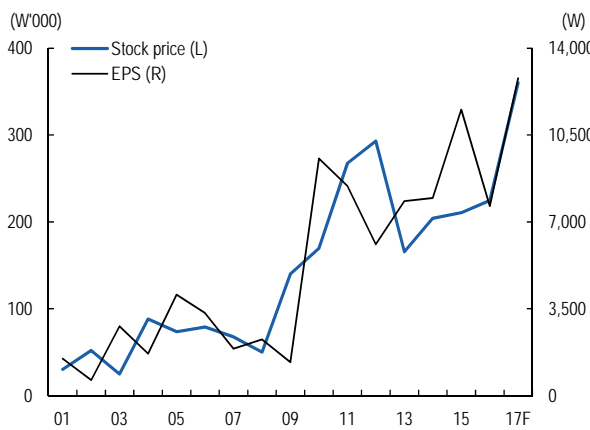
2) Qualitative variable: Earnings per shares (EPS)

Qualitative variables, including EPS, are important to all companies, including game companies. The shares of major game companies, including NCsoft (Korea), Nintendo (Japan), Activision Blizzard (US), and NetEase (China), have moved mostly in line with their respective EPS.

However, there were times when their shares moved out of sync with their EPS (in terms of growth or direction), as expectations for new game launches were priced in, or massive marketing spending was executed before game launch. In addition, in the 2010s, when the mobile game market expanded markedly, investors turned attention away from conventional console and PC online game companies, leading to declines in their valuation multiples.

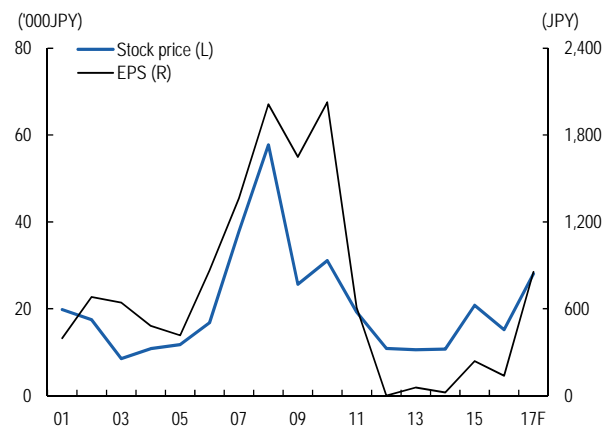
Ideally, steady earnings are generated from existing games, while expectations for earnings improvement reflect the addition of new games to the pipeline. For example, NCsoft, which generates steady royalty revenue from the intellectual property of its long-lasting PC-online games, is likely to deliver earnings growth via new mobile game launches.

Figure 6. NCsoft's share performance and EPS



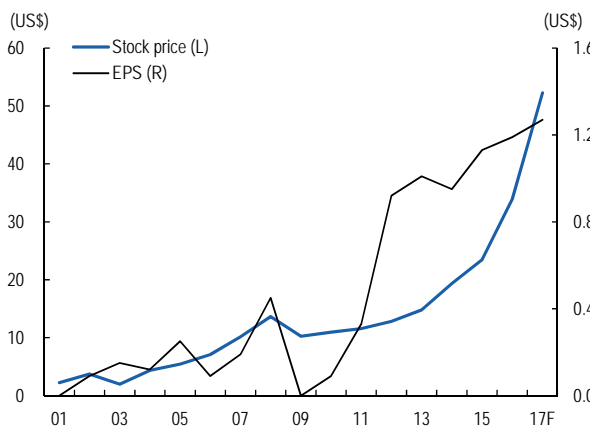
Note: As of end-April
Source: Thomson Reuters, Mirae Asset Daewoo Research

Figure 7. Nintendo's share performance and EPS



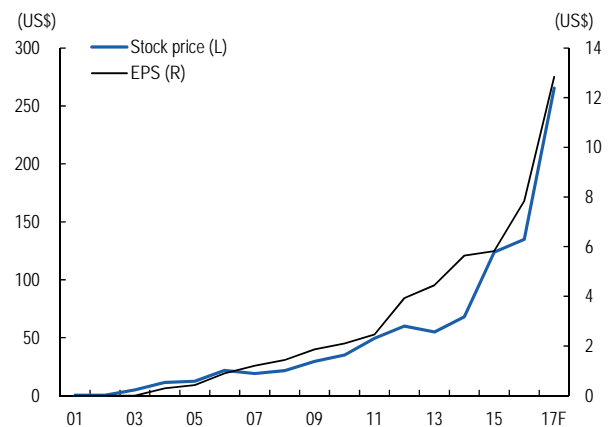
Note: As of end-April
Source: Thomson Reuters, Mirae Asset Daewoo Research

Figure 8. Activision Blizzard's share performance and EPS



Note: As of end-April
Source: Thomson Reuters, Mirae Asset Daewoo Research

Figure 9. NetEase's share performance and EPS



Note: Based on the US dollar due to listing on the NASDAQ; as of end-April
Source: Thomson Reuters, Mirae Asset Daewoo Research

3) Expectations for new titles

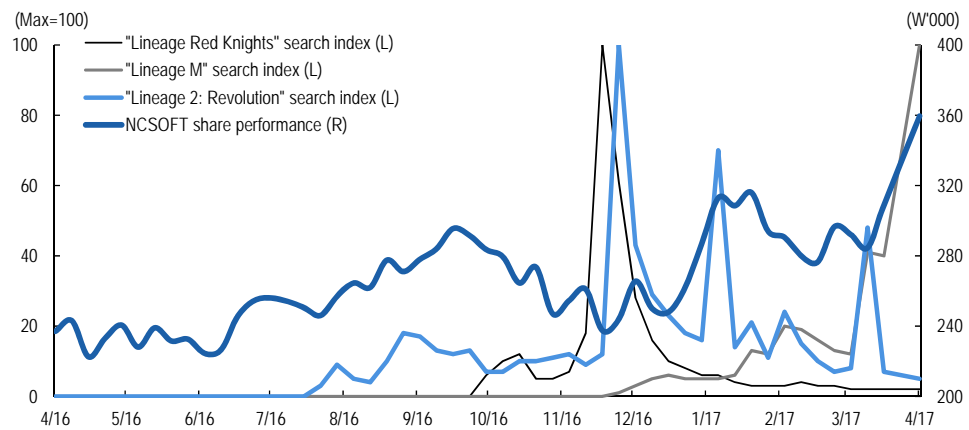
Expectations for new titles serve as the strongest momentum for game plays, as new games should provide new sources of revenue for game companies by attracting new subscribers. The ideal scenario would see the addition of new game revenue with no cannibalizing of existing game revenue. For the scenario to actually materialize, game companies would need to diversify genres and markets and strategically set user targets.

In the past year, NCsoft's shares have enjoyed a boost from the releases of new mobile games based on the intellectual properties of *Lineage*, including *Lineage Red Knights* (developed in-house) and *Lineage II: Revolution* (developed by Netmarble Games, and thus generate royalty revenue for NCsoft) or expected launch of in-house developed *Lineage M*. Of note, mobile game publishers carry out various pre-launch marketing events online, including beta testing and pre-launch sign-ups.

Over the past year, Nintendo has also enjoyed tailwinds from new mobile titles based on the intellectual properties of existing console games, including *Pokémon GO* and *Super Mario Run*, and a new handheld game console, Nintendo Switch.

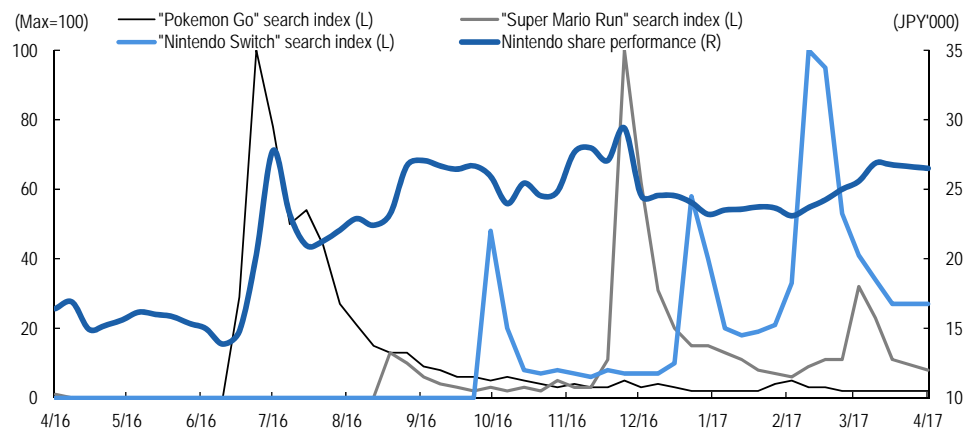
As more new titles are awaiting release this year, compared with the previous year, we recommend trading strategies based on new game expectations.

Figure 10. NCsoft's share performance and search indices for related games



Note: *Lineage Red Knights* and *Lineage M* developed by NCsoft; *Lineage II: Revolution* developed by Netmarble Games, with NCsoft receiving royalties; based on search data at NAVER
 Source: NAVER Data Lab, Thomson Reuters, Mirae Asset Daewoo Research

Figure 11. Nintendo's share performance and search indices for related games



Note: Nintendo Switch and Super Mario Run developed by Nintendo; Pokémon GO developed by Niantic, with Nintendo receiving royalties; based on search data at Google
 Source: Google Trends, Thomson Reuters, Mirae Asset Daewoo Research

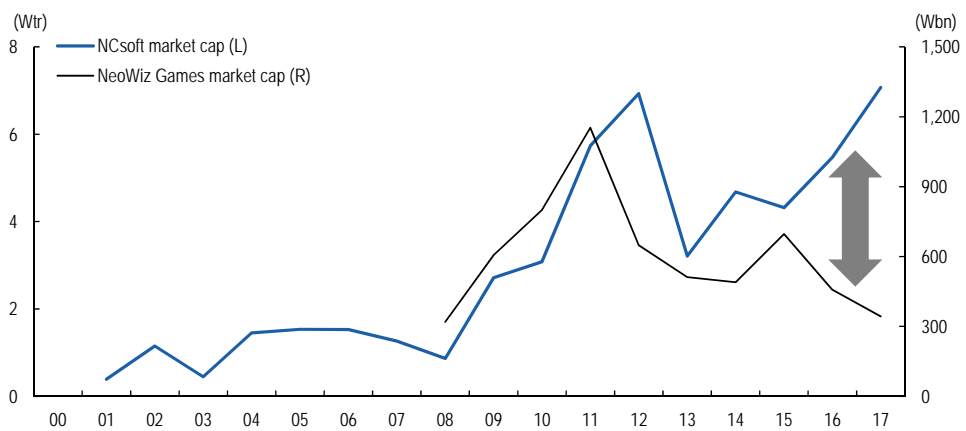
4) Shift in trend: Changes in genres

Shifts in market trends also affect game shares. The major developers of market-leading genres enjoy earnings growth and valuation premiums.

In the online PC game segment, the leading genres have shifted from casual and board games to RPGs and MMORPGs. As a result, the share performances of Neowiz Games, which focuses on online board and casual games (e.g., first-person shooter (FPS) games), and NCsoft, which specializes in MMORPGs, have increasingly diverged since 2015.

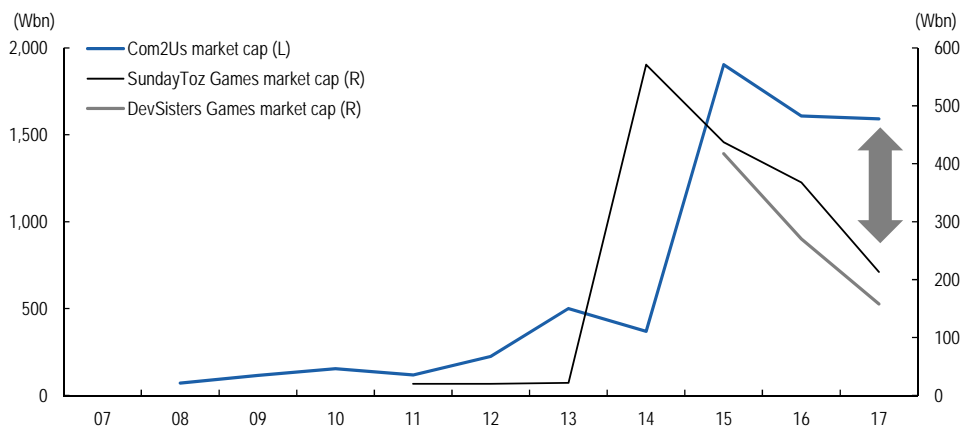
In the mobile space, the growth drivers have also shifted from casual to more sophisticated games like RPGs. Since 2016, SundayToz and Devsisters, major mobile casual game developers, and Com2uS, which has successfully transitioned from a casual game developer in the feature phone era to an RPG developer, have also seen their shares diverge.

Figure 12. Drivers for online PC games shifted from casual/board to MMORPGs, leading to divergence of Neowiz and NCsoft shares



Note: Based on market cap on April 10th each year
 Source: Thomson Reuters, Mirae Asset Daewoo Research

Figure 13. Drivers for mobile games shifted from casual to RPGs, leading to divergence of SundayToz/Devsisters and Com2uS shares



Note: Based on market cap on April 10th each year
 Source: Thomson Reuters, Mirae Asset Daewoo Research

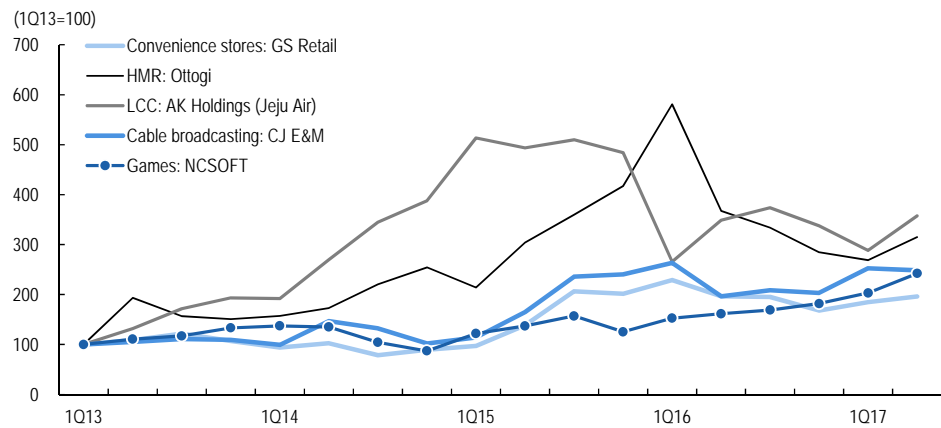
5) Changes in consumption patterns

The recent consumption trend is characterized by a structural increase in single-person households. The percentage of single-person households is projected to increase from 6.7% in 1985 to 12.9% in 1995, 20.4% in 2005, and 27.2% in 2015. The percentage is anticipated to rise further to 28.5% by 2020.

In the stock market, stocks related to low-cost carriers, home meal replacement (HMR), cable TVs, and convenience stores have been considered major beneficiaries of the uptrend in single-person households. In the entertainment sector, LOEN Entertainment, a music streaming service provider, and CJ E&M, a cable channel operator, have displayed strong share performances, as they provide content that can be consumed individually.

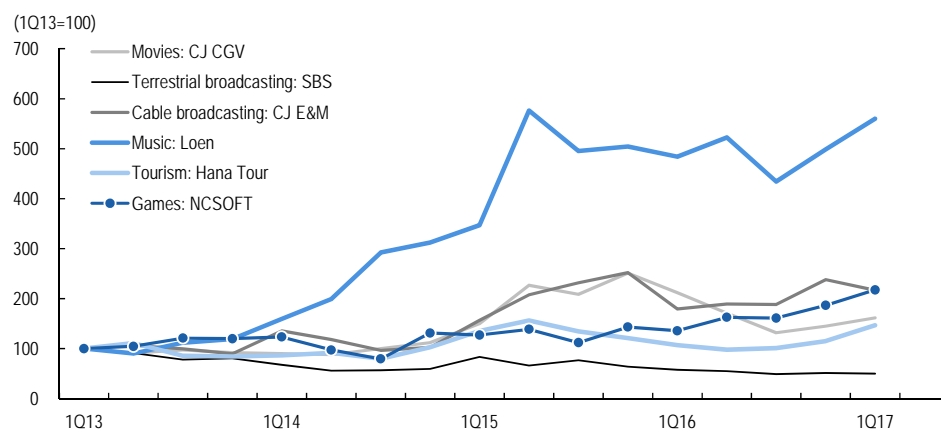
Going forward, games will likely emerge as the leading form of entertainment content, as individuals can enjoy games alone and at relatively little cost. On a positive note, the genres of mobile games are becoming increasingly diversified, with their quality improving to the levels of online PC or console games.

Figure 14. Market cap trend of stocks related to rise of single-person households



Note: Market cap as of early-1Q13=100
Source: Thomson Reuters, Mirae Asset Daewoo Research

Figure 15. Market cap trend of entertainment stocks related to rise of single-person households



Note: Market cap as of early-1Q13=100
Source: Thomson Reuters, Mirae Asset Daewoo Research

2. Revenue model

1) Subscription- and sales-based models the most widely used; microtransactions recently increasing

Game business models are largely divided into intermediary-service-, subscription-, sale-, manufacturing-, advertising-, and information-mediation-based models, of which subscription- and sale-based models are the most widely adopted. NCsoft's PC-online games are based on a subscription-based model. Most PC-online and mobile games adopt sales-based and microtransaction models.

Table 1. Online games' pricing models

Revenue model	Description	Notes
Intermediary	Charge commissions for intermediary services and fees for using the space on an online game site	
Subscription	Generate subscription fees on a service for a certain period	NCsoft's <i>Lineage</i>
Sale	Sells virtual goods, such as game items and avatar, and actual goods related to game services	Netmarble Games' <i>Lineage 2: Revolution</i>
Manufacturing	Sell game platform licenses	<i>Happy City</i> jointly developed by JCE and KT&G
Advertising	Generate ad revenue	Nexon's <i>Cart Rider</i> , Nintendo's <i>Pokémon Go</i>
Information-mediation	Generate by providing information based on avatar behavior analysis	

Source: Game Dictionary (NCsoft), Mirae Asset Daewoo Research

Table 2. Types of subscription-based models by game distribution

Distribution	Description	Notes
Package	Sold in CD packages, bundled with magazines or software	Preferred in North America and Europe
Complete fee-based model	Fixed rate plan: Pay for a certain period of usage in advance For Internet cafes, price discounts are offered depending on the number of IP addresses	NCsoft's PC-online games
	Usage-based charge: Pay for the time to be spent in advance For Internet cafes, owners pay to game companies based on the amount of time users spent	
Microtransaction	Users purchase some game items on free-of-charge games Payment can be made either in cash or game money	Preferred in Asia; the most profitable

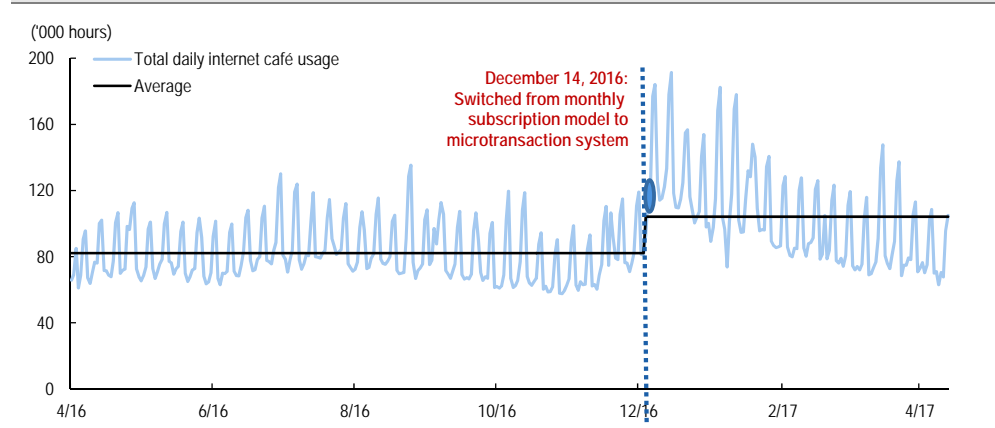
Source: Will Luton, Game Dictionary (NCsoft), Mirae Asset Daewoo Research

Table 3. Compensation for users' payment

Compensation	Description
Global expansion	Expand the areas in which players can explore
Time saving	Save players' time and efforts
Improved attack skill	Improve players' capability to attack other players
Decoration	Allow players to decorate their characters

Source: Will Luton, Game Dictionary (NCsoft), Mirae Asset Daewoo Research

Figure 16. NCsoft's *Blade & Soul*. Increase in time spent since switch to microtransactions in December, 2016



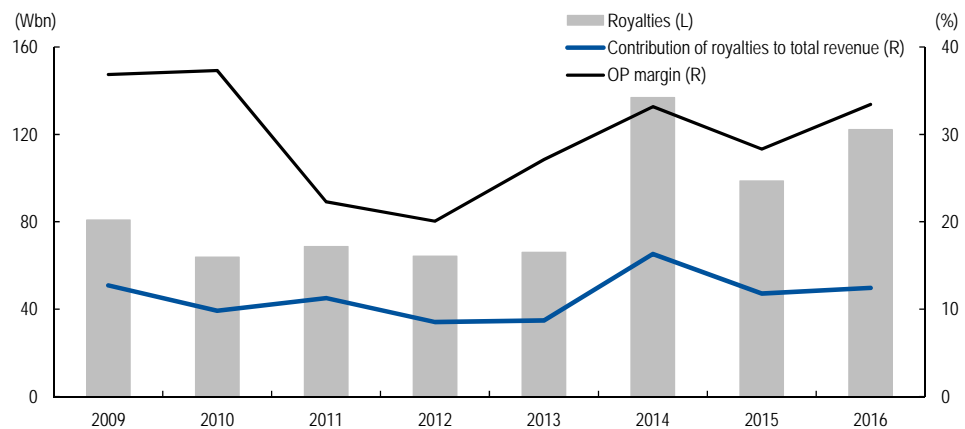
Source: Gametrics, Mirae Asset Daewoo Research

2) Royalty revenue based on intellectual property

Royalty revenue based on intellectual property is emerging as one of the major revenue contributors for established game companies. Nintendo, NCsoft, and Webzen are enjoying royalty revenue from their respective intellectual property – *Pokémon GO* for Nintendo, *Lineage*, *Lineage II*, and *Blade & Soul* for NCsoft, and *Mu Online* for Webzen.

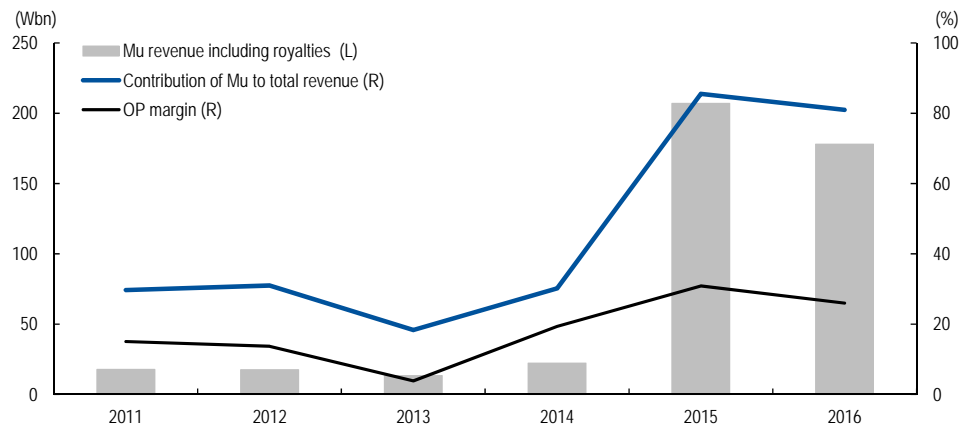
As royalties are a cost-free revenue source, royalty revenue should positively affect operating profit. Indeed, at NCsoft and Webzen, royalty revenue and OP margin have generally moved in sync. Going forward, demand for well-known intellectual property - which could give the upper hand in advertising and forays into new genres - should grow in line with intensifying competition in the mobile game market.

Figure 17. NCsoft's royalty revenue and OP margin trends



Source: NCsoft, Mirae Asset Daewoo Research

Figure 18. Webzen's royalty revenue and OP margin trends



Note: Revenue from *Mu Online* includes the games developed by third-party developers based on *Mu Online* intellectual property, including *Mu Miracle* and *Mu Origin*

Source: Webzen, Mirae Asset Daewoo Research

3. Market trend analysis

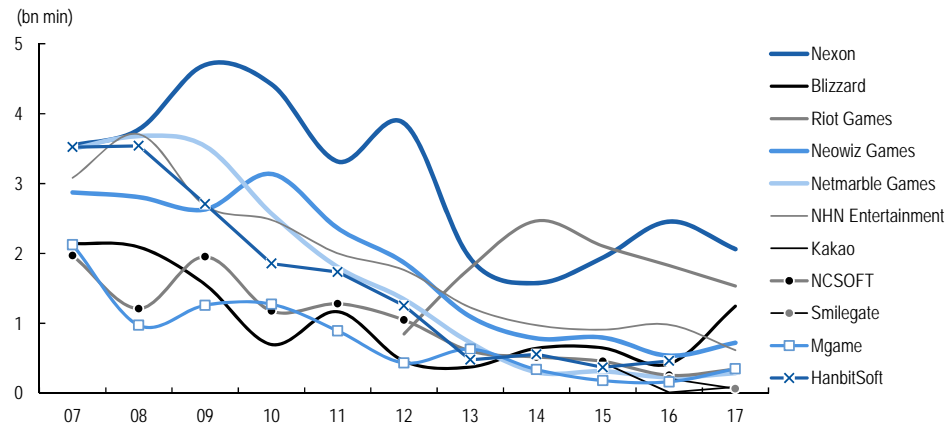
1) Based on time spent

The amount of time spent playing online PC games has largely trended downwards over the past ten years. Recently, Nexon (which specializes in casual games), Blizzard (which is further expanding its user base on the back of the popularity of an FPS game, *Overwatch*, following the huge success of *StarCraft*), and Riot Games (which developed *League of Legends*), are faring relatively well. It is worth noting that the leading market players' major online PC games are mostly played at internet cafes.

In addition, online board game developers, namely Neowiz Games and Mgame, are seeing a slight increase in time spent in playing their games. NCsoft's shift from monthly fixed-rate to microtransaction schemes for *Blade & Soul* in mid-December also gave a slight boost to the time spent for its online PC games.

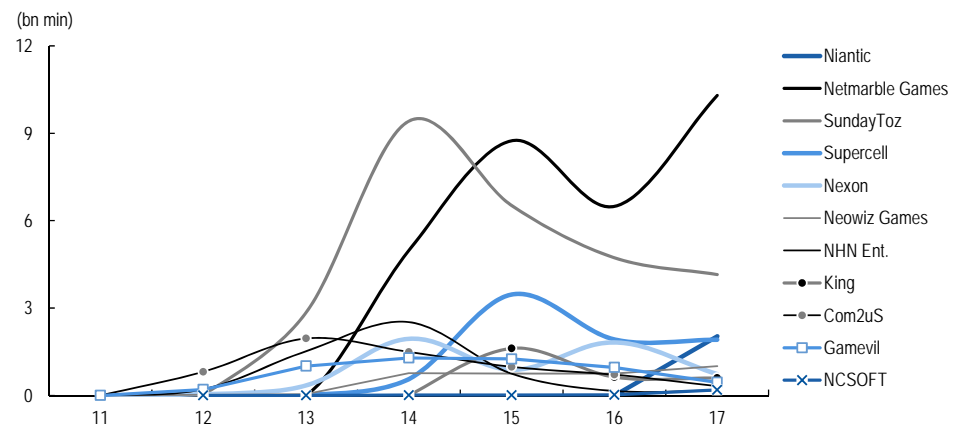
In the mobile game segment, growth in time spent has concentrated on a handful of companies since 2014, including SundayToz (*Anipang*) in 2014, Netmarble Games (*Everybody's Marble*, *Seven Knights*, and *Raven*) and Supercell (*Clash of Clans*) in 2015-2016, and Netmarble Games (*Lineage II: Revolution*) in 2017.

Figure 19. Trend of time spent playing online PC games in Korea



Note: Based on data of total time spent provided by each company in March
 Source: KoreanClick, Mirae Asset Daewoo Research

Figure 20. Trend of time spent playing mobile games in Korea



Note: Based on data of total time spent provided by each company in March
 Source: KoreanClick, Mirae Asset Daewoo Research

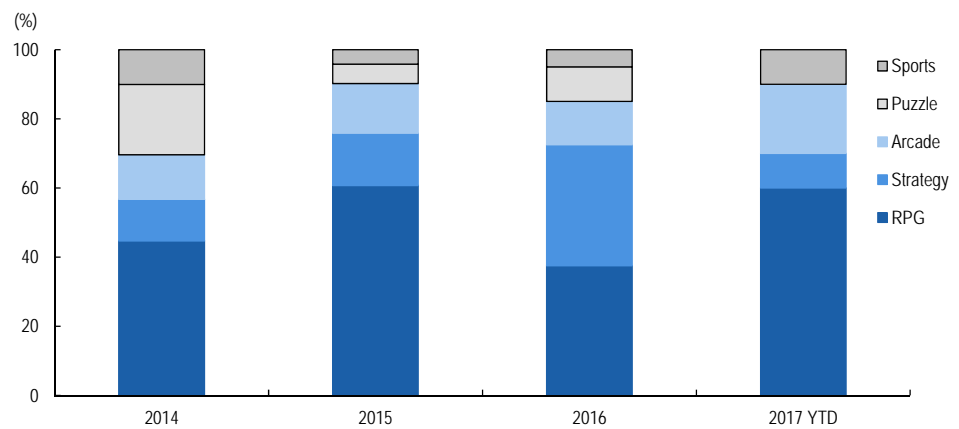
2) Gaming market breakdown by genre

The mobile games market is concentrated on RPGs, which are highly competitive, yet lucrative at the same time, owing to their relatively high ARPPU.

Since 2014, the RPG genre has dominated the top 10 lists of highest grossing mobile games. Strategy games grabbed as big a share as RPGs in 2016, but RPGs have reclaimed the lost ground since early 2017 with the release of *Lineage* IP-based MMORPGs, such as *Lineage II: Revolution* and *Lineage Red Knights*, at end-2016.

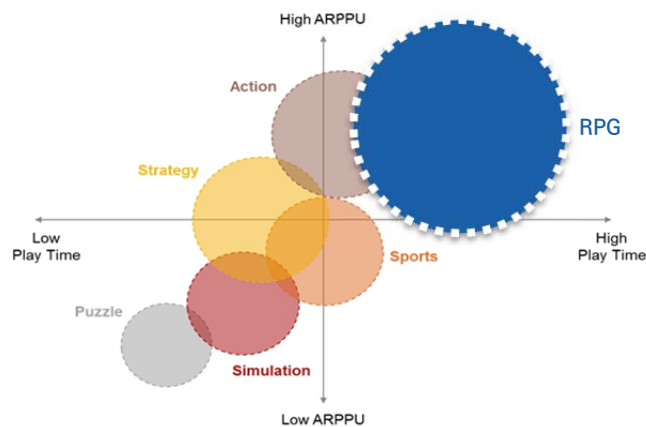
In terms of playing time and ARPPU, RPGs rank first, followed by action and strategy games, sports games, simulation games, and puzzle games. Recently, the mobile games market has seen crossovers between genres, such as action RPGs and strategy RPGs. The RPG genre is shifting toward high-end MMORPGs, which can support large numbers of players simultaneously. MMORPGs are now present in the mobile game lineups of major Korea companies such as NCsoft, Netmarble Games, Com2us, and Gamevil.

Figure 21. Korea's top 10 grossing mobile games by genre: RPGs enjoy dominant presence



Note: A role-playing game (RPG) is one in which players take on the role of a character and follow it through combat and quests
 Source: Korea Game White Paper, Google Play, App Annie, Mirae Asset Daewoo Research

Figure 22. RPGs rank first in terms of playing time and ARPPU



Note: ARPPU = Average Revenue Per Paying User
 Source: Netmarble Games, Mirae Asset Daewoo Research

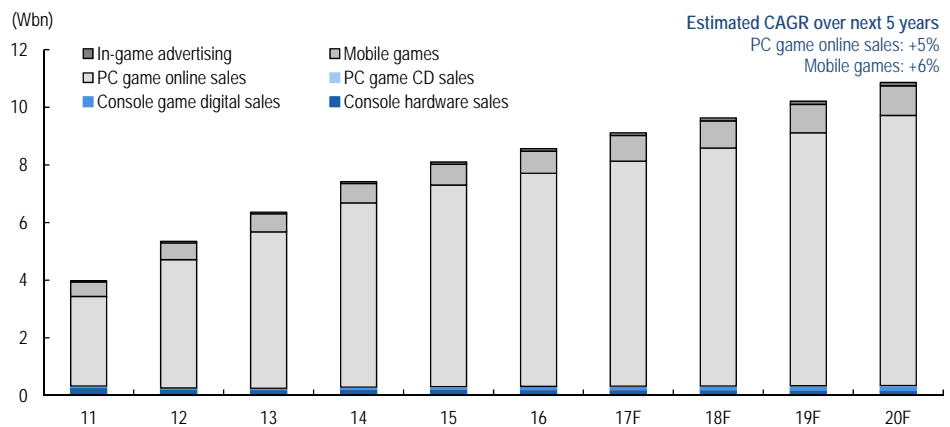
3) Gaming market breakdown by platform

The gaming market is diversified across console (including handheld devices), PC, and mobile (mostly smartphones) platforms.

In Korea, PC online games account for the lion's share of gaming market revenue, due to the development of "PC bang" (internet café) networks and penetration of subscription-based services. Meanwhile, mobile game revenues have been expanding. We project average annual growth rates of 5% and 6%, respectively, over the next five years for revenue from PC online games and mobile games. Although mobile games are now the most active segment, we think PC online game companies and new PC titles (e.g., NCsoft's soon-to-be released *Lineage Eternal*) deserve continued attention, given the steady and sizable revenue contribution of PC online games.

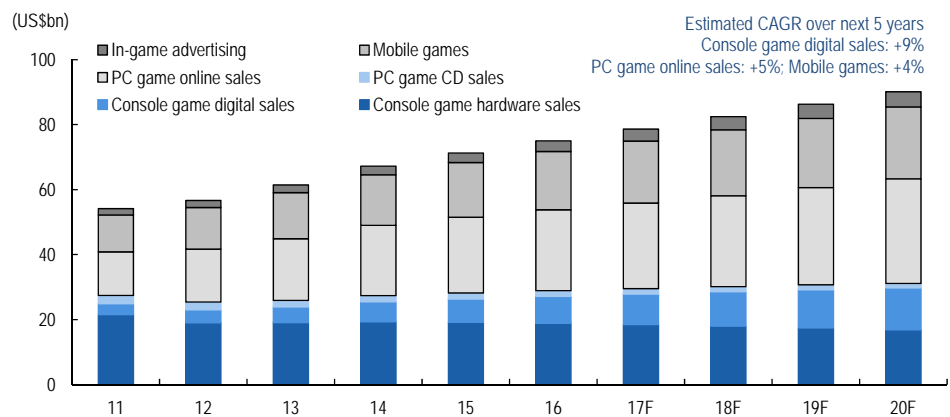
Globally, gaming market revenue is evenly distributed across console, PC, and mobile platforms. Notably, digital revenue is on the rise. Apart from hardware or packaged sales, digital console revenue has been increasing on the back of online matches and content downloads. The global mobile game segment is much larger, in relative and absolute terms, than Korea's mobile game segment. As such, we think mobile game companies should look beyond Korea in the development and distribution stages to increase their chances of success.

Figure 23. Korean gaming market revenue outlook by platform: PC online game revenue dominant, while mobile game revenue growing



Note: Excluding exports and direct sales in overseas markets by Korean companies
 Source: PwC, Mirae Asset Daewoo Research

Figure 24. Global gaming market revenue outlook by platform: Strong outlook for digital revenue growth



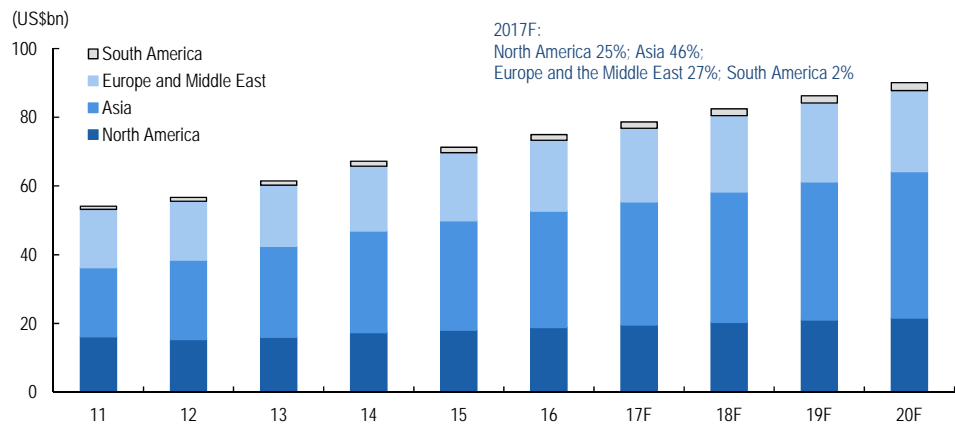
Source: PwC, Mirae Asset Daewoo Research

4) Gaming market by region

By region, the global gaming market (based on all platforms, i.e., console, PC, and mobile) in 2017 breaks down into Asia (46%); Europe and the Middle East (27%); North America (25%); and South America (2%). Excluding console (to reflect Korean companies' focus on PC and mobile games) increases the share of Asia to 65%, followed by Europe and the Middle East (19%), North America (14%), and Latin America (2%).

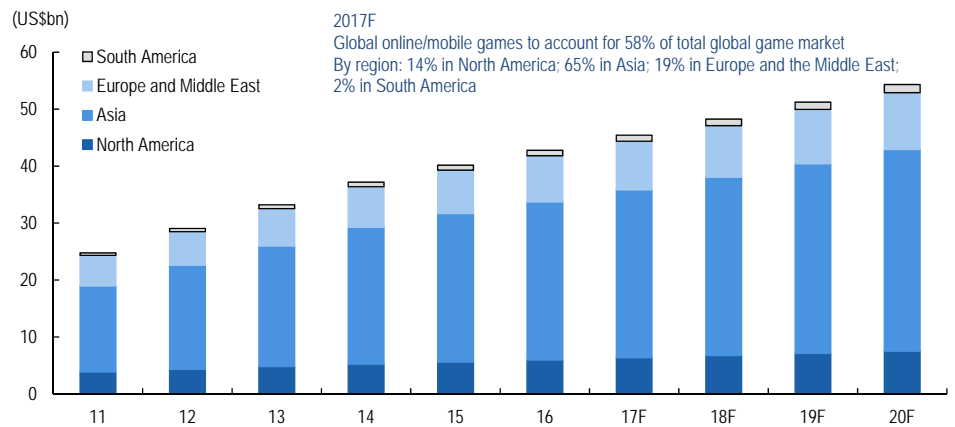
For major Korean companies, we expect their earnings and share performances to hinge on publishing strategies and release schedules in China, which accounts for a significant share of the global PC online and mobile platform markets. The Japanese market, although smaller than China, also merits attention, as it offers relatively high ARPPU and is seeing gradual expansion of the mobile gaming segment.

Figure 25. Global gaming market trend and outlook by region



Note: Based on console games, PC games, mobile games and in-game ads
Source: PwC, Mirae Asset Daewoo Research

Figure 26. Outlook for global PC online and mobile game segments, which are the focus of Korean gaming companies



Note: Based on PC online games and mobile games
Source: PwC, Mirae Asset Daewoo Research

4. Global game companies

1) Activision Blizzard

Activision Blizzard is a US-based game company with a market cap of W45tr. In 2017, we expect the company to generate revenue of W7tr and operating profit of W2tr. In Korea, the company is well known for its PC-based online games, such as *StarCraft* and *Overwatch*. In 2015, the company expanded into mobile games with the acquisition of King Digital Entertainment.

Activision, Blizzard, and King contribute to total revenue in roughly equal amounts. Activision focuses on the *Call of Duty* console game series, Blizzard on PC online games, such as *StarCraft*, *Warcraft*, and *Diablo*, and King on casual mobile games, such as *Candy Crush Saga*.

In all, Activision Blizzard stands out for its long-running game franchises, offered on a variety of platforms, including console, PC online, and mobile. For PC online games, in particular, the company is expanding into e-sports games to create ancillary markets, and is working on increasing the longevity of its games. Activision Blizzard's main strategy is to develop new content for its game franchises, increase gamer immersion and consumption, and reinvest proceeds secured in the process. In short, the company focuses on increasing the lifespan and ecosystem of its major games.

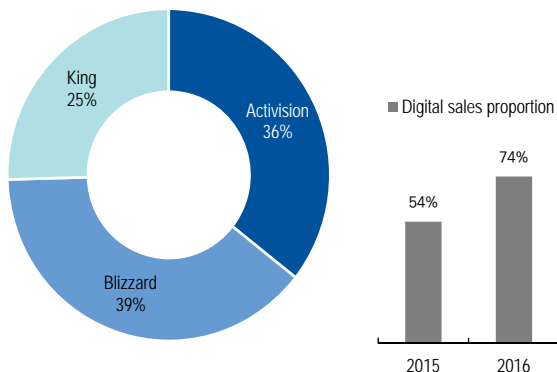
For the summer of 2017, Activision Blizzard plans on releasing *StarCraft: Remastered*. Before the release of the new version, the company has begun to offer the original *StarCraft* for free and has released the 1.18 patch for the game. In seeking to attract fans of the original *StarCraft*, we believe the company is following a similar strategy to that of NCsoft. NCsoft's *Lineage M* is an attempt to bring the original PC-based *Lineage* game to the mobile platform. In addition, NCsoft recently discontinued monthly fees for the PC version of *Blade & Soul* ahead of the release of a mobile version of the game.

Figure 27. Activision Blizzard's business strategy: Develop new content for game franchises → increase gamer immersion and consumption → reinvest proceeds



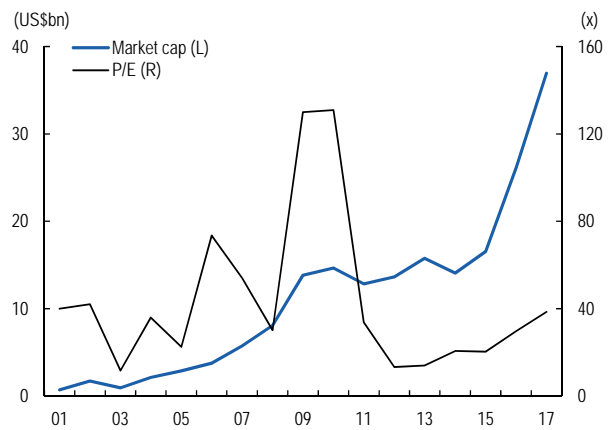
Source: Activision Blizzard, Mirae Asset Daewoo Research

Figure 28. Revenue breakdown (2016)



Note: King (acquired in early 2016) is a mobile game company well known for *Candy Crush Saga*

Figure 29. Market cap and P/E trend: P/E currently on uptrend



Note: EPS for years in the red (2001, 2009) substituted with levels similar to the EPS from the following year

2) NetEase

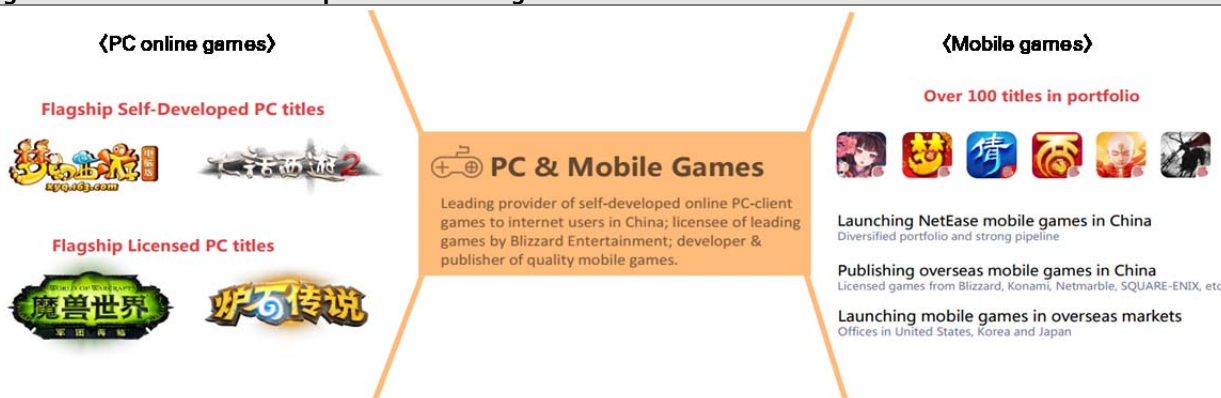
NetEase is a game company based in China with a market cap of W40tr. In 2017, we expect it to generate revenue of W8tr and operating profit of W2tr. The company has successfully transitioned from a PC online game distributor to a mobile game developer. For PC online games, the company is shifting its focus from publishing games of other developers to developing proprietary games in-house. Its mobile game business has grown to become the company's biggest segment, now holding more than 100 game titles in total.

In 2016, revenue contributions were as follows: mobile games 45%, PC games 28%, advertisements 6%, and email/e-commerce 21%. The PC game division, which focuses on publishing games such as Blizzard's *StarCraft*, enjoyed boosts in 2016 from the release of *Overwatch* and the *World of Warcraft* expansion pack.

For mobile games, NetEase focuses mainly on the distribution of proprietary games, but also publishes overseas games in China and in-house developed games in overseas markets. Roughly 60% of mobile game revenue comes from iOS games developed for smartphones with solid specifications. In 2016, NetEase published Netmarble Games' *Raven* in the Chinese market. Upcoming releases include the hardcore MMORPG *Land of Glory* and another MMORPG slated for release in 2H17. For the summer of 2017, the company plans on publishing *Minecraft*.

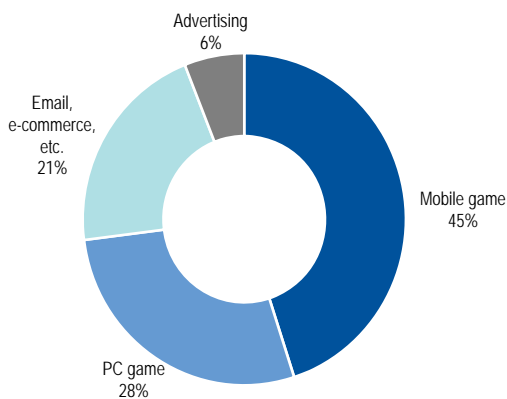
NetEase's business model transition offers implications for domestic game companies, such as Netmarble Games and NCsoft. In the past, as a PC online game company, Netmarble Games focused on publishing outsourced games, instead of in-house developed proprietary games. With the advent of the smartphone era, however, the company grew into a major mobile developer. Meanwhile, NCsoft is taking a similar path, by expanding from PC online games into mobile games.

Figure 30. NetEase's business strategy: In addition to the publishing of Blizzard's PC online games, securing growth through rising revenue from in-house developed online/mobile games



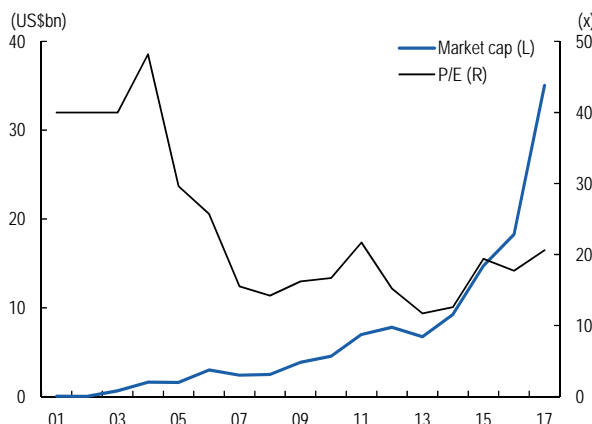
Source: NetEase, Mirae Asset Daewoo Research

Figure 31. Revenue breakdown (2016)



Source: NetEase, Mirae Asset Daewoo Research

Figure 32. Market cap and P/E trend: P/E currently on uptrend



Note: EPS for years in the red (2001-2003) substituted with levels similar to the EPS from the following year (2004)

Source: Thomson Reuters, Mirae Asset Daewoo Research

3) Nintendo

Nintendo is a console game company based in Japan with a market cap of W40tr. In 2017, we expect it to generate revenue of W7.8tr and operating profit of W1tr. Recently, the company has been reporting growth in software revenue and has been releasing mobile games based on key IP assets. The company's main strategy is to expand the user base for its key IP assets.

In 2016, revenue contributions were as follows: console and handheld console hardware 36%, relevant software 49%, and other 15%.

For console games, the company is focused on enhancing the ecosystem for its proprietary platforms, such as Nintendo Switch and 3DS, through the supply of nearly 100 games from around 70 developers. The longevity of its platforms depends on maintaining and increasing users through the steady supply of content.

For newer platforms, such as mobile, Nintendo works through external developers to develop games based on its IP assets (such as *Pokémon Go*), or develops its own games based on IP assets (such as *Super Mario Run*). The company also focuses on generating synergy with its existing console game business.

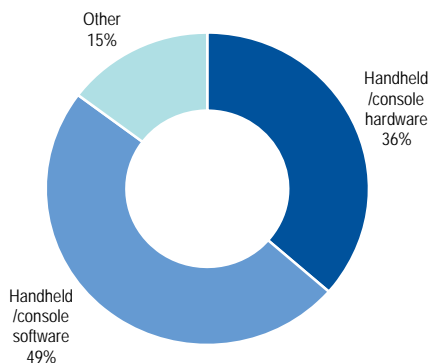
Super Mario Run, despite the popularity of the IP, ranked in the 40s on game revenue in Japan, due to issues in pricing. However, *Fire Emblem Heroes* has been emerging as a major mobile game, ranking in the top 10 in game revenue in Japan. In all, we think that the company has a similar mobile game strategy as NCsoft.

Figure 33. Nintendo's business strategy: Develop mobile games using proprietary IP and allow outside developers to create software for console games to expand ecosystem for proprietary hardware system



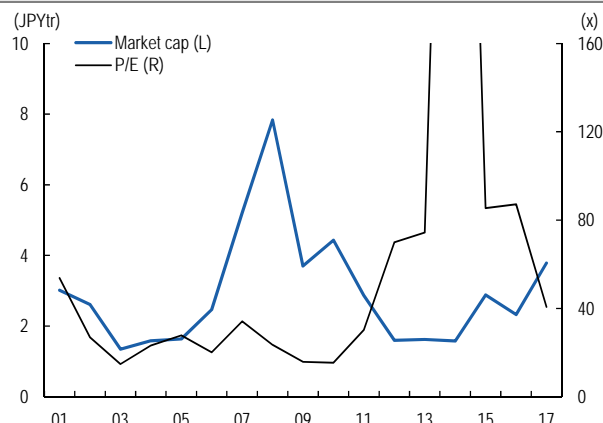
Source: Nintendo, Mirae Asset Daewoo Research

Figure 34. Revenue breakdown (2016)



Note: Based on Nintendo's fiscal year
Source: Nintendo, Mirae Asset Daewoo Research

Figure 35. Market cap and P/E trend: P/E currently on a downtrend



Note: EPS for the year in the red (2012) substituted with levels similar to the EPS from the following year
Source: Thomson Reuters, Mirae Asset Daewoo Research

III. Game industry outlook

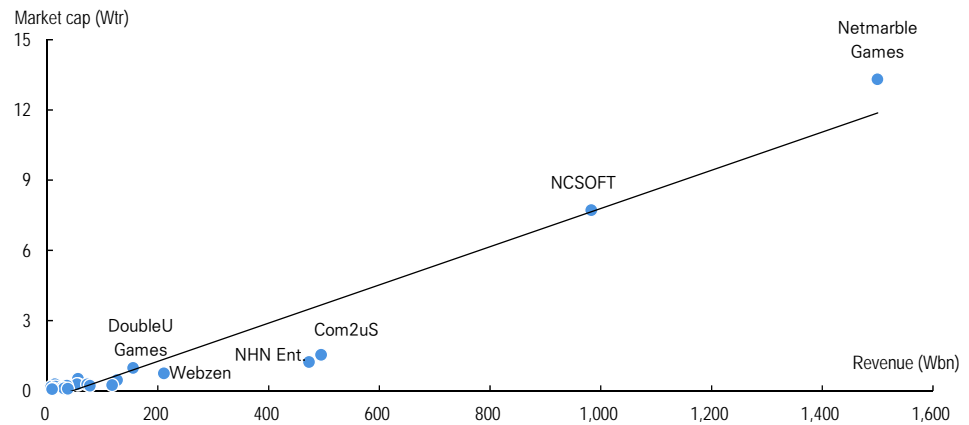
1. Deepening bipolarization

1) Large companies vs. SMEs

The game industry is seeing bipolarization deepening, particularly between large companies and SMEs. Just like PC-online games, the mobile game industry is also undergoing consolidation, spurred by the increasing scale of individual mobile titles and a wave of M&A deals. We believe rising entry barriers to game development will set the stage for a “battle for the crown,” with new title competition and M&As becoming concentrated among top-tier firms.

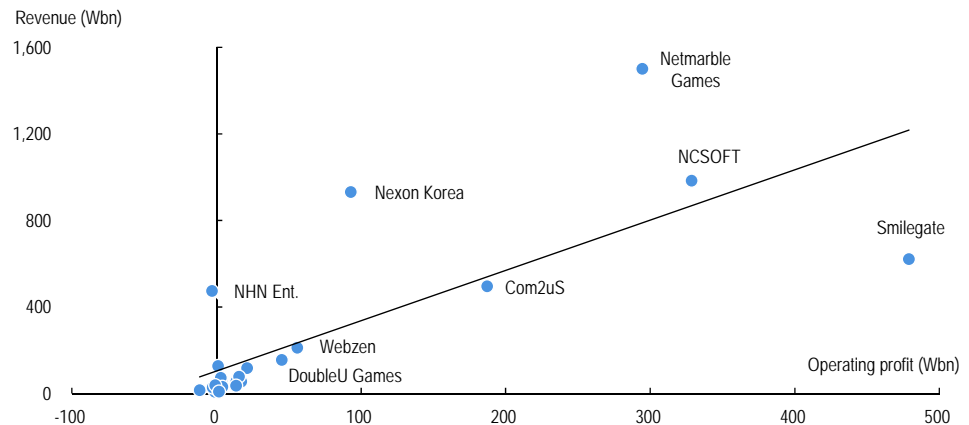
When Netmarble Games (currently in the process of listing) goes public, the domestic game industry will have two large-cap game companies - Netmarble Games, with an estimated market cap of W13tr based on its IPO price), and NCsoft, with a market cap of around W7.8tr. The market caps of Com2uS, DoubleU Games, and NHN Entertainment stand at around W1tr. Among unlisted firms, Smilegate deserves attention, due to its solid earnings and profitability.

Figure 36. Market cap-revenue distribution of major domestic game companies



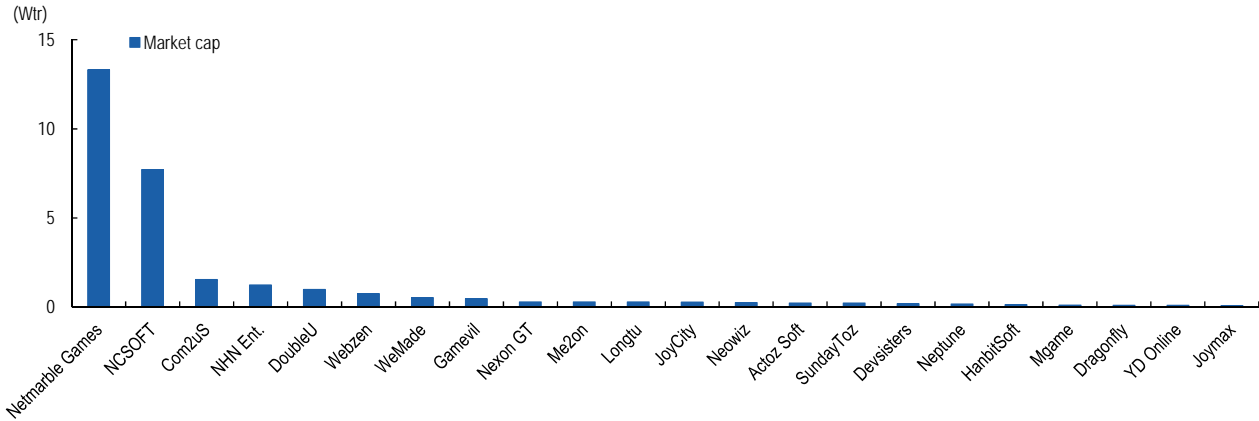
Note: Revenue as of end-2016; Market cap as of April 24th, 2017; consolidated revenue for Netmarble Games, NCsoft, and Com2uS; game revenue for NHN Entertainment; Netmarble Games' market cap based on upper bound of its IPO price range
Source: Company data, Mirae Asset Daewoo Research

Figure 37. Revenue-operating profit distribution of major domestic game companies



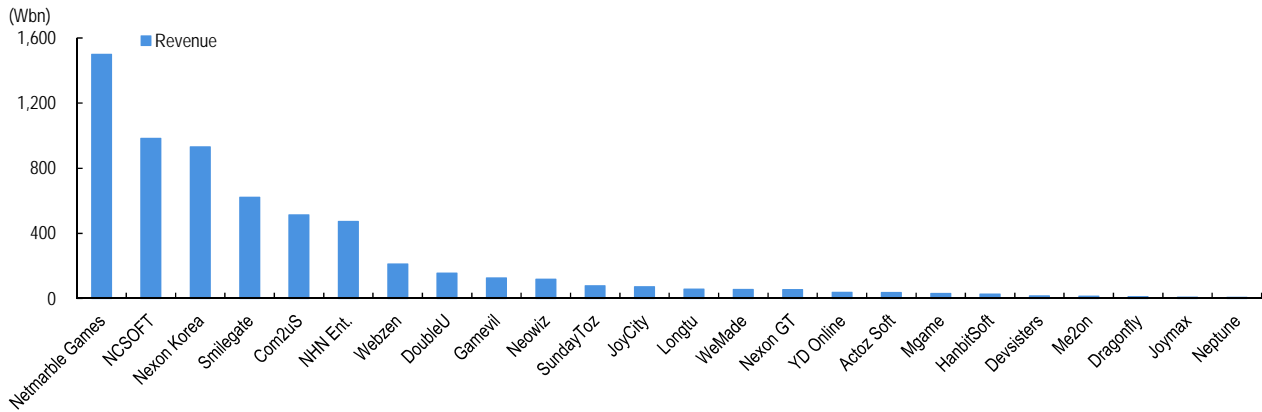
Note: As of end-2016; consolidated revenue and OP for Netmarble Games, NCsoft, and Com2uS; consolidated game revenue and parent-based OP for NHN Entertainment
Source: Company data, Mirae Asset Daewoo Research

Figure 38. Major domestic game companies' market cap: W1tr or higher for Netmarble Games (to be listed), NCsoft, Com2uS, NHN Entertainment



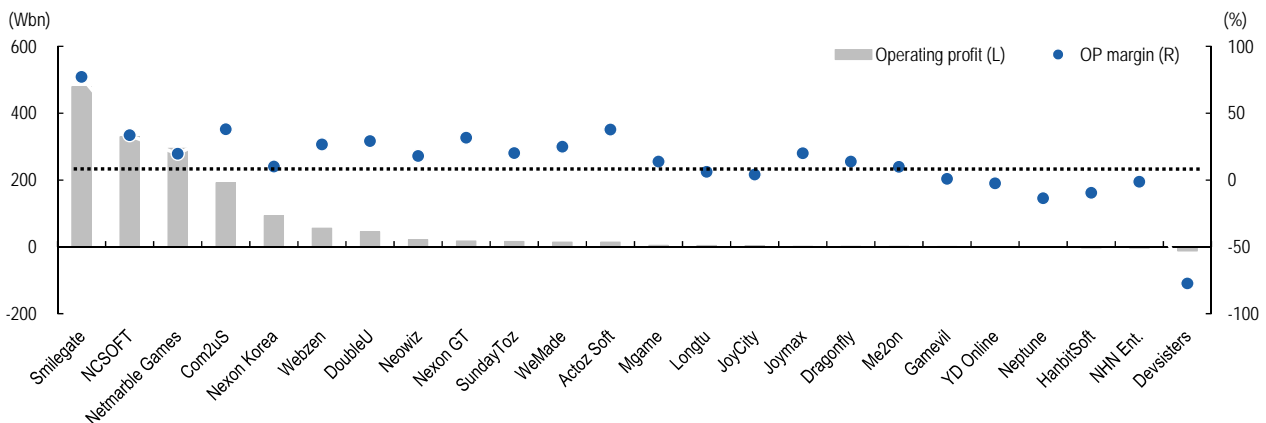
Note: Market cap as of April 24th; Netmarble Games' market cap based on upper bound of its IPO price range
 Source: Mirae Asset Daewoo Research

Figure 39. Major domestic game companies' 2016 revenue: W500bn or higher for Netmarble Games, NCsoft, and Com2uS



Note: Consolidated revenue for Netmarble Games, NCsoft, and Com2uS; Game revenue for NHN Entertainment; non-consolidated revenue for the others
 Source: FSS, Company data, Korea Ratings, Mirae Asset Daewoo Research

Figure 40. Major domestic game companies' 2016 OP: W100bn or higher for NCsoft, Netmarble Games, Com2uS



Note: Consolidated OP for Netmarble Games, NCsoft, and Com2uS; non-consolidated OP for the others
 Source: FSS, Company data, Korea Ratings, Mirae Asset Daewoo Research

2) Light users vs. heavy users

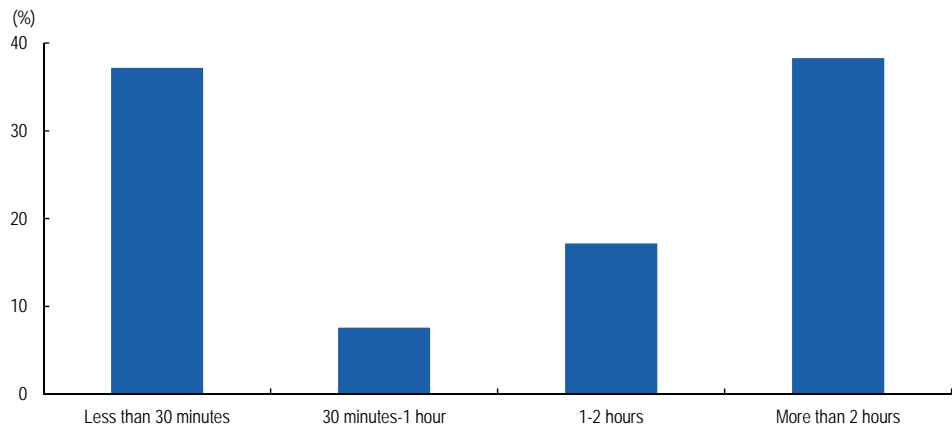
The behavior of game users is also become polarized. Although there are still many people who hardly play games, we think existing users' time and money spent on games are steadily increasing.

In 2016, the Korea Internet & Security Agency (KISA) conducted a survey of around 60,000 domestic internet users. To the question of weekly average time spent on mobile games, 37% of the respondents said less than 30 minutes, while 38% replied more than two hours, showing a barbell-like distribution.

Regarding spending on mobile games, 90% of the respondents said none, while the remaining 10% replied yes. Among those who replied yes, 34% said that they spent less than W5,000 per month, while 18% replied more than W20,000 per month.

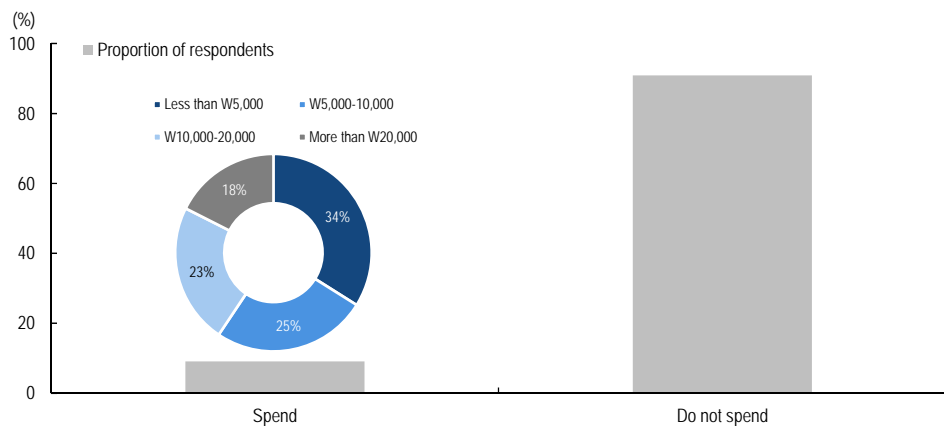
Mobile game companies mainly target heavy users that play more than two hours per week and spend W20,000 per month. Of note, the time spent and ARPPU are particularly high for RPG games. As such, game companies will likely increase the launches of new RPG and MMORPG games.

Figure 41. Distribution of weekly average time spent on mobile games: Heavily weighted at both ends



Note: Based on survey of around 61,238 domestic internet users in 2H16
 Source: KISA, Mirae Asset Daewoo Research

Figure 42. Spending on mobile games



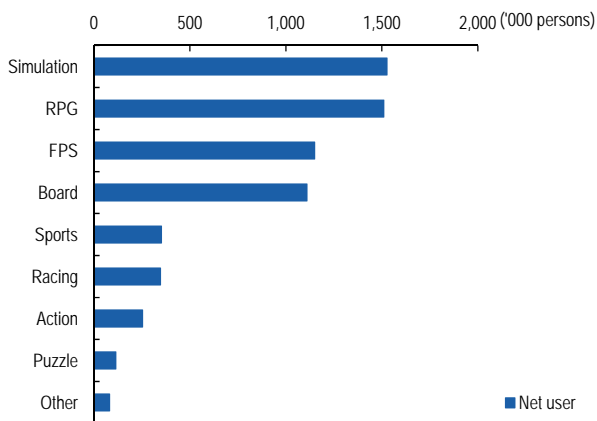
Note: Based on survey of around 661,238 domestic internet users in 2H16
 Source: KISA, Mirae Asset Daewoo Research

3) Those aged 19-49 make up lion's share of RPG game users; simulation and board/puzzle games popular among young and senior users, respectively

Preferred game genres are becoming distinct among age groups. We examined research data published by KoreanClick as of the end of March 2017. For both PC-online and mobile games, those aged 19-49 made up the lion's share of RPG game users, due to genre characteristics and age restriction. Among PC-online game genres, in order of preference, those aged 7-18 preferred racing, simulation, and FPS games, while those 50-69 preferred board, puzzle, and sports games.

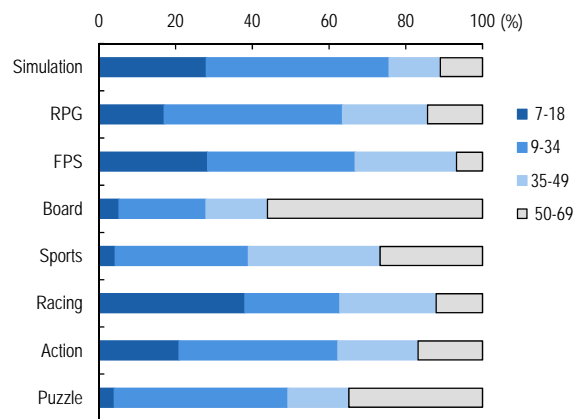
For mobile game genres, in order of preference, those aged 7-18 preferred racing, action, and simulation games, and those 50-69 preferred board, puzzle, and shooting games, as with PC-online games. For the RPG genre, the proportion of those aged 19-49 was higher for mobile games than PC games. We believe the preference for playing RPG games on mobile devices, rather than PCs, for those aged 19-49 is due to the fact that most in that age group spend much of their days at work. As such, game companies are increasingly targeting this age group by featuring over-40-year-old celebrities in ads for their new mobile RPG games.

Figure 43. No. of users by PC-online game genre: Simulation and RPG games rank high



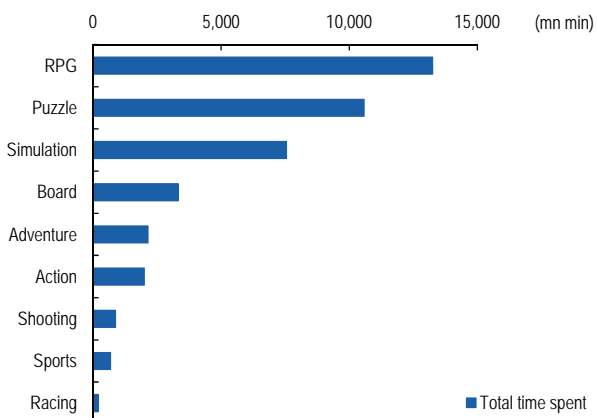
Note: As of March 2017
Source: KoreanClick, Mirae Asset Daewoo Research

Figure 44. Age distribution of PC-online game users by genre



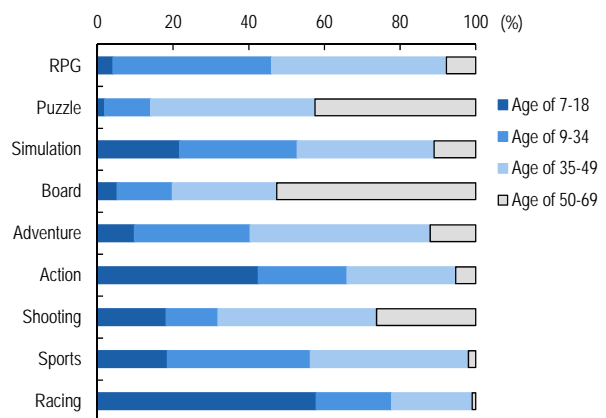
Note: As of March 2017
Source: KoreanClick, Mirae Asset Daewoo Research

Figure 45. Time spent on mobile games by genre: RPG and puzzle games rank high



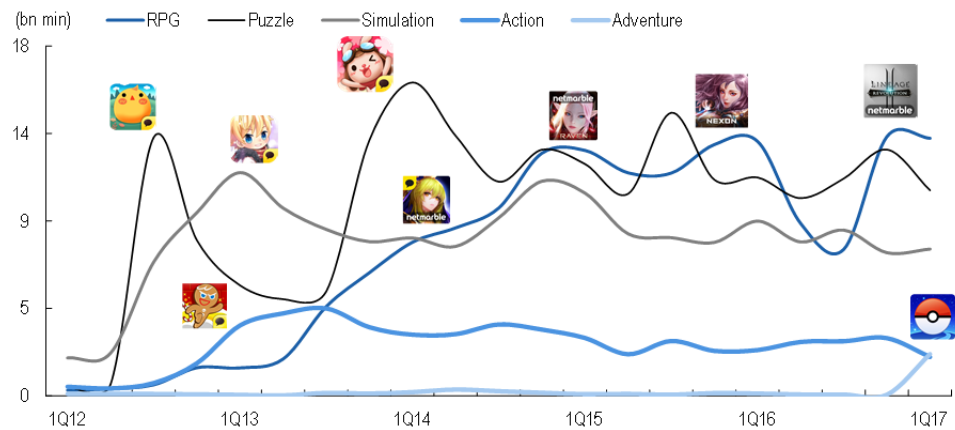
Note: As of March 2017, Source: KoreanClick, Mirae Asset Daewoo Research

Figure 46. Age distribution of mobile game users by genre



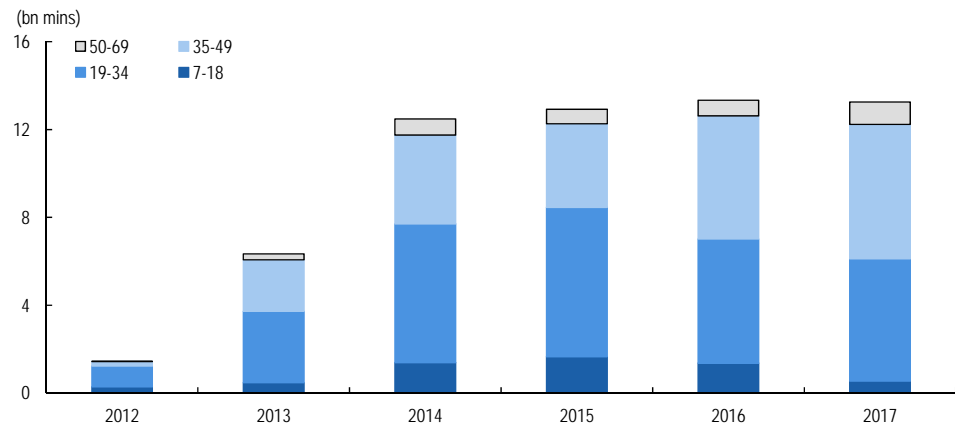
Note: As of March 2017, Source: KoreanClick, Mirae Asset Daewoo Research

Figure 47. Monthly time spent on mobile games by genre: RPG became a main genre in 2015



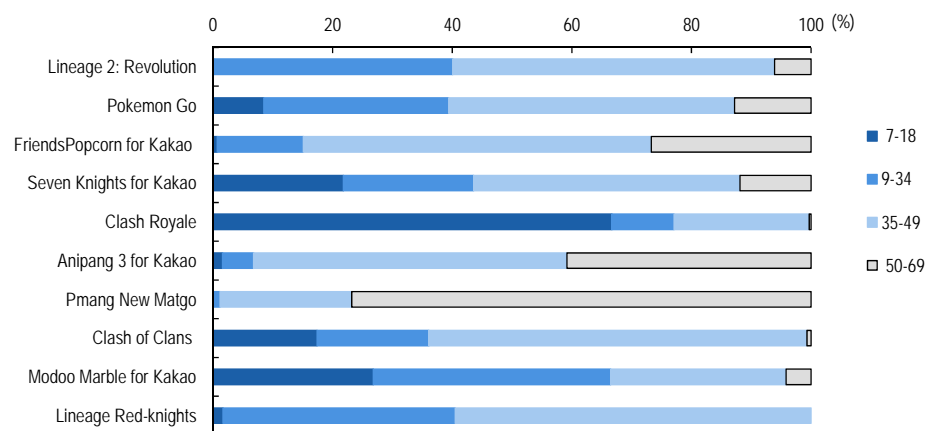
Note: Based on monthly data at end each quarter
 Source: KoreanClick, Mirae Asset Daewoo Research

Figure 48. Monthly time spent on mobile RPG games by age group: Proportion of older age groups increasing



Note: Based on monthly data at end each year; as of end-March for 2017
 Source: KoreanClick, Mirae Asset Daewoo Research

Figure 49. Age distribution of mobile game users by game as of March 2017: Proportion of those aged 35-49 high in MMORPG games



Note: MMORPG include Lineage 2: Revolution and Lineage Red-Knights
 Source: KoreanClick, Mirae Asset Daewoo Research

2. Complete adaption to the mobile era

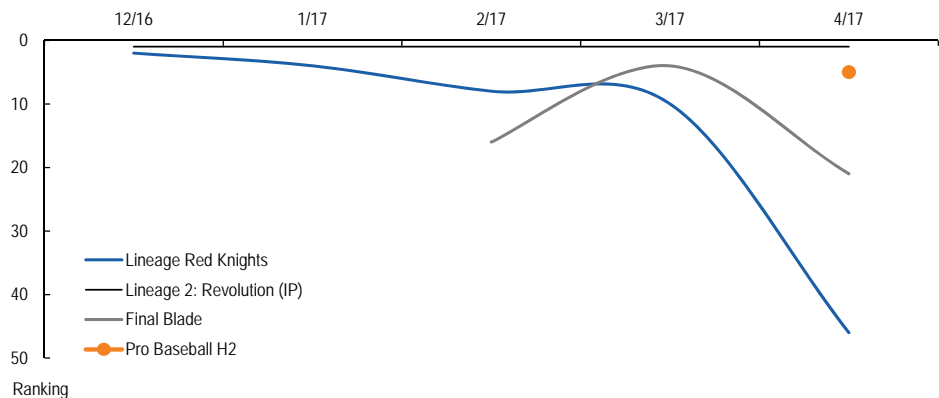
1) Conventional game developers' full-fledged expansion of mobile business

Notably, conventional console and PC online game companies (e.g. Korea's NCsoft and Japan's Nintendo) have been aggressively expanding into mobile games, driven mainly by: 1) the improving performance of smartphones; 2) diversification of mobile games genres; 3) the inflow of PC/console game users into the mobile game segment; and 4) the effectiveness of the marketing strategy based on the intellectual property of long-running PC online games.

NCsoft, which was previously geared towards domestic PC games, has continued to roll out new mobile titles since late 2016, sending a number of them to the top of the charts. Its new game, *Lineage Red Knights*, which climbed to the second spot (in terms of gross revenue) in the first week of its December 8th, 2016 release, remained in the top-10 list through end-March. *Final Blade*, which ranked in the top 20 in the first week of its February 13th release, jumped to the fifth spot in March. *Pro Baseball H2* (released on March 30th) took fifth place in April, an exceptionally strong performance for a sports-based mobile game. Notably, preorders for *Lineage M*, slated for launch in 2Q, exceeded the 3mn-mark at the fastest-ever pace, thanks to large-scale marketing in the pre-registration stage.

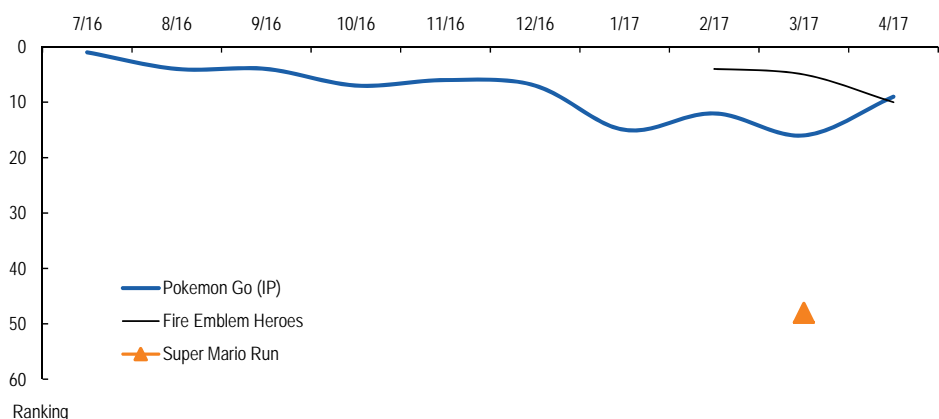
Nintendo forayed into the mobile game market with *Pokémon GO* - which Niantic had developed based on the intellectual property of Nintendo's iconic *Pokémon*. Its in-house developed title, *Fire Emblem Heroes*, has remained in the top-ten list (through April) since its February launch.

Figure 50. Ranking of NCsoft's in-house developed mobile games (based on intellectual property of its existing online PC games)



Note: Android app stores' top-grossing charts in Korea
 Source: App Annie, Mirae Asset Daewoo Research

Figure 51. Ranking of Nintendo's new mobile games (based on intellectual property of its existing console games); *Fire Emblem Heroes* remains in top 10 list



Note: Android app stores' top-grossing charts in Japan; no available data for *Super Mario Run*, which failed to enter top-100 list in April
 Source: App Annie, Mirae Asset Daewoo Research

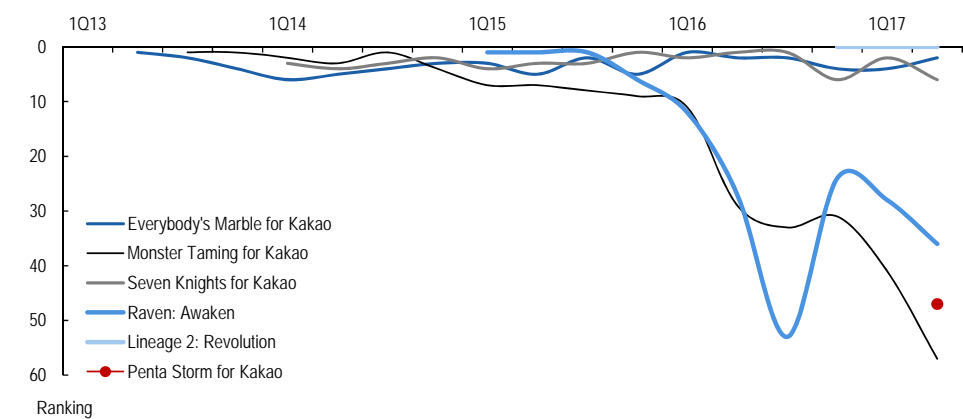
2) Increasing lifespan of mobile games

In general, mobile games have shorter lifespans than their console and PC online game counterparts. As such, in order to ensure a steady inflow of mobile revenue, game publishers have opted for a strategy of publishing a great number of mobile games on a regular basis.

However, the lifespan of mobile games has recently been rising. Should this trend continue, we think new game releases would be viewed as additional growth momentum for mobile game developers/publishers. The increasing longevity of mobile games should allow mobile game companies to improve their earnings stability, and thus either emerge from valuation discounts or enjoy valuation premium versus existing mobile game stocks going forward.

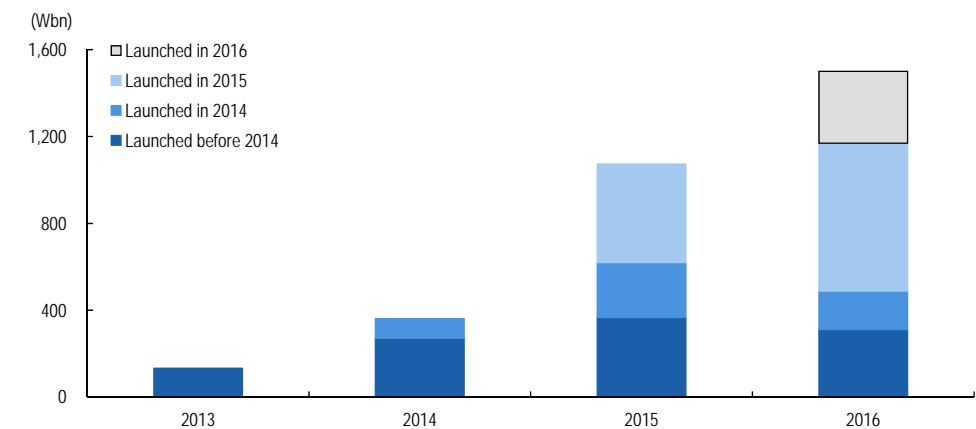
Notably, Netmarble Games' mobile games have relatively long lifespans, with *Everybody's Marble* (released in 2013) and *Seven Knights* (2014) still ranked high on the iOS and Android store charts. Such mobile games have lifespans as long as those of online game titles, which we view as a testament to the company's operational knowhow. Indeed, Netmarble Games has long been engaged in publishing PC online games, and accumulated relevant operational knowhow (e.g. content update). The firm has also accumulated knowhow from the full-fledged expansion of its mobile game business.

Figure 52. Netmarble Games: Everybody's Marble (released in 2013) and Seven Knights (2014) still rank high in revenue



Note: Android end-quarter mobile game ranking (in revenue terms)
 Source: App Annie, Mirae Asset Daewoo Research

Figure 53. Netmarble Games: Revenue contribution of new mobile titles by year



Source: Netmarble's data, Mirae Asset Daewoo Research

3. Increase in M&A

1) Growing M&A momentum in global game market

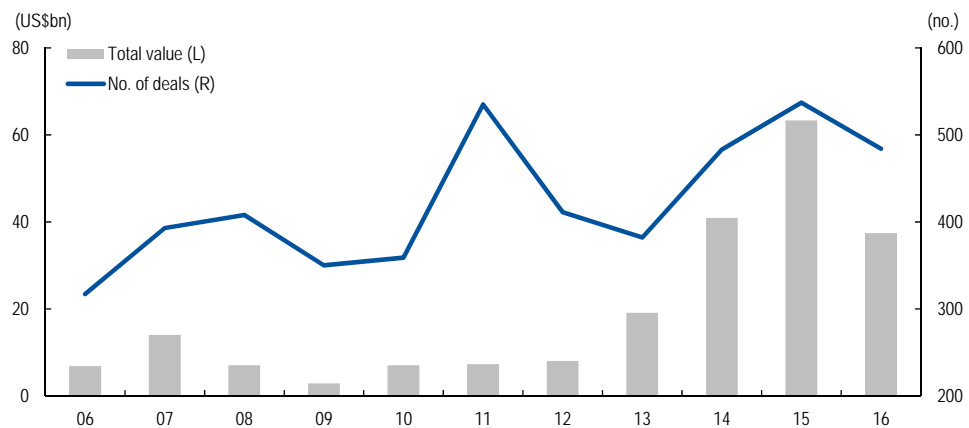
We expect an increase in M&A deals between global game developers/publishers going forward. Looking at both M&A and stake investment trends in the global game/entertainment industry over the past 10 years, the number of M&A/stake investment deals peaked in 2011 and 2015. The sharp increase in M&A deals in 2011 was driven mainly by the acquisition of mobile-game development studios by major game companies, while the leading M&A deal in 2015 was Activision Blizzard’s acquisition of King Digital Entertainment.

We note that major mobile game companies are currently piling up cash. Backed by an abundance of cash, we believe they are highly likely to turn to M&As to better compete with other major firms and bring scale to their mobile titles.

In Korea, NCsoft has increased its cash reserves through the sale of idle property, while Netmarble Games is likely to raise cash from its IPO. More recently, DoubleU Games leaped to the number two position in the social casino game market through an acquisition. Com2uS has a relatively strong cash position, when compared with its market cap.

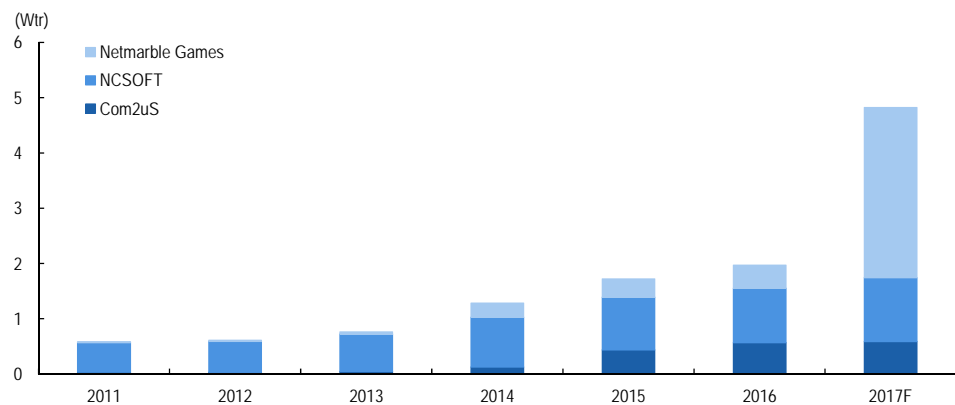
Meanwhile, smaller players are focusing on new releases and entry into augmented reality (AR) and virtual reality (VR). Mid-sized mobile game developers, including Com2uS and Gamevil, are beefing up their new releases and also developing games using third-party intellectual property.

Figure 54. M&A and stake investment trends in global game/entertainment software industry



Source: Bloomberg, Mirae Asset Daewoo Research

Figure 55. Top-tier game companies’ cash-equivalent asset trends and outlook



Note: Our 2017 estimate includes the expected capital inflow from the IPO of Netmarble Games, NCsoft’s sale of NC Tower 2, and Com2uS’ annual FCF increases

Source: Company data, Korea Ratings, Mirae Asset Daewoo Research

2) Proliferation of development studio systems

The proliferation of development studio systems is also a major reason behind the increase in M&As. Game publishers (distributors) run businesses based on contracts with game developers or companies with intellectual property and share revenue with them. To maximize consolidated revenue and stave off contract-related risks, large game publishers strive to acquire game developers and take them under their wing. In addition, to solidify contract relations with intellectual-property-holding companies, game publishers endeavor to purchase stakes in these companies.

Domestically, Netmarble Games, NCsoft, and NHN Entertainment have more than 10 consolidated or affiliated development studios, respectively. This is also the case with companies overseas, including Activision Blizzard. In particular, both Netmarble Games and Activision Blizzard boast diversified revenue sources, with the two companies owning around 20 studios combined. Going forward, other game companies will also likely switch to a development studio system and seek M&As.

Of note, Netmarble Games is pursuing IPOs for Netmarble Monster (which developed *Monster Tamer* and *Raven*), Netmarble N2 (*Everybody's Marble*), and Netmarble Nexus (*Seven Knights*). Netmarble Games' development studios also include Netmarble Npark (*Magu Magu*), Netmarble Neo (*Lineage 2: Revolution*), as well as Cherry Bugs and ITS Games (both of which are developers of social games).

NCsoft's development studios include Ntreev Soft (Pro Baseball H2), North America-based Arenanet (Guild Wars), and THIS GAME STUDIO. In particular, THIS GAME STUDIO mainly develops microtransaction-based mobile games that have quality equivalent to console games.

Table 4. Major game companies' development studios

Netmarble Games	NCsoft	NHN Entertainment	Activision Blizzard
Netmarble Npark	Ntreev Soft	NHN BlackPick	Activision
Netmarble Monster	NC Interactive	NHN 629	Activision Blizzard Media Networks
Netmarble Neo	Arenanet	NHN PixelCube	Activision Blizzard Studios
Netmarble Nexus	Carbine LLC	<i>DancingAnchovy Entertainment</i>	Beachhead Studios
Netmarble N2	Hidden Path Entertainment, Inc	<i>nPluto</i>	Beenox
Netmarble Blue	THIS GAME STUDIO	<i>MOMO</i>	Blizzard Entertainment
1111	<i>NOVN</i>	<i>Wise Cat</i>	Demonware
Crenova	<i>Dotomchi Games</i>	<i>Playworks</i>	Fun Labs
Cherry Bugs	<i>Araso Pandan</i>	<i>Gplus</i>	High Moon Studios
ITS Games	<i>BINAREE</i>	<i>Polygon Games</i>	Infinity Ward
Cavalry Games	<i>Buff Studio</i>	<i>Dev sisters</i>	King Digital Entertainment
IDEA Games	<i>Highbrow</i>	<i>Rainbow Yard</i>	Major League Gaming
Jam City (formerly SGN Games)		<i>Baobab Net</i>	Radical Entertainment
TinyCo, Inc.		<i>Sioo Interactive</i>	Raven Software
Kabam, Inc.		<i>Critical Force</i>	Sierra Entertainment
<i>Funny Paw</i>			Sledgehammer Games
<i>4PLAT</i>			Toys for Bob
<i>YJM GAMES</i>			Treyarch
<i>YJMVR</i>			Vicarious Visions

Note: For studios in italic font, small equity investments are made; cross shareholdings between Netmarble Games and NCSOFT are excluded; overseas distribution subsidiaries are excluded

Source: Company data, Dart, Wikipedia, Mirae Asset Daewoo Research

4. Risks

Major risks related to the game industry are as follows:

Performance of new titles: The performance of new game titles is difficult to predict; however, game companies have recently been utilizing a variety of pre-launch procedures, including closed-beta tests (CBT), open-beta tests (OBT), and reservations to play before launch, as marketing tools to increase the likelihood of new titles' success. If a new game title does not fare well, a game company could not cover the marketing/development/labor costs related to the new title.

Schedule risk: Game companies often postpone the launch of new titles to drive up their quality. As games are becoming larger in scale and exposed to more variables, amid intense competition, the launch schedule of new titles will likely continue to be subject to change. Delays in new title launches could dent share performance and earnings outlook.

Competitive risks: Both in Korea and overseas, mobile game companies are now engaged in fierce competition. In the Korean market, the number of new game launches by Korea's major players has doubled YoY, while games developed by China- and US-based companies have recently ranked high in the app store charts. Moreover, the increasing utilization of both online and offline advertising platforms has driven up the overall ad expenses of mobile game companies. Meanwhile, we think competition in the PC online game segment is less intense. Despite the restructuring of the global PC online game market, based on top-three players, i.e., Activision Blizzard (US), NetEase (China), and NCsoft (Korea), the scale of the PC online game market has remained solid, in terms of both user base and revenue.

Contract-related risks: Mobile game companies face the risk of contract termination with game publishers and other partners. Uncertainty is particularly high surrounding publishing contracts and intellectual property licensing deals with Chinese partners. Based on their contracts with game developers or intellectual property rights holders, game-publishing companies (distributors) operate their businesses and share revenue with them. In order to stave off contract-related risks, large game publishers could acquire stakes in game developers to take them under their umbrella. To solidify partnership with intellectual-holding companies, game publishers could also opt for purchasing stakes in these companies.

Personnel risks: As the success of new games is highly dependent on the abilities of core developers, the loss of such personnel would pose a grave threat to internet game companies. If market growth continues to be driven by certain platforms and genres, the competition to hire people with relevant development track record should heat up. In order to prevent flight of core developers, game companies have been implementing a variety of measures, including employee stock option programs and IPOs of development studios.

Surging costs: Growing revenue contribution from mobile games should drive up overall variable costs of internet game companies, as the mobile game business incurs greater expenses (e.g., commissions, marketing, and labor) than the PC online game business. The ballooning labor expenses for the mobile game business are due mainly to the increasing scale of individual mobile titles and hiring of additional employees for content updates, as part of companies' efforts to extend the lifespan of mobile games. However, we believe the cost increase should be offset by positives resulting from the success of new mobile titles, increasing longevity of mobile games, and growing royalty revenue.

Asset risks: Amid the recent M&A wave, companies could suffer from impairment losses on intangible assets, such as goodwill. Whether or not their investments in either M&As or stake investments will prove successful is difficult to predict in the investment planning stages.

Regulatory risks: Internet game companies' earnings have been affected both directly and indirectly by relevant government regulations, and severity of their enforcement. The primary examples of such regulations include the "shutdown law" (which was introduced in 2011 to block those under the age of 16 from accessing gaming websites after midnight) and regulations on web board games (2014). The regulations on web board games, in particular, resulted in a plunge in the relevant gaming revenue. Although web board game-related regulations eased in 2016, the adverse impact of the regulations continues to be felt in the industry. A key regulatory issue to watch for in 2017 is the potential introduction of

self-regulation on in-game items that involve an element of chance, an issue that was first proposed by the Saenuri Party in 2015. Self-regulation measures proposed by Korea Association of Game Industry are set to be implemented from July 2017.

1) Regulations on random reward items

In the game industry, earnings are directly or indirectly affected by the intensity of government regulations. As such, regulations are a major risk factor for the industry.

With regard to the issue of random reward items, a bill was introduced in the National Assembly in 2015, and the Korea Association of Game Industry plans to implement a revised self-regulation plan in July 2017. In games, random reward items are offered in box-, capsule- or lottery-like form and can be acquired according to chance. These items are available in most games (particularly board and RPG games) that are charged for based on microtransaction.

As with lottery tickets, players are required to pay cash, without knowing whether they will obtain random reward items; as such, in March 2015, a bill proposing the introduction of a random reward item act was tabled in the National Assembly, with the aim of: 1) preventing excessive consumption; and 2) ensuring the right of consumers to choose games in a reasonable manner by disclosing the probability of obtaining items. However, some lawmakers expressed opposition to this bill, on the grounds that: 1) the probability of obtaining items was a trade secret; and 2) the undisclosed probability was a key factor in the fun of playing such games.

In November 2016, although a similar bill was proposed in the National Assembly, the bill was met with opposing views, including: 1) the potential of discrimination against domestic games, versus overseas titles; 2) the likelihood of creating additional regulations; and 3) the importance of industry self-regulation.

Finally, the Korea Association of Game Industry plans to implement a revised self-regulation plan in July 2017. The association has decided to: 1) disclose the component ratios of individual items in random reward item games; 2) categorize all game times into high-, medium- and general-grade items and reveal their component ratios by grade; and 3) keep the value of individual items equal to, or higher than, their single-purchase prices.

Table 5. History of random reward item regulation

Time	Details
Mar. 2015	Disclosure of the probabilities of obtaining random reward items and their component ratios - Random reward items: In games, random reward items are offered in box-, capsule- or lottery-like forms and can be acquired according to chance; as with lottery tickets, players are required to pay cash, without knowing whether they will obtain random reward items - In March 2015, a bill on revision to the Game Industry Promotion Act, or a bill on the introduction of a random reward item act, was proposed in the National Assembly (automatically scrapped, due to the termination of the 19 th National Assembly period) - Supporters: As the Game Industry Promotion Act requires game companies to warn users of violent content, obscenity, and whether certain in-game purchases involve an element of chance, it would be legally appropriate to implement the bill; in addition, it would be justifiable to: 1) prevent excessive consumption; and 2) ensure consumers' right to choose games in a reasonable manner by disclosing the probability of obtaining items - Opponents: The probability of obtaining items is a trade secret; the undisclosed probability is directly related to the fun of playing games; industry self-regulation would be more appropriate than any top-down regulation
May 2015	In May 8 th , 2015, the K-iDEA announced a self-regulation plan on random reward items → Implemented the self-regulation plan in July 2015
July 2016	11 lawmakers, including No Woong-rae, and 13 lawmakers, including Jeong Woo-taek, proposed bills on the disclosure of the probabilities of random reward items, respectively: 1) Prevention of information asymmetry; 2) prevention of excessive consumption; and 3) the establishment of random reward item games as sound games
Oct. 2016	Bill proposed by rep. Lee Won-uk: If games include random reward items that have less than 10% probability of being obtaining, they should be categorized as adult-grade games
Nov. 2016	In the 346 th National Assembly session, the bill on revision to the Game Industry Promotion Act was discussed → Under review by a subcommittee as of April 2017
Feb. 2017	The Korea Association of Game Industry (formerly known as the K-iDEA) announced an industry self-regulation plan on random reward items → To be implemented in July 1 st in 2017

Source: Mirae Asset Daewoo Research

2) Shutdown regulation

A number of domestic game regulations have been introduced since the passage of the Shutdown Law in 2011. The Shutdown Law forbids children under the age of 16 to play PC-online games between the hours of 12:00 AM and 6:00 AM. A regulation allowing adolescents to choose their game-playing hours was implemented in 2012, while a bill on the prevention of game addiction and treatment was proposed in 2013.

The Shutdown Law has yet to be applied to mobile games, and the question of whether the law should be applied to mobile games will be reviewed every two years. The next review is set to be conducted after May 2017.

Table 6. History of shutdown regulation

	Regulation	Details	Regulator
Nov. 2011 (implemented)	Shutdown Law	- Children under the age of 16 are not allowed to access internet games from 12:00 AM to 6:00 AM (Currently applied only to PC-online games)	MOGEF
July 2012 (implemented)	Regulation of allowing adolescents to choose their game playing hours	- Restrict game access hours for adolescents aged under 18. (Selective shutdown) - Control game playing hours at the request of users or their parents - Netmarble Games offered a service to restrict game playing hours	MCST
Jan. 2013 (proposed)	Bill on the prevention of addition to internet games and treatment	- Expanded shutdown hours	Rep. Son In-chun
	Bill on the prevention of addition to internet games	- Imposed a penalty (1% of revenue) on game companies - Imposed restrictions on highly addictive games	
Feb. 2013 (proposed)	Bill on the revision to the Juvenile Protection Act	- Adolescents can be excused from the shutdown regulation at the request of their parents	Rep. Jeon Byeong-heon
Oct. 2013 (proposed)	Bill on the prevention of game addition and treatment	- Designated games as one of the four major addictions, alongside alcohol, gambling, and illegal drugs	Rep. Hwaing Woo-yeo
May 2017 (to be implemented)	Mobile game shutdown	- The Shutdown Law has yet to be applied to mobile games; the question of whether to apply the law to mobile games will be reviewed every two years - The next review is set to be conducted after May 2017	MOGEF

Source: Game White Paper, Netmarble Games, Mirae Asset Daewoo Research

3) Regulations on web board games

The regulations on web board games are among those that have hit both the relevant markets and companies hardest. The introduction of the regulations in 2014 resulted in a plunge in the relevant gaming revenue. However, as web board game-related regulations eased in 2016 via amendments to the relevant law, we need to keep a close watch on a potential recovery in the relevant gaming revenue going forward.

Table 7. Regulations on web board games

	Details
Effective from February 2014 through February 2016	<p>Subparagraph 8 of attached Table 2 that prescribes matters to be observed by a game-providing business entity that offers game products that imitate the substance of betting or dividends, such as card or 'hwatu' games, through the information and communications network:</p> <ul style="list-style-type: none"> ① The payment limit for game users is set at W300,000 per month ② Bet limit per game play is W30,000 ③ If a player loses over W100,000 in a single day, (s)he is blocked from accessing the game for the next 24 hours ④ A player is prohibited from choosing its counterpart ⑤ Automatic betting is not allowed ⑥ A player is required to undergo the authentication process every quarter <p>→ The enforcement decree is valid through February 23rd 2016 (Paragraph 2 of the Article 25)</p>
Amended in March 2016	<p>The amendment entered into force on March 22nd 2016</p> <ul style="list-style-type: none"> ① Monthly payment limit for game users was increased to W500,000 ② Bet limit per game play was raised to W50,000 ③ If a player loses over W100,000 in a single day, (s)he is blocked from accessing the game for the next 24 hours ④ A player is prohibited from choosing its counterpart ⑤ Automatic betting is not allowed ⑥ A player is required to undergo the authentication process every year <p>→ The Minister of Culture, Sports and Tourism shall examine the appropriateness of subparagraph 8 of attached Table 2 and take measures, such as making improvements, biennially from March 15th 2016 as the base date</p>

Source: White Paper On Korean Games, Mirae Asset Daewoo Research

IV. Investment strategy & valuation

1. Investment strategy

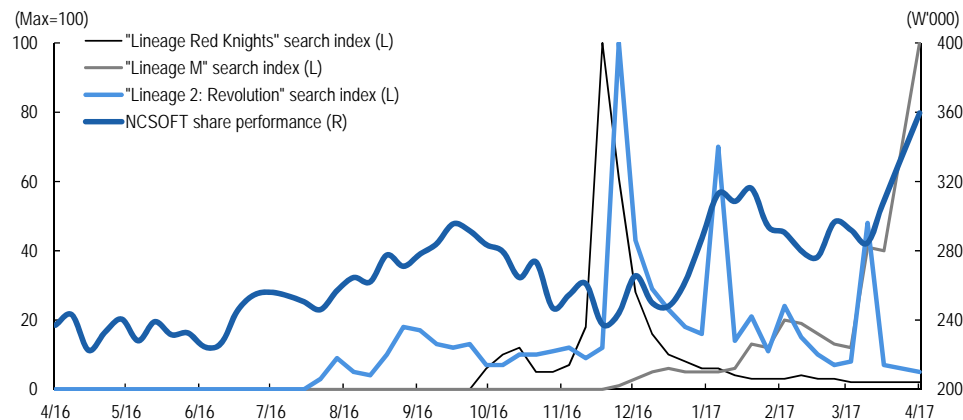
1) Short-term strategy: Focus on event-driven momentum (e.g. new game launches)

For game stocks, we recommend investors focus in the near term on key events (e.g. new game launches), which move shares ahead of actual earnings growth. Indeed, new game launches should create a fresh revenue source through expansion in the user base, and thus serve as a new growth driver. If internet game companies succeed in diversifying their gaming platforms, genres, and market regions through new game launches, new games' cannibalization of existing gaming revenue would be minimized.

In 2017, NCsoft, Netmarble Games, and Com2uS plan to launch new mobile games every quarter. Over the past year, NCsoft's shares have enjoyed a boost from expectations for releases of new mobile games based on the intellectual properties of *Lineage*. We also note the recent increase in the number of pre-launch procedures, including closed-beta tests (CBT), open-beta tests (OBT), and pre-orders (orders placed for items that have yet to be released). Indeed, shares of NCsoft have recently set a new record, with preorders for its new mobile game *Lineage M* (in Korea) exceeding the 3mn-mark at the fastest-ever pace, thanks to large-scale marketing in the pre-registration stage.

We think large-scale content updates and launches of expansion packs also deserve attention, as they should help drive up revenue from existing games.

Figure 56. NCsoft's share prices vs. search index related to releases of new mobile games based on intellectual property of *Lineage*



Source: Mirae Asset Daewoo Research

Table 8. Scheduled launch of new mobile games by company

	2Q17	2H17	2018
NCsoft	Expected launches of <i>Lineage M</i> (mobile) in Korea and <i>MXM</i> (PC) in North America	Scheduled releases of <i>Aion Legions</i> (mobile) in Europe; <i>Lineage Eternal</i> (PC) CBT in Europe; and <i>Lineage Red Knights</i> (mobile) in overseas markets	Expected global release of <i>Lineage Eternal</i> (PC); <i>Blade & Soul Mobile</i> and <i>Lineage 2 Mobile</i>
Netmarble Games	Listing on KOSPI slated for May 12 th	Expected launches of <i>Lineage 2: Revolution</i> in Japan and China; likely releases of 17 new games in 2017 (possibility of additional global M&As)	(Likely to seek IPO of game-development subsidiaries)
Com2uS	Expected launch of <i>Project G2</i>	Expected launches of <i>Danceville</i> , <i>Ace Fishing</i> , <i>Wild Catch</i> (VR), <i>Project S</i> , and <i>Heroes War 2</i>	Scheduled launch of the MMORPG version of <i>Summoners War</i> and mobile version of <i>Skylanders: Trap Team</i> (based on intellectual property of <i>Activision</i>)

Note: Games that have already been launched in 2Q are excluded from this table.

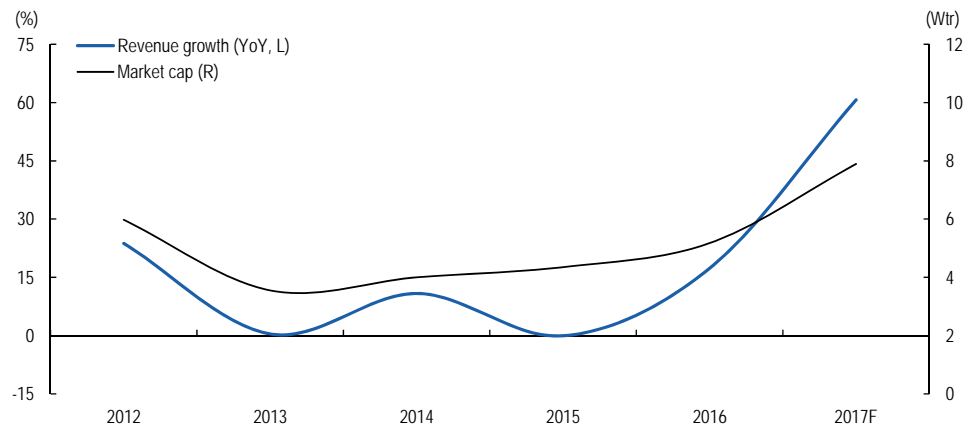
Source: Company data, media releases, Mirae Asset Daewoo Research

2) Medium/long-term strategy: Focus on growth potential (in revenue terms)

Over the medium/long-term, we think revenue growth upside should serve as an important variable for game company shares. Once the user base is expanded through new game launches, cash proceeds from fresh users would allow companies to seek inorganic growth opportunities through M&As. Historically, among global gaming stocks, those expecting stronger revenue growth have tended to enjoy reratings in P/E.

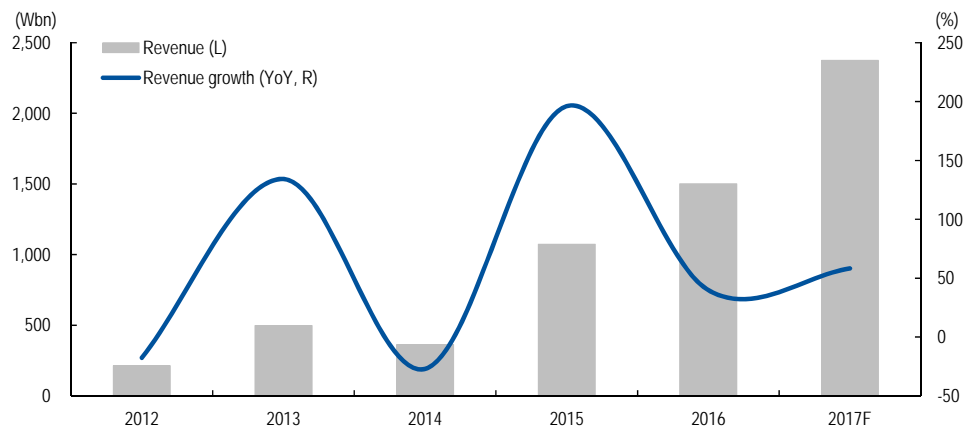
The qualitative aspect of revenue growth is also noteworthy. For example, the diversification of game portfolios in terms of genre and publishing platform, as well as expansion of market regions, should allow game companies to improve their earnings stability and thus either narrow valuation discounts or enjoy valuation premiums versus peers.

Figure 57. NCsoft's revenue growth vs. market cap trends: Revenue growth accelerates in 2017



Note: For market caps for 2012-2016, end-June figures were used; for 2017, end-April figure was used
 Source: Company data, Thomson Reuters, Mirae Asset Daewoo Research

Figure 58. Netmarble Games' revenue & growth; 2017 revenue growth should exceed that of 2016



Source: Company data, Mirae Asset Daewoo Research

2. Valuation comparison with global peers

Among global game stocks, only a handful of companies - including Korea's Netmarble Games, the US' Activision Blizzard and Electronic Arts, Japan's Nintendo, and China's Tencent and NetEase - boast market caps in excess of W10tr. Major domestic and global game stocks are trading at an average 2017F P/E of 22x (ROE of 17%). NCsoft and Com2uS are garnering increasing attention for their lower P/Es and higher expected ROEs.

Table 9. Global major game companies' earnings forecast

(Wbn)

Company name	Market cap.	Revenue		Operating profit		Net profit	
		17F	18F	17F	18F	17F	18F
Netmarble Games	(To be listed)	2,374	2,601	678	740	514	568
NCsoft	7,894	1,581	1,778	541	682	417	523
Com2uS	1,544	565	625	212	234	166	183
NHN Entertainment	1,217	940	1,042	36	57	42	76
DoubleU Games	953	242	284	77	95	75	80
Webzen	715	204	253	66	83	56	72
Gamevil	517	186	222	19	21	13	16
Activision	44,898	7,249	7,975	2,264	2,837	1,684	2,078
Electronic Arts	33,331	5,599	5,910	1,742	1,890	1,344	1,459
Take-Two	7,268	2,088	2,491	332	504	258	380
Zynga	2,861	917	1,008	87	99	80	101
Glumobile	355	248	274	-32	-6	-27	-2
Ubisoft (FR)	6,102	1,829	2,114	279	350	179	234
Nintendo (JP)	40,987	7,894	9,787	1,057	1,780	824	1,337
Nexon	8,560	2,087	2,223	774	805	621	638
Square Enix	4,105	2,562	2,639	334	420	210	273
DeNA	3,630	1,546	1,700	231	333	287	221
Gungho Online	2,470	975	898	359	317	223	197
GREE	2,122	624	675	80	102	123	69
Tencent (CH)	338,188	34,563	43,537	11,764	14,972	9,582	12,070
NetEase	39,722	8,480	10,229	2,627	3,105	2,449	2,871
Youzu Interactive	4,255	1,716	2,104	230	303	241	314
Kingsoft	4,237	603	763	136	179	145	189
Changyou	1,946	631	688	175	189	193	206

Note: Among Korean companies, Netmarble Games, NCsoft, and Com2uS are based on our estimates; others are based on market consensus. Source: Bloomberg, Mirae Asset Daewoo Research estimates

Table 10. Global major game companies' valuation

(x, %)

Company name	P/E		EV/EBITDA		P/B		ROE	
	17F	18F	17F	18F	17F	18F	17F	18F
Netmarble Games	-	-	-	-	-	-	30.5	25.5
NCsoft	18.9	15.0	12.2	9.3	3.3	2.8	20.4	21.6
Com2uS	9.3	8.4	3.8	2.8	1.9	1.6	23.4	21.2
NHN Entertainment	26.2	15.8	7.0	5.4	0.8	0.8	3.4	4.9
DoubleUGames	12.7	11.8	8.8	7.0	2.0	1.7	17.7	16.3
Webzen	12.8	10.0	9.0	7.3	2.4	1.9	20.8	21.6
Gamevil	38.6	32.2	10.6	9.8	1.5	1.5	4.0	4.6
Activision	26.8	22.1	17.2	14.6	4.0	3.5	13.6	14.9
Electronic Arts	24.7	22.9	15.3	14.7	7.9	6.2	28.0	28.4
Take-Two	30.9	22.3	16.3	11.7	5.6	4.6	24.8	21.6
Zynga	41.3	32.5	15.4	12.1	1.6	1.6	2.1	2.7
Glumobile	-	-	-	-	1.6	1.7	-11.5	-9.4
Ubisoft (FR)	33.0	25.6	7.9	6.1	4.4	3.8	11.7	14.3
Nintendo (JP)	42.1	26.4	27.2	16.6	2.7	2.6	6.7	9.6
Nexon	14.0	13.6	6.2	6.1	1.9	1.7	14.6	13.1
Square Enix	19.6	15.1	7.5	6.0	2.2	2.0	11.3	14.1
DeNA	12.4	16.6	7.6	5.9	1.6	1.4	12.8	9.2
Gungho Online	8.6	9.8	5.4	5.8	3.3	2.6	43.6	28.8
GREE	16.2	31.1	12.6	9.2	1.8	1.7	11.4	6.2
Tencent (CH)	34.9	27.2	24.9	19.9	9.2	7.0	28.4	27.4
NetEase	16.2	13.9	12.3	10.4	4.8	3.8	31.8	29.1
Youzu Interactive	17.8	13.7	11.6	8.7	2.9	2.4	16.6	18.3
Kingsoft	30.3	23.8	30.2	25.4	7.1	5.4	24.4	24.1
Changyou	10.4	9.6	4.8	4.5	1.3	1.2	13.9	13.1
Average	22.6	19.1	12.5	10.0	3.3	2.8	16.9	15.9

Note: Among Korean companies, Netmarble Games, NCsoft, and Com2uS are based on our estimates; others are based on market consensus. Source: Bloomberg, Mirae Asset Daewoo Research estimate

NCsoft (036570 KS)

Dominance in PC online games to transfer to mobile

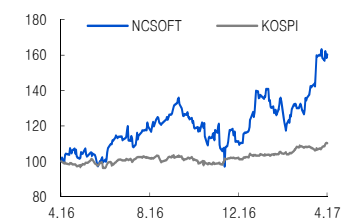
Game

(Initiate)	Buy
Target Price (12M, W)	500,000
Share Price (04/28/17, W)	360,000
Expected Return	39%

OP (17F, Wbn)	541
Consensus OP (17F, Wbn)	500
EPS Growth (17F, %)	53.6
Market EPS Growth (17F, %)	36.3
P/E (17F, x)	18.9
Market P/E (17F, x)	9.4
KOSPI	2,205.44

Market Cap (Wbn)	7,894
Shares Outstanding (mn)	22
Free Float (%)	84.8
Foreign Ownership (%)	40.6
Beta (12M)	1.01
52-Week Low	218,000
52-Week High	366,500

(%)	1M	6M	12M
Absolute	24.4	35.1	60.4
Relative	22.0	23.7	45.5



Initiate with Buy call and 12-month forward TP of W500,000; Our top pick

We initiate our coverage of NCsoft with a Buy rating and 12-month forward target price of W500,000, and recommend the stock as one of our top sector picks. NCsoft has already demonstrated strong MMORPG development capability in the PC online gaming market, and is agilely responding to the mobile gaming market in 2017 by releasing a series of chart-topping new titles.

Investment points

Accelerating revenue growth: We expect NCsoft to achieve revenue growth of around 60% YoY in 2017 (versus 17% in 2016), on the back of mobile titles and royalties. With the release of the much-anticipated *Lineage M*, following *Lineage Red Knights*, *Final Blade*, and *Pro Baseball H2*, we forecast over tenfold growth in NCsoft's mobile gaming revenue in 2017. Royalty revenue has been rising, driven by *Lineage* IP-based titles released by other developers, such as Netmarble Games.

Profitability contribution from PC games and royalties: Long-standing PC titles and royalties are key contributors to profitability. For PC titles, there were concerns over *Lineage*, due to the advance recognition of revenues from an offline event in 4Q16, removal of bot accounts, and declining user traffic. However, we expect PC gaming revenue to remain solid, given content updates to *Lineage*, improving revenue from *Lineage II* and *Blade & Soul*, and the release of the *Guild Wars 2* expansion pack. We are also positive on royalty revenue, as Netmarble Games plans to release *Lineage II: Revolution* in Japan and China in 2H17, and roll out a new title based on *Blade & Soul* IP.

Continuous growth momentum from new title releases: NCsoft is set to release *Lineage M*, a mobile MMORPG adaptation of its hit PC game *Lineage*. NCsoft's promising lineup also extends to PC game titles: *Lineage Eternal*, a PC online game targeting the global market, is expected to be released in early 2018.

Catalyst vs. risk: *Lineage M* potential vs. volatility related to new titles

Should the release of *Lineage M* prove successful, this would testify to NCsoft's well-known strength in the MMORPG genre, provide proof that the company's leadership in PC online games could transfer into the mobile space, and boost revenue growth through global publishing. Risk factors include volatility in the schedule of new title releases, uncertainties over commercial success, and intensifying competition in the mobile gaming market.

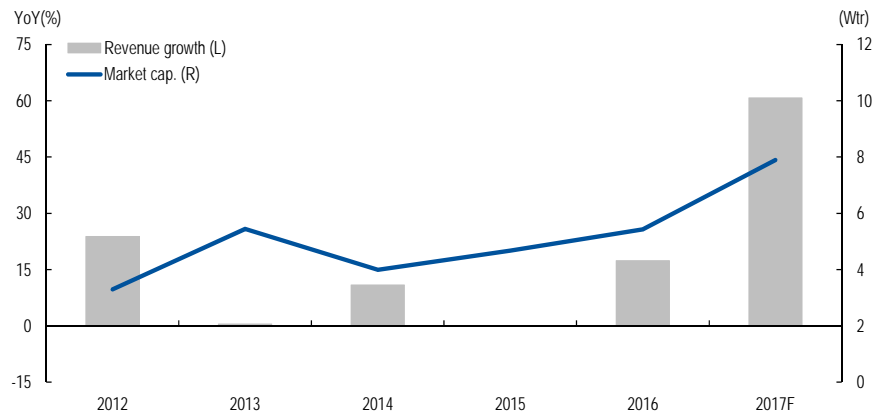
FY (Dec.)	12/14	12/15	12/16	12/17F	12/18F	12/19F
Revenue (Wbn)	839	838	984	1,581	1,778	1,849
OP (Wbn)	278	237	329	541	682	728
OP margin (%)	33.1	28.3	33.4	34.2	38.4	39.4
NP (Wbn)	230	165	272	418	525	560
EPS (W)	10,486	7,542	12,416	19,067	23,937	25,526
ROE (%)	18.4	10.6	14.9	20.4	21.6	19.6
P/E (x)	17.4	28.2	19.9	18.9	15.0	14.1
P/B (x)	2.7	2.6	2.7	3.3	2.8	2.4
Dividend yield (%)	1.9	1.3	1.5	1.4	1.5	1.7

Notes: All figures are based on consolidated K-IFRS; NP refers to net profit attributable to controlling interests
Source: Company data, Mirae Asset Daewoo Research estimates

Investment points

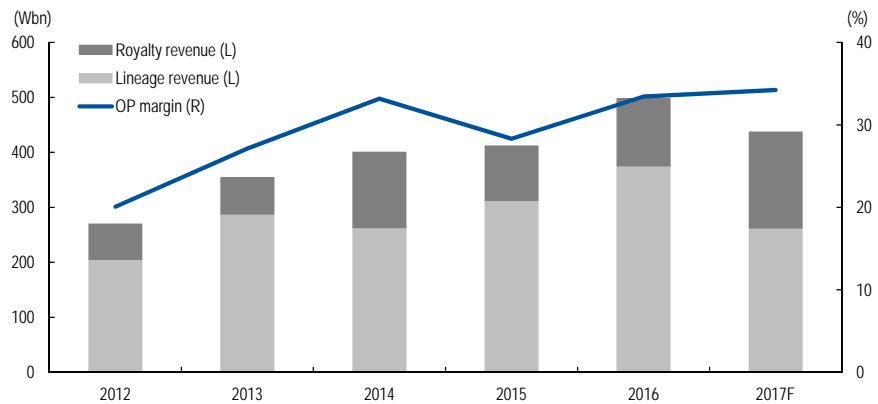
Key investment points for NCsoft include accelerating revenue growth, high-margin earnings from PC-based online games, and royalty revenue, and continuing momentum from new game releases. A successful launch of *Lineage M* would be significant for NCsoft, as it would allow the MMORPG- and PC online game-focused company to prove its bona fides as a leader in mobile games, as well. *Lineage M*'s global release should add a further boost to revenue growth going forward.

Figure 59. New mobile games and royalties to drive revenue growth for 2017



Note: Market cap as of end-April for 2017 and end-December for all other years
 Source: NCsoft, Mirae Asset Daewoo Research

Figure 60. Revenue from *Lineage* (PC online game) and royalties to drive OP growth



Source: NCsoft, Mirae Asset Daewoo Research

Figure 61. New games, such as *Lineage M* (mobile, 2Q17) and *Lineage Eternal* (PC, 2018), to drive earnings growth



Source: NCsoft, Mirae Asset Daewoo Research

Earnings outlook and valuation

For 2017, we expect NCsoft to post 60% YoY growth in revenue and 64% YoY growth in operating profit, driven by earnings from mobile games and royalty revenue. Long-running PC online games, such as *Lineage*, and royalty revenue should help to drive overall profitability. NCsoft is planning to release *Lineage M* (mobile) in 2Q17, and we expect the mobile game to generate daily average revenue of W2bn, translating into full-year revenue of W360bn for 2017.

Meanwhile, upcoming releases scheduled for 2H17 include *Aion Legions* (mobile) for the European market, a mobile game developed by a US game studio, and the overseas publishing of *Lineage Red Knights* (mobile). *Lineage Eternal* (PC), scheduled for release in early 2018, will undergo pre-release tests in 2H17. In 2018, NCsoft has scheduled the release of *Blade & Soul Mobile* and *Lineage II Mobile*. We plan to reflect new game releases in our earnings forecasts according to the launch schedule of the games and initial earnings results.

Table 11. NCsoft annual earnings trend and forecasts

(Wbn, %)

	2014	2015	2016	2017F	2018F
Revenue	839	838	984	1,581	1,778
Lineage	263	313	375	263	271
Lineage2	59	63	77	81	84
Aion: Upheaval	94	74	72	66	63
Blade & Soul	83	114	182	193	207
Guild Wars 2	86	101	77	87	84
Mobile and other	67	76	78	717	861
Royalties	137	99	122	174	209
Operating profit	278	237	329	541	682
OP margin	33.2	28.3	33.4	34.2	38.4
Net profit	228	166	271	417	523
Net margin	27.1	19.8	27.6	26.4	29.4
YoY					
Revenue	10.8	-0.1	17.3	60.7	12.5
Lineage	-8.6	18.9	20.0	-30.0	3.0
Lineage2	4.1	5.8	22.5	5.0	4.0
Aion: Upheaval	-1.4	-21.9	-2.7	-8.0	-5.0
Blade & Soul	20.1	37.7	60.1	6.0	7.0
Guild Wars 2	-30.6	17.4	-23.8	13.0	-3.0
Mobile and other	15.9	13.0	3.3	817.8	20.0
Royalties	107.5	-27.9	23.7	42.3	20.0
Operating profit	35.5	-14.6	38.5	64.6	26.1
Net profit	43.4	-26.9	63.1	53.5	25.6

Notes: All figures are based on consolidated K-IFRS; net profit refers to net profit attributable to controlling and non-controlling interests; Source: NCsoft, Mirae Asset Daewoo Research

Table 12. NCsoft's 12-month target price calculation

(Wbn, x, W)

Category	Value	Note
Operating value (1)	10,031	
	2017F net profit attributable to controlling interests	P/E multiple
Consolidated	418	24.0
		10,031
Investment assets (2)	310	
Available-for-sale financial assets	1	FV at end-2016, including unlisted shares
Equity investments in related companies	71	BV at end-2016
Investment in real estate	238	BV at end-2016
Total asset value (1+2=3)	10,341	
Net debt (4)	-834	As of end-2016; consolidated
Net asset value (3-4)	11,175	
No. of shares ('000)	21,929	Total outstanding shares, including treasury shares
Target price	500,000	

Note: Target P/E based on valuations of peers including NetEase, Activision Blizzard, Nintendo, and Nexon
Source: Mirae Asset Daewoo Research

Company overview

NCsoft was established in 1997 as an online game developer. The company went public on the KOSDAQ in July 2000 and was relisted on the KOSPI in May 2003.

PC-based online games released by the company include *Lineage* (1998); *Lineage II* (2003); *Guild Wars* (2005); *Tabula Rasa* (US/Europe, 2007); *Aion* (2008); *Blade & Soul* (2012); and *Guild Wars 2* (US/Europe, 2012). Most of its games are still generating revenue at present.

NCsoft expanded into mobile games with the release of *Lineage Mobile: Haste* in March 2014. The company's mobile game business began to grow in earnest with the release of *Lineage Red Knights* in December 2016. Recent mobile game releases include *Final Blade* in February 2017 and *Pro Baseball H2* in March 2017. Next, the company plans to release *Lineage M* in 2Q17.

Figure 62. Revenue breakdown

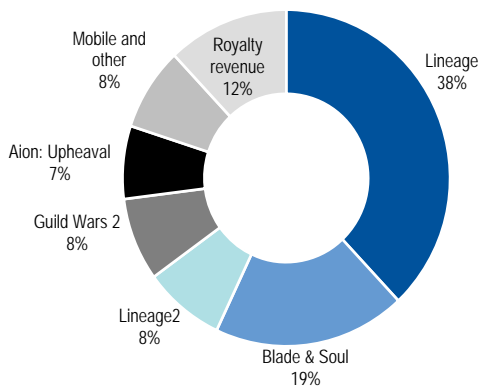
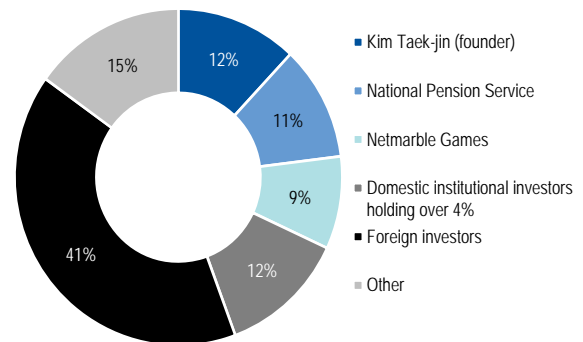


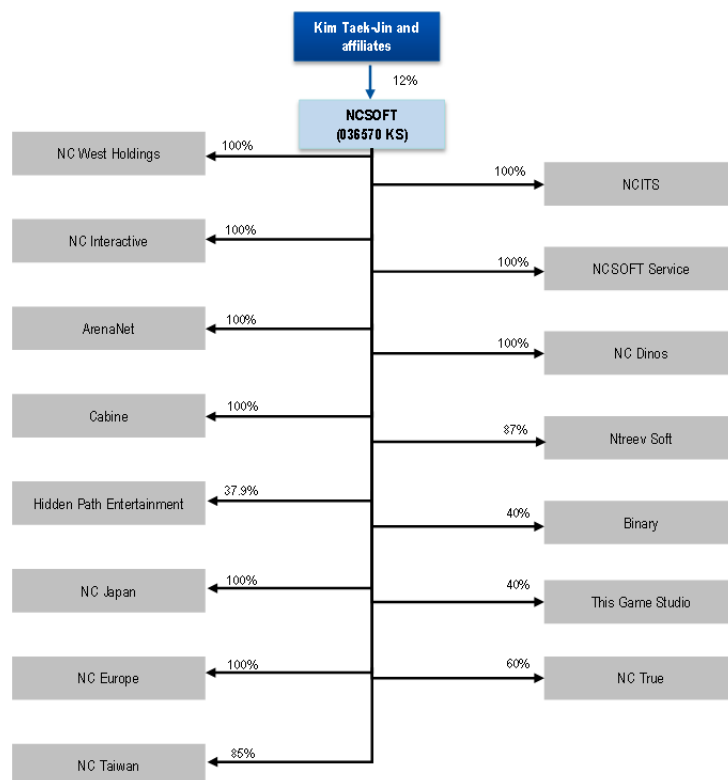
Figure 63. Shareholder structure



Note: As of 2016
Source: NCsoft, Mirae Asset Daewoo Research

Note: As of April 2016
Source: Bloomberg, Mirae Asset Daewoo Research

Figure 64. Governance structure



Note: Based on 2016 annual report Source: NCsoft, Mirae Asset Daewoo Research

Financial structure

NCsoft has maintained robust operating profit and EBITDA margins of around 30% for the past three years. In addition, it has kept debt ratio at 20% levels, with a low total debt to total asset ratio. As of end-2016, net cash holdings were estimated at ₩800bn, which could be used for the company's further expansion via M&A activities.

Table 13. NCsoft major financial ratios (% , x)

	2014	2015	2016
OP margin	33.2	28.3	33.4
EBITDA margin	37.6	32.5	36.7
Net debt/EBITDA	-2.9	-3.5	-2.3
Debt ratio	23.5	24.1	24.6
Total debt to total asset ratio	0.0	0.0	6.3

Note: All figures are based on consolidated K-IFRS

Source: Korea Ratings, Mirae Asset Daewoo Research

Risks

Schedule risks: NCsoft concentrates on MMORPGs, the development of which takes longer and requires higher costs, compared with casual games. The company has sometimes postponed the launches of new titles, in an effort to improve quality. Potential delays in major new title launches could dent both share performance and earnings outlook.

Performance of new titles: The performance of new game titles is difficult to predict; however, game companies have recently been utilizing a variety of pre-launch procedures, including CBTs, OBTs, and reservations to play before launch, as marketing tools to increase the likelihood of new title's success. Recently, NCsoft carried out large-scale promotions for a reservation event before the launch of *Lineage M*. User reservations for the pre-launch event exceeded 3m in the shortest period time ever in Korea.

Competitive risks: Both in Korea and overseas, mobile game companies are now engaged in fierce competition. In the Korean market, the number of new game launches by Korea's major players has doubled YoY, while games developed by China- and US-based companies have recently ranked high in the app store charts. Moreover, the increasing utilization of both online and offline advertising platforms has driven up the overall ad expenses of mobile game companies.

Meanwhile, we think competition in the PC online game segment, a traditional domain of NCsoft, is less intense. Despite the restructuring of the global PC online game market, based on top-three players, i.e., Activision Blizzard (US), NetEase (China), and NCsoft (Korea), the scale of the online PC game market has remained solid, in terms of both user base of revenue. Accordingly, we see a good chance of success for *Lineage Eternal*, NCsoft's new online PC game targeting the global market.

Surging costs: Growing revenue contribution from mobile games should drive up overall variable costs, as the mobile game business incurs greater expenses related to commissions and marketing than the PC online game business. In addition, labor costs are also on the rise, as NCsoft continues hiring developers to solidify its foothold in the mobile game space. However, such an increase in costs should be offset by revenue generation from new mobile games and solid revenue from existing high-margin online PC games and royalties.

NCsoft (036570 KS/Buy/TP: W500,000)

Comprehensive Income Statement (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Revenue	984	1,581	1,778	1,849
Cost of Sales	188	302	339	353
Gross Profit	796	1,279	1,439	1,496
SG&A Expenses	467	738	757	768
Operating Profit (Adj)	329	541	682	728
Operating Profit	329	541	682	728
Non-Operating Profit	17	11	11	10
Net Financial Income	19	0	0	0
Net Gain from Inv in Associates	7	0	0	0
Pretax Profit	346	552	693	738
Income Tax	75	135	170	180
Profit from Continuing Operations	271	417	523	558
Profit from Discontinued Operations	0	0	0	0
Net Profit	271	417	523	558
Controlling Interests	272	418	525	560
Non-Controlling Interests	-1	-1	-2	-2
Total Comprehensive Profit	329	417	523	558
Controlling Interests	329	416	522	557
Non-Controlling Interests	0	1	1	1
EBITDA	361	573	714	760
FCF (Free Cash Flow)	95	515	577	598
EBITDA Margin (%)	36.7	36.2	40.2	41.1
Operating Profit Margin (%)	33.4	34.2	38.4	39.4
Net Profit Margin (%)	27.6	26.4	29.5	30.3

Statement of Financial Condition (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Current Assets	1,192	1,369	1,756	2,207
Cash and Cash Equivalents	145	155	390	628
AR & Other Receivables	161	258	290	302
Inventories	1	1	1	1
Other Current Assets	885	955	1,075	1,276
Non-Current Assets	1,169	1,519	1,612	1,625
Investments in Associates	71	114	129	134
Property, Plant and Equipment	225	198	172	145
Intangible Assets	53	47	42	36
Total Assets	2,361	2,888	3,368	3,832
Current Liabilities	284	457	514	535
AP & Other Payables	28	45	51	53
Short-Term Financial Liabilities	0	0	0	0
Other Current Liabilities	256	412	463	482
Non-Current Liabilities	181	200	206	208
Long-Term Financial Liabilities	150	150	0	0
Other Non-Current Liabilities	31	50	206	208
Total Liabilities	465	657	720	743
Controlling Interests	1,886	2,222	2,641	3,084
Capital Stock	11	11	11	11
Capital Surplus	432	432	432	432
Retained Earnings	1,544	1,881	2,300	2,742
Non-Controlling Interests	10	9	7	5
Stockholders' Equity	1,896	2,231	2,648	3,089

Cash Flows (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Cash Flows from Op Activities	112	515	577	598
Net Profit	271	417	523	558
Non-Cash Income and Expense	115	167	202	212
Depreciation	27	27	27	27
Amortization	6	6	6	6
Others	82	134	169	179
Chg in Working Capital	-154	66	22	8
Chg in AR & Other Receivables	-71	-96	-32	-12
Chg in Inventories	0	0	0	0
Chg in AP & Other Payables	-5	4	1	0
Income Tax Paid	-136	-135	-170	-180
Cash Flows from Inv Activities	-139	-381	-221	-239
Chg in PP&E	-15	0	0	0
Chg in Intangible Assets	-2	0	0	0
Chg in Financial Assets	-170	-381	-221	-239
Others	48	0	0	0
Cash Flows from Fin Activities	-74	-81	-106	-117
Chg in Financial Liabilities	-	-	-	-
Chg in Equity	-9	0	0	0
Dividends Paid	-60	-81	-106	-117
Others	-	-	-	-
Increase (Decrease) in Cash	-103	10	236	237
Beginning Balance	248	145	155	390
Ending Balance	145	155	390	628

Source: Company data, Mirae Asset Daewoo Research estimates

Forecasts/Valuations (Summarized)

	12/16	12/17F	12/18F	12/19F
P/E (x)	19.9	18.9	15.0	14.1
P/CF (x)	14.1	13.5	10.9	10.3
P/B (x)	2.7	3.3	2.8	2.4
EV/EBITDA (x)	12.7	12.2	9.3	8.2
EPS (W)	12,416	19,067	23,937	25,526
CFPS (W)	17,610	26,635	33,065	35,117
BPS (W)	93,096	108,463	127,557	147,756
DPS (W)	3,820	5,000	5,500	6,000
Payout ratio (%)	29.9	25.5	22.3	22.8
Dividend Yield (%)	1.5	1.4	1.5	1.7
Revenue Growth (%)	17.4	60.7	12.5	4.0
EBITDA Growth (%)	32.7	58.7	24.6	6.4
Operating Profit Growth (%)	38.8	64.4	26.1	6.7
EPS Growth (%)	64.6	53.6	25.5	6.6
Accounts Receivable Turnover (x)	8.0	7.7	6.6	6.3
Inventory Turnover (x)	1,455.7	1,821.9	1,564.1	1,506.8
Accounts Payable Turnover (x)	21.0	34.7	29.8	28.7
ROA (%)	11.9	15.9	16.7	15.5
ROE (%)	14.9	20.4	21.6	19.6
ROIC (%)	61.8	96.4	143.0	173.6
Liability to Equity Ratio (%)	24.5	29.4	27.2	24.1
Current Ratio (%)	419.1	299.6	341.7	412.8
Net Debt to Equity Ratio (%)	-44.0	-39.7	-46.5	-54.0
Interest Coverage Ratio (x)	110.4	0.0	0.0	0.0

Netmarble Games (251270 KS)

Champion of global mobile gaming market

Game

(Initiate)	Buy
Target Price (12M, W)	200,000
Listing date: 5/12/17	-
Expected Return	-
OP (17F, Wbn)	678
Consensus OP (17F, Wbn)	991
EPS Growth (17F, %)	151.2
Market EPS Growth (17F, %)	36.3
P/E (17F, x)	-
Market P/E (17F, x)	9.4
KOSPI	2,205.44

Initiate with Buy call and 12-month forward TP of W200,000; Our top pick

We initiate our coverage of Netmarble Games with a Buy rating and 12-month forward target price of W200,000, and recommend it as one of our top sector picks. Netmarble Games is set to go public on May 12th with an initial offering price of W157,000 per share. As of March 2017, Netmarble Games is Korea's top mobile game developer and publisher and the world's third largest publisher of mobile games, according to App Annie.

Investment points

Record-setting earnings: Netmarble has delivered record-high earnings every year. We expect earnings growth to accelerate in 2017, with revenue and operating profit likely to expand by 58% YoY (versus 40% YoY in 2016) and 130% YoY (versus 30% YoY), respectively. The key growth driver is the mobile MMORPG *Lineage II: Revolution*, which has been the top grossing title in Korea since its release on December 14th, 2016 (*Lineage II: Revolution* is set for release in Japan and China in 2H17), while the released recently *Yokai Saga* (MMORPG) and *Penta Storm* (MOBA) are also contributing to revenue. Netmarble plans to roll out 17 new titles in 2017.

Mobile games with a relatively long lifespan: In general, mobile games have a shorter lifespan than their online game counterparts. However, Netmarble's key mobile games have as long a lifespan as online game titles, which is a testament to the company's operational knowhow. Notably, *Everybody's Marble* (released in 2013) and *Seven Knights* (2014) still rank high on the iOS and Android store charts.

Revenue diversification: Netmarble has a well-diversified portfolio of mobile game titles, which accounted for 94% of total revenue in 2016. The company's mobile gaming revenue came in at W1.4tr in 2016; by genre, this breaks down into RPG (45%), casual games (40%), MMORPG (11%) and other (4%), and by market, revenue was evenly split between domestic sales and exports. The well-distributed mobile revenue mix suggests that Netmarble Games has overcome the limitations related to overreliance on a single game.

Catalyst vs. risk: M&As after IPO vs. volatility related to new title releases

Netmarble Games plans to raise W2.6tr through the IPO. We estimate the company can finance M&A deals worth W3tr based on net cash holdings, as of end-2016, or up to W5tr if external financing is used. Risk factors include commercial uncertainties over new titles in an increasingly competitive mobile gaming market and cannibalization of existing game revenues.

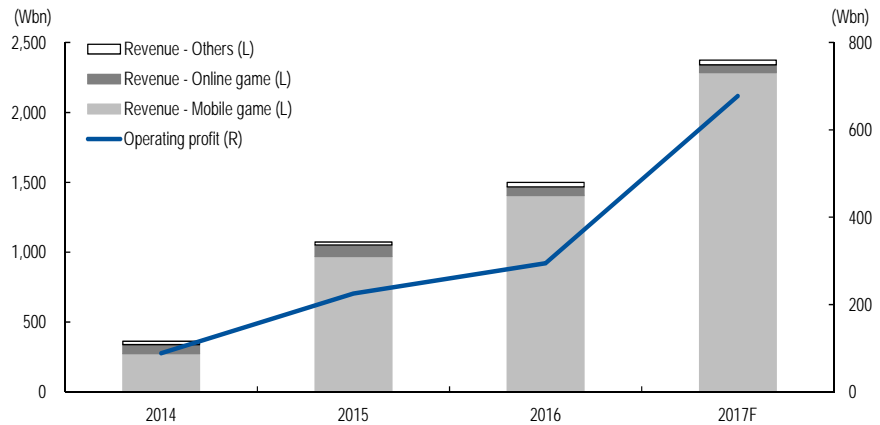
FY (Dec.)	12/14	12/15	12/16	12/17F	12/18F	12/19F
Revenue (Wbn)	362	1,073	1,500	2,374	2,601	2,853
OP (Wbn)	89	225	295	678	740	809
OP margin (%)	24.6	21.0	19.7	28.6	28.5	28.4
NP (Wbn)	25	121	174	437	483	529
EPS (W)	457	2,024	2,567	6,448	7,119	7,801
ROE (%)	7.8	14.8	15.3	30.5	25.5	22.0
P/E (x)	-	-	-	-	-	-
P/B (x)	-	-	-	-	-	-
Dividend yield (%)	-	-	-	-	-	-

Notes: All figures are based on consolidated K-IFRS; NP refers to net profit attributable to controlling interests
Source: Company data, Mirae Asset Daewoo Research estimates

Investment points

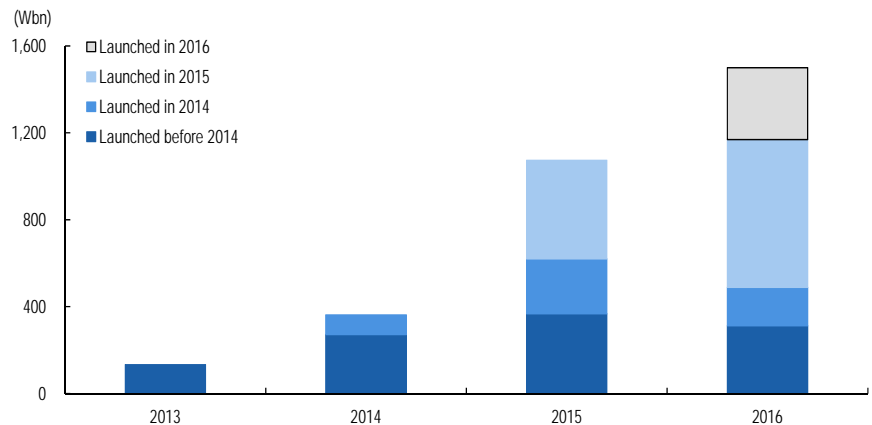
The likely continuation of record-high earnings, longevity of mobile titles, and revenue diversification should count as valuation premium factors, in our view. We also expect favorable share supply/demand dynamics post-IPO, given the high likelihood of the stock's inclusion in major indices, such as the KOSPI 200, MSCI, and FTSE.

Figure 65. Revenue and OP to reach record highs in 2017



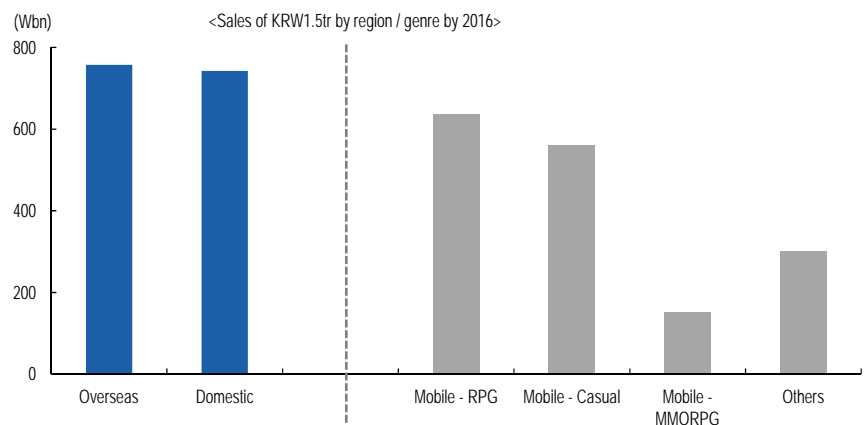
Source: Company data, Mirae Asset Daewoo Research

Figure 66. Longevity of mobile titles and advanced operational knowhow



Source: Company data, Mirae Asset Daewoo Research

Figure 67. Well-balanced revenue mix across genres and regions



Source: Company data, Mirae Asset Daewoo Research

Earnings outlook and valuation

For 2017, we expect Netmarble Games to report revenue growth of 58% YoY, bolstered by the release of the mobile MMORPG *Lineage II: Revolution* in Korea at end-2016, and in Japan and China in 2H17.

Notably, *Penta Storm for Kakao* was released in April, and Tencent has conducted a closed beta test (CBT) of *Lineage II: Revolution* in China.

Netmarble Games is planning to roll out 17 new titles this year. At a press conference held early this year, the company unveiled its lineup of mobile titles for 2017-18, comprising *Night of War*, *StoneAge Mobile*, *Destiny 6*, *Epic Saga*, *Monster Age*, *ArchMoon*, *Soul King*, *GLiNDA*, *Seven Knights MMORPG*, *PhantomGate*, *4ONES POKER*, *Blade & Soul MMORPG*, *Tera Mobile*, *The King of Fighters All Star*, *Teria Saga*, *First Born*, *G. I. JOE*, and *Trendy Town*.

Table 14. Netmarble Games annual earnings trend and forecasts (Wbn, %)

	2014	2015	2016	2017F	2018F
Revenue	362	1,073	1,500	2,374	2,601
Mobile games	275	970	1,406	2,286	2,516
MMORPG	12	17	150	895	988
RPG	144	544	638	689	730
Casual	79	350	561	645	741
Other	39	59	58	58	58
Online game	64	82	61	55	52
Other from games	23	21	33	33	33
Operating profit	89	225	295	678	740
OP margin	24.5	21.0	19.6	28.5	28.4
Net profit	42	169	209	514	568
Net margin	11.6	15.7	13.9	21.7	21.8
YoY					
Mobile games		196.1	39.8	58.2	9.6
MMORPG		252.9	45.0	62.6	10.1
RPG		39.5	768.8	495.5	10.3
Casual		276.8	17.1	8.0	6.0
Other		340.7	60.4	15.0	15.0
Mobile games		51.6	-1.8	0.0	0.0
Online game		27.7	-25.3	-10.0	-5.0
Other from games		-9.1	54.8	0.0	0.0
Operating profit		153.8	30.8	129.9	9.2
Net profit		299.9	24.1	145.8	10.5

Notes: All figures are based on consolidated K-IFRS; net profit refers to net profit attributable to controlling and non-controlling interests

Source: Netmarble Games, Mirae Asset Daewoo Research

Table 15. 12-month target price calculation (Wbn, x, W)

	Value	Note
Operating value (1)	13,463	
	2017F net profit attributable to controlling interests	P/E multiple
Consolidated	437	30.8
	13,463	Reflecting peer average 2017F P/E
Investment asset (2)	535	
Available-for-sale financial assets	528	FV at end-2016 including unlisted shares
Equity investments in related companies	6	BV at end-2016
Total asset value (1+2=3)	13,997	
Net debt (4)	-2,974	Including proceeds expected from IPO based on consolidated earnings at end-2016
Net asset value (3-4)	16,971	
No. of shares ('000)	84,704	Shares issued on a post-IPO basis
Target price	200,000	

Note: P/E based on peer group including NetEase, Tencent, and Zynga

Source: Mirae Asset Daewoo Research

Company overview

Founded as CJ Games in 2011, Netmarble Games began the smartphone mobile games business in earnest by establishing a mobile business center in 2012. Following its separation from CJ Group in 2014, CJ Games merged with CJ Netmarble, a spun-off unit of CJ E&M, and changed its name to Netmarble Games; original founder Bang Jun-Hyuk became the largest shareholder at that time.

Netmarble Games forged a strategic alliance with NCsoft in 2015 and began to roll out titles using NCsoft's major game IP, including *Lineage II: Revolution* (released in December 2016).

Netmarble Games' major acquisitions in North America include Jam City (formerly SGN Games) in July 2015 and Kabam in February 2017.

Figure 68. Revenue breakdown (2016)

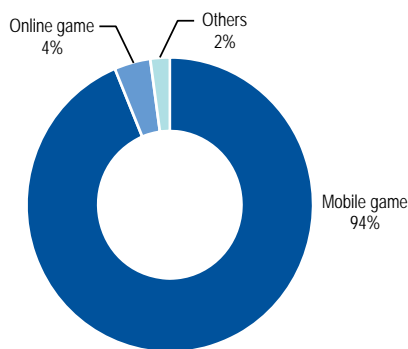
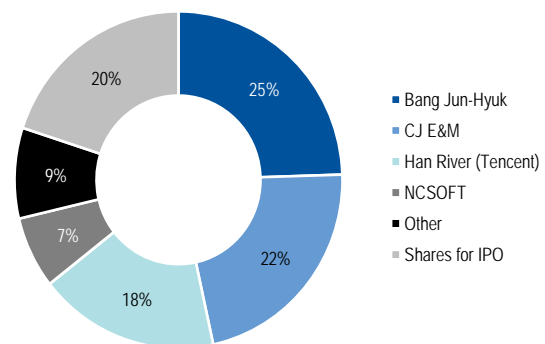


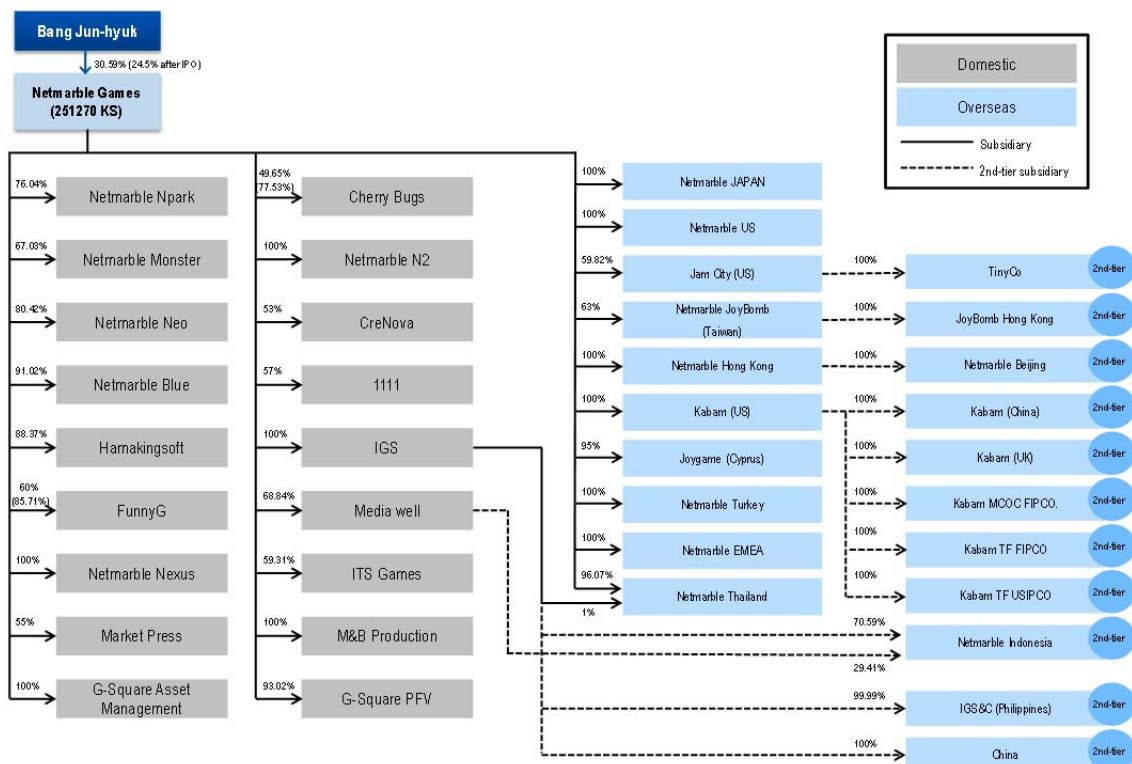
Figure 69. Shareholder structure on a post-IPO basis



Source: Company data, Mirae Asset Daewoo Research

Note: Shareholder breakdown on pre-IPO basis: Bang Jun-hyuk (30.6%); CJ E&M (27.6%); Han River/Tencent (22.2%); and NCsoft (8.6%)
Source: Bloomberg, Mirae Asset Daewoo Research

Figure 70. Governance structure



Note: Based on registration statement as of April 2017, including potential voting rights, such as convertible preferred shares
Source: Company data, Mirae Asset Daewoo Research

Financial structure

Netmarble Games has maintained a solid profitability over the past three years, with operating profit and EBITDA margins both largely staying above 20%. The company is expected to attract capital worth W2.6tr through the IPO in May 2017, which should further improve the company's liquidity conditions. We estimate that the company can finance M&A deals worth W3tr, based on net cash holdings and the IPO, and up to W5tr, if external financing is used.

Table 16. Netmarble Games major financial ratio (% , x)

	2014	2015	2016
OP margin	24.5	21.0	19.6
EBITDA margin	28.2	23.1	21.7
Net debt/EBITDA	-2.4	-1.2	-1.0
Debt ratio	25.0	23.5	49.4
Total debt to total asset ratio	1.8	2.1	5.4

Note: All figures are based on consolidated K-IFRS

Source: Korea Ratings, Mirae Asset Daewoo Research

Risks

Performance of new titles: The performance of new game titles is difficult to predict; however, game companies have recently been utilizing a variety of pre-launch procedures, including CBTs, OBTs, and reservations to play before launch, as marketing tools to increase the likelihood of success for new titles. Recently, Netmarble Games attracted over 2mn user reservations in just three weeks from the pre-launch reservation event for *Penta Storm*.

Competitive risks: Both in Korea and overseas, mobile game companies are now engaged in fierce competition. In the Korean market, the number of new game launches by Korea's major players has doubled YoY, while games developed by China- and US-based companies have recently ranked high in the app store charts. Moreover, the increasing utilization of both online and offline advertising platforms has driven up the overall ad expenses of mobile game companies.

Schedule risks: Mobile games increasingly require longer time and higher costs for development, compared with casual games, with sophisticated genres (currently MMORPGs) leading the segment. The company could postpone the launches of new titles in an effort to improve quality. Potential delays in major new title launches could dent share performance and earnings outlook.

Contract-related risks: As a publisher (distributor), Netmarble Games operates businesses based on contracts with game developers or intellectual property holders, and shares revenue with them. In order to stave off contract-related risks, the company acquired stakes in game developers to include them under its umbrella. In addition, to solidify their partnership, Netmarble and NCsoft (an intellectual property holder) cross-hold shares in each other.

Netmarble Games (251270 KS/Buy/TP: W200,000)

Comprehensive Income Statement (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Revenue	1,500	2,374	2,601	2,853
Cost of Sales	751	1,189	1,303	1,429
Gross Profit	749	1,185	1,298	1,424
SG&A Expenses	454	506	558	614
Operating Profit (Adj)	295	678	740	809
Operating Profit	295	678	740	809
Non-Operating Profit	-19	9	14	20
Net Financial Income	2	0	0	0
Net Gain from Inv in Associates	-3	0	0	0
Pretax Profit	276	687	754	829
Income Tax	66	173	186	207
Profit from Continuing Operations	209	514	568	622
Profit from Discontinued Operations	0	0	0	0
Net Profit	209	514	568	622
Controlling Interests	174	437	483	529
Non-Controlling Interests	35	77	85	93
Total Comprehensive Profit	275	514	568	622
Controlling Interests	239	446	493	540
Non-Controlling Interests	36	68	75	82
EBITDA	325	709	770	840
FCF (Free Cash Flow)	107	566	604	659
EBITDA Margin (%)	21.7	29.9	29.6	29.4
Operating Profit Margin (%)	19.7	28.6	28.5	28.4
Net Profit Margin (%)	11.6	18.4	18.6	18.5

Cash Flows (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Cash Flows from Op Activities	197	566	604	659
Net Profit	209	514	568	622
Non-Cash Income and Expense	130	198	211	233
Depreciation	8	8	8	8
Amortization	22	22	22	22
Others	100	168	181	203
Chg in Working Capital	-82	21	5	6
Chg in AR & Other Receivables	-103	-142	-37	-41
Chg in Inventories	-2	-1	0	0
Chg in AP & Other Payables	0	63	16	18
Income Tax Paid	-67	-173	-186	-207
Cash Flows from Inv Activities	-207	-399	-104	-115
Chg in PP&E	-89	0	0	0
Chg in Intangible Assets	-7	0	0	0
Chg in Financial Assets	-134	-399	-104	-115
Others	23	0	0	0
Cash Flows from Fin Activities	63	0	0	0
Chg in Financial Liabilities	-	-	-	-
Chg in Equity	276	0	0	0
Dividends Paid	-4	0	0	0
Others	-	-	-	-
Increase (Decrease) in Cash	57	163	499	543
Beginning Balance	216	273	436	935
Ending Balance	273	436	935	1,478

Source: Company data, Mirae Asset Daewoo Research estimates

Statement of Financial Condition (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Current Assets	721	1,146	1,713	2,331
Cash and Cash Equivalents	273	436	935	1,478
AR & Other Receivables	247	391	428	470
Inventories	2	3	3	4
Other Current Assets	199	316	347	379
Non-Current Assets	1,236	1,522	1,574	1,635
Investments in Associates	6	10	11	12
Property, Plant and Equipment	123	115	107	98
Intangible Assets	540	518	495	473
Total Assets	1,957	2,668	3,287	3,966
Current Liabilities	421	603	650	703
AP & Other Payables	152	240	263	288
Short-Term Financial Liabilities	109	109	0	0
Other Current Liabilities	160	254	387	415
Non-Current Liabilities	226	241	245	249
Long-Term Financial Liabilities	200	200	0	0
Other Non-Current Liabilities	26	41	245	249
Total Liabilities	647	844	895	952
Controlling Interests	1,216	1,653	2,136	2,664
Capital Stock	7	7	7	7
Capital Surplus	1,200	1,200	1,200	1,200
Retained Earnings	294	731	1,213	1,742
Non-Controlling Interests	94	171	256	350
Stockholders' Equity	1,310	1,824	2,392	3,014

Forecasts/Valuations (Summarized)

	12/16	12/17F	12/18F	12/19F
P/E (x)	-	-	-	-
P/CF (x)	-	-	-	-
P/B (x)	-	-	-	-
EV/EBITDA (x)	-	-	-	-
EPS (W)	2,567	6,448	7,119	7,801
CFPS (W)	5,004	10,514	11,496	12,610
BPS (W)	17,949	24,397	31,516	39,317
DPS (W)	0	0	0	0
Payout ratio (%)	0.0	0.0	0.0	0.0
Dividend Yield (%)	-	-	-	-
Revenue Growth (%)	39.8	58.3	9.6	9.7
EBITDA Growth (%)	31.0	118.2	8.6	9.1
Operating Profit Growth (%)	31.1	129.8	9.1	9.3
EPS Growth (%)	26.8	151.2	10.4	9.6
Accounts Receivable Turnover (x)	8.1	7.5	6.4	6.4
Inventory Turnover (x)	1,374.8	975.0	831.8	832.3
Accounts Payable Turnover (x)	8.5	8.5	7.2	7.2
ROA (%)	12.3	22.2	19.1	17.2
ROE (%)	15.3	30.5	25.5	22.0
ROIC (%)	38.9	76.5	88.6	101.7
Liability to Equity Ratio (%)	49.4	46.3	37.4	31.6
Current Ratio (%)	171.3	190.0	263.4	331.7
Net Debt to Equity Ratio (%)	-8.4	-19.7	-36.8	-48.0
Interest Coverage Ratio (x)	149.2	0.0	0.0	0.0

Com2uS (078340 KQ)

World-class game development capabilities

Game

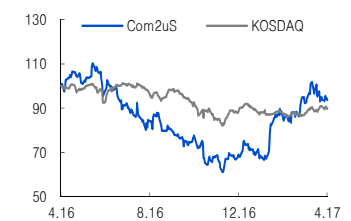
(Initiate)	Trading Buy
Target Price (12M, W)	135,000
Share Price (4/28/17, W)	120,000
Expected Return	13%

OP (17F, Wbn)	212
Consensus OP (17F, Wbn)	206

EPS Growth (17F, %)	9.2
Market EPS Growth (17F, %)	36.3
P/E (17F, x)	9.3
Market P/E (17F, x)	9.4
KOSDAQ	628.24

Market Cap (Wbn)	1,544
Shares Outstanding (mn)	13
Free Float (%)	72.5
Foreign Ownership (%)	25.0
Beta (12M)	0.93
52-Week Low	78,500
52-Week High	141,200

(%)	1M	6M	12M
Absolute	1.4	22.3	-6.3
Relative	-1.2	24.6	4.3



Initiate coverage with Trading Buy and 12-month TP of W135,000

We initiate our coverage of Com2uS with a Trading Buy call and target price of W135,000. The RPG *Summoners War: Sky Arena* is generating robust revenue primarily in North America. Having started as a casual game developer in the feature phone era, in the smartphone age, the company has successfully shifted to being a global player in the RPG genre.

Investment points

Solid overseas performance: In 2016, Com2uS generated 86% of its revenue overseas, with Asia (excluding Korea) and North America contributing 36% and 30%, respectively. Total revenue is projected to improve 10% YoY in 2017. Of note, overseas revenue is expected to increase 11%, driving up overall growth.

Expectations for new titles: Com2uS is steadily diversifying its mobile game portfolio. New games scheduled for release in 2017 include: *Project G2* (sports); *Danceville* (sandbox); *Ace Fishing: Wild Catch* (VR); *Project S*; and *Heroes War 2*. In 2018, the company plans to introduce the MMORPG version of *Summoners War: Sky Arena*, which currently generates the lion's share of revenue. A game based on the intellectual property of *Skylanders: Trap Team* (published by Activision) is also under development.

Valuation merits: The current share price corresponds to a 2017F P/E of 9.3x. In light of Com2uS' net cash holdings of W570bn, as of end-2016 (37% of total market cap) and global game companies' average 2017F P/E of 22x, the stock is undervalued, in our view.

Catalyst vs. risk: Robust overseas mobile game revenue vs. excessive dependence on single game

Com2uS' robust overseas mobile game revenue should receive renewed attention going forward. Amid intensifying competition in the domestic mobile game market, RPGs have emerged as a new growth driver in the domestic and overseas markets. In addition, the company has also successfully diversified its overseas markets. However, excessive dependence on *Summoners War: Sky Arena* is serving as a discount factor. The game is believed to generate over half of the company's entire revenue since it instituted worldwide marketing campaigns at end-2014.

We expect greater earnings contribution from the new titles scheduled for release in 2018, including the MMORPG version of *Summoners War: Sky Arena* and the mobile version of *Skylanders: Trap Team*, than the ones awaiting debut in 2017. We believe the valuation discount will narrow going forward, thanks to an expected decrease in dependence on a single game and the company's ability to develop games with global potential.

FY (Dec.)	12/14	12/15	12/16	12/17F	12/18F	12/19F
Revenue (Wbn)	235	434	513	565	625	682
OP (Wbn)	101	166	192	212	234	255
OP margin (%)	43.0	38.2	37.4	37.5	37.4	37.4
NP (Wbn)	79	126	152	166	183	199
EPS (W)	6,981	9,779	11,796	12,880	14,259	15,471
ROE (%)	49.8	35.0	26.5	23.4	21.2	19.1
P/E (x)	17.3	12.1	7.4	9.3	8.4	7.8
P/B (x)	6.4	3.0	1.7	1.9	1.6	1.3
Dividend yield (%)	0.0	0.0	1.6	1.2	1.2	1.2

Notes: All figures are based on consolidated K-IFRS; NP refers to net profit attributable to controlling interests
Source: Company data, Mirae Asset Daewoo Research estimates

Earnings outlook and valuation

For 2017, we expect Com2uS' revenue to expand 10% YoY, driven by brisk overseas revenue growth (+11% YoY). We also forecast operating profit to grow 10% YoY, with OP margin likely remaining high, at 37%.

Com2uS shares are trading at a discount, mainly due to its overreliance on a single game, *Summoners War*. We expect the valuation discount to narrow, alongside: 1) the company's efforts to reduce revenue concentration through new releases; and 2) the market's growing awareness of Com2uS' ability to develop globally competitive games.

Table 17. Com2uS annual earnings trend and forecasts (Wbn, %)

	2014	2015	2016	2017F	2018F
Revenue	235	434	513	565	625
Domestic	62	70	73	76	84
Overseas	172	363	440	489	542
- Asia	98	161	187	200	220
- North America	39	130	155	178	202
- EU	26	51	83	92	102
- Other	8	22	19	19	19
Operating profit	101	166	192	212	234
OP margin	43.1	38.3	37.4	37.4	37.4
Net profit	79	126	152	166	183
Net margin	33.8	29.0	29.6	29.3	29.2
YoY					
Revenue	188.5	84.7	18.3	10.2	10.6
Domestic	275.4	12.2	3.5	5.0	10.0
Overseas	166.1	111.0	21.2	11.1	10.7
- Asia		63.9	16.1	7.0	10.0
- North America		228.7	19.7	15.0	13.0
- EU		94.7	60.4	12.0	10.0
- Other		161.0	-13.8	0.0	0.0
Operating profit	1208.9	63.9	15.7	10.2	10.7
Net profit	309.4	58.8	20.6	9.3	10.3

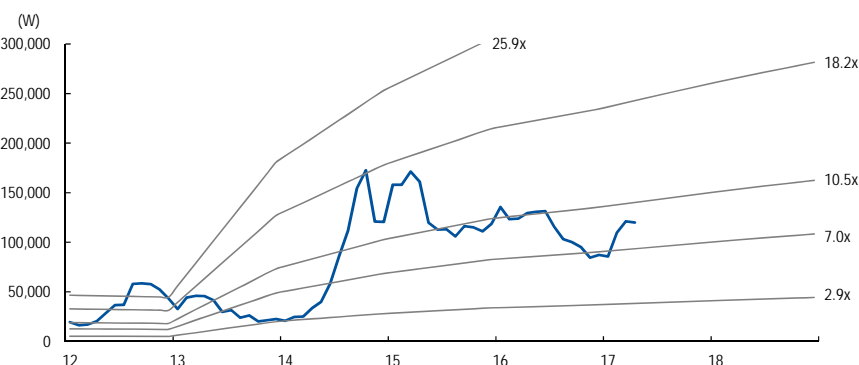
Note: All figures are based on consolidated K-IFRS, NP refers to net profit attributable to controlling and non-controlling interests, Source: Com2uS, Mirae Asset Daewoo Research

Table 18. 12-month target price calculation (Wbn, x, W)

	2017F net profit attributable to controlling interests	P/E multiple	Value	Note
Consolidated basis	166	10.5	1,741	Upper-end of the forward P/E band over the past two years
No. of shares (000)			12,866	No. of shares issued (incl. treasury shares)
Target price			135,000	

Source: Mirae Asset Daewoo Research

Figure 71. 12-month-forward P/E band and share price



Source: Mirae Asset Daewoo Research

Company overview

Com2uS is a mobile game publisher founded in 1998. When feature phones were the norm, the company focused on developing casual mobile games suitable for a closed, telco-centric ecosystem. After the arrival of smartphones, it successfully adapted to the more open iOS and Android ecosystems and achieved revenue growth with the global release of the RPG *Summoners War*. That title proved the company's ability to diversify revenue geographically and move into more sophisticated genres.

In December 2013, the company announced a change in the top management and largest shareholder. The founding CEO and largest shareholder sold her stake to rival Gamevil, which has become the largest shareholder of Com2uS, with a 24% stake.

Figure 72. Revenue breakdown by region (2016)

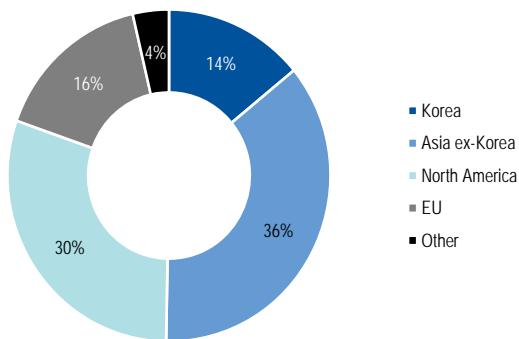
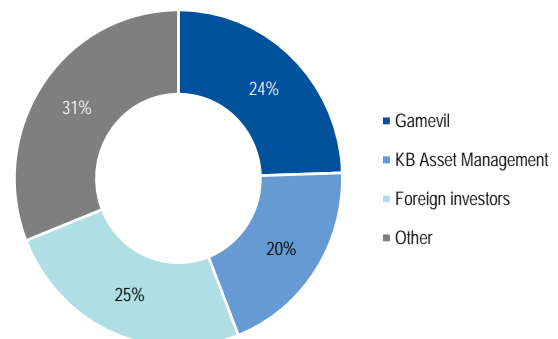


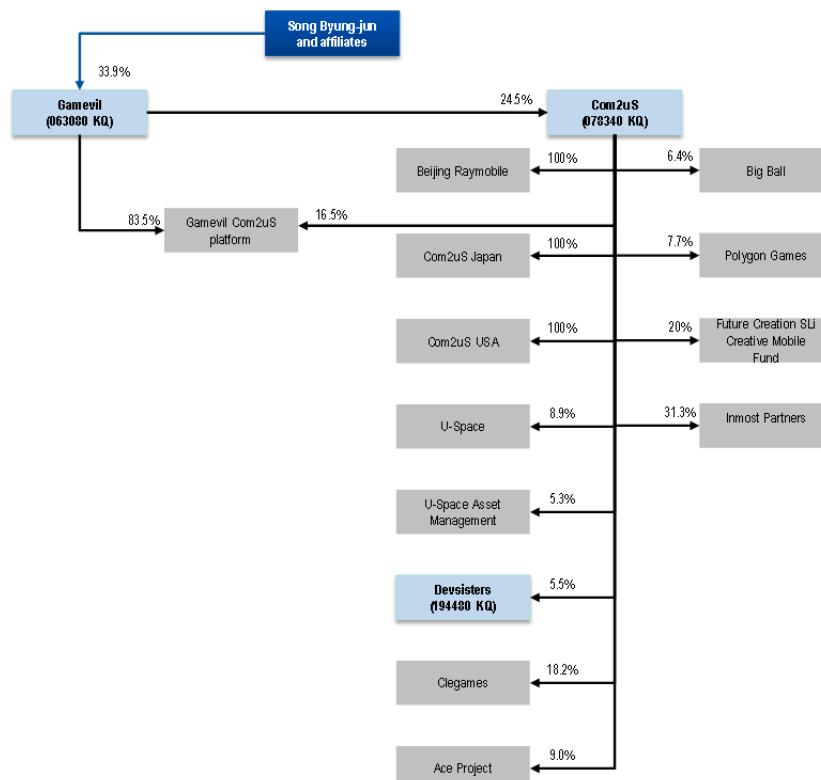
Figure 73. Shareholder structure (2016)



Source: Company data, Mirae Asset Daewoo Research

Source: Bloomberg, Mirae Asset Daewoo Research

Figure 74. Governance structure



Note: Based on 2016 annual report
Source: Company data, Mirae Asset Daewoo Research

Financial structure

Com2uS has displayed strong profitability in recent two years, posting OP and EBITDA margins of close to 40%. Net cash holdings were estimated at W570bn, as of end-2016. The company began paying cash dividends in 2016 and is expected to search for M&A opportunities, based on its solid net cash position.

Table 19. Com2uS major financial ratio (% , x)

	2014	2015	2016
OP margin	20.9	38.3	37.4
EBITDA margin	44.3	39.0	38.0
Net debt/EBITDA	-1.3	-2.6	-2.9
Debt ratio	18.6	14.4	12.1
Total debt to total asset ratio	0.0	0.0	0.0

Note: All figures are based on consolidated K-IFRS; Source: Korea Ratings, Mirae Asset Daewoo Research

Risks

Concentration of revenue: Excessive revenue dependence on *Summers War: Sky Arena* is serving as a discount factor for shares. The game is believed to have generated over half of the company's entire revenue since it implemented worldwide global marketing campaigns at end-2014. We expect that new titles to reduce its dependence on the single game and diversify revenue sources.

Schedule risks: The development of MMORPGs, Com2uS's future growth driver, takes longer and incurs higher costs. In addition, among the company's new releases scheduled for this year, VR games could be exposed to a higher risk of errors, due to the adoption of a new platform. Meanwhile, Com2uS could delay the launches of some of its new titles to improve quality, which could dent share performance and earnings outlook.

Com2uS (078340 KQ/Trading Buy/TP: W135,000)

Comprehensive Income Statement (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Revenue	513	565	625	682
Cost of Sales	52	57	63	69
Gross Profit	461	508	562	613
SG&A Expenses	270	297	328	358
Operating Profit (Adj)	192	212	234	255
Operating Profit	192	212	234	255
Non-Operating Profit	7	8	9	9
Net Financial Income	8	0	0	0
Net Gain from Inv in Associates	0	0	0	0
Pretax Profit	199	220	243	264
Income Tax	47	54	60	65
Profit from Continuing Operations	152	166	183	199
Profit from Discontinued Operations	0	0	0	0
Net Profit	152	166	183	199
Controlling Interests	152	166	183	199
Non-Controlling Interests	0	0	0	0
Total Comprehensive Profit	145	166	183	199
Controlling Interests	145	166	183	199
Non-Controlling Interests	0	0	0	0
EBITDA	195	215	237	258
FCF (Free Cash Flow)	155	168	186	202
EBITDA Margin (%)	38.0	38.1	37.9	37.8
Operating Profit Margin (%)	37.4	37.5	37.4	37.4
Net Profit Margin (%)	29.6	29.4	29.3	29.2

Statement of Financial Condition (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Current Assets	654	811	987	1,178
Cash and Cash Equivalents	90	190	299	428
AR & Other Receivables	64	70	77	84
Inventories	0	0	0	0
Other Current Assets	500	551	611	666
Non-Current Assets	58	57	56	55
Investments in Associates	3	3	3	4
Property, Plant and Equipment	3	1	-1	-3
Intangible Assets	3	1	0	-1
Total Assets	712	868	1,043	1,233
Current Liabilities	74	82	91	99
AP & Other Payables	0	0	0	0
Short-Term Financial Liabilities	0	0	0	0
Other Current Liabilities	74	82	91	99
Non-Current Liabilities	3	3	3	3
Long-Term Financial Liabilities	0	0	0	0
Other Non-Current Liabilities	3	3	3	3
Total Liabilities	77	85	94	102
Controlling Interests	635	783	949	1,131
Capital Stock	6	6	6	6
Capital Surplus	208	208	208	208
Retained Earnings	435	583	749	931
Non-Controlling Interests	0	0	0	0
Stockholders' Equity	635	783	949	1,131

Cash Flows (Summarized)

(Wbn)	12/16	12/17F	12/18F	12/19F
Cash Flows from Op Activities	156	168	186	202
Net Profit	152	166	183	199
Non-Cash Income and Expense	43	57	63	68
Depreciation	2	2	2	2
Amortization	1	1	1	1
Others	40	54	60	65
Chg in Working Capital	4	-1	-1	-1
Chg in AR & Other Receivables	1	-6	-7	-7
Chg in Inventories	0	0	0	0
Chg in AP & Other Payables	0	0	0	0
Income Tax Paid	-50	-54	-60	-65
Cash Flows from Inv Activities	-131	-51	-58	-56
Chg in PP&E	-1	0	0	0
Chg in Intangible Assets	-1	0	0	0
Chg in Financial Assets	-119	-51	-58	-56
Others	-10	0	0	0
Cash Flows from Fin Activities	-20	-17	-17	-17
Chg in Financial Liabilities	-	-	-	-
Chg in Equity	0	0	0	0
Dividends Paid	0	-17	-17	-17
Others	-	-	-	-
Increase (Decrease) in Cash	5	100	110	128
Beginning Balance	85	90	190	299
Ending Balance	90	190	299	428

Source: Company data, Mirae Asset Daewoo Research estimates

Forecasts/Valuations (Summarized)

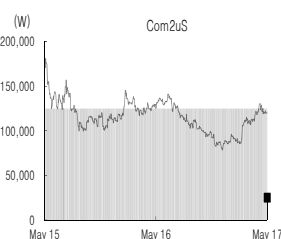
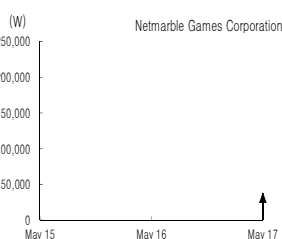
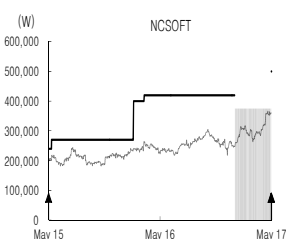
	12/16	12/17F	12/18F	12/19F
P/E (x)	7.4	9.3	8.4	7.8
P/CF (x)	5.7	6.9	6.3	5.8
P/B (x)	1.7	1.9	1.6	1.3
EV/EBITDA (x)	2.8	3.8	2.8	1.8
EPS (W)	11,796	12,880	14,259	15,471
CFPS (W)	15,166	17,307	19,134	20,766
BPS (W)	51,150	62,674	75,574	89,686
DPS (W)	1,400	1,400	1,400	1,400
Payout ratio (%)	11.5	10.6	9.5	8.8
Dividend Yield (%)	1.6	1.2	1.2	1.2
Revenue Growth (%)	18.2	10.1	10.6	9.1
EBITDA Growth (%)	15.4	10.3	10.2	8.9
Operating Profit Growth (%)	15.7	10.4	10.4	9.0
EPS Growth (%)	20.6	9.2	10.7	8.5
Accounts Receivable Turnover (x)	8.3	8.7	8.7	8.7
Inventory Turnover (x)	0.0	0.0	0.0	0.0
Accounts Payable Turnover (x)	0.0	0.0	0.0	0.0
ROA (%)	23.5	21.0	19.2	17.5
ROE (%)	26.5	23.4	21.2	19.1
ROIC (%)	322.3	367.7	428.4	491.8
Liability to Equity Ratio (%)	12.1	10.8	9.9	9.1
Current Ratio (%)	879.0	989.7	1,088.3	1,190.2
Net Debt to Equity Ratio (%)	-89.9	-91.8	-93.2	-94.3
Interest Coverage Ratio (x)	6,487.4	0.0	0.0	0.0

APPENDIX 1

Important Disclosures & Disclaimers

2-Year Rating and Target Price History

Company (Code)	Date	Rating	Target Price	Company (Code)	Date	Rating	Target Price
NCSOFT 036570)	05/01/2017	Buy	500,000	Netmarble Games (251270)	04/27/2015	Buy	240,000
		No Coverage			Com2uS 078340)	05/02/2017	Buy
	03/11/2016	Buy	420,000			05/02/2017	Trading Buy
	02/05/2016	Buy	400,000			No Coverage	
	05/13/2015	Buy	270,000				



Stock Ratings

- Buy : Relative performance of 20% or greater
- Trading Buy : Relative performance of 10% or greater, but with volatility
- Hold : Relative performance of -10% and 10%
- Sell : Relative performance of -10%

Industry Ratings

- Overweight : Fundamentals are favorable or improving
- Neutral : Fundamentals are steady without any material changes
- Underweight : Fundamentals are unfavorable or worsening

Ratings and Target Price History (Share price (—), Target price (—), Not covered (■), Buy (▲), Trading Buy (■), Hold (●), Sell (◆))

* Our investment rating is a guide to the relative return of the stock versus the market over the next 12 months.

* Although it is not part of the official ratings at Mirae Asset Daewoo Co., Ltd., we may call a trading opportunity in case there is a technical or short-term material development.

* The target price was determined by the research analyst through valuation methods discussed in this report, in part based on the analyst's estimate of future earnings.

* The achievement of the target price may be impeded by risks related to the subject securities and companies, as well as general market and economic conditions.

Equity Ratings Distribution

Buy	Trading Buy	Hold	Sell
72.86%	15.58%	11.56%	0.00%

* Based on recommendations in the last 12-months (as of March 31, 2017)

Disclosures

As of the publication date, Mirae Asset Daewoo Co., Ltd. and/or its affiliates do not have any special interest with the subject company and do not own 1% or more of the subject company's shares outstanding.

Analyst Certification

The research analysts who prepared this report (the "Analysts") are registered with the Korea Financial Investment Association and are subject to Korean securities regulations. They are neither registered as research analysts in any other jurisdiction nor subject to the laws and regulations thereof. Opinions expressed in this publication about the subject securities and companies accurately reflect the personal views of the Analysts primarily responsible for this report. Mirae Asset Daewoo Co., Ltd. ("Mirae Asset Daewoo") policy prohibits its Analysts and members of their households from owning securities of any company in the Analyst's area of coverage, and the Analysts do not serve as an officer, director or advisory board member of the subject companies. Except as otherwise specified herein, the Analysts have not received any compensation or any other benefits from the subject companies in the past 12 months and have not been promised the same in connection with this report. No part of the compensation of the Analysts was, is, or will be directly or indirectly related to the specific recommendations or views contained in this report but, like all employees of Mirae Asset Daewoo, the Analysts receive compensation that is determined by overall firm profitability, which includes revenues from, among other business units, the institutional equities, investment banking, proprietary trading and private client division. At the time of publication of this report, the Analysts do not know or have reason to know of any actual, material conflict of interest of the Analyst or Mirae Asset Daewoo except as otherwise stated herein.

Disclaimers

This report is published by Mirae Asset Daewoo, a broker-dealer registered in the Republic of Korea and a member of the Korea Exchange. Information and opinions contained herein have been compiled in good faith and from sources believed to be reliable, but such information has not been independently verified and Mirae Asset Daewoo makes no guarantee, representation or warranty, express or implied, as to the fairness, accuracy, completeness or correctness of the information and opinions contained herein or of any translation into English from the Korean language. In case of an English translation of a report prepared in the Korean language, the original Korean language report may have been made available to investors in advance of this report.

The intended recipients of this report are sophisticated institutional investors who have substantial knowledge of the local business environment, its common practices, laws and accounting principles and no person whose receipt or use of this report would violate any laws and regulations or subject Mirae Asset Daewoo and its affiliates to registration or licensing requirements in any jurisdiction shall receive or make any use hereof.

This report is for general information purposes only and it is not and shall not be construed as an offer or a solicitation of an offer to effect transactions in any securities or other financial instruments. The report does not constitute investment advice to any person and such person shall not be treated as a client of Mirae Asset Daewoo by virtue of receiving this report. This report does not take into account the particular investment objectives, financial situations, or needs of individual clients. The report is not to be relied upon in substitution for the exercise of independent judgment. Information and opinions contained herein are as of the date hereof and are subject to change without notice. The price and value of the investments referred to in this report and the income from them may depreciate or appreciate, and investors may incur losses on investments. Past performance is not a guide to future performance. Future returns are not guaranteed, and a loss of original capital may occur. Mirae Asset Daewoo, its affiliates and their directors, officers, employees and agents do not accept any liability for any loss arising out of the use hereof.

Mirae Asset Daewoo may have issued other reports that are inconsistent with, and reach different conclusions from, the opinions presented in this report. The reports may reflect different assumptions, views and analytical methods of the analysts who prepared them. Mirae Asset Daewoo may make investment decisions that are inconsistent with the opinions and views expressed in this research report. Mirae Asset Daewoo, its affiliates and their directors, officers, employees and agents may have long or short positions in any of the subject securities at any time and may make a purchase or sale, or offer to make a purchase or sale, of any such securities or other financial instruments from time to time in the open market or otherwise, in each case either as principals or agents. Mirae Asset Daewoo and its affiliates may have had, or may be expecting to enter into, business relationships with the subject companies to provide investment banking, market-making or other financial services as are permitted under applicable laws and regulations.

No part of this document may be copied or reproduced in any manner or form or redistributed or published, in whole or in part, without the prior written consent of Mirae Asset Daewoo.

Distribution

United Kingdom: This report is being distributed by Mirae Asset Securities (UK) Ltd. in the United Kingdom only to (i) investment professionals falling within Article 19(5) of the Financial Services and Markets Act 2000 (Financial Promotion) Order 2005 (the "Order"), and (ii) high net worth companies and other persons to whom it may lawfully be communicated, falling within Article 49(2)(A) to (E) of the Order (all such persons together being referred to as "Relevant Persons"). This report is directed only at Relevant Persons. Any person who is not a Relevant Person should not act or rely on this report or any of its contents.

United States: This report is distributed in the U.S. by Mirae Asset Securities (USA) Inc., a member of FINRA/SIPC, and is only intended for major institutional investors as defined in Rule 15a-6(b)(4) under the U.S. Securities Exchange Act of 1934. All U.S. persons that receive this document by their acceptance thereof represent and warrant that they are a major institutional investor and have not received this report under any express or implied understanding that they will direct commission income to Mirae Asset Daewoo or its affiliates. Any U.S. recipient of this document wishing to effect a transaction in any securities discussed herein should contact and place orders with Mirae Asset Securities (USA) Inc., which accepts responsibility for the contents of this report in the U.S. The securities described in this report may not have been registered under the U.S. Securities Act of 1933, as amended, and, in such case, may not be offered or sold in the U.S. or to U.S. persons absent registration or an applicable exemption from the registration requirements.

Hong Kong: This document has been approved for distribution in Hong Kong by Mirae Asset Securities (HK) Ltd., which is regulated by the Hong Kong Securities and Futures Commission. The contents of this report have not been reviewed by any regulatory authority in Hong Kong. This report is for distribution only to professional investors within the meaning of Part I of Schedule 1 to the Securities and Futures Ordinance of Hong Kong (Cap. 571, Laws of Hong Kong) and any rules made thereunder and may not be redistributed in whole or in part in Hong Kong to any person.

All Other Jurisdictions: Customers in all other countries who wish to effect a transaction in any securities referenced in this report should contact Mirae Asset Daewoo or its affiliates only if distribution to or use by such customer of this report would not violate applicable laws and regulations and not subject Mirae Asset Daewoo and its affiliates to any registration or licensing requirement within such jurisdiction.

Mirae Asset Daewoo International Network

Mirae Asset Daewoo Co., Ltd. (Seoul)

Global Equity Sales Team
Mirae Asset Center 1 Building
26 Eulji-ro 5-gil, Jung-gu, Seoul 04539
Korea

Tel: 82-2-3774-2124

Mirae Asset Securities (USA) Inc.

810 Seventh Avenue, 37th Floor
New York, NY 10019
USA

Tel: 1-212-407-1000

PT. Mirae Asset Sekuritas Indonesia

Equity Tower Building Lt. 50
Sudirman Central Business District
Jl. Jend. Sudirman, Kav. 52-53 Jakarta Selatan
12190
Indonesia

Tel: 62-21-515-3281

Mirae Asset Securities Mongolia UTsk LLC

#406, Blue Sky Tower, Peace Avenue 17
1 Khoroo, Sukhbaatar District
Ulaanbaatar 14240
Mongolia

Tel: 976-7011-0806

Shanghai Representative Office

38T31, 38F, Shanghai World Financial Center
100 Century Avenue, Pudong New Area
Shanghai 200120
China

Tel: 86-21-5013-6392

Mirae Asset Securities (HK) Ltd.

Suites 1109-1114, 11th Floor
Two International Finance Centre
8 Finance Street, Central
Hong Kong
China

Tel: 852-2845-6332

Mirae Asset Wealth Management (USA) Inc.

555 S. Flower Street, Suite 4410,
Los Angeles, California 90071
USA

Tel: 1-213-262-3807

Mirae Asset Securities (Singapore) Pte. Ltd.

6 Battery Road, #11-01
Singapore 049909
Republic of Singapore

Tel: 65-6671-9845

Mirae Asset Investment Advisory (Beijing) Co., Ltd

2401B, 24th Floor, East Tower, Twin Towers
B12 Jianguomenwai Avenue, Chaoyang District
Beijing 100022
China

Tel: 86-10-6567-9699

Ho Chi Minh Representative Office

7F, Saigon Royal Building
91 Pasteur St.
District 1, Ben Nghe Ward, Ho Chi Minh City
Vietnam

Tel: 84-8-3910-7715

Mirae Asset Securities (UK) Ltd.

41st Floor, Tower 42
25 Old Broad Street,
London EC2N 1HQ
United Kingdom

Tel: 44-20-7982-8000

Mirae Asset Wealth Management (Brazil) CCTVM

Rua Funchal, 418, 18th Floor, E-Tower Building
Vila Olimpia
Sao Paulo - SP
04551-060
Brasil

Tel: 55-11-2789-2100

Mirae Asset Securities (Vietnam) LLC

7F, Saigon Royal Building
91 Pasteur St.
District 1, Ben Nghe Ward, Ho Chi Minh City
Vietnam

Tel: 84-8-3911-0633 (ext.110)

Beijing Representative Office

2401A, 24th Floor, East Tower, Twin Towers
B12 Jianguomenwai Avenue, Chaoyang District
Beijing 100022
China

Tel: 86-10-6567-9699 (ext. 3300)
