13 11 2017

Corporate research

TMT

Razer Inc.

Unpacking the gaming company IPO

Razer Inc. (1337 HK) ("the Company") is a leading lifestyle brand offering gaming hardware, software and services. In its coming IPO, the Company recorded an oversubscription of around 290 times. Apart from the recent stock rally, its overwhelmed order is probably due to the fast growing global gaming industry and the Company's unique positioning. In this report, we will take a glance at Razer's business model and the potential opportunities and risks of this newcomer of stock market.

Growing gaming sector: According to industry consultant Newzoo, there are over two billion active gamers globally and the number will grow at a CAGR of 5.4% between 2017 and 2021. Newzoo also forecasts the sales revenue from gaming hardware will be over US$2bn this year. As one of the leading players in the gaming hardware industry (98% of its revenue came from hardware), Razer seems to be well-positioned to benefit from it although the Company is still loss-marking at the moment.

Loss-marking till at least 2018: The Company reported decent top-line growth in both 2016 and 1H17 at 23% and 30% respectively. But the leading market position and strong sales come with a cost. Due to the surge in sales and marketing expenses and research and development cost, Razer has been reporting operating loss since 2015. As the Company expects the relevant expenses will still going up, it states clearly in the IPO prospectus that it will remain loss-making in both 2017 and 2018. The Company also does not plan to give any dividend.

Mobile initiative: Razer plans to achieve profitability through the growth of its hardware business. Beside the existing peripherals and systems it offers, Razer's new initiative comes from a gaming-focused smartphone. Specifications of the Razer Phone is comparable to high-end flagships of major brands, but the price is around one third cheaper. But probably due to the hyper competition in global smartphone market, Razer makes it clear that the launch will not be a full scale entrance into mobile.

Unpacking the deal: After six rounds of private fund-raising, Razer has finally turned to the market for an IPO that will raise a maximum of HK$4.2bn by issuing new shares which equal to 12% of the enlarged share capital (before over-allotment). We expect top-line growth of Razer will remain strong due to the introduction of new products, but its bottom-line will likely stay under pressure.

Key risks: Increasing competition from PC brands; PC games market may be saturated; Smartphone business maybe unprofitable; Razer may not be able to monetize its Software and Service segment.

Marco Yau
Senior Analyst
marco.yau@cebi.com.hk
(852) 2916-9631

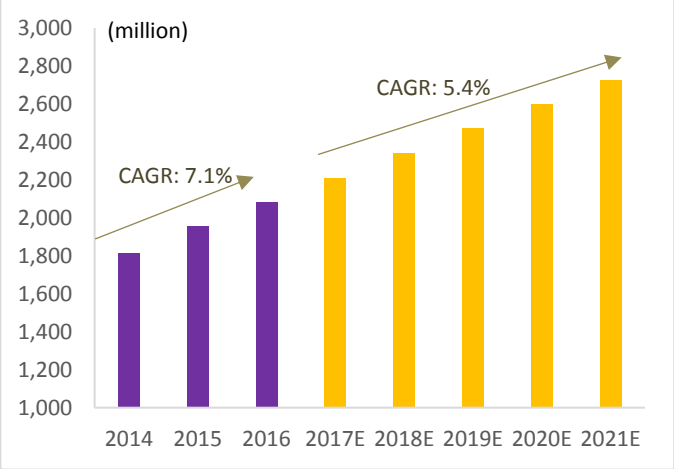
Razer Inc.

Established in 2005, Razer ("the Company") is a gaming lifestyle brand founded by Mr. Min-Liang Tan. The Company offers an integrated portfolio of gaming hardware, software and services. Though it is still loss making, Razer owns a leading market share in certain key gaming peripherals and will continue to extend its reach in the gaming world.

Growing gaming sector

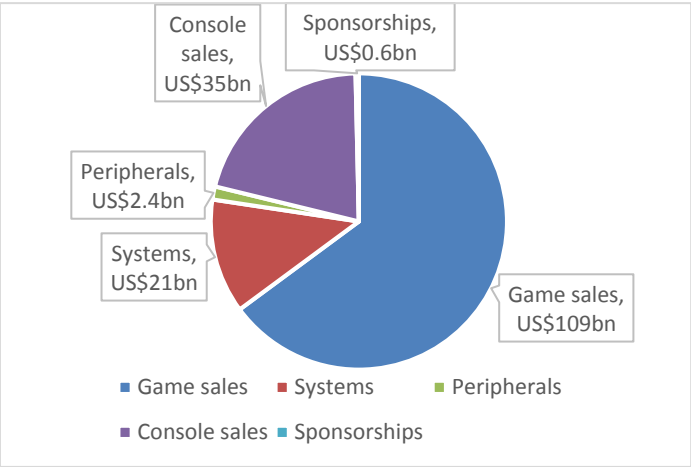
Gaming is a billion dollars opportunity. According the industry consultant Newzoo, there were around 2.1bn active gamers across mobile, PC and console devices in 2016 who play games at least once a month or spend at least one hour on average per week playing games. Newzoo estimates that sales revenue from the gaming sector will reach US$168bn in 2017. And revenue from game sales alone will be more than US$100bn.

Fig 1: Global active gamers



Source: Newzoo, CEBI

Fig 2: Estimated revenue from global gaming industry in 2017



Source: Newzoo, CEBI

Razer's operations in the gaming ecosystem consists of hardware, software and services. But 98.3% (99.3%) of the Company's revenue was generated from the hardware segment in 1H17 (2016). And the Company clearly states that hardware will continue to be its key business as it plans to achieve profitability through of its hardware (systems and peripherals) business.

Therefore, we will focus on the Company's hardware business in this report.

Fig 3: Segment revenue

	2014		2015		2016		1H16		1H17	
Hardware	US$ '000	%	US$ '000	%	US$ '000	%	US$ '000	%	US$ '000	%
- Peripherals	274,560	87.1	282,392	88.3	298,626	76.2	122,456	80.2	132,464	66.9
- Systems	40,624	12.9	37,085	11.6	90,697	23.1	29,423	19.3	62,296	31.4
Software and Services	63	0.0	148	0.1	95	0.0	64	0.0	110	0.1
Others	0	0	81	0.0	2,681	0.7	738	0.5	3,134	1.6
Total	315,247	100	319,706	100	392,099	100	152,681	100	198,004	100

Source: Company, CEBI

Gaming hardware

Gaming hardware consists of gaming peripherals (including high-precision mice, fully customizable keyboards, audio devices, mouse mats and gaming console controllers) and systems (including desktop PC and laptops).

Fig 4: Gaming hardware - peripherals

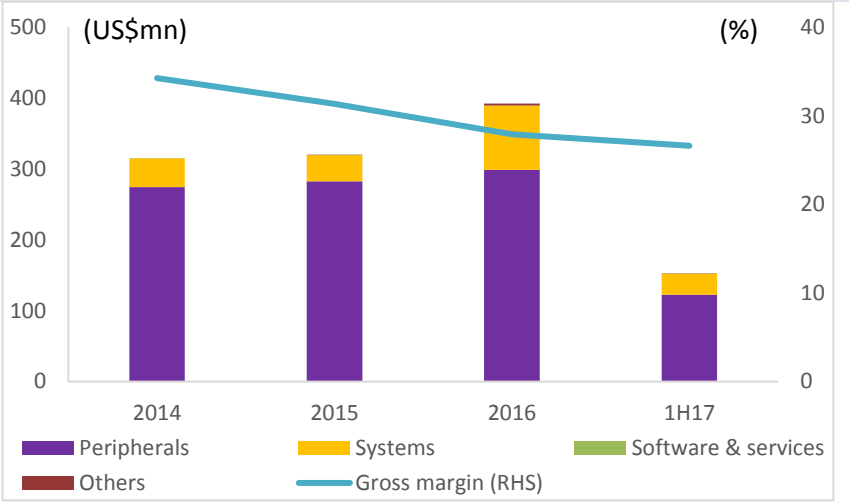
Source: Company, CEBI

Fig 5: Gaming hardware - systems

Source: Company, CEBI

Since its establishment, hardware has been the major source of income of Razer. In 2016, over 99% of the total revenue came from sales of gaming hardware (peripherals and systems). During the track record period from 2014 to 1H17, Razer has sold over US$1bn worth of gaming hardware.

Fig 6: Razer's revenue and margin

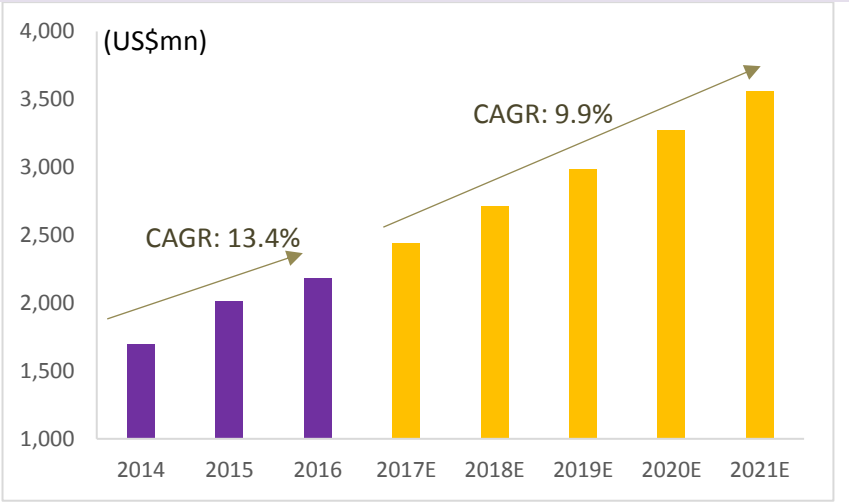


Source: Company, CEBI

Peripherals

From the report of industry consultant Newzoo, the global gaming peripherals market generated US$2.2bn revenue in 2016. Headsets ad keyboards were the fastest growing categories within gaming peripherals, but only by a small margin.

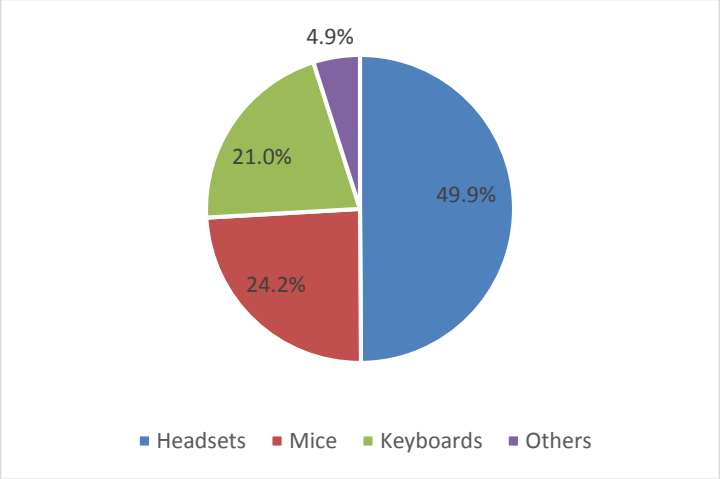
Fig 7: Total revenue of global gaming peripherals market



Source: Newzoo, CEBI

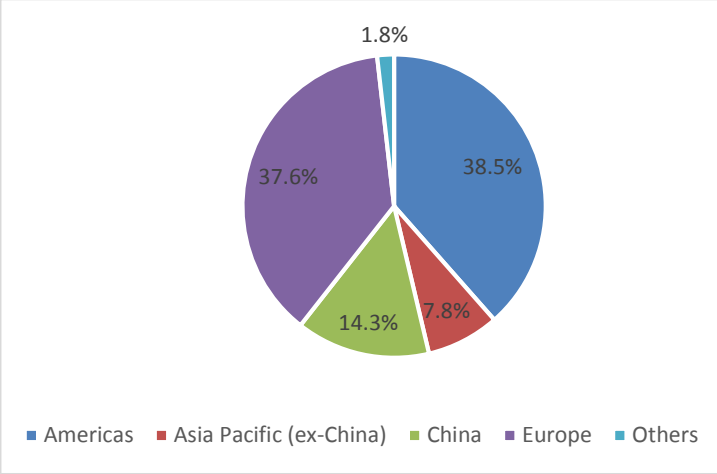
Quality and performance of gaming peripherals are important to the overall gaming experience, especially if used in a competitive setting. Therefore, gamers need to upgrade their gaming peripherals from time to time according to Newzoo. We believe if the virtual reality (VR) and augmented reality (AR) technology become more commonly used in games, gamers may need to upgrade their gears more frequently and may drive the sales of gaming peripherals.

Fig 8: Share of total revenue for different gaming peripherals (2016)



Source: Newzoo, CEBI

Fig 9: Geographical distribution of gaming peripherals revenue (2016)



Source: Newzoo, CEBI

China, Europe and the United States are the three major market of gaming peripherals as per Newzoo. And Razer owns leading market share in these three major market.

Fig. 10: Market share of Razer in gaming peripherals

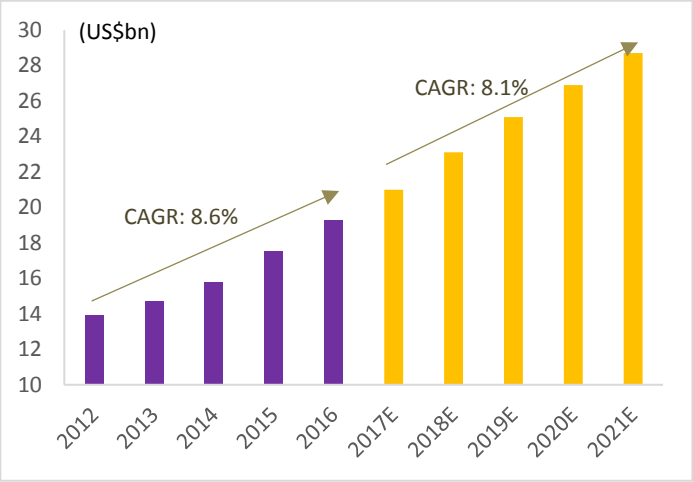
Peripherals	China	Europe	United States
Mice	1st (25.2%)	1st (10.7%)	2nd (10.3%)
Keyboards	1st (21.9%)	2nd (8.5%)	1st (10.2%)
Headsets	1st (13.8%)	2nd (5.1%)	3rd (4.3%)
Controllers	1st (20.9%)	2nd (5.2%)	2nd (4.6%)

Source: Newzoo, CEBI

Systems

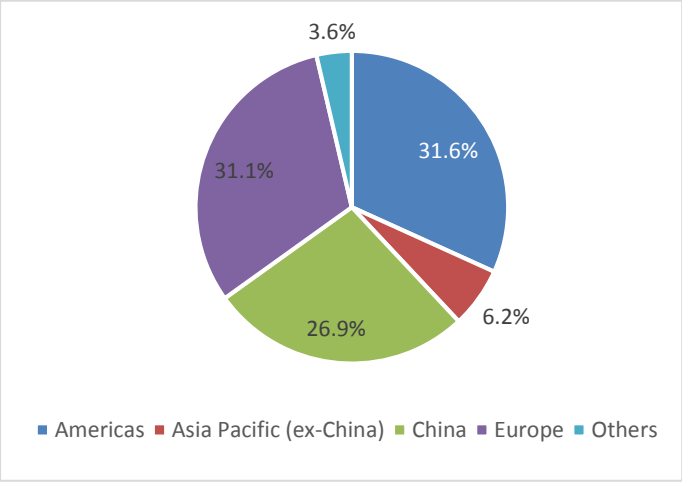
Gaming systems are the desktop PCs and laptops with top-of-the-rang components that allow for an optimal gaming experience when playing complex and immersive games. As gaming systems is one of the few areas with significant growth is the PC hardware industry, virtually all major PC manufacturers now have a gaming product line or sub-brand to compete in the landscape.

Fig 11: Share of total revenue for different gaming systems (2016)



Source: Newzoo, CEBI

Fig 12: Geographical distribution of gaming systems revenue (2016)



Source: Newzoo, CEBI

The gaming systems market has grown steadily with a CAGR of 8.6% between 2012 and 2016. Within the gaming systems industry, laptops with decent portability and high performance is expected to be the main driver of overall growth.

But the competitive landscape for gaming systems is very diverse and fragmented with both gamer-focused specialists and large manufacturers. Among the gamer-focused brands, Newzoo estimates that Razer accounted for around 3% of market share.

Gaming software

Razer Software Platform had over 35 million registered users as of June 30, 2017. But in terms of revenue, both gaming software and services segments do not provide material revenue to the business. The two segments together only contributed US$110k to Razer in 1H17 (US$95k in FY2016). So from our point of view, these two segments are more like the value-add services offer to the hardware users.

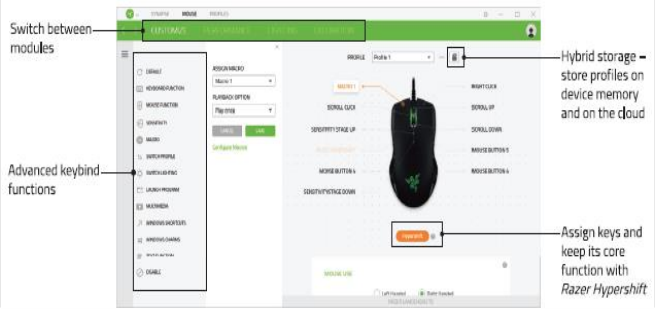
The following table sets forth some key software platform offered by Razer and their functions:

Fig. 13: Software platform

Platform	Function
Razer Synapse	An IoT platform which allows uers to access the software platform via their hardware devices
Razer Chroma	RGB lighting technology system
Razer Cortex	Game launcher, optimizer, aggregator and price comparison engine

Source: Company, CEBI

Fig 14: Razer Synapse



Source: Company, CEBI

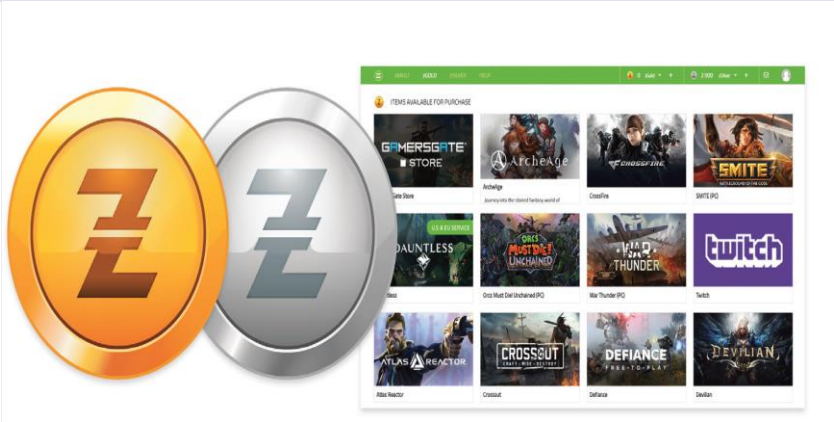
Fig 15: Razer Chroma

Source: Company, CEBI

Gaming services

In March 2017, Razer launched a virtual credits service called zGold. Gamers can purchase zGold and exchange it for digital content and items from various content providers. The service allows gamers to access over 2,500 online gamers as of June 30, 2017. Users store their zGold in e-wallets which is called zVault. So far, more than 2.1 million zVault e-wallets have been registered.

Fig 16: zGold and game catalog

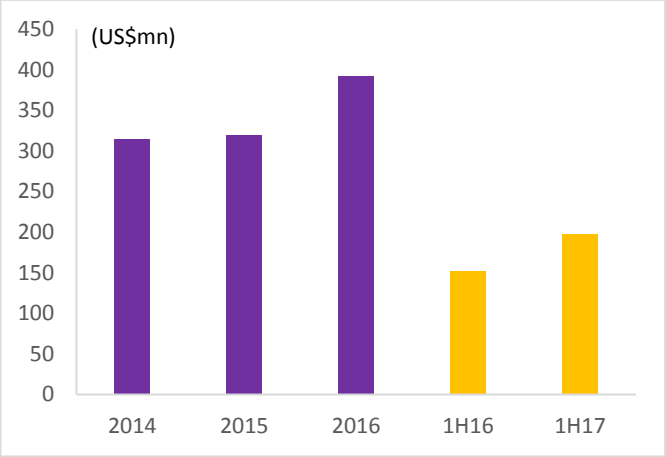


Source: Company, CEBI

Loss making till at least 2018

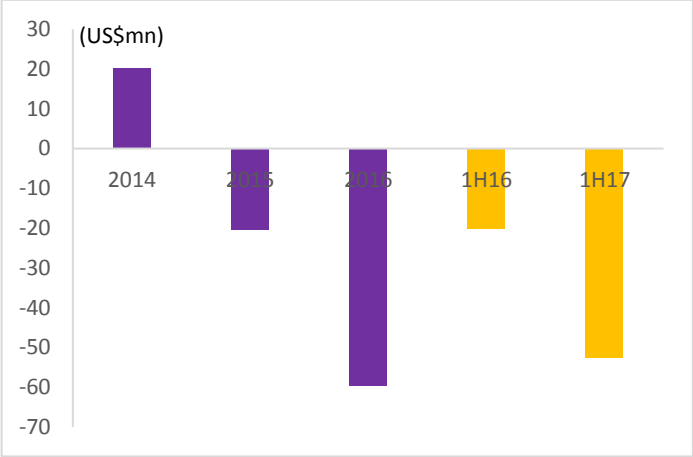
Despite its leading market position in this growing industry, Razer is actually loss making at the moment. The Company reported US$52.6mn net loss in 1H17, 1.6x more than the previous year (US$20.2mn net loss in 1H16) due to the surge in operating expenses. As the Company expects the expenses will continue to increase, it stated in the prospectus that it expects to remain loss making for the year 2017 and 2018.

Fig 17: Revenue



Source: Company, CEBI

Fig 18: Net profit/loss



Source: Company, CEBI

Expensive business

Gross profit for the 1H17 in fact increased by 34.1% yoy, but due to the surge in selling and marketing expenses (+50.6% yoy), research and marketing expenses ("R&D expenses") (+73.7%) and general and administrative expenses (+116.9%), the operating loss increased by more than double.

Fig. 19: Operating income/loss of Razer

US$ '000	2015	2016	Change	1H16	1H17	Change
Revenue	319,706	392,099	22.6%	152,681	198,004	29.7%
	-	-		-	-	
Cost of sales	219,505	282,648	28.8%	112,040	143,489	28.1%
Gross profit	100,201	109,451	9.2%	40,641	54,515	34.1%
Selling and marketing expenses	-41,110	-69,993	70.3%	-25,465	-38,360	50.6%
Research and development expenses	-29,818	-52,175	75.0%	-20,821	-36,167	73.7%
General and administrative expenses	-41,348	-49,606	20.0%	-16,569	-35,945	116.9%
Impairment of goodwill	0	-805	NA	0	0	NA
Operating income	-12,075	-63,128	422.8%	-22,214	-55,957	151.9%

Source: Company, CEBI

Marketing expenses rise for brand building

The gaming industry is growing decently and has gained a lot of traction. But the traction does not come for free. It involves huge selling and marketing expenses consist of advertising, sponsorships, attending trade shows and gaming-related events.

Going forward, the Company plans to increase the budget for sales and marketing initiatives, including traditional and digital advertising. As a result, the relevant expenses is expected to rise further.

Fig. 20: Followers / subscribers of Razer on social media

Social media	Amount (million)
Facebook	7.8
Twitter	2.9
Instagram	1.8
YouTube	1.2
WeChat	0.25
Weibo	0.16

Source: Company, CEBI

R&D expenses go up to keep up-to-date

The gaming industry is changing quickly. Therefore Razer has to keep investing in product development to ensure it can provide customers satisfactory gaming experience. The Company expects R&D expenses will continue to go up in order to support its business expansion, in particular in respect of the software and services.

The Company also expects the general and administrative expenses to keep increasing due to the business expansion and IPO related expenses. According to the prospectus, the total listing expenses will be around HK$184mn, of which only HK$29.4mn has been reflected in the P&L. Due to the expectation of rising expenses, Razer expects the business to stay loss making for 2017 and 2018.

Mobile initiative

The Company plans to achieve profitability through the growth of its hardware business. Apart from the existing peripherals and systems it offers, Razer's new initiative comes from a gaming-focused smartphone. We believe it is not just an expansion to boost revenue, but also a must-do strategy if as the global mobiles games market is now much larger than the PC segment which Razer is focused on.

But this strategy may not goes too smooth as the competition in global smartphones market is already fierce.

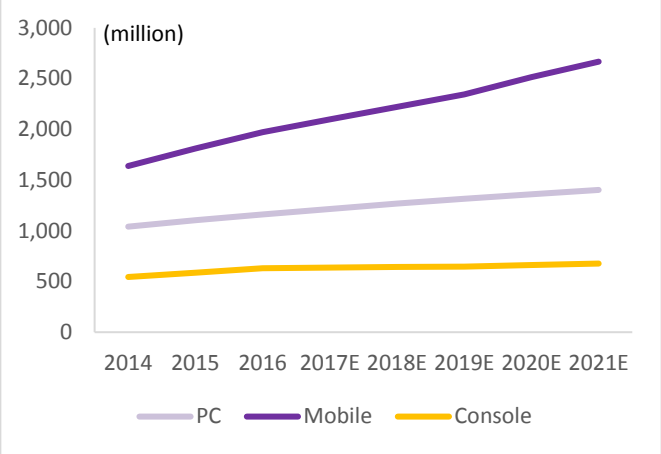
Fig 21: Razer Phone

Source: Razer, CEBI

Fast growing mobile games market

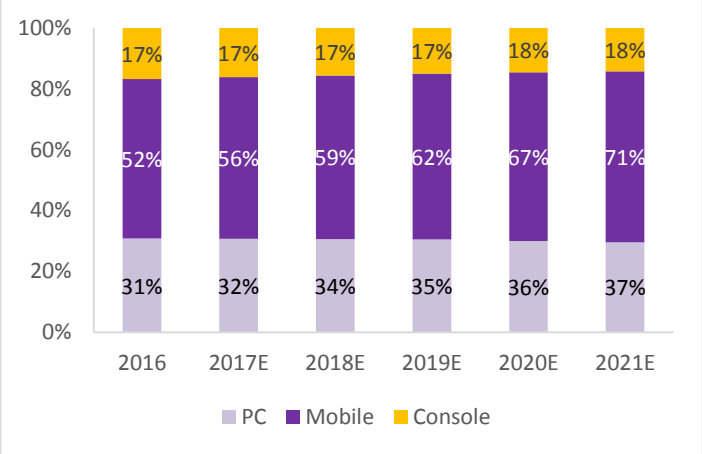
Mobile games is the fastest growing segment among the games market. There were almost 2 billion active mobile games players in the world in 2016 according to Newzoo, more than the total of console and PC gamers. The industry consultant estimates that the number of mobile gamers will grow at a CAGR of 6.2% between 2017 and 2021, versus 3.6% and 1.5% of PC gamers and console gamers. The number of active mobile gamers is expected to reach 2.7 billion in 2021 according to Newzoo's estimate.

Fig 22: Number of active gamers by segment



Source: Newzoo, CEBI

Fig 23: Global active gamers



Source: Newzoo, CEBI

Mobile gamers generate higher revenue than PC and console too. 2016 marked the first year that mobile games generated more revenue than PC or console games with US$38.6bn or 38% of the total global games market, having grown at a CAGR of 25.6% from 2014 and 2016. In 2017, mobile games is anticipated to take 42% of the global games market, generating US$46.1bn in revenue, and is expected to grow at a CAGR of 10.6% from 2017, reaching US$68.9bn in 2021.

Razer Phone

Despite of Razer's leading position in gaming hardware market, its products are mainly limited to the PC games market. As a result, the Company has been aggressively acquiring mobile-related assets over the past three years to strengthen its capabilities.

Fig 24: Razer's acquisitions made for developing it mobile device

Year	Acquisition target	Technology acquired
2015	OUYA	Games content and software
2016	THX	Audiovisual
2017	Nextbit System	Product design and software development

Source: Company, CEBI

In November 2017, Razer unveiled its first smartphone which is Android-based and made for mobile gaming and digital entertainment purposes. The phone will only be launched in Europe and United Stated in the first phase. The following table compares the specifications of Razer phone and the major flagship Android smartphone – Samsung Galaxy Note 8:

Fig 25: Razer Phone vs Samsung Galaxy Note 8

	Galaxy Note 8	Razer Phone
Size	162.5 x 74.8 x 8.6 mm	158.5 x 77.7 x 8 mm
Weight	195 grams	197 grams
Screen	6.3-inch Super AMOLED	5.72-inch 120 Hz Ultramotion LCD display
Resolution	2960 × 1440 pixels	2560 x 1440 pixels
OS	Android 7.1.1 Nougat	Android 7.1.1 Nougat
Storage	64GB, 128GB, 256GB	64GB
MicroSD card slot	Yes	Yes
NFC support	Yes	Yes
Processor	Qualcomm Snapdragon 835 (U.S.), Samsung Exynos 8895 (international)	Snapdragon 835 with Adreno 540
RAM	6GB	8GB
Camera	Dual 12 MP rear (both with OIS), 8MP front	Dual 12 MP rear (f/1.75 wide angle & f/2.6 zoom), 8 MP front
Video	Up to 4K at 30 fps	Up to 4K at 30 fps
Water resistant	Yes, IP68 rated	No
Battery	3,300mAh	4,000mAh
Charging port	USB-C	USB-C
Price	US$930	US$699

Source: Media, CEBI

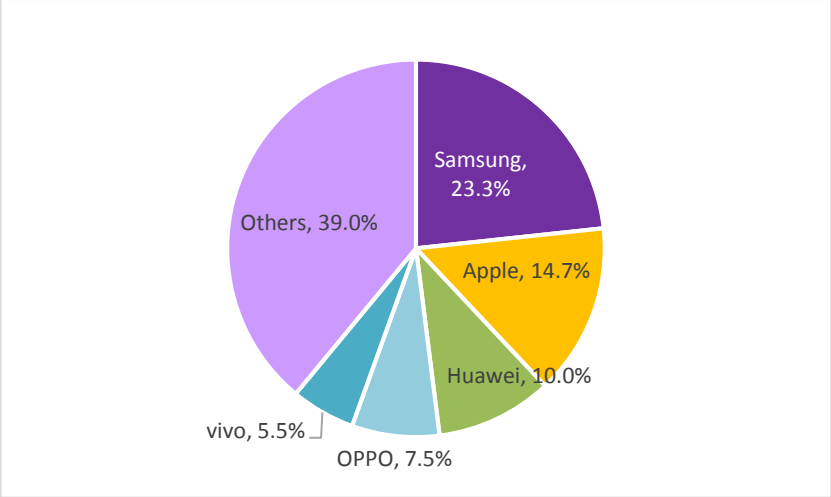
Although Razer phone lacks some features which are commonly found on other flagship devices, such as OLED screen, wireless charging and ultra-narrow borders around its display, its Snapdragon 835 chip, 8GB of RAM and the screen resolution are already at the top quality among flagship smartphones. Besides, it is a relative bargain as the price is 20-30% cheaper than the top flagships e.g. Samsung Galaxy Note 8 and iPhone X.

Intense competition in smartphone market

The global smartphones market has grown rapidly in recent years. But the industry is also intensely competitive and has generally been characterized by two dominant players i.e. Apple and Samsung.

The current make-up of the market makes it unlikely that any new entrant will be able to compete on costs. This leaves a combination of brand and superior design and/or functionality as the possible competitive advantages, while quality and performance must be at least on par with the leading brands.

Fig 26: Smartphone company market share in unit shipments



Source: IDC, CEBI

Though the Company said this launch will be a foray into mobile, not a full-blown launch, we are afraid that selling and market costs will surge again to build a brand name in this highly competitive market. This foray into mobile industry may lead to losses in the first few years.

Unpacking the IPO

After six rounds of private fund-raising, Razer has finally turned to the market for an IPO that is expected to raise a maximum of HK$4.2bn (US$545mn) by issuing new shares which equal to 12% of the enlarged share capital (before over-allotment). The price range of HK$2.93 - HK$4.00, implies that the market capitalization of Razer will be between HK$25.9bn and HK$35.5bn after listing.

Fig 27: Offering range

HK$	Floor	Top
Offer price	2.93	4.00
Market cap	25,969mn	35,452mn

Company: Company, CEBI

IPO for business expansion

As Razer has zero long-term debt (the Company funds itself via equity financing through six rounds of pre-IPO fund raising), management plans to use the IPO proceeds mainly on developing new technology, acquisitions and marketing.

Fig 28: Intended use of net proceeds

Amount of the net proceeds	Intended use of net proceeds
25%	Develop new verticals in gaming and digital entertainment industry
25%	Finance acquisitions
20%	R&D
20%	Sales and Marketing
10%	Working capital

Company: Company, CEBI

Expect strong top-line growth, but bottom-line under pressure

Razer reported 22.6% yoy revenue growth in 2016 and 29.7% in 1H17. The strong top-line growth was mainly driven by the launch of new products (*Razer Blade Stealth*, a new Ultrabook line and two other products refreshes in 2016). As Razer is going to launch Razer phone in 4Q17, we expect the revenue growth can maintains its strong momentum for 2017 and 2018.

But the bottom-line would be another story. Operating loss of Razer actually increased in 2016 and 1H17 due to surge in R&D and selling and marketing expenses. With the launch of new product in a completely new space to Razer, and not to mention the smartphone market is highly competitive, the Company probably needs to boost its

marketing expenses again.

Gaming is a fast-changing market. To catch up with the latest technology, hardware producers need to keep upgrading their products to improve the user experience. But before the new products can be pushed to market, R&D expenses could be huge. Therefore, we expect Razer's R&D expense may further increase in near future in order to catch up with the new trends, such as virtual reality technology.

General and administrative expenses also brought significant pressure on the Company's financials in the first half of 2017 (+116.9% yoy). Key reasons for the increase is the surge in staff cost (US$17.8mn in 1H17, +227% yoy) and the professional fees (US$5.6mn) which is related to the IPO. As most of the listing expenses will be charged in the second half, Razer's expenses is expected to go up further.

As the expenses may grow faster than the revenue, we expect Razer's bottom-line will continue to be under pressure in near future despite the top-line growth.

Fig. 29: Operating income/loss of Razer

US$ '000	2015	2016	Change	1H16	1H17	Change
Revenue	319,706	392,099	22.6%	152,681	198,004	29.7%
	-	-		-	-	
Cost of sales	219,505	282,648	28.8%	112,040	143,489	28.1%
Gross profit	100,201	109,451	9.2%	40,641	54,515	34.1%
Selling and marketing expenses	-41,110	-69,993	70.3%	-25,465	-38,360	50.6%
Research and development expenses	-29,818	-52,175	75.0%	-20,821	-36,167	73.7%
General and administrative expenses	-41,348	-49,606	20.0%	-16,569	-35,945	116.9%
Impairment of goodwill	0	-805	NA	0	0	NA
Operating income	-12,075	-63,128	422.8%	-22,214	-55,957	151.9%

Source: Company, CEBI

No dividends in near future

As the Company is loss-making and is expected to stay loss-making in the near future, the Company makes it clear that it has no dividend policy and does not intend to pay any dividend in the near future.

Comparable

Nearly all the revenue of Razer is generated from peripheral and systems sales. So we believe Logitech, Microsoft, Asustek, MSI, HP and Fujitsu can be the comparable of Razer. And considering that Razer is trying to expand its reach to mobile device and to create an ecosystem which consists of software and service, we include

consumer electronics companies Apple, Samsung, LG, Lenovo and Sony in the comps table too.

For the valuation of Razer, P/E and EV/EBITDA would be negative numbers as the Company is loss-making. EV/Sales during the track record is low (< 1%). But as Razer is still loss-making, EBITDA margin would be negative too, making the EV/Sales ratio meaningless.

Fig 30: Sector Valuation Summary

Company	Ticker	Market cap (US$mn)	P/E			EV/Sales			EV/EBITDA		
Hardware - Peripherals			2016	2017E	2018E	2016	2017E	2018E	2016	2017E	2018E
Logitech	LOGN SW Equity	6,289	49.7	28.4	24.9	1.03	2.08	2.38	11.38	17.63	17.92
Microsoft	MSFT US Equity	650,109	39.8	27.8	25.0	3.98	5.39	5.64	12.68	15.58	14.20
		Average	**44.7**	**28.1**	**25.0**	**2.50**	**3.73**	**4.01**	**12.03**	**16.60**	**16.06**
Hardware - System											
Asustek	2357 TT Equity	6,443	10.1	13.5	11.9	0.24	0.32	0.31	5.49	8.27	7.02
MSI	2377 TT Equity	2,076	12.8	12.5	11.2	0.49	0.52	0.48	8.19	8.89	7.58
HP	HPQ US Equity	35,710	14.8	13.0	12.0	0.53	0.71	0.70	6.53	8.64	7.85
Fujitsu	6702 JP Equity	15,693	20.6	19.9	11.8	0.24	0.36	0.50	3.57	5.17	5.68
		Average	**14.6**	**14.7**	**11.7**	**0.37**	**0.48**	**0.50**	**5.95**	**7.74**	**7.03**
Ecosystem											
Apple	AAPL US Equity	897,529	20.9	19.4	15.3	2.09	2.78	2.76	6.39	8.91	8.48
Samsung	005930 KS Equity	324,563	17.8	9.4	7.8	0.73	1.28	1.15	2.96	3.97	3.12
Lenovo Group	992 HK Equity	6,434	NA	8.4	13.5	0.22	0.21	0.20	12.32	5.48	6.91
Sony	6758 JP Equity	58,439	44.1	95.2	19.4	0.40	0.60	0.80	4.75	7.48	6.55
		Average	**27.6**	**33.1**	**14.0**	**0.86**	**1.22**	**1.23**	**6.61**	**6.46**	**6.27**

Source(s): Bloomberg, CEB

Key investment risks

We believe Razer faces the following risks:

Increasing competition from global PC brands

We believe the top PC brands may challenge the hardware business of Razer. As gaming systems is one of the few areas with significant growth is the PC hardware industry, virtually all major PC manufacturers now have a gaming product line or sub-brand to compete in the landscape. We believe the top PC brands are well-funded to compete in the hardware business and they enjoy economies of scale through their traditional PC business. These top PC brands also offer professional gaming peripherals e.g. keyboards, mice and headsets.

PC games market may be saturated

According to Newzoo's research, active PC gamers will grow at a CAGR of 3.6% between 2017 and 2021, slower than the 5.7% between 2014 and 2016. And we believe with the upgrade of mobile device and introduction of new technology to mobile games, such as virtual reality, PC games market may grow even slower than Newzoo's forecast. As most of the hardware products of Razer are PC-based, sales growth may be capped.

Smartphone market maybe too competitive to make profit

The global smartphone market are dominated by Apple and Samsung. Below the two leaders, there are a group of Chinese manufacturers selling high-end smartphone with top specifications. And in order to gain market share, these brands don't mind selling their phones at cost or even with a slight loss. Taking the huge sales and marketing expense in the initial stage of entering the mobile business, there is chance that Razer may make a loss in this hyper-competitive market.

Razer may not be able to monetize software and service business

Razer would like to diversify its business and therefore the Company launched its software and service segments. But there are actually many more platforms in the market for gamers to purchase games and other digital content. As Razer does not issue its own games or produce the console, the Company may not have particular edge competing in this landscape. There is chance that these two segments may only be a value-add service to users, but not a revenue driver of the Company.

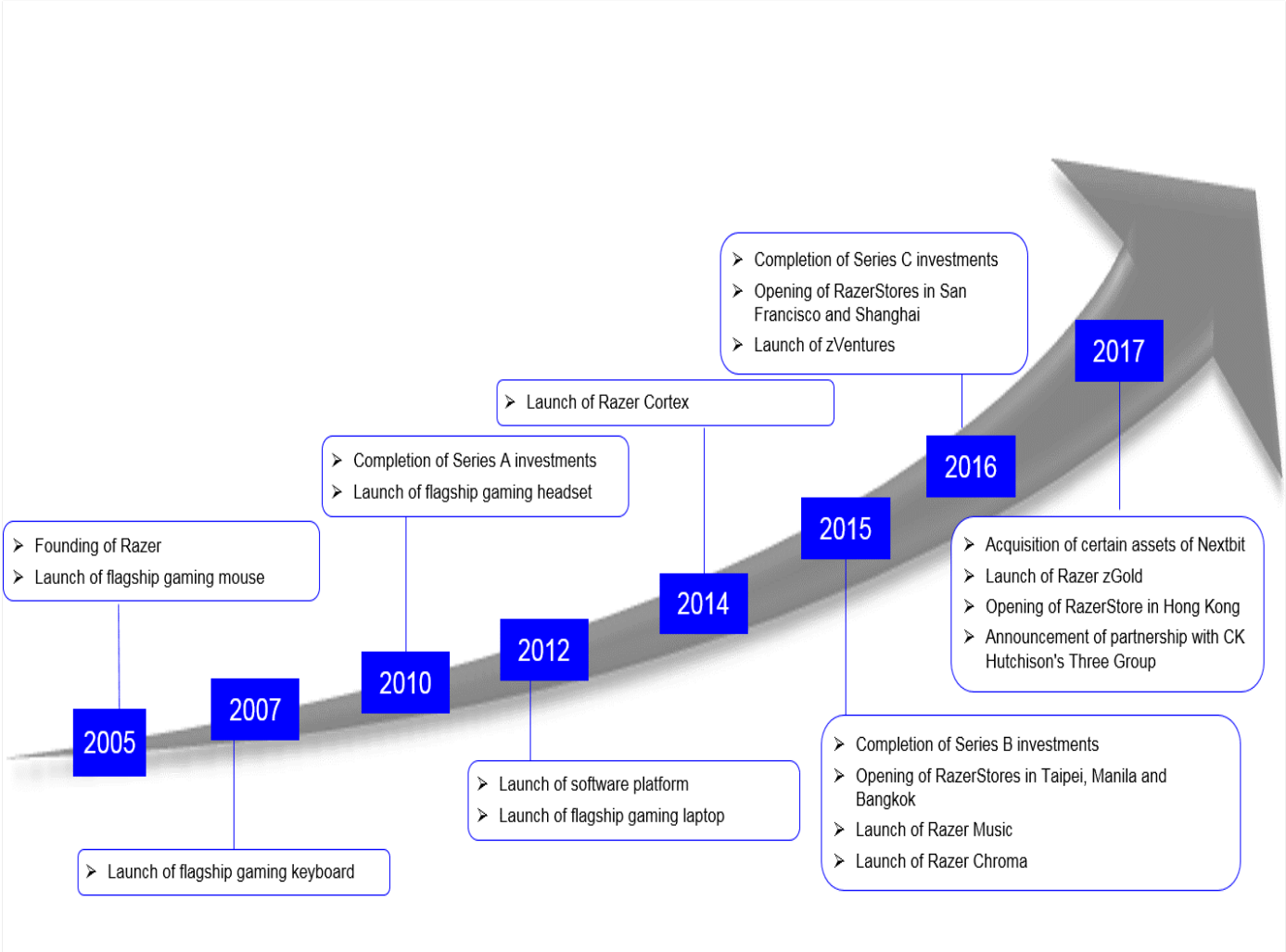
Appendix I: Company History

Razer was founded in 2005 by Mr. Min-Liang Tan and Mr. Robert Krakoff to design products for gamers. The Company's dual headquarters are located in San Francisco and Singapore. Its Singapore office serves as the nexus for most of is general, administration, legal and finance functions and supply chain management operations.

Company milestone

The following illustrates the key milestones of Razer's business development:

Fig 31: Company milestone

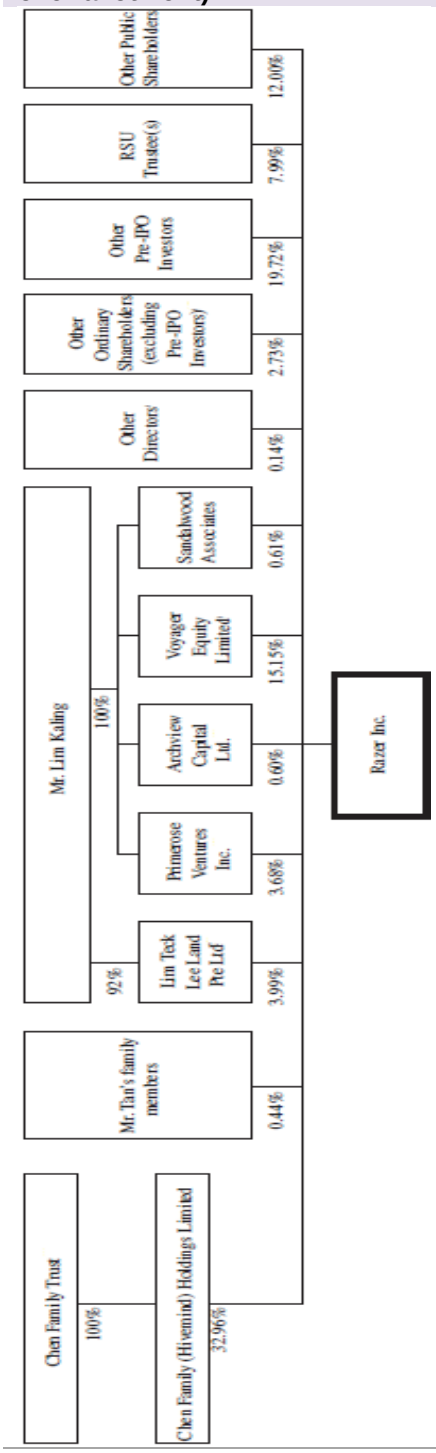


Source: Company, CEBI

Appendix II: Shareholding Structure

Assuming there is no over-allotment, the founder Mr. Tan and his family trust will hold roughly one-third of shares of Razer after IPO, and the public shareholders will hold 12% of the total outstanding shares.

Fig 31: Shareholding structure after IPO (assuming no over-allotment)



Source: Company, CEBI

General Disclosures and Disclaimers

This report is produced and distributed by CEB International Capital Corporation Limited, which is regulated by the Hong Kong Securities and Futures Commission. This report is based on information available to the public that we consider reliable, however, the authenticity, accuracy or completeness of such information is not guaranteed by CEB International Capital Corporation Limited and/or its affiliates (collectively as "CEBI").

This report does not take into account the particular investment objectives, financial situation or needs of individual investors and does not constitute a personal investment recommendation to anyone. Investors are wholly responsible for any investment decision based on this report. Investors are not advised to solely rely on the opinions in this report before making any investment decision or other decision. Investors are advised to consider whether any advice or recommendation contained in this report is suitable for their particular circumstances.

The content of this report does not represent a recommendation of CEBI and does not constitute any buying/selling or dealing agreement in relation to the securities mentioned. This report is not intended to be an offer to buy or sell or a solicitation of an offer to buy or sell the securities mentioned. The prices of securities may fluctuate up or down. It may become valueless. It is as likely that losses will be incurred rather than profit made as a result of buying and selling securities.

Information and opinions contained in this report are subject to change and may be amended without any notification. Further, CEBI's salespeople, traders, or other licensed personnel may provide oral or written market commentary or trading ideas that may be inconsistent with, and reach different conclusions from, the recommendations and opinions presented in this report. CEBI may make investment decisions that are inconsistent with the recommendations or opinions expressed in this report.

This report is for distribution only to investors of CEBI. This report is furnished to you solely for your information and may not be reproduced or redistributed to any other person. Without CEBI's written authorization, any form of quotation, reproduction or transmission to third parties is prohibited, or may be subject to legal action. This report is not directed at, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any jurisdiction where such distribution, publication, availability or use would be contrary to applicable law or regulation or which would subject CEBI and its group companies to any registration or licensing requirement within such jurisdiction.

This report is for distribution in Hong Kong only and may not be distributed in the United States. The Analyst(s) who prepared this report is / are not registered or qualified as research analysts with FINRA in the United States.

Special Disclosure

I, YAU Man Fu (C.E. No.:BCA258), am a SFC licensed person, primarily responsible for the content of this research report, in whole or in part, hereby certify that all of the views expressed in this report accurately reflect my personal view about the subject company or companies and its or their securities. I also certify that no part of my compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed in this report. I and/or my associates have no financial interests in relation to any listed company (ies) covered in this report, and I and/or my associates do not serve as officer(s) of any listed company (ies) covered in this report.

Definition of equity rating

Buy	**Expected return 10 % over the next twelve month**
Hold	**Expected return between -10% and 10% over the next twelve month**
Sell	**Expected return -10 % over the next twelve month**

Explanation of Stock Ratings: (i) Buy: A return potential of 10% or more relative to overall market within 6 – 12 months; (ii) Neutral: A return potential ranging from -10% to 10% relative to overall market within 6 – 12 months; and (iii) Sell: A negative return of 10% or more relative to overall market within 6 –12 months.

Explanation of Sector Ratings: (i) Overweight: The sector will outperform the overall market by 10% or higher within 6 –12 months; (ii) Neutral: The sector performance will range from -10% to 10% relative to overall market within 6 –12 months; and (iii) Underweight: The sector will underperform the overall market by 10% or lower within 6 – 12 months.(iv) Not Rated: No sector rating is given to the sector.

The research analyst(s) is licensed by the Hong Kong Securities and Futures Commission. Neither the research analyst nor his/her associate(s) serves as an officer of the listed company(ies) covered in this report and has no financial interests in the companies.