

FACEBOOK



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Professor: Dr. John M. Longo CFA

BUY

Facebook (FB)

Upside potential: 37%

1. EXECUTIVE SUMMARY

The global social media powerhouse

World's No.1 social media platform should continue the execution of its persuasive recipe – expanding its user base powered by network effect, that is providing the most interesting and creative content which is used to connect users with advertisers. Given the fact that people create new trends, I believe that social media e-commerce trend will translate to an important growth engine for the company. Despite the heavy investment year, I expect healthy revenue and EBITDA growth of 27% and 16.2%. Based on my estimate, the stock is currently trading at discount vs. global industry peers; 12.7x 2019E EBITDA vs. average 17.6x 2019E EBITDA consensus. I propose Buy rating.

Wide moat + TAM outlook + leadership + economies of scale, a potent mix

After a huge sell-off, driven by certain bad events, this is the time to buy Facebook (FB) with a significant margin of safety. At the current price, FB's wide moat in combination with economies of scale and a leadership position within a growing market, represent a rare opportunity to own.

Resilience + monetization outlook, a price rally driver

I expect two catalysts to drive the stock higher. During the volatile 2018 year, the firm still realized resilience in operating activities by producing healthy margins. Moreover, moving to a growing e-commerce market coupled with in-house unused monetization options, I expect to see shares rise, and potentially EBITDA multiple to trade above their global industry peers.

Q4/FY 2018

Q4 revenue was \$12.97bn; demonstrated solid year-end performance driven by strong sales growth (FY2018 \$55.8bn 37.4% YoY), and stable operating margin of 44.6%. Mobile ad revenue was \$15.5bn (+36% YoY) representing 93% of ad revenue. DAUs^{1,2} on Facebook reached 1.52bn, up 8.7%, and MAUs³ increased 9% YoY.

Deciphering the intrinsic value

My valuation methodology is based on an equal-weighted blend of DCF (Perpetuity Growth), 19.5x FY2019E EV/EBITDA, and 23.6x FY2019E EV/NOPAT, implying the target price of \$227. I believe there is a 37% upside potential for the share price.

Exhibit 1: Financial forecasts and key data

FUNDAMENTAL METRICS						
GAAP	FY2016	FY2017	FY2018	2019E	2020E	2021E
Total Revenue	27,638	40,653	55,838	70,868	86,746	102,215
Growth	54.2%	47.1%	37.4%	26.9%	22.4%	17.8%
Gross Profit	23,849	35,199	46,483	57,829	69,397	82,283
Margin	86.3%	86.6%	83.2%	81.6%	80.0%	80.5%
R&D	5,919	7,754	10,273	14,882	19,084	23,509
% of Revenue	21.4%	19.1%	18.4%	21.0%	22.0%	23.0%
S&M	3,772	4,725	7,846	10,134	13,012	13,288
% of Revenue	13.6%	11.6%	14.1%	14.3%	15.0%	13.0%
G&A	1,731	2,517	3,451	4,323	5,205	6,133
% of Revenue	6.3%	6.2%	6.2%	6.1%	6.0%	6.0%
Total Oper. Costs	11,422	14,996	21,570	29,340	37,301	42,930
% of Revenue	41.3%	36.9%	38.6%	41.4%	43.0%	42.0%
Operating profit	12,427	20,203	24,913	28,560	32,096	39,353
Margin	45.0%	49.7%	44.6%	40.3%	37.0%	38.5%
Net Profit	10,217	15,934	22,112	24,512	27,727	34,187
Margin	37.0%	39.2%	39.6%	34.6%	32.0%	33.4%
Diluted EPS	3.49	5.39	7.57	8.27	9.21	11.19
Growth	170.3%	54.3%	40.4%	9.2%	11.4%	21.5%

KEY DATA		
	2018	2019E
P/E	30.0x	27.5x
EV/EBITDA	22.7x	19.5x
EV/NOPAT	26.2x	23.6x
ROIC	57.43%	47.30%
CROCI	78.63%	59.04%
Earnings Yield	3.33%	3.64%
ROA	22.72%	20.13%
ROE	26.07%	22.77%
	Current	
Price	\$165.71	
MCAP	\$491,299	
EV	\$481,280	
	Target	
12 month price target (\$)	\$227.00	
MCAP	\$673,279	
EV	\$663,260	
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¹DAUs: Daily Average Users

²FB focused on investing in data privacy and promoting Stories experiences which resulted in DAU increase

³MAUs: Monthly Active Users



2. COMPANY DESCRIPTION

Facebook is the world's largest social media company with a mission to provide people the power to build community by bringing the world closer together. It is available in over 70 languages worldwide with more than 2.3bn active users per month. The company is the leading platform for sharing information, photos, and videos with friends outside of local markets in Russia and the Asia Pacific region.

Facebook was founded by Mark Elliot Zuckerberg, Dustin Moskovitz, Chris R. Hughes, Andrew McCollum and Eduardo P. Saverin on February 4, 2004 and is headquartered in Menlo Park, CA. It helps people discover and learn about what is going on in the world around them with the mission to make the world more open and connected. As of the end of 2018, the company employs 35,500 people and offers services through their ecosystem, which includes:



Facebook - pioneered the social media space where people connect, share, discover, and communicate with each other on mobile devices and personal computers.



Instagram - is a community for sharing photos, videos, and messages, and enables people to discover and share their interest.



Messenger – is messaging application, which connects people, groups and businesses across platforms and devices.



WhatsApp - is a reliable and end-to-end encrypted messaging application that connects users.

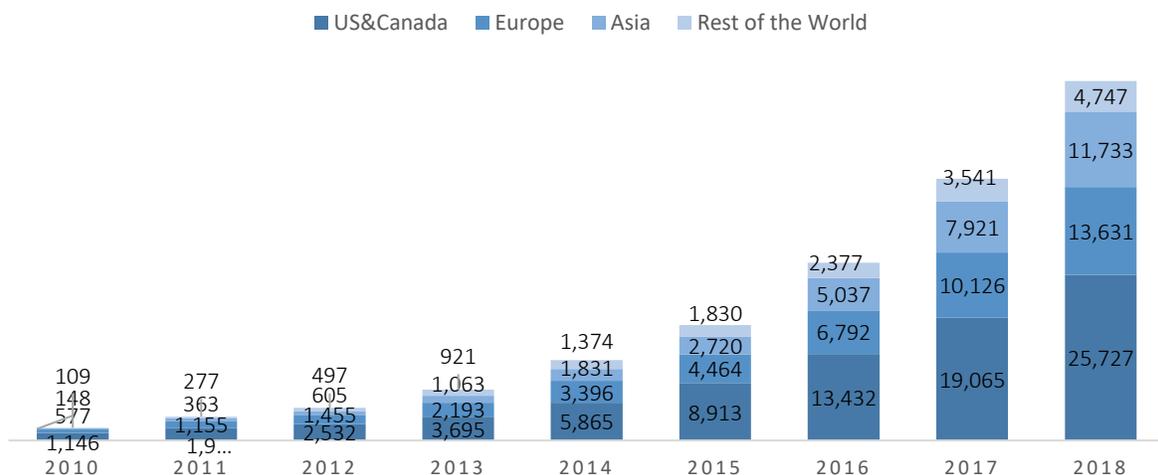


Oculus - is hardware, software, and developer ecosystem which offers a virtual reality product helping people connect in a virtual world.

Facebook generates revenue through two main segments:

- 1) **Advertising (98.5% of Revenue)**: Generated by displaying ad products on Facebook website, mobile application, and third-party affiliated websites.
- 2) **Payments and Other Fees (1.5% of Revenue)**: Share revenue from transactions of virtual and digital goods.

Exhibit 2: FB revenues by geography (\$Mn)





3. QUALITATIVE ANALYSIS

3.1. Industry analysis

3.1.1. Online Advertising industry

3.1.2. Social Media Industry

3.1.3. Forces that shape competition: Porter's 5 forces

3.2 Company analysis

3.2.1. Facebook value

3.2.1.1. Moat

3.1. INDUSTRY ANALYSIS

FB operates under the Technology sector. In relation to its ecosystem, this is further broken down by industry group, industry, and sub-industry, please see below:

Sector: Technology



Exhibit 3: Sector and Industry classification

More or less, all segments described in Exhibit 3 are highly correlated. The critical economic variables which affect the Technology sector are:

- Economic growth
- Consumer spending
- Business spending

While these drivers mostly depend on a current US short-term debt cycle as well as expansionary or contractionary policy, however, the world GDP growth and disposable income are also important elements to consider.

The technology sector is cyclical by nature. However, online advertising and social media industries are growing industries. Therefore, I would classify FB as a non-cyclical firm. While we have not had a chance



to see how the company reacts during a recession, the demands for their products and services have remained stable. In fact, it has increased since FB's IPO on May 18, 2012.

3.1.1. Online Advertising industry (FY 2018: \$251.04 bn)

The online advertising industry is a growing market space with 16.7% CAGR 2011-2018, as well as 19% CAGR 2014-2018. In essence, this growth is primarily driven by taking market share from the non-digital traditional advertising industry. The size of the online ad market reached \$251.04bn in 2018, or approximately 42% of total ad spending worldwide, as reflected in the table below:

	FY2007	FY2008	FY2009	FY2010	FY 2011	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	2019E	2020E
TOTAL ADDRESSABLE MARKET														
Total AD spending worldwide								488,549	509,111	530,994	552,431	596,297	646,142	678,453
Total Online Advertising Market Worldwide	42,281	51,601	55,200	72,370	87,270	104,570	107,392	125,557	150,697	178,414	208,819	251,041	301,102	362,294
yoy growth		22.0%	7.0%	31.1%	20.6%	19.8%	2.7%	16.9%	20.0%	18.4%	17.0%	20.2%	19.9%	20.3%
Share of total ad spending worldwide								25.7%	29.6%	33.6%	37.8%	42.1%	46.6%	53.4%
Total Mobile Online Advertising Market Worldwide						8,295	17,237	33,379	54,983	83,268	115,447	156,772	205,615	265,405
yoy growth								107.8%	93.6%	64.7%	51.4%	38.6%	31.2%	29.1%
Global Social Online Advertising						5,891	9,409	14,647	21,928	32,203	45,071	61,793	79,594	99,950
yoy growth								59.7%	55.7%	49.7%	46.9%	40.0%	37.1%	28.8%
Social Mobile			50	100	200	331	3,905	9,055	16,109	25,942	38,172	54,204	71,549	91,583
yoy growth								1079.8%	131.9%	77.9%	61.0%	47.1%	42.0%	32.0%
% of Global Social Media Ad								41.5%	61.8%	73.5%	80.6%	84.7%	87.7%	89.9%
Social Desktop						5,560	5,504	5,592	5,819	6,261	6,899	7,589	8,045	8,367
yoy growth								-1.0%	1.6%	4.1%	7.6%	10.2%	10.0%	6.0%
% of Global Social Media Ad								58.5%	38.2%	26.5%	19.4%	15.3%	12.3%	10.1%
Global Video Advertising						5,207	6,971	9,725	13,256	17,563	22,910	30,284	40,011	52,592
yoy growth								33.9%	39.5%	36.3%	32.5%	30.4%	32.2%	32.1%
Video Mobile			40	80	180	368	779	2,136	4,034	6,662	10,413	16,037	24,055	34,880
yoy growth								111.7%	174.2%	88.9%	65.1%	56.3%	54.0%	50.0%
Video Desktop						4,839	6,192	7,589	9,222	10,901	12,497	14,247	15,956	17,712
yoy growth								28.0%	22.6%	21.5%	18.2%	14.6%	14.0%	12.0%
Total U.S. Online Advertising Market	21,200	23,400	22,700	26,000	31,700	36,600	42,800	49,500	59,600	68,820	77,370	86,610	96,110	105,210
yoy growth		10.4%	-3.0%	14.5%	21.9%	15.5%	16.9%	15.7%	20.4%	15.5%	12.4%	11.9%	11.0%	9.5%
Total U.S. Mobile Online Advertising Market			600	1,600	3,400	7,100	12,500	19,150	31,590	45,950	59,000	70,000	79,000	86,840
yoy growth				166.7%	112.5%	108.8%	76.1%	53.2%	65.0%	45.5%	28.4%	18.6%	12.9%	9.9%
% of Total U.S. Online Advertising Market			2.6%	6.2%	10.7%	19.4%	29.2%	38.7%	53.0%	66.8%	76.3%	80.8%	82.2%	82.5%
Total FB Revenue	153	272	777	1,974	3,711	5,085	7,872	12,466	17,927	27,638	41,364	55,673	70,868	86,741
yoy growth		77.8%	185.7%	154.1%	88.0%	37.0%	54.8%	58.4%	43.8%	54.2%	49.7%	34.6%	27.3%	22.4%
Market share Social Media Worldwide						86.3%	83.7%	85.1%	81.8%	85.8%	91.8%	90.1%	89.0%	86.8%
Market share Online Ad Market Worldwide	0.4%	0.5%	1.4%	2.7%	4.3%	4.9%	7.3%	9.9%	11.9%	15.5%	19.8%	22.2%	23.5%	23.9%
Market share Mobile Online Ad Market Worldwide						61.3%	45.7%	37.3%	32.6%	33.2%	35.8%	35.5%	34.5%	32.7%
Market share U.S. Online Ad Market (accounted total FB US revenue)						7.0%	8.6%	11.8%	15.0%	20.4%	26.4%	31.2%	35.1%	39.0%
Market share U.S. Mobile Online Ad Market (accounted total FB US revenue)						36.0%	29.6%	30.6%	28.2%	30.6%	34.6%	38.6%	42.8%	47.3%
yoy growth								-17.8%	3.6%	-7.9%	8.5%	13.0%	11.6%	10.6%

Exhibit 4: TAM

Source: MagnaGlobal, Emarketer

Trends

Online advertising industry growth is driven by current and new trends – people like to spend time on the internet, shop online and advertise their businesses. Other trends make up online search ads, online mobile ads, and video ads. Within the industry, there is an evidence that spending is rapidly growing through mobile and video online advertising segments which together with e-commerce social media trend should represent key drivers for the next five to seven years industry expansion. As the online community grows and people rely on smartphones, I expect the online advertising industry and the opportunity for market share will continue to grow.



Market Share

Facebook represents a 22% market share of global digital ad spending, creating a duopoly with Google. Other players are Alibaba, Baidu, Microsoft, Amazon, Tencent Holdings, and Twitter who each hold single digit market share of the industry. With Amazon rapidly increasing its online ad market share I believe investors will continue to focus on the competition.

Worldwide Online Advertising Industry market share

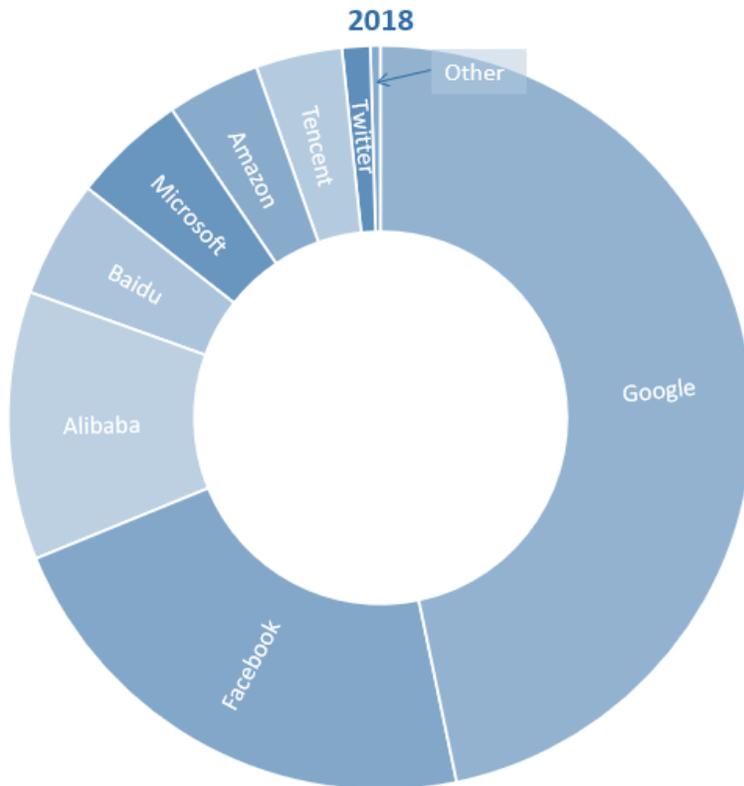


Exhibit 5: Market Share

Source: SEC Filings 10-K, MagnaGlobal

3.1.2. Social media industry (FY 2018: \$61.7bn)

The social media industry has experienced massive expansion in the last half of the decade, producing 43.3% CAGR 2014-2018, reflecting 56.4% CAGR through the social mobile advertising market (Exhibit 4). The industry is consolidated with FB as the major player.

Industry Trends

Social media is one of the most influential factors on the online advertising trends. Through social media, people connect from around the globe, distribute and share information, such as news. The industry trend has been moving from desktop to mobile experiencing more than double growth as a percentage of



total social media Industry between 2013 and 2018. In 2018 mobile spending represented 87.7% of total social media spending worldwide (Exhibit 4).

Market Share

Facebook constitutes the majority of the social media space – 89% in 2018 and 27% annual growth in the last seven years. As industry penetration expands, I expect the company will continue to grow its market position driven by its dominant industry role and worldwide brand value.

Conclusion

In both industries, there is a presence of *undercapacity*, which is driving a situation where demand exceeds supply – as these industries are still in a growing stage with pretty low penetration rates (Online Ad: 42%, Social Media: 10%) I expect further expansion in the foreseeable future.

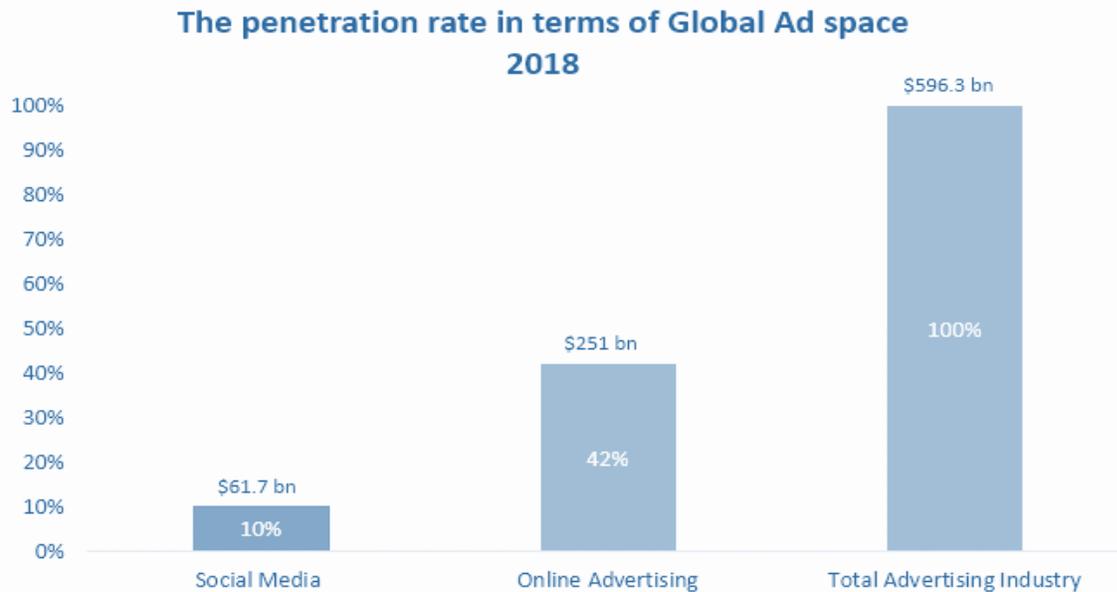


Exhibit 6: Penetration rate

Source: MagnaGlobal

3.1.3. Forces that shape competition: Porter's five forces

Threat of new entrants - LOW

FB benefits from brand identity, customer loyalty, as well as network effects which create economies of scale. My assessment of a low threat is supported by two crucial elements: demand-side benefits of scale (also called network effects) which means buyers are willing to pay more for products, and unequal access to distribution channels which means it's hard for new players to establish the scalable distribution of products. This is not easy to accomplish and requires enormous technology innovative investments which freely can be compared with significant capital investments. While barriers to entry and compete



with FB's user base for the online ad share are pretty high, creating a new social media network is not as difficult, evidenced by the introduction of SNAP. SNAP introduced a different strategy but has not reached any significant pricing power as FB responded by simply offering the same features. As long as FB R&D margins remain stable with tendencies to grow - the threat of new entries will remain low.

Bargaining power of suppliers – LOW

Data infrastructure – hardware, servers, and human capital resources as leading suppliers. I think this is linked together because people make this data equipment. Based on my research, Facebook has created most of its software, and I don't think one particular software supplier holds a dominant position which could potentially harm FB in the future. Based on the fact that data infrastructure is well diversified and that Facebook is becoming more vertically integrated company, I believe the bargaining power of suppliers is low. Advanced Micro Devices supplies FB with the raw material for its Oculus business, but I don't think they hold any substantial additional power.

Bargaining power of buyers – LOW

This is a substantial fragmented segment with no bargaining leverage existence. Across the online advertising industry as well as social media space, there is no evidence of the existence of a dominant corporate player who can influence FB's revenue generation model.

Threat of substitutes – LOW TO MEDIUM

At this moment the threat of substitutes for online advertising and social media space is very low since this is a new trend which people have accepted around the globe. However, the existence of other social media platforms such as Snapchat, Twitter, Qzone, WeChat and LinkedIn, mean consumers have more options and choices. However, as long as FB creates new products which will produce exciting content, people will spend more time on FB's platforms, translating into more revenue for FB.

Rivalry among existing competitors – MEDIUM

Competition is medium within the social media space. However, in terms of the online advertising industry consumers have more options, such as Google, Alibaba, Twitter, Microsoft, Amazon. Still, it's quite a challenge to match the FB experience. Whether the goal is to reach target consumer base to sell their products and services, or simply to connect with friends and family around the globe – FB is likely the first choice due to its diverse global audience. Moreover, FB mitigates geographic and demographic risks through its global presence and new generation trend where new users are much more digitally educated than previous generations.

Conclusion

Facebook competitive strategies are driven through its massive user base which ensures low threats of new entrants, low bargaining power of suppliers, low bargaining power of buyers, and low to medium threat of substitutes. The potential threat to FB's long-term profitability might be a structural shift to a new trend. For example, Amazon has been slightly presented in the online advertising industry for many years, but if users and customers think that shifting to e-commerce will bring better options for advertising customer's products, that could move a portion of the ad dollars to a different course.



Another threat could be if FB's innovation slows down and users turn to other solutions. However, FB's 2.3bn MAUs remains the biggest obstacle to current and potential competitors.

3.2. COMPANY ANALYSIS

3.2.1. Facebook value

I believe Facebook has a strong value and it is one of the most quality assets to have in an investment portfolio today. The important thing I've learned from Benjamin Graham and Warren Buffet work is to differentiate financial assets value and price – FB derives value driven by next catalysts:

- ❖ Growth
 - FB benefits from multiple levers of growth thanks to secular shift to online
 - From industry level the growth is coming from mobile, video, and social trends of communication
 - The firm created powerful business model with very high gross and operating margins
- ❖ Innovation
 - Facebook is one of the pioneers of the social media industry
 - Organic growth/strategic acquisition, products like Instagram, WhatsApp, Oculus, TBH, Open-Source deep learning framework (Caffe, Caffe2)
 - FB is a firm with a nimble and driven management team which drives innovation
 - The highest R&D margin within the industry in last six years
- ❖ Degree of Operating Leverage
 - FB benefits from high operating leverage because of its business model
 - Customer acquisition costs growth control, the firm benefits from viral growth
 - The firm reaches profitability quick with unique fixed costs control
- ❖ Moat
 - Qualitative Moat: Network effect, valuable Intangible assets, high switching costs, and pricing power
 - Quantitative Moat: High gross profit margin, sustainable FCF generation, negatively leveraged balance sheet, best in class EBITDA margin and ROIC

3.2.1.1. Moat

I divide FB's moat into qualitative and quantitative portions, which are driving sustainable competitive advantages compared to other players.

Qualitative Moat:

Network Effect

Driven by a massive user base of 2.3bn people, FB benefits from a network effect. As users add more content and information, more people use the platform, which translates into increasing value of products and services. Given the fact that FB has a global presence, the network effect will allow FB to continue its domination within the social media space in the future.



Valuable Intangible Assets

Besides the brand value, information is FB's most valuable intangible asset. The firm has created patents in the form of advance advertising targeting software, open-source deep learning framework named Caffe and Caffe2, augmented reality and virtual reality gaming platform, etc. Knowing information about its users position the firm to monetize its extensive network creating sustainable competitive advantage within the industry.

High Switching Costs

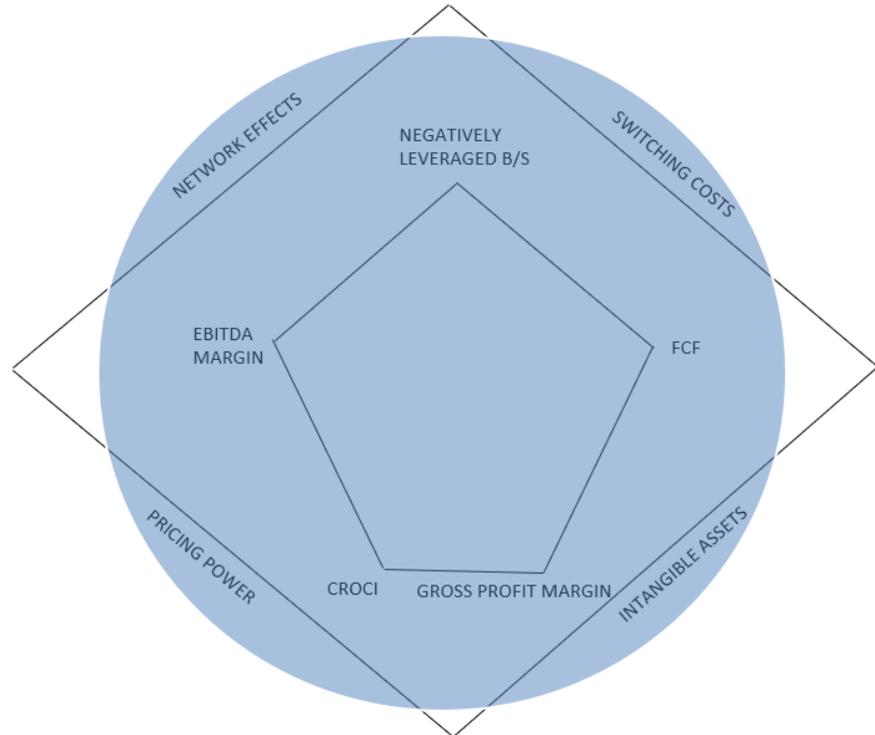
While by nature the social media and online advertising industries both have low switching costs, I firmly believe FB benefits from high switching costs. The main reason is its robust user base which provides unparalleled experience to FB users. For example, if people have to announce something to their friends and family around the world it's hard to find a better source than FB because there is a pretty high probability, their family and friends are FB's users.

Pricing Power

The Internet has a very attractive risk-reward ratio. In FB's case that can be explained through pricing power. As long as FB increases its price per ad and the company produces more than they spend on acquisition costs for new customers, FB will continue to grow its revenue at a high pace and enjoy pricing power which will continue to fuel growth in capital invested returns. FB scalable business model produces inelastic demand reflecting revenue per acquired customer is 4.1x (6yrs average) higher than FB pays to acquire the same customer (Exhibit 8). While during 2018 and 2019 management has been intensively invested in the platform to ensure users privacy resulting in pressure on the growth scale (RPAC/CACC ratio) dropping from 5x in 2017 to 2.5x in 2019E. However, as it has done historically, FB will pay off its heavy investments which will translate in the RPAC/CACC ratio expansion in 2020E (Exhibit 8).

Exhibit 7: Economic Moat

Source: Vladimir Lucic



	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	2019E	2020E	2021E	2022E	2023E
Revenue per acquired customer (RPAC)		\$16.30	\$27.51	\$27.72	\$36.24	\$50.06	\$75.55	\$67.73	\$66.77	\$61.14	\$55.70	\$48.76
yoy growth		68.8%	0.8%	30.7%	38.1%	50.9%	-10.3%	-1.4%	-8.4%	-8.9%	-12.5%	
Customers acquisition Costs (per customer)		\$3.58	\$5.75	\$8.93	\$7.35	\$10.07	\$34.94	\$26.92	\$30.22	\$11.30	\$15.91	\$15.60
yoy growth		60.8%	55.2%	-17.7%	37.1%	247.0%	-23.0%	12.3%	-62.6%	40.8%	-1.9%	
Number of acquired customers/year		171.0	167.0	197.0	268.0	260.0	201.0	221.9	237.8	253.0	266.6	278.7
yoy growth		-2.3%	18.0%	36.0%	-3.0%	-22.7%	10.4%	7.2%	6.4%	5.4%	4.5%	
RPAC/CACC		4.6	4.8	3.1	4.9	5.0	2.2	2.5	2.2	5.4	3.5	3.1
			5.0%	-35.1%	58.9%	0.8%	-56.5%	16.4%	-12.2%	144.9%	-35.3%	-10.8%

Exhibit 8: Facebook's growth scale per unit

Source: 10-K, Vladimir Lucic



Quantitative Moat:

Negatively Leveraged Balance Sheet

As of year-end 2018, FB has had \$41bn in cash and marketable securities, and no leverage. This is a notable quantitative moat because it provides less risk and attracts thoughtful investors.

EBITDA Margin

In the last six years, FB's average EBITDA margin has been consistently higher comparing to the two biggest online advertising companies in the world - Google and Microsoft. Regarding other major worldwide players who reported positive operating profits, FB also produced much higher EBITDA margins. As long as FB manages its variable costs efficiently, it will continue to provide premier margins and bypass the competition.

Exhibit 9: Average 2012-2018 EBITDA margin peers

Facebook	51.40%
Google	32.40%
Microsoft	39.00%
Alibaba	38.00%
Amazon	7.80%
Baidu	32.60%
Tencent	38.80%
Average	34.29%

Source: Morningstar

CROCI – Cash Return on Capital Investments

On average, for each dollar invested in gross cash investments, FB has produced approximately 50% return in the last five years. This proves that management knows how to seed capital with high returns. Going forward, I am confident this will continue to be a strong firm's quantitative moat (Exhibit 10).

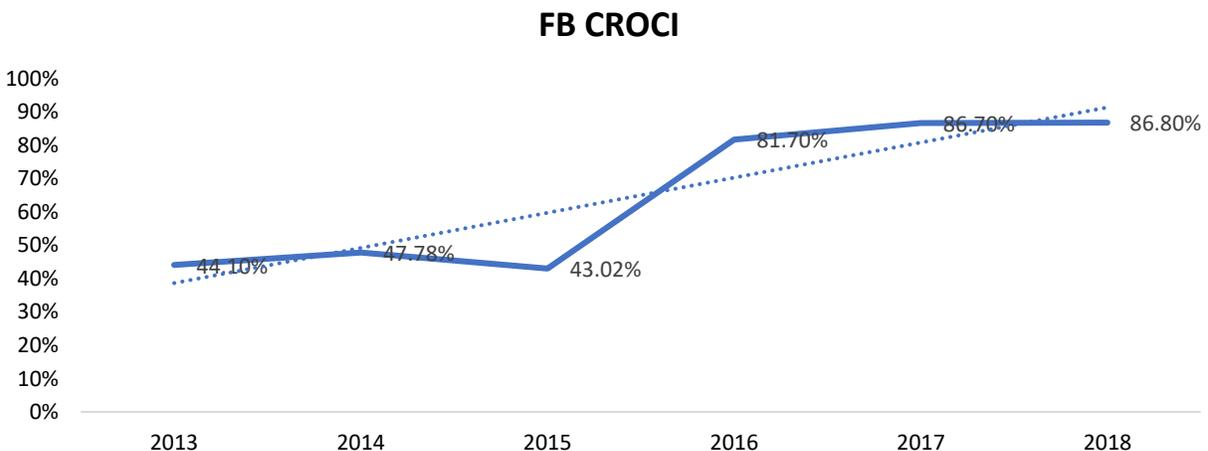


Exhibit 10: FB Cash return on capital invested

Source: Vladimir Lucic

Gross Profit Margin

Very high Gross profit margin (FY2018: 83.2%) allows the firm to have a capacity to invest in research and development projects which mostly yielded in growth. This level of gross margin expresses that FB holds a significant market share. Still, they need less than 20 cents which they turn to one dollar, that's pretty powerful. I believe Gross profit margin will remain stable and help the firm to continue to grow in the future.



Free Cash Flow

Since its 2012 IPO, FB has been reporting a sustainable FCF growth. The firm's assets generate plenty of FCF which gives real value to the company. This is a notable moat – the excess of cash will position FB for long-term organic growth.

These nine factors create **wide economic moat** which I believe will continue to:

- mitigate competition
- produce substantial value
- consistently generate superior returns on invested capital in the long-term future

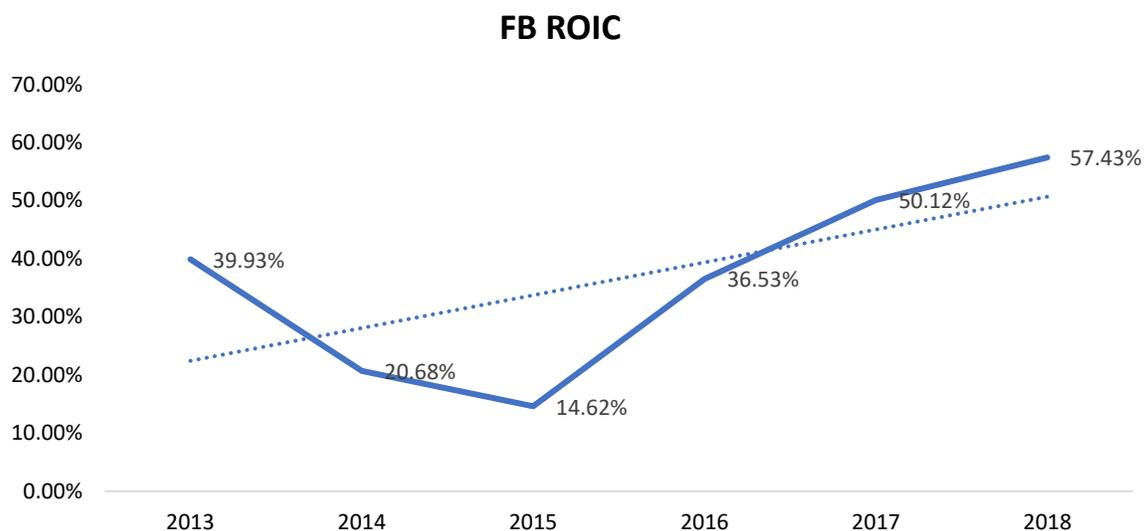


Exhibit 11: FB Return on invested capital

Source: Vladimir Lucic

4. FINANCIAL STATEMENT ANALYSIS

Income Statement

In the last five years, FB has reported significant revenue growth, outpacing its industry peers, with compounding annual growth rate in sales of 47.97%. During the same time, gross profit margins have expanded from 73.2% to 83.25%. While COGS⁴ grew 21% per year, COGS margins shrank from 23.8% to 16.8% reflecting FB's benefit from strong economies of scale. Moreover, the firm's general and administrative costs margins (FY2018: 6.2%) decreased by almost 4%, evidenced of economies of scale in G&A expenses. Marketing and selling expenses margins (FY2018: 14.1%) increased by only 1.4% driven by mostly organic customer acquisition costs. R&D costs as a percentage of sales have been relatively flat, but this is the segment that drives growth. For the full FY2018 this percentage was best in class: 18.4% (GOOGL R&D FY2018 15.6%). Because of economies of scale FB has expanded its operating margin from 35.6% in 2013 to 49.7% in 2017. Starting here Fb experienced negative trend change reflecting the decrease in EBIT margin to 44.6% at the end of 2018. The decline is driven by substantial investments in



the platform because of some bad events/news for the social media giant in 2018. The 2013-2018 EBITDA CAGR was 50.34%, that's still higher comparing to the revenue CAGR of approximately 48%. Before operating margins was hit, the 2012-2017 operating profit CAGR was 106.8% - more than two times higher than 2012-2017 sales CAGR, resulting in a very high degree of operating leverage.

The scalable business model fueled the firm's profitability resulting in 2013-2018 GAAP Net Income CAGR of 71.28% and 66.26% EPS annual growth rate.

Balance Sheet

Since 2013 FB's total assets grew by \$80bn. Almost \$40bn are cash & cash equivalents, and marketable securities, while \$22bn relates to PP&E. Conversely, liabilities increased \$10bn and shareholders' equity grew \$70bn. As of FY2018 working capital stands at \$43.5bn which makes up 78% of total revenues. While most of current assets and liabilities are more or less in line with their % of total revenue or total COGS, the marketable securities segment has decreased approximately two times since 2013. That might be a good sign because more money flows towards high return cash generating projects (Exhibit 10) rather than to government bonds and other safe haven financial assets.

Cash Flow

Cash Flow from Operating Activities (CFO) grew \$25bn in the last five years. The non-cash items (SBC⁵ and D&A) make up 20% of the total CFO. In short, FB is a cash generation machine, and its energetic operating activities reflect stronger cash flow from operations. FB has spent \$31bn in capital expenditures (CAPEX), and produced more than double; \$61bn in free cash flow (FCF) during the same period of time.

FB deploys and harvests capital with premium returns. During the period 2013-2018, the firm spent \$33bn on R&D and \$31bn on CAPEX. What's the operating return on R&D and CAPEX after the company's costs? Including the year-end calculation based on the formula where the denominator is the sum of all R&D costs and CAPEX, while the numerator is a sum of all EBITDA for the same period, FB comes out with a return of 1.34x or 34%, which is 2.6x more than GOOGL's 13% for the same time 2013-2018. Given that CAPEX and R&D are future investments, this is best in class, par excellence harvesting (Exhibit 12).

	GOOGL		FB	
	<u>180,090</u>		<u>85,436</u>	
	82,058	+ 76,767	32,843	+ 30,855
	<u>180,090</u>		<u>85,436</u>	
	158,825		63,698	
	1.13x		1.34x	
<u>2013-2018</u>				
Return on R&D and CAPEX	13%		34%	

Exhibit 12: Operating returns in terms of investments in R&D and CAPEX

Source: Vladimir Lucic



FB holds strong liquidity and solvency position reflecting strong cash, quick, and current ratios, 1.4x, 6.9x, and 7.2x, respectively. Cash conversion cycle is pretty steady in the last five years, showing proper working capital management within the firm. In terms of accounting FB's Sloan ratio is very stable (6.2%) so there is no evidence of accounting misconduct. FCF yield has increased almost 2x since 2013, from 2.1% to 4.1% confirming the thesis that FB assets are cash generating machine.

Ratios FB													
	FY2012	FY2013	FY2014	FY2015	FY2016	FY2017	FY2018	2019E	2020E	2021E	2022E	2023E	
Liquidity and Solvency Ratios													
Receivables turnover		8.6	8.9	8.5	8.4	8.3	7.4	7.6	7.5	7.1	7.0	7.4	
Inventory Turnover		0.0	0.0	0.0	0.0	0.0	0.0	1.0	2.0	3.0	4.0	5.0	
Payable Turnover		24.7	16.4	15.4	15.2	16.0	15.6	13.3	12.5	11.2	10.9	10.7	
Asset Turnover		0.5x	0.4x	0.4x	0.1x	0.1x	0.1x	0.1x	0.2x	0.0x	0.0x	0.0x	
Days Sales Outstanding		42.4	40.8	43.1	43.3	44.1	49.6	48.2	48.5	51.1	51.8	49.3	
Days Inventory		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Payables Period		14.8	22.3	23.7	24.0	22.8	23.4	27.5	29.2	32.6	33.6	34.0	
Cash Operating Cycle		42.4	40.8	43.1	43.3	44.1	49.6	48.2	48.5	51.1	51.8	49.3	
Cash Conversion Cycle		27.6	18.5	19.5	19.3	21.3	26.2	20.6	19.3	18.5	18.3	15.3	
Working Capital		11,970.0	11,966.0	19,727.0	31,526.0	44,803.0	43,463.0	54,476.5	65,196.9	84,986.9	114,262.1	148,172.1	
Current Ratio		11.9x	9.4x	11.2x	12.0x	12.9x	7.2x	7.9x	7.5x	8.2x	9.5x	10.9x	
Quick Ratio		11.4x	9.0x	10.9x	11.6x	12.6x	6.9x	7.5x	7.2x	7.8x	9.1x	10.5x	
Cash Ratio		3.0x	3.0x	2.5x	3.1x	2.1x	1.4x	1.9x	2.6x	3.6x	4.8x	6.3x	
Defensive Interval (days)		319.2	292.8	232.9	309.4	248.3	207.8	210.9	248.2	330.2	415.1	504.0	
Debt to EBITDA		127.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Debt to Equity		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Debt to Capital		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Debt to Asset		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Leverage Ratio		1.21x	1.12x	1.11x	1.11x	1.12x	1.15x	1.13x	1.11x	1.10x	1.09x	1.08x	
CFO/Total Debt		0.0x	1.0x	2.0x	3.0x	4.0x	5.0x	6.0x	7.0x	8.0x	9.0x	10.0x	
Cash Flow Ratios													
Operating Cash Flow Growth % YOY		161.9%	72.8%	41.5%	56.0%	45.7%	24.7%	17.4%	21.5%	22.4%	18.5%	16.0%	
Free Cash Flow Growth % YOY		665.9%	91.8%	42.8%	48.9%	44.1%	-8.2%	-5.4%	-20.1%	128.9%	22.2%	19.8%	
Cap Ex as a % of Revenue		17.3%	14.7%	14.1%	16.2%	16.6%	24.9%	28.0%	25.0%	24.0%	24.0%	24.0%	
Free Cash Flow/Revenue %		36.2%	43.8%	43.5%	42.0%	41.2%	27.5%	15.6%	22.5%	27.3%	28.9%	31.8%	
Free Cash Flow/Net Income		189.9%	185.8%	211.6%	113.7%	105.1%	69.5%	45.2%	70.4%	81.7%	86.1%	95.7%	
CFO/Revenue		53.6%	58.5%	57.6%	58.3%	57.7%	52.4%	48.5%	48.1%	50.0%	51.8%	53.8%	
CFO/Total Asset		23.6%	18.3%	20.9%	24.8%	27.8%	30.1%	28.2%	28.0%	27.5%	26.1%	24.9%	
CFO/Total Equity		27.3%	20.2%	23.3%	27.2%	31.6%	34.8%	31.4%	30.9%	30.1%	28.3%	26.8%	
CFO/Operating Income		150.6%	146.1%	165.9%	129.6%	116.2%	117.5%	120.4%	130.1%	129.9%	134.4%	141.6%	
FCF Yield		0.7%	2.1%	2.7%	2.7%	3.5%	3.3%	4.1%					
Quality of Earnings													
Cash Flow Earnings Index (CFO/NI)		32.9x	2.8x	2.5x	2.8x	1.6x	1.5x	1.3x	1.4x	1.5x	1.5x	1.5x	1.6x
Sloan Ratio		-0.55%	3.90%	5.66%	9.00%	14.88%	4.56%	6.29%	3.57%	2.85%	1.96%	0.78%	
ROE and Du Pont Analysis													
ROE		0.00%	10.16%	8.25%	8.30%	17.39%	21.10%	26.07%	22.77%	20.58%	20.24%	18.47%	16.61%
Leverage Ratio			1.21x	1.12x	1.11x	1.11x	1.12x	1.15x	1.13x	1.11x	1.10x	1.09x	1.08x
ROA		0.32%	8.38%	7.36%	7.46%	15.73%	18.85%	22.72%	20.13%	18.58%	18.41%	16.97%	15.41%
Asset Turnover		0.34x	0.44x	0.31x	0.36x	0.43x	0.48x	0.57x	0.58x	0.58x	0.55x	0.50x	0.46x
Net Profit Margin		0.96%	19.05%	23.58%	20.57%	36.97%	39.20%	39.60%	34.59%	31.96%	33.45%	33.61%	33.24%
Interest Burden		91.76%	98.22%	98.32%	99.50%	100.73%	101.94%	101.80%	101.57%	102.23%	102.81%	103.31%	103.53%
Tax Burden		10.00%	54.47%	59.88%	59.53%	81.62%	77.37%	87.19%	84.50%	84.50%	84.50%	84.50%	84.50%
Operating Margin		10.50%	35.62%	40.06%	34.72%	44.96%	49.70%	44.62%	40.30%	37.00%	38.50%	38.50%	38.00%

Exhibit 13: FB Ratios, quality of earnings, and Du Pont

Source: Vladimir Lucic



5. VALUATION AND WHY FB IS BUY

5.1. Valuation and Margin of Safety

5.2. Why FB – key takeaways

5.2.1. Monetization outlook

5.2.2. Why FB based on Graham and Buffet criteria

5.1. VALUATION AND MARGIN OF SAFETY

I am Buy rated on FB. My 12-month intrinsic value price target of \$227 is based on an equal-weighted blend of DCF (Perpetuity Growth), 19.5x FY2019E EV/EBITDA, and 23.6x FY2019E EV/NOPAT. The key risks to my investment thesis are coming from macro headwinds, regulations, unsocial behavior, and user fatigue.

- ❖ DCF Perpetuity Growth Method – I model 3% perpetuity growth rate with WACC of 7.3%.

DCF Perpetuity Growth Method	
NPV of FCF	\$85,214.3
PV of the Terminal Value	\$578,046.4
EV	\$663,260.7
Cash	\$10,019.0
Debt	\$0.0
Equity value	\$673,279.7
Shares	\$2,964.8
Equity value per share	\$227.1
WACC	7.3%

Exhibit 14: DCF perpetuity Growth Method

Source: Vladimir Lucic

- ❖ 19.5x FY2019E EV/EBITDA – This seems as a reasonable multiple based on the fact FB has traded on average 29.9x EV/EBITDA since IPO (Exhibit 16).
- ❖ 23.6x FY2019E EV/NOPAT – Professor Bruce Greenwald from Columbia University, Warren Buffett’s friend, and author of the Value Investing book, suggests “never ever pay more than 25x for NOPAT”. It seems a fair value with my target price.

	FY2014	FY2015	FY2016	FY2017	FY2018	2019E	2020E	2021E	2022E	2023E
Multiples at current price - \$227.089938591494										
Gaap EBITDA	6,236.0	8,169.0	14,769.0	23,228.0	29,228.0	33,954.3	40,189.8	50,450.7	59,589.0	68,031.4
yoy growth		31.0%	80.8%	57.3%	25.8%	16.2%	18.4%	25.5%	18.1%	14.2%
EV/Gaap EBITDA	106.4x	81.2x	44.9x	28.6x	22.7x	19.5x	16.5x	13.1x	11.1x	9.7x
Adjusted EBITDA	8,022.0	11,129.0	17,987.0	26,951.0	33,380.0	38,077.7	47,597.5	60,479.9	70,326.4	82,155.1
yoy growth		38.73%	61.62%	49.84%	23.85%	14.07%	25.00%	27.07%	16.28%	16.82%
EV/Adjusted EBITDA	82.7x	59.6x	36.9x	24.6x	19.9x	17.4x	13.9x	11.0x	9.4x	8.1x
Unlevered Net Income	4,059.7	5,464.7	12,770.0	19,086.9	25,337.1	28,097.3	32,042.8	38,982.0	44,634.7	48,996.5
yoy growth		34.6%	133.7%	49.5%	32.7%	10.9%	14.0%	21.7%	14.5%	9.8%
EV/Adjusted NOPAT		121.4x	51.9x	34.7x	26.2x	23.6x	20.7x	17.0x	14.9x	13.5x

Exhibit 15: FB NOPAT and EBITDA multiple @ target price

Source: Vladimir Lucic



	Mean	STDEV	68%	95%	99.7%
2012-2018			+ 1 STDEV from the mean	+ 2 STDEV from the mean	+ 3 STDEV from the mean
EV/EBITDA	29.9x	10.83	40.71	51.54	62.38
EV/Adj.EBITDA	21.3x	5.50	26.83	32.33	37.83
			- 1 STDEV from the mean	- 2 STDEV from the mean	- 3 STDEV from the mean
EV/EBITDA	29.9x	10.83	19.04	8.20	(2.63)
EV/Adj.EBITDA	21.3x	5.50	15.83	10.33	4.83

Bloomberg data

2012-2018	Mean	STDEV	+ 1 STDEV from the mean	+ 2 STDEV from the mean	+ 3 STDEV from the mean
EV/EBITDA	31.5x	9.16	40.65	49.80	58.96
	31.5x	9.16	- 1 STDEV from the mean	- 2 STDEV from the mean	- 3 STDEV from the mean
			22.33	13.17	4.01

Exhibit 16: FB Historic year-end EV/EBITDA mean

Source: 10-K calculation, Bloomberg

Margin of Safety

At the current share price, FB is representing a compelling entry point with valuation of 12.6x FY2019E EBITDA and 17.4x LTM EBIT, a discount vs. global average industry peers of 17.6x FY2019E EBITDA and 35.4x LTM EBIT (Exhibit 17). Moreover, 20X FY2019E P/E is also below the global average peers which is trading 29.3x EPS. On a growth adjusted basis FB is also trading below the peers: 10.8x FY 2020E EBITDA vs. the average of 14.2x. FB is currently trading at \$165.71 which is a significant margin of safety based on my intrinsic value (\$227) and industry peers (Exhibit 17).

GLOBAL PEERS																			
Company	Stock Price as of 2/4/2019	Market Value of Equity	Enterprise value	EV as a Multiple of:							Price as a Multiple of:		Projected Growth (%)	PEG Ratio	FCF Conversion	FCF Yield	R&D as % of Revenue	EV/FCF	
				REVENUE			EBITDA			EBIT LTM	EPS 2019E	ESP 2020E							
				2018	2019E	2020E	2018	2019E	2020E										
Google	1,118.62	777,962	972,780	7.1x	5.9x	5.1x	24.1x	16.5x	14.3x	37.0x	23.9x	20.3x	18.09	1.32	49.0%	3.0%	15.7%	33.7x	
Twitter	33.19	25,266	22,020	7.2x	6.3x	5.5x	18.4x	16.9x	14.4x	48.6x	19.2x	35.7x	32.40	0.59	55.6%	3.3%	18.0%	30.4x	
Microsoft	102.78	788,550	734,060	6.7x	5.9x	5.4x	16.2x	14.0x	12.3x	18.9x	23.2x	20.6x	12.42	1.87	66.7%	4.8%	13.3%	21.0x	
Amazon	1,623.00	798,500	778,537	3.3x	2.8x	2.4x	23.3x	18.4x	14.3x	62.7x	60.2x	41.3x	13.42	4.49	63.0%	3.4%	13.5%	29.3x	
Tencent	44.50	423,636	424,500	9.1x	7.1x	5.6x	25.3x	21.1x	16.7x	35.8x	36.4x	31.3x	16.00	2.27	86.3%	4.1%	13.0%	24.5x	
Alibaba	168.00	411,264	407,150	11.0x	7.3x	5.4x	25.9x	23.2x	18.3x	39.6x	31.5x	25.4x	14.42	2.19	13.3%	0.6%	9.0%	174.0x	
Baidu	173.94	60,530	59,740	3.9x	3.4x	2.9x	12.1x	17.7x	12.7x	23.5x	20.2x	15.5x	9.00	2.25	110.6%	6.2%	14.7%	16.0x	
			High	11x	7.3x	5.6x	25.9x	23.2x	18.3x	62.7x	60.2x	41.3x	32.4x	4.5x	110.6%	6.2%	21.0%	174.0x	
			Average	7.0x	5.6x	4.6x	20.0x	17.6x	14.2x	35.4x	29.3x	26.0x	15.9x	2.1x	60.9%	3.6%	14.8%	44.8x	
			Median	7.1x	5.9x	5.1x	18.4x	16.9x	14.3x	35.8x	23.2x	20.6x	13.4x	1.9x	59.3%	3.4%	14.1%	29.3x	
			Low	3.3x	2.8x	2.4x	12.1x	12.7x	10.8x	17.4x	19.2x	15.5x	9.0x	0.6x	13.3%	0.6%	9.0%	16.0x	
Facebook	\$165.71	472,934	432,810	7.8x	6.1x	5.0x	14.8x	12.7x	10.8x	17.4x	20.0x	18.0x	11.5	1.75	42.82%	3.36%	21.0%	29.8x	

Exhibit 17: FB Valuation

Source: FB Model Vladimir Lucic

5.2. WHY FB – KEY TEKEAWAYS

We have proven that FB has a unique value and wide economic moat; these are crucial factors that will protect the firm from the competition. Therefore, besides the current valuation where FB is trading with a big margin of safety lets elaborate in details why FB is a buy (Exhibit 18).

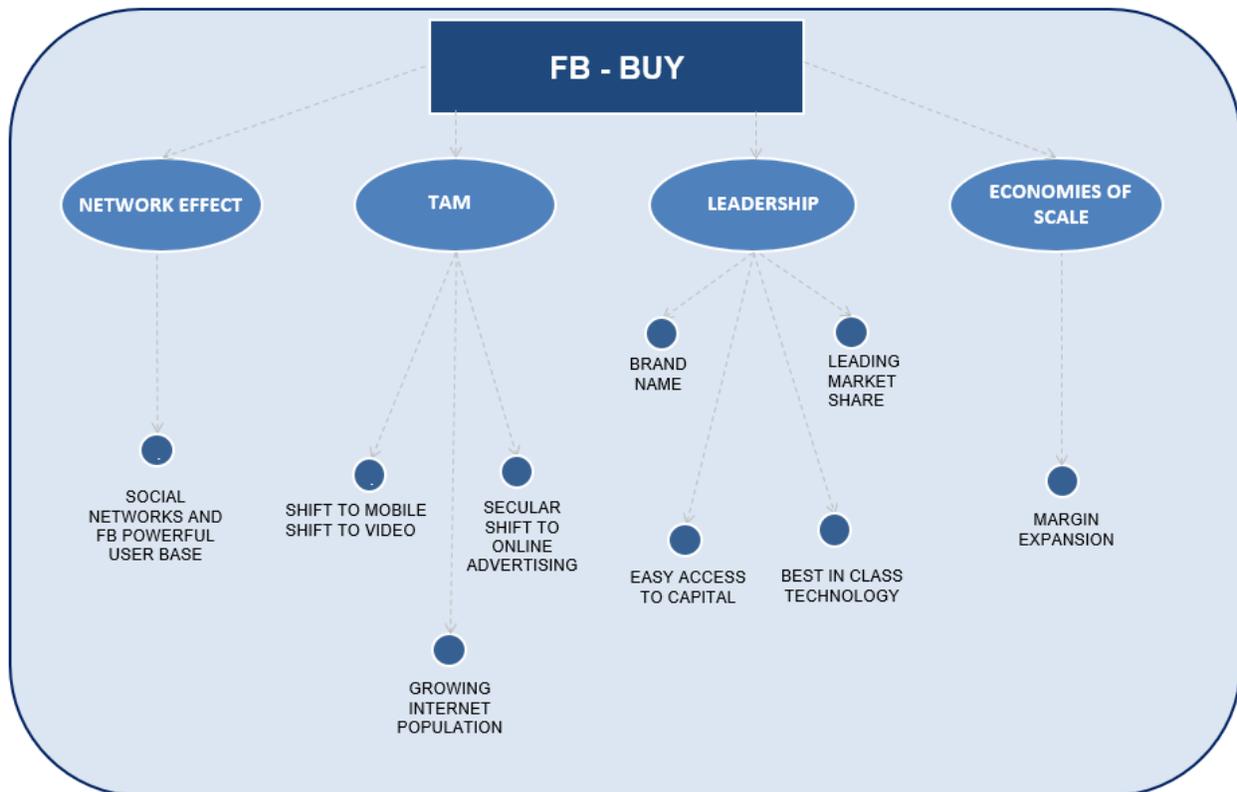


Exhibit 18: FB - Buy

Source: Vladimir Lucic

KEY TAKEAWAYS

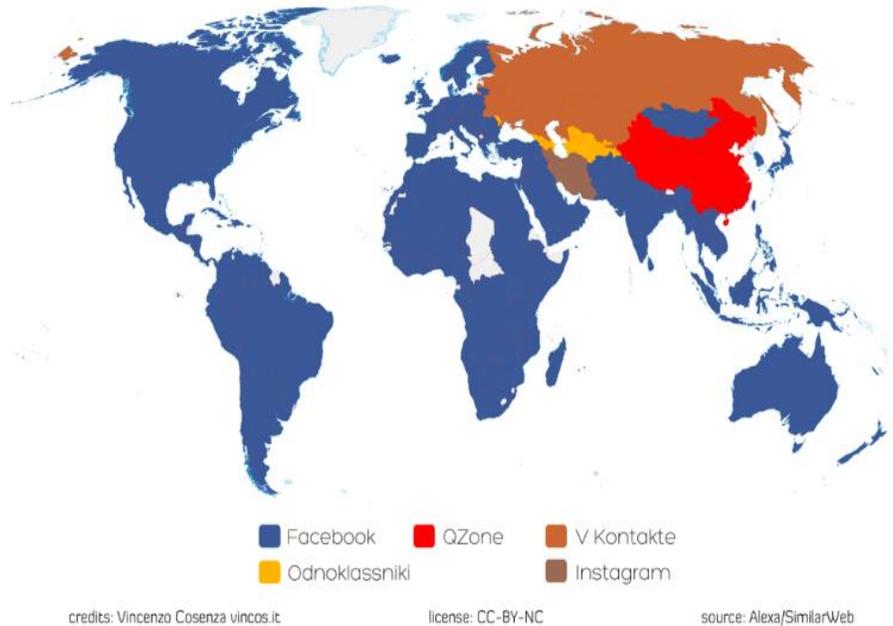
1 STRENGTH OF NETWORK EFFECTS AND POWER OF SOCIAL NETWORKS

Facebook provides the best global platform for connecting people globally. Without serious competition on a comparable scale, Facebook continues to rapidly expand its footprint as seen in the social network map (Exhibit 19).

Exhibit 19: FB global map

Source: Alexa/SimilarWeb

The company has reported 1.52bn of Daily Active Users (DAUs), which have been growing at an annual rate of 22% since 2011. Aside from user growth, FB has also increased user engagement, (DAUs as a percentage of MAUs) and average revenue per user (ARPU), which has quintupled (5x) since 2012. Driven by growing online advertising public around the world, revenue will grow at a faster pace to MAUs. As a result, that will supply ARPU growth. Given that a strong network effect powers the social network, FB will keep on its momentum in global user acquisition and continue to be the dominating platform for the online community. Facebook has much potential for growth further fueled by smartphone adoption across the globe.



Daily Average Users (DAUs)

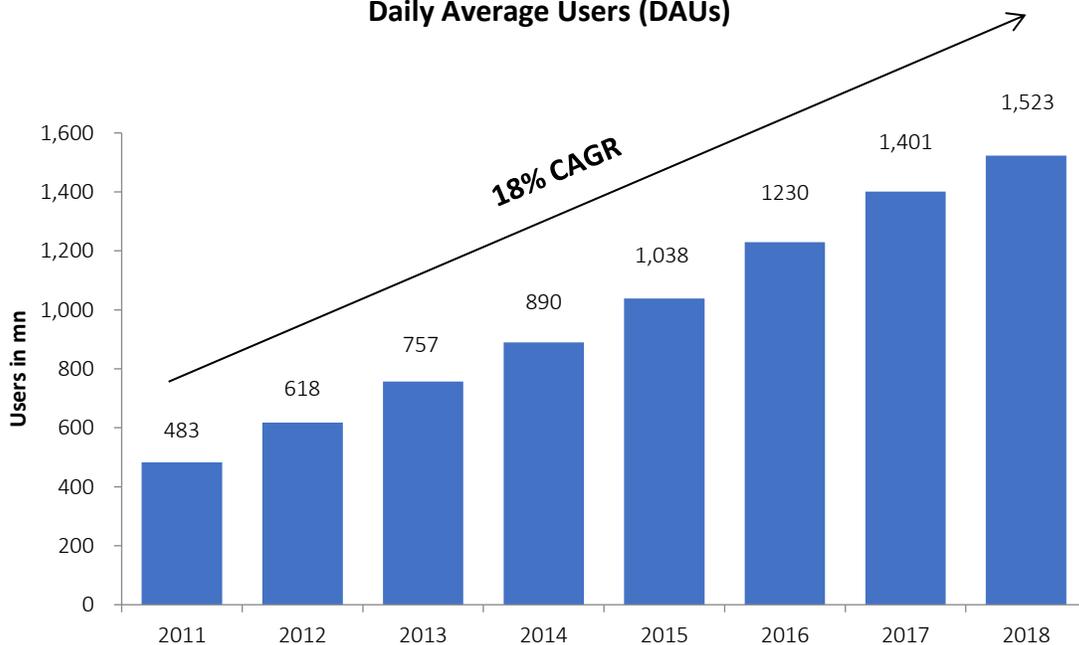


Exhibit 20: Daily Average Users

Source: FB 10-K



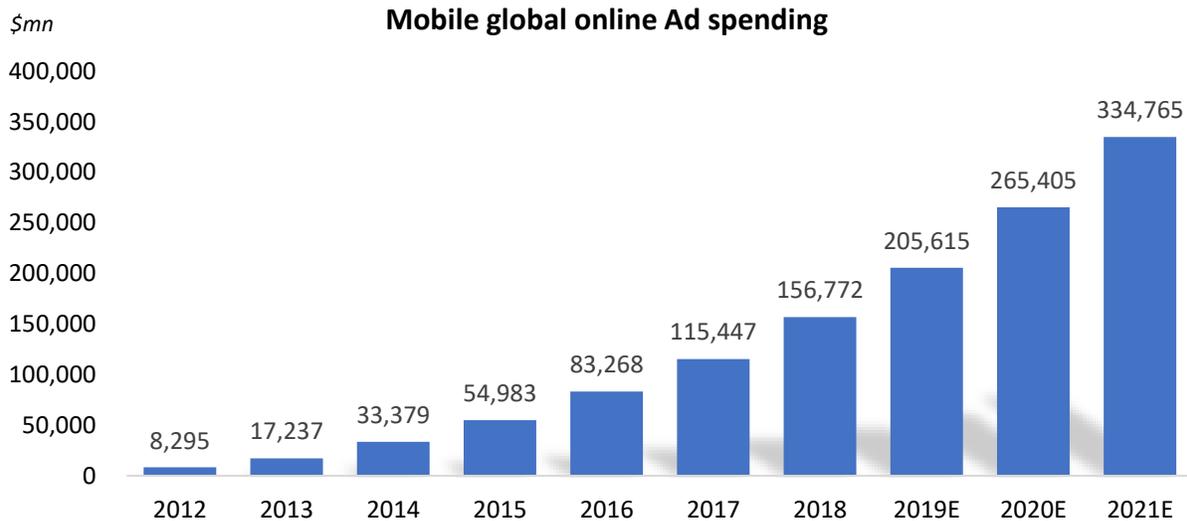
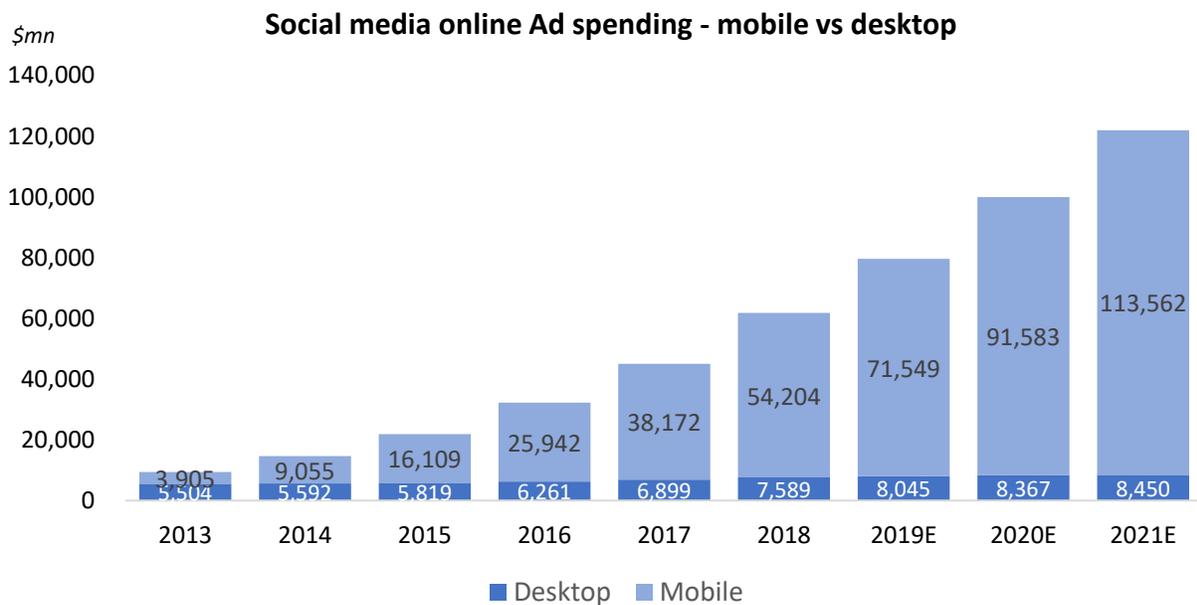
2 ONLINE ADVERTISING LONG -TERM GROWTH AND MOBILE AD EXPANSION

Facebook's over 2.3bn registered users create a robust platform and various options for advertisers. As new generations are coming, online ad spending has been taking a market share from TV. Moreover, mobile advertising has wholly suppressed desktop ad spending, and I expect the trend will continue in the future.

The shift to mobile ad spending is driven by consumers demand and their need to spend on average more time with mobile devices every day. Growing internet and smartphone penetration in the world will continue to fuel mobile ad spending which will again translate to Facebook foreseeable growth.

Exhibit 21: Mobile vs Desktop; Mobile global Ad spending

Source: Emarketer





Despite mobile growth, the company is firmly positioned to expand its video mobile ad growth, as well as e-commerce social media, which together with still low social media industry penetration rate, will be notable revenue drivers in the future.

Social media mobile penetration rate %

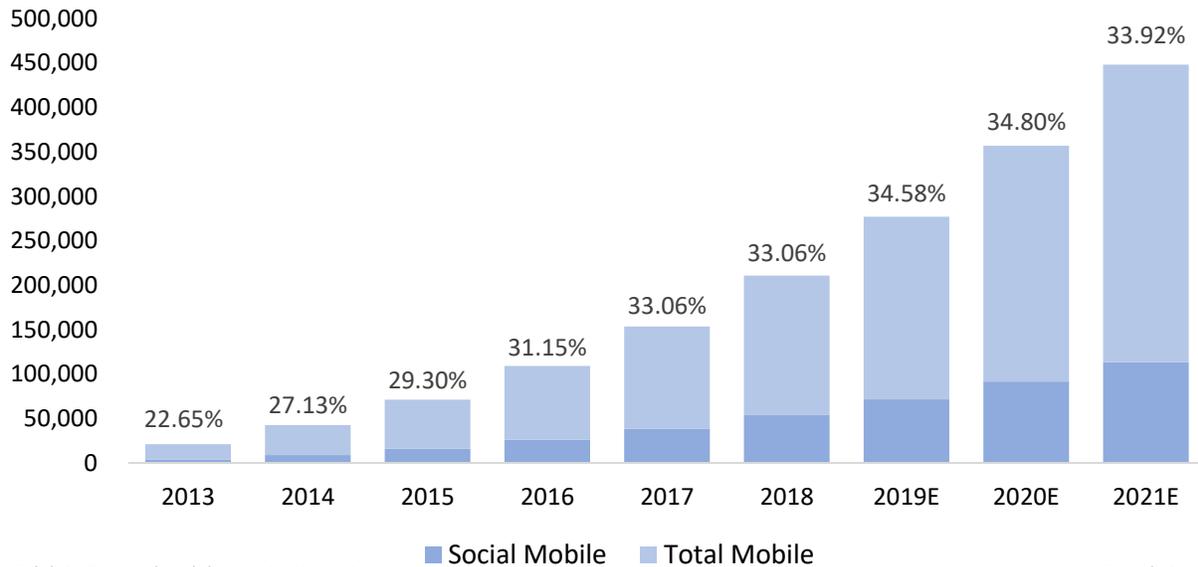


Exhibit 22: Social mobile penetration rate

Source: Emarketer

Facebook has enormous opportunities for penetration in rural, poor and developing parts of the world, due to one single reason - it's free. Anyone can open a profile, benefit from connecting on the vast worldwide network, and advertise its unique ideas and products for free. If these pages/products are exciting and visited, FB will benefit from it. Moreover, with internet and mobile infrastructure development in these parts of the world, Facebook will be able to connect more people and continue its worldwide penetration. India is one of these developing countries with low internet penetration rate that I expect FB will benefit the most. Enormous opportunities are also in Indonesia, Pakistan, Nigeria, and Brazil.

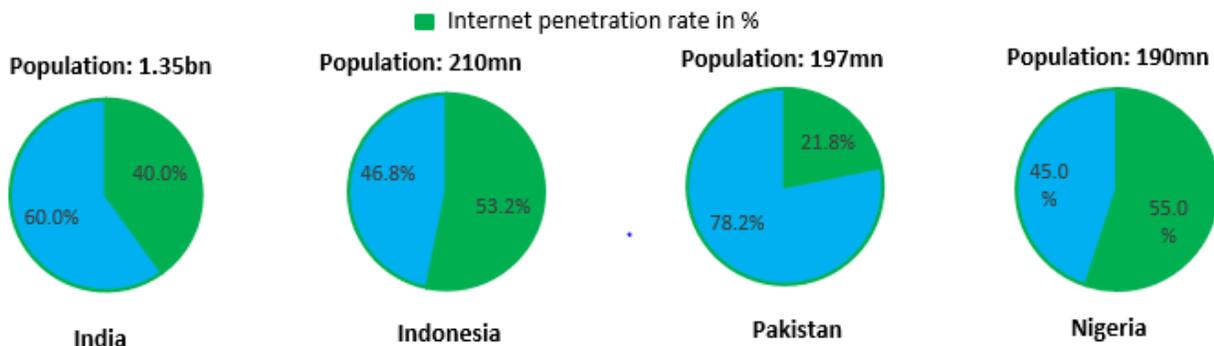


Exhibit 23: Internet penetration rates

Source: www.internetworldstats.com



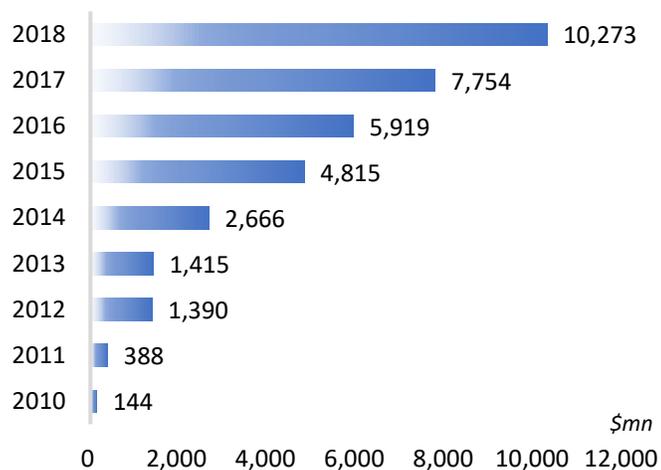
3 A LONG-TERM WINNER AS A LEADING WORLDWIDE SOCIAL MEDIA GIANT

I. ADVANCED TECHNOLOGY

FB is a leading internet technology company in its industry and one of leading in the world. I firmly believe Information is the most expensive product of the 21st Century, and Facebook has used it as a tool to attract new customers and support its growth. Based on its database the company can collect more information about people on the internet than any other company in the world - this is giving the advantage to customize their experience to their needs. The self-created advanced artificial intelligence (AI) algorithms have provided a variety of possibilities to identify and target customers with a very high percentage of accuracy.

I expect the company will continue to invest significantly in R&D. As a result, this will increase innovations and help FB to maintain an industry disruptor role, which will fuel the company's growth. I expect that Facebook, as a strong industry leader, will continue to lead the social media ecosystem in the next ten years. In a long-term perspective, this position might contribute to a potential opportunity for transition or expand to other businesses.

FB Research & Development costs



II. BRAND

Exhibit 24: R&D expenses

Source: Facebook 10-k

Facebook represents a status symbol in the social network industry. As a result of its superior platform which is followed by advanced technology solutions, FB has achieved a strong brand value in the last ten years.

With unparalleled popularity, the FB brand has helped the company to attract unique talent acquisitions reflected in their pool of best engineers and designers. By having a well-known brand name which produces high switching costs, Facebook has established a strong moat in its industry, and these advantages will create sustainable growth in the future as well as maintain its market share.





III. EASY ACCESS TO CAPITAL

Easy access to capital reflects the FB's negatively leveraged balance sheet, which has positioned the company to bear significant competitive advantage among industry peers. This powerhouse has no debt on its balance sheet. With this position and bright management vision for the future, Facebook doesn't have to worry about access to new funding but only about cash generating projects, which fuel the company's organic growth.

IV. MARKET SHARE

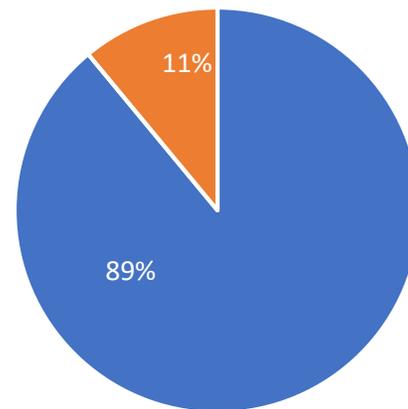
FB is holding a dominant leading position among the social media industry with an 89% global market share. Owing to the ability to capture a substantial market stake as well as to drive the industry in the last decade, Facebook can be defined as a real commander in a winner-takes-all market.

Facebook reached unique 2.32bn users, which is roughly 53% of the entire internet world population. At 56 % world internet penetration rate there is more room for industry growth, which will anchor FB's current market share.

Exhibit 25: Social media market share

Source: MagnaGlobal

Social media market share



■ Facebook ■ Others

Global Population

7.73 Billion

Internet Users

4.35 Billion

56 % of total population

Facebook Users

2.32 Billion

53 % of total internet users



Exhibit 26: FB users in the world

Facebook is facing competition from another tech giant - Google. Although they use different strategies to acquire customers, they have the same goal - selling digital ads to their users. Since Facebook IPO in 2012, GOOGL grew annually at a rate of 27%, while FB increased annually 35%, the online advertising is a young industry, and there is no zero-sum game situation in this landscape. Also, while Google is a search engine, Facebook is a leader in display-ads. Based on these facts, I think there is plenty of space for both firms.



4 ECONOMIES OF SCALE

The network effects produce economies of scale. The company has been investing in expanding its network, develop platform features, and user's security (privacy protection). These have an impact on its operating margins. As the number of users continues to increase, the invested capital translates into revenue growth, and lower average costs, FB will continue to grow at a fast-growing scale.

5.2.1 MONETIZATION OUTLOOK

While FB revenue growth rate is slowing, it still experienced an impressive 48% growth per year for the last five years. In 2018, the most turbulent year for FB since its 2012 IPO, the firm had incredible growth of 37.4%. Given its most important part of the moat – network effect - FB is very well positioned to pick up growth through monetization of:

Instagram Stories – it is the online place which allows users to share all the moments of their day, not just the ones they want to keep on their profile. Instagram just surpassed 500M daily actives on Stories. Starting 2019 this will be an essential monetization factor.

Social Media E-commerce – The firm is moving to e-commerce space by connecting users with well-known brands who provide superior customer experience. Besides this model, FB also offers 3P high margin business model which essentially connects people to sell products on FB Marketplace. The firm's massive user base, and e-commerce market tailwinds driven by very low US penetration rate (9.9%, Source: US Department of Commerce) and pretty high US online customers education, represent enormous future monetization opportunity.

WhatsApp (1.5bn users) and **Messenger** (1.3bn users) – During the Q4 2018 earnings call Mark Zuckerberg CEO has said: *"In Q4, we launched ads in Messenger Stories"*. Since users around the world spend more time on messaging apps, there is a huge monetization opportunity which preferably could be conducted through users' statuses than private messages because people like privacy.

VR/AR - In the long-run I expect Virtual and Augmented reality will be another critical business segment on which FB will sell ads. By 2025 the VR software market might be around \$30bn. This market is positioning video as a core, concentrating on video games, live events, and video entertainment. This is a capital investment which is not yet reflected in FB's growth.

As information grows exponentially, and **E-Cloud** is leading to a trillion dollars market, FB should think of moving to e-cloud for two reasons. The first reason is that FB could join a growing market space and participate in market consolidation driven by its premier innovation-driven technology worldwide reputation. Second, FB should offer low subscription fees (or maybe for free) or/and differentiation strategy and offer e-cloud services to its users. FB's main concern will be how much it costs to maintain the ever-growing e-cloud base. Even if FB decides not to charge a subscription fee the reward to risk ratio is very high. As a result, FB might increase the "Time spent" which is next to "Ad load" and "User growth" one of the critical variables that drives growth. By using FB E-cloud services, users would spend more time on the platform which would drive to a higher revenue for the company.

During the Q4 2018 earnings call in Jan 30th, Sheryl Sandberg, FB COO pointed next: *"One of the challenges that marketers have is keeping up where consumers are. If you think about our history, people*



made the shift to mobile before marketers did. And I think one of the successes we've had is we made it easier for advertisers to move into a mobile environment. And just as we did that in mobile, now we are very focused on doing that in the new things that people are doing, and Stories is a big part of that. Messaging will be further out, but is important as well."

Considering the firm's history of carefully planning its future steps, which have influenced human behavior I'm confident with FB's monetization outlook.

5.2.2. WHY FB – BASED ON WARREN BUFFETT & BENJAMIN GRAHAM CRITERIA

Compatibility with Graham/Buffett checklist – the firm is matching next parameters:

- ❖ Current ratio is greater than 2
FB FY2018: 7.2x, 5yrs average: 10.8x
- ❖ Total debt is less than book value
FB has no debt
- ❖ P/E ratio less than 40% of the highest P/E ratio the stock had over the past 5 years
FB current P/E of 21.9x is around 40% of the 5yrs average P/E, and 24% of the highest P/E of 90x in 2015
- ❖ Management is rational with its capital
Management proved they seed capital with premium returns; 5yrs average ROIC of 37%
- ❖ Total debt less than 2 times Net Current Asset Value
- ❖ Sustainable stability of growth of earnings
2013-2018 EPS CAGR of 71.3%
- ❖ Business have a consistent operating history and favorable long-term prospect
2013-2018 EBIT CAGR of 55%
- ❖ Business can be purchase at reasonable margin of safety
Key multiples are trading very cheap in terms of the peers (margin of safety 37%)

Based on the Graham/Buffett investment criteria FB is a premier value investing candidate at the current price (\$165.71), representing a remarkable margin of safety which will reflect in significant gains for the stock in the future.

6. RISKS

Key risks to my investment thesis might come from macro headwinds, regulations, unsocial behavior, and user fatigue.

Unsocial behavior is a potential risk that might arise because using social media platforms people give up other social habits, which might result in unsocial behavior patterns. However, a digitalization trend is still active because new generations have more online education.

Moreover, a possible threat is that users could potentially get tired of looking on screens within the hours they have to relax from hard working.

Regulations might represent a significant pressure on FB business. The most famous is GDPR which requires companies to protect the personal data and privacy of residents of EU countries.



Though the US isn't likely to follow the EU's example, most will agree the internet needs new rules.

Worsening macro is the situation with high uncertainty since we don't know how FB reacts in a recession because the stock has traded for only the last six years. My view is that the short-term debt cycle won't be ended in 2019 because historically equity markets reach a zenith several months before a recession triggered. Thus, 2020/2021 might be tough years. However, FB generates more than 50% of their sales from outside the US, and that might be a point of resilience during a downturn.

7. PRIMARY RESEARCH

I conducted primary research for FB intending to show how different demographic groups think about FB's platforms, its competitors, and new e-commerce social media trends.

My focus group is divided into two segments: under 18 and over 18. The sample is small - 15 people per segment. I interviewed my cousins and friends around the globe: the US, South America (Brazil, Argentina), Europe (Montenegro, Germany, Italy), including my native country Serbia. Also, I spoke with my Chinese friends who currently live outside China. Participants were asked two questions. For the first question was asked of both age groups. The second question was directed to those over 18.

I. Rank social media by priority where you can reach most of your friends, connect with them and leave a message? I offered nine apps.⁶

Based on the segment 18+, the research showed that for the top three ranked positions, the most votes were assigned to FB: 12, Instagram: 12, WhatsApp: 9, WeChat: 9, Messenger: 3, and Qzone: 3. Based on this survey, 75% of votes for the top three social media networks belongs to platforms under FB's ecosystem. The group under 18 chose Instagram: 15, WhatsApp: 12, Snap: 9, FB: 3, Messenger: 3, and Twitter: 3. The majority, which is 73% of the top three choices belong to Facebook's platforms that shows FB enjoys a high level of popularity among the youngest population. This survey indicates that FB's ecosystem is a leading online communication option for people around the globe.

II. In terms of selling your goods, where do you think you could reach a greater shopping audience, on AMZN or FB?

Surprisingly 13.3% of the participants voted for FB. AMZN is a global leading online retailer, and it's not easy to compete with them. However, FB's user base could play a vital role in the e-commerce marketplace model which FB is trying to establish.

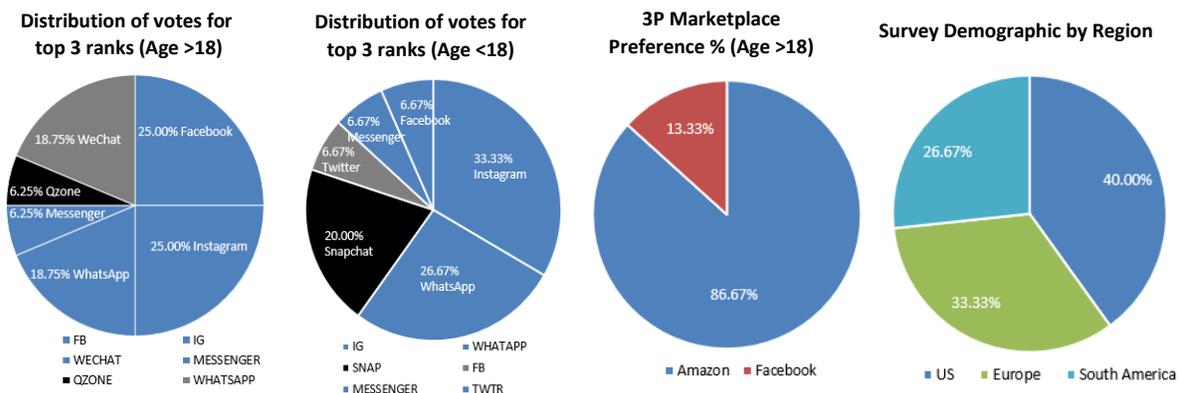


Exhibit 27: Primary research - the most popular social media networks

Source: Vladimir Lucic

⁶TWTR: Twitter, SNAP: Snapchat, TCEHY: Tencent Holdings (WeChat and Qzone), GOOGL: Google+, FB: Facebook (Instagram (IG), WhatsApp, Messenger)



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