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Editor's Note on 3/23/2021

We updated this report to correct the implied user growth in Snap's (SNAP: $24/share) valuation, the stock price when we originally published the report, after we realized that we incorrectly calculated the daily active users (DAUs) implied by the stock price based on quarterly average revenue per user (ARPU) instead of annual average revenue per user (ARPU).

After correcting this error, our thesis remains unchanged given that Snap's valuation implies it will double ARPU and nearly quadruple DAUs.

Check out this week's Danger Zone interview with Chuck Jaffe of Money Life.

We first warned investors about SNAP before its IPO in February 2017: Danger Zone: Snap Inc. (SNAP). We warned again in August 2018, Bursting SNAP's (Micro) Bubble, before closing the position in February 2019 after the stock had fallen 65% from its IPO closing price while the S&P 500 had increased 14%.

Now, with the stock trading ~155% above where we closed the position, the valuation implies nearly the entire global population will be Snapchat users. Fiduciaries should consider this stock extremely risky, especially in today's market. Snap (SNAP: $24/share) is this week's Danger Zone pick.

Learn more about the best fundamental research

We think those with fiduciary responsibilities need to consider just how much risk they take by owning SNAP at current levels. This report shows investors of all types just how extreme the risk in SNAP is based on:

- Lack of competitive advantages vs. fierce, deep-pocketed competitors
- Growth is with very low-spending (aka unprofitable) users
- Doing the math: the stock price implies Snap's DAU will nearly equal Facebook's (FB) assuming it maintains its current average revenue per user (ARPU).

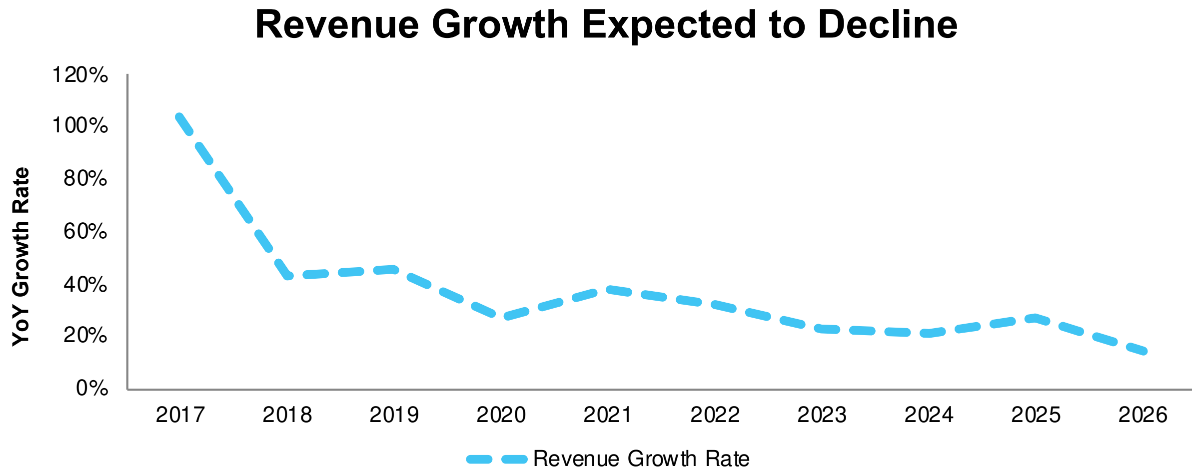
Growth Will Slow, But Competition for Ad Dollars Will Increase

Snap went public riding a wave of rapid revenue growth and the hype of being the next big social media platform. However, that wave crested in 2017 and grows weaker by the day. As the firm attempts to scale up, and more competition enters the market (in some cases directly copying Snap's core product), it becomes harder to maintain its past growth rates. For example, revenue grew 104% YoY in 2017 and 45% YoY in 2019. Consensus estimates expect revenue will grow 27% YoY in 2020, and just 15% YoY by 2026, per Figure 1.

Snap faces an increasingly uphill battle to grow revenue at high rates as the fight for ad dollars intensifies.

Important Disclosure Information is contained on the last page of this report.
The recipient of this report is directed to read these disclosures.

Figure 1: Consensus Revenue Growth Estimates: 2017-2026



Sources: New Constructs, LLC and company filings.
2020-2026 revenue growth rates based on consensus estimates

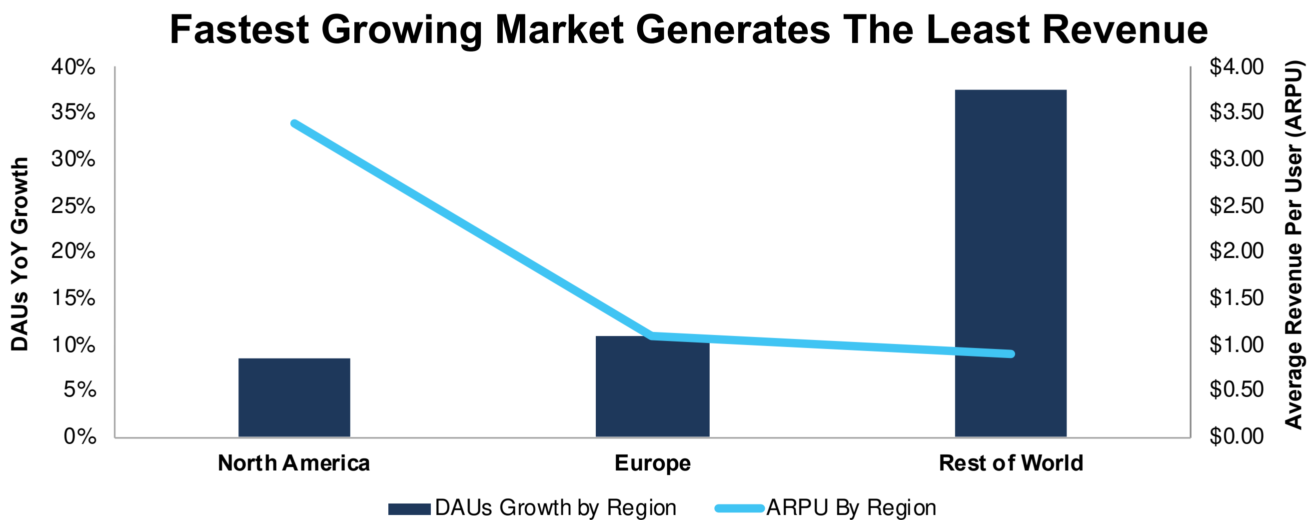
Growth Focused in Unprofitable Markets

As with most social media companies, the road to profitability, which is elusive for nearly all but Facebook (FB), begins with growing users.

Unfortunately for Snap, and investors that care about profitability, the firm's growth is coming from its least lucrative market: "Rest of World." Snap's Rest of World DAUs grew 38% YoY in 2Q20, compared to just 11% and 8% for Europe and North America. ARPU in North America is nearly four times as high as Rest of World and three times as high as Europe, per Figure 2.

While the faster growth in the Rest of World segment is partly driven by starting from a smaller base, (North America is still the largest segment by DAUs), the lower ARPU in that segment exacerbates the firm's already negative profitability.

Figure 2: DAUs Growth & ARPU by Geographic Region – 2Q20

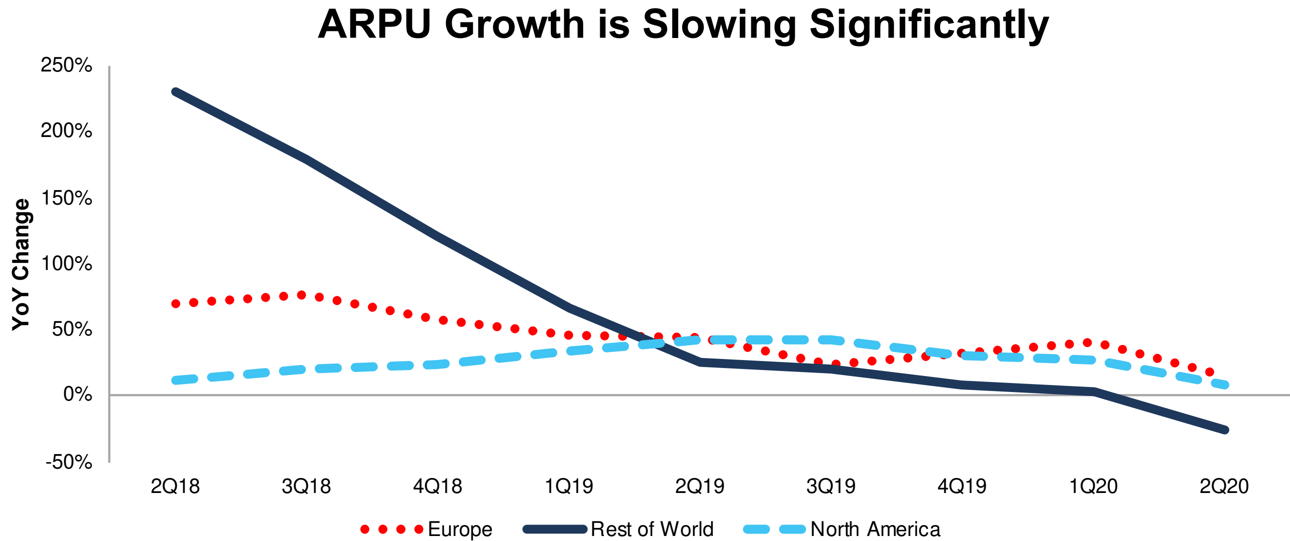


Sources: New Constructs, LLC and company filings.

The rate at which Snap is improving its overall ARPU is slowing too, per Figure 3. ARPU in the Rest of World segment grew 231% YoY in 2Q18, 25% YoY in 2Q19, and fell 26% YoY in 2Q20. Europe ARPU grew 69% YoY

in 2Q18, 44% YoY in 2Q29, and 16% YoY in 2Q20. North America tells a similar story, where ARPU grew 12% YoY in 2Q18, 42% in 2Q19, and 8% in 2Q20.

Figure 3: YoY ARPU Growth Rates: 2Q18 through 2Q20



Sources: New Constructs, LLC and company filings.

Will Snap Ever be Profitable?

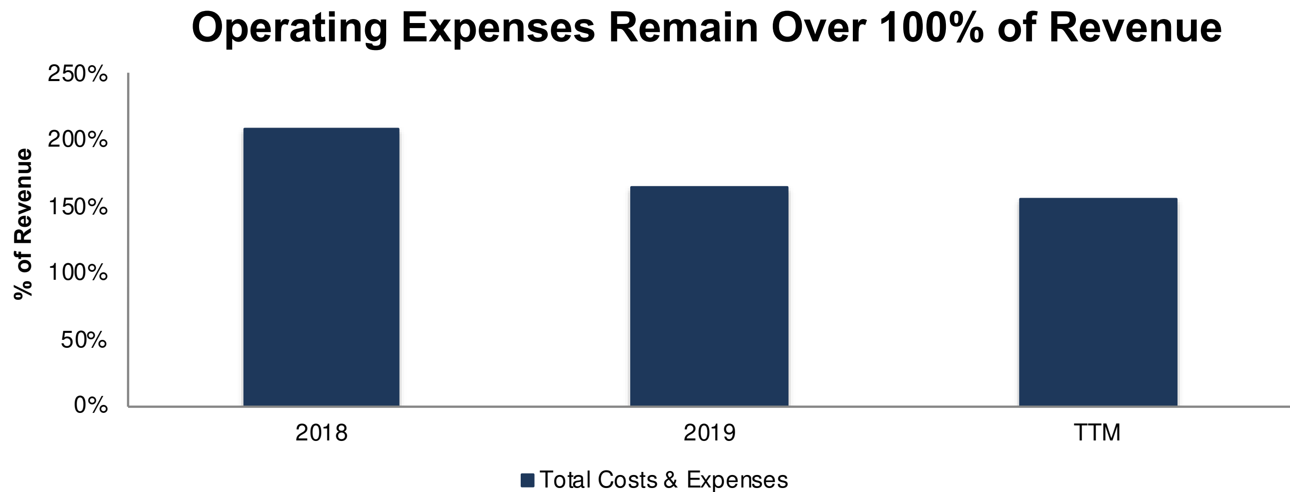
With revenue and ARPU growth slowing, it appears Snap's path to profitability requires a significant reduction in expenses. We don't see significant cost reduction coming anytime soon because it signals that the company has given up trying to grow and achieve scale, and that signal would likely cause most investors to sell.

Accordingly, Snap's cost of revenue, sales & marketing, general & administrative, and research & development costs ("Total Costs & Expenses") are an astonishing 156% of revenue over the TTM period, per Figure 4.

To maintain competitiveness, attract new users, and develop new products to engage those users, Snap must continue this spending, which makes us question whether it can ever achieve profitability. The firm admits this strategy is bad for business in its 10-K, "we expect to increase marketing, sales, and other operating expenses to grow and expand our operations and to remain competitive. Increases in costs without a corresponding increase in revenue would increase our losses and could seriously harm our business."

We think investors should sell the stock of any company that is unlikely to generate profits.

Figure 4: Total Costs & Expenses as a Percent of Revenue: 2018 through TTM



Sources: New Constructs, LLC and company filings.

Fierce Competitors

Regardless of user base and growth rates, Snap's heavy reliance on advertising dollars (98% of revenue in 2019, down from 99% in 2018) means it competes with some of the largest, most successful and most profitable media/internet firms in the world. Specifically, Snap's direct competitors include Facebook (FB) and Instagram, Alphabet (GOOGL), Twitter (TWTR), Pinterest (PINS), ByteDance (owner of TikTok), and more.

Snap bulls can't point to its user base as a strength, as competitors have larger, or faster-growing user bases. Snap's DAUs reached 238 million in 2Q20, an increase of 17% YoY. For comparison, Facebook reported 1.79 billion DAUs in 2Q20 for an increase of 12% YoY. Instagram has over 500 million DAUs (Facebook doesn't regularly report YoY growth in Instagram DAUs). Twitter (TWTR) reported 186 million DAUs in 2Q20 for an increase of 34% YoY. Pinterest (PINS) reported 416 monthly active users (MAU), for an increase of 39% YoY.

More broadly, one might consider that Snap competes against all content available for consumption. Any minute spent viewing something else is time that Snap could be showing ads. With so much content in the world today (social media, streaming and live TV, video games/streaming), the competition for ad spending has never been tougher.

Facing virtually unlimited competition for the attention of consumers makes turning a profit even more difficult for Snap. With a user base that is dwarfed by Facebook, Instagram, YouTube, and even TikTok (which reportedly has 800 million DAUs), Snap relies on lower ad prices to attract advertisers. If Snap increases prices for ads, advertisers have plenty of other, larger platforms to spend ad budgets.

Still Not Making Money

Per Figure 5, Snap's NOPAT margin, invested capital turns (a measure of balance sheet efficiency) and return on invested capital (ROIC) rank well below its competition. We included GoPro in Figure 5 as a comp for Snap's continued insistence that they are "a camera company", despite nearly all revenue generated from ad sales.

Figure 5: TTM NOPAT Margin, Invested Capital Turns, and ROIC vs. Competition

Ticker	Company Name	NOPAT Margin	Invested Capital Turns	ROIC
FB	Facebook Inc.	32%	1.2	38%
GOOGL	Alphabet, Inc.	18%	1.6	29%
TWTR	Twitter, Inc.	-1%	0.8	-1%
GPRO	GoPro Inc.	-6%	2.1	-13%
PINS	Pinterest Inc.	-34%	0.5	-18%
SNAP	Snap Inc.	-53%	0.5	-29%

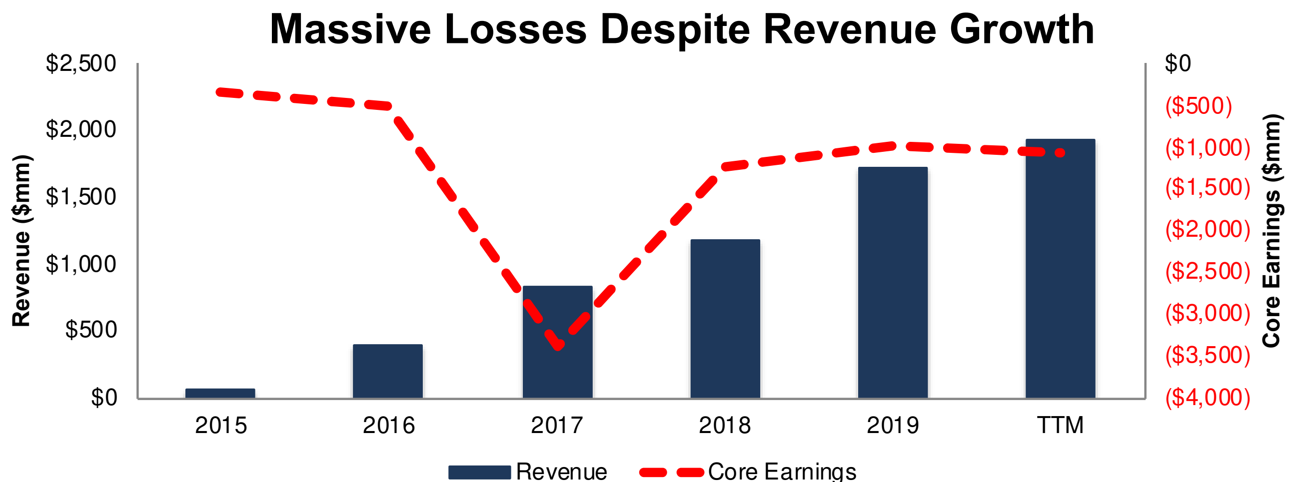
Sources: New Constructs, LLC and company filings.

Snap's lack of profitability reflects the downside to a growth-at-all-costs mentality. Competing on price is a losing strategy for a smaller firm already lacking profitability, as larger competitors can easily match prices, or even undercut, to lure advertisers away.

Competitive Disadvantages Mean Big Losses

Given the competitive market and negative margins, it should come as no surprise that Snap's losses are large. Per Figure 6, Snap has grown revenue by 133% compounded annually since 2015. Snap's core earnings[1], which have never been positive, have fallen from -$357 million in 2015 to -$1.1 billion over the TTM.

Figure 6: Revenue Vs. Core Earnings: 2015 through TTM



Sources: New Constructs, LLC and company filings.

Furthermore, Snap has a history of significant free cash flow (FCF) burn that is unlikely to change anytime soon. Over the past four years, the firm has burned a cumulative $8.7 billion (25% of market cap) in FCF. In 2019, FCF was -$1.9 billion compared to -$592 million in 2018. Over the TTM period, FCF is -$2.7 billion. At the end of 2Q20, Snap had $2.8 billion of cash and cash equivalents on its balance sheet. At its TTM FCF burn rate, the firm has enough cash to operate for just over 12 months before running out or needing additional capital infusion.

[1] Our core earnings are a superior measure of profits, as demonstrated in Core Earnings: New Data & Evidence a paper by professors at Harvard Business School (HBS) & MIT Sloan. The paper empirically shows that our data is superior to "Operating Income After Depreciation" and "Income Before Special Items" from Compustat, owned by S&P Global (SPGI).

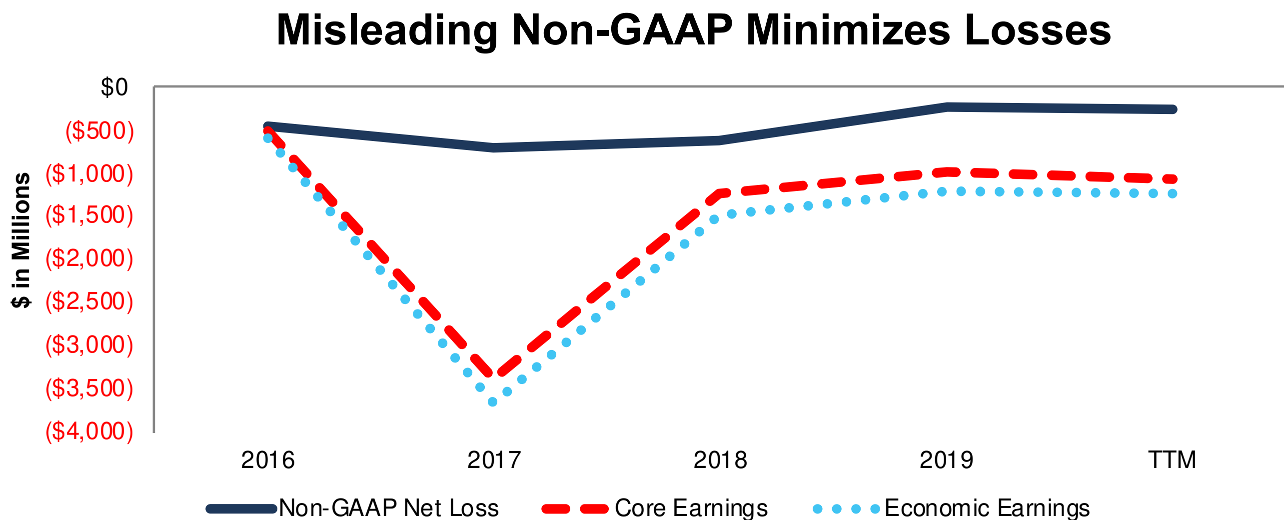
Don't Buy the Non-GAAP Either

As with most unprofitable firms, Snap would rather investors focus on flawed non-GAAP metrics such as adjusted EBITDA and non-GAAP net loss, which paints a rosier picture of the firm's losses. Non-GAAP metrics allow management significant leeway in removing actual costs of the business to present a more optimistic view.

Among the largest items Snap excludes when calculating its non-GAAP metrics are stock-based compensation and amortization of intangibles.

Over the TTM, Snap removed $683 million (36% of revenue) in stock-based compensation and $29 million (2% of revenue) in amortization of intangibles when calculating non-GAAP net loss. Per Figure 7, Snap's TTM non-GAAP net loss of -$250 million is well above core earnings of -$1.1 billion. Economic earnings, which remove unusual gains/losses and changes to the balance sheet, are even lower, at -$1.2 billion TTM.

Figure 7: Non-GAAP Net Loss vs. Core and Economic Earnings: 2016 through TTM



Sources: New Constructs, LLC and company filings.

Doing the Math: Valuation Implies DAUs Must Nearly Equal Facebook's

With slowing ARPU growth, heavy competition, already negative profitability, and ad rates falling across the industry, SNAP already looks risky. Next, we provide more details on why this stock is too risky for fiduciaries.

First, Snap's current economic book value, or no growth value, is -$13/share. But, let's see what the price looks like if we give the firm credit for being able to grow into a profitable enterprise.

We'll start with using our reverse discounted cash flow (DCF) model to analyze the expectations implied by the current valuation.

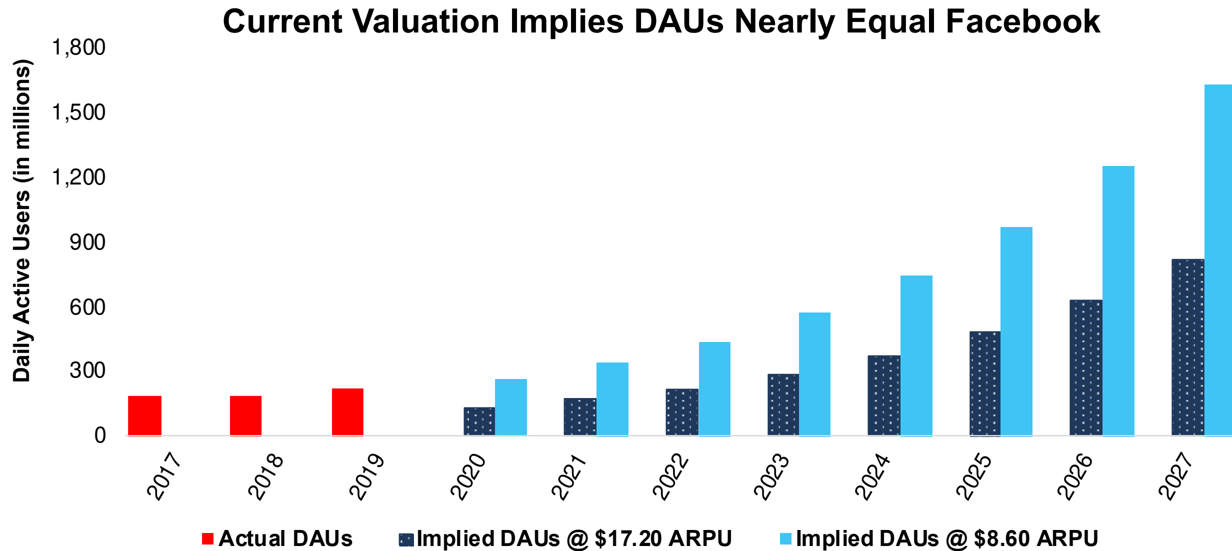
To justify its current price of $24/share, Snap must immediately improve its NOPAT margin to 16% (compared to -53% TTM), which equals Twitter's best-ever margin in 2018, and grow revenue by 30% compounded annually for the next eight years. See the math behind this reverse DCF scenario.

In this scenario, Snap would generate nearly $14 billion in revenue eight years from now, compared to $1.7 billion in 2019. At its annual ARPU[2], $8.60 at the end of 2Q20, this scenario implies the firm would have over 1.6 billion DAUs, which equals ~91% of Facebook's 2Q20 DAUs.

For comparison, if we optimistically assume Snap can immediately double its ARPU to $17.20, then Snap needs just under 814 million DAUs to achieve the revenue implied by its stock price. In other words, even if Snap can double ARPU, it must have 4 times the DAUs (in eight years) than Twitter in 2Q20 and grow DAUs by 342% to justify its current stock price. Figure 8 illustrates these expectations.

[2] Calculated as TTM revenue of $1.9 billion divided by average quarterly DAUs over the TTM (224 million).

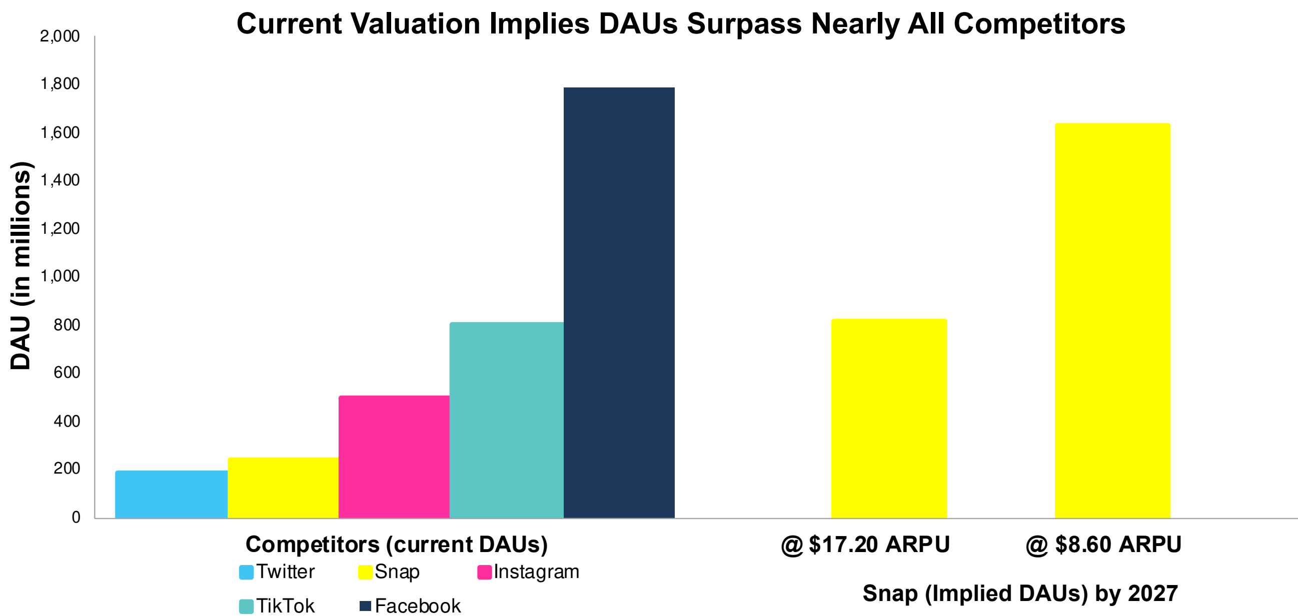
Figure 8: SNAP's Historical DAUs vs. Implied DAUs



Sources: New Constructs, LLC and company filings.

For comparison, we compare the DAUs implied by Snap's stock price to some of its largest competitors, per Figure 9. At its current ARPU, Snap's stock price implies it will have more DAUs (in eight years) than TikTok, Instagram, or Twitter, and nearly as many as Facebook, currently have.

Figure 9: SNAP's Implied DAUs vs. Competition



Sources: New Constructs, LLC and company filings.

Figure 10 compares the firm's implied future NOPAT in this scenario to its historical NOPAT. In any scenario worse than this one, Snap holds significant downside risk, as we'll show.

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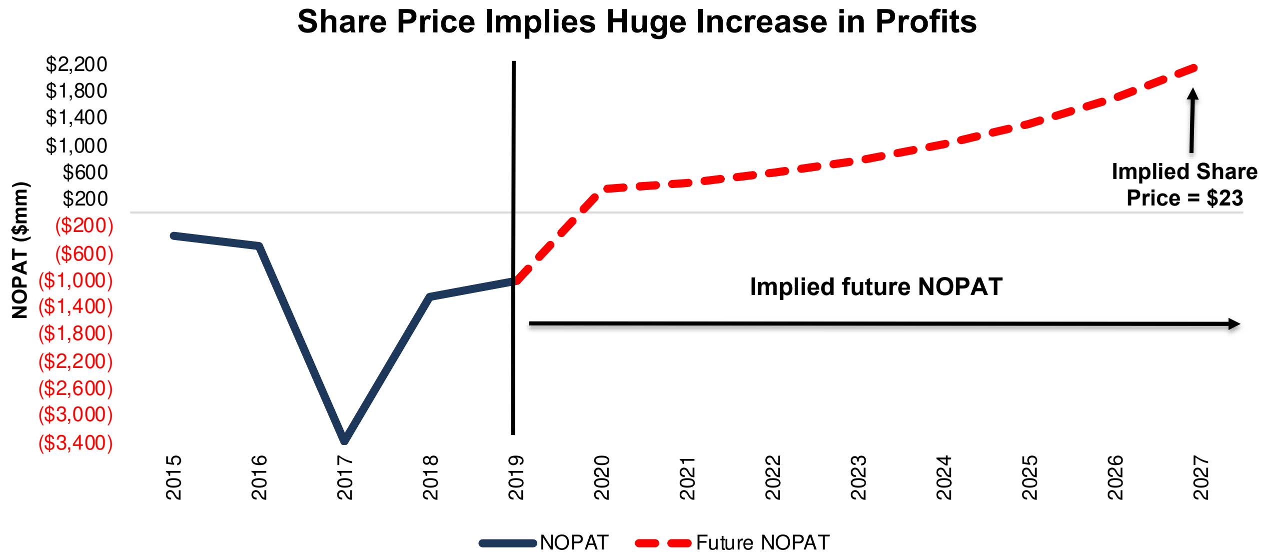
Figure 10: Current Valuation Implies Snap Will Generate More NOPAT Than Intuit (INTU) or eBay (EBAY)



Sources: New Constructs, LLC and company filings.

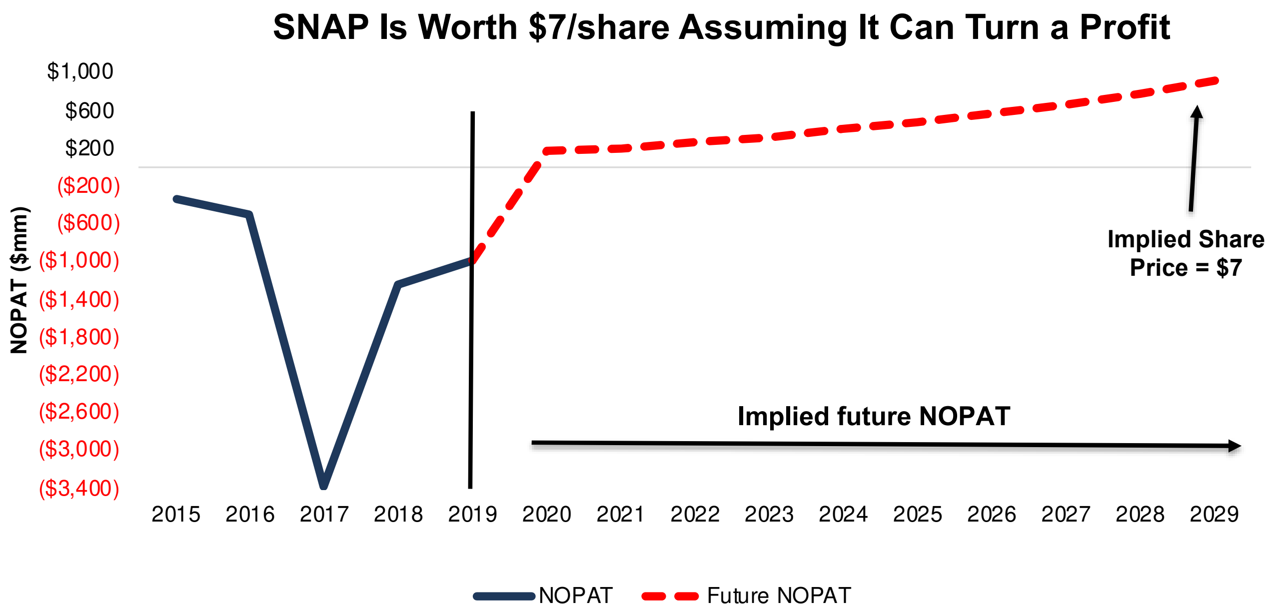
Significant Downside in a More Realistic Scenario

Given the competitive issues discussed so far, we believe the future cash flow scenario above is highly unlikely, if not impossible for Snap to achieve.

If we assume Snap can achieve an 8% NOPAT margin (equal to Twitter's margin over the past three years, and well above its current -53% margin) and grow revenue by 21% compounded annually (equal to longer-term consensus estimates through 2029) for the next decade, the stock is worth only $7/share today – a 70% downside to the current stock price. See the math behind this reverse DCF scenario.

Figure 11 compares the firm's implied future NOPAT in this scenario to its historical NOPAT.

Figure 11: Snap Has Large Downside Risk: DCF Valuation Scenario



Sources: New Constructs, LLC and company filings.

Each of the above scenarios also assumes Snap is able to grow revenue, NOPAT and FCF without increasing working capital or fixed assets. This assumption is highly unlikely but allows us to create best-case scenarios that demonstrate how high expectations embedded in the current valuation are. For reference, Snap's invested capital has increased by an average of $643 million (37% of 2019 revenue) over the past four years.

Acquisition Would Be Unwise

Often the largest risk to any bear thesis is what we call "stupid money risk", which means an acquirer comes in and pays for Snap at the current, or higher, share price despite the stock being overvalued. The high-flying valuations of certain tech stocks can be their own worst enemy, as they make the cost of acquisition much higher and the option to build out a standalone platform more attractive to potential suitors.

Nevertheless, it's possible that a firm could decide to buy Snap to jumpstart its entry into the social media market.

We think it would be unwise for a larger firm to acquire Snap anywhere close to its current valuation. Here's the math behind our thinking.

Walking Through the Acquisition Math

First, investors need to know that Snap has liabilities that make it more expensive than the accounting numbers would initially suggest.

- $334 million operating leases (1% of market cap)
- $150 million in outstanding employee stock options (<1% of market cap)

After adjusting for these liabilities, we can model multiple purchase price scenarios. For this analysis, we chose Microsoft (MSFT) as a potential acquirer of Snap given its recent interest in acquiring TikTok. While we chose Microsoft, analysts can use just about any company to do the same analysis. The key variables are the weighted average cost of capital (WACC) and ROIC for assessing implied stock prices for a deal to create value for the acquirer.

Even in the most optimistic of scenarios, Snap is worth less than its current share price.

Figures 12 and 13 show what we think Microsoft should pay for Snap to ensure it does not destroy shareholder value. There are limits on how much Microsoft should pay for Snap to earn a proper return, given the NOPAT or free cash flows being acquired.

Each implied price is based on a 'goal ROIC' assuming different levels of revenue growth. In each scenario, the estimated revenue growth rate is 27% in year one, 38% in year two, and 32% in year three, or equal to consensus. In scenario 1, we assume revenue grows 32% in years four and five, or a continuation of consensus estimates. In scenario 2, we assume 40% revenue growth in years for and five to illustrate a better-case scenario where we assume Snap could grow revenue even faster with the resources of Microsoft.

We conservatively assume that Microsoft can grow Snap's revenue and NOPAT without spending any working capital or fixed assets beyond the original purchase price. We also assume Snap achieves a 20% NOPAT margin, which is greater than Twitter ever achieved, but still below Facebook. For reference, Snap's TTM NOPAT margin is -53%.

Figure 12: Implied Acquisition Prices for Value-Neutral Deal

To Earn 6% ROIC On Acquisition		
Revenue Growth Scenario	SNAP's Implied Stock Value	% Discount to Current Price
32% CAGR for 5 years	$13	44%
35% CAGR for 5 years	$15	36%

Sources: New Constructs, LLC and company filings

Figure 12 shows the implied values for SNAP assuming Microsoft wants to achieve an ROIC on the acquisition that equals its WACC of 6%. This scenario represents the minimum level of performance required not to destroy value. Even if Snap can grow revenue by 35% compounded annually for five years and achieve a 20% NOPAT margin, the firm is worth much less than $24/share. It's worth noting that any deal that only achieves a 6% ROIC would not be accretive to shareholders, as the return on the deal would equal Microsoft's WACC.

Figure 13: Implied Acquisition Prices to Create Value

To Earn 39% ROIC on Acquisition		
Revenue Growth Scenario	SNAP's Implied Stock Value	% Discount to Current Price
32% CAGR for 5 years	$0.95	96%
35% CAGR for 5 years	$1.25	95%

Sources: New Constructs, LLC and company filings

Figure 13 shows the implied values for Snap assuming Microsoft wants to achieve an ROIC on the acquisition that equals 39%, its current ROIC. Acquisitions completed at these prices would be accretive to Microsoft's shareholders. Even in this best-case growth scenario, the implied value is far below Snap's current price. Without significant increases over the margins and/or revenue growth assumed in this scenario, an acquisition of Snap at its current price destroys significant shareholder value

Catalyst: Market Can Remain Irrational, But Missed Expectations Could Send Shares Lower

At the end of April, the consensus estimate for Snap's 2020 earnings was just -$0.23/share. Jump forward to today, and the 2020 consensus estimate has improved to -$0.19/share, despite declining ad spending across the industry. Snap hasn't missed earnings in any of the past 12 quarters, but with the global uncertainty, slowing ARPU, and stiff competition, continued beats could be much more difficult.

Further, the COVID-driven increase in user growth, which Snap described as an increase in daily active users at the onset of widespread shelter-in-place orders, is already fading. In the 2Q20 conference call, management noted "this initial lift [in daily active users] dissipated faster than we anticipated as shelter in place conditions persisted." Such a bump in user growth will not likely recur, which could pressure user growth rates moving forward.

If user growth doesn't meet expectations, disappointed investors might dump their shares in favor of ones with better risk/reward profiles.

Or, investors, at any time, could tire of subsidizing the operations of a highly unprofitable business.

What Noise Traders Miss With SNAP

These days, fewer investors pay attention to fundamentals and the red flags buried in financial filings. Instead, due to the proliferation of noise traders, the focus tends toward technical trading tends while high-quality fundamental research is overlooked. Here's a quick summary for noise traders when analyzing Snap:

- Most DAUs growth comes from unprofitable markets
- ARPU growth is in long-term decline
- Profitability is well below competition and expenses remain significantly above revenue
- Valuation implies Snaps DAUs will nearly equal Facebook's by 2027

Executive Compensation Details are Minimal Given Snap's Multi Class Shares

As noted in our original report on Snap, the firm's multiple classes of shares leave investors with no say on important matters and much less disclosure relating to corporate governance (not ever a good thing). Because the publicly-traded A shares have no voting rights, Snap is not required to file proxy statements which normally detail the compensation committee's decision-making process for determining executive compensation.

Instead, investors get a less detailed breakdown in Snap's 10-K. In 2019, Snap executives were eligible for base salaries, equity based awards, and discretionary performance-based awards. Snap notes that the majority of executive compensation is in the form of equity-based awards, which vest over multiple years, and the value of which is tied to Snap's stock price. Discretionary performance-based awards can also be approved based on individual performance, overall performance, and the recommendation of the CEO.

We've highlighted the problems that can occur when compensation plans are tied directly to stock price, namely that executives are incentivized to drive the stock higher with no accountability to the real economics of the business or true shareholder value.

Without significant changes to its executive compensation, Snap will continue to be incentivized to boost top-line growth numbers with no attention to prudent capital stewardship. We'd recommend the firm's compensation committee tie pay to improving ROIC, which is directly correlated with creating shareholder value.

Insider Are Selling and Short Interest is Notable

Over the past 12 months, insiders have purchased 17 million shares and sold 40 million shares for a net effect of ~23 million shares sold. These sales represent nearly 2% of shares outstanding.

There are currently 73 million shares sold short, which equates to 5% of shares outstanding and nearly three days to cover. The number of shares sold short has declined by 12% since last month, but it's clear a portion of investors aren't buying Snap's story.

Critical Details Found in Financial Filings by Our Robo-Analyst Technology

As investors focus more on fundamental research, research automation technology is needed to analyze all the critical financial details in financial filings as shown in the Harvard Business School and MIT Sloan paper, "Core Earnings: New Data and Evidence".

Below are specifics on the adjustments we make based on Robo-Analyst findings in Snap's 10-Q and 10-K:

Income Statement: we made $237 million of adjustments, with a net effect of removing $47 million in non-operating expenses (3% of revenue). You can see all the adjustments made to Snap's income statement here.

Balance Sheet: we made $537 million of adjustments to calculate invested capital with a net decrease of $489 million. One of the most notable adjustments was $152 million for midyear acquisitions. This adjustment represented 4% of reported net assets. You can see all the adjustments made to Snap's balance sheet here.

Valuation: we made $2.1 billion of adjustments with a net effect of decreasing shareholder value by $2.1 billion. There were no adjustments that increased shareholder value. Apart from total debt, the most notable adjustment to shareholder value was $150 million in outstanding employee stock options. This adjustment represents <1% of Snap's market cap. See all adjustments to Snap's valuation here.

Unattractive Funds That Hold SNAP

The following funds receive our Unattractive-or-worse rating and allocate significantly to Snap.

1. Global X Social Media ETF (SOCL) – 6.6% allocation and Unattractive rating
2. Invesco Dynamic Software ETF (PSJ) – 5.4% allocation and Unattractive rating
3. Marsico 21st Century Fund (MXXIX) – 4.2% allocation and Unattractive rating
4. ARK Next Generation Internet ETF (ARKW) – 2.9% allocation and Very Unattractive rating
5. First Trust U.S. Equity Opportunities ETF (FPX) – 2.7% allocation and Very Unattractive rating
6. SoFi Gig Economy ETF (GIGE) – 2.5% allocation and Unattractive rating

This article originally published on September 14, 2020.

Disclosure: David Trainer, Kyle Guske II, and Matt Shuler receive no compensation to write about any specific stock, sector, style, or theme.

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It's Official: We Offer the Best Fundamental Data in the World

Many firms claim their research is superior, but none of them can prove it with independent studies from highly-respected institutions as we can. Three different papers from both the public and private sectors show:

1. Legacy fundamental datasets suffer from significant inaccuracies, omissions and biases.
2. Only our "novel database" enables investors to overcome these flaws and apply reliable fundamental data in their research.
3. Our proprietary measures of Core Earnings and Earnings Distortion materially improve stock picking and forecasting of profits.

Best Fundamental Data in the World

Forthcoming in The Journal of Financial Economics, a top peer-reviewed journal, Core Earnings: New Data & Evidence proves our Robo-Analyst technology overcomes material shortcomings in legacy firms' data collection processes to provide superior fundamental data, earnings models, and research. More details.

Key quotes from the paper:

- "[New Constructs'] *Total Adjustments* differs significantly from the items identified and excluded from Compustat's adjusted earnings measures. For example… 50% to 70% of the variation in *Total Adjustments* is not explained by *S&P Global's (SPGI) Adjustments* individually." – pp. 14, 1st para.
- "A final source of differences [between New Constructs' and S&P Global's data] is due to data collection oversights…we identified cases where Compustat did not collect information relating to firms' income that is useful in assessing core earnings." – pp. 16, 2nd para.

Superior Models

A top accounting firm features the superiority of our ROIC, NOPAT and Invested Capital research to Capital IQ & Bloomberg's in Getting ROIC Right. See the Appendix for direct comparison details.

Key quotes from the paper:

- "…an accurate calculation of ROIC requires more diligence than often occurs in some of the common, off-the-shelf ROIC calculations. Only by scouring the footnotes and the MD&A [as New Constructs does] can investors get an accurate calculation of ROIC." – pp. 8, 5th para.
- "The majority of the difference…comes from New Constructs' machine learning approach, which leverages technology to calculate ROIC by applying accounting adjustments that may be buried deeply in the footnotes across thousands of companies." – pp. 4, 2nd para.

Superior Stock Ratings

Robo-Analysts' stock ratings outperform those from human analysts as shown in this paper from Indiana's Kelley School of Business. Bloomberg features the paper here.

Key quotes from the paper:

- "the portfolios formed following the buy recommendations of Robo-Analysts earn abnormal returns that are statistically and economically significant." – pp. 6, 3rd para.
- "Our results ultimately suggest that Robo-Analysts are a valuable, alternative information intermediary to traditional sell-side analysts." – pp. 20, 3rd para.

Our mission is to provide the best fundamental analysis of public and private businesses in the world and make it affordable for all investors, not just Wall Street insiders.

We believe every investor deserves to know the whole truth about the profitability and valuation of any company they consider for investment. More details on our cutting-edge technology and how we use it are here.

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