

Alphabet Inc.

Revenue Trajectory Restored at 20%+ w/Incremental Disclosures & Bigger Buyback; Raising PT to \$1,420

Key Takeaways from Alphabet Earnings & Calls w/Management:

1) Revenue Growth Returns to 20%+. Following a few months of consternation around Alphabet's revenue growth, including fears of further deceleration, **FXHN revenue reaccelerated to 22% growth, essentially in-line w/the levels of 2018.** Mobile search, YouTube, and Cloud were the primary Alphabet drivers, w/acceleration across all regions. Google Properties specifically saw ~21% FXHN revenue growth led by mobile search, YouTube, & desktop search. Yes, desktop search continues to grow. The Google Segment's 'Other Revenue' also came in 9% above our estimate driven by Cloud, Google Play, & hardware. Management did not provide more detail on product changes or other factors that may have pressured 1Q growth & subsided in 2Q, but continued to emphasize that ad products roll out in stages & Google makes 100+ ad changes every quarter. **Management also confirmed strong YouTube growth & that removal of YouTube content has had virtually no impact on revenue.**

2) Heavy Investment in Cloud Continues. Google revealed that Cloud is on an \$8B run-rate, up from \$4B at 4Q17. **We believe the trajectory is in-line w/our previously published estimate (link) for Google Cloud revenue of \$8.5B-\$10B in 2019.** Cloud was the largest driver of Google 'Other Revenue' & the 3rd largest for Alphabet overall. **For comparison, AWS is on a \$33B run-rate, 4x the size of Google Cloud, & Azure is on a ~\$17B run-rate.** Google continues to invest aggressively into Cloud, w/particular emphasis on the go-to-market strategy including sales, service, partnerships, & ops teams. Cloud is the biggest area of hiring for Google & mgmt. expects to triple the sales force over the next few years. **We'd also note that on its conference call Amazon highlighted increased sales & mktg hiring for AWS as well, suggesting the competition for enterprise talent is ratcheting up.**

3) Better Disclosure + Bigger Buyback = A Bit More Shareholder-Friendly. We are encouraged to see GOOGL mgmt provide some incremental disclosures & color around the business. Beyond the Cloud run-rate, which hadn't been disclosed since 4Q17, we believe mgmt. provided more detail around the drivers within Cloud, greater Play & hardware disclosure, more granularity on capex breakdown, & slightly

GOOGL, GOOGL US

Overweight

Price: \$1,135.94 (25-Jul)

Price Target: \$1,420.00 (Dec-20)

GOOG, GOOG US

Overweight

Price: \$1,132.12 (25-Jul)

Price Target: \$1,420.00 (Dec-20)

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Alphabet Inc. (Class A) (GOOGL;GOOGL US)

Year-end Dec (\$)	FY17A	FY18A	FY19E (Prev)	FY19E (Curr)	FY20E (Prev)	FY20E (Curr)	FY21E (Prev)	FY21E (Curr)
Revenue (\$ mn)	89,183	110,093	129,889	132,125	152,040	155,767	-	180,127
Adj. EBIT (\$ mn)	36,561	41,753	47,427	48,180	54,704	56,045	-	64,846
EBIT margin	41.0%	37.9%	36.5%	36.5%	36.0%	36.0%	-	36.0%
EBITDA margin	48.7%	46.1%	44.8%	44.8%	43.8%	43.8%	-	43.6%
Adj. EPS (\$)	45.09	55.14	59.71	60.85	69.02	71.98	-	84.34
BBG EPS (\$)	43.16	54.19	-	57.18	-	63.50	-	75.96
Reported EPS (\$)	18.00	43.70	45.44	49.26	53.15	55.40	-	64.94
Dividend yield	-	-	-	-	-	-	-	-
Adj. P/E	25.2	20.6	19.0	18.7	16.5	15.8	-	13.5
P/ BV	5.2	4.5	3.9	3.9	3.4	3.3	-	2.9

Source: Company data, Bloomberg, J.P. Morgan estimates.

Company Data

Shares O/S (mn)	700
52-week range (\$)	1,296.97-977.66
Market cap (\$ mn)	795,105.70
Exchange rate	1.00
Free float(%)	99.9%
3M - Avg daily vol (mn)	1.70
3M - Avg daily val (\$ mn)	1,928.3
Volatility (90 Day)	25
Index	S&P 500
BBG BUY HOLD SELL	37 7 0

See page 13 for analyst certification and important disclosures, including non-US analyst disclosures.

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expanded commentary on the outlook. Mgmt indicated it is pleased w/ongoing momentum off a large revenue base & that it is confident in the ongoing opportunity set. Alphabet also announced a \$25B share buyback authorization, up from \$12.5B in its most recent round in January 2019. **When complete, Alphabet will have repurchased ~\$60B of stock since 2015.**

Overall, 2Q results put Google's revenue trajectory back on track & highlight mgmt's confidence in future growth, led by machine learning. Alphabet operating margin of 24% also came in nearly a point above expectations w/leverage in TAC and S&M offsetting some of the compression from Other Cost of Revenue. **We come away from 2Q earnings incrementally positive based on Alphabet's restored revenue trajectory, profit upside, increased disclosures, & stepped-up buyback.** Alphabet's machine learning focus is more compute intensive, and therefore more expensive to operate, but it also opens up new revenue opportunities across the businesses and drives operating efficiencies. We are establishing our December 2020 PT at \$1,420 (up from prior \$1,310) based on 21x our 2021E Google Segment GAAP EPS of \$67.48.

Figure 1: GOOGL Revenue by Segment, Other Cost of Revenue, & Capex - % Growth, \$ Growth, \$ Growth Callouts, & Capex Magnitude Callout

	1Q17A	2Q17A	3Q17A	4Q17A	1Q18A	2Q18A	3Q18A	4Q18A	1Q19A	2Q19A
Google Properties										
% chg. Y/Y Reported	+21.5% Y/Y	+19.6% Y/Y	+22.6% Y/Y	+23.8% Y/Y	+26.4% Y/Y	+26.3% Y/Y	+22.0% Y/Y	+21.5% Y/Y	+16.7% Y/Y	+17.5% Y/Y
% chg. Y/Y FXHN	+22.9% Y/Y	+21.7% Y/Y	+22.9% Y/Y	+23.3% Y/Y	+23.1% Y/Y	+23.7% Y/Y	+22.2% Y/Y	+22.6% Y/Y	+19.1% Y/Y	+20.5% Y/Y
\$ chg. Y/Y (\$M)	+\$3,075 Y/Y	+\$3,025 Y/Y	+\$3,634 Y/Y	+\$4,269 Y/Y	+\$4,595 Y/Y	+\$4,837 Y/Y	+\$4,331 Y/Y	+\$4,785 Y/Y	+\$3,684 Y/Y	+\$4,073 Y/Y
\$ growth drivers	1) Biggest contributor to growth again was Mobile Search	1) Biggest contributors again were Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search	1) Led again by Mobile Search
	2) YouTube can't grow @ a significant rate	2) and YouTube	2) Complemented by Desktop Search	2) Solid growth from Desktop Search	2) Solid growth from Desktop Search	2) Strong contribution from YouTube	2) Strong contribution from YouTube	2) Strong contribution from YouTube	2) Strong contribution from YouTube	2) Strong contribution from YouTube
			3) Strong performance from YouTube	3) Strong performance from YouTube	3) Strong performance from YouTube	3) Strong contribution from Desktop Search	3) Followed by Desktop Search	3) Followed by Desktop Search	3) Followed by Desktop Search	3) Followed by Desktop Search
Google Network										
% chg. Y/Y Reported	+8.6% Y/Y	+13.5% Y/Y	+16.3% Y/Y	+12.6% Y/Y	+15.9% Y/Y	+13.6% Y/Y	+12.9% Y/Y	+12.5% Y/Y	+8.5% Y/Y	+9.1% Y/Y
\$ chg. Y/Y (\$M)	+\$316 Y/Y	+\$504 Y/Y	+\$610 Y/Y	+\$559 Y/Y	+\$636 Y/Y	+\$578 Y/Y	+\$558 Y/Y	+\$623 Y/Y	+\$394 Y/Y	+\$441 Y/Y
\$ growth drivers	1) Programmatic	1) Programmatic	1) Programmatic	1) Programmatic	1) Programmatic	1) AdMob	1) AdMob	1) AdMob	1) AdMob	1) Google Ad Manager
	2) AdMob	2) AdMob	2) AdMob	2) AdMob	2) AdMob	2) Programmatic	2) Programmatic	2) Google Ad Manager	2) Google Ad Manager	2) AdMob
Google Other										
RESTATED TO INCLUDE NEST IN GOOGLE OTHER INSTEAD OF OTHER BETS BEGINNING 1Q17 \$ GROWTH DRIVER COMMENTS WERE MADE PRIOR TO RESTATEMENT										
% chg. Y/Y Reported	NA	NA	NA	NA	+35.8% Y/Y	+36.5% Y/Y	+29.2% Y/Y	+30.7% Y/Y	+25.1% Y/Y	+39.7% Y/Y
\$ chg. Y/Y (\$M)	NA	NA	NA	NA	+\$1,147 Y/Y	+\$1,184 Y/Y	+\$1,050 Y/Y	+\$1,522 Y/Y	+\$1,095 Y/Y	+\$1,756 Y/Y
\$ growth drivers	1) Play	1) Play	1) Cloud	1) Hardware	1) Cloud	1) Cloud	1) Cloud	1) Cloud	1) Cloud	1) Cloud
	2) Hardware	2) Cloud	2) Play	2) Cloud	2) Hardware	2) Play	2) Play	2) Hardware	2) Play	2) Ongoing strong contribution from Play
	3) Cloud	3) Hardware	3) Hardware	3) Play	3) Play	3) Hardware	3) Play	3) Play	3) partially offset by Hardware	3) Hardware related
Other Bets										
RESTATED TO INCLUDE NEST IN GOOGLE OTHER INSTEAD OF OTHER BETS BEGINNING 1Q17 \$ GROWTH DRIVER COMMENTS WERE MADE PRIOR TO RESTATEMENT										
% chg. Y/Y Reported	NA	NA	NA	NA	+13.6% Y/Y	+49.5% Y/Y	+24.8% Y/Y	+17.6% Y/Y	+13.3% Y/Y	+11.7% Y/Y
\$ chg. Y/Y (\$M)	NA	NA	NA	NA	+\$18 Y/Y	+\$48 Y/Y	+\$29 Y/Y	+\$23 Y/Y	+\$118 Y/Y	+\$20 Y/Y
Revenue Drivers	1) Nest	1) Nest	1) Nest	1) Nest (FY17)	1) Fiber	1) Fiber	1) Fiber	1) Fiber (FY18)	1) Fiber	1) Fiber
	2) Verily	2) Fiber	2) Fiber	2) Fiber (FY17)	2) Verily	2) Verily	2) Verily	2) Verily (FY18)	2) Verily	2) Verily
	3) Fiber	3) Verily	3) Verily	3) Verily (FY17)						
Alphabet Other Cost of Revenue										
% chg. Y/Y Reported	+33.8% Y/Y	+27.1% Y/Y	+25.0% Y/Y	+34.5% Y/Y	+39.0% Y/Y	+41.3% Y/Y	+36.4% Y/Y	+34.1% Y/Y	+27.5% Y/Y	+34.8% Y/Y
\$ chg. Y/Y (\$M)	+\$1,306 Y/Y	+\$1,127 Y/Y	+\$1,129 Y/Y	+\$2,004 Y/Y	+\$2,013 Y/Y	+\$2,181 Y/Y	+\$2,053 Y/Y	+\$2,665 Y/Y	+\$1,973 Y/Y	+\$2,595 Y/Y
\$ growth drivers	1) Data Center, incl. Depreciation	1) Data Center, incl. Depreciation	1) Data Center, incl. Depreciation	1) DC & Other Oper, incl. Depreciation	1) DC & Other Oper, incl. Depreciation	1) DC & Other Oper, incl. Depreciation	1) DC & Other Oper, incl. Depreciation	1) Content-acq, primarily for YouTube	1) DC & Other Oper, incl. Depreciation	1) DC & Other Oper, incl. Depreciation
	2) Content-acq, primarily for YouTube	2) Content-acq, primarily for YouTube	2) Content-acq, primarily for YouTube	2) Hardware related	2) Content-acq, primarily for YouTube	2) Content-acq, primarily for YouTube	2) Content-acq, primarily for YouTube	2) DC & Other Oper, incl. Depreciation	2) Content-acq, primarily for YouTube	2) Content-acq, primarily for YouTube
	3) Hardware related	3) Hardware related	3) Hardware related	3) Content-acq, primarily for YouTube	3) Hardware related	3) Hardware related	3) Hardware related	3) Hardware related	3) Hardware related	3) Hardware related
Capex										
% chg. Y/Y Reported	+2.6% Y/Y	+32.5% Y/Y	+38.5% Y/Y	+39.9% Y/Y	+191.0% Y/Y	+93.5% Y/Y	+49.3% Y/Y	+64.4% Y/Y	-36.5% Y/Y	+11.8% Y/Y
Capex Spend (\$M)	+\$2,508 Y/Y	+\$2,831 Y/Y	+\$3,538 Y/Y	+\$4,307 Y/Y	+\$7,299 Y/Y	+\$5,477 Y/Y	+\$5,282 Y/Y	+\$7,081 Y/Y	+\$4,638 Y/Y	+\$6,126 Y/Y
Google Segment Accrued Capex By Magnitude of Spend	1) Machines	1) Machines	1) Machines	1) Machines	1) Facilities	1) Machines	1) Machines	1) Facilities	1) Data Centers	1) Office Facilities
	2) Facilities	2) Facilities	2) Facilities	2) Facilities	2) Machines	2) Data Center Construction	2) Data Center Construction	2) Data Centers	2) Servers	2) Data Centers
	3) Data Center Construction	3) Data Center Construction	3) Data Center Construction	3) Data Center Construction	3) Data Center Construction	3) Facilities	3) Facilities	3) Servers (prev. Machines)	3) Office Facilities	3) Servers

Source: J.P. Morgan and Company Data

Source: J.P. Morgan estimates, Company data.

Summary of the Quarter

Figure 2: Alphabet Inc. 2Q Performance vs. J.P. Morgan Estimates

\$ in millions, except per share data and where noted otherwise

(\$ in millions)	2Q19		
	JPM	Actuals	Diff (%/bps)
Alphabet FXHN Gross Revenue Growth	19.0%	22.3%	321 bps
Alphabet Gross Revenue	38,162	38,944	2.0%
Alphabet Net Revenue	30,822	31,706	2.9%
Google Segment Gross Revenue	37,991	38,782	2.1%
Google Sites	27,058	27,335	1.0%
Google Network	5,269	5,266	-0.1%
Google Other	5,664	6,181	9.1%
Traffic Acquisition Cost (TAC)			
Google Sites TAC, % of Sites Gross Revs	13.4%	13.2%	(17) bps
Google Network TAC, % of Network Gross Revs	70.5%	68.8%	(174) bps
Total TAC, % of Total Gross Ad Revs	22.7%	22.2%	(50) bps
Google Segment Net Ad Revenue	24,987	25,363	1.5%
Google Sites Net Ad Revenue	23,432	23,718	1.2%
Google Network Net Ad Revenue	1,554	1,645	5.8%
Google Segment GAAP Operating Income	9,916	10,388	4.8%
Margin - Gross	26.1%	26.8%	69 bps
Other Bets			
Revenue	171	162	-5.3%
Operating Income / (Loss)	(931)	(989)	NA
Alphabet GAAP Operating Income	8,784	9,180	4.5%
Margin, % of Gross Revenue	23.0%	23.6%	55 bps
Margin, % of Net Revenue	28.5%	29.0%	45 bps
Alphabet EBITDA	14,234	14,771	3.8%
EBITDA Margin, % of Gross Revenue	37.3%	37.9%	63 bps
EBITDA Margin, % of Net Revenue	46.2%	46.6%	40 bps
Alphabet GAAP EPS	\$11.28	\$14.21	26.0%
Y/Y Growth			
Alphabet Gross Revenue	16.9%	19.3%	239 bps
Alphabet Net Revenue	17.5%	20.8%	337 bps
Alphabet GAAP EPS	148.3%	212.8%	6,445 bps
Sequential Growth			
Alphabet Gross Revenue	5.0%	7.2%	215 bps
Alphabet Net Revenue	4.6%	7.6%	300 bps
Alphabet GAAP EPS	18.8%	49.6%	3,083 bps

Source: J.P. Morgan estimates, Company data.

Adjusting Estimates

Following Alphabet's 2Q19 results, we are adjusting our estimates as follows:

Figure 3: Adjusting J.P. Morgan Estimates

\$ in millions, except per share data and where noted otherwise

Alphabet, Inc	3Q19 JPMe		4Q19 JPMe		2019 JPMe		2020 JPMe		2021 JPMe
(\$ in millions, except where noted)	Old	New	Old	New	Old	New	Old	New	New
Google Segment									
Google Segment Gross Revenue	39,470	40,037	46,004	46,589	159,633	161,577	186,250	189,733	218,938
Y/Y Growth	17.5%	19.2%	17.6%	19.1%	17.2%	18.6%	16.7%	17.4%	15.4%
% chg vs. old		1.4%		1.3%		1.2%		1.9%	
Operating Income	10,657	10,870	11,363	11,321	41,260	41,904	46,376	47,243	53,421
% Margin - Gross	27.0%	27.2%	24.7%	24.3%	25.8%	25.9%	24.9%	24.9%	24.4%
% chg vs. old		2.0%		-0.4%		1.6%		1.9%	
Google GAAP EPS	\$13.17	\$13.63	\$14.06	\$14.20	\$52.42	\$56.59	\$56.93	\$59.11	\$67.48
Y/Y Growth	-6.0%	-3.6%	-4.5%	-3.6%	-5.6%	1.7%	8.6%	4.5%	14.2%
% chg vs. old		3.5%		1.0%		7.9%		3.8%	
Other Bets									
Revenue	172	172	176	176	690	679	814	798	942
% chg vs. old		-0.4%		-0.4%		-1.5%		-2.0%	
Operating Income/(Loss)	(949)	(995)	(1,281)	(1,022)	(4,029)	(3,874)	(3,932)	(3,778)	(3,234)
% chg vs. old		(46)		259		155		153	
Alphabet Inc.									
Alphabet Gross Revenue	39,642	40,209	46,180	46,764	160,323	162,256	187,064	190,531	219,880
Y/Y Growth	17.5%	19.2%	17.6%	19.1%	17.2%	18.6%	16.7%	17.4%	15.4%
FXHN Y/Y Growth	18.9%	20.9%	18.4%	20.2%	18.8%	20.6%	17.3%	18.2%	15.5%
% chg vs. old		1.4%		1.3%		1.2%		1.9%	
Alphabet Net Revenue	32,013	32,686	37,575	38,254	129,889	132,125	152,040	155,767	180,127
Y/Y Growth	17.9%	20.4%	18.0%	20.1%	18.0%	20.0%	17.1%	17.9%	15.6%
Q/Q Growth	3.9%	3.1%	17.4%	17.0%					
% chg vs. old		2.1%		1.8%		1.7%		2.5%	
GAAP Operating Income	9,508	9,675	9,882	10,099	34,782	35,562	41,629	42,649	49,355
% Margin - Gross	24.0%	24.1%	21.4%	21.6%	21.7%	21.9%	22.3%	22.4%	22.4%
% Margin - Net	29.7%	29.6%	26.3%	26.4%	26.8%	26.9%	27.4%	27.4%	27.4%
% chg vs. old		1.8%		2.2%		2.2%		2.5%	
EBITDA	14,809	15,067	15,432	15,726	58,162	59,251	66,615	68,245	78,602
% Margin - Gross	37.4%	37.5%	33.4%	33.6%	36.3%	36.5%	35.6%	35.8%	35.7%
% Margin - Net	46.3%	46.1%	41.1%	41.1%	44.8%	44.8%	43.8%	43.8%	43.6%
% chg vs. old		1.7%		1.9%		1.9%		2.4%	
GAAP EPS	\$12.11	\$12.51	\$12.55	\$13.05	\$45.44	\$49.26	\$53.15	\$55.40	\$64.94
Y/Y Growth	-7.3%	-4.2%	-1.7%	2.2%	4.0%	12.7%	17.0%	12.5%	17.2%
% chg vs. old		3.3%		4.0%		8.4%		4.2%	

Source: J.P. Morgan estimates.

Investment Thesis, Valuation and Risks

Alphabet Inc. (Overweight; Price Target: \$1,420.00)

Investment Thesis

We believe Alphabet's fundamentals are strong and that the company will remain a primary beneficiary of the secular shift to online spending. Google remains focused on innovation across its advertising businesses and new offerings, which is helping Google sustain a DD growth off of a large base. We continue to believe there is meaningful runway across search and YouTube as ROI improves and TV dollars shift more online. Google Segment's other businesses such as Cloud, Play, and Hardware have strong momentum, and companies within Other Bets, incl. Waymo, provide option value. And with DD 2017-20E CAGRs for revenue and profits, we believe GOOGL shares remain attractive.

Valuation

We are establishing our December 2020 PT at \$1,420 (up from prior \$1,310) based on 21x our 2021E Google Segment GAAP EPS of \$67.48. We believe Alphabet shares should trade at a premium to the S&P 500 as Alphabet maintains a dominant position in the global online ad industry w/~1/3 share, and is one of the few companies in the S&P 500 w/DD revenue and EPS growth off of a very large base.

Risks to Rating and Price Target

Downside risks include 1) potential for a return to heavy investment spending and margin compression; **2)** continued competition for engineering talent; **3)** increased regulatory scrutiny; and **4)** next major revenue drivers—potentially Cloud, Hardware, and Waymo—may not materialize.

Overweight

Company Data	
Shares O/S (mn)	700
52-week range (\$)	1,289.27-970.11
Market cap (\$ mn)	792,431.90
Exchange rate	1.00
Free float(%)	87.1%
3M - Avg daily vol (mn)	1.56
3M - Avg daily val (\$ mn)	1,766.1
Volatility (90 Day)	25
Index	S&P 500
BBG BUY HOLD SELL	13 2 0

Alphabet Inc. (GOOG;GOOG US)

Year-end Dec (\$)	FY17A	FY18A	FY19E (Prev)	FY19E (Curr)	FY20E (Prev)	FY20E (Curr)	FY21E (Prev)	FY21E (Curr)
Revenue (\$ mn)	89,183	110,093	129,889	132,125	152,040	155,767	-	180,127
Adj. EBIT (\$ mn)	36,561	41,753	47,427	48,180	54,704	56,045	-	64,846
EBIT margin	41.0%	37.9%	36.5%	36.5%	36.0%	36.0%	-	36.0%
EBITDA margin	48.7%	46.1%	44.8%	44.8%	43.8%	43.8%	-	43.6%
Adj. EPS (\$)	45.09	55.14	59.71	60.85	69.02	71.98	-	84.34
BBG EPS (\$)	43.16	54.19	-	57.18	-	63.50	-	75.96
Reported EPS (\$)	18.00	43.70	45.44	49.26	53.15	55.40	-	64.94
Dividend yield	-	-	-	-	-	-	-	-
Adj. P/E	25.1	20.5	19.0	18.6	16.4	15.7	-	13.4
P/ BV	5.2	4.5	3.9	3.8	3.4	3.3	-	2.9

Source: Company data, Bloomberg, J.P. Morgan estimates.

Figure 4: Alphabet Income Statement

\$ in millions, except per share amounts	2017A	3/18A	6/18A	9/18A	12/18A	2018A	3/19A	6/19A	9/19E	12/19E	2019E	2020E	2021E
Gross Revenues	\$110,855.0	\$31,146.0	\$32,657.0	\$33,740.0	\$39,276.0	\$136,819.0	\$36,339.0	\$38,944.0	\$40,208.7	\$46,764.1	\$162,255.8	\$190,530.5	\$219,879.8
Traffic Acquisition Costs (TAC)	\$21,672.0	\$6,288.0	\$6,420.0	\$6,582.0	\$7,436.0	\$26,726.0	\$6,860.0	\$7,238.0	\$7,522.9	\$8,509.8	\$30,130.7	\$34,763.1	\$39,752.7
Net Revenues excluding TAC	89,183.0	24,858.0	26,237.0	27,158.0	31,840.0	110,093.0	29,479.0	31,706.0	32,685.8	38,254.4	132,125.2	155,767.4	180,127.1
Other cost of revenues	23,911.0	7,179.0	7,463.0	7,699.0	10,482.0	32,823.0	9,152.0	10,058.0	10,132.6	12,891.7	42,234.3	49,876.7	58,000.9
Gross profit	65,272.0	17,679.0	18,774.0	19,459.0	21,358.0	77,270.0	20,327.0	21,648.0	22,553.2	25,362.6	89,890.8	105,890.7	122,126.2
Operating expenses													
Research & development	16,625.0	5,039.0	5,114.0	5,232.0	6,034.0	21,419.0	6,029.0	6,213.0	6,341.0	7,230.1	25,813.1	30,997.7	36,025.4
Sales & marketing	12,893.0	3,604.0	3,780.0	3,849.0	5,100.0	16,333.0	3,905.0	4,212.0	4,576.0	5,852.9	18,545.9	23,365.1	27,379.3
General & administrative	6,872.0	1,598.0	1,764.0	1,753.0	2,003.0	7,118.0	2,088.0	2,043.0	1,961.1	2,180.5	8,272.6	8,878.7	9,366.6
Other 1x item, incl. Impairment charge	2,736.0	(195.0)	5,071.0	-	-	4,876.0	1,697.0	-	-	-	1,697.0	-	-
Total operating expenses	39,126.0	10,046.0	15,729.0	10,834.0	13,137.0	49,746.0	13,719.0	12,468.0	12,878.2	15,263.5	54,328.7	63,241.6	72,771.3
GAAP Operating income	26,146.0	7,633.0	3,045.0	8,625.0	8,221.0	27,524.0	6,608.0	9,180.0	9,675.0	10,099.2	35,562.1	42,649.1	49,354.8
Non-GAAP Operating income	28,882.0	7,633.0	8,116.0	8,625.0	8,221.0	32,595.0	8,305.0	9,180.0	9,675.0	10,099.2	37,259.1	42,649.1	49,354.8
JPMc Adjusted Operating income	36,561.0	9,895.0	10,529.0	10,855.0	10,474.0	41,753.0	11,074.0	11,936.0	12,355.2	12,815.2	48,180.4	56,045.1	64,845.7
Other income, expense and other, net	1,047.0	2,910.0	1,170.0	1,458.0	1,851.0	7,389.0	1,538.0	2,967.0	625.8	648.3	5,779.1	2,507.6	2,801.3
Income before taxes	27,193.0	10,543.0	4,215.0	10,083.0	10,072.0	34,913.0	8,146.0	12,147.0	10,300.8	10,747.4	41,341.3	45,156.7	52,156.1
Provision for income taxes	14,531.0	1,142.0	1,020.0	891.0	1,124.0	4,177.0	1,489.0	2,200.0	1,545.1	1,612.1	6,846.2	6,773.5	7,823.4
Effective tax rate	53.4%	10.8%	24.2%	8.8%	11.2%	12.0%	18.3%	18.1%	15.0%	15.0%	16.6%	15.0%	15.0%
Discontinued Operations - Motorola	-	-	-	-	-	-	-	-	-	-	-	-	-
GAAP Net Income (loss)	12,662.0	9,401.0	3,195.0	9,192.0	8,948.0	30,736.0	6,657.0	9,947.0	8,755.7	9,135.3	34,495.0	38,383.2	44,332.7
GAAP EPS - Diluted	\$18.00	\$13.33	\$4.54	\$13.06	\$12.77	\$43.70	\$9.50	\$14.21	\$12.51	\$13.05	\$49.26	\$55.40	\$64.94
Diluted shares outstanding	703.6	705.1	703.2	703.9	700.9	703.3	700.9	700.0	700.0	700.1	700.2	692.8	682.6
Alphabet Non-GAAP reconciliation													
Adj. for One-time item	12,593.0	-	5,071.0	-	-	5,071.0	1,682.0	-	-	-	1,682.0	-	-
Non-GAAP Net Income (loss)	25,255.0	9,401.0	8,266.0	9,192.0	8,948.0	35,807.0	8,339.0	9,947.0	8,755.7	9,135.3	36,177.0	38,383.2	44,332.7
Non-GAAP EPS - Diluted	\$35.89	\$13.33	\$11.75	\$13.06	\$12.77	\$50.91	\$11.90	\$14.21	\$12.51	\$13.05	\$51.66	\$55.40	\$64.94
Non-recurring items:													
Stock compensation expense	7,679.0	2,457.0	2,413.0	2,230.0	2,253.0	9,353.0	2,769.0	2,756.0	2,680.2	2,716.1	10,921.3	13,396.0	15,490.9
One-time items	12,593.0	(2,706.0)	4,300.0	(1,005.0)	(1,338.00)	(719.0)	646.00	(2,339.00)	54.92	43.44	(1,594.6)	115.37	90.32
Tax Effect	(1,212.1)	27.0	(404.6)	(108.2)	(102.1)	(588.0)	(314.0)	(75.5)	(410.3)	(413.9)	(1,213.8)	(2,026.7)	(2,337.2)
JPMc Adjusted Net Income (loss)	31,721.9	9,179.0	9,533.4	10,308.9	9,760.9	38,782.0	9,758.0	10,288.5	11,080.6	11,480.9	42,607.9	49,867.9	57,576.8
JPMc Adj. EPS - Diluted	\$45.09	\$13.02	\$13.56	\$14.65	\$13.93	\$55.14	\$13.92	\$14.70	\$15.83	\$16.40	\$60.85	\$71.98	\$84.34
Diluted shares outstanding	703.6	705.1	703.2	703.9	700.9	703.3	700.9	700.0	700.0	700.1	700.2	692.8	682.6
EBITDA Reconciliation													
Operating income (adj. for 1x item as noted)	28,882.0	7,438.0	8,116.0	8,625.0	8,221.0	32,400.0	8,305.0	9,180.0	9,675.0	10,099.2	37,259.1	42,649.1	49,354.8
Depreciation & amortization	6,915.0	1,986.0	2,114.0	2,355.0	2,580.0	9,035.0	2,613.0	2,835.0	2,711.8	2,911.1	11,070.9	12,200.1	13,755.8
Stock compensation expense	7,679.0	2,457.0	2,413.0	2,230.0	2,253.0	9,353.0	2,769.0	2,756.0	2,680.2	2,716.1	10,921.3	13,396.0	15,490.9
JPMc EBITDA	43,476.0	11,881.0	12,643.0	13,210.0	13,054.0	50,788.0	13,687.0	14,771.0	15,067.0	15,726.3	59,251.3	68,245.1	78,601.5
Year/Year Growth	2017A	3/18A	6/18A	9/18A	12/18A	2018A	3/19A	6/19A	9/19E	12/19E	2019E	2020E	2021E
Gross Revenues (FXHN)	23.6%	22.8%	23.0%	21.8%	22.6%	22.5%	19.0%	22.3%	20.9%	20.2%	20.6%	18.2%	15.5%
Gross Revenues	22.8%	25.8%	25.6%	21.5%	21.5%	23.4%	16.7%	19.3%	19.2%	19.1%	18.6%	17.4%	15.4%
Traffic Acquisition Costs (TAC)	29.1%	35.8%	26.1%	19.6%	15.3%	23.3%	9.1%	12.7%	14.3%	14.4%	12.7%	15.4%	14.4%
Net Revenues	21.4%	23.5%	25.4%	21.9%	23.1%	23.4%	18.6%	20.8%	20.4%	20.1%	20.0%	17.9%	15.6%
Other cost of revenues	30.3%	39.0%	41.3%	36.4%	34.1%	37.3%	27.5%	34.8%	31.6%	23.0%	28.7%	18.1%	16.3%
Gross profit	18.4%	18.2%	20.1%	17.1%	18.3%	18.4%	15.0%	15.3%	15.9%	18.8%	16.3%	17.8%	15.3%
Research & development	19.2%	27.8%	22.6%	24.4%	40.1%	28.8%	19.6%	21.5%	21.2%	19.8%	20.5%	20.1%	16.2%
Sales & marketing	23.0%	36.3%	30.5%	26.5%	18.3%	26.7%	8.4%	11.4%	18.9%	14.8%	13.5%	26.0%	17.2%
General & administrative	-1.6%	-11.3%	3.8%	9.9%	12.8%	3.6%	30.7%	15.8%	11.9%	8.9%	16.2%	7.3%	5.5%
Stock compensation expense	14.6%	22.3%	20.5%	22.5%	22.0%	21.8%	12.7%	14.2%	20.2%	20.6%	16.8%	22.7%	15.6%
Total operating expenses	24.5%	19.8%	19.4%	22.5%	26.4%	27.1%	36.6%	17.0%	18.9%	16.2%	9.2%	16.4%	15.1%
GAAP Operating income	10.2%	16.2%	-26.3%	10.8%	7.3%	5.3%	-13.4%	201.5%	12.2%	22.8%	29.2%	19.9%	15.7%
Non-GAAP Operating income	21.8%	16.2%	18.2%	10.8%	7.3%	12.9%	8.8%	13.1%	12.2%	22.8%	14.3%	14.5%	15.7%
JPMc Adjusted Operating income	20.2%	15.4%	18.7%	13.0%	10.1%	14.2%	11.9%	13.4%	13.8%	22.4%	15.4%	16.3%	15.7%
Depreciation & amortization	12.5%	32.1%	30.1%	33.7%	27.3%	30.7%	31.6%	34.1%	15.2%	12.8%	22.5%	10.2%	12.8%
EBITDA	18.9%	17.9%	20.5%	16.3%	13.1%	16.8%	15.2%	16.8%	14.1%	20.5%	16.7%	15.2%	15.2%
GAAP EPS	-35.3%	72.5%	-9.3%	36.5%	NA	142.8%	-28.8%	212.8%	-4.2%	2.2%	12.7%	12.5%	17.2%
Non-GAAP EPS	28.8%	72.5%	32.1%	36.5%	31.7%	41.8%	-10.8%	20.9%	-4.2%	2.2%	1.5%	7.2%	17.2%
JPMc Adjusted EPS	31.3%	30.1%	18.9%	24.7%	16.8%	22.3%	7.0%	8.4%	8.1%	17.8%	10.3%	18.3%	17.2%
GAAP expenses as % of Net Revenues													
Other cost of revenues (non-TAC)	26.8%	28.9%	28.4%	28.3%	32.9%	29.8%	31.0%	31.7%	31.0%	33.7%	32.0%	32.0%	32.2%
Research & development	18.6%	20.3%	19.5%	19.3%	19.0%	19.5%	20.5%	19.6%	19.4%	18.9%	19.5%	19.9%	20.0%
Sales & marketing	14.5%	14.5%	14.4%	14.2%	16.0%	14.8%	13.2%	13.3%	14.0%	15.3%	14.0%	15.0%	15.2%
General & administrative	7.7%	6.4%	6.7%	6.5%	6.3%	6.5%	7.1%	6.4%	6.0%	5.7%	6.3%	5.7%	5.2%
Stock compensation expense	8.6%	9.9%	9.2%	8.2%	7.1%	8.5%	9.4%	8.7%	8.2%	7.1%	8.3%	8.6%	8.6%
GAAP expenses as % of Gross Revenues													
Traffic Acquisition Costs (TAC)	19.5%	20.2%	19.7%	19.5%	18.9%	19.5%	18.9%	18.6%	18.7%	18.2%	18.6%	18.2%	18.1%
Other cost of revenues (non-TAC)	21.6%	23.0%	22.9%	22.8%	26.7%	24.0%	25.2%	25.8%	25.2%	27.6%	26.0%	26.2%	26.4%
Research & development	15.0%	16.2%	15.7%	15.5%	15.4%	15.7%	16.6%	16.0%	15.8%	15.5%	15.9%	16.3%	16.4%
Sales & marketing	11.6%	11.6%	11.6%	11.4%	13.0%	11.9%	10.7%	10.8%	11.4%	12.5%	11.4%	12.3%	12.5%
General & administrative	6.2%	5.1%	5.4%	5.2%	5.1%	5.2%	5.7%	5.2%	4.9%	4.7%	5.1%	4.7%	4.3%
Stock compensation expense	6.9%	7.9%	7.4%	6.6%	5.7%	6.8%	7.6%	7.1%	6.7%	5.8%	6.7%	7.0%	7.0%
Margins as % of Net Revenues													
Gross margin	73.2%	71.1%	71.6%	71.7%	67.1%	70.2%	69.0%	68.3%	69.0%	66.3%	68.0%	68.0%	67.8%
GAAP Operating Margin	29.3%	30.7%	11.6%	31.8%	25.8%	25.0%	22.4%	29.0%	29.6%	26.4%	26.9%	27.4%	27.4%
JPMc Adjusted Operating margin	41.0%	39.8%	40.1%	40.0%	32.9%	37.9%	37.6%						

Figure 5: Alphabet Revenue Drivers

\$ millions except where noted	2017A	3/18A	6/18A	9/18A	12/18A	2018A	3/19A	6/19A	9/19E	12/19E	2019E	2020E	2021E
Gross Revenue Summary													
Google Properties (a.k.a Sites)	77,788.0	21,998.0	23,262.0	24,054.0	27,022.0	96,336.0	25,682.0	27,335.0	28,350.2	31,890.4	113,257.6	133,618.5	154,615.2
Y/Y growth	22.0%	26.4%	26.3%	22.0%	21.5%	23.8%	16.7%	17.5%	17.9%	18.0%	17.6%	18.0%	15.7%
FXHN Y/Y growth (estimate)	22.7%	23.1%	23.7%	22.2%	22.6%	22.9%	19.1%	20.5%	19.6%	19.1%	19.5%	18.7%	15.8%
Q/Q growth		-1.1%	5.7%	3.4%	12.3%		-5.0%	6.4%	3.7%	12.5%		6.5%	5.6%
Google Network Members' Properties	17,587.0	4,644.0	4,825.0	4,900.0	5,613.0	19,982.0	5,038.0	5,266.0	5,376.5	6,070.5	21,751.0	23,169.6	24,460.2
Y/Y growth	12.8%	15.9%	13.6%	12.9%	12.5%	13.6%	8.5%	9.1%	9.7%	8.2%	8.9%	6.5%	5.6%
Total Google Advertising - Gross Revenues	95,375.0	26,642.0	28,087.0	28,954.0	32,635.0	116,318.0	30,720.0	32,601.0	33,726.8	37,960.9	135,008.6	156,788.1	179,075.4
Y/Y growth	20.1%	24.4%	23.9%	20.3%	19.9%	22.0%	15.3%	16.1%	16.5%	16.3%	16.1%	16.1%	14.2%
Google Other Revenues	15,003.0	4,354.0	4,425.0	4,640.0	6,487.0	19,906.0	5,449.0	6,181.0	6,310.4	8,627.7	26,568.1	32,944.5	39,862.8
Y/Y growth	48.8%	35.8%	36.5%	29.2%	30.7%	32.7%	25.1%	39.7%	36.0%	33.0%	33.5%	24.0%	21.0%
Google Segment Revenues	110,378.0	30,996.0	32,512.0	33,594.0	39,122.0	136,224.0	36,169.0	38,782.0	40,037.2	46,588.6	161,576.7	189,732.6	218,938.2
Y/Y growth	23.4%	25.9%	25.5%	21.5%	21.5%	23.4%	16.7%	19.3%	19.2%	19.1%	18.6%	17.4%	15.4%
Other Bets Revenues	477.0	150.0	145.0	146.0	154.0	595.0	170.0	162.0	171.6	175.6	679.1	798.0	941.6
Y/Y growth	-41.0%	13.6%	49.5%	24.8%	17.6%	24.7%	13.3%	11.7%	17.5%	14.0%	14.1%	17.5%	18.0%
Alphabet Gross Revenues	110,855.0	31,146.0	32,657.0	33,740.0	39,276.0	136,819.0	36,339.0	38,944.0	40,208.7	46,764.1	162,255.8	190,530.5	219,879.8
Y/Y growth	22.8%	25.8%	25.6%	21.5%	21.5%	23.4%	16.7%	19.3%	19.2%	19.1%	18.6%	17.4%	15.4%
FXHN Y/Y growth	23.6%	22.6%	23.0%	21.8%	22.6%	22.5%	19.0%	22.3%	20.9%	20.2%	20.6%	18.2%	15.5%
Q/Q growth		-3.6%	4.9%	3.3%	16.4%		-7.5%	7.2%	3.2%	16.3%			
Gross Revenue Share by Segment													
Google Properties (a.k.a Sites)	70.2%	70.6%	71.2%	71.3%	68.8%	70.4%	70.7%	70.2%	70.5%	68.2%	69.8%	70.1%	70.3%
Google Network Members' Properties	15.9%	14.9%	14.8%	14.5%	14.3%	14.6%	13.9%	13.5%	13.4%	13.0%	13.4%	12.2%	11.1%
Total Google Advertising - Gross Revenues	86.0%	85.5%	86.0%	85.8%	83.1%	85.0%	84.5%	83.7%	83.9%	81.2%	83.2%	82.3%	81.4%
Google Other Revenues	13.5%	14.0%	13.5%	13.8%	16.5%	14.5%	15.0%	15.9%	15.7%	18.4%	16.4%	17.3%	18.1%
Google Segment Revenues	99.6%	99.5%	99.6%	99.6%	99.6%	99.6%	99.5%	99.6%	99.6%	99.6%	99.6%	99.6%	99.6%
Other Bets Revenues	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	0.5%	0.4%	0.4%	0.4%	0.4%	0.4%	0.4%
TAC Analysis													
Google Properties - TAC	9,031.0	2,902.0	3,009.0	3,155.0	3,506.0	12,572.0	3,383.0	3,617.0	3,813.1	4,321.1	15,134.3	18,706.6	22,728.4
Y/Y growth	53.2%	60.8%	46.9%	31.4%	26.3%	39.2%	16.6%	20.2%	20.9%	23.3%	20.4%	23.6%	21.5%
TAC as % of Google Sites Gross Adv. Revenues	11.61%	13.19%	12.94%	13.12%	12.97%	13.05%	13.17%	13.23%	13.45%	13.55%	13.36%	14.00%	14.70%
Google Network Members' Properties - TAC	12,641.0	3,386.0	3,411.0	3,427.0	3,930.0	14,154.0	3,477.0	3,621.0	3,709.8	4,188.6	14,996.4	16,056.6	17,024.3
Y/Y growth	16.0%	19.9%	12.1%	10.5%	7.0%	12.0%	2.7%	6.2%	8.3%	6.6%	6.0%	7.1%	6.0%
TAC as % of Google Network Gross Adv. Revenues	71.9%	72.9%	70.7%	69.9%	70.0%	70.8%	69.0%	68.8%	69.0%	69.0%	68.9%	69.3%	69.6%
Total Traffic Acquisition Costs (TAC)	21,672.0	6,288.0	6,420.0	6,582.0	7,436.0	26,726.0	6,860.0	7,238.0	7,522.9	8,509.8	30,130.7	34,763.1	39,752.7
Y/Y growth	29.1%	35.8%	26.1%	19.6%	15.3%	23.3%	9.1%	12.7%	14.3%	14.4%	12.7%	15.4%	14.4%
TAC as a % of Total Gross Adv. Revenues	22.7%	23.6%	22.9%	22.7%	22.8%	23.0%	22.3%	22.2%	22.3%	22.4%	22.3%	22.2%	22.2%
Net Revenue Summary													
Google Properties - Net Revenues	68,757.0	19,096.0	20,253.0	20,899.0	23,516.0	83,764.0	22,299.0	23,718.0	24,537.1	27,569.2	98,123.4	114,911.9	131,886.8
Y/Y growth	18.8%	22.4%	23.7%	20.7%	20.8%	21.8%	16.8%	17.1%	17.4%	17.2%	17.1%	17.1%	14.8%
FXHN Y/Y growth (estimate)	19.6%	19.5%	21.2%	20.8%	21.8%	20.9%	18.9%	20.0%	19.1%	18.3%	19.0%	17.9%	14.9%
Q/Q growth		-1.9%	6.1%	3.2%	12.5%		-5.2%	6.4%	3.5%	12.4%		5.3%	4.5%
Google Network Members' Properties - Net Revenues	4,946.0	1,258.0	1,414.0	1,473.0	1,683.0	5,828.0	1,561.0	1,645.0	1,666.7	1,881.8	6,754.6	7,113.1	7,435.9
Y/Y growth	5.3%	6.3%	17.3%	18.7%	27.9%	17.8%	24.1%	16.3%	13.2%	11.8%	15.9%	5.3%	4.5%
Google Advertising - Net Revenues	73,703.0	20,354.0	21,667.0	22,372.0	25,199.0	89,592.0	23,860.0	25,363.0	26,203.9	29,451.1	104,877.9	122,025.0	139,322.7
Y/Y growth	17.8%	21.3%	23.2%	20.5%	21.3%	21.6%	17.2%	17.1%	17.1%	16.9%	17.1%	16.3%	14.2%
FXHN Y/Y growth (estimate)	18.8%	18.7%	20.9%	20.4%	22.0%	20.6%	19.2%	19.8%	18.8%	18.0%	18.9%	17.2%	14.3%
Google Other & Other Bets Net Revenues	15,480.0	4,504.0	4,570.0	4,786.0	6,641.0	20,501.0	5,619.0	6,343.0	6,482.0	8,803.3	27,247.2	33,742.4	40,804.4
Y/Y growth	42.2%	34.9%	36.9%	29.1%	30.3%	32.4%	24.8%	38.8%	35.4%	32.6%	32.9%	23.8%	20.9%
Alphabet Net Revenues	89,183.0	24,858.0	26,237.0	27,158.0	31,840.0	110,093.0	29,479.0	31,706.0	32,685.8	38,254.4	132,125.2	155,767.4	180,127.1
Y/Y growth	21.4%	23.5%	25.4%	21.9%	23.1%	23.4%	18.6%	20.8%	20.4%	20.1%	20.0%	17.9%	15.6%
Q/Q growth		-3.9%	5.5%	3.5%	17.2%		-7.4%	7.6%	3.1%	17.0%			
Seasonality		22.6%	23.8%	24.7%	28.9%		22.3%	24.0%	24.7%	29.0%			
Net Revenue Share by Segment													
Google Properties as % of Alphabet Net Revenues	77.1%	76.8%	77.2%	77.0%	73.9%	76.1%	75.6%	74.8%	75.1%	72.1%	74.3%	73.8%	73.2%
Google Network Members' Properties as % of Alphabet N	5.5%	5.1%	5.4%	5.4%	5.3%	5.3%	5.3%	5.2%	5.1%	4.9%	5.1%	4.6%	4.1%
Google Advertising as % of Alphabet Net Revenues	82.6%	81.9%	82.6%	82.4%	79.1%	81.4%	80.8%	80.0%	80.2%	77.0%	79.4%	78.3%	77.3%
Google Other & Other Bets as % of Alphabet Net Reven	17.4%	18.1%	17.4%	17.6%	20.9%	18.6%	19.1%	20.0%	19.8%	23.0%	20.6%	21.7%	22.7%
MONETIZATION													
Google Properties (Sites) Paid Clicks													
Google Properties Paid Click Growth													
Y/Y growth	54.3%	59.0%	58.0%	62.0%	66.0%	61.3%	39.0%	28.0%	38.0%	36.0%	35.3%	30.0%	22.0%
Q/Q growth		8.0%	15.0%	10.0%	22.0%		-9.0%	6.0%					
Google Properties CPC Growth													
Y/Y growth	-21.0%	-19.0%	-22.0%	-28.0%	-29.0%	-24.5%	-19.0%	-11.0%	-14.6%	-13.2%	-14.5%	-9.2%	-5.2%
Q/Q growth		-7.0%	-10.0%	-7.0%	-9.0%		5.0%	-1.0%					
Google Properties (a.k.a Sites)	77,788.0	21,998.0	23,262.0	24,054.0	27,022.0	96,336.0	25,682.0	27,335.0	28,350.2	31,890.4	113,257.6	133,618.5	154,615.2
Y/Y growth	22.0%	26.4%	26.3%	22.0%	21.5%	23.8%	16.7%	17.5%	17.9%	18.0%	17.6%	18.0%	15.7%
FXHN Y/Y growth	22.7%	23.1%	23.7%	22.2%	22.6%	22.9%	19.1%	20.5%	19.6%	19.1%	19.5%	18.7%	15.8%
Q/Q growth		-1.1%	5.7%	3.4%	12.3%		-5.0%	6.4%	3.7%	12.5%		6.5%	5.6%
Seasonality		22.8%	24.1%	25.0%	28.0%		22.7%	24.1%	25.0%	28.2%			
Google Network Members' Properties (NETWORK) - Impressions													
Google Network Members' Properties Impressions Growth													
Y/Y growth	3.0%	0.0%	1.0%	1.0%	7.0%	2.3%	6.0%	11.0%	5.0%	3.0%	6.3%	2.5%	2.0%
Q/Q growth		5.0%	-4.0%	-1.0%	7.0%		5.0%	0.0%					
Google Network Members' Properties CPM Growth													
Y/Y growth	8.5%	18.0%	14.0%	11.0%	5.0%	12.0%	1.0%	-1.0%	4.5%	5.0%	2.4%	4.0%	3.5%
Q/Q growth		-10.0%	7.0%	2.0%	7.0%		-14.0%	5.0%					
Google Network Members' Properties	17,587.0	4,644.0	4,825.0	4,900.0	5,613.0	19,982.0	5,038.0	5,266.0	5,376.5	6,070.5	21,735.1	23,169.6	24,460.2
Y/Y growth	12.8%	15.9%	13.6%	12.9%	12.5%	13.6%	8.5%	9.1%	9.7%	8.2%	8.8%	6.6%	5.6%
FXHN Y/Y growth	13.5%	12.9%	11.3%	13.1%	13.5%	12.7%	10.7%	11.9%	11.3%	9.1%	10.7%	7.2%	5.7%
Q/Q growth		-6.9%	3.9%	1.6%	14.6%		-10.2%	4.5%	2.1%	12.9%			
Seasonality		23.2%	24.1%	24.5%	28.1%		23.2%	24.2%	24.7%	27.9%			
Google Other & Other Bets (Licensing & Other)													
Google Other Revenue	ing in 1Q17 15,003.0	4,354.0	4,425.0	4,640.0	6,487.0	19,906.0	5,449.0	6,181.0	6,310.4	8,627.7	26,568.1	32,944.5	39,862.8
Y/Y growth	NA	35.8%	36.5%	29.2%	30.7%	32.7%	25.1%	39.7%	36.0%	33.0%	33.5%	24.0%	21.0%
Q/Q growth		-12.3%	1.6%	4.9%	39.8%		-16.0%	13.4%	2.1%	36.7%		25.9	
Seasonality		21.9%	22.2%	23.3%	32.6%	140.7	20.5%	23.3%	23.8%	32.5%			
Other Bets	477.0	150.0	145.0	146.0	154.0	595.0	170.0	162.0	171.6	175.6	679.1	798.0	941.6
Y/Y growth	NA	13.6%	49.5%	24.8%	17.6%	24.7%	13.3%	11.7%	17.5%	14.0%	14.1%	17.5%	18.0%
Q/Q growth		14.5%	-3.3%	0.7%	5.5%		10.4%	-4.7%	5.9%	2.3%			

Figure 6: Alphabet Revenue Drivers (Cont'd)

(\$ millions except where noted)	2017A	3/18A	6/18A	9/18A	12/18A	2018A	3/19A	6/19A	9/19E	12/19E	2019E	2020E	2021E
Geographic Breakdown													
Alphabet Gross Revenues	110,855.0	31,146.0	32,657.0	33,740.0	39,276.0	136,819.0	36,339.0	38,944.0	40,208.7	46,764.1	162,255.8	190,530.5	219,879.8
Y/Y growth	22.8%	25.8%	25.6%	21.5%	21.5%	23.4%	16.7%	19.3%	19.2%	19.1%	18.6%	17.4%	15.4%
Y/Y growth (ex-FX & Hedging)	23.6%	22.6%	23.0%	21.8%	22.6%	22.5%	19.0%	22.3%	20.9%	20.2%	20.6%	18.2%	15.5%
Q/Q growth		-3.6%	4.9%	3.3%	16.4%		-7.5%	7.2%	3.2%	16.3%			
Geographic Breakdown													
United States	52,449.0	14,144.0	14,933.0	15,523.0	18,669.0	63,269.0	16,532.0	17,863.0	18,394.8	22,029.4	74,819.2	87,164.3	98,931.5
Y/Y growth	22.6%	20.2%	21.2%	20.1%	21.0%	20.6%	16.9%	19.6%	18.5%	18.0%	18.3%	16.5%	13.5%
Q/Q growth		-8.3%	5.6%	4.0%	20.3%		-11.4%	8.1%	3.0%	19.8%			
U.S. revenues as % of Gross Revenues	47.3%	45.4%	45.7%	46.0%	47.5%	46.2%	45.5%	45.9%	45.7%	47.1%	46.1%	45.7%	45.0%
International	58,406.0	17,002.0	17,724.0	18,217.0	20,607.0	73,550.0	19,807.0	21,081.0	21,814.0	24,734.7	87,436.7	103,366.2	120,948.3
Y/Y growth	23.0%	31.0%	29.5%	22.7%	22.0%	25.9%	16.5%	18.9%	19.7%	20.0%	18.9%	18.2%	17.0%
FXHN Y/Y growth	24.5%	24.8%	24.7%	23.2%	24.1%	24.1%	20.8%	24.5%	22.9%	22.1%	22.6%	19.6%	17.3%
Q/Q growth		0.6%	4.2%	2.8%	13.1%		-3.9%	6.4%	3.5%	13.4%			
International revenues as % of Gross Revenues	52.7%	54.6%	54.3%	54.0%	52.5%	53.8%	54.5%	54.1%	54.3%	52.9%	53.9%	54.3%	55.0%
International Breakdown (post-1Q17 change)													
EMEA	36,046.0	10,474.0	10,785.0	10,958.0	12,350.0	44,567.0	11,791.0	12,401.0	12,601.3	14,189.3	50,982.6	57,857.4	65,465.9
Y/Y growth	18.9%	29.5%	26.2%	20.5%	19.8%	23.6%	12.6%	15.0%	15.0%	14.9%	14.4%	13.5%	13.2%
FXHN Y/Y growth	21.5%	21.0%	18.8%	19.2%	20.3%	19.8%	16.3%	20.6%	19.0%	18.0%	18.5%	15.5%	13.5%
Q/Q growth		1.6%	3.0%	1.6%	12.7%		-4.5%	5.2%	1.6%	12.6%			
EMEA as a % of Gross Revenues	32.5%	33.6%	33.0%	32.5%	31.4%	32.6%	32.4%	31.8%	31.3%	30.3%	31.4%	30.4%	29.8%
APAC	16,235.0	4,804.0	5,090.0	5,424.0	6,056.0	21,374.0	6,112.0	6,551.0	6,952.7	7,807.8	27,423.5	34,436.7	42,119.2
Y/Y growth	29.3%	32.7%	36.5%	29.2%	29.2%	31.7%	27.2%	28.7%	28.2%	28.9%	28.3%	25.6%	22.3%
FXHN Y/Y growth	29.5%	29.8%	34.4%	30.3%	31.5%	31.5%	30.6%	32.7%	30.5%	30.0%	30.9%	26.5%	22.5%
Q/Q growth		2.5%	6.0%	6.6%	11.7%		0.9%	7.2%	6.1%	12.3%			
APAC as a % of Gross Revenues	14.6%	15.4%	15.6%	16.1%	15.4%	15.6%	16.8%	16.8%	17.3%	16.7%	16.9%	18.1%	19.2%
Other Americas (Canada and LatAM)	6,125.0	1,724.0	1,849.0	1,835.0	2,201.0	7,609.0	1,904.0	2,129.0	2,260.0	2,737.6	9,030.5	11,072.1	13,363.1
Y/Y growth	32.3%	35.6%	30.9%	18.7%	16.1%	24.2%	10.4%	15.1%	23.2%	24.4%	18.7%	22.6%	20.7%
FXHN Y/Y growth	30.4%	34.7%	34.4%	28.0%	26.3%	30.3%	21.2%	24.8%	24.0%	23.5%	23.4%	22.0%	20.5%
Q/Q growth		-9.0%	7.3%	-0.8%	19.9%		-13.5%	11.8%	6.2%	21.1%			
Other Americas as a % of Gross Revenues	5.5%	5.5%	5.7%	5.4%	5.6%	5.6%	5.2%	5.5%	5.6%	5.9%	5.6%	5.8%	6.1%
Foreign Exchange Impact on Gross Revenue													
Total Gross Revenue	110,855.0	31,146.0	32,657.0	33,740.0	39,276.0	136,819.0	36,339.0	38,944.0	40,208.7	46,764.1	162,255.8	190,530.5	219,879.8
Y/Y growth	22.8%	25.8%	25.6%	21.5%	21.5%	23.4%	16.7%	19.3%	19.2%	19.1%	18.6%	17.4%	15.4%
Q/Q growth		-3.6%	4.9%	3.3%	16.4%		-7.5%	7.2%	3.2%	16.3%			
Y/Y Foreign Exchange Impact	127.0	1,311.0	768.0	(385.0)	(724.0)	970.0	(1,153.0)	(1,217.0)	(642.0)	(373.4)	(3,385.4)	(856.8)	-
Cash Flow Hedging Impact	(169.0)	(239.0)	(103.0)	80.0	124.0	(138.0)	137.0	108.0	160.5	93.3	498.8	214.2	-
Excl. Hedging Total Gross Revenue	111,024.0	31,385.0	32,760.0	33,660.0	39,152.0	136,957.0	36,202.0	38,836.0	40,048.2	46,670.8	161,757.0	190,316.3	219,879.8
Y/Y growth (excl. Hedging)	23.7%	27.9%	26.0%	20.4%	20.4%	23.4%	15.3%	18.5%	19.0%	19.2%	18.1%	17.7%	15.5%
Q/Q growth (excl. Hedging)		-3.5%	4.4%	2.7%	16.3%		-7.5%	7.3%	3.1%	16.5%			
BPS of Y/Y growth impacted by Hedging	(92.6)	(208.7)	(41.1)	111.6	112.1	6.4	132.5	70.5	19.4	(13.9)	48.4	(23.0)	(13.0)
FXHN Gross Revs. (based on year ago period)	110,897.0	30,074.0	31,992.0	34,045.0	39,876.0	135,987.0	37,355.0	40,053.0	40,690.3	47,044.1	165,142.4	191,173.1	219,879.8
Y/Y growth (ex-FX & Hedging)	23.6%	22.6%	23.0%	21.8%	22.6%	22.5%	19.0%	22.3%	20.9%	20.2%	20.6%	18.2%	15.5%
BPS of Y/Y growth impacted by FX & Hedging	(78.4)	325.7	254.3	(26.1)	(110.5)	93.7	(234.9)	(301.0)	(171.4)	(109.2)	(198.8)	(75.9)	(13.0)
FX & Hedging Neutral Gross Revs. (based on last quarter)		30,968.0	32,967.0	34,275.0	39,446.0		36,175.0	39,059.0	40,059.8	46,771.5			
Q/Q growth (ex-FX & Hedging)		-4.8%	5.0%	4.6%	17.2%		-7.6%	7.9%	3.2%	16.8%			
BPS of Q/Q growth impacted by FX & Hedging		113.4	(18.9)	(130.8)	(78.2)		12.6	(72.3)	9.6	(48.4)			
Foreign Exchange Impact on APAC Gross Revenue													
Total Gross APAC Revenue	16,235.0	4,804.0	5,090.0	5,424.0	6,056.0	21,374.0	6,112.0	6,551.0	6,952.7	7,807.8	27,423.5	34,436.7	42,119.2
Y/Y growth	29.3%	32.7%	36.5%	29.2%	29.2%	31.7%	27.2%	28.7%	28.2%	28.9%	28.3%	25.6%	22.3%
Q/Q growth		2.5%	6.0%	6.6%	11.7%		0.9%	7.2%	6.1%	12.3%			
Y/Y Foreign Exchange Impact	(26.0)	198.0	91.0	(94.0)	(148.0)	49.0	(199.0)	(217.0)	(127.5)	(43.3)	(586.8)	(214.5)	-
Hedge as % of FX Impact	-165%	-8%	0%	-24%	-17%	67%	-8%	-7%	-25%	-25%	-13%	-25%	-25%
Cash Flow Hedging Impact	43.0	(15.0)	-	23.0	25.0	33.0	16.0	15.0	31.9	10.8	73.7	53.6	-
Excl. Hedging APAC Gross Revenue	16,192.0	4,819.0	5,090.0	5,401.0	6,031.0	21,341.0	6,096.0	6,536.0	6,920.8	7,797.0	27,349.8	34,383.0	42,119.2
Y/Y growth (excl. Hedging)	29.2%	35.4%	36.9%	28.1%	28.4%	31.8%	26.5%	28.4%	28.1%	29.3%	28.2%	25.7%	22.5%
Q/Q growth (excl. Hedging)		2.6%	5.6%	6.1%	11.7%		1.1%	7.2%	5.9%	12.7%			
BPS of Y/Y growth impacted by Hedging	2.3	(262.1)	(40.4)	109.7	78.0	(14.6)	72.8	29.5	4.4	(35.5)	14.7	(14.2)	(19.1)
FXHN Gross Revs. (based on year ago period)	16,218.0	4,621.0	4,999.0	5,495.0	6,177.0	21,292.0	6,295.0	6,753.0	7,048.3	7,840.3	27,936.6	34,597.5	42,119.2
Y/Y growth (excl. FX & Hedging)	29.5%	29.8%	34.4%	30.3%	31.5%	31.5%	30.6%	32.7%	30.5%	30.0%	30.9%	26.5%	22.5%
BPS of Y/Y growth impacted by FX & Hedging	(18.4)	294.0	204.3	(113.2)	(232.9)	15.7	(340.1)	(396.9)	(231.6)	(107.3)	(260.3)	(92.7)	(19.1)
Y/Y growth in FX	-0.2%	4.3%	1.8%	-1.7%	-2.4%	0.2%	-3.2%	-3.2%	-1.8%	-0.6%	-2.1%	-0.6%	0.0%
Foreign Exchange Impact on Other Americas Gross Revenue													
Total Gross Other Americas Revenue	6,125.0	1,724.0	1,849.0	1,835.0	2,201.0	7,609.0	1,904.0	2,129.0	2,260.0	2,737.6	9,030.5	11,072.1	13,363.1
Y/Y growth	32.3%	35.6%	30.9%	18.7%	16.1%	24.2%	10.4%	15.1%	23.2%	24.4%	18.7%	22.6%	20.7%
Q/Q growth		-9.0%	7.3%	-0.8%	19.9%		-13.5%	11.8%	6.2%	21.1%			
Y/Y Foreign Exchange Impact	148.0	19.0	(44.0)	(168.0)	(211.0)	(404.0)	(192.0)	(184.0)	(7.4)	25.8	(357.6)	70.6	0.0
Hedge as % of FX Impact	-15%	-37%	0%	-5%	0%	0%	1%	-3%	-25%	-25%	0%	-25%	-25%
Cash Flow Hedging Impact	(22.0)	(7.0)	-	8.0	-	1.0	(2.0)	5.0	1.8	(6.4)	(1.6)	(17.6)	-
Excl. Hedging Other Americas Gross Revenue	6,147.0	1,731.0	1,849.0	1,827.0	2,201.0	7,608.0	1,906.0	2,124.0	2,258.1	2,744.0	9,032.1	11,089.7	13,363.1
Y/Y growth (excl. Hedging)	33.7%	36.2%	31.2%	17.3%	15.3%	23.8%	10.1%	14.9%	23.6%	24.7%	18.7%	22.8%	20.5%
Q/Q growth (excl. Hedging)		-9.3%	6.8%	-1.2%	20.5%		-13.4%	11.4%	6.3%	21.5%			
BPS of Y/Y growth impacted by Hedging	(131.3)	(55.1)	(37.1)	142.8	85.2	46.1	33.1	27.0	(43.9)	(29.3)	(3.7)	(17.4)	19.2
FXHN Gross Revs. (based on year ago period)	5,999.0	1,712.0	1,893.0	1,995.0	2,412.0	8,012.0	2,098.0	2,308.0	2,265.5	2,718.2	9,389.7	11,019.2	13,363.1
Y/Y growth (excl. FX & Hedging)	30.4%	34.7%	34.4%	28.0%	26.3%	30.3%	21.2%	24.8%	24.0%	23.5%	23.4%	22.0%	20.5%
BPS of Y/Y growth impacted by FX & Hedging	190.5	94.4	(349.4)	(935.5)	(1,020.1)	(611.1)	(1,076.1)	(968.1)	(84.2)	87.8	(473.7)	60.8	19.2
Y/Y growth in FX	2.5%	1.1%	-2.3%	-8.4%	-8.7%	-5.0%	-9.2%	-8.0%	-0.3%	0.9%	-3.8%	0.6%	0.0%

Source: J.P. Morgan estimates, Company data.

Figure 7: Alphabet Segment Reporting

\$ in millions, except per share amounts	2017A	3/18A	6/18A	9/18A	12/18A	2018A	3/19A	6/19A	9/19E	12/19E	2019E	2020E	2021E
GOOGLE SEGMENT													
Google Sites Revenue	77,788	21,998	23,262	24,054	27,022	96,336	25,682	27,335	28,350	31,890	113,258	133,618	154,615
Google Network Sites Revenue	17,587	4,644	4,825	4,900	5,613	19,982	5,038	5,266	5,377	6,070	21,751	23,170	24,460
Google Ad Revenue	95,375	26,642	28,087	28,954	32,635	116,318	30,720	32,601	33,727	37,961	135,009	156,788	179,075
Google Other Revenue	15,003	4,354	4,425	4,640	6,487	19,906	5,449	6,181	6,310	8,628	26,568	32,944	39,863
Google Gross Revenue	110,378	30,996	32,512	33,594	39,122	136,224	36,169	38,782	40,037	46,589	161,577	189,733	218,938
TAC	21,672	6,288	6,420	6,582	7,436	26,726	6,860	7,238	7,523	8,510	30,131	34,763	39,753
Google Net Revenue	88,706	24,708	26,092	27,012	31,686	109,498	29,309	31,544	32,514	38,079	131,446	154,969	179,185
Google Opex ex-SBC	49,251	14,036	14,845	15,451	19,894	64,226	17,372	18,556	19,142	24,219	79,289	95,204	111,260
Google SBC	7,168	2,304	2,288	2,071	2,092	8,755	2,612	2,600	2,502	2,539	10,253	12,522	14,505
Google Opex	56,419	16,340	17,133	17,522	21,986	72,981	19,984	21,156	21,644	26,758	89,542	107,726	125,765
Google GAAP Operating Income/(Loss)	32,287	8,368	8,959	9,490	9,700	36,517	9,325	10,388	10,870	11,321	41,904	47,243	53,421
Google Non-GAAP Operating Income/(Loss) ex-SBC	39,455	10,672	11,247	11,561	11,792	45,272	11,937	12,988	13,372	13,860	52,158	59,766	67,926
OI&E	1,047	2,910	1,170	1,458	1,851	7,389	1,538	2,967	626	648	5,779	2,508	2,801
Provision for tax less tax effect	15,743	1,115	1,425	999	1,226	4,765	1,803	2,276	1,955	2,026	8,060	8,800	10,161
Google GAAP Net Income	17,591	10,163	8,704	9,949	10,325	39,141	9,060	11,079	9,541	9,943	39,623	40,951	46,062
Google GAAP EPS	\$25.00	\$14.41	\$12.38	\$14.13	\$14.73	\$55.65	\$12.93	\$15.83	\$13.63	\$14.20	\$56.59	\$59.11	\$67.48
Diluted Shares	704	705	703	704	701	703	701	700	700	700	700	693	683
Google CapEx	12,619	7,669	5,299	5,643	6,849	25,460	4,534	6,896	7,125	8,158	26,712	30,245	33,544
Google Depreciation, Amortization & Impairment	6,608	1,901	2,031	2,277	2,499	8,708	2,529	2,756	2,630	2,819	10,734	11,858	13,443
Google Y/Y Growth													
Google Sites Revenue	22%	26%	26%	22%	22%	24%	17%	18%	18%	18%	18%	18%	16%
Google Network Sites Revenue	13%	16%	14%	13%	12%	14%	8%	9%	10%	8%	9%	7%	6%
Google Ad Revenue	20%	24%	24%	20%	20%	22%	15%	16%	16%	16%	16%	16%	14%
Google Other Revenue	49%	36%	37%	29%	31%	33%	25%	40%	36%	33%	33%	24%	21%
Google Gross Revenue	23%	26%	25%	21%	22%	23%	17%	19%	19%	19%	19%	17%	15%
TAC	29%	36%	26%	20%	15%	23%	9%	13%	14%	14%	13%	15%	14%
Google Net Revenue	22%	24%	25%	22%	23%	23%	19%	21%	20%	20%	20%	18%	16%
Google Opex ex-SBC	27%	32%	32%	30%	29%	30%	24%	25%	24%	22%	23%	20%	17%
Google SBC	21%	22%	21%	23%	22%	22%	13%	14%	21%	21%	17%	22%	16%
Google Opex	26%	30%	30%	29%	28%	29%	22%	23%	24%	22%	23%	20%	17%
Google GAAP Operating Income/(Loss)	16%	12%	17%	11%	13%	13%	11%	16%	15%	17%	15%	13%	13%
Google Non-GAAP Operating Income/(Loss) ex-SBC	17%	14%	18%	13%	14%	15%	12%	15%	16%	18%	15%	15%	14%
Google GAAP Net Income	-18%	72%	28%	37%	N/A	123%	-11%	27%	-4%	-4%	1%	3%	12%
Google GAAP EPS	-19%	72%	28%	37%	N/A	123%	-10%	28%	-4%	-4%	2%	4%	14%
Google CapEx	34%	218%	87%	58%	80%	102%	-41%	30%	26%	19%	5%	13%	11%
Google Depreciation, Amortization & Impairment	14%	34%	30%	34%	29%	32%	33%	36%	16%	13%	23%	10%	13%
Margins, as % of Google Gross Revenue													
Google Sites Revenue	70%	71%	72%	72%	69%	71%	71%	70%	71%	68%	70%	70%	71%
Google Network Sites Revenue	16%	15%	15%	15%	14%	15%	14%	14%	13%	13%	13%	12%	11%
Google Ad Revenue	86%	86%	86%	86%	83%	85%	85%	84%	84%	81%	84%	83%	82%
Google Other Revenue	14%	14%	14%	14%	17%	15%	15%	16%	16%	19%	16%	17%	18%
TAC as % Gross Ad Revenue	22.7%	23.6%	22.9%	22.7%	22.8%	23.0%	22.3%	22.2%	22.3%	22.4%	22.3%	22.2%	22.2%
Google Net Revenue	80%	80%	80%	80%	81%	80%	81%	81%	81%	82%	81%	82%	82%
Google Opex ex-SBC	45%	45%	46%	46%	51%	47%	48%	48%	48%	52%	49%	50%	51%
Google SBC	6.5%	7.4%	7.0%	6.2%	5.3%	6.4%	7.2%	6.7%	6.3%	5.5%	6.3%	6.6%	6.6%
Google Opex	51%	53%	53%	52%	56%	54%	55%	55%	54%	57%	55%	57%	57%
Google GAAP Operating Income/(Loss) - Gross	29.3%	27.0%	27.6%	28.2%	24.8%	26.8%	25.8%	26.8%	27.2%	24.3%	25.9%	24.9%	24.4%
Google GAAP Operating Income/(Loss) - Net	36.4%	33.9%	34.3%	35.1%	30.6%	33.3%	31.8%	32.9%	33.4%	29.7%	31.9%	30.5%	29.8%
Google Non-GAAP Operating Income/(Loss) ex-SBC - Gross	35.7%	34.4%	34.6%	34.4%	30.1%	33.2%	33.0%	33.5%	33.4%	29.8%	32.3%	31.5%	31.0%
Google Non-GAAP Operating Income/(Loss) ex-SBC - Net	44.5%	43.2%	43.1%	42.8%	37.2%	41.3%	40.7%	41.2%	41.1%	36.4%	39.7%	38.6%	37.9%
Google CapEx	11%	25%	16%	17%	18%	19%	13%	18%	18%	18%	17%	16%	15%
Google Depreciation, Amortization & Impairment	6.0%	6.1%	6.2%	6.8%	6.4%	6.4%	7.0%	7.1%	6.6%	6.1%	6.6%	6.3%	6.1%
Other Bets Segment													
Other Bets Revenue	477	150	145	146	154	595	170	162	172	176	679	798	942
Other Bets Opex ex-SBC	2,848	609	750	748	1,357	3,464	915	1,026	1,025	1,057	4,023	3,869	3,386
Other Bets SBC	363	112	127	125	125	489	123	125	142	140	530	707	790
Other Bets GAAP Operating Income/(Loss)	(2,734)	(571)	(732)	(727)	(1,328)	(3,358)	(868)	(989)	(995)	(1,022)	(3,874)	(3,778)	(3,234)
Other Bets Non-GAAP Operating Income/(Loss) ex-SBC	(2,371)	(459)	(605)	(602)	(1,203)	(2,869)	(745)	(864)	(853)	(882)	(3,344)	(3,071)	(2,444)
Other Bets CapEx	493	55	10	55	61	181	59	65	66	67	257	285	320
Other Bets Depreciation, Amortization & Impairment	307	85	83	78	81	327	84	79	81	92	337	342	313
Other Bets Y/Y Growth													
Other Bets Revenue	NA	14%	49%	25%	18%	25%	13%	12%	18%	14%	14%	18%	18%
Other Bets Opex ex-SBC	NA	-19%	16%	11%	75%	22%	50%	37%	37%	-22%	16%	-4%	-12%
Other Bets SBC	NA	30%	57%	33%	23%	35%	10%	-2%	14%	12%	8%	33%	12%
Other Bets CapEx	NA	-67%	-93%	-25%	-42%	-63%	7%	550%	20%	10%	42%	11%	12%
Other Bets Depreciation, Amortization & Impairment	NA	-2%	36%	15%	-11%	7%	-1%	-5%	4%	14%	3%	1%	-8%
Margin (% of Other Bets Revenue)													
Other Bets SBC	76%	75%	88%	86%	81%	82%	72%	77%	83%	80%	78%	89%	84%
Other Bets Operating Income/(Loss)	-573%	-381%	-505%	-498%	-862%	-564%	-511%	-610%	-580%	-582%	-570%	-473%	-343%
Other Bets CapEx	103%	37%	7%	38%	40%	30%	35%	40%	38%	38%	38%	36%	34%
Other Bets Depreciation, Amortization & Impairment	64%	57%	57%	53%	53%	55%	49%	49%	47%	53%	50%	43%	33%

Source: J.P. Morgan estimates, Company data.

Alphabet Inc.: Summary of Financials

Income Statement - Annual						Income Statement - Quarterly					
	FY17A	FY18A	FY19E	FY20E	FY21E		1Q19A	2Q19A	3Q19E	4Q19E	
Revenue	89,183	110,093	132,125	155,767	180,127	Revenue	29,479A	31,706A	32,686	38,254	
COGS	(23,911)	(32,823)	(42,234)	(49,877)	(58,001)	COGS	(9,152)A	(10,058)A	(10,133)	(12,892)	
Gross profit	65,272	77,270	89,891	105,891	122,126	Gross profit	20,327A	21,648A	22,553	25,363	
SG&A	(19,765)	(23,451)	(26,819)	(32,244)	(36,746)	SG&A	(5,993)A	(6,255)A	(6,537)	(8,033)	
Adj. EBITDA	43,476	50,788	59,251	68,245	78,602	Adj. EBITDA	13,687A	14,771A	15,067	15,726	
D&A	(6,915)	(9,035)	(11,071)	(12,200)	(13,756)	D&A	(2,613)A	(2,835)A	(2,712)	(2,911)	
Adj. EBIT	36,561	41,753	48,180	56,045	64,846	Adj. EBIT	11,074A	11,936A	12,355	12,815	
Net Interest	0	0	0	0	0	Net Interest	0A	0A	0	0	
Adj. PBT	37,608	49,142	53,960	58,553	67,647	Adj. PBT	12,612A	14,903A	12,981	13,464	
Tax	(14,531)	(4,177)	(6,846)	(6,774)	(7,823)	Tax	(1,489)A	(2,200)A	(1,545)	(1,612)	
Minority Interest	-	-	-	-	-	Minority Interest	-	-	-	-	
Adj. Net Income	31,722	38,782	42,608	49,868	57,577	Adj. Net Income	9,758A	10,288A	11,081	11,481	
Reported EPS	18.00	43.70	49.26	55.40	64.94	Reported EPS	9.50A	14.21A	12.51	13.05	
Adj. EPS	45.09	55.14	60.85	71.98	84.34	Adj. EPS	13.92A	14.70A	15.83	16.40	
DPS	-	-	-	-	-	DPS	-	-	-	-	
Payout ratio	-	-	-	-	-	Payout ratio	-	-	-	-	
Shares outstanding	704	703	700	693	683	Shares outstanding	701A	700A	700	700	
Balance Sheet & Cash Flow Statement						Ratio Analysis					
	FY17A	FY18A	FY19E	FY20E	FY21E		FY17A	FY18A	FY19E	FY20E	FY21E
Cash and cash equivalents	10,715	16,701	20,533	32,828	47,397	Gross margin	73.2%	70.2%	68.0%	68.0%	67.8%
Accounts receivable	18,336	20,838	23,718	27,962	32,334	EBITDA margin	48.7%	46.1%	44.8%	43.8%	43.6%
Inventories	749	1,107	988	1,038	1,090	EBIT margin	41.0%	37.9%	36.5%	36.0%	36.0%
Other current assets	94,508	97,030	109,910	110,821	111,759	Net profit margin	35.6%	35.2%	32.2%	32.0%	32.0%
Current assets	124,308	135,676	155,149	172,649	192,581	ROE	21.8%	23.5%	22.2%	22.6%	22.8%
PP&E	42,383	59,719	75,074	93,922	114,366	ROA	17.4%	18.0%	16.8%	17.0%	17.3%
LT investments	0	0	0	0	0	ROCE	15.0%	22.6%	21.5%	22.0%	22.4%
Other non current assets	30,604	37,397	45,158	45,219	45,479	SG&A/Sales	22.2%	21.3%	20.3%	20.7%	20.4%
Total assets	197,295	232,792	275,381	311,789	352,426	Net debt/equity	NM	NM	NM	NM	NM
Short term borrowings	0	0	0	0	0	P/E (x)	25.2	20.6	18.7	15.8	13.5
Payables	3,137	4,378	5,547	6,539	7,562	P/BV (x)	5.2	4.5	3.9	3.3	2.9
Other short term liabilities	21,046	30,242	36,696	43,166	49,833	EV/EBITDA (x)	18.1	15.4	13.1	11.2	9.5
Current liabilities	24,183	34,620	42,243	49,706	57,395	Dividend Yield	-	-	-	-	-
Long-term debt	3,969	4,012	4,074	4,074	3,074	Sales/Assets (x)	0.5	0.5	0.5	0.5	0.5
Other long term liabilities	16,641	16,532	23,132	22,425	21,721	Interest cover (x)	-	-	-	-	-
Total liabilities	44,793	55,164	69,449	76,205	82,190	Operating leverage	94.5%	60.6%	76.9%	91.2%	100.4%
Shareholders' equity	152,502	177,628	205,932	235,585	270,236	Revenue y/y Growth	21.4%	23.4%	20.0%	17.9%	15.6%
Minority interests	-	-	-	-	-	EBITDA y/y Growth	18.9%	16.8%	16.7%	15.2%	15.2%
Total liabilities & equity	197,295	232,792	275,381	311,789	352,426	Tax rate	38.6%	8.5%	12.7%	11.6%	11.6%
BVPS	216.75	252.57	294.09	340.03	395.87	Adj. Net Income y/y Growth	32.2%	22.3%	9.9%	17.0%	15.5%
y/y Growth	8.9%	16.5%	16.4%	15.6%	16.4%	EPS y/y Growth	31.3%	22.3%	10.3%	18.3%	17.2%
Net debt/(cash)	(6,746)	(12,689)	(16,459)	(28,754)	(44,323)	DPS y/y Growth	-	-	-	-	-
Cash flow from operating activities	37,091	47,971	52,508	63,617	73,230						
o/w Depreciation & amortization	6,915	9,035	11,071	12,200	13,756						
o/w Changes in working capital	9,246	4,908	(673)	(362)	(350)						
Cash flow from investing activities	(31,401)	(28,504)	(31,259)	(30,530)	(33,864)						
o/w Capital expenditure	(13,184)	(25,139)	(26,180)	(30,530)	(33,864)						
as % of sales	14.8%	22.8%	19.8%	19.6%	18.8%						
Cash flow from financing activities	(8,298)	(13,179)	(17,449)	(20,792)	(24,797)						
o/w Dividends paid	0	0	0	0	0						
o/w Net debt issued/(repaid)	(86)	(61)	(76)	0	(1,000)						
Net change in cash	(2,203)	5,986	3,832	12,295	14,569						
Adj. Free cash flow to firm	23,907	22,832	26,329	33,087	39,366						
y/y Growth	(8.2%)	(4.5%)	15.3%	25.7%	19.0%						

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Dec. o/w - out of which

Alphabet: Summary of Financials

Income Statement - Annual					Income Statement - Quarterly				
	FY17A	FY18A	FY19E	FY20E		1Q19A	2Q19A	3Q19E	4Q19E
Revenue	89,183	110,093	132,125	155,767	Revenue	29,479A	31,706A	32,686	38,254
COGS	(23,911)	(32,823)	(42,234)	(49,877)	COGS	(9,152)A	(10,058)A	(10,133)	(12,892)
Gross profit	65,272	77,270	89,891	105,891	Gross profit	20,327A	21,648A	22,553	25,363
SG&A	(19,765)	(23,451)	(26,819)	(32,244)	SG&A	(5,993)A	(6,255)A	(6,537)	(8,033)
Adj. EBITDA	43,476	50,788	59,251	68,245	Adj. EBITDA	13,687A	14,771A	15,067	15,726
D&A	(6,915)	(9,035)	(11,071)	(12,200)	D&A	(2,613)A	(2,835)A	(2,712)	(2,911)
Adj. EBIT	36,561	41,753	48,180	56,045	Adj. EBIT	11,074A	11,936A	12,355	12,815
Net Interest	-	-	-	-	Net Interest	-	-	-	-
Adj. PBT	37,608	49,142	53,960	58,553	Adj. PBT	12,612A	14,903A	12,981	13,464
Tax	(14,531)	(4,177)	(6,846)	(6,774)	Tax	(1,489)A	(2,200)A	(1,545)	(1,612)
Minority Interest	-	-	-	-	Minority Interest	-	-	-	-
Adj. Net Income	31,722	38,782	42,608	49,868	Adj. Net Income	9,758A	10,288A	11,081	11,481
Reported EPS	18.00	43.70	49.26	55.40	Reported EPS	9.50A	14.21A	12.51	13.05
Adj. EPS	45.09	55.14	60.85	71.98	Adj. EPS	13.92A	14.70A	15.83	16.40
DPS	-	-	-	-	DPS	-	-	-	-
Payout ratio	-	-	-	-	Payout ratio	-	-	-	-
Shares outstanding	704	703	700	693	Shares outstanding	701A	700A	700	700
Balance Sheet & Cash Flow Statement					Ratio Analysis				
	FY17A	FY18A	FY19E	FY20E		FY17A	FY18A	FY19E	FY20E
Cash and cash equivalents	10,715	16,701	20,533	32,828	Gross margin	73.2%	70.2%	68.0%	68.0%
Accounts receivable	18,336	20,838	23,718	27,962	EBITDA margin	48.7%	46.1%	44.8%	43.8%
Inventories	749	1,107	988	1,038	EBIT margin	41.0%	37.9%	36.5%	36.0%
Other current assets	94,508	97,030	109,910	110,821	Net profit margin	35.6%	35.2%	32.2%	32.0%
Current assets	124,308	135,676	155,149	172,649	ROE	21.8%	23.5%	22.2%	22.6%
PP&E	42,383	59,719	75,074	93,922	ROA	17.4%	18.0%	16.8%	17.0%
LT investments	-	-	-	-	ROCE	15.0%	22.6%	21.5%	22.0%
Other non current assets	30,604	37,397	45,158	45,219	SG&A/Sales	22.2%	21.3%	20.3%	20.7%
Total assets	197,295	232,792	275,381	311,789	Net debt/equity	NM	NM	NM	NM
Short term borrowings	0	0	0	0	P/E (x)	25.1	20.5	18.6	15.7
Payables	3,137	4,378	5,547	6,539	P/BV (x)	5.2	4.5	3.8	3.3
Other short term liabilities	21,046	30,242	36,696	43,166	EV/EBITDA (x)	18.1	15.4	13.1	11.2
Current liabilities	24,183	34,620	42,243	49,706	Dividend Yield	-	-	-	-
Long-term debt	3,969	4,012	4,074	4,074	Sales/Assets (x)	0.5	0.5	0.5	0.5
Other long term liabilities	16,641	16,532	23,132	22,425	Interest cover (x)	-	-	-	-
Total liabilities	44,793	55,164	69,449	76,205	Operating leverage	94.5%	60.6%	76.9%	91.2%
Shareholders' equity	152,502	177,628	205,932	235,585	Revenue y/y Growth	21.4%	23.4%	20.0%	17.9%
Minority interests	-	-	-	-	EBITDA y/y Growth	18.9%	16.8%	16.7%	15.2%
Total liabilities & equity	197,295	232,792	275,381	311,789	Tax rate	38.6%	8.5%	12.7%	11.6%
BVPS	216.75	252.57	294.09	340.03	Adj. Net Income y/y Growth	32.2%	22.3%	9.9%	17.0%
y/y Growth	8.9%	16.5%	16.4%	15.6%	EPS y/y Growth	31.3%	22.3%	10.3%	18.3%
Net debt/(cash)	(6,746)	(12,689)	(16,459)	(28,754)	DPS y/y Growth	-	-	-	-
Cash flow from operating activities	37,091	47,971	52,508	63,617					
o/w Depreciation & amortization	6,915	9,035	11,071	12,200					
o/w Changes in working capital	9,246	4,908	(673)	(362)					
Cash flow from investing activities	(31,401)	(28,504)	(31,259)	(30,530)					
o/w Capital expenditure	(13,184)	(25,139)	(26,180)	(30,530)					
as % of sales	14.8%	22.8%	19.8%	19.6%					
Cash flow from financing activities	(8,298)	(13,179)	(17,449)	(20,792)					
o/w Dividends paid	-	-	-	-					
o/w Net debt issued/(repaid)	(86)	(61)	(76)	0					
Net change in cash	(2,203)	5,986	3,832	12,295					
Adj. Free cash flow to firm	23,907	22,832	26,329	33,087					
y/y Growth	(8.2%)	(4.5%)	15.3%	25.7%					

Source: Company reports and J.P. Morgan estimates.

Note: \$ in millions (except per-share data). Fiscal year ends Dec. o/w - out of which

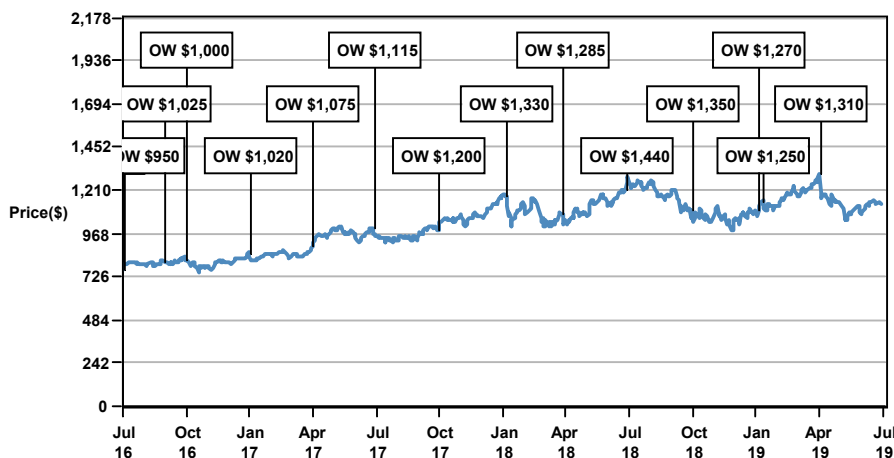
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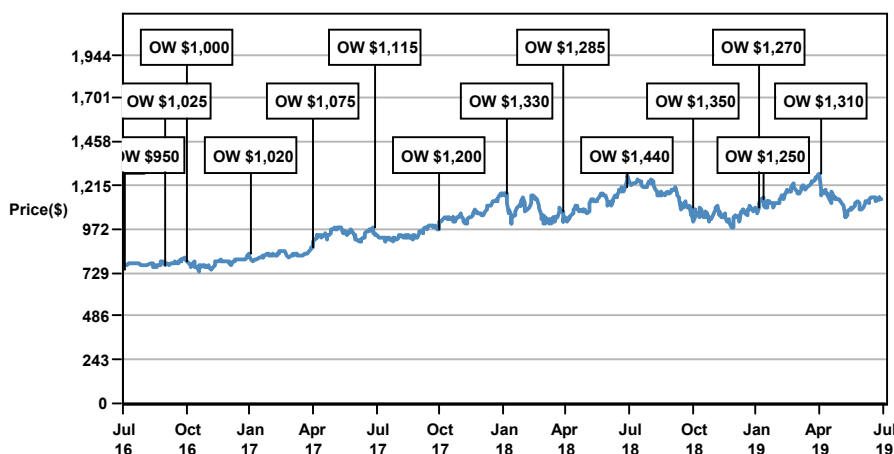
Alphabet Inc. (GOOGL, GOOGL US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Jul 17, 2015. All share prices are as of market close on the previous business day.

Date	Rating	Share Price (\$)	Price Target (\$)
29-Jul-16	OW	765.84	950.00
27-Sep-16	OW	802.65	1025.00
28-Oct-16	OW	817.35	1000.00
27-Jan-17	OW	856.98	1020.00
28-Apr-17	OW	891.44	1075.00
25-Jul-17	OW	998.31	1115.00
27-Oct-17	OW	991.42	1200.00
02-Feb-18	OW	1181.59	1330.00
24-Apr-18	OW	1073.81	1285.00
24-Jul-18	OW	1211.00	1440.00
26-Oct-18	OW	1103.59	1350.00
31-Jan-19	OW	1097.99	1270.00
05-Feb-19	OW	1141.42	1250.00
30-Apr-19	OW	1296.20	1310.00

Alphabet (GOOG, GOOG US) Price Chart



Source: Bloomberg and J.P. Morgan; price data adjusted for stock splits and dividends.
Initiated coverage Sep 28, 2004. All share prices are as of market close on the previous business day.

Date	Rating	Share Price (\$)	Price Target (\$)
29-Jul-16	OW	745.91	950.00
27-Sep-16	OW	774.21	1025.00
28-Oct-16	OW	795.35	1000.00
27-Jan-17	OW	832.15	1020.00
28-Apr-17	OW	874.25	1075.00
25-Jul-17	OW	980.34	1115.00
27-Oct-17	OW	972.56	1200.00
02-Feb-18	OW	1167.70	1330.00
24-Apr-18	OW	1067.45	1285.00
24-Jul-18	OW	1205.50	1440.00
26-Oct-18	OW	1095.57	1350.00
31-Jan-19	OW	1089.06	1270.00
05-Feb-19	OW	1132.80	1250.00
30-Apr-19	OW	1287.58	1310.00

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IB clients*	52%	49%	36%
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IB clients*	76%	65%	56%

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