



# GNAM Investment Competition

## Seoul National University Top Investment Idea



SEOUL  
NATIONAL  
UNIVERSITY

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**I. Executive Summary**

**II. Company Overview**

**III. New Business Analysis**

**IV. Current Business Analysis**

**V. Conclusion**



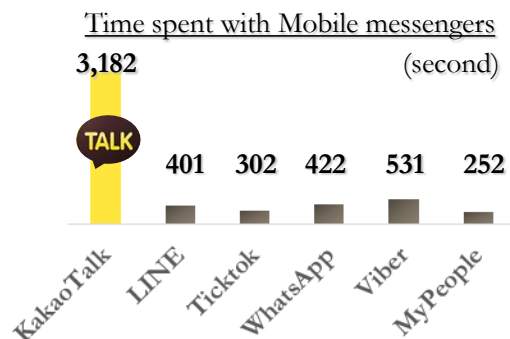
# Agenda



# I . Executive Summary

## WHY KAKAO ?

“Leader of Next  
Mobile Era in Korea”



Source : AppRanker, Electronic Times Recited

“On-demand  
Service Provider”



## Earnings & Valuation Metrix

FY	Revenues (USDmn)	OP OP Margin (USDmn) (%)	NP (USDmn)	EPS (USD)	EBITDA (USDmn)	ROE (%)	P/E (X)	EV/EBITDA (X)	
Dec/15	794	98	12	96	1.33	123	4.2	43	37.2
Dec/16	1012	263	26	211	2.93	281	5.1	65	44.8

## Trading Buy

Target Price(12M, USD)	141.78
Share Price(10/30/15, USD)	94.75
Expected Return(12M, %)	49.6
EPS Growth(16F, %)	120
Market EPS Growth(16F, %)	6.1
P/E(16F, x)	65
Market P/E(16F, x)	47.64
KSDAQ	683.6
Market Cap(USD bn)	4,166
Shares Outstanding (mn)	60
Avg Trading Volume(3M, '000)	518
Avg Trading Value(3M, USDmn)	55
Dividend Yield(14F, %)	0.1
52-Week Low(USD)	82.57
52-Week High(USD)	133.44
Beta(12M, Daily Rate of Return)	1.7
Foreign Ownership (%)	19

## Major Shareholder (s)

Kim Beom-su and other 11 directors	41.1
Maximo Pte Ltd	9.4

## Price Performance

(%)	1M	6M	12M
Absolute	-6.6	5.2	-22.9
Relative	-11.7	10.1	-29.0

## II. Company Overview

### New CEO Profile

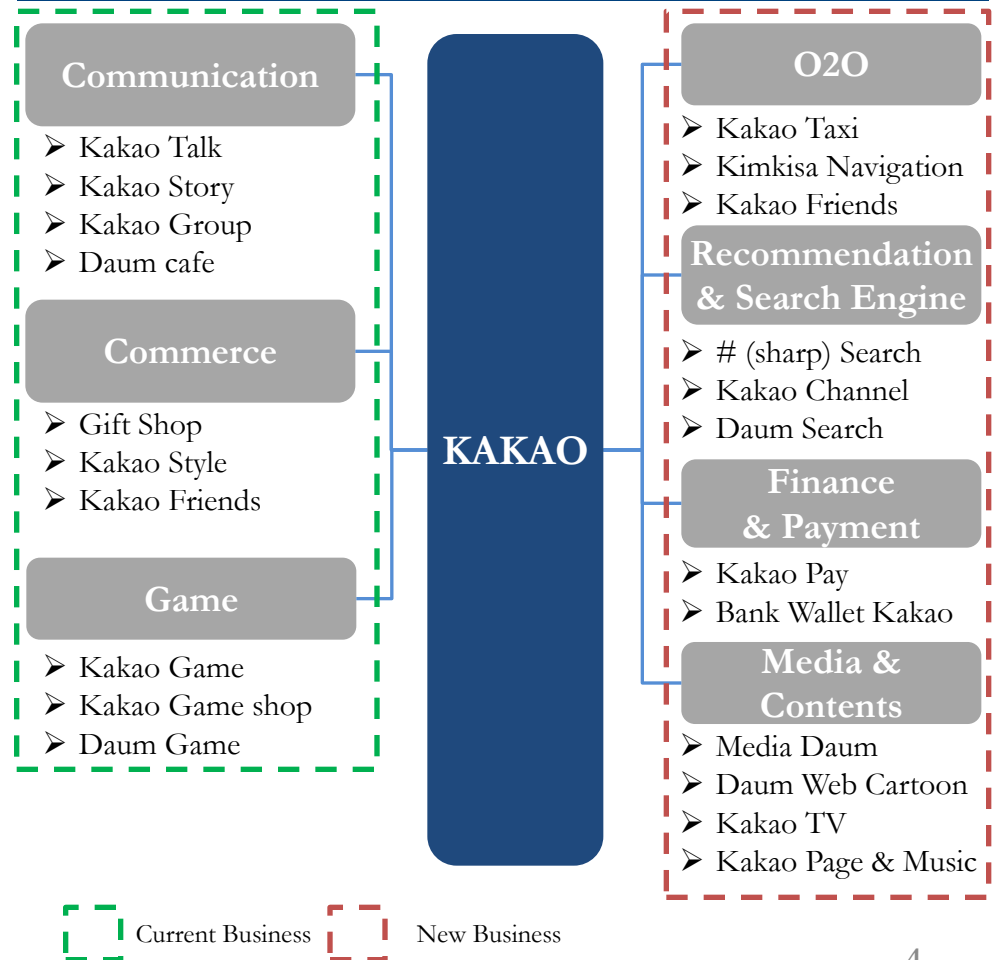


In August 2015, Kakao appointed its new CEO, J-H Lim. Despite his relatively young age of 35, J-H Lim has become the CEO of a \$6bn (USD) company.

### Professional experience

- + 2012. 4 ~ 2015. 8 K Cube Ventures, CEO
- + 2007 ~ 2012 SoftBank Ventures Principal
- + 2006 ~ 2007 Consultant at BCG
- + 2005 ~ 2006 NHN strategy manager
- + 2003 ~ 2005 Accenture, IT analyst
- + 2003 KAIST Department of Industrial Engineering, summa cum laude

### Kakao Service Portfolio



## II. Company Overview

### KAKAO HISTORY

Date	Event
Dec 2006	Established Company
2010	Launched KakaoTalk (Messaging Service), Changed company name to Kakao
2012	Launched KakaoStory (SNS Service)
2014	Merged Daum (2 <sup>nd</sup> Largest Portal Service provider in S.Korea) Launched KakaoPay, BankWallet
Mar 2015	Launched Kakao Taxi
May 2015	Merged Kimkisa (Map & Navigation Service)
Jun 2015	Launched Kakao #Search, Kakao TV

### KAKAO VISION



### “Connect Everything”

Kakao reaches beyond interpersonal connection, striving to connect all of us to the things around us. We believe that smarter, broad-reaching connections allows information to flow freely and effectively, businesses to grow organically, and people to live better lives. The more we innovate the way we connect, the closer and more harmonious our world can become



### III. New Business Model



Lifestyle

**Kakao  
Premium Taxi  
(Black)**

Lifestyle

**Kakao  
Paid Designated  
Driver**

Fintech

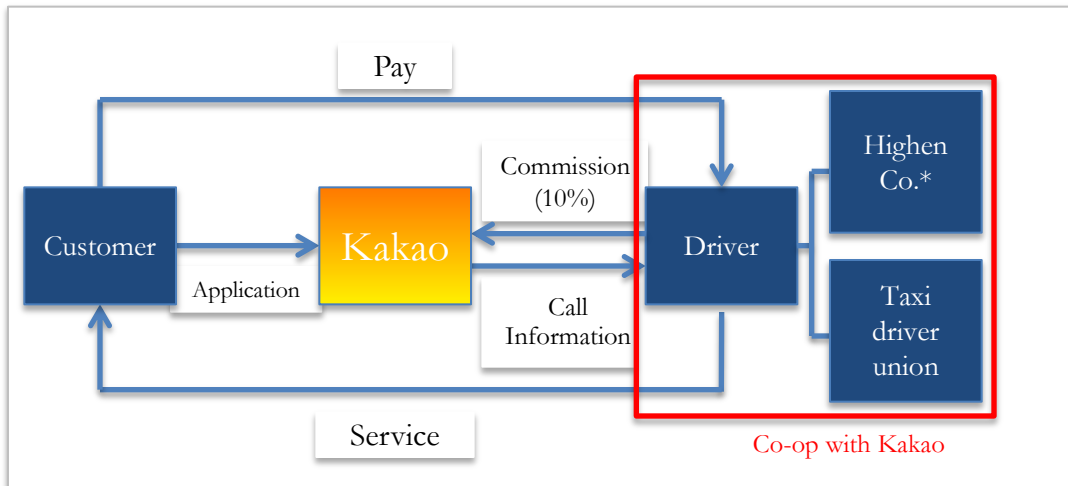
**Kakao  
Bank  
(Internet Specialized)**

SERVICE

**Kakao  
Quick Delivery**

### III. New Business Model *Kakao Premium Taxi (Black)*

#### KAKAO Taxi Black Business Model



\*Highen Co. Tax Driver & operation management company in S. Korea

#### Analysis

- Unlike Uber Korea, Kakao premium taxi started their business under the approval of the government and came to the agreement with Taxi driver union
- Kakao is an only call tax service provider via mobile platform
- Kakao Premium taxi service is expected to generate \$3.1Million in 2016

#### Kakao Premium Taxi Commission Sales Estimate

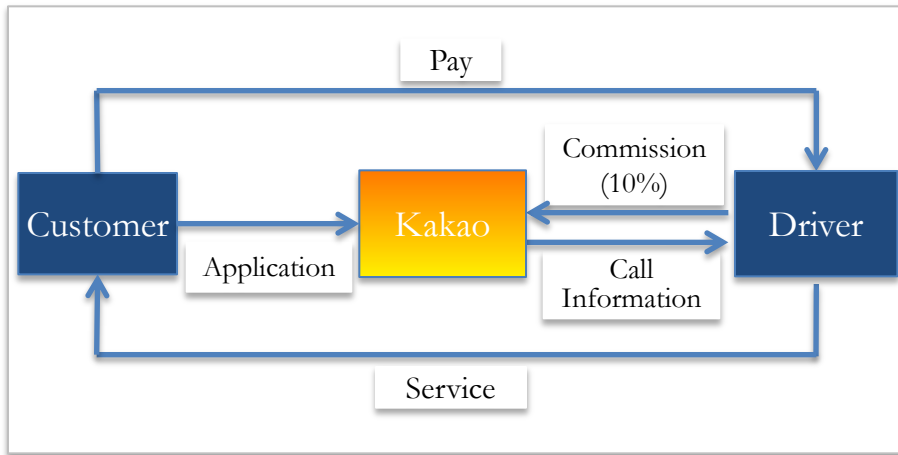
(USD thous)

	4Q15F	2015F	1Q16F	2Q16F	3Q16F	4Q16F	2016F
(Sales)	365	365	548	730	913	913	3,103
Scenario Outline							
Number of taxis	200		300	400	500	500	
Number of transactions per day	8		8	8	8	8	
Average rate	25 USD		25 USD	25 USD	25 USD	25 USD	
Commission rate	10%		10%	10%	10%	10%	
Yearly Commission Sales	1,460		21,900	29,200	36,500	36,500	

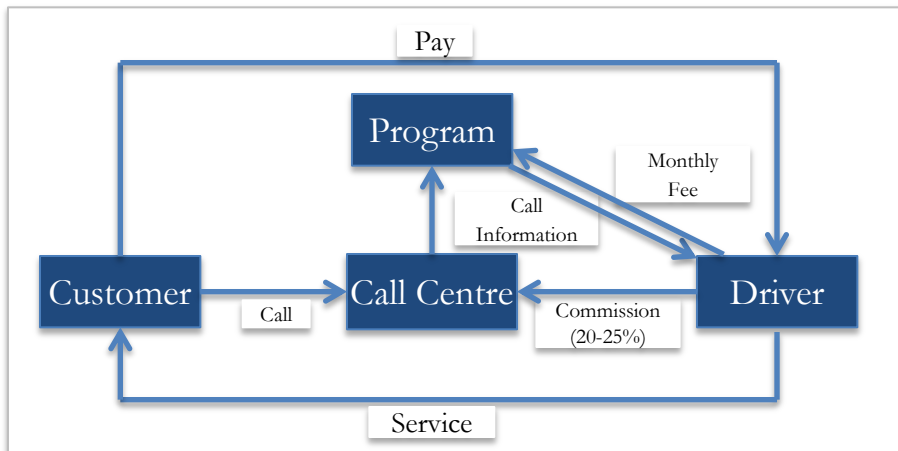


### III. New Business Model *Kakao Designated Driver*

#### KAKAO Designate Driver Business Model



#### Existing Designated Driver Business Model



#### Analysis

- The estimated revenue from Kakao Designated Driver business model is expected to \$80 Million in 2016
- Under the Kakao new business model, designated driver only need to pay 10% of their earning, which is currently around 20~25%
- Also customers get benefit in terms of being secured by checking the identify of drivers

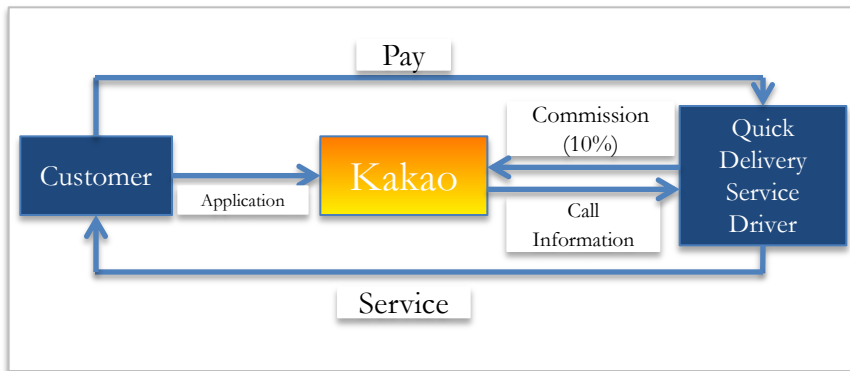
Kakao Designated Driver Commission Sales Estimate (USD thous)

	4Q15F	2015F	1Q16F	2Q16F	3Q16F	4Q16F	2016F
(Sales)	2,852	<b>2,852</b>	11,406	17,109	22,813	28,516	<b>79,844</b>
Scenario Outline							
Number of drivers	5,000		20,000	30,000	40,000	50,000	
Sales volume per day	5		5	5	5	5	
Average charge	12.5		12.5	12.5	12.5	12.5	
	USD		USD	USD	USD	USD	
Commission rate	10%		10%	10%	10%	10%	
Commission Sales(yearly)	11,406		45,625	68,438	91,250	114,063	



### III. New Business Model *Kakao Quick Delivery & Internet Bank*












#### KAKAO Quick Delivery Business Model



#### KAKAO Quick Delivery

- Kakao Quick Delivery Service is anticipated to be monetized within the fiscal year of 2016
- The number of registered Quick Delivery service drivers is expected to increase sharply since Kakao enables them to access customers easily
- Kakao Quick Delivery Service is expected to generate \$930 Million per year

#### KAKAO Internet Bank Consortium

1	KAKAO	
2	Tencent	
3	ebay	
4	Yes24	
5	Netmarble	
6	Loen Entertainment	
7	SGI Seoul Security	
8	Korea Post	
9	KONAI	
10	Korea Holdings	
11	KB Bank	

#### Kakao Internet Bank Consortium

- Kakao applied to the first new internet banking license in Korea in 23 years
- The Kakao consortium is consisted of 11 shareholders including local financial institutions and global internet service providers
- Internet Banking business is estimated to generate new revenue stream under the approval of the committee



## IV. Current Business Model



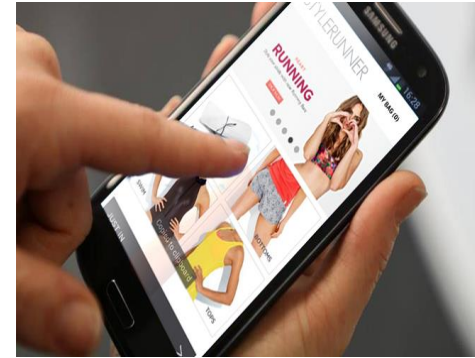
Platform

Daum/Kakao  
Advertising



Entertainment

Kakao Game



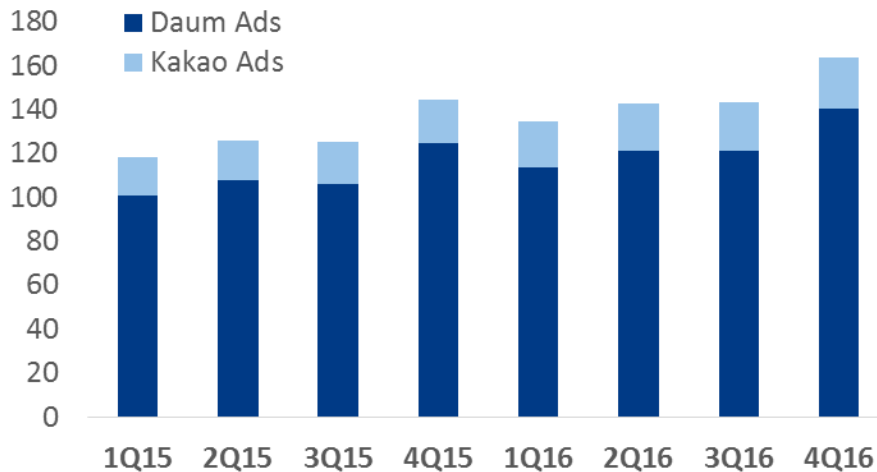
Platform

Commerce

## IV. Current Business Model *Advertising*

### KAKAO Advertising Revenue Estimate

**Kakao Advertising Sales Estimate**  
(USD mn)



Source: Kakao Corp. & Mirae Asset Securities

### Analysis

- Kakao ads has two main streams of divisions : Daum web/mobile, Kakao platform ads
- Kakao Advertising business revenue is expected to \$513.8 Million in 2015 and \$584.7 Million in 2016
- Traditional off season effect on PC web ads and sluggish PC ads market lead to fall revenue from PC web ads
- Daum Mobile ads revenue growth offset the loss from PC web ads
- Kakao advertising, consisting of Kakao Talk, KakaoStory, and Kakao TV ads expect to be \$19 Million in 3Q14

### Kakao Advertising Division Sales Estimate

(USD mn, %)

	1Q15	2Q15	3Q15F	4Q15F	2015F	1Q16F	2Q16F	3Q16F	4Q16F	2016F
(Sales)										
Ads	118.4	125.9	125.1	144.3	513.8	134.3	142.6	143.5	163.5	584.7
Daum Ads	100.8	107.7	106.1	124.4	439.0	113.6	121.1	121.0	140.0	496.6
Kakao Ads	17.6	18.3	19.0	19.8	74.7	20.7	21.5	22.4	23.4	88.1
(Sales Portion)										
Daum Ads	85	85	85	86	85.0	85	85	84	86	85.0
Kakao Ads	15	15	15	14	15.0	15	15	16	14	15.0

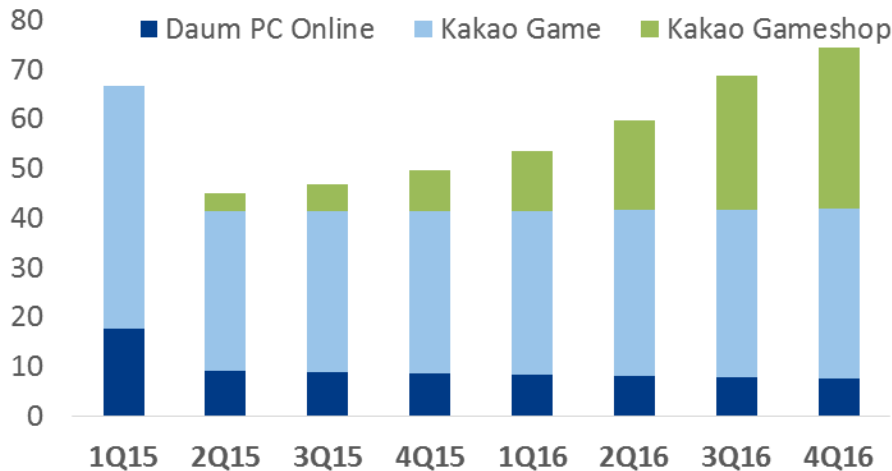
Source: Korea Investment & Securities & Mirae Asset Securities

## IV. Current Business Model *Game*

### KAKAO Game Revenue Estimate

#### Kakao Games Sales Estimate

(USD mn)



Source: Kakao Corp. & Mirae Asset Securities

### Analysis

- Three main streams of divisions : Daum PC Online, Kakao game, Kakao Gameshop
- Kakao Games create second best revenue and the largest operating income (\$118 Mil 2014) among all Kakao subsidiaries business
- Kakao Games business revenue is expected to \$199.8 Mil 2015 and \$256.8 Mil in 2016
- Game publishers and developers exodus run from 1Q15 to 2Q15 led to collapses in revenue
- Starting 4Q15, web-board mobile market and line-up expansion will be reflected
- 2016 Kakao Gameshop will replace Google Play mobile game market

#### Kakao Game Division Sales Estimate

(USD mn, %)

	1Q15	2Q15	3Q15F	4Q15F	2015F	1Q16F	2Q16F	3Q16F	4Q16F	2016F
(Sales)										
Game	58.4	45.0	46.8	49.6	199.8	53.7	59.8	68.9	74.5	256.8
Kakao Game	17.7	9.2	8.9	8.6	44.3	8.3	8.0	7.8	7.5	31.7
Kakao Gameshop	49.0	32.3	32.6	32.9	146.8	33.2	33.6	33.9	34.3	135.0
Daum PC Online	-	3.6	5.4	8.1	17.0	12.1	18.2	27.2	32.7	90.1

Source: Kakao Corp. & Korea Investment & Securities

## IV. Current Business Model *Commerce*

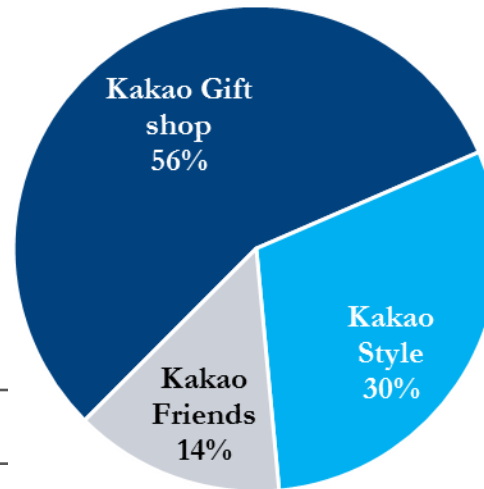
### KAKAO Commerce Revenue Breakdown (%)

#### Kakao Gift Shop Service

Gift shop is mobile commerce service, which provokes various products sales thorough mobile platform among Kakao talk users

#### Kakao Friends Service

Kakao Friends business basically is consisted of sales of Kakao characters products at pop-up stores and the license loyalty of its characters from partnership with other companies such as Samlip General Foods

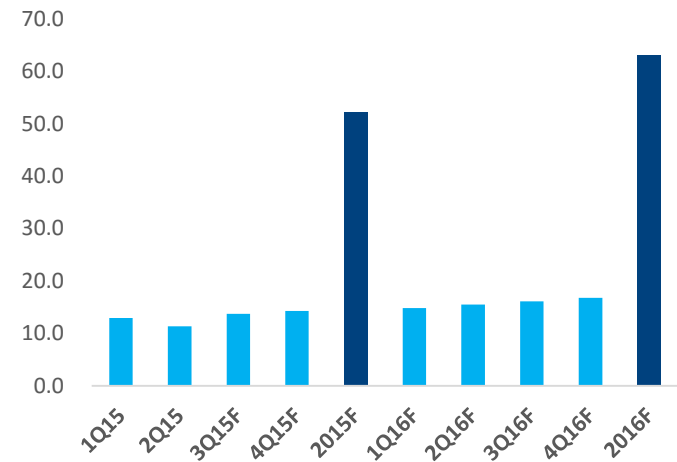


#### Kakao Style Service

Kakao Style is another form of fashion-related online advertising platform even though the corporate categorizes and recognize as commerce business model. It induces users by exposing various small/ large size shopping malls information

### Analysis

Kakao Commerce Sales Estimate  
(USD mn)

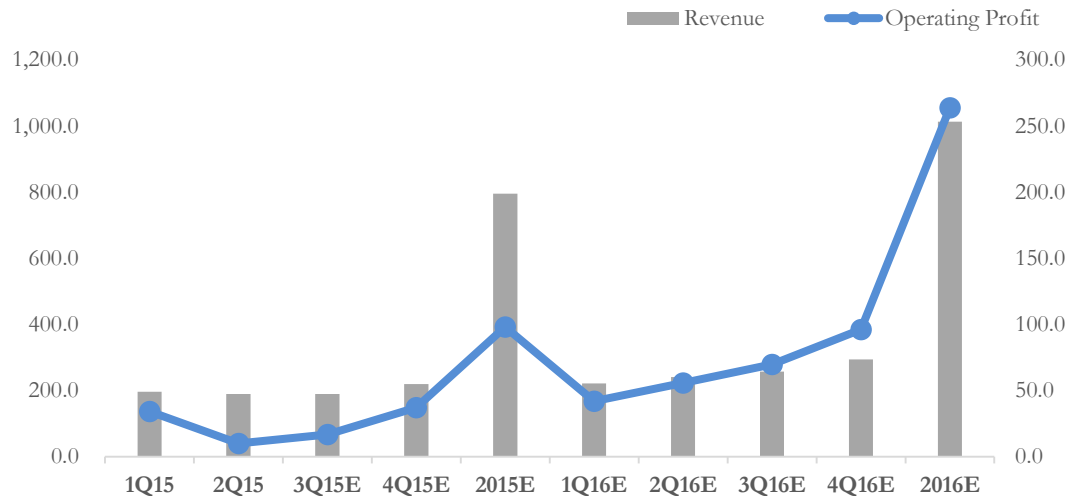


Source: Ebest Securities & Mirae Asset Securities

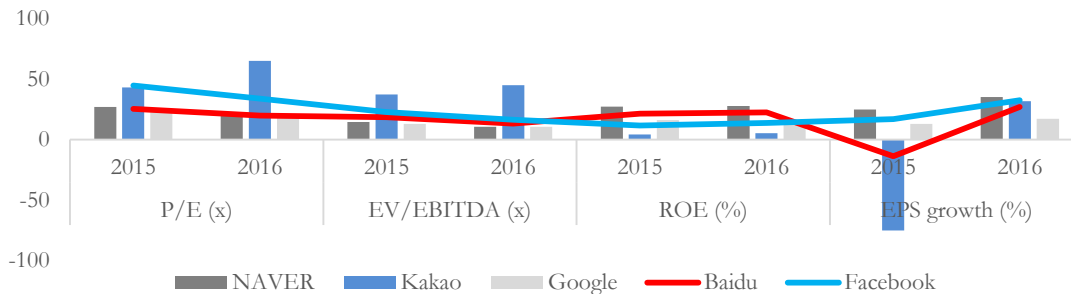
- The revenues of Commerce operations make up 4% of total revenues and are expected to increase 66.5% (YoY)
- Commerce operations represents a small share of the Kakao revenues, its business model is expected to contribute to improving the revenue stream of the entire corporate

# V. Conclusion

## Earning Outlook



## Peer Valuation Table



## Analysis

- Kakao (035720 KS) with a Trading Buy rating and a target price is USD 142. Target price was derived from the comparative PER (Price Earnings Ratio) valuation method
- Given that Kakao is under Internet and Mobile Platform industry where the market fluctuation is easily accessible, value of Beta is estimated as 1.7. According to the Korea Exchange Market, Internet Software and Service Industry PER is at 47.64x, and Kakao's PER is at 18.57x
- By multiplying stock price as of October 30th 2015 (US\$94.75) to the ratio of Industry PER to Kakao's PER and lastly divide it by Beta, target price comes up with USD 142  

$$*Comparative\ PER\ Valuation\ Method = Stock\ Price * (Industry\ PER / Securities\ PER) / Beta$$
- Market has not yet recognized a tremendous coming effect Kakao will deliver upon in which Kakao Bank and Kakao O2O Platform services
- Kakao will be determined as Blue Chip Company in 2016, and investors should pay attention how Kakao successfully grow

**End of Document**

**Thank you**

**Team Seoul National University**



**SEOUL  
NATIONAL  
UNIVERSITY**





This paper, authored by six MBA students at Seoul National University, outlays a portfolio of five Korean stock picks to be entered in the GNAM Investment Competition. The selection of the five stocks stems from the overall analyses of the Korean market and industries. The five selected stocks are: Kakao, Celltrion, KB Insurance, Hanjinkal, and Jcontentree. As per the requirements and rules provided by the competition, a security analysis of one stock, Kakao, is detailed in this paper.

# PORTFOLIO SECURITY ANALYSIS

## In-depth Analysis of KAKAO

Seoul National University  
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Derik Cho

# TABLE OF CONTENTS

INTRODUCTION .....	2
UNCERTAINTY IN KOREAN ECONOMY .....	2
INDUSTRY ANALYSES OF SELECTED STOCKS.....	2
KAKAO – WHY BUY RECOMMENDATION?.....	3
<b>1. Company Overview: Kakao, Top of the Korean Mobile Platform Business</b> .....	<b>3</b>
<b>A. History</b> .....	<b>3</b>
<b>B. Vision</b> .....	<b>4</b>
<b>C. Appointment of New CEO</b> .....	<b>4</b>
<b>2. Kakao's dream materializes: Monetization of new business is now starting</b> .....	<b>4</b>
<b>A. Kakao Premium Taxi Service</b> .....	<b>4</b>
<b>B. Paid Designated Driver</b> .....	<b>5</b>
<b>C. Kakao Bank Service</b> .....	<b>6</b>
<b>D. Quick Service</b> .....	<b>6</b>
<b>3. Expected Improvement of the Existing Business Operations</b> .....	<b>7</b>
<b>A. Advertising</b> .....	<b>7</b>
<b>B. Games</b> .....	<b>7</b>
<b>C. Commerce</b> .....	<b>9</b>
CONCLUSION .....	9

## INTRODUCTION

The authors of this paper, for the purpose of the GNAM Investment Competition, have selected five most-recommendable, moderately-risky stocks traded in the Korean market. Authors intend to introduce a brief Korean economy analysis and overall analyses of the industries of the selected stocks in order to view this as a diversified portfolio. Then, a detailed security analysis on one stock is presented as per the requirements of the competition.

## UNCERTAINTY IN KOREAN ECONOMY

### 1. Declining Exports to China

Korean economy is ranked 11<sup>th</sup> in the world in terms of nominal GDP. South Korea (Korea) has been one of the fastest growing developed countries since 1960s through exports that accumulate to \$628bn, 5<sup>th</sup> in the world. China and USA are Korea's top two trade partners, which accounts for 36.5% of the total exports. (World Factbook, CIA) Due to Korea's high dependence on its largest trading partner, China; recent slowing growth of Chinese economy along with economic structural reform has negatively affected Korean exports. According to KDI Macroeconomic Research Center, 1% decline in Chinese economy growth leads to an overall decline in Korean economy growth by 0.17%. The uncertainty in Chinese economy growth directly translates into significant uncertainty in Korean market.

### 2. Expected Increase in Interest Rate by Federal Reserve

The most anticipated concern among investors for the Korean economy in the second half of 2015 is the expected increase in interest rate by Federal Reserve (Janet Yellen, Chair). This could be problematic for Korea as experienced in 'Taper Tantrum 2013'. Another concern would be Korea's extremely large household debt, which is more than \$1.1 trillion USD. If Fed raises the interest rate, Korean government falls into a dilemma:

- 1) Increase domestic interest rate as well, which will worsen the burden of the household debt; or
- 2) Hold or decrease domestic interest rate, which will result in capital outflow.

Hence, along with declining exports to China, Fed's interest rate change adds increasing uncertainty to Korean market.

### 3. Mixed Currency Movements and Increased Global Competition (TPP vs. AIIB)

Although Korean Won has weakened against US dollar in the past year, allowing increase in Korean exports; Japan's "Abenomics" (Japanese government's efforts to fight deflation and strong Japanese Yen) led to a drastic weakening of JPY, which resulted in a direct price competition between Korean and Japanese exports. On top of the mixed currency effects, Japan, entering the TPP in 2013, has acquired further advantage over Korean exports. Korea, having failed to reach agreement in TPP, has joined Asian Infrastructure Investment Bank (AIIB) which led to strengthened relationship with the Chinese regime. These factors further increased uncertainty and volatility in Korean market.

## INDUSTRY ANALYSES OF SELECTED STOCKS

As the export-oriented Korean economy is expected to suffer from high uncertainty and volatility due to aforementioned macroeconomic factors, investment strategy in Korean market needs to focus on the industries with relatively low dependence on external macroeconomic factors and with internal growth potential and opportunity. In order to narrow down the search for the five stocks, five industries, out of the 16 industry groupings on KOSPI and KOSDAQ, are selected based on the above-mentioned criteria: Internet Service, pharmaceutical, insurance, transportation, and entertainment. Then, further analyses led to pick a stock in each industry with most growth potential and moderate risk. Below are summaries of these industries (Internet service industry will be discussed further in the security analysis of Kakao in the following part):

2013 OECD nations's Smart phone change rate & cycle

Rank	Nation	Change Rate	Change Cycle
1	Republic of Korea	77.1	15.6
2	Chile	69.4	17.3
3	USA	65.8	18.2
4	United Kingdom	60.2	19.9
5	Denmark	52.3	22.9
6	Ireland	48.5	24.7
7	Netherlands	48.2	24.9
8	Portugal	48.1	24.9
9	Sweden	48.0	25.0
10	France	46.9	25.6
11	Switzerland	46.1	26.0
12	Spain	46.1	26.0
13	Norway	46.0	26.1

Source: KT Economic Research Institute

### 1. Internet Service Industry → Kakao

Internet service industry is expected to grow as the business structure is constantly changing and creating new opportunities with the mobile platform, by offering services to increase consumers' convenience.

### 2. Pharmaceutical Industry → Celltrion (Summary detailed in the separate attachment)

Pharmaceutical industry has received much supportive attention and investments from Korean multi-national corporations and government bodies. Korean government has recently relieved policies on tax and business conduct in pharmaceutical industry. Korean pharmaceutical companies are expected to increase their global competitiveness through these favorable conditions.

### 3. Insurance Industry → KB Insurance (Summary detailed in the separate attachment)

Insurance industry is expected to grow as Korean government recently eased policies. It leaves insurance companies more flexibility to expand their business operations.

### 4. Transportation Industry → Hanjinkal (Summary detailed in the separate attachment)

Transportation industry is less dependent on external factors as the oligopoly market is practically controlled by a couple of large airliners.

### 5. Entertainment Industry: Jcontentree (Summary detailed in the separate attachment)

Entertainment industry is expected to grow overall in Korea. Although the probability of a "big hit" is low, the returns are attractive, making the risk-taking investment worthwhile.

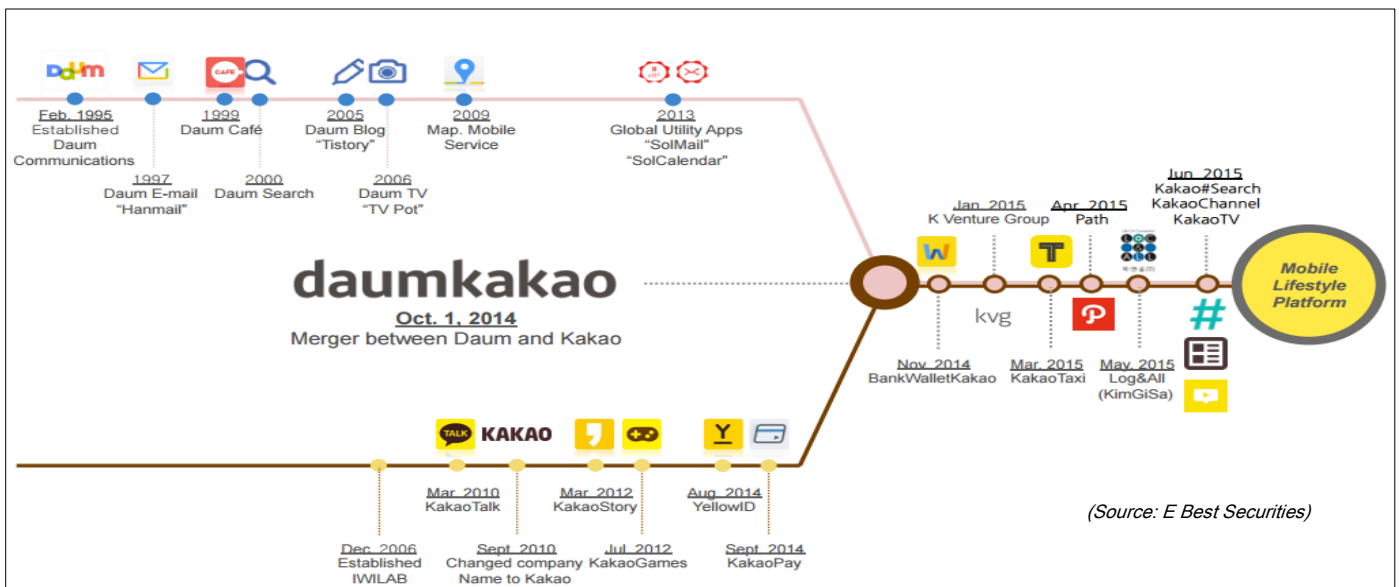
## KAKAO – WHY BUY RECOMMENDATION?

South Korean use smart phone averagely 3 hours 39 minutes a day. In accordance with research by KT Economic Research Institute in 2013, the majority of smart phone users in Korea had replaced smart phone approximately every 15.6 months – the shortest period among OECD nations. Such mobile-friendly culture in South Korea provides unlimited opportunities to Kakao. Kakao's market share is 96% of mobile messenger and this will enhance successful implement of new mobile platform business. Although market share in Internet industry has been slightly declined, future of game, advertisement, and commerce business is looking bright. South Korea had been called "Samsung Republic" since Samsung's hardware mobile business had been highly reputed in the world and it had represented the country. Now South Korea is highly skilled and its mobile software industry is growing rapidly, the time has come to switch the nickname to "Kakao Republic".

### 1. Company Overview: Kakao, Top of the Korean Mobile Platform Business

#### A. History

Kakao, incorporated in December 2006, has grown to be the leader in Korean mobile messaging with a monopoly-like market share of 96%. Kakao's mobile messaging service, KakaoTalk, has brought the company an exponential growth



(Source: E Best Securities)

and success since its introduction in March 2010. Kakao became publicly-traded as “DaumKakao” through a merger with Daum Communications (Second largest portal service provider in Korea) in October 2014. Then, the company changed its name to “Kakao” in September 2015. Kakao has business operations in online advertising, mobile games, and mobile service (Messaging, SNS, music, mobile payment, taxi-booking service). Recently, Kakao began its aggressive expansion of the businesses through acquisitions and new product developments: Notably, Kakao acquired Kimkisa, a mobile navigation service provider; and Kakao launched its free mobile taxi-booking service. Kakao’s main sources of revenues are advertising, mobile games, e-commerce, and others. Based on 2Q 2015 data, advertising accounts for 63.5%; mobile games, 26.9%; e-commerce, 6.3%; other operations, 3.3%.

**B. Vision**

On the official website, Kakao states its vision as follows:

*“Connect Everything – Kakao reaches beyond interpersonal connection, striving to connect all of us to the things around us. We believe that smarter, broad-reaching connections allows information to flow freely and effectively, businesses to grow organically, and people to live better lives.*

*The more we innovate the way we connect, the closer and more harmonious our world can become.”*

*Kakao thrives to create added value to users’ life through connecting people to people, people to information, people to on-/offline businesses, and people to objects. All of Kakao’s services are aimed primarily to overcome users’ inconveniences with user-friendly technologies.*

The fact that Kakao has the mobile platform with 96% market share in mobile messaging gives Kakao a critical advantage in capitalizing on already existing customer base with new business developments.

**C. Appointment of New CEO**

In August 2015, Kakao appointed its new CEO, J-H Lim. Despite his relatively young age of 35, J-H Lim has become the CEO of a \$6bn (USD) company. On the announcement day of his appointment, the market reacted positively with a 3% stock price appreciation. His work experiences are diverse: IT analyst at Accenture, strategy manager at Naver (Kakao’s main competitor), consultant at BCG, principal at SoftBank Ventures, and CEO at K Cube Ventures (a subsidiary of Kakao). J-H Lim has begun aggressive acquisitions of ventures and new developments to grow the company.

**2. Kakao’s dream materializes: Monetization of new business is now starting**

Kakao has been actively expanding its business line to living business such as taxi booking service, paid designated driver service, and quick delivery service. Kakao is predicting monetization of premium taxi and paid designated driver business from Q4 2015. Estimated revenue is 83mn USD for 2016. In addition, other start-up businesses like Kakao bank and quick delivery service will give positive impact on value of stock price. Because of existing significant size of Kakao mobile messaging community, implementing new business line is optimistically forecasted and this will become major contribution to boost Kakao’s performance.

**A. Kakao Premium Taxi Service**

Kakao Premium Taxi service allows customers to reserve Benz E-class taxis via mobile application and experience top quality taxi service. Once customers request taxi services, the taxi will provide pick up and drop off service. Drivers will be trained by Highen (operating company of Kakao Premium Taxi) to provide premium service to customer. Government already approved for this service because unlike Uber, call taxi service that had failed to sustain in Korean market in 2013, Kakao established respectful partnership with Taxi companies and drivers’ union sharing benefits. Estimated revenue is 3.1mn USD in 2016. Kakao will acquire 200 taxis in Q4 2015 and plan to increase

number up to 500. Kakao will generate revenue by commission from drivers. The business has potential to increase marketability and will lead to increase in profitability.

**Price per service**

Type of Taxi	Rate	Extra Charge for night
Premium Taxi	Base rate(3km)	4.17USD
	Extra charge	0.17USD/164m

Source: KT Economic Research Institute

*If premium taxi goes from Gangnam Station to Yeoido, distance is 13.72 km*

*It will costs about 15 USD*

*Kakao estimates that Kakao premium taxi will cost 25 USD for same distance*

**Registered taxi**

Period	Number of taxis
Oct 2015(Launching)	200
Dec 2016(Max)	500

Source: Kakao, KB securities

**Number of transactions per premium taxi in a day**

8 times a day
---------------

Source: Seoul Metropolitan Government

## Yearly Sales Scenario

Registered taxi x Transactions per day x Price per service X365 (USD thous)

Number of Registered Car	Number of transactions per taxi in a day				
	6	8	10	12	14
100	5,475	7,300	9,125	10,950	12,775
200	10,950	14,600	18,250	21,900	25,550
300	16,425	21,900	27,375	32,850	38,325
400	21,900	29,200	36,500	43,800	51,100
500	27,375	36,500	45,625	54,750	63,875

## Yearly Commission Sales Scenario (10% Commission)

(USD thous)

Number of Registered Car	Number of transactions per taxi in a day				
	6	8	10	12	14
100	548	730	913	1,095	1,278
200	1,095	1,460	1,825	2,190	2,555
300	1,643	2,190	2,738	3,285	3,833
400	2,190	2,920	3,650	4,380	5,110
500	2,738	3,650	4,563	5,475	6,388

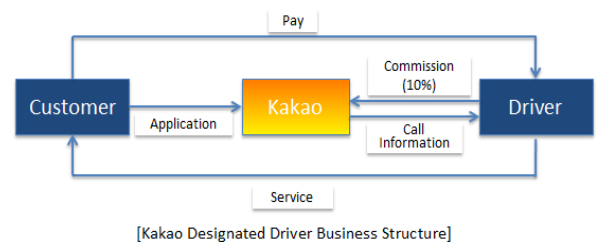
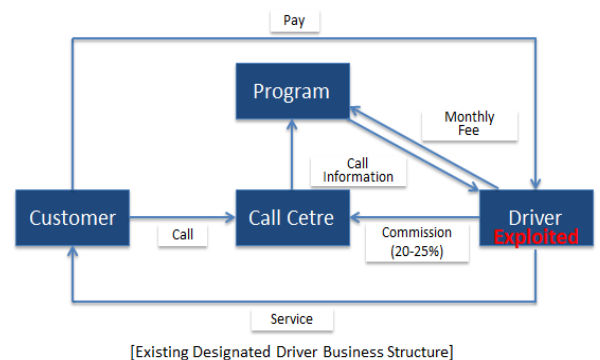
## Kakao Premium Taxi Commission Sales Estimate

(USD thous)

	4Q15F(200 taxis)	2015F	1Q16F(300 taxis)	2Q16F(400 taxis)	3Q16F(500 taxis)	4Q16F(500 taxis)	2016F
(Sales)	365	365	548	730	913	913	3,103

## B. Paid-Designated Driver

Paid Designated Driver is a service that people pay for driving their car to a desired destination. Drink and drive is strictly prohibited in South Korea. The cost of using the service from Y to Z within Seoul, usually averaged at 12.50 USD (Gangnam to Yeouido). While the most people call arranging the service, people can do so using Kakao application by their smart phones. Kakao will be differentiated from current paid designated driver industry as indicated in figure. Drivers only need to pay 10% of earnings under Kakao paid-designated driver services. Drivers' identification will be guaranteed by Kakao. Customers and friends or families can check driver's identification so that they feel safe during a ride service. Estimated revenue in 2016 is 80mn USD. Kakao has started the business with 5,000 drivers and expects 50,000 drivers to join their business. It will be greeted by paid-designated drivers who have been suffered with current high commission rates and monthly fees.



### PDD\* Market Outline

Market size	2.5 Billion USD
Commission Market size	500 Million USD(20%)
Number of drivers	Appx 100,000
Number of companies	Appx 7,000
Sales volume	Appx 500,000 times/day
Average charge	12.5 USD

### Number of PDD\*

Period	Number of cars
4Q 2015(Launching)	5,000
Dec 2016(Max)	50,000

PDD\* : Paid Designated Driver

Source: Kakao

PDD\* : Paid Designated Driver

Source: Ministry of Land, Infrastructure and Transport

So one driver's sales volume per day is 5 times

## Yearly PDD\* Sales Scenario

Number of drivers X Sales volume per day X Average Charge X 365 (USD thous)

Number of drivers	Sales volume per day				
	3	4	5	6	7
5,000	68,438	91,250	114,063	136,875	159,688
20,000	273,750	365,000	456,250	547,500	638,750
30,000	410,625	547,500	684,375	821,250	958,125
40,000	547,500	730,000	912,500	1,095,000	1,277,500
50,000	684,375	912,500	1,140,625	1,368,750	1,596,875

PDD\* : Paid Designated Driver



**Yearly PDD\* Commission Sales Scenario (10% Commission)**

(USD thous)

Number of drivers	Sales volume per day				
	3	4	5	6	7
5,000	6,844	9,125	11,406	13,688	15,969
20,000	27,375	36,500	45,625	54,750	63,875
30,000	41,063	54,750	68,438	82,125	95,813
40,000	54,750	73,000	91,250	109,500	127,750
50,000	68,438	91,250	114,063	136,875	159,688

PDD\* : Paid Designated Driver

**Kakao PDD\* Commission Sales Estimate**

(USD thous)

	4Q15F(5000 drivers)	2015F	1Q16F(20,000 drivers)	2Q16F(30,000 drivers)	3Q16F(40,000 drivers)	4Q16F(50,000 drivers)	2016F
(Sales)	2,852	2,852	11,406	17,109	22,813	28,516	79,844

PDD\* : Paid Designated Driver

**C. Kakao Bank Service**

Kakao bank service can be found in existing Kakao mobile application. Employing open application program interface, user can proceed wire transfer, borrow money, online payment, and managing own asset easily. In order to implement the business, Kakao has formed consortium with 11 organizations that are KB bank, Korea Holdings, Yes24, Ten Cents, Net Marble, Loen entertainment, SGI Seoul Security, Post office, Ebay, and Konai. It is difficult to predict revenue of the business but it possesses potential revenue if considering existing high-traffic platform and mobile messaging community.

**D. Quick Delivery Service**

Delivery culture has long been an aspect of the everyday life in Korea, for which an enormous range of products and services requires only phone call or Internet for delivery. Quick delivery service is that people can get from motorcycle riders who will deliver document, parcel, and basically everything that riders are able to carry within few hours. In general, people can be served with cost of 12 US dollars per document approximately. Kakao will charge 10% of commission to drivers while current commission rate is 20-25% in the industry. Kakao expects Kakao quick service to represent O2O market in the near future. Monetization of service will be realized during 2016. If 30,000 drivers become partner with Kakao, they will generate 930mn USD of revenue. These factors enhance optimistic forecast on stock price.

**Kakao Quick Service Sales Estimate** Number of drivers X Sales volume per day X Average Charge X 365 (USD thous)

Number of drivers	Sales volume per day				
	6	8	10	12	14
30,000	558,450	744,600	930,750	1,116,900	1,303,050
50,000	930,750	1,241,000	1,551,250	1,861,500	2,171,750
70,000	1,303,050	1,737,400	2,171,750	2,606,100	3,040,450
90,000	1,675,350	2,233,800	2,792,250	3,350,700	3,909,150
110,000	2,047,650	2,730,200	3,412,750	4,095,300	4,777,850

**Kakao Quick Service Commission Sales Estimate**

(USD thous)

Number of drivers	Sales volume per day				
	6	8	10	12	14
30,000	55,845	74,460	93,075	111,690	130,305
50,000	93,075	124,100	155,125	186,150	217,175
70,000	130,305	173,740	217,175	260,610	304,045
90,000	167,535	223,380	279,225	335,070	390,915
110,000	204,765	273,020	341,275	409,530	477,785

**Quick Service Market Outline**

Market size	Appx 3.8 Billion USD
Commission Market size	Appx 750 Million USD(20%)
Number of drivers	Appx 150,000
Number of companies	Appx 4,000
Sales volume	Appx 1.5 Millon times/day
Average charge	8.5 USD

Source: Samsung Economic Research Institute

*So one driver's sales volume per day is 10 times*



### 3. Expected Improvement of the Existing Business Operations

#### A. Advertising

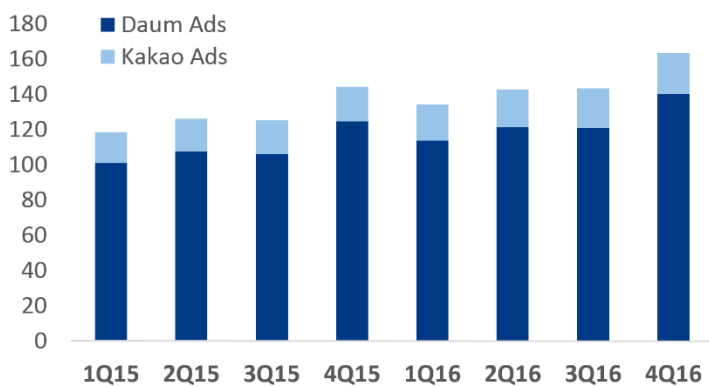
Kakao has two main streams of divisions for advertising: Daum PC web and mobile web advertising and Kakao advertising.

Daum advertising division, consisting of PC search and display advertising and mobile web advertising, is expected to generate 125.1mn USD with strong performance from its mobile ads platform Ad@m, the biggest mobile ad networks in Korea, in 3Q. According to 2Q 2015 results, Daum advertising sales accounted for 85.5% of the total advertising revenues (107.7mn USD out of 125.9mn USD). The traditional off season effect on PC web ads and sluggish PC ads market growth lead to decrease 3Q sales in search and display ads operations. Sales increasing from mobile ads platform Ad@m, will partially make up revenue drops from PC web ads by securing ads contractors in 3Q.

The second division, Kakao advertising, consisting of KakaoTalk, KakaoStory, and Kakao TV advertisements, expected to be 19.0mn USD in 3Q. In 2Q 2015, Kakao advertising sales accounted for the rest, 14.5% of the total advertising revenues. Nonetheless, the important thing to note is 51.5% year-on-year increase.

**Kakao Advertising Sales Estimate**

(USD mn)



Source: Kakao Corp. & Mirae Asset Securities

- KakaoTalk advertisement takes the forms of “Plus Friend,” “Yellow ID,” and “Brand Emoticons.” Plus Friend and Yellow ID are paid corporate accounts for brands and firms. As being part of highly-concentrated KakaoTalk messaging community, these corporate user accounts are exposed in the users’ friends list by advertisements, referral by friends, or direct search by the users. Brand Emoticons are usually interactive emoticons of specific brands that are frequently used by the users during conversations.
- KakaoStory advertisement allows corporate customers to display their ad banners on the pages that users visit.
- Kakao TV advertisement, launched in June 2015, generates revenues from playing video advertisements between programs. It has partnered with CJ E&M (Entertainment and media firm of the Korean conglomerate CJ) and SMR (Korean mobile-ad content company) to share the media contents and subsequently the revenues.

As KakaoTalk already is a high-traffic platform with 96% market share of the mobile messaging community,

KakaoTalk proves to be a highly attractive and essential platform to many advertisers as they can realize substantial

**Kakao Advertising Division Sales Estimate**

(USD mn, %)

	1Q15	2Q15	3Q15F	4Q15F	2015F	1Q16F	2Q16F	3Q16F	4Q16F	2016F
<b>(Sales)</b>										
Ads	118.4	125.9	125.1	144.3	<b>513.8</b>	134.3	142.6	143.5	163.5	<b>584.7</b>
Daum Ads	100.8	107.7	106.1	124.4	<b>439.0</b>	113.6	121.1	121.0	140.0	<b>496.6</b>
Kakao Ads	17.6	18.3	19.0	19.8	<b>74.7</b>	20.7	21.5	22.4	23.4	<b>88.1</b>
<b>(Sales Portion)</b>										
Daum Ads	85	85	85	86	<b>85.0</b>	85	85	84	86	<b>85.0</b>
Kakao Ads	15	15	15	14	<b>15.0</b>	15	15	16	14	<b>15.0</b>

Source: Korea Investment & Securities & Mirae Asset Securities

exposure to consumers in the mobile messaging community.

#### B. Game

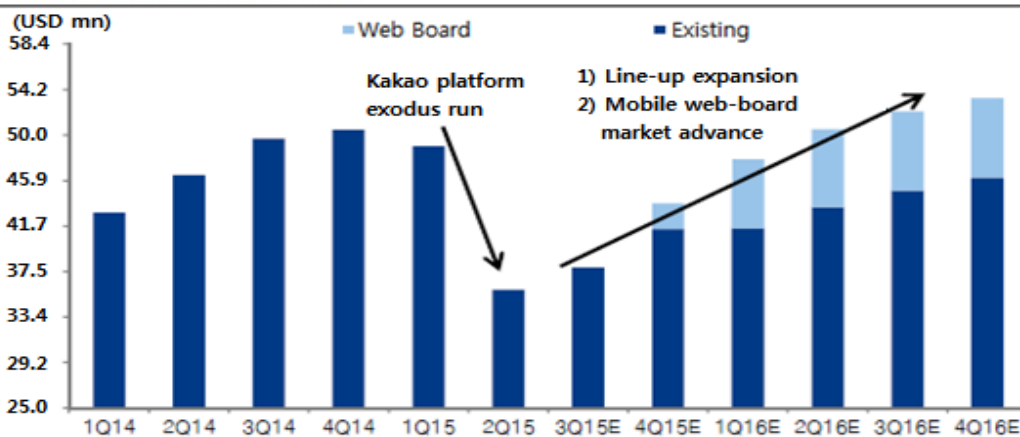
Kakao's Game division holds a significant shares over entire business. As indicated, Game division's operating income holds the largest portion (accounting up to \$118 Million 2014), comparably it creates 2<sup>nd</sup> best in Revenue sales. The revenue streams for games are: Daum online games and Kakao mobile games. For Daum online games, the revenues are generated by the subsidiary Daum Games through channeling and publishing services of online games. For Kakao mobile games, the revenues stem from Kakao Games and Kakao Gameshop.

For Daum online games, the growth has been stalling and expected to decline or maintain a low growth rate.

For Kakao Games, the revenues are shared among publishers, open market (such as Google Play and App Store), and mobile game platform. In general, publishers, or the game developers, take a major share of the revenues (70%), and the open market (and mobile game platform) takes a commission (30%).

Despite its exponential growth since 2012, in the recent period, the quarter-on-quarter growth had reversed to -3% and -24% in 1Q and 2Q 2015, respectively. This decline is mainly due to publishers/developers launching their products with their own marketing channel, for instance airing through TV commercials, with competitors' platforms or without a platform, to avoid commission fees. Nevertheless, the 4Q outcome will be more reassuring as the expected number of newly launching games (including in-house developments) through Kakao platform is increased and as a new genre of board games will be introduced in Kakao Game platform.

### Kakao Game Sales Estimate QoQ



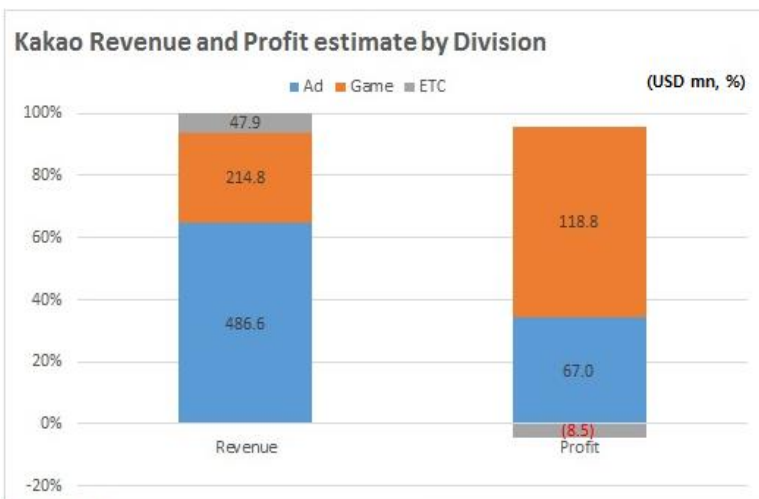
Source: Kakao corp. & Mirae Asset Securities

Release Option	App Market	Platform	Publisher	Producer
Google / Apple	30			70
Google / Apple + Kakao Game	30	21		49
Google / Apple + Publisher	30		35	35
Google / Apple + Kakao Game + Publisher	30	21	25	24
Google / Apple + with Naver	30	10		60
Google / Apple + with Naver + Publisher	30	10	30	30
Kakao Gameshop	28.5			71.5
Kakao Gameshop + Publisher	28.5		35.7	35.7

Note: estimated sales distribution of Publisher : Producer as 5:5

Source: Korea Investment & Securities

games in 2Q to an expected number of 73 games in 3Q); Kakao Gameshop is expected to generate sound revenues. The ultimate goal for Kakao Game division is no other than a market dominance in Korea, replacing Android's Google Play and Apple's App store in regards to mobile games coming 2016.



Note: 2014 IR

Source: Kakao Corp. & Korea Investment & Securities

**Kakao Game Division Sales Estimate**

(USD mn, %)

	1Q15	2Q15	3Q15F	4Q15F	2015F	1Q16F	2Q16F	3Q16F	4Q16F	2016F
<b>(Sales)</b>										
Game	58.4	45.0	46.8	49.6	199.8	53.7	59.8	68.9	74.5	256.8
Daum PC Online	17.7	9.2	8.9	8.6	44.3	8.3	8.0	7.8	7.5	31.7
Kakao Game	49.0	32.3	32.6	32.9	146.8	33.2	33.6	33.9	34.3	135.0
Kakao Gameshop	-	3.6	5.4	8.1	17.0	12.1	18.2	27.2	32.7	90.1
<b>(Sales Portion)</b>										
Daum PC Online	30.3	20.4	18.9	17.3	22.2	15.5	13.5	11.3	10.1	12.3
Kakao Game	84	71.7	69.6	66.4	73.5	62	56.2	49.2	46	52.6
Kakao Gameshop	-	8	11.5	16.3	8.5	22.6	30.4	39.5	43.9	35.1

Source: Kakao Corp. &amp; Korea Investment &amp; Securities

**C. Commerce**

The revenues of Commerce operations make up 4% of the total revenues and are expected to increase 66.5% year-on-year. Commerce operations are composed of KakaoTalk Gift Shop, KakoStyle, and Kakao Friends. First, the Gift Shop consists of mobile gift certificates or e-coupons that users purchase to use in offline stores. Kakao takes 8 to 10% intermediary commission from the transactions. The number of products featured in Gift Shop has jumped from 400 in its inception to 10,000 in 2Q 2015. Secondly, KakoStyle is a separate app which aggregates and provides the advertisements for fashion-related online shopping websites. Advertising fees are collected from the website-holding companies. Lastly, Kakao Friends, a subsidiary of Kakao, sells Kakao Friends characters products and licenses out its trademark characters. Although commerce operations represent a small share of the Kakao revenues, the optimistically assuring forecasts of these business units will contribute to improving the financial position of Kakao.

**CONCLUSION**

In conclusion, Kakao (035720 KS) with a Trading Buy rating and a target price is USD 142. Target price was derived from the comparative PER (Price Earnings Ratio) valuation method. Given that Kakao is under Internet and Mobile Platform industry where the market fluctuation is easily accessible, value of Beta is estimated as 1.7. According to the Korea Exchange Market, Internet Software and Service Industry PER is at 47.64x, and Kakao's PER is at 18.57x. By multiplying stock price as of October 30th 2015 (US\$94.75) to the ratio of Industry PER to Kakao's PER and lastly divide it by Beta, target price comes up with USD 142. Market has not yet recognized a tremendous coming effect Kakao will deliver upon in which Kakao Bank and Kakao O2O Platform services. Kakao will be determined as Blue Chip Company in 2016, and investors should pay attention how Kakao successfully grow.