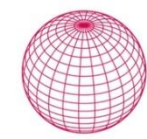This information is for learning purposes only.

This is not investment advice or a recommendation.

Ask Ajarn Andrew

**US$38 – 31 Jan 2022**: Musk started buying Twitter shares

US$50 – 4 Apr: Musk announced that he acquired 9.2% for $2.64 billion, stock rose 27% that day

US$51 – 5 Apr: Twitter invited Musk to board, Musk accepted

US$47 – 9 Apr: After realizing being on the board would stop him from going beyond a 14.9% stake Musk refused

US$45 – 14 Apr: Musk offered to buy Twitter for US$43bn, or **$54.20** per share. The board saw it as a hostile takeover.
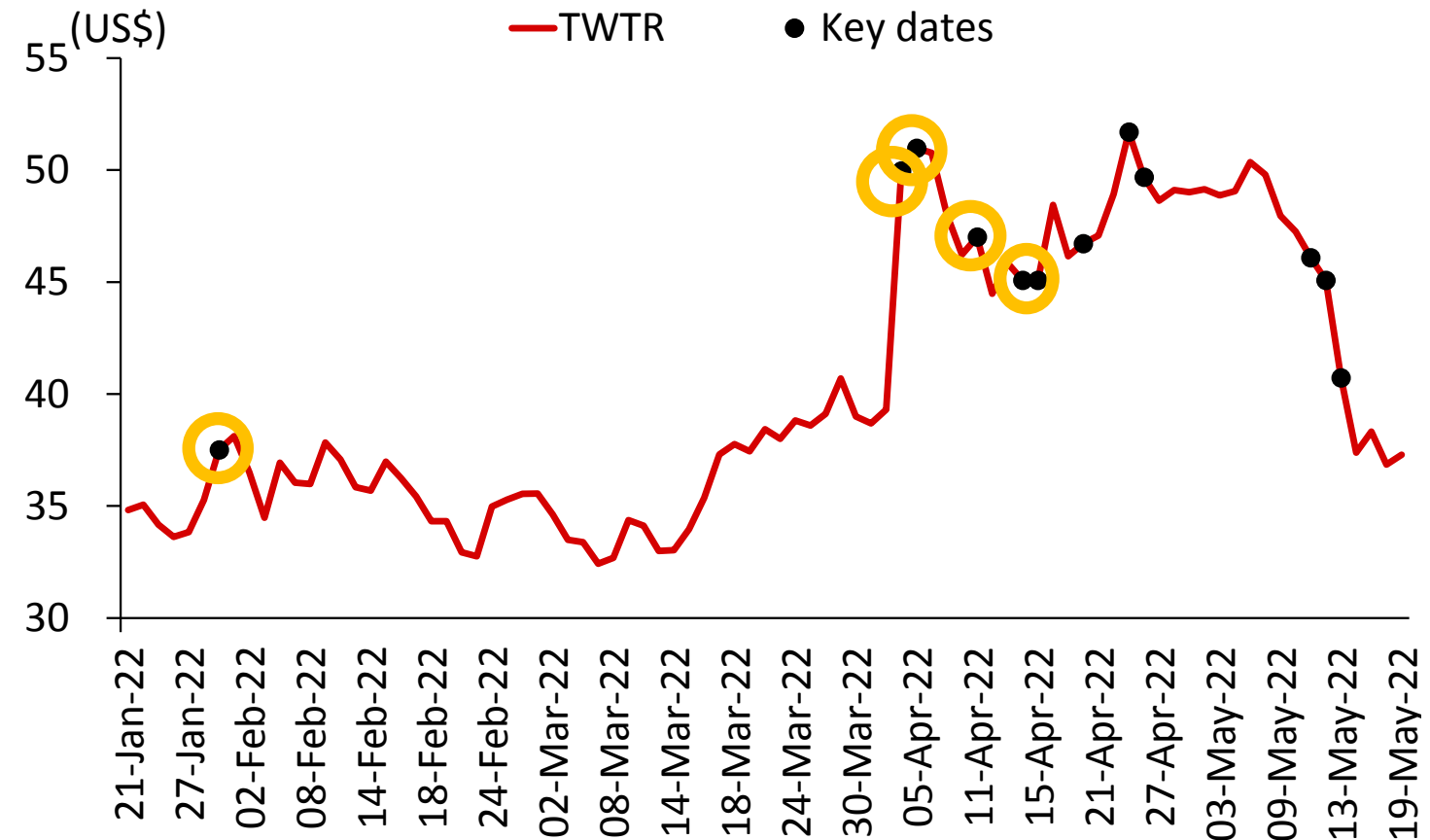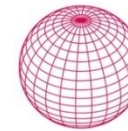
US$45 – 15 Apr: Twitter's board announced a "poison pill" strategy to block Musk takeover

US$47 – 20 Apr: Musk secured US$13bn loans and debt for Twitter; US$6.25bn bank loans and US$20bn cash from Musk; and US$7.1bn in equity from 19 investors

24 Apr: News reported Twitter was in final negotiations to accept Musk's offer, deal expected the next day

US$50 – 25 Apr: Twitter's shares rose by 5%. Twitter's board accepted the offer for $44 billion, and that Twitter would become a private company once the transaction is completed sometime in 2022
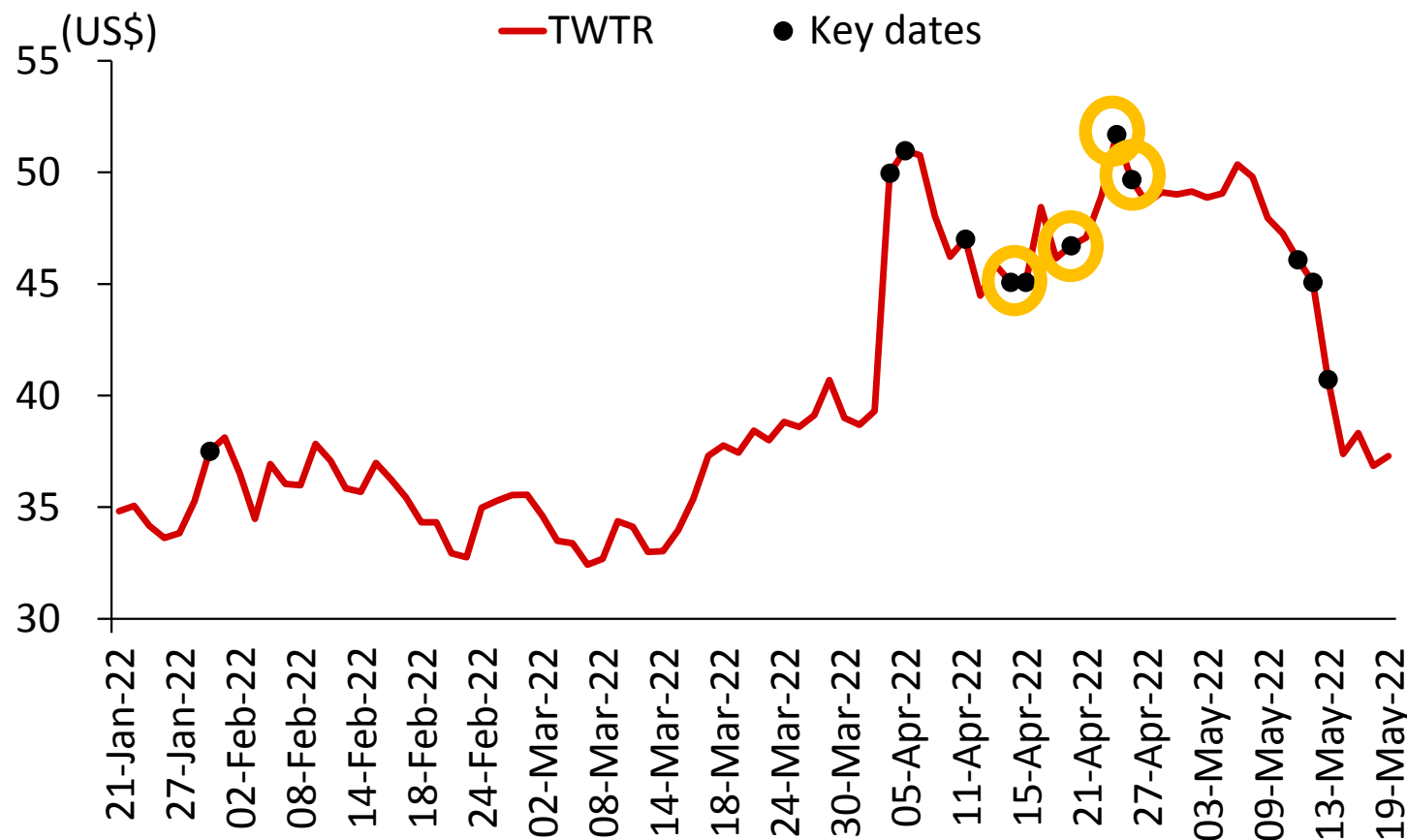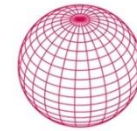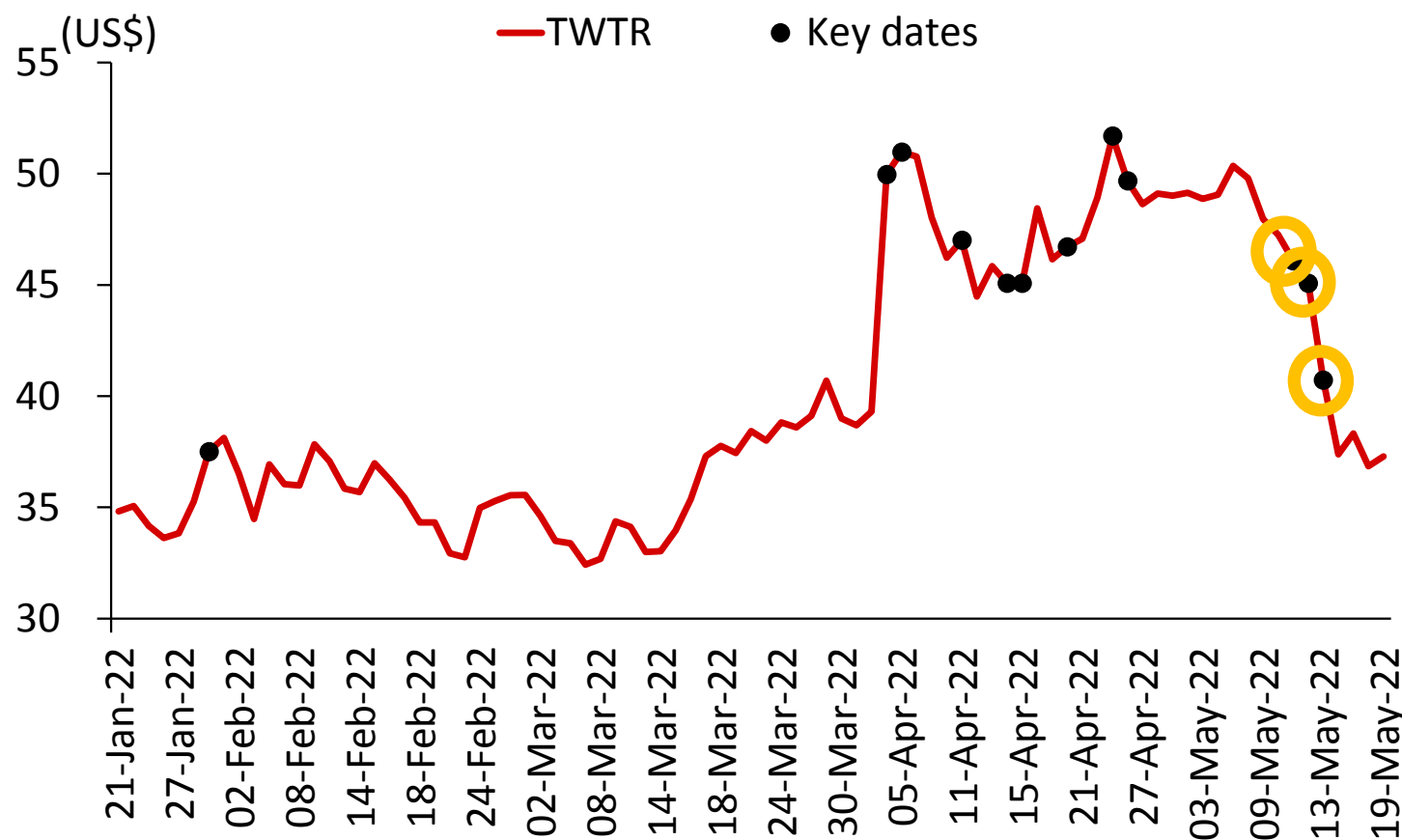
US$46 – 11 May: News reported that the US SEC and FTC had opened investigations into events leading to the acquisition.

US$45 – 12 May: Twitter CEO, Parag Agrawal, dismissed Twitter General Manager Kayvon Beykpour and revenue product lead Bruce Falck.

US$41 – 13 May: Musk said the deal was "on hold" following reports that 5% of Twitter's daily active users were spam accounts, causing Twitter shares to drop more than 10%. Musk later clarified that he remained committed to the acquisition, and Agrawal stated that he expected the deal to close.

US$37 – 23 May

Let's go to the latest annual report

Source: https://www.sec.gov

This is not investment advice and it's not a recommendation.

20 May 2022   6

SECUR...

TABLE OF CONTENTS

VALUATION MASTER CLASS

TABLE OF CONTENTS

★ The Management's Discussion and Analysis (MD&A) is a valuable section to get a brief overview of what the company is doing

★ It also mentions the most recent developments in the company and industry

- **Hence, it's a great starting point to read**

VALUATION MASTER CLASS

Annual report: Page 47

Data Licensing and Other

We generate data licensing and other revenue by (i) offering data products and data licenses that allow our data partners to access, search and analyze historical and real-time data on our platform (which consists of public Tweets and their content), and (ii) until the completion of its sale on January 1, 2022, providing mobile advertising exchange services through our MoPub exchange. Our data partners generally purchase licenses to access all or a portion of our data for a fixed period. We recognize data licensing revenue as our data partners consume and benefit from their use of the licensed data. In addition, through December 31, 2021, we operated a mobile ad exchange and received service fees from transactions completed on the exchange. Our mobile ad exchange enabled buyers and sellers to purchase and sell advertising inventory and matched buyers and sellers. We have determined we were not the principal as it relates to the purchase and sale of advertising inventory in transactions between third-party buyers and sellers on the exchange. Therefore, we report revenue related to our ad exchange services on a net basis.

	Year Ended December 31,			
	2021	2020	$ Change	% Change
	(in thousands)			
Advertising services	$ 4,505,692	$ 3,207,392	$ 1,298,300	40 %
Data licensing and other	571,790	508,957	$ 62,833	12 %
Total revenue	$ 5,077,482	$ 3,716,349	$ 1,361,133	37 %

Revenue breakdown

Monetizable users (m)
Avg. revenue per user (US$)
Total advertising revenue (US$m)

Revenue = Price x quantity

This is not investment advice and it's not a recommendation.

VALUATION MASTER CLASS

Annual report: Page 43

Monetizable Daily Active Usage: Worldwide
(quarterly average in millions)*
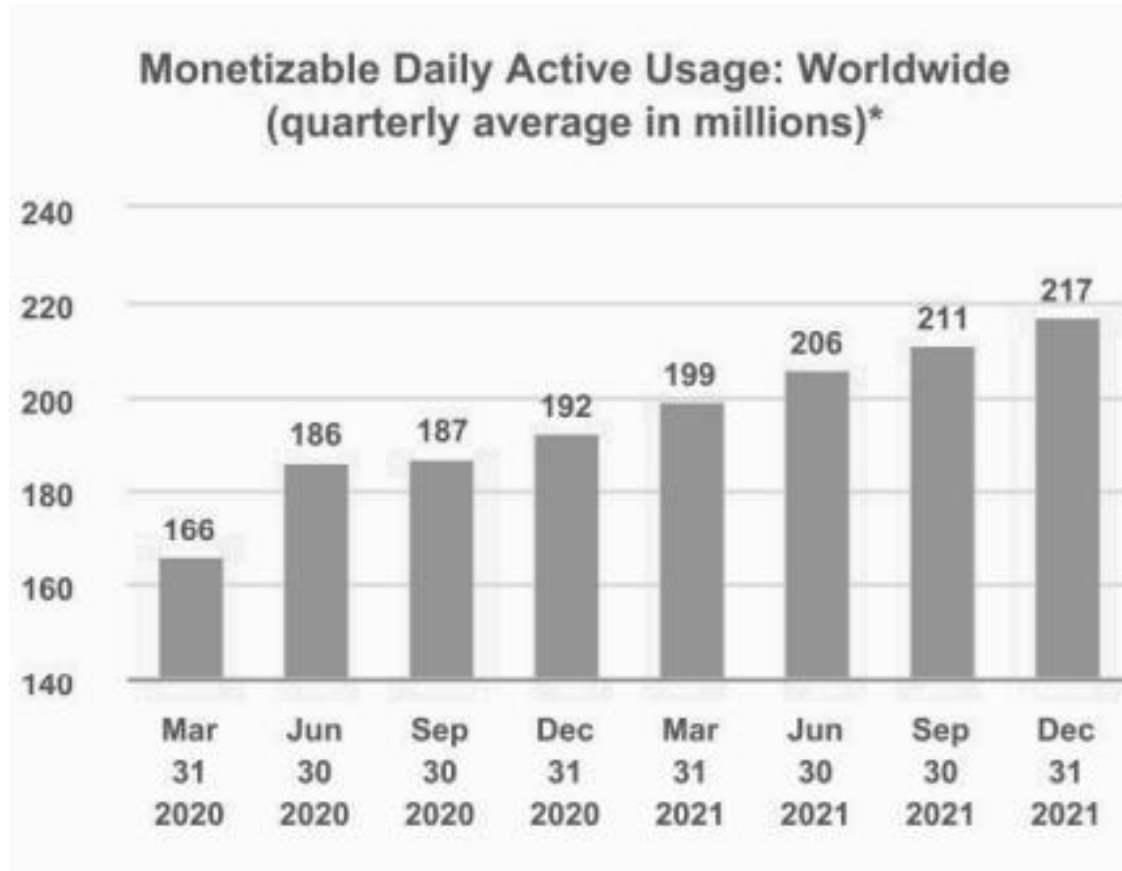
To increase revenue, Twitter needs to attract more users on its platform

Revenue breakdown	2016	2017	2018	2019	2020	2021
Monetizable users (m)	105	115	126	152	192	217
Avg. revenue per user (US$)						
Total advertising revenue (US$m)						

How good is Twitter at monetizing its users? Let's look at the price component

Twitter had difficulties getting more money out of its users

Revenue breakdown	2016	2017	2018	2019	2020	2021
Monetizable users (m)	105	115	126	152	192	217
Avg. revenue per user (US$)	21.4	18.3	20.8	19.7	16.7	20.8
Total advertising revenue (US$m)	**2,248**	**2,110**	**2,617**	**2,993**	**3,207**	**4,506**

As a comparison, Facebook generates US$40 per user per year, hence 2x Twitter

This is not investment advice and it's not a recommendation.
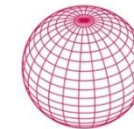
VALUATION MASTER CLASS

Revenue breakdown	2016	2017	2018	2019	2020	2021
Monetizable users (m)	105	115	126	152	192	217
Avg. revenue per user (US$)	21.4	18.3	20.8	19.7	16.7	20.8
Total advertising revenue (US$m)	**2,248**	**2,110**	**2,617**	**2,993**	**3,207**	**4,506**
Data and licensing revenue (US$m)	**282**	**333**	**425**	**466**	**509**	**572**
Total revenue	**2,530**	**2,443**	**3,042**	**3,459**	**3,716**	**5,077**
Revenue growth		*(3.4)*	*24.5*	*13.7*	*7.4*	*36.6*

Start at the company's website

Source: https://www.sec.gov **This is not investment advice and it's not a recommendation.** 20 May 2022

Twitter Announces First Quarter 2022 Results

SAN FRANCISCO, California - Twitter, Inc. (NYSE: TWTR) today announced financial results for its first quarter 2022.

First Quarter 2022 Operational and Financial Highlights

Except as otherwise stated, all financial results discussed below are presented in accordance with generally accepted accounting principles in the United States of America, or GAAP. As supplemental information, we have provided certain non-GAAP financial measures in this press release's supplemental tables, and such supplemental tables include a reconciliation of these non-GAAP measures to our GAAP results. The sum of individual metrics may not always equal total amounts indicated due to rounding.

- Q1 revenue totaled $1.20 billion, an increase of 16% year-over-year, or 19% on a constant currency basis, reflecting headwinds associated with the war in Ukraine. When excluding MoPub and MoPub Acquire, year-over-year growth was 22%.[1]
  - Advertising revenue totaled $1.11 billion, an increase of 23%, or 26% on a constant currency basis.
  - Subscription and other revenue totaled $94 million, a decrease of 31% year-over-year, or a decrease of 5% year-over-year when excluding MoPub from the year ago period.[1]

- Costs and expenses totaled $1.33 billion, an increase of 35% year-over-year. This resulted in an operating loss of $128 million and -11% operating margin, compared to an operating income of $52 million or 5% operating margin in the same period of the previous year.
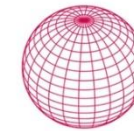
- Stock-based compensation (SBC) expense grew 60% year-over-year to $177 million and was approximately 15% of total revenue.

- Net income was $513 million, representing a net margin of 43% and diluted EPS of $0.61.
  - Net income of $513 million includes a pre-tax gain of $970 million from the sale of MoPub for $1.05 billion and income taxes related to the gain of $331 million. This compares to net income of $68 million, a net margin of 7% and diluted EPS of $0.08 in the same period of the previous year.

- Net cash provided by operating activities in the quarter was $126 million, compared to $390 million in the same period last year. Capital expenditures totaled $161 million, compared to $179 million in the same period last year.

- Average monetizable daily active usage (mDAU)[2] was 229.0 million for Q1, up 15.9% compared to Q1 of the prior year.
  - Average US mDAU was 39.6 million for Q1, up 6.4% compared to Q1 of the prior year.
  - Average international mDAU was 189.4 million for Q1, up 18.1% compared to Q1 of the prior year.

Company disclosures: User breakdown

Monetizable Daily Active Users

% of mDAU

Million	1Q21	1Q22	1Q21	1Q22	% Chg
US	37	40	18.8	17.3	6.5
International	160	189	81.2	82.7	18.1
Total	**198**	**229**	**100.0**	**100.0**	**15.9**

★ Twitter users are mainly international
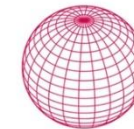
Revenue by geography			% of revenue		
US$m	1Q21	1Q22	1Q21	1Q22	% Chg
US	556	672	53.7	55.9	20.7
Japan	170	180	16.4	15.0	5.6
Rest of the world	310	350	29.9	29.1	12.9
Total	**1,036**	**1,201**	**100.0**	**100.0**	**15.9**

★ Though 80% of users are international, they only contributed about 44% of revenue

★ 55% of revenue from US and this region is growing fastest

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Revenue by services

US$m	1Q21	1Q22	% of revenue		% Chg
			1Q21	1Q22	
Advertising services	899	1,107	86.8	92.2	23.1
Subscription & other	137	94	13.2	7.8	(31.4)
Total	**1,036**	**1,201**	**100.0**	**100.0**	**15.9**

★ Almost all revenue comes from advertising

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

SCHEDULE 14A

PROXY STATEMENT PURSUANT TO SECTION 14(a) OF THE
SECURITIES EXCHANGE ACT OF 1934

It's publicly available

Filed by the Registrant ☒

Filed by a Party other than the Registrant ☐

Check the appropriate box:

- ☒ Preliminary Proxy Statement
- ☐ Confidential, for Use of the Commission Only (as permitted by Rule 14a-6(e)(2))
- ☐ Definitive Proxy Statement
- ☐ Definitive Additional Materials
- ☐ Soliciting Material under §240.14a-12

TWITTER, INC.
(Name of Registrant as Specified In Its Charter)

Payment of Filing Fee (Check all boxes that apply):

- ☐ No fee required.
- ☐ Fee paid previously with preliminary materials.
- ☒ Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a-6(i)(1) and 0-11.
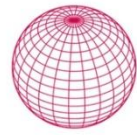
Opinion of J.P. Morgan Securities LLC

Pursuant to an engagement letter, Twitter retained J.P. Morgan as its financial advisor in connection with the proposed merger.

At the meeting of the Twitter Board on April 25, 2022, J.P. Morgan rendered its oral opinion to the Twitter Board that, as of such date and based upon and subject to the factors and assumptions set forth in its opinion, the consideration to be paid to Twitter's common stockholders in the proposed transaction was fair, from a financial point of view, to such stockholders. J.P. Morgan has confirmed its April 25, 2022 oral opinion by delivering its written opinion to the Twitter Board, dated April 25, 2022, that, as of such date, the consideration to be paid to Twitter's common stockholders in the proposed merger was fair, from a financial point of view, to such stockholders.

Public Trading Multiples

Selected Transaction Multiples

Discounted Cash Flow

Sources: A. Stotz Investment Research, company data

This is not investment advice and it's not a recommendation.

20 May 2022   22
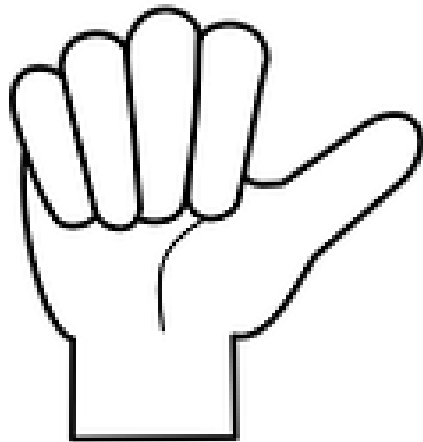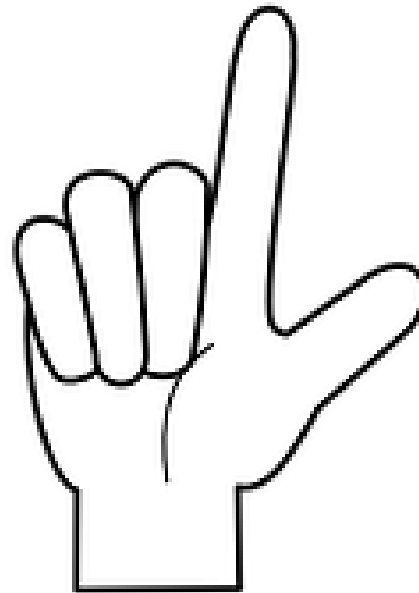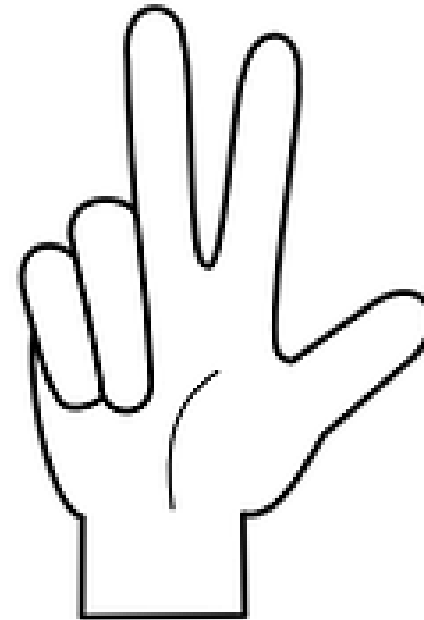
Step 1: Identify "selected companies"

The selected companies were chosen, among other reasons, because they are publicly traded companies with operations and businesses that, for purposes of J.P. Morgan's analyses, may be considered sufficiently similar to those of Twitter based on business sector participation, operational characteristics and financial metrics. However, none of the selected companies reviewed is identical to Twitter and certain of these companies have financial and operating characteristics that are materially different from those of Twitter. The analyses necessarily involve complex considerations and judgments concerning differences in financial and operational characteristics of the companies involved and other factors that could affect the companies differently than they would affect Twitter.

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Step 2: Apply Firm Value to EBITDA

	FV/2023E Adj. EBITDA
Alphabet Inc.	10.4 x
Meta Platforms, Inc.	6.7 x
Pinterest, Inc.	11.2 x
Snap Inc.	30.2 x
Median	**10.8 x**

A similar table as used by Goldman Sachs

Revenue (US$bn)	2016	2017	2018	2019	2020	2021
TWTR	2.5	2.4	3.0	3.5	3.7	5.1
SNAP	0.4	0.8	1.2	1.7	2.5	4.1
PINS	0.3	0.5	0.8	1.1	1.7	2.6
FB	27.6	40.7	55.8	70.7	86.0	117.9
GOOGL	90.3	110.9	136.8	161.9	182.5	257.6

This is not investment advice and it's not a recommendation.

Method 1: Public Trading Multiples

Step 2: Apply Firm Value to EBITDA

Based on the results of the above analysis and on other factors J.P. Morgan considered appropriate based on their experience and professional judgment, J.P. Morgan selected a FV/2023E Adj. EBITDA multiple reference range for Twitter of 15.0x to 17.5x. J.P. Morgan then applied that range to Twitter's adjusted EBITDA of $2,685 million forecasted for the year ending December 31, 2023, as provided by Twitter management, yielding implied trading values for Twitter's common stock, rounded to the nearest $0.10, of approximately $49.70 to $57.50 per share.

Value – Based on public trading EV/EBITDA multiples
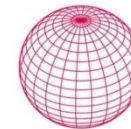
Assumptions and per share value	JP Morgan		
	Low	High	Avg.
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**

Value – Based on public trading EV/EBITDA multiples

Assumptions and per share value	JP Morgan			Goldman Sachs			JPM - GS
	Low	High	Avg.	Low	High	Avg.	
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3	15.0	17.5	16.3	-
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**	**na**	**na**	**na**	**na**

This is not investment advice and it's not a recommendation.

VALUATION MASTER CLASS

Public Trading
Multiples

Selected
Transaction
Multiples

Discounted
Cash Flow

JPM: US$50-58

GS: Rather expensive

This is not investment advice and it's not a recommendation.

EBIT (US$bn)	2016	2017	2018	2019	2020	2021
TWTR	(0.4)	0.0	0.5	0.4	0.0	0.3
SNAP	(0.5)	(3.5)	(1.3)	(1.1)	(0.9)	(0.7)
PINS	(0.2)	(0.1)	(0.1)	(1.4)	(0.1)	0.3
FB	12.4	20.2	24.9	29.0	32.7	46.8
GOOGL	23.7	28.9	32.6	35.9	41.2	78.7

★ The operating business is tough

Method 2: Selected Transaction Multiples

Step 1: Identify similar past transactions

Announcement Date	Acquiror	Target	FV/LTM Adj. EBITDA
Feb 2021	Magnite, Inc.	SpotX, Inc.	33.4 x
Jun 2020	Just Eat Takeaway.com N.V.	Grubhub Inc.	47.4
Dec 2019	Hellman & Friedman LLC	AutoScout24	26.1
May 2018	Silver Lake	ZPG Plc	21.5
Jun 2016	Microsoft Corporation	LinkedIn Corporation	31.2
Nov 2015	Expedia, Inc.	HomeAway, Inc.	36.4
Aug 2015	Liberty Media Corporation	zulily, inc.	50.6
Jul 2014	Zillow, Inc.	Trulia, Inc.	nm
Jun 2014	The Priceline Group Inc.	OpenTable, Inc.	29.9
Nov 2012	priceline.com Incorporated	KAYAK Software Corporation	27.6
May 2011	Microsoft Corporation	Skype S. à r.l	32.2

Step 2: Apply FV/EBITDA multiple to Twitter

Based on the results of this analysis and other factors that J.P. Morgan considered appropriate based on their experience and professional judgment, J.P. Morgan selected a FV/LTM Adj. EBITDA multiple reference range of 28.0x to 36.0x. J.P. Morgan then applied that reference range to Twitter's adjusted EBITDA of $1,448 million (which is adjusted to exclude a one-time litigation-related net charge of $766 million) for the year ended December 31, 2021, to produce a range of implied equity values per share of Twitter common stock, rounded to the nearest $0.10, of $50.00 to $63.40.

Goldman Sachs: Selected Precedent analysis

publicly available, Goldman Sachs calculated and compared the implied enterprise value of the applicable target company based on the consideration paid in the transaction as a multiple of the target company's EBITDA over the last twelve month period ended prior to the announcement of the applicable transaction (which we refer to for purposes of this section of the proxy statement as "**EV/LTM EBITDA**").

The foregoing analysis indicated a 25th percentile EV/LTM EBITDA multiple of 28.2x and a 75th percentile EV/LTM EBITDA multiple of 35.7x. Using this analysis and its professional judgment and experience, Goldman Sachs applied a range of illustrative EV/EBITDA

Value – Based on public trading EV/EBITDA multiples

	JP Morgan		
Assumptions and per share value	Low	High	Avg.
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**
FV/EBITDA LTM (x)	28.0	36.0	32.0
VALUE - Transaction multiples ($)	**50.0**	**63.4**	**56.7**

Value – Based on public trading EV/EBITDA multiples

Assumptions and per share value	JP Morgan			Goldman Sachs			JPM - GS
	Low	High	Avg.	Low	High	Avg.	
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3	15.0	17.5	16.3	-
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**	**na**	**na**	**na**	**na**
FV/EBITDA LTM (x)	28.0	36.0	32.0	28.2	35.7	32.0	0.0
VALUE - Transaction multiples ($)	**50.0**	**63.4**	**56.7**	**50.3**	**62.9**	**56.6**	**0.1**

★ It feels like two students in a classroom suspiciously getting the exact same answer

VALUATION MASTER CLASS

Public Trading Multiples

Selected Transaction Multiples

Discounted Cash Flow

JPM: US$49-58

GS: Rather expensive

JPM: US$50-63

GS: US$50-63

Sources: A. Stotz Investment Research, company data

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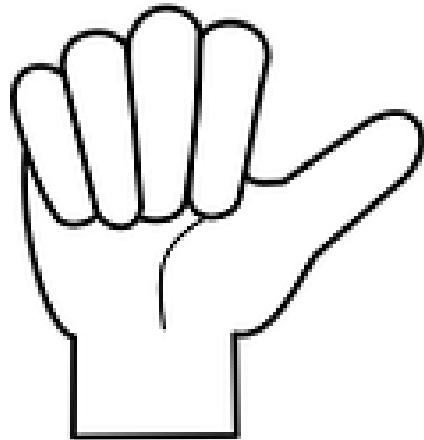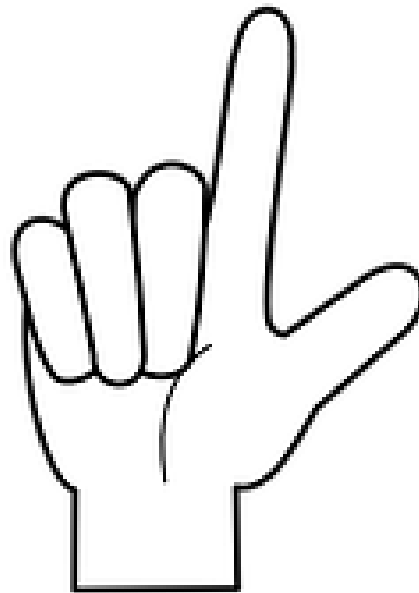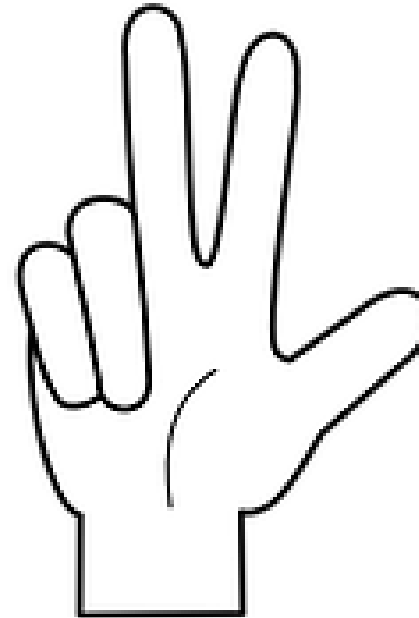
VALUATION MASTER CLASS

Profit (US$bn)	2016	2017	2018	2019	2020	2021
TWTR	(0.5)	(0.1)	1.2	1.5	(1.1)	(0.2)
SNAP	(0.5)	(3.4)	(1.3)	(1.0)	(0.9)	(0.5)
PINS	(0.2)	(0.1)	(0.1)	(1.4)	(0.1)	0.3
FB	10.2	15.9	22.1	18.5	29.1	39.4
GOOGL	19.5	12.7	30.7	34.3	40.3	76.0

★ 2018/9 Twitter made money

★ 2018 US$0.845bn Inc. tax benefit (Release of valuation allowance from Brazil)

★ 2019 Income tax benefit of US$1.2bn – Establishment of deferred tax assets from intra-entity transfer of intangible assets

Method 3: Discounted cash flow analysis

Step 1: Forecast free cash flows and determine exit multiple for terminal growth rate

J.P. Morgan calculated the unlevered free cash flows that Twitter is expected to generate during fiscal years 2022 through 2027 based upon financial projections prepared by Twitter's management through the year ended December 31, 2027 and more fully described in the section of this proxy statement captioned "—*Unaudited Prospective Financial Information*." J.P. Morgan also calculated a range of terminal values for

Twitter by applying terminal growth rates ranging from 6.0% to 7.0% to the unlevered free cash flows of Twitter at the end of fiscal year 2027. The unlevered free cash flows and the range of terminal values were then discounted to present values using a range of discount rates from 10.25% to 11.25%, which was chosen by J.P. Morgan based upon an analysis of the cost of capital of Twitter, which takes into account certain company-specific metrics, including Twitter's target capital structure, the cost of equity, the pre-tax cost of debt, long-term debt, forecasted tax rate and predicted (Barra) beta.

Value – Based on public trading EV/EBITDA multiples

	JP Morgan		
Assumptions and per share value	**Low**	**High**	**Avg.**
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**
FV/EBITDA LTM (x)	28.0	36.0	32.0
VALUE - Transaction multiples ($)	**50.0**	**63.4**	**56.7**
Discount rate (%)	10.3	11.3	10.8
Terminal growth rate (%)	6.0	7.0	6.5

This is not investment advice and it's not a recommendation.

Assumptions and per share value	JP Morgan			Goldman Sachs			JPM -
	Low	High	Avg.	Low	High	Avg.	GS
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3	15.0	17.5	16.3	-
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**	**na**	**na**	**na**	**na**
FV/EBITDA LTM (x)	28.0	36.0	32.0	28.2	35.7	32.0	0.0
VALUE - Transaction multiples ($)	**50.0**	**63.4**	**56.7**	**50.3**	**62.9**	**56.6**	**0.1**
Discount rate (%)	10.3	11.3	10.8	10.0	12.0	11.0	(0.3)
Terminal growth rate (%)	6.0	7.0	6.5	5.6	9.0	7.3	(0.8)

This is not investment advice and it's not a recommendation.

Method 3: Discounted cash flow analysis

Step 2: Add cash and equity investments to enterprise value + subtract debt to derive equity value

In addition, as directed by the management of Twitter, J.P. Morgan calculated the present value of certain tax credits expected to be utilized by Twitter through fiscal year 2027, which were discounted from June 30 of each year to present values as of December 31, 2021 using the same mid-year convention and a discount range of 10.25% to 11.25%. The total tax credit utilization amounts provided by management of Twitter were $0 million, $689 million, $934 million, $1,226 million, $127 million and $0 million for each of fiscal years 2022 through 2027, respectively. The present values were then added together with the present values derived based on the unlevered free cash flows to derive a range of firm values for Twitter, which was then adjusted to take into account Twitter's net cash totaling $1,364 million in the aggregate as of December 31, 2021 to derive a range of implied equity values for Twitter.

Based on the results of this analysis, J.P. Morgan arrived at a range of implied equity value per share for Twitter common stock, rounded to the nearest $0.10, of $36.50 to $57.60.

This is not investment advice and it's not a recommendation.

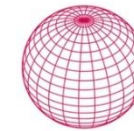# Value – Based on public trading EV/EBITDA multiples

Assumptions and per share value	JP Morgan			Goldman Sachs			JPM -
	Low	High	Avg.	Low	High	Avg.	GS
Estimated FV/EBITDA 2023E (x)	15.0	17.5	16.3	15.0	17.5	16.3	-
VALUE - Public trading multiples ($)	**49.7**	**57.5**	**53.6**	**na**	**na**	**na**	**na**
FV/EBITDA LTM (x)	28.0	36.0	32.0	28.2	35.7	32.0	0.0
VALUE - Transaction multiples ($)	**50.0**	**63.4**	**56.7**	**50.3**	**62.9**	**56.6**	**0.1**
Discount rate (%)	10.3	11.3	10.8	10.0	12.0	11.0	(0.3)
Terminal growth rate (%)	6.0	7.0	6.5	5.6	9.0	7.3	(0.8)
VALUE - DCF (US$)	**36.5**	**57.6**	**47.1**	**39.1**	**60.9**	**50.0**	**(3.0)**
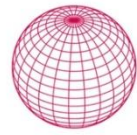
This is not investment advice and it's not a recommendation.

Public Trading Multiples
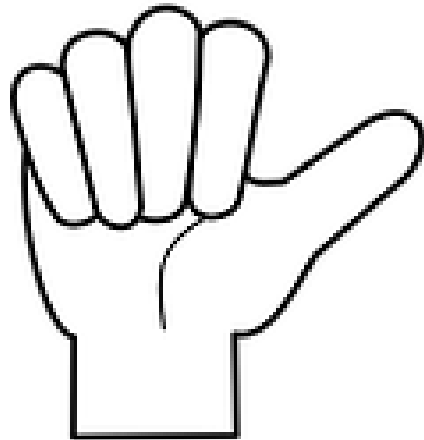
Selected Transaction Multiples

Discounted Cash Flow

JPM: US$49-58

GS: Rather expensive
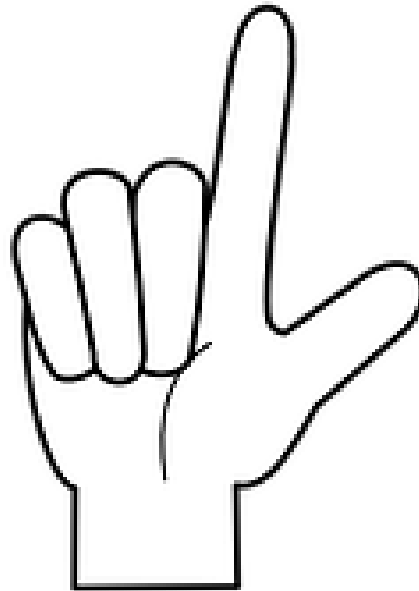
JPM: US$50-64

GS: US$50-63
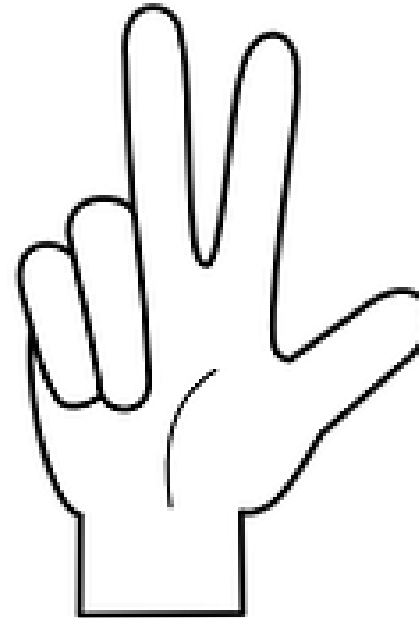
JPM: US$37-58

GS: US$39-61

FCF to the firm (US$bn)	2016	2017	2018	2019	2020	2021
TWTR				0.5	(0.3)	(0.2)
SNAP				(1.6)	(0.3)	(0.8)
PINS				1.4	(1.5)	(0.1)
FB				21.9	16.4	29.5
GOOGL				22.0	31.3	53.1

★ Negative FCF for Twitter, SNAP, and PINS

★ Massively positive for FB and GOOGL

April 28, 2022

Twitter Announces First Quarter 2

SAN FRANCISCO, California - Twitter, Inc. (NYSE: TWTR) today announce 2022.

First Quarter 2022 Operational and Financial Highlights

Except as otherwise stated, all financial results discussed below are preser accepted accounting principles in the United States of America, or GAAP. provided certain non-GAAP financial measures in this press release's supp tables include a reconciliation of these non-GAAP measures to our GAAP may not always equal total amounts indicated due to rounding.

- Q1 revenue totaled $1.20 billion, an increase of 16% year-over-yea reflecting headwinds associated with the war in Ukraine. When ex year-over-year growth was 22%.[1]
  - Advertising revenue totaled $1.11 billion, an increase of 23 basis.
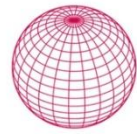 - Subscription and other revenue totaled $94 million, a decr decrease of 5% year-over-year when excluding MoPub fro

- Costs and expenses totaled $1.33 billion, an increase of 35% year loss of $128 million and -11% operating margin, compared to an c operating margin in the same period of the previous year.

- Stock-based compensation (SBC) expense grew 60% year-over-y approximately 15% of total revenue.

- Net income was $513 million, representing a net margin of 43% an
  - Net income of $513 million includes a pre-tax gain of $970 $1.05 billion and income taxes related to the gain of $331 $68 million, a net margin of 7% and diluted EPS of $0.08 in the same period of the previous year.

A Note About Metrics

Twitter defines monetizable daily active usage or users (mDAU) as people, organizations, or other accounts who logged in or were otherwise authenticated and accessed Twitter on any given day through twitter.com, Twitter applications that are able to show ads, or paid Twitter products, including subscriptions. Average mDAU for a period represents the number of mDAU on each day of such period divided by the number of days for such period. Changes in mDAU are a measure of changes in the size of our daily logged in or otherwise authenticated active total accounts. To calculate the year-over-year change in mDAU, we subtract the average mDAU for the three months ended in the previous year from the average mDAU for the same three months ended in the current year and divide the result by the average mDAU for the three months ended in the previous year. Additionally, our calculation of mDAU is not based on any standardized industry methodology and is not necessarily calculated in the same manner or comparable to similarly titled measures presented by other companies. Similarly, our measures of mDAU growth and engagement may differ from estimates published by third parties or from similarly titled metrics of our competitors due to differences in methodology.

The numbers of mDAU presented in our earnings materials are based on internal company data. While these numbers are based on what we believe to be reasonable estimates for the applicable period of measurement, there are inherent challenges in measuring usage and engagement across our large number of total accounts around the world. Furthermore, our metrics may be impacted by our information quality efforts, which are our overall efforts to reduce malicious activity on the service, inclusive of spam, malicious automation, and fake accounts. For example, there are a number of false or spam accounts in existence on our platform. We have performed an internal review of a sample of accounts and estimate that the average of false or spam accounts during the first quarter of 2022 represented fewer than 5% of our mDAU during the quarter. The false or spam accounts for a period represents the average of false or spam accounts in the samples during each monthly analysis period during the quarter. In making this determination, we applied significant judgment, so our estimation of false or spam accounts may not accurately represent the actual number of such accounts, and the actual number of false or spam accounts could be higher than we have estimated. We are continually seeking to improve our ability to estimate the total number of spam accounts and eliminate them from the calculation of our mDAU, and have made improvements in our spam detection capabilities that have resulted in the suspension of a large number of spam, malicious automation, and fake accounts. We intend to continue to make such improvements. After we determine an account is spam, malicious automation, or fake, we stop counting it in our mDAU, or other related metrics. We also treat multiple accounts held by a single person or organization as multiple mDAU because we permit people and organizations to have more than one account. Additionally, some accounts used by organizations are used by many people within the organization. As such, the calculations of our mDAU may not accurately reflect the actual number of people or organizations using our platform.

Source: https://s22.q4cdn.com

★ "(…) there are a number of false or spam accounts in existence on our platform

★ "We have performed an internal review of a sample of accounts and estimate that the average of false or spam accounts during the first quarter of 2022 represented **fewer than 5%** of our mDAU during the quarter."

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VALUATION MASTER CLASS
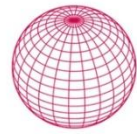
★ "In making this determination, we applied significant judgment, so our estimation of false or spam accounts may not accurately represent the actual number of such accounts, and the actual number of false or spam accounts could be higher than we have estimated."

20% fake/spam accounts, while 4 times what Twitter claims, could be *much* higher.
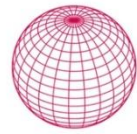
My offer was based on Twitter's SEC filings being accurate.

Yesterday, Twitter's CEO publicly refused to show proof of <5%.

This deal cannot move forward until he does.

Who is right? Twitter or Elon Musk?

Gross profit margin (%)	2016	2017	2018	2019	2020	2021
TWTR		64.8	68.3	67.1	63.2	64.6
SNAP		13.0	32.3	47.8	52.8	57.5
PINS		62.2	68.0	68.6	73.5	79.5
FB		86.6	83.2	81.9	80.6	80.8
GOOGL		58.9	56.5	55.6	53.6	56.9

★ FB is gross profit margin champion, Twitter is third place

★ Developing costs are low
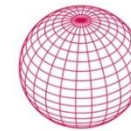
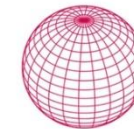| EBIT margin (%)	2016	2017	2018	2019	2020	2021
TWTR		1.6	14.9	10.6	0.7	5.4
SNAP		(422.5)	(107.5)	(64.3)	(34.4)	(17.1)
PINS		(29.2)	(9.9)	(121.5)	(3.1)	12.7
FB		49.7	44.6	41.0	38.0	39.6
GOOGL		26.1	23.8	22.2	22.6	30.6

★ FB is EBIT margin champion, GOOGL is second place

★ Operating business is weak at TWTR, disaster at SNAP and PINS

VALUATION MASTER CLASS

Net margin (%)	2016	2017	2018	2019	2020	2021
TWTR		(4.4)	39.6	42.4	(30.6)	(4.4)
SNAP		(417.6)	(106.4)	(60.3)	(37.7)	(11.9)
PINS		(27.5)	(8.3)	(119.1)	(7.6)	12.3
FB		39.2	39.6	26.1	33.9	33.4
GOOGL		11.4	22.5	21.2	22.1	29.5

★ SNAP has never made a profit, Twitter only in 2018 and 2019 because of tax adjustments
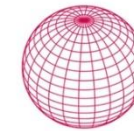
★ FB and GOOGL are killing it

ROIC (%)	2016	2017	2018	2019	2020	2021
TWTR				8.0	0.6	6.0
SNAP				(40.9)	(41.4)	(36.8)
PINS				8.0	0.6	6.0
FB				54.2	50.5	59.2
GOOGL				33.6	36.4	59.5

★ SNAP is bleeding

★ Twitter's return to investors has been tiny

★ FB and GOOGL are massive value generators

VALUATION MASTER CLASS

Expense breakdown

US$m	1Q21	1Q22	% of revenue		% Chg
			1Q21	1Q22	
Sales and marketing	235	300	22.7	25.0	27.7
General and admin.	118	150	11.4	12.5	27.1
Total	**353**	**450**	**34.1**	**37.5**	**27.5**

★ Gross profit margin is strong, but Twitter's operating costs are massive and eat up any opportunity for profit