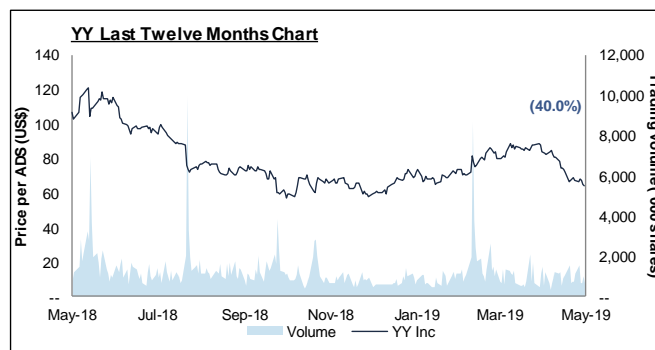


YY Inc. (NASDAQ: YY) – Long

Steven Shi

Key Operating and Trading Statistics (US\$ unless stated otherwise)			
Ticker	NASDAQ: YY	Market Capitalization	\$ 5,320.9mm
Sector / Industry	Social Media / Technology	Net Cash	\$ 663.8mm
Current Price (24-May-19)	\$ 64.12	Enterprise Value	\$ 5,125.9mm
Recommendation	BUY	2018 Revenue	\$ 2,283
Base Case Valuation	\$ 80.15	2018 Core EBITDA	\$ 387
Upside / (Downside)	44.3%	2018 Net Income	\$ 587
Bear / Bull	\$ 50.00 / \$ 115.00	2018 EV/Revenue	2.2x
Upside / (Downside)	(22.0%) / 79.4%	2018 EV/EBITDA	13.2x
52-Week Low / High	\$ 55.55 / \$ 125.84	2018 P/E	9.1x
ADS Outstanding (mm)	83.0	2019E EV/Revenue	1.8x
Short Interest (%)	5.0%	2019E EV/EBITDA	10.9x
LTM Total Return	(40.0%)	2019E P/E	10.4x



Recommendation

I recommend buying shares of YY Inc. (“YY” or the “Company”) due to the Company’s established moat and long runway of growth. YY has proven its business model in YY Live, which averaged an operating margin of 32% and free cash flows of 15% over the last five years. The Company is now exporting that business model to larger and underpenetrated markets in e-sports and foreign markets. The recent pullback in YY’s shares, largely sparked by a sell-off in Chinese equities from ongoing US-China trade tensions, provide an attractive entry point for long-term investors looking to purchase a growing business occupying a compelling niche in social media at a discount to current value.

Business Description

YY was founded in 2005 as an online web portal but pivoted its business model to focus on live streaming in 2012. Since then, live streaming has been the core focus of the group, comprising about 94% of total net revenues in 2018. YY is now the number 1 Chinese live-streaming platform (ranked by monthly active users, or “MAU”) with three distinct business operations: i) YY Live, the Company’s legacy business focused on Chinese general entertainment livestreaming; ii) Huya, a spun-off entity that focuses solely on e-sports live streaming; and iii) Bigo, a recently acquired Singaporean-based startup focused on live streaming and short form videos in the Indian, ASEAN and MENA markets¹.

Live streaming platforms benefit from network effects seen in most social media apps. On one side of the platform lies content creators; on the other side, viewers. As a platform gains creators and viewers, the value proposition of the whole increases – a larger audience for the creators and more content choices for the viewers.

In contrast to the subscription-based business model typically seen in North American video content platforms, such as Amazon’s Twitch, Alphabet’s Youtube, and Patreon, YY’s business model is focused around a tipping and gifting ecosystem. In return for the creators’ content and broadcast, they are compensated with tips, in the form of virtual gifts, by viewers. YY takes a significant cut for facilitating this transaction (typically ranging from 10% to 40%).

What the gifting model sacrifices in consistent and predictable revenue generation compared to the subscription model, it makes up for in compelling economics and aligned incentives. There is a strong social phenomenon at work behind each tip, in which viewers compete for the streamers’ attention by gifting higher value gifts. The competitive bidding nature of this model is highly profitable – according to different sources, a live streaming platform can be self-sustaining with only the top 4% of its users. Moreover, because creators receive immediate feedback from their viewers, they’re incentivized to broadcast higher quality content more frequently. As a result, the business model leads to a steady supply of content – something North American live streaming apps struggle with – and reinforces network effects.

Investment Thesis

1) Current dynamics of the three segments mask the compelling economics of YY’s businesses

A deeper dive in YY’s legacy business segment, YY Live, uncovers a business model with compelling network effects and economics. The medium stands out for its interactivity, social element, immediateness, and authenticity. The platform is sticky – users tend to stay on a live streaming platform even if their main creator leaves for another platform - and the Company has a proven ability to convert viewers into paying users. Moreover, because users load a wallet prior to spending on the platform, the business working capital is often a source of funds. All of this results in a business that boasts a revenue CAGR growth of 33% since FY2014 and a 5-year average operating margin of 32%.

Nonetheless, the Company recognizes that there are more attractive growth opportunities than YY Live. Instead of focusing on reinvestment in its legacy business, YY Live’s free cash flows are redirected to support growth in Huya and Bigo, segments with much more favorable growth backdrops. As a result, the profitability of the consolidated financials appears worse than reality, which I believe is a factor in the Company’s undervaluation.

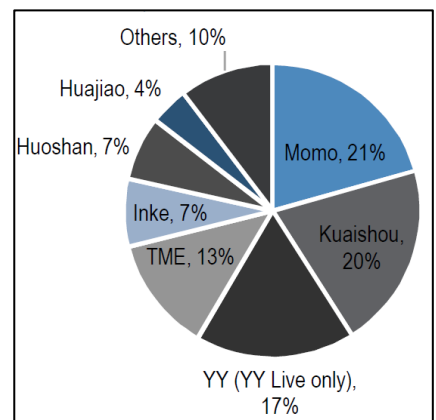
¹ ASEAN = Association of Southeast Asian Nations, MENA = Middle East and North Africa

2) Consolidation in the Chinese market will likely improve profitability

The market continues to view China's live streaming market as hypercompetitive. Certainly, there were over 100 live streaming platforms in 2016. However, there are several signs that competitive pressures have eased significantly and the market is heading towards consolidation. After the China live streaming boom in 2016, several have gone bankrupt or have closed operations. The top four players in the Chinese talent live streaming market now holds 71% of industry market share.

Consolidation is evidenced in the Chinese e-sports live streaming space as well. According to interviews with YY's founder, Tencent intends to consolidate the e-sports streaming industry through merging its investees to create a Chinese streaming powerhouse similar to Twitch (Tencent holds a 29.6% interest in Huya and a 40.1% stake in Douyu, a rival streaming platform). This is a well-known strategy for Tencent - it followed the same playbook in merging several domestic music groups to form Tencent Music, creating a profitable music streaming giant. The third largest e-sports streaming platform, PandaTV, declared bankruptcy in March 2019, adding further momentum to consolidation. Consolidation will likely beget greater pricing power both in terms of taking a greater cut of transactions within the gifting ecosystem as well as demanding higher fees from advertisers from a larger audience.

Figure 1 - China Live Broadcasting Market Breakdown

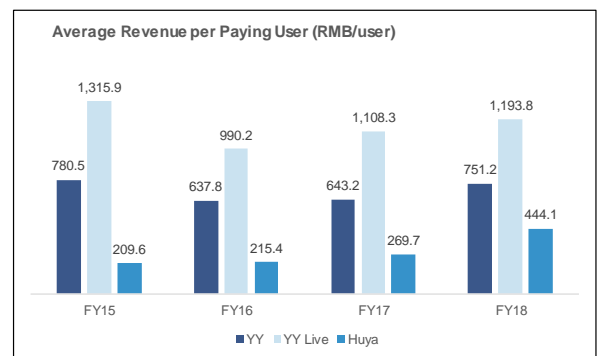


Source: JP Morgan

3) Attractive industry trends and long overseas runway underpin growth

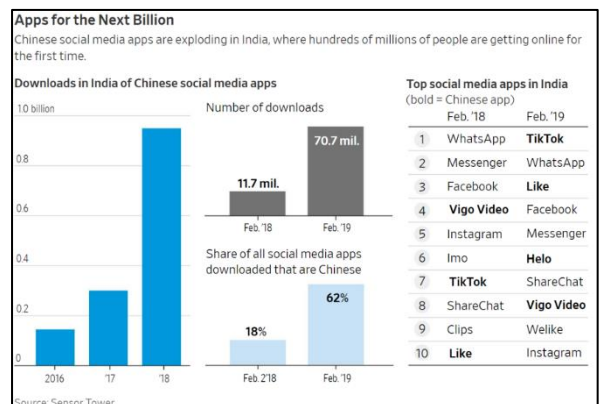
The China e-sports market is the largest in the world behind the United States and the top two platforms (Huya and Douyu) generate almost 50% of e-sports revenue worldwide. Huya's scale almost rivals Amazon's Twitch – while Twitch's platform boasted 140 million monthly unique viewers in 2018, Huya is catching up with 124 million active users in Q1 2019. And although Huya's Average Revenue per Paying User (ARPPU) has doubled since 2015, it is still less than half of what YY Live earns on its Paying User (see Figure 2). This is due to a combination of two factors: i) the proportionate number of paying users to active users on Huya are half of that of YY Live's, and ii) the Average Revenue per User (the more traditional "ARPU") is approximately 60% lower than YY Live's estimated ARPU. Nevertheless, both figures have improved significantly since 2017. Given the market trend to consolidation, there is a strong possibility that ARPPU of Huya will eventually overtake that of YY Live's. All these factors combine for an attractive, long runway of growth.

Figure 2 – Average Revenue per Paying User



Bigo may be even more attractive for growth, as it capitalizes on a first-mover advantage in the less competitive, overseas market. Bigo is already a top-grossing app. Based on App Annie's top grossing ranks in Google Play, Bigo is among the top ten most profitable non-gaming applications in 39 nations / regions, including 19 in MENA, 8 in ASEAN, and 12 other countries including India, the United States, Australia, Canada, etc. To illustrate its popularity, it currently ranks above apps such as Dropbox, Headspace, and TikTok in the US. Growth in India has been particularly strong – the country captured 32% of Bigo's 11 million new Android users between January and February of 2019, according to Sensor Tower. Although Bigo's financials are not yet consolidated into public filings, the price paid for Bigo – 4.3x EV / trailing sales – seems reasonable to public comparables (MOMO, YY's closest comp, trades at 4.3x EV / 2019 sales).

Figure 3 - Bigo's Like App Now Top Three in India



4) Strong management team with skin in the game

David Li, CEO and founder of YY, has a proven to be a strong strategic thinker and astute capital allocator. In addition to pioneering the Chinese live streaming market with YY Live, he achieved viral growth in Bigo's apps, achieving 23 million monthly active users in its live streaming platform and 46 million monthly active users in its short form video platform since its March 2016 launch. Furthermore, Li's incentives are aligned with shareholders – he has a ~15% stake in YY.

Valuation

The market is currently pricing YY Live at a 2018 EBIT multiple of ~5.0x, which I believe is incredibly cheap for a business that grew its topline at 18% this year, earned a 24% operating margin, and has a network-effect moat in the Chinese market.

I use a SOTP approach to valuation and reach per ADS² valuation range of \$75 to \$85. The key assumptions include:

- **US\$40/ADS** for YY Live, based on an 8x EBIT multiple on forecasted 2019 financials
 - The forecasted 2019 financials assume a 5% growth in the number of paying users (~35% CAGR growth from 2015 to 2018) and a flat ARPPU growth
 - The applied 11x EBIT multiple is at a >50% discount to the 2019E EBIT multiple of its closest competitor, MOMO
- **US\$15/ADS** for Huya, based on the current market capitalization and YY's 39% shareholding in Huya, applying a 30% holding company discount
- **US\$26/ADS** for Bigo, based on the US\$2.1bn acquisition valuation

Figure 4 - Sum-of-the-parts Valuation Summary

Sum-of-the-Parts Valuation Summary			
Segment	Description	Units	Amount
YY Live Equity Value	8x 2019E EBIT (~50% discounted multiple to MOMO) and adjusted for net cash + investments + NCI	US\$mm	3,285.2
Huya Equity Value	30% HoldCo discount to YY's stake	US\$mm	1,239.1
BIGO Equity Value	Implied valuation at buyout	US\$mm	2,127.1
Implied Equity Value of YY Inc		US\$mm	6,651.3
FDS Outstanding	Pro Forma for Bigo acquisition and Huya follow -on offering	mm	1,659.7
Shares per ADS Outstanding		x	20.0
Total ADS Outstanding		mm	83.0
Implied Price per ADS Share		US\$/ADS	80.15
Current Price per ADS Shares		US\$/ADS	64.12
Upside / (downside)		%	25.0%
Implied Price per ADS Share - no HoldCo Discount			86.55
Current Price per ADS Shares		US\$/ADS	64.12
Upside / (downside)		%	35.0%

A bull case of YY, which sees more consolidation in the Chinese market and better-than-expected growth in the overseas market, suggests a per ADS range of \$110 to \$120. A bear case that envisions a slowdown in the Chinese market, greater competition in the e-sports market, and a 40% write-down in Bigo's valuation suggests a range of \$50 to \$60.

My margin of safety is rooted in: i) my belief that YY Live's durable advantage in its existing network is intact and will continue to drive cash flows to fund growth; ii) the strong track record of the business model, proven first by YY Live and now being exported to larger and underpenetrated markets; and iii) a proposed buyout by David Li in 2015 take YY private at a valuation of \$3.7 billion or \$68.50 per ADS (7% higher than the current share price), which provides a soft floor to the share price.

Key Risks

- 1) There exist regulatory risks in many forms, such as China's strict controls over gaming licenses and free speech. Now, broadcasters streaming news and entertainment require licenses to operate. State data will also be used to limit underage gaming in China. While YY has been able to operate a profitable business in YY Live successfully since 2012, regulation remains a real risk. A push into foreign markets mitigates some of this risk.
- 2) Greater than expected competition in foreign markets may pressure Bigo's growth. I see this risk as partly mitigated by Bigo's first mover advantage in several markets.
- 3) Continued uncertainty around Tencent's plan for its stakes in Huya and Douyu. I model a HoldCo discount to partly account for this.

² ADS = American Depository Share. 1 ADS represents 20 common shares.

Appendix

Figure 5 - Valuation By Segment

YY Live Valuation	<i>Units</i>	
2019E Revenue	<i>RMBmm</i>	12,123.6
2019E EBIT	<i>RMBmm</i>	2,667.2
2019E EBIT Multiple	x	8.0x
YY Live Implied Enterprise Value	<i>RM Bmm</i>	21,337.5
Plus: Cash & Equivalents	<i>RMBmm</i>	6,004.2
Plus: Short-Term Investments	<i>RMBmm</i>	979.1
Plus: Investments	<i>RMBmm</i>	4,591.5
Less: Debt	<i>RMBmm</i>	(35.2)
Less: Mezzanine Equity	<i>RMBmm</i>	(418.7)
Less: NCI (HUYA at Market Value)	<i>RMBmm</i>	(2,818.4)
Less: Cash Used in BIGO Acquisition	<i>RMBmm</i>	(2,299.9)
Less: Adjustments for BIGO Consolidation	<i>RMBmm</i>	(4,655.9)
Implied Equity Value	<i>RM Bmm</i>	22,684.3
Implied Equity Value	<i>US\$mm</i>	3,285.2
<i>Implied Value per ADS Share</i>	<i>US\$/ADS</i>	39.6
<i>Implied 2018 P/E</i>	x	5.6x
<i>Implied 2019E P/E (Analyst Consensus)</i>	x	8.4x

BIGO Valuation	<i>Units</i>	
Acquisition Price	<i>US\$mm</i>	1,452.8
Stake Purchased in Acquisition	%	68.3%
Value of BIGO	<i>US\$mm</i>	2,127.1
<i>Implied Value per ADS Share</i>	<i>US\$/ADS</i>	25.6

HUYA Valuation	<i>Units</i>	
Shares Outstanding		
Class A	<i>mm</i>	65.7
Class B	<i>mm</i>	154.4
Total shares outstanding	<i>mm</i>	220.1
Price (US\$/sh)	<i>US\$/sh</i>	20.9
Market Equity Value	<i>US\$mm</i>	4,588.5
HUYA Shares Owned by YY	<i>mm</i>	84.9
YY Ownership Stake (%)	%	38.6%
Value of YY's Stake	<i>US\$mm</i>	1,770.1
HoldCo Discount	%	30%
Value of YY's Stake Post-Discount	<i>US\$mm</i>	1,239.1
<i>Implied Value per ADS Share</i>	<i>US\$/ADS</i>	14.9
Discount gap	<i>US\$mm</i>	531.0

Figure 6 – SOTP Valuation Summary – Bull Case

Sum-of-the-Parts Valuation Summary - Bull Case			
Segment	Description	Units	Amount
YY Live Equity Value	12x 2019E EBIT (~25% discounted multiple to MOMO) and adjusted for net cash + investments + NCI	US\$mm	4,830.3
Huya Equity Value	No HoldCo discount to YY's stake	US\$mm	1,770.1
BIGO Equity Value	6.0x EV / LTM Sales	US\$mm	2,977.9
Implied Equity Value of YY Inc		US\$mm	9,578.3
FDS Outstanding	Pro Forma for Bigo acquisition and Huya follow -on offering	mm	1,657.6
Shares per ADS Outstanding		x	20.0
Total ADS Outstanding		mm	82.9
Implied Price per ADS Share		US\$/ADS	115.57
Current Price per ADS Shares		US\$/ADS	64.12
Upside / (downside)		%	80.2%

Figure 7 - SOTP Valuation Summary - Bear Case

Sum-of-the-Parts Valuation Summary			
Segment	Description	Units	Amount
YY Live Equity Value	5x 2019E EBIT (~70% discounted multiple to MOMO) and adjusted for net cash + investments + NCI	US\$mm	2,126.4
Huya Equity Value	40% HoldCo discount to YY's stake	US\$mm	1,062.1
BIGO Equity Value	40% w ritedow n of implied valuation at buyout	US\$mm	1,276.2
Implied Equity Value of YY Inc		US\$mm	4,464.7
FDS Outstanding	Pro Forma for Bigo acquisition and Huya follow -on offering	mm	1,663.0
Shares per ADS Outstanding		x	20.0
Total ADS Outstanding		mm	83.1
Implied Price per ADS Share		US\$/ADS	53.70
Current Price per ADS Shares		US\$/ADS	64.12
Upside / (downside)		%	-16.3%
Implied Price per ADS Share - no HoldCo Discount			62.21
Current Price per ADS Shares		US\$/ADS	64.12
Upside / (downside)		%	-3.0%

Figure 8 - Public Company Comparables

Company Name	Price 05/24/19 (US\$)	% of 52-Week high (%)	Equity Value (US\$mm)	Enterprise Value (US\$mm)	EV / Sales		EV / EBITDA		EV / EBIT		P/E		EBITDA margin		EBIT margin		2018-20E CAGR			
					2019E	2020E	2019E	2020E	2019E	2020E	2019E	2020E	2019E	2020E	Revenue (%)	EBITDA (%)	EBIT (%)	EPS (%)		
Chinese Live Streaming																				
Momo	26.02	51.7	10,769	9,840	4.2	3.5	15.1	12.2	16.2	13.1	10.7	8.7	27.6	29.0	25.6	27.0	15.3	20.3	20.0	17.6
Inke	0.23	33.8	470	86	na	na	na	na	na	na	6.3	3.3	na	na	na	na	na	na	na	36.7
Tian Ge	0.27	28.6	339	136	na	na	na	na	na	na	n/a	n/a	na	na	na	na	na	na	na	na
Mean		38.0			4.2	3.5	15.1	12.2	16.2	13.1	8.5	6.0	27.6	29.0	25.6	27.0	17.2	29.6	30.8	20.0
Median		33.8			4.2	3.5	15.1	12.2	16.2	13.1	8.5	6.0	27.6	29.0	25.6	27.0	17.2	29.6	30.8	20.0
Chinese Social Media																				
Weibo	43.66	39.0	9,723	8,784	4.5	3.8	12.6	10.4	12.8	10.7	15.4	12.8	35.8	37.1	35.1	36.1	16.5	18.6	19.1	18.9
SINA	40.04	41.4	2,859	2,424	1.0	0.9	3.9	3.2	4.1	3.4	13.4	11.3	26.8	28.6	25.7	27.4	13.6	24.4	21.7	21.6
Mean		40.2			2.8	2.4	8.2	6.8	8.4	7.0	14.4	12.1	31.3	32.9	30.4	31.7	15.1	21.5	20.4	20.3
Median		40.2			2.8	2.4	8.2	6.8	8.4	7.0	14.4	12.1	31.3	32.9	30.4	31.7	15.1	21.5	20.4	20.3
Mean		38.9			3.2	2.8	10.5	8.6	11.0	9.0	11.4	9.1	30.0	31.6	28.8	30.2	15.1	21.1	20.3	23.7
Median		39.0			4.2	3.5	12.6	10.4	12.8	10.7	12.0	10.0	27.6	29.0	25.7	27.4	15.3	20.3	20.0	20.3
YY Inc.	64.12	54.9	5,321	5,126	1.8	1.6	10.9	8.2	13.0	9.9	10.4	8.5	17.0	19.1	14.2	15.8	17.2	29.6	30.8	20.0