THE OWL FUND Alphabet

Initiation of Coverage
October 2, 2019

Luke Greenley | Lead Analyst
lgreenley@theowlfund.com | (610) 613-0219
Nathan Latimer | Associate Analyst
nlatimer@theowlfund.com | (484) 868-6191
Fred Shub | Associate Analyst
fshub@theowlfund.com | (215) 840-9391

Alphabet, Inc.

Exchange: NASDAQ | Ticker: GOOGL | Target Price: $1,435.00

INVESTMENT THESIS

- GOOGL stock has experienced a tumultuous year, beginning with regulatory threats made by Congress and the DoJ in September of 2018. Furthermore, following multiple top line misses with growth rates below expectations, investors scrutinized capex initiatives and a lack of subsidiary disclosure. Finally, the threat of a Huawei blacklisting enhanced the sell off during the summer.
- Overall, our team believes that overhangs regarding threats of regulatory intervention by the FTC and DOJ are overblown and unrealistic, as any substantiated investigation would likely span much longer than the Fund's investment horizon. Additionally, we feel that investors overreacted to slight top line misses and discounted underlying strong double-digit growth and improved efficiency across business lines.
- Looking forward, we expect GOOGL to leverage its massively under-monetized multi-billion user base while simultaneously deploying eCommerce initiatives that are well positioned to optimize mobile app monetization and drive advertising growth. Further expansion of the Google Cloud Platform and protection supplied by an impermeable balance sheet reaffirm our confidence in GOOGL's cash flexibility and commitment to the creation of shareholder value.
- GOOGL is currently trading at a LTM P/E multiple of 27.4x, representing a 7.6% discount to its 3-year average, as well as an 18.6% discount to its 1-year average spread to its internet media peer group. With a target multiple of 32.6x derived from the 1-year average of GOOGL's peer group, we estimate shares returning ~19% upside, represented by a target price of $1,435/share.

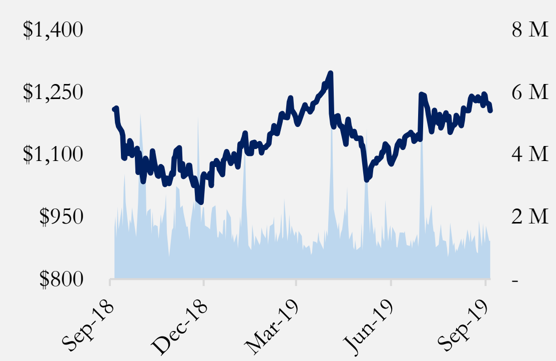
COMPANY OVERVIEW

Alphabet, Inc. (NASDAQ: GOOGL) is a holding company headquartered in Mountain View, CA that owns and operates numerous businesses, the largest of which is Google. The company engages in online advertising, web-based search, software applications, mobile operating systems, consumer content, as well as the sale of hardware products. GOOGL reports revenue through two segments, Google (99.6% of revenue) and Other Bets (0.4% of revenue). Geographically, Alphabet operates in the United States (46.2% of revenue), Europe (32.6%), Asia (15.6%), and Other Americas (5.6%).

Key Statistics (US$ in M, except per share data)

Price (2-Oct)	$1,206.00	**52-Week Low**	$977.66
Exp. Return	~19%	**52-Week High**	$1296.98
Shares O/S	747	**Div. Yield**	-
Market Cap	$849,753	**Ent. Value**	$742,923

One-Year Price Graph



Earnings (Adj.) / Revenue Surprise History

Quarters	EPS	Revenue	Δ Price
3Q'18	15.05%	(0.64%)	(1.80%)
4Q'18	20.17%	1.64%	0.92%
1Q'19	14.65%	(1.86%)	(7.50%)
2Q'19	6.63%	2.82%	9.62%

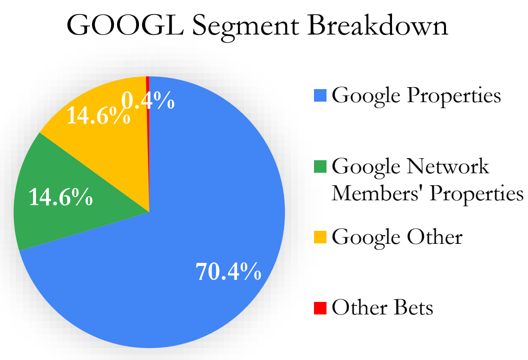
Earnings Projections (Adj.)

	Q1	Q2	Q3	Q4	FY
2017A	$7.79	$8.67	$9.64	$9.93	$36.03
2018A	10.14	8.87	11.66	11.44	42.11
2019E	10.19	10.72	15.03	15.87	51.81
2020E	15.54	16.66	16.95	18.35	67.50

Source: Bloomberg, FactSet, CapIQ

GOOGL BUSINESS OVERVIEW

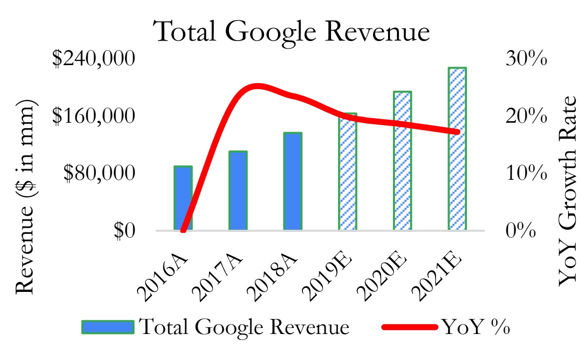
GOOGL reports revenue in two main segments which can be broken down into four smaller business lines. GOOGL's main segment, Google, can be broken down into Google Properties, Google Network Members' Properties, and Google Other revenues. The smallest segment, Other Bets, is not broken down into subsections.



Google (99.6% of FY'18 Revenue)

The Google segment is composed primarily of advertising revenue. Companies purchase advertising through Google Ads, Google Ad Manager, Google Marketing Platform, or a number of smaller platforms. Both subsegments offer advertising on a cost-per-click basis, meaning advertisers primarily only pay Google when a user clicks on a placed advertisement. For certain ads, Google is paid when a user engages with an ad for a specified amount of time, e.g. viewing an ad on YouTube for more than a pre-set length. Some customers pay for advertising on a cost-per-impression basis, meaning that revenue is generated by Google each time an ad is displayed, whether the ad is clicked on or not. Within the Google segment, revenue is broken down by Google Properties (including G-suite products such as Gmail, Maps, Search, and YouTube), Google Network Members' Properties, and Other (comprised of Google Cloud Platform, Android, Play Store and hardware products such as the Pixel smartphone, Chromebook, and Google Home products). GOOGL's products in the segment include the world's largest search engine (Google), the largest smartphone operating system (Android), and the largest video sharing platform (YouTube).

- **<u>Google Properties (70.4% of Total Revenue)</u>** - The segment is comprised of advertising revenues from Google Search, Gmail, and other G-Suite apps. The segment offers services that include AdWords, AdSense and AdSense for Content. Expansion in this segment is driven by increases in mobile search as well as global expansion of products, advertisers, and user bases. Regarding customer traffic, Google Properties has seen an increase in paid clicks in each of the past two years.



- **<u>Google Network Members' Properties (14.6% of Total Revenue)</u>** - The segment includes ad revenues generated on properties that Google does not own. This includes all third-party websites that use AdMob, AdSense, and Google Ad Manager. Revenue from ads is generated primarily on a cost-per-impression basis.
- **<u>Other Revenues (14.6% of Total Revenue)</u>** - The main revenue drivers in this segment are Google Cloud offerings, apps and content from the Google Play store, in addition to hardware sales of products such as the Pixel smartphone and Google Home devices. The Google Cloud Platform (GCP) is the fastest growing growth driver in this segment.

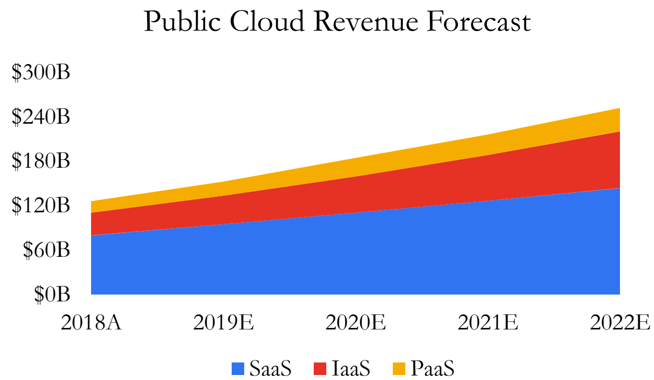
Other Bets (0.4% of FY'18 Revenue)

The Other Bets segments includes a variety of small "moonshot" companies in various stages of development. The companies are focused on trends of the future, such as driverless vehicles, artificial intelligence, drone delivery and life sciences. Each company has its own CEO and operates like a start-up. Companies in the Other Bets segment include Waymo, GV, Access, Verily, X, Calico, Nest, and CapitalG. The companies generate revenue primarily through internet and TV services, as well as licensing and R&D services.

INDUSTRY OVERVIEW

Head in the Clouds

It's impossible to talk about the future of technology without talking about "the Cloud". The Cloud has revolutionized the way that enterprises think about IT resources. In essence, cloud computing is an alternative method of resource delivery. Instead of buying hardware and software to construct and maintain data centers, enterprises can utilize access to computing resources over the internet with the cloud.



- Benefits to adopting cloud computing include reduced costs, faster speeds, productivity, security, reliability, as well as an improvement in scaling capabilities. Businesses enhance the ability to analyze vast amounts of data, which is essential in today's data-driven economy.
- There are three main services provided by cloud companies: Software as a Service (SaaS), Platform as a Service (PaaS), and Infrastructure as a Service (IaaS). In SaaS, cloud providers use the ability to access software applications over the internet, e.g. Google Drive. This is the largest and simplest form of cloud computing. PaaS provides an on-demand environment for developing and testing software applications. The service allows enterprises to be more efficient and spend time actually coding and developing projects rather than dealing with an in-house platform. Lastly, IaaS providers rent IT infrastructure ranging from servers to operating systems.
- Additionally, there are currently three different ways to deploy cloud services: public cloud, private cloud, or hybrid cloud. A private cloud is used only by one business, and is hosted either on-site or by a third-party cloud service provider (CSP) such as GCP. This is the most expensive but safest option, allowing companies to run applications that would normally only be run in-house. A public cloud is owned and operated entirely by a CSP. This option boasts huge cost savings, but the downside is a lack of security and data control. A **hybrid cloud combines a private and public cloud** with the technology that allows data to flow between them. This option gives business more **flexibility, deployment options, and security**.
- Currently, there are three main players in the cloud market: Amazon Web Services (AWS), Microsoft Azure, and Google Cloud Platform (GCP). Currently, AWS dominates the market with a 47% market share, Azure sits at 22%, and GCP trails at 8%. GCP, however, is **the fastest growing cloud provider**, as it was sitting on only a 6% market share a year ago. Since 4Q'17, GCP has doubled its annual revenue run rate and is closing in fast.

Cloudy with a Chance of Profits

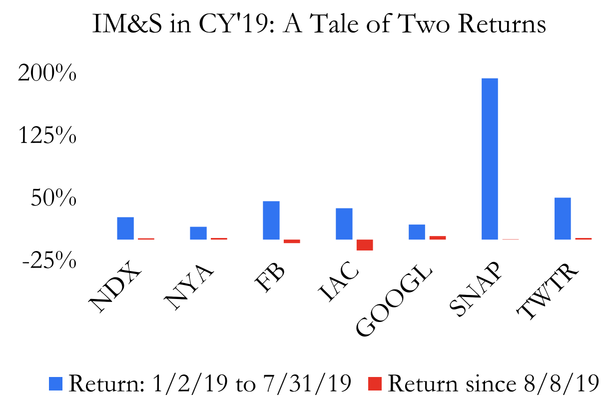
- In July, the International Data Corporation released an update to its Cloud Services Spending Guide. According to the report, public cloud spending will grow at a **22.3% CAGR** from 2019 to 2023, becoming a **$300B+ industry**. Within this forecast, SaaS is expected to account for over half of all spending. This spending will be driven by the growth of CRMs and ERMs. IaaS will be the second largest category, but will be the fastest growing segment, at a 32.0% CAGR.
- Moving forward, **hybrid cloud computing is poised to take center stage**. The reluctance of business owners to entrust sensitive financial data to an outsourcing agent has been the main problem for cloud adoption. The hybrid cloud solves this problem, as it gives enterprises unmatched flexibility. Sensitive data can remain in-house but can also be transferred to a public cloud when needed. The hybrid cloud also gives customers the ability to perform Big Data analytics without slowing down internal operations. These analytics are enhanced by the continued development of AI and Machine Learning, two areas in which **GCP has immense expertise**.

Monetization, Valuation, and Consternation: Uncertainty Reigns Supreme in IM&S

U.S. interactive media & services (IM&S) equities performed well through July 2019, with Internet media stocks such as Alphabet (+19% YTD), Facebook (+39% YTD) and Interactive Corp (+47% YTD) contributing to a ~20% rally in the NASDAQ 100 (NDX). Strong returns from Snap, Inc. (+210%) and Twitter (+48%) helped fuel the NYSE Composite Index's (NYA) ~16% rise through July. Investors have bid up U.S. internet media stocks on the prospect of increased monetization of content and user bases. After 2Q'19 earnings, TWTR shares jumped ~12% on news that average monetizable daily active users (DAUs) grew by 14% YoY, while SNAP rose ~13% after reporting 13mm new DAUs in the quarter. FB beat estimates on average revenue per user, rallying shares 1% despite worries of FTC regulation. IAC rose ~11% after majority stake Match Group reported an 18% YoY increase in average subscribers.

- As the returns of internet media stocks grew, **valuations became increasingly frothy.** From January to July CY'19, the average forward EV/Sales multiple of IAC, SNAP, TWTR, and FB expanded ~90% to 7.43x (*See Appendix Exhibit IX).* The average forward P/E of the group, excluding SNAP, expanded ~30% to 29.3x. Fueled by strong performance in 1H'19, firms set strong expectations for 2H'19, and investors reaffirmed their conviction that returns could continue on the heels of expanding user bases and increased monetization.

Conditions changed abruptly for IM&S in August, when global macroeconomic pessimism and new developments in the U.S.-China trade war stopped the monetization-fueled rally in its tracks. On August 1, President Trump announced a 10% tariff on an additional $300B of Chinese goods starting September 1. The NDX and NYA had been able to shrug off previous developments in the trade war, but this time was different, as the tariffs targeted a plethora of consumer goods. Within a day of the news, the group mentioned above dropped an average of 4%.



- As tariff worries increased, investors who bid IM&S stocks to sizeable premiums grew pessimistic. Amidst a deteriorating macroeconomy, it became obvious that **the prices of user-monetizing internet stocks had moved well ahead of underlying fundamentals.**
- Since a slight recovery on August 8th, IM&S equities have struggled; shares of IAC (-12.8%) and FB (-4.1%) are down, while SNAP (+0.1%) and TWTR (+2.2%) have stalled significantly. GOOGL (+4.5%) is the only stock of the group to see modest returns. The meteoric rise in valuations has begun to fall back to Earth, with the average forward EV/Sales multiple contracting 5.2% to 6.64x and forward P/E (excluding SNAP) growing 0.7% since Aug. 8. GOOGL is the only member of the group to see EV/Sales expansion during the period.
- The only thing that remains constant is uncertainty in the market, as investors seemingly flip back and forth between investment disciplines based on the relative optimism or pessimism of the day's headline. In order for firms to continue driving returns, they must be positioned to succeed from a fundamental standpoint. This means companies can no longer carry themselves on the back of subscriber growth and increased user monetization and must instead focus on improving the fundamentals that support their user expansion stories.
- Alphabet did not experience the same run-up as its IM&S peers through July, as growth-minded investors wrote off GOOGL as a muted value play. After uncertainty rocked the market and investors began to stray from their myopic view on growth indicators, GOOGL has seen stronger share price appreciation from its peers because of its **strong cash position** and solid fundamentals that support continued appreciation. As investors continue to trade with uneasiness on the global growth outlook, we see GOOGL share gains driven from its **fundamentally-defensive position and underrated growth initiatives**.

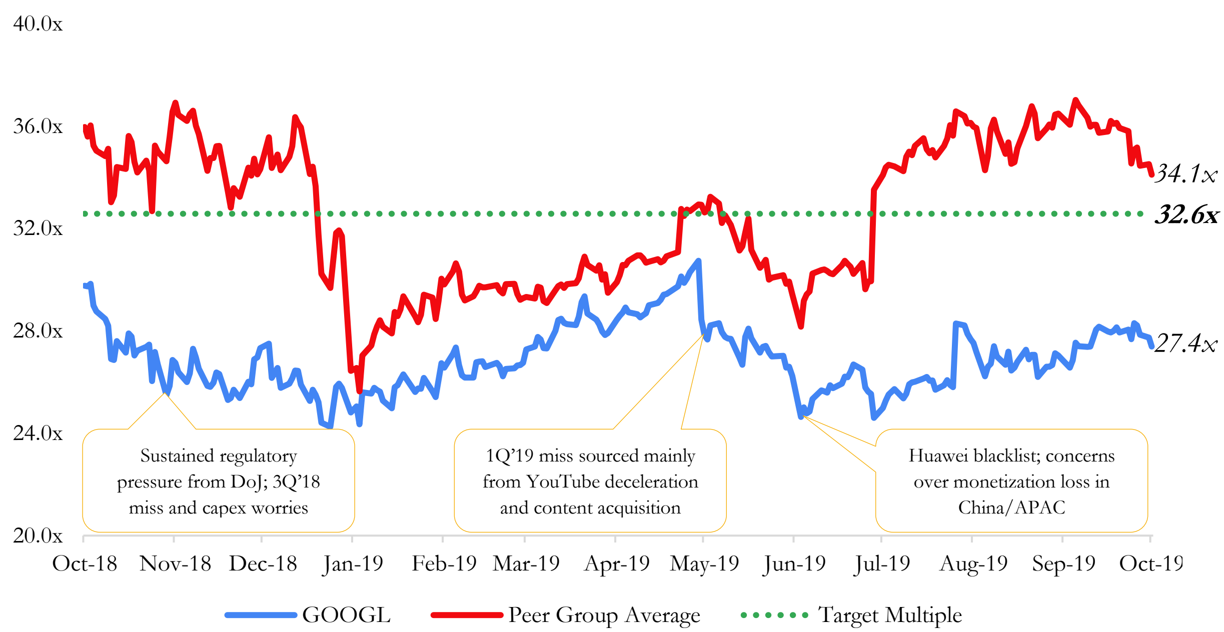
UNDERVALUATION & THESIS:

GOOGL's Story

- GOOGL is currently trading at a LTM P/E multiple of 27.4x, representing a 7.6% discount to its 3-year average, as well as an 18.6% discount to its 1-year average spread to its internet media peer group. GOOGL also trades at a 15.6% discount to its 2-year average EV/EBITDA multiple of 19.0x.
- **September 27, 2018** - Alphabet stock began to face pressure in late September as Republican members of Congress accused the search giant of perpetuating a bias against Conservatives. CEO Sundar Pichai agreed to testify to defend the company as well as meet with President Trump, but investor worries about a regulatory crackdown on GOOGL punished the stock more than 14% over the following week.
- **October 26, 2018** - Alphabet fell on 3Q'18 revenues that slightly missed analyst expectations, along with sales growth rates from Search and YouTube that came in at 22%, slower than the prior quarter. Investors were also concerned about the magnitude of capital expenditures to support content acquisition, the buildout of additional data centers, and consumer products like the Pixel smartphone, as spending was up 49% YoY. Shares fell as much as 5% in response and remained at suppressed levels until Christmas Eve lows.
    - However, beyond the headline-grabbing revenue miss, during the quarter top line growth was still very strong. Other revenues within the Google segment grew 29% YoY, and bottom line grew 21% YoY, with EPS blowing by analyst estimates with a surprise of 25% driven by a favorable tax rate and a traffic acquisition cost (TAC) decline YoY flowing through to the bottom line. The largest hit to top line was due to effects of a strengthening U.S. dollar.
- **April 30, 2019** - In 1Q'19, GOOGL's revenue numbers came in soft, missing analyst expectations by 3%. Overall revenue growth failed to meet expectations, which was not taken kindly by investors. The majority of deceleration was sourced from YouTube, which had recently undergone changes through a strategic initiative that the Company implemented to scale content production and maximize the user experience, such as scaling YouTube Premium and YouTube TV. The changes had no material impact to YouTube's performance long-term, as since then, YouTube has returned to being GOOGL's secondary engine of growth. In addition to the top line miss, news broke that GOOGL's former Chairman and CEO Eric Schmidt was stepping down from his board position.
    - A strong beat on the bottom line was overshadowed by another slight top line miss, as the rate of growth was not up to par with what investors had expected. However, costs associated with the provision of ads (TAC) fell by 200 bps for the quarter. Still, investor scrutiny regarding a lack of revenue and cost disclosures by subsidiary caused the stock to sell off by more than 10%.
- **May 20, 2019** - President Trump's move to blacklist Huawei sent shockwaves throughout the global industry supply chain. A sustained blacklist of Huawei would cut off the sale of hardware and software to the global equipment vendor, hampering growth in initiatives such as the buildout of 5G technology as well as limiting GOOGL's Android software in consumer facing products in China.
    - Shares fell more than 10% after the news, as the implications of a sustained blacklist would mean that Android-OS smartphones would not be equipped with proprietary apps like Google Maps and Gmail. This was concerning to investors, because mobile app exposure is essential for GOOGL to spread consumer apps to additional users, and support growth in the mobile ad business through increased app monetization.
- **July 1, 2019** - President Trump, in his most recent bout of disdain with Big Tech, stated in an interview that companies such as TWTR, FB, and GOOGL "were against" him. This prompted investors to speculate on a course of action from the president's camp, prolonging a regulation-induced sell off to the tune of ~4%.

Outlook

- Overall, our team believes that threats of regulatory intervention by the FTC and DOJ are overblown and unrealistic, as any investigation would likely take a number of years, spanning much longer than the Fund's investment horizon. Regulation of internet companies is like nothing agencies have ever seen before, leading us to believe that a material threat to GOOGL's operations in the near term is baseless. Furthermore, GOOGL stock has shown resilience before (*See Timeline Below*), while concurrently retaining numerous competitive advantages in a space with minimal competitive threats. Its market positioning and defensiveness in response to macroeconomic and legislative developments reiterate our confidence in outperformance going forward.
- In regards to additional pressures on GOOGL stock, we feel that investors overreacted to slight top line misses and discounted underlying strong double-digit growth across business lines. Additionally, investors continue to ignore improved efficiency of the ad business, with multiple quarters of traffic acquisition costs (TAC) coming in ahead of expectations. In addition, GOOGL has gained solid footing to benefit from prior investment initiatives with respect to data infrastructure, advertising content and consumer facing technology. The ancillary threats from the blacklisting of Huawei are a short-term and low magnitude risk in our view, as the U.S. recently returned previously confiscated Huawei equipment, prompting Huawei to drop its lawsuit against the U.S.
- Looking forward, we expect GOOGL to leverage its strong and massively unmonetized mobile consumer base of 1B+ users on Maps and Discover to support growth in the advertising business. In addition, optimization and rollout of a series of eCommerce products through the Google platform will support eCommerce search monetization to bolster further growth in the segment. Finally, sustained expansion of the Google Cloud Platform supported by Anthos and the $2.6B acquisition of Looker will allow GOOGL to close the competitive gap between AWS and Azure in the rapidly expanding Cloud market. Supported by a pristine balance sheet and cash flexibility, we view all of these initiatives as accretive to the growth and efficiency of GOOGL's core business lines. Investors have discounted the fundamental strength and profitability of the Company, while overreacting to regulatory threats, resulting in a widened discount of the stock relative to its internet media peers*. In our view, this relative discount is unjustified, and our team recognizes this value opportunity to recommend a BUY on GOOGL stock with a price target of ~$1,435/share, implying ~19% upside from current levels.



**Note: Peer Group includes FB, TWTR, BIDU, IAC, MSFT, as to reflect GOOGL's initiatives across app monetization, Cloud and eCommerce.*

ALPHABET VS. REGULATORY THREATS – A TIMELINE

July 18, 2018 - European regulators fined Alphabet a record-high $5B and ordered the company to cease using the Android operating system to block rivals, in response to allegations that GOOGL intentionally thwarted competition in the region.

- GOOGL shares dipped ~1% in the following days before rallying back to weekly highs.

September 5, 2018 - Alphabet declined to testify before the Senate Select Committee on Intelligence on social media and foreign influence in the States, amongst criticism from Congress.

- Shares, along with other notable Big Tech firms, continued their fall from late August, but began to rally within a week of the news.

December 11, 2018 - CEO Sundar Pichai testified in front of Congress in regards to Google+ data breaches, plans for a censored Chinese search engine, and bias towards conservatives.

- There was no material impact on the stock.

March 20, 2019 - EU antitrust officials once again fined Alphabet $1.7B for hindering Google rivals in online search advertising for over a decade.

- Shares initially rose before an 8-day contraction that sent shares down nearly 5%, after which the stock rallied ~4% in four days.

April 9, 2019 - Google testified before the House Judiciary Committee about the rise of white nationalism on social media and was forced to turn off comments on the YouTube stream due to hateful rhetoric.

- After the event, there was no material impact on the stock, as the stock continued to rally.

June 10, 2019 - The House Judiciary Committee began its inaugural hearing on anti-competitive practices in Big Tech and criticized Alphabet over its power over the online market and public life.

- Again, even under heavy scrutiny from elected officials, the stock saw no material effect.

July 16, 2019 - Alphabet testified before the House Judiciary Committee and faced further criticism for market power and political bias.

- No initial stock movement ensued, but then GOOGL fell with the rest of the big tech names through the end of the week before rallying back by the middle of the following week.

August 28, 2019 - An EU spokesperson confirmed to CNBC that the Competition Commission would be looking into anti-competitive behavior in the Company's "Google for Jobs" program, drawing parallels to a $2.7B fine against GOOGL in 2017.

- After the break, there was no effect on the stock; shares rallied through the week.

September 9, 2019 - Attorneys general for 50 U.S. States and territories announced an antitrust probe into Google.

- Shares were flat before rallying towards the end of the week.

Key Takeaway

- The more recent the event, the less investors seem to be threatened. Each major regulatory development of the past twelve months has been met with apathy at worst and disregard at best, with shares more likely to rally than fall in the days following a seemingly-major proceeding. In our view, these aforementioned events reinforce the thesis that GOOGL stock **will not realize any significant impact from regulatory proceedings** in the near term.

CATALYSTS & DRIVERS:

Monetization of the G-Suite – A Road Map for Advertising Growth

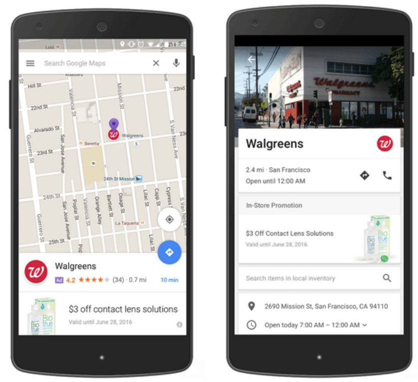
Google Maps

Google Maps has emerged as a "utility" type service, with a consistent user base of 1B+ users on mobile and desktop, much like Search. The platform, however, is vastly under-monetized and GOOGL is sitting on a treasure trove of customer data and advertiser relationships from businesses that aim to expand their customer base. In August 2019, the Company announced a new initiative on Google Maps to increase monetization rates with local, national and branded advertisers through sponsored ads paired with location searches driven by local intent, e.g. when a consumer searches for a certain location or establishment "near me." Expected to complete beta testing in 4Q'19-1Q'20, the broad rollout of Sponsored Listings paired with local campaigns will allow for businesses to become more visible to consumers on the Google Maps platform while driving an increased rate of foot traffic in brick-and-mortar locations.

- Local ad campaigns were previously only available to advertisers with multiple store locations and thousands of ad impressions, and that had been tailored to fostering foot traffic. Including a more localized footprint **enhances monetization** and gives GOOGL a **new way to utilize and optimize the base** it has already built.

Promoted Pins

- Promoted Pins are branded pins (denoted by a logo) that appear within the Maps platform that serve to virtually promote a business location. The initiative allows businesses in a certain geographic area to stand out to prospective customers while simultaneously advertising an in-store promotion. Google, deploying the use of its data analytics and machine learning expertise, uses a blend of query context, location, browsing history, time of day, and customer behavior to return the optimal ad to display. This prevents a customer from receiving an ad from a store they never frequent, thus increasing the probability of a purchase.



Local Inventory Search

- Through customizable Local Pages, advertisers can choose the format and content of their Maps page, including store hours, phone number, address, etc. However, according to Google data, 25% of customers will not follow through with a store visit due to uncertainty of product availability. Through this new initiative, Google can accept a local inventory feed of price and quantity information from businesses, which offers customers more clarity on stocking information regarding the product of interest, increasing the likelihood of a sale.

Google's Motivation

- As an advertising business, Google thrives when its advertising customers (businesses) expand their initiatives through marketing to consumers. As technological capabilities evolve and as Google's reach expands, the Company is searching for ways to optimize its vast customer base through monetization. For example, ~90% of global sales happen in store, and 30% of mobile searches are driven by a locational objective. Location-related searches are outpacing broader search growth by 50%, and Google searches guide customers to more than 1.5B locations annually. Furthermore, 84% of consumers conduct local searches, and of those local searching customers, 76% end up visiting a brick-and-mortar location within 1 day. Further, 30% of those searches result in a purchase.

- The conversion of consumers from local searcher into purchasing customer presents a massive opportunity for businesses to advertise on Google's platforms to make it easier for customers to find them. Google acts as a bridge from the business to the customer, and through Sponsored Listings, businesses are willing to pay a hefty toll to cross.

Mapping GOOGL's Benefit

- GOOGL charges advertisers on a cost-per-click basis, with clicks charged when customers elect to get location details, get directions, call, or visit the website of a business. Broadening the thoroughfare between businesses and customers through the rollout of Sponsored Listings is the next initiative to transform the **billion-user platform** into a **billion-dollar platform**.
- The upside from increased advertising spend from retailers, brands and local businesses to acquire customers within their geographic area based on ads with local intent is a significant opportunity for Maps. Long-term, this strategy will be effective in returning **higher ROI and CPC rates**, fueling the prosperity of the advertising business.
- In the near term, assuming that Google shows ads on just half of all Maps searches with local intent, while applying a **50% discount rate** due to lower initial conversion upon product rollout, and pricing Maps ads at a **20% discount** to the average price of a Google Search ad, we expect Maps to generate incremental Google Properties revenue of **$2.5B in 2020** (on total revenue of $6.3B), or **accretive to an additional 1.9% of segment revenue**. By 2022, we expect Google Maps to be a **$10B business**, adding **240 bps** to annual revenue growth.

<u>Discover Feed</u>

- Discover, formerly known as Google Now or Google Feed, is a news feed that appears on the Google app home page on iOS and Android, as well as the Google.com homepage on mobile devices. The feed is conducive to user customization based on what topics are of interest to them. To target ads to consumers, Google uses a combination of web/app activity, location data and device data to optimize offerings.
- To upscale the ad load and effectiveness of ad placement on Discover, Google plans to roll out Discovery ads to multiple channels across Search, YouTube, and mobile. Discovery ads are automated and targeted ads that use certain visual assets and campaign objectives from app developers and advertisers to construct and deploy ads on the Google network.
- The platform has become a key driver for the advertising business, accumulating over 800mm monthly users and well on its way to be **Google's next 1B user product**. The ads, structured utilizing Gallery ads (*See eCommerce Initiatives below*), are native to the feed and include a series of large pictures and a short description of a product or service tailored to the customer in question. The ad structure marks a divergence from legacy text-heavy ads, and aims to enhance marketability of products in a more visually-appealing way.

Discovering an Opportunity

- New advertising products are designed to reach out to and communicate with consumers when they are searching for something specific, but also when they are open to trying something new. This is what Discover and Discovery ads serve to do.

GOOGL Discover Revenue		**2020E**
Discover MAUs (mm)		800
* Assumed ARPU		$10.00
* Discount for Incremental Revenue		40%
Incremental Revenue		**3,200**
2020E Google Properties Revenue	$	114,639.8
/ Incremental Discover Revenue	$	3,200
% Segment Revenue Accretion		**2.8%**

- In the newsfeed competitive environment, monetization ranges from $3/user (Pinterest) to $20/user (Facebook). Incorporating the success of ad targeting and performance on Google's ecosystem, as well as competitive pricing and the sheet volume of ads shown, our team assumes a modest **$10 of revenue/user per year (ARPU)**, representative of a **50% discount** to FB ARPU as of 2018 (*See Appendix Exhibit VIII*). Given Discover's existing 800mm user base, we expect GOOGL to see strong demand from advertisers for Discovery ads, contributing **$3.2B in incremental revenue in FY'20**, or **2.8%** of segment revenue.

eCommerce Initiatives

Given that Google's network is most effective for advertisers and ad placement, coupled with the fact that eCommerce makes up ~25% of total Search revenue (equating to ~$27B projected in FY'20), Google retains quite a large opportunity for promoting eCommerce expansion with seamless purchases directly from Google's interconnected platforms. A series of newly announced eCommerce products set out to do just that, by promoting easier access to advertisers and making GOOGL a competitor in the eCommerce space.

Shopping Campaigns with Partners

- Manufacturers have long tried to compete on paid search by filtering advertising dollars to retailers to indirectly analyze the impact on sales that the ad dollars had. This is not preferred from the manufacturers point of view, as the use of ad spend is solely up to the discretion of the outsourced retailer. However, under Shopping Campaigns with Partners, manufacturers are able to directly control and track the impact of spending by advertising directly and instantly viewing the impact on sales that the spending has. Overall, the campaign enhances visibility to brands and how products are advertised on Google in search results, **meaning brands can spend more on Google Ads** to target advertising dollars more effectively. This offers significant upside for GOOGL as the Company aims to penetrate the $180B trade spend market in the U.S.

Deep Linking

- Google is also deploying Google Ads for deep linking, or the process of when a clicked link directs the customer to complete the action in an advertiser's mobile app for purchase. Deep linking will be integrated from ads on Google Search and Google Shopping, and expedites the purchasing process by minimizing customer logins and entering of payment credentials. According to Google data, **deep linking drives 100% more completion rates** than traditionally, offering an attractive opportunity for advertisers to provide a frictionless customer experience. Overall, higher completion rates are a win-win for Google and advertisers, **driving higher CPCs and monetization**, while also giving more power to advertisers to retain customers on proprietary apps.

Showcase Shopping Ads

- Showcase Shopping Ads feature a catalog of images embedded in the search result page. Showcase ads appear on searches for more broad, generic categories rather than specific products, giving a nod to Google's machine learning capabilities through the lens of ad targeting. The ads, originally launched on Search in 2016, have returned overwhelmingly positive results in terms of customer conversion. Since launch, 80% of traffic directed to advertisers' websites through Showcase ads was from new visitors. Heading into 4Q'19-1Q'20, GOOGL plans to launch these ads on **Image Search, YouTube, and the Discover Feed** as well.

Pay to Play

GOOGL eCommerce Search Revenue		2020E
Total Search Revenue	$	107,117
eCommerce as a % of Search Revenue		25.0%
Total eCommerce Revenue	$	26,779.26
Revenue Growth from eCommerce Suite		7.5%
Incremental Segment Revenue	$	2,008
% Segment Revenue Accretion		**1.8%**

- We view all of these recently announced initiatives, in addition to upgrades to the Google Shopping platform as a positive for supporting growth in completion rates, improving customer experiences, and fostering increased advertising spending across the Google ecosystem for best-in-class ad placement. Looking forward, we are bullish on GOOGL leveraging the pure power of advertising value that the Google ecosystem commands. We believe that the aforementioned **apps in the G-Suite are considerably under-monetized**, and that there is significant value to unlock as the Company expands the monetary benefits of the sheer scale it has built through the interconnected Google environment. All in, we expect the increased monetization efforts of Google Maps and the Discover Feed, on top of the optimization of eCommerce to generate total **incremental revenue of $7.7B**, contributing to ~38% of Google Properties projected **$20.3B** top line expansion in FY'20.

Sunshine Peeking Through the Cloud

The Google Cloud Platform (GCP) is the second component of Alphabet's Cloud service that also includes G-Suite. GCP offers a full suite of services, world-class infrastructure, and hybrid/multi-cloud capabilities, all while delivering leading security, responsiveness, and insights. According to CFO Ruth Porat, GCP is "one of the fastest growing" Alphabet businesses and "the primary driver of performance" within Cloud. 2Q'19 was the strongest quarter yet for GCP; Cloud reached an annualized run rate of $8B, up more than 100% from 4Q'17. 2Q'19 revenues for the Other Google subsegment grew 40% YoY to $6.2B, and management noted that Cloud was the largest driver within Other Google revenues and the third-largest revenue driver for Alphabet overall. Moving forward, Alphabet will continue to grow GCP through expanding its global reach and developing an experienced sales team, outpacing competition on Artificial Intelligence and Machine Learning, and driving value through strategic partnerships and acquisitions.

Growing the Footprint

- Alphabet is rapidly expanding the reach of its cloud products through the construction of new data centers across the globe. Last quarter, GOOGL launched the seventh APAC cloud region in Osaka, began the construction of three new data centers, announced the Cloud region in Las Vegas, and invested $1B into Dutch data centers. As it stands, GCP has over **100 locations across 20 regions**.
- Additionally, as part of a shift towards a client-based model, GOOGL is aggressively stepping up its hiring for enterprise sales reps and making incentives a larger part of the pay structure. Over the next few years, GOOGL plans to **triple its salesforce for GCP**.

Differentiation Through AI/ML

- Alphabet has leveraged its Artificial Intelligence and Machine Learning (AI/ML) abilities developed in its search and advertising businesses to develop the most innovative and adaptive cloud computing product on the market. Through AI/ML offerings, GCP customers are able to enhance and personalize customer interactions, gain valuable Big Data insights, and deliver cost-effective solutions at scale. Enterprise cloud computing is already a large market, but it is still in its early stages. As the market grows on the back of AI adoption and machine learning, GCP will continue to acquire new customers, mainly those that are focused on data analytics such as banks.

Partnerships and Acquisitions Continue to Aid Growth

- Anthos is an application management platform that allows firms to develop consistent operations strategies for both cloud and on-premises computing environments using open-source technologies that integrate hybrid and multi-cloud solutions into a single technology stack. With Anthos, customers can build and deploy apps across its cloud environments simultaneously while automating policies and security processes, increasing efficiency and reducing risk in data modernization and migration to the cloud. In a recent survey, Alphabet found that **88% of US companies are likely to adopt hybrid and multi-cloud strategies**, and Anthos is the premier product in the market to optimize the integration of cloud transfer technologies.
- In June, Alphabet announced it entered an agreement to purchase Looker, a business analytics, data applications and embedded AI platform, for $2.6B in cash. Looker utilizes business intelligence strategies to integrate data into daily workflow and deliver cutting-edge visualization solutions. The company supports data collection and visualization across multiple cloud environments and is committed to delivering transparent and secure deployment methods in hybrid and multi-cloud systems. Alphabet and Looker already share more than 350 joint customers, and GOOGL will look to drive value from the acquisition's 1,700+ customer base.

By continuously updating GCP products with the most innovative features, expanding the products' reach in new end markets, and utilizing M&A and other strategic developments, GOOGL will be able to generate **$4B in incremental revenue** from GCP, representative of ~61% of projected segment revenue growth in FY'20.

PEER GROUP ANALYSIS

Facebook

Facebook, Inc. (NYSE: FB) is a social networking website operator with over 1.2B daily users and 7mm advertisers. FB also owns and operates notable social network Instagram and online messaging apps WhatsApp and Facebook Messenger. The company has invested heavily in artificial intelligence and virtual reality to improve the appeal of its properties to consumers and advertisers alike. Facebook reported $16.9B in 2Q'19 revenues and FY'18 revenues of $55.8B.

Twitter

Twitter, Inc. (NYSE: TWTR) is a provider of social networking and microblogging services with over 126mm daily users. TWTR generates 85% of its revenue from the sale of mobile advertising (promoted tweets, promoted accounts, and promoted trends) and the remaining 15% from data licensing. The company posted $844mm in 2Q'19 revenues and FY'18 revenue of $3B.

Baidu

Baidu (NASDAQ: BIDU) is a Chinese internet media company specializing in internet products and AI. Like GOOGL, at its core BIDU is a search engine. It offers advertising services on its platforms on a pay-for-performance basis and offers other services such as navigation and payment platforms. In FY'18, BIDU reported $102.2B in revenue, up 20.6% YoY. A majority of this revenue (80.1%) came from the Online Marketing Services segment.

Interactive Media

Interactive Media Corp. (NASDAQ: IAC) is a media/internet company that owns over 150 brands. Ask.com, Match.com, Vimeo, and dictionary.com are some of the prominent holdings. The company's main source of revenue is Match Group (40.6% of revenue in 2018), which includes stakes in companies such as Match, Tinder, OkCupid, and The Princeton Review. In FY'18 the company reported $4.3B in revenue. Revenue from outside the U.S. grew from 29.8% in FY'17 to 33.7% in FY'18

Microsoft

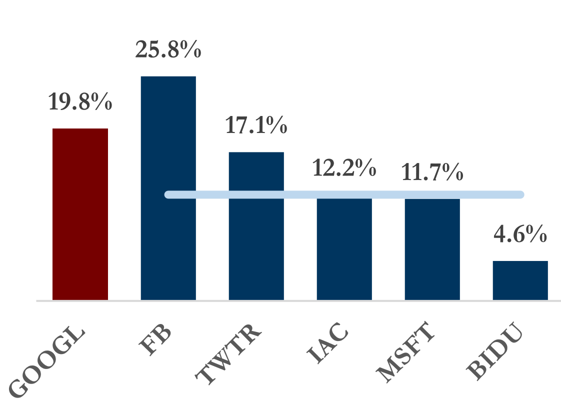
Microsoft (NASDAQ: MSFT) is an American technology company. It develops, licenses, sells, and supports a variety of software products and services. Microsoft Azure, its cloud service, provides all three types of cloud computing on both public and private systems. The company also produces operating systems, software development tools, video games, and business solution applications. MSFT sells hardware including PCs, tablets, consoles, phones, and accessories that pair with its cloud services. The company derives 51.0% of its revenue from the U.S.

Company	Ticker	Market Statistics: Market Cap	Market Statistics: Enterprise Value	Growth Analysis: Sales LTM	Growth Analysis: Sales 2019E	Growth Analysis: EPS LTM	Growth Analysis: EPS 2019E	Margin Analysis: EBITDA Margin LTM	Margin Analysis: EBITDA Margin 2019E	Margin Analysis: Profit Margin LTM	Margin Analysis: Profit Margin 2019E	Valuation Analysis: Enterprise Value / EBITDA LTM	Enterprise Value / EBITDA 2019E	Enterprise Value / Sales LTM	Enterprise Value / Sales 2019E	Price / Earnings LTM	Price / Earnings 2019E
Alphabet Inc.	**GOOGL**	**$844,947**	**$738,117**	**23.4%**	**19.8%**	**95.9%**	**37.7%**	**29.3%**	**29.3%**	**22.5%**	**22.5%**	**12.5x**	**10.7x**	**5.5x**	**4.7x**	**20.7x**	**19.4x**
Facebook, Inc.	FB	517,183	476,397	37.4%	25.8%	22.9%	17.6%	43.5%	43.5%	39.6%	39.6%	12.9x	10.5x	6.8x	5.6x	20.4x	16.5x
Twitter, Inc.	TWTR	32,018	28,826	24.5%	17.1%	-	198.5%	30.1%	30.1%	39.6%	39.6%	21.9x	18.6x	8.1x	7.0x	20.6x	37.2x
Baidu Inc.	BIDU	34,021	192,239	20.6%	4.6%	31.4%	(45.2)%	9.5%	9.5%	27.0%	27.0%	18.1x	11.1x	1.8x	1.6x	23.6x	15.9x
InterActiveCorp	IAC	18,929	19,943	28.9%	12.2%	68.8%	7.3%	16.7%	16.7%	14.7%	14.7%	19.4x	15.6x	4.2x	3.6x	32.6x	26.1x
Microsoft Corp.	MSFT	1,048,953	1,001,589	14.0%	11.7%	27.8%	12.1%	44.8%	44.8%	31.2%	31.2%	16.3x	14.6x	7.1x	6.4x	26.2x	23.2x
High		**$1,048,953**	**$1,001,589**	**37.4%**	**25.8%**	**68.8%**	**198.5%**	**44.8%**	**44.8%**	**39.6%**	**39.6%**	**21.9x**	**18.6x**	**8.1x**	**7.0x**	**32.6x**	**37.2x**
Mean		**330,221**	**343,799**	**25.1%**	**14.3%**	**37.7%**	**38.1%**	**28.9%**	**28.9%**	**30.4%**	**30.4%**	**17.7x**	**14.1x**	**5.6x**	**4.8x**	**24.7x**	**23.8x**
Median		**34,021**	**192,239**	**24.5%**	**12.2%**	**29.6%**	**12.1%**	**30.1%**	**30.1%**	**31.2%**	**31.2%**	**18.1x**	**14.6x**	**6.8x**	**5.6x**	**23.6x**	**23.2x**
Low		**18,929**	**19,943**	**14.0%**	**4.6%**	**22.9%**	**(45.2)%**	**9.5%**	**9.5%**	**14.7%**	**14.7%**	**12.9x**	**10.5x**	**1.8x**	**1.6x**	**20.4x**	**15.9x**

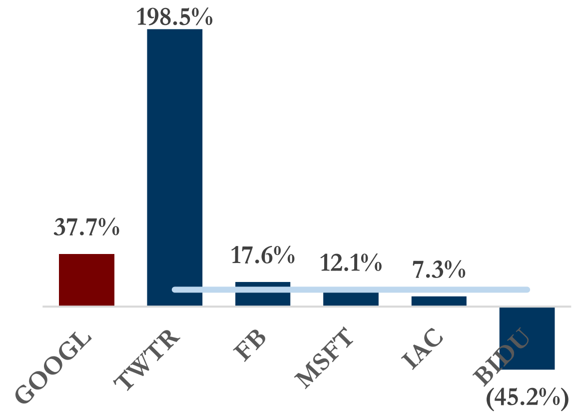
Company	Ticker	General Statistics: Tax Rate	General Statistics: Beta	General Statistics: Dividend Yield	Returns Analysis: ROIC	Returns Analysis: ROE	Returns Analysis: ROA	2018A Leverage Analysis: Total Debt / Cap	Total Debt / EBITDA	Total Debt / Equity	2018A Coverage Analysis: EBITDA / Int. Exp.	(EBITDA -Cpx)/Int.	EBIT / Int. Exp.	Liquidity Profile: Quick Ratio	Liquidity Profile: Current Ratio	Credit Profile: Moody's	Credit Profile: S&P
Alphabet Inc.	**GOOGL**	**12.0%**	**1.08**	**14.8%**	**14.8%**	**19.6%**	**14.8%**	**2.2%**	**0.3x**	**2.3%**	**310.1x**	**89.6x**	**230.9x**	**3.75**	**3.92**	**Aa2**	**AA+**
Facebook, Inc.	FB	12.8%	1.12	18.8%	18.8%	20.3%	16.5%	0.0%	0.3x	0.0%	3247.6x	1701.4x	2768.1x	6.94	7.19	-	-
Twitter, Inc.	TWTR	0.0%	0.84	25.7%	25.7%	33.8%	22.0%	28.6%	3.3x	40.0%	6.6x	3.0x	3.4x	4.62	4.69	-	NR
Baidu Inc.	BIDU	17.4%	1.24	1.5%	1.5%	10.5%	5.5%	27.0%	7.2x	36.9%	16.8x	12.2x	8.2x	2.56	2.73	A3	-
InterActiveCorp	IAC	50.0%	0.90	9.4%	9.4%	19.4%	7.4%	38.4%	4.3x	62.5%	6.9x	6.1x	5.2x	2.87	3.13	Ba2	BB+ *-
Microsoft Corp.	MSFT	10.2%	1.05	21.5%	21.5%	42.4%	14.4%	45.8%	1.5x	84.5%	21.0x	15.8x	16.0x	2.35	2.53	Aaa	AAA
High		**50.0%**	**1.24**	**25.7%**	**25.7%**	**42.4%**	**22.0%**	**45.8%**	**7.2x**	**84.5%**	**3247.6x**	**1701.4x**	**2768.1x**	**6.94**	**7.19**		
Mean		**18.1%**	**1.03**	**15.4%**	**15.4%**	**25.3%**	**13.2%**	**28.0%**	**3.3x**	**44.8%**	**659.8x**	**347.7x**	**560.2x**	**3.87**	**4.05**		
Median		**12.8%**	**1.05**	**18.8%**	**18.8%**	**20.3%**	**14.4%**	**28.6%**	**3.3x**	**40.0%**	**16.8x**	**12.2x**	**8.2x**	**2.87**	**3.13**		
Low		**0.0%**	**0.84**	**1.5%**	**1.5%**	**10.5%**	**5.5%**	**0.0%**	**0.3x**	**0.0%**	**6.6x**	**3.0x**	**3.4x**	**2.35**	**2.53**		

COMPARABLE BENCHMARKING

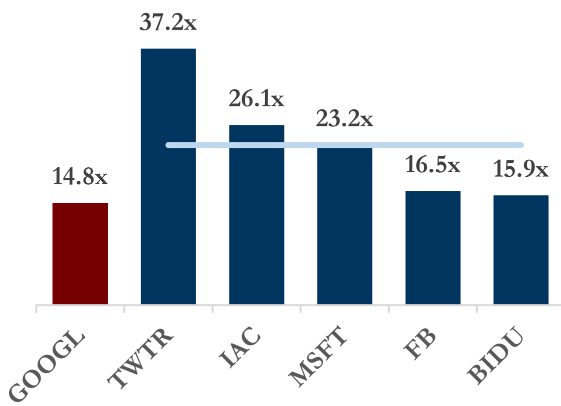
Revenue Growth 2019E



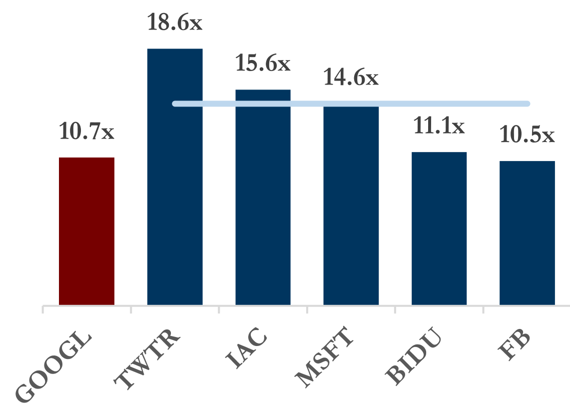
EPS Growth 2019E



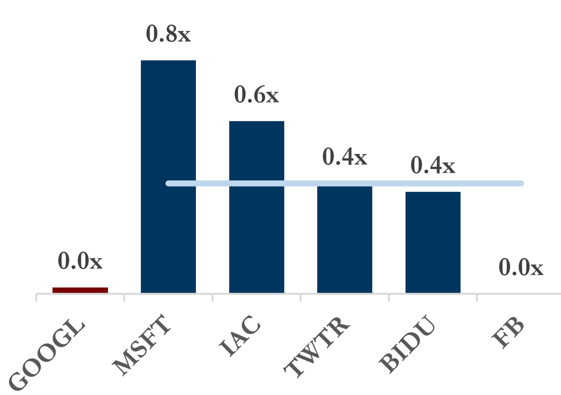
NTM P/E



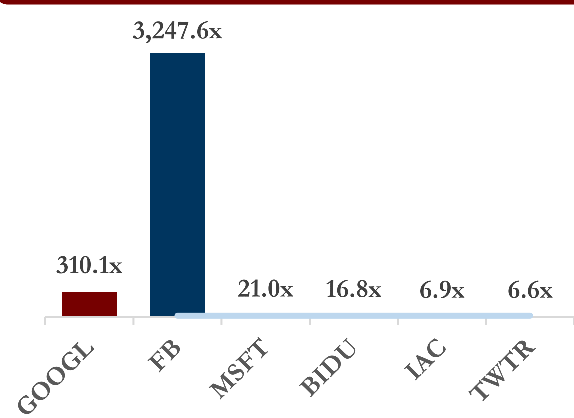
NTM EV/EBITDA



Total Debt/Equity



Interest Coverage (EBITDA/Int.)



RISKS TO INVESTMENT THESIS

Advertising Revenue Growth

- With Advertising comprising the large majority of GOOGL's business and revenue, a slowdown in the core segment could be a huge blow to the company. The business model is reliant on third-party advertisers that can eliminate contracts with Google at any time. Additionally, spending on advertisement can be cyclical, and should we see the economy take a severe turn for the worse the segment could see a decline in growth.
- Since 2017, GOOGL has faced the potential of a mass exodus of YouTube advertisers in a series of events the clients pulled ads from the platform after their they appeared on obscene and offensive videos.

Regulatory Overhang

- Historically, GOOGL's performance has overcome fines and sentiment related to antitrust regulation. Moving forward, we don't expect any fines to have a negative impact on the stock; the company has more than enough cash to cover any fines the EU or U.S. could impose.
- The risk, however, comes from Democratic presidential candidates who threaten to break up large tech companies. Elizabeth Warren and Bernie Sanders are the two largest proponents of such regulation. With the democratic primaries and the general election both in the investment horizon, a nomination or an election for one of these candidates could weigh negatively on GOOGL's stock. On the other hand, any legitimate threat of a forced break-up would likely fall outside the investment horizon, meaning the threat is purely sentiment-based.

Investment Initiatives Weighing on Margins

- GOOGL emphasizes an innovative, start-up culture throughout the business. As a result, the company spends a significant amount on capex, R&D, and S&M. These expenditures have recently been focused on the smaller, often net loss-producing companies in Other Bets and Other Google Revenues. Should these investments not play out and turn net income positive or turn profits more slowly than expected, GOOGL could see margin compression.

ECONOMIC MOATS

Balance Sheet Strength

- Alphabet boasts one of the most pristine balance sheets of any publicly traded company. As of August 1, GOOGL is the most cash-rich company in the world, holding a staggering $121B in cash and cash equivalents, implying net debt of ($106B) and an interest coverage ratio of ~310x.
- This dry powder buildup enables GOOGL to move quickly in response to industry or competitive developments and gives the company the opportunity to enhance shareholder value through extensive share buyback programs. A strong balance sheet allows the Company to maneuver with the agility of a much smaller firm.
- Alphabet remains well-insulated from any impact of punitive regulatory decisions and fines, as even record-setting financial penalties have amounted to a slap on the wrist with no material impact on the company's financials. Additionally, A strong balance sheet has allowed Alphabet to grow through strategic M&A, as seen in the July acquisition of Looker to bolster fully-comprehensive GCP offerings.

Established User Base – Network Effect

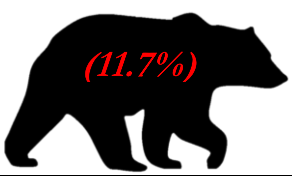
- The Company has established extensive network effects across its digital offerings that incentivizes the continued use of Alphabet properties as consumers and businesses grow. As GOOGL seeks to grow its Cloud business and enhance monetization across the G-Suite, it will leverage its strong network of users and industry-leading data and insights to increase value across various end markets. Apart from Search, Alphabet has seven other properties that have over 1B monthly active users.

Bear Case Assumptions for $1,065 PT:

- Faster than expected deceleration of Search revenue as the market matures and advertising environment becomes less profitable; revenue decelerates to mid-teens
- Pricing environment on mobile ad initiatives declines due to competitive threats, eating into top line growth
- Cloud adoption fizzles out after 2020, leading to margin pressure and deteriorating cash flow
- Regulatory impact materializes, most likely through a record-high fine (>$10B) or a mandated business segment spinoff
- Capital expenditures are not met with significant returns, coupled with rising TAC eroding margins

Bull Case Assumptions for $1,760 PT:

- Revenue growth of 20%+ continues over the forecast period
- Google realizes sustained growth in Search, supplemented by faster than expected growth in the advertising business, sourced from effective monetization efforts and favorable pricing conditions
- Cloud services continue rapid run-rate acceleration, capturing an incremental 5% market share within the NTM on the heels of strong enterprise spending and G-Suite integration
- Other Bets take off, becoming a $1B revenue generator by 2021
- Modest margin expansion continues, reaping the benefits of heavy investment in content acquisition for YouTube, hardware devices and data center/Cloud capacity, contributing to strong FCF growth
- Increased segment financials disclosure catalyzes investor sentiment, reaffirming long-term outperform outlook



Exit Multiple Method:	
Terminal Year EBITDA:	$73,790
Exit Multiple:	11.0 x
Terminal Value:	811,690
PV of Terminal Value:	653,807
PV of Stage 1 Cash Flows:	35,939
Implied Enterprise Value:	**$689,746**
(+) Cash & Equivalents:	109,140
(-) Preferred Stock:	0
(-) Total Debt:	(4,012)
(-) Pension Obligations:	0
(-) Non-Controlling Interests:	0
(-) Capital Leases:	0
Implied Equity Value:	**$794,874**
Diluted Shares O/S:	746.5
Implied Share Price:	$1,064.80
% Return:	*(11.7%)*

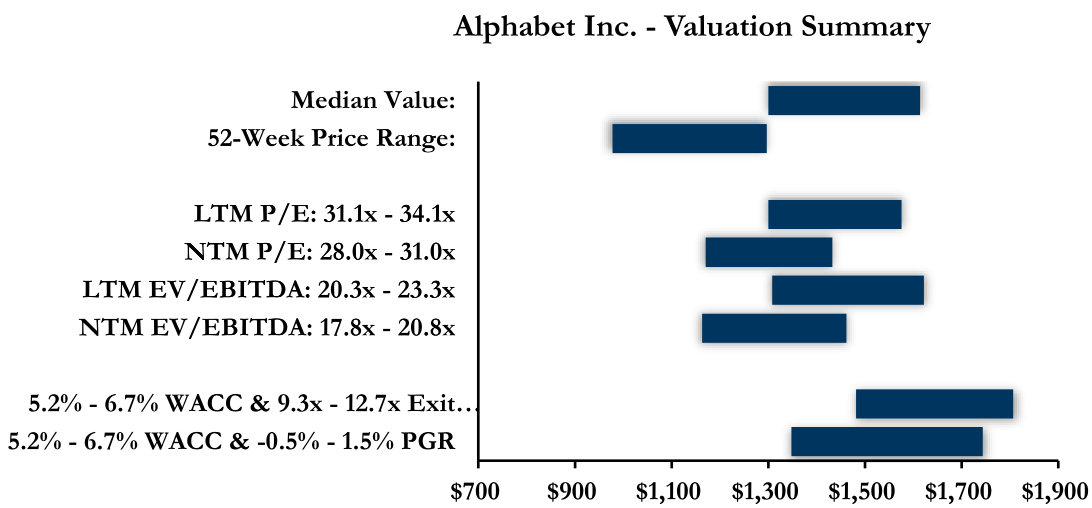
Exit Multiple Method:	
Terminal Year EBITDA:	$115,363
Exit Multiple:	11.0 x
Terminal Value:	1,268,990
PV of Terminal Value:	1,022,157
PV of Stage 1 Cash Flows:	186,786
Implied Enterprise Value:	**$1,208,943**
(+) Cash & Equivalents:	109,140
(-) Preferred Stock:	0
(-) Total Debt:	(4,012)
(-) Pension Obligations:	0
(-) Non-Controlling Interests:	0
(-) Capital Leases:	0
Implied Equity Value:	**$1,314,071**
Diluted Shares O/S:	746.5
Implied Share Price:	$1,760.31
% Return:	*46.0%*

VALUATION ANALYSIS

DCF Assumptions:

Our base case implies 2019 sales of $163.9B, representing 19.8% growth YoY. This reflects our expectations for expanded monetization initiatives and pricing tailwinds in the advertising business. Additionally, sustained growth in Other Google revenues will be boosted by Google Cloud expansion driven by strategic partnerships and end market diversification. Our EPS, FCF, and EBITDA assumptions for sustained mid-to-high teens growth remain in-line with consensus, reflective of improved efficiencies of GOOGL's core businesses for the duration of the forecast period. Finally, we expect margins to expand at a modest rate, as capex initiatives begin to materialize.

	Historical			Projected				
DCF Analysis:	**2016A**	**2017A**	**2018A**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**
Revenue:	$90,272.0	$110,855.0	$136,819.0	$163,919.0	$194,532.6	$227,937.1	$263,570.9	$300,454.2
% Growth:		*22.8%*	*23.4%*	*19.8%*	*18.7%*	*17.2%*	*15.6%*	*14.0%*
EBITDA:	$29,860.0	$35,797.0	$40,427.0	$50,814.9	$61,083.2	$74,877.3	$92,249.8	$109,215.1
% Margin:	*33.1%*	*32.3%*	*29.5%*	*31.0%*	*31.4%*	*32.9%*	*35.0%*	*36.4%*
EBIT:	$23,716.0	$28,882.0	$31,392.0	$38,590.6	$45,758.3	$56,042.4	$69,496.3	$79,019.7
% Margin:	*26.3%*	*26.1%*	*22.9%*	*23.5%*	*23.5%*	*24.6%*	*26.4%*	*26.3%*
(-) Taxes:	($4,672.0)	($14,531.0)	($4,177.0)	($6,974.8)	($8,300.5)	($10,364.3)	($12,913.6)	($14,478.1)
NOPAT (EBIAT):	$19,044.0	$14,351.0	$27,215.0	$31,615.7	$37,457.8	$45,678.1	$56,582.7	$64,541.5
(+) Depreciation:				11,474.3	14,589.9	18,235.0	22,403.5	30,045.4
(+) Amortization:				750.0	735.0	600.0	350.0	150.0
(+) Stock-Based Compensation:				11,577.3	13,739.5	16,098.8	18,615.5	21,220.5
(-) Capital Expenditures:				(30,325.0)	(35,015.9)	(34,190.6)	(34,264.2)	(36,054.5)
(+) Goodwill Impairment:				0.0	0.0	0.0	0.0	0.0
(+/-) Changes in Net Working Capital:				611.8	1,131.0	(45.5)	193.3	1,776.5
(+/-) Changes in Other Assets & Liabilities:				(6,601.1)	(9,121.4)	(12,604.0)	(17,416.3)	(24,066.0)
Unlevered Free Cash Flow:				**$19,103.0**	**$23,516.0**	**$33,771.8**	**$46,464.5**	**$57,613.5**
Full-Year Discount Period:				*0.27*	*1.27*	*2.27*	*3.27*	*4.27*
Mid-Year Discount Period:				*0.13*	*0.77*	*1.77*	*2.77*	*3.77*
Discount Factor:				*0.99*	*0.96*	*0.90*	*0.85*	*0.81*
Present Value of Free Cash Flow:				**$18,955.9**	**$22,500.2**	**$30,511.0**	**$39,637.1**	**$46,407.1**
% Growth:					*18.7%*	*35.6%*	*29.9%*	*17.1%*



Valuation Multiple Sensitivity Analysis (Returns of 15%-30% in Green)

Implied Share Price

		LTM P/E Multiple				
		29.6x	31.1x	32.6x	34.1x	35.6x
FY EPS	$39.61	$1,172.43	$1,231.84	$1,291.25	$1,350.67	$1,410.08
	$41.81	$1,237.56	$ 1,300.28	$ 1,362.99	$ 1,425.70	$1,488.42
	$44.01	$1,302.70	$ 1,368.71	$ 1,434.73	$ 1,500.74	$1,566.76
	$46.21	$1,367.83	$ 1,437.15	$ 1,506.46	$ 1,575.78	$1,645.09
	$48.41	$1,432.97	$1,505.58	$1,578.20	$1,650.82	$1,723.43

Implied % Return

		LTM P/E Multiple				
		29.6x	31.1x	32.6x	34.1x	35.6x
FY EPS	$39.61	(2.8%)	2.1%	7.1%	12.0%	16.9%
	$41.81	2.6%	7.8%	13.0%	18.2%	23.4%
	$44.01	8.0%	13.5%	19.0%	24.4%	29.9%
	$46.21	13.4%	19.2%	24.9%	30.7%	36.4%
	$48.41	18.8%	24.8%	30.9%	36.9%	42.9%

Implied Share Price

		NTM P/E Multiple				
		26.5x	28.0x	29.5x	31.0x	32.5x
FY EPS	$39.61	$1,049.64	$1,109.05	$1,168.47	$1,227.88	$1,287.29
	$41.81	$1,107.95	$ 1,170.67	$ 1,233.38	$ 1,296.09	$1,358.81
	$44.01	$1,166.27	$ 1,232.28	$ 1,298.30	$ 1,364.31	$1,430.33
	$46.21	$1,224.58	$ 1,293.89	$ 1,363.21	$ 1,432.53	$1,501.84
	$48.41	$1,282.89	$1,355.51	$1,428.12	$1,500.74	$1,573.36

Implied % Return

		NTM P/E Multiple				
		26.5x	28.0x	29.5x	31.0x	32.5x
FY EPS	$39.61	(13.0%)	(8.0%)	(3.1%)	1.8%	6.7%
	$41.81	(8.1%)	(2.9%)	2.3%	7.5%	12.7%
	$44.01	(3.3%)	2.2%	7.7%	13.1%	18.6%
	$46.21	1.5%	7.3%	13.0%	18.8%	24.5%
	$48.41	6.4%	12.4%	18.4%	24.4%	30.5%

Price Calculation: Average LTM P/E Multiple

LTM EPS	Peer Avg. 1-Yr LTM P/E		Target Price		% Upside
$44.01	32.6x	=	$1,435.00	=	~19%

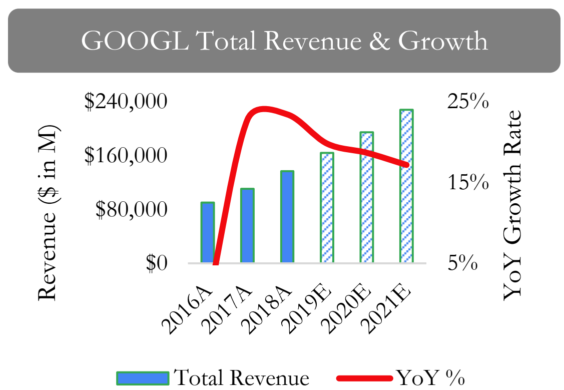
FINANCIAL ANALYSIS

GOOGL Segment Revenue Model

	Historical			Projected				
Annual Revenue Model	**2016A**	**2017A**	**2018A**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**
Google Properties	$63,785.0	$77,788.0	$96,336.0	$114,880.7	$135,272.0	$158,268.2	$183,591.2	$211,129.8
% Growth		*22.0%*	*23.8%*	*19.3%*	*17.8%*	*17.0%*	*16.0%*	*15.0%*
% Total Revenue	*70.7%*	*70.2%*	*70.4%*	*70.1%*	*69.5%*	*69.4%*	*69.7%*	*70.3%*
Google Network Members' Properties	15,598.0	17,587.0	19,982.0	21,880.3	23,521.3	25,050.2	26,428.0	27,683.3
% Growth		*12.8%*	*13.6%*	*9.5%*	*7.5%*	*6.5%*	*5.5%*	*4.8%*
% Total Revenue	*17.3%*	*15.9%*	*14.6%*	*13.3%*	*12.1%*	*11.0%*	*10.0%*	*9.2%*
Total Google Advertising Revenue	**$79,383.0**	**$95,375.0**	**$116,318.0**	**$136,761.0**	**$158,793.3**	**$183,318.4**	**$210,019.1**	**$238,813.1**
% Growth:		*20.1%*	*22.0%*	*17.6%*	*16.1%*	*15.4%*	*14.6%*	*13.7%*
% Total Revenue:	*87.9%*	*86.0%*	*85.0%*	*83.4%*	*81.6%*	*80.4%*	*79.7%*	*79.5%*
Google Other	10,080.0	15,003.0	19,906.0	26,475.0	34,947.0	43,683.7	52,420.5	60,283.5
% Growth		*48.8%*	*32.7%*	*33.0%*	*32.0%*	*25.0%*	*20.0%*	*15.0%*
% Total Revenue	*11.2%*	*13.5%*	*14.5%*	*16.2%*	*18.0%*	*19.2%*	*19.9%*	*20.1%*
Total Google Revenue	**$89,463.0**	**$110,378.0**	**$136,224.0**	**$163,236.0**	**$193,740.3**	**$227,002.2**	**$262,439.6**	**$299,096.6**
% Growth		*23.4%*	*23.4%*	*19.8%*	*18.7%*	*17.2%*	*15.6%*	*14.0%*
% Total Revenue	*99.1%*	*99.6%*	*99.6%*	*99.6%*	*99.6%*	*99.6%*	*99.6%*	*99.5%*
Other Bets	809.0	477.0	595.0	683.1	792.3	935.0	1,131.3	1,357.6
% Growth		*(41.0%)*	*24.7%*	*14.8%*	*16.0%*	*18.0%*	*21.0%*	*20.0%*
% Total Revenue	*0.9%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.4%*	*0.5%*
Total Revenue	**$90,272.0**	**$110,855.0**	**$136,819.0**	**$163,919.0**	**$194,532.6**	**$227,937.1**	**$263,570.9**	**$300,454.2**
% Growth		***22.8%***	***23.4%***	***19.8%***	***18.7%***	***17.2%***	***15.6%***	***14.0%***

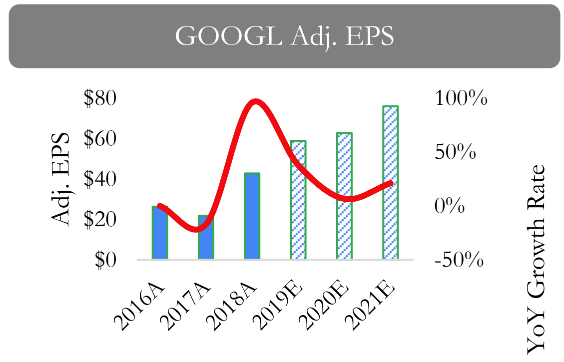
Our FY'19 and FY'20 revenue estimates sit at $163.9B and $194.5B, representing YoY growth of 19.8% and 18.7%, respectively. Our assumptions are sourced from expectations for sustained holistic growth of the Google business, including advertising through the monetization of G-Suite apps, as well as continued growth of GCP and Other Bets. Overall, our estimates reflect incrementally conservative top line growth and margin expansion.

Total Revenue:



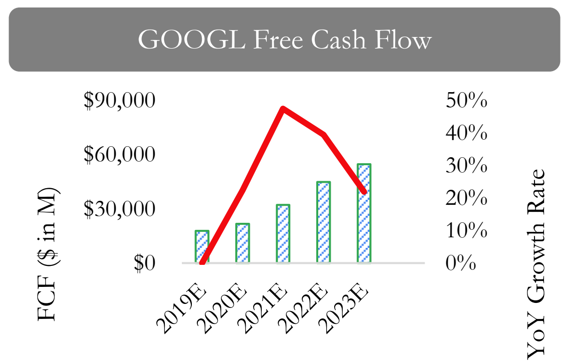
- FY'18 total revenue was $136.8B, a 23.4% YoY increase attributable to continued strength in mobile search and rising momentum in YouTube, Cloud, and desktop search.
- FY'18 US revenue grew 20.6% to $63.2B, while EMEA (+23.6% YoY), APAC (+31.7% YoY), and Other Americas revenue (+24.2% YoY) grew to $73.5B, $44.6B, and $7.6B, respectively.
- Total revenue in 2Q'19 totaled $38.9B, a 19.3% YoY increase from 2Q'18. Organic growth of 22.0% YoY was driven by growth in the core Search and Display business.
- Google Properties revenues reached $27.3B in 2Q'19, driven mainly by increases in mobile search. Advertiser activity also grew as advertisers continued to take advantage of a growing user base.
- Other revenues (the Company's fastest growing segment) reached $6.2B in 2Q'19, up 40.0% YoY from $4.4B in the prior year quarter, primarily driven by revenues from Google Cloud offerings. Additionally, revenue in this segment was derived from Google Play, largely related to in-app purchases, as well as hardware offerings.
- Members' Network revenues reached $5.3B in 2Q'19, up 9.0% YoY driven by strength in AdMob and programmatic advertising buying. Cost-per-impression was generally unchanged.
- Revenue in Other Bets was $162mm in 2Q'19, down from $170mm in 1Q'19 but up 12% YoY. Should companies in this segment pan out long-term, they will most likely be spun off or transferred out of the segment.

Earnings:



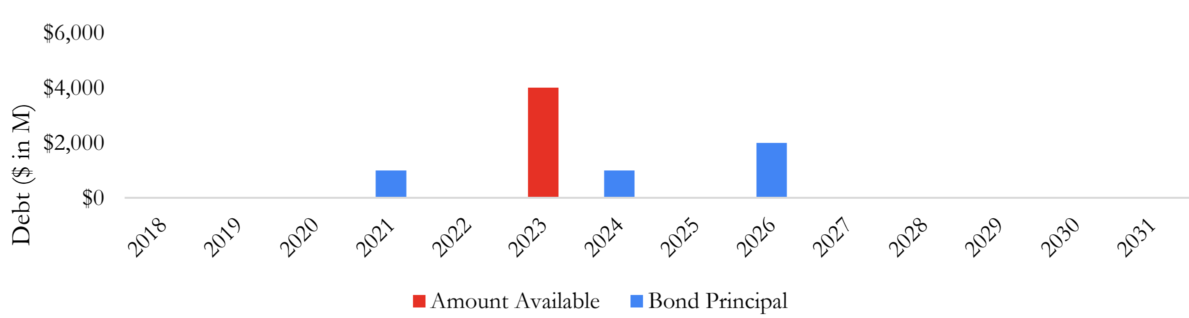
- 2Q'19 GAAP EPS came in at $14.21, representing YoY growth of 213% YoY, and 50% QoQ. The figures beat street consensus by 4.2%, and were reflective of declining TAC during the quarter.
- GOOGL has surpassed consensus GAAP and Adj. EPS estimates in 7 of the last 8 quarters, with an average surprise of 9.2% and 7.7%, respectively.
- Management does not formally issue earnings guidance, however for FY'19, consensus estimates call for adjusted EPS of $58.81.
- The growth of G-Suite monetization and GCP supported by persistent strength in mobile and desktop search and advertising businesses will continue to expand margins across the businesses and will prove accretive to earnings moving forward.

Cash Flow/Capital Expenditures/Shareholder Returns:

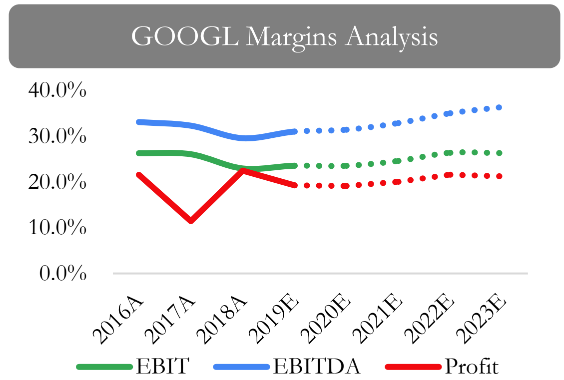


- In recent years, GOOGL FCF growth has slowed due to increased capex growth, as the company has allocated a significant portion of capital to investments in technical infrastructure and equipment, facilities, and development of recent acquisitions.
- In 2Q'19, FCF was $6.5B, representing a 40% YoY increase but a 12% decrease QoQ. This drop was attributable to a 32% QoQ rise in capex led by increased investments in office facility and data center development. Over the past six quarters, QoQ capex growth has outpaced QoQ FCF expansion three times. Moving forward, management expects the capex growth rate to moderate significantly as the company's shifts capital allocation to emphasize technical infrastructure growth through 2H'19.
- In 2Q'19, Alphabet repurchased shares totaling $3.6B, the largest quarterly buyback in company history. Total buybacks for 1H'19 totalled $6.6B, up 58% from $4.2B in the same time period last year. This increased level of repurchases is part of the company's new $25B buyback authorization program announced in 2Q'19, in addition to the recent $12.5B program announced in 1Q'19. Many investors are looking for Alphabet to use some of its excess cash to buy back more shares.

Debt Distribution:



Margins:



- In FY'18 GOOGL's gross margin contracted slightly by 4.1% YoY to 56.5%, as the Company invested heavily in capital expenditures for cloud infrastructure, hardware capacity, cloud staff, and content acquisition.
- Contraction was also partially attributable to initial expansion into mobile search, which inherently carries a higher TAC than desktop search.
- FY'18 profit margin reached 21.9%, representing a YoY increase of 56.6%. The increase was in part due to a favorable tax benefit, as well as operating income growth.
- As of 2Q'19, a 16% increase YoY led to strong expansion of operating margin, up to 26.8%.
- We project steady margin expansion for the forecast period, as capex initiatives generate strong earnings growth across higher margin business lines such as GCP, while higher TAC mobile search margins normalize.

Traffic Acquisition Costs (TAC):

- Traffic Acquisition Cost (TAC) is a cost of revenue for internet search providers that consists of payments made to direct traffic to their sites, or the rate at which a firm spends on the percentage of its revenue to acquire traffic. TAC is a key metric when looking at the health and profitability of an internet media company, and profitability increases with a decrease in TAC.
- Over the past 6 quarters, Alphabet has seen rising TAC due to consumer traffic shifting towards higher-cost mobile search sites; however, the rate of TAC increase has moderated each quarter since 1Q'18.
- In 2Q'19, Alphabet's Google segment TAC increased 25% YoY to $7.2B, surpassing expectations of $7.3B. TAC as a percentage of Q2'19 advertising revenues was 22%, representing a YoY decrease. Within sites, TAC slightly increased with increased traffic on high-cost mobile sites but was offset by growth in no-TAC YouTube traffic.
- Despite increased volumes on high-TAC mediums like mobile sites, we remain confident in total revenue growth outpacing rising acquisition costs, as was seen in last quarter. The continued growth of YouTube and lower-TAC G-Suite applications will also work to reduce the effect of increase mobile search costs moving forward.

Cost-per-Click (CPC):

- Cost-per-click (CPC) is defined as click-driven revenue divided by the total number of paid clicks. This cost represents the average amount Alphabet charges advertisers for engagement.
- In 2Q'19, paid clicks were up 28% YoY, but CPC was down 11%. This was due to tougher comps from the prior year quarter. The volume increased as a result of an increase in YouTube engagement ads. This increase in volume was offset by the fact that advertisers pay less per click for YouTube engagement ads than traditional search ads.
- Cost-per-impression (CPI) represents the average amount Alphabet charges advertisers for each impression displayed to users.
- In 2Q'19, raw impressions increased by 8% YoY, but CPI remained flat. GOOGL cited an increase in programmatic advertising buying for the increase in impressions. There was no increase in CPI due to "ongoing product and policy changes and improvements we have made in ad formats and delivery."

APPENDIX

Exhibit I: Consolidated Financial Statements

	Historical			Projected				
Consolidated Income Statement:	**2016A**	**2017A**	**2018A**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**
Revenue:	**$90,272**	**$110,855**	**$136,819**	**$163,919**	**$194,533**	**$227,937**	**$263,571**	**$300,454**
% Growth YoY:		*22.8%*	*23.4%*	*19.8%*	*18.7%*	*17.2%*	*15.6%*	*14.0%*
Gross Profit:	**$55,134**	**$65,272**	**$77,270**	**$95,893**	**$114,774**	**$137,902**	**$162,096**	**$184,028**
% Margin:	*61.1%*	*58.9%*	*56.5%*	*58.5%*	*59.0%*	*60.5%*	*61.5%*	*61.3%*
Operating Income (EBIT):	**$23,716**	**$28,882**	**$31,392**	**$38,591**	**$45,758**	**$56,042**	**$69,496**	**$79,020**
% Growth YoY:		*21.8%*	*8.7%*	*22.9%*	*18.6%*	*22.5%*	*24.0%*	*13.7%*
Margin:	*26.3%*	*26.1%*	*22.9%*	*23.5%*	*23.5%*	*24.6%*	*26.4%*	*26.3%*
Net Income:	**$19,478**	**$12,662**	**$30,736**	**$31,560**	**$37,182**	**$45,659**	**$56,890**	**$63,782**
% Growth YoY:		*(35.0%)*	*142.7%*	*2.7%*	*17.8%*	*22.8%*	*24.6%*	*12.1%*
Margin:	*21.6%*	*11.4%*	*22.5%*	*19.3%*	*19.1%*	*20.0%*	*21.6%*	*21.2%*
Diluted Earnings Per Share (EPS) - Adj:	**$26.29**	**$21.81**	**$42.72**	**$58.81**	**$62.68**	**$75.90**	**$88.95**	**$90.10**
% Growth YoY:		*(17.0%)*	*95.9%*	*37.7%*	*6.6%*	*21.1%*	*17.2%*	*1.3%*
EBITDA:	**$29,860**	**$35,797**	**$40,427**	**$50,815**	**$61,083**	**$74,877**	**$92,250**	**$109,215**
% Growth YoY:		*19.9%*	*12.9%*	*25.7%*	*20.2%*	*22.6%*	*23.2%*	*18.4%*
Margin:	*33.1%*	*32.3%*	*29.5%*	*31.0%*	*31.4%*	*32.9%*	*35.0%*	*36.4%*

	Historical			Projected				
Consolidated Balance Sheet:	**2016A**	**2017A**	**2018A**	**2019E**	**2020E**	**2021E**	**2022E**	**2023E**
Cash & Cash Equivalents:	$86,333	$101,871	$109,140	$121,272	$120,584	$126,454	$149,376	$183,631
Accounts Receivable:	14,137	18,336	20,838	20,209	23,983	28,102	32,495	37,042
Inventory:	268	749	1,107	951	1,114	1,258	1,418	1,627
Prepaid & Other Current Assets:	4,670	3,352	4,591	5,573	6,614	7,750	8,961	10,215
Total Current Assets:	105,408	124,308	135,676	148,005	152,296	163,564	192,250	232,515
PP&E, Net:	34,234	42,383	59,719	78,870	99,796	116,401	129,212	136,421
Intangible Assets	3,307	2,692	2,220	2,391	2,578	2,899	3,470	4,242
Goodwill:	16,468	16,747	17,888	17,888	17,888	17,888	17,888	17,888
Other Non-Current Assets:	8,080	11,165	17,289	23,890	33,011	45,615	63,032	87,098
Total Non-Current Assets:	62,089	72,987	97,116	123,039	153,273	182,804	213,602	245,648
Total Assets:	**167,497**	**197,295**	**232,792**	**271,044**	**305,569**	**346,367**	**405,852**	**478,164**
Accounts Payable:	2,041	3,137	4,378	3,932	4,611	5,205	5,866	6,730
Accrued Liabilities	6,144	10,177	16,958	15,510	18,185	20,528	23,136	26,545
Other Current Liabilities:	8,571	10,869	13,284	15,986	18,743	21,158	23,847	27,360
Total Current Liabilities (Excl. Debt):	16,756	24,183	34,620	35,429	41,539	46,891	52,849	60,636
Revolver:	0	0	0	0	0	0	0	0
Total Debt (Current + LT, Excl. Rev.):	3,935	3,969	4,012	4,012	4,012	5,012	5,012	9,012
Deferred Income Taxes:	226	430	1,264	1,264	1,264	1,264	1,264	1,264
Other Non-Current Liabilities:	7,544	16,211	15,268	15,268	15,268	15,268	15,268	15,268
Total Non-Current Liabilities:	11,705	20,610	20,544	20,544	20,544	21,544	21,544	25,544
Total Liabilities:	**28,461**	**44,793**	**55,164**	**55,973**	**62,083**	**68,435**	**74,393**	**86,180**
Common Stock & APIC:	36,307	40,247	45,049	57,501	72,153	89,146	108,664	130,783
Retained Earnings:	105,131	113,247	134,885	166,445	203,627	249,286	306,176	369,958
Treasury Stock:	0	0	0	(6,770)	(30,363)	(58,759)	(81,960)	(107,636)
Accumulated Other Comprehensive Income (AOCI):	(2,402)	(992)	(2,306)	(2,106)	(1,931)	(1,741)	(1,421)	(1,121)
Total Shareholder's Equity:	**139,036**	**152,502**	**177,628**	**215,071**	**243,486**	**277,932**	**331,459**	**391,984**
Noncontrolling Interests:	0	0	0	0	0	0	0	0
Total Equity:	**139,036**	**152,502**	**177,628**	**215,071**	**243,486**	**277,932**	**331,459**	**391,984**
Total Liabilities & Shareholder's Equity:	**$167,497**	**$197,295**	**$232,792**	**$271,044**	**$305,569**	**$346,367**	**$405,852**	**$478,164**

Exhibit II: Google Maps Revenue Build

Google Maps Model	2018A	Projected 2019E	2020E	2021E	2022E	2023E
Total Searches (Potential Ads)						
Desktop Google Searches	1,193,888	1,098,377	1,076,410	1,065,645	1,065,645	1,065,645
% Growth		*-8.0%*	*-2.0%*	*-1.0%*	*0.0%*	*0.0%*
Mobile Google Searches	3,082,909	3,545,345	4,041,693	4,567,114	5,115,167	5,626,684
% Growth		*15.0%*	*14.0%*	*13.0%*	*12.0%*	*10.0%*
Total Google Searches	4,276,797	**4,643,722**	**5,118,103**	**5,632,759**	**6,180,813**	**6,692,329**
% Growth		*8.6%*	*10.2%*	*10.1%*	*9.7%*	*8.3%*
% Desktop Searches w/ Local Intent	5.0%	5.5%	6.0%	6.5%	7.0%	7.5%
YoY Change Assumption		*0.5%*	*0.5%*	*0.5%*	*0.5%*	*0.5%*
Total Desktop Searches w/ Local Intent		60,411	64,585	69,267	74,595	79,923
% Growth			*6.9%*	*7.3%*	*7.7%*	*7.1%*
% Mobile Searches w/ Local Intent	35.0%	36.0%	37.0%	38.0%	39.0%	40.0%
YoY Change Assumption		*1.0%*	*1.0%*	*1.0%*	*1.0%*	*1.0%*
Total Mobile Searches w/ Local Intent		1,276,324	1,495,427	1,735,503	1,994,915	2,250,674
% Growth			*17.2%*	*16.1%*	*14.9%*	*12.8%*
Total Searches w/ Local Intent		**1,336,735**	**1,560,011**	**1,804,770**	**2,069,510**	**2,330,597**
Ad Load						
% of Ads on Searches w/ Local Intent		*50.0%*	*52.5%*	*55.0%*	*60.0%*	*65.0%*
Desktop Maps Ads		30,205	33,907	38,097	44,757	51,950
Mobile Maps Ads		638,162	785,099	954,527	1,196,949	1,462,938
Total Maps Ads		**668,368**	**819,006**	**992,624**	**1,241,706**	**1,514,888**
% Growth			*22.5%*	*21.2%*	*25.1%*	*22.0%*
Click-Through Rate						
Mobile Search Click-Through Rate		*5.0%*	*5.5%*	*5.8%*	*6.5%*	*7.0%*
Click-Through Rate Discount Factor		50%	50%	50%	50%	50%
Mobile Map Ads Click-Through Rate		2.5%	2.8%	2.9%	3.3%	3.5%
Paid Clicks						
Desktop Ad Paid Clicks		755	932	1,095	1,455	1,818
% Growth			*23.5%*	*17.5%*	*32.8%*	*25.0%*
Mobile Ad Paid Clicks		15,954	21,590	27,443	38,901	51,203
% Growth			*35.3%*	*27.1%*	*41.8%*	*31.6%*
Pricing						
Desktop Search Average CPC		$1.50	$1.50	$1.50	$1.50	$1.50
Map Ads Discount to Search CPC		20%	20%	20%	20%	20%
Mobile Search Average CPC		$0.30	$0.30	$0.30	$0.30	$0.30
Map Ads Discount to Search CPC		20%	20%	20%	20%	20%
Revenue						
Desktop Local Search Revenue		$906.2	$1,118.9	$1,314.3	$1,745.5	$2,181.9
Mobile Local Search Revenue		$3,829.0	$5,181.7	$6,586.2	$9,336.2	$12,288.7
Total Maps Revenue		**$4,735.1**	**$6,300.6**	**$7,900.6**	**$11,081.7**	**$14,470.6**
% Growth			33.1%	25.4%	40.3%	30.6%
% of Segment Revenue		*4.1%*	*4.7%*	*5.0%*	*6.0%*	*6.9%*
Incremental Maps Revenue		40%	40%	40%	40%	40%
Total Incremental Maps Revenue		**$1,894.05**	**$2,520.2**	**$3,160.2**	**$4,432.7**	**$5,788.2**
% Growth			*33.1%*	*25.4%*	*40.3%*	*30.6%*
% of Incremental Segment Revenue		1.6%	1.9%	2.0%	2.4%	2.7%

Exhibit III: Ratio Analysis

Ratio Analysis	Historical			Projected				
	2016A	2017A	2018A	2019E	2020E	2021E	2022E	2023E
Profitability:								
Gross Margin:	61.1%	58.9%	56.5%	58.5%	59.0%	60.5%	61.5%	61.3%
EBITDA Margin:	33.1%	32.3%	29.5%	31.0%	31.4%	32.9%	35.0%	36.4%
EBIT Margin:	26.3%	26.1%	22.9%	23.5%	23.5%	24.6%	26.4%	26.3%
Net Profit Margin:	21.6%	11.4%	22.5%	19.3%	19.1%	20.0%	21.6%	21.2%
Return on Assets (ROA):	11.6%	6.4%	13.2%	11.6%	12.2%	13.2%	14.0%	13.3%
Return on Equity (ROE):	14.0%	8.3%	17.3%	14.7%	15.3%	16.4%	17.2%	16.3%
Return on Invested Capital (ROIC):	13.6%	8.1%	16.9%	14.4%	15.0%	16.1%	16.9%	15.9%
Coverage:								
EBIT / Interest Expense:	191.3x	265.0x	275.4x	267.2x	316.8x	345.0x	385.2x	313.0x
EBITDA / Interest Expense:	240.8x	328.4x	354.6x	351.8x	422.9x	461.0x	511.3x	432.7x
(EBITDA - Capex) / Interest Expense:	158.5x	207.5x	134.1x	141.9x	180.5x	250.5x	321.4x	289.8x
Leverage:								
Total Debt / EBITDA:	0.1x	0.1x	0.1x	0.1x	0.1x	0.1x	0.1x	0.1x
Total Debt / Equity:	2.8%	2.6%	2.3%	1.9%	1.6%	1.8%	1.5%	2.3%
Total Debt / Total Assets:	2.3%	2.0%	1.7%	1.5%	1.3%	1.4%	1.2%	1.9%
Efficiency:								
Asset Turnover:	0.5x	0.6x	0.6x	0.6x	0.6x	0.7x	0.6x	0.6x
Days Receivable Outstanding (DSO):	57.2	60.4	55.6	45.0	45.0	45.0	45.0	45.0
Days Inventory Held (DIH):	2.8	6.0	6.8	5.1	5.1	5.1	5.1	5.1
Days Payable Outstanding (DPO):	21.2	25.1	26.8	21.1	21.1	21.1	21.1	21.1
Liquidity:								
Current Ratio:	6.3x	5.1x	3.9x	4.2x	3.7x	3.5x	3.6x	3.8x
Quick Ratio:	6.0x	5.0x	3.8x	4.0x	3.5x	3.3x	3.4x	3.6x
Cash Ratio:	5.2x	4.2x	3.2x	3.4x	2.9x	2.7x	2.8x	3.0x

Exhibit IV: GOOGL 3-Year LTM P/E

Exhibit V: GOOGL 3-Year NTM P/E

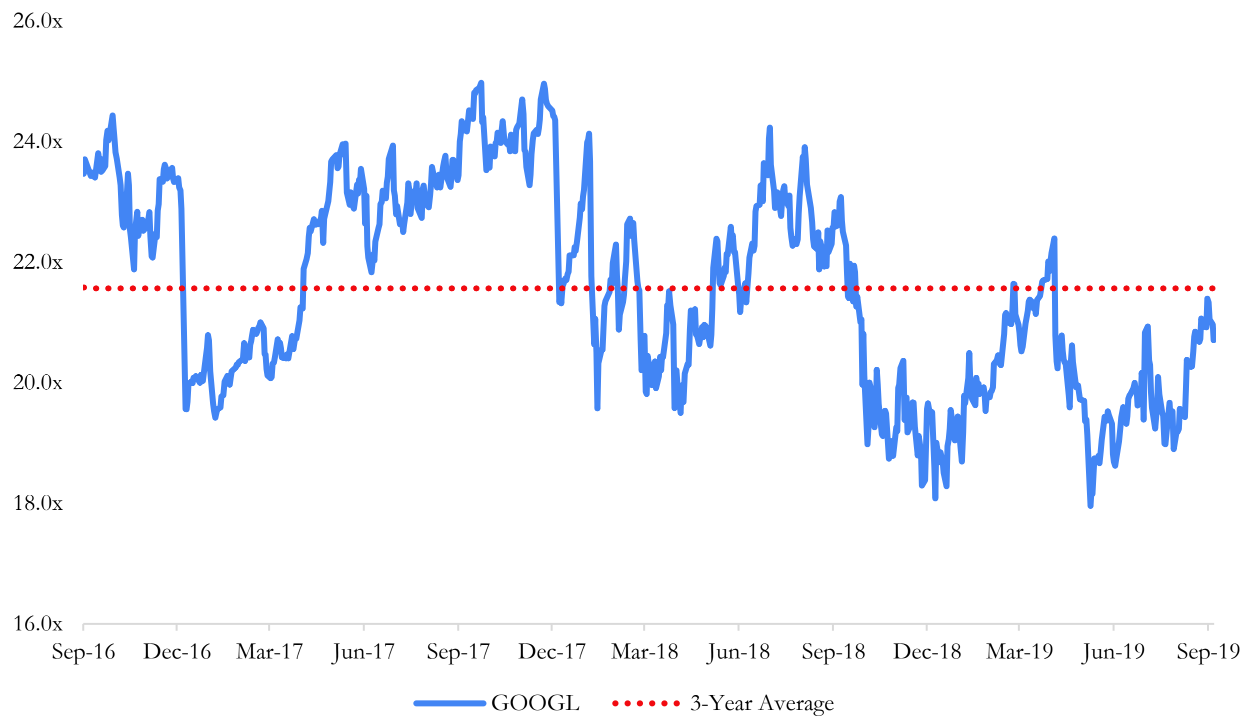


Exhibit VI: GOOGL 2-Year LTM EV/EBITDA

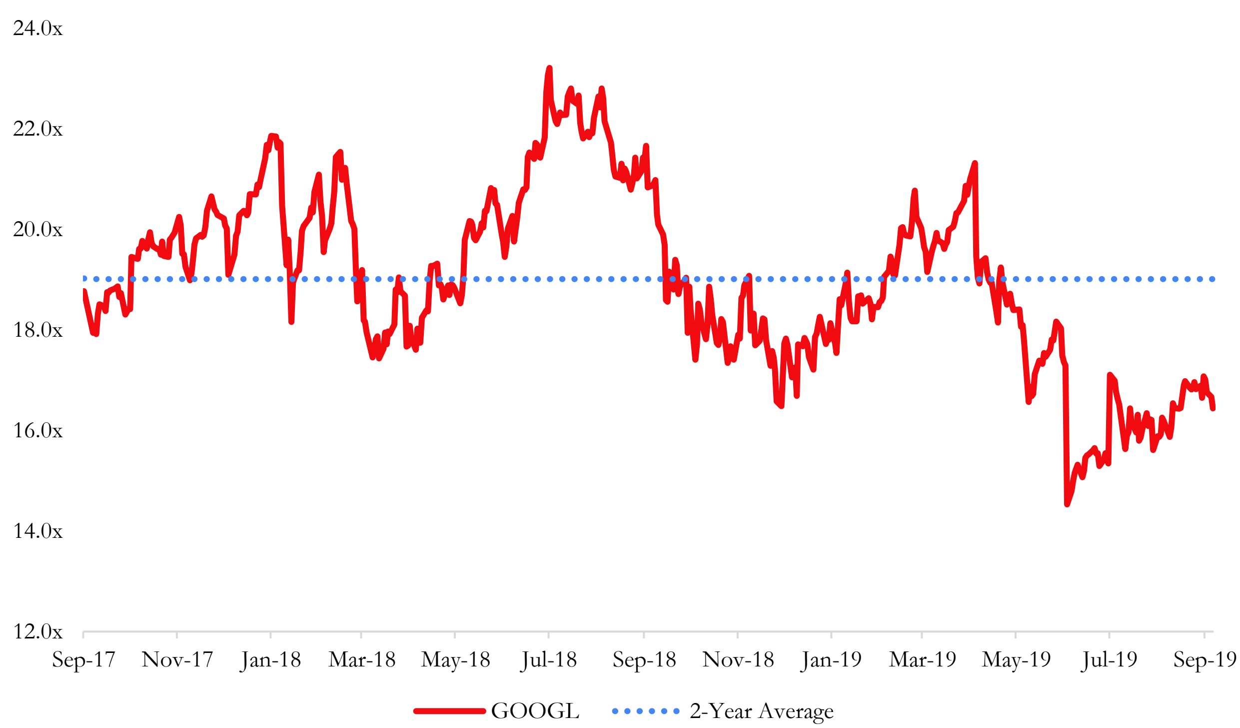


Exhibit VII: 3-Year Indexed LTM P/E: GOOGL vs. SPX

Exhibit VIII: Annualized ARPU of Monetized Newsfeed Competitors

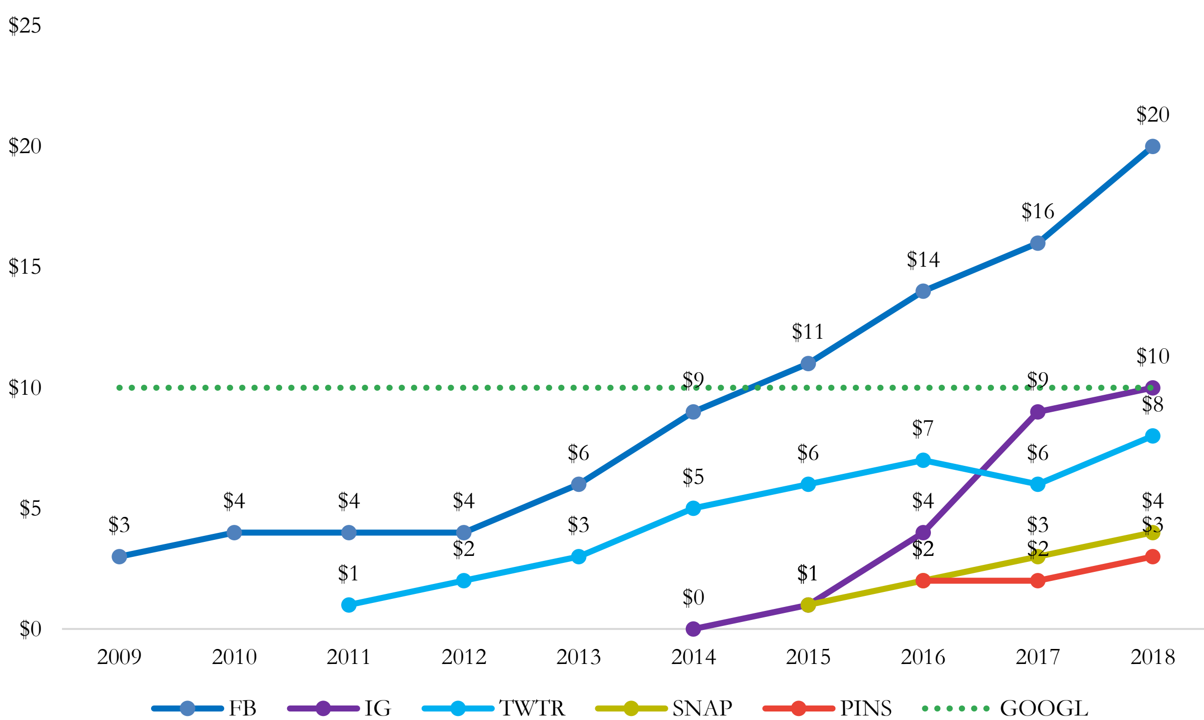


Exhibit IX: IM&S NTM EV/Sales Multiples

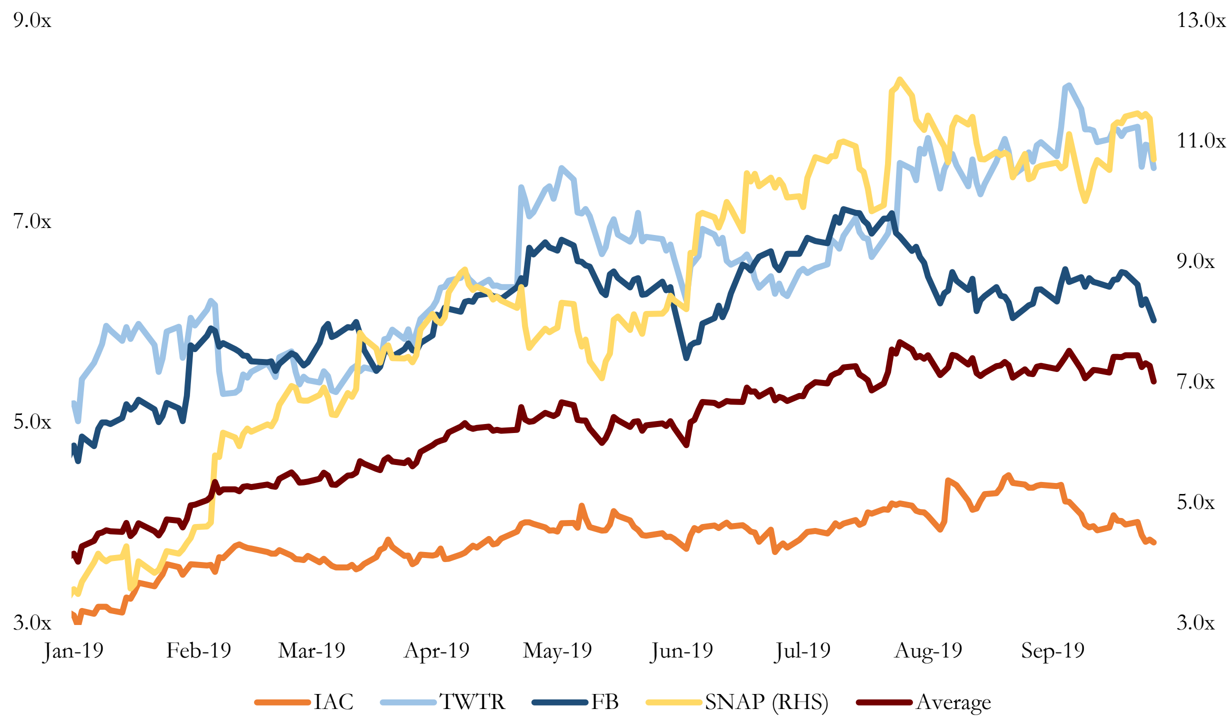


Exhibit X: Google Ads – Monetization Breakdown

Google Ads

Ad Rank =	CPC Max Bid *	Quality Score
Highest ad rank gets **best position**	Max bid for a **specified keyword** (in $)	Determines **relevance** of ad to a user

CPC = (Ad rank of advertiser below you / Your quality score) + $0.01

	Max Bid	Quality Score	Ad Rank		Actual CPC
Advertiser 1	$2.00	10★	20	➡	(16/10) + $0.01 = **$1.61**
Advertiser 2	$4.00	4★	16	➡	(12/4) + $0.01 = **$3.01**
Advertiser 3	$6.00	2★	12	➡	(8/2) + $0.01 = **$4.01**
Advertiser 4	$8.00	1★	8	➡	Highest CPC

DISCLAIMER

This report is prepared strictly for educational purposes and should not be used as an actual investment guide. The forward-looking statements contained herein are simply the author's opinions. The writer does not own any Alphabet, Inc. (GOOGL) stock.

TUIA STATEMENT

Established in honor of Professor William C. Dunkelberg, former Dean of the Fox School of Business, for his tireless dedication to educating students in "real-world" principles of economics and business, the William C. Dunkelberg (WCD) Owl Fund will ensure that future generations of students have exposure to a challenging, practical learning experience. Managed by Fox School of Business graduate and undergraduate students with oversight from its Board of Directors, the WCD Owl Fund's goals are threefold:

- Provide students with hands-on investment management experience
- Enable students to work in a team-based setting in consultation with investment professionals.
- Connect student participants with nationally recognized money managers and financial institutions

Earnings from the fund will be reinvested net of fund expenses, which are primarily trading and auditing costs and partial scholarships for student participants.