

## Equity Research

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## TMT

### Apple, Inc.

#### How Bad Will Apple's Guidance Be?

Smartphone upgrade rates remain at record low levels and do not appear poised to rebound in the first calendar quarter. Reduced iPhone promotions could be having an impact ([as previously discussed](#)), but the sustained lengthening of the replacement cycle appears driven simply by customer choice to hold onto their phone longer. We reduced our estimates in Apple as detailed in the note below and are concerned that revenue guidance for the March quarter could be as low as \$60 billion versus a consensus of \$68 billion.

### AAPL

\$171.11

12 month target

\$198.00

### BUY

52 week range

\$121.35 - \$179.26

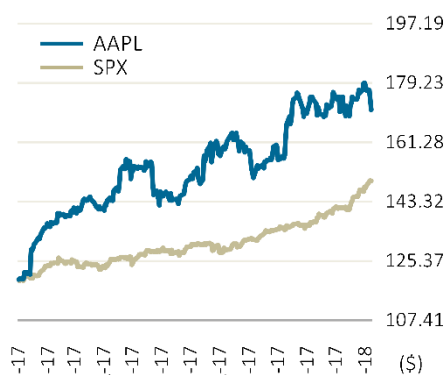
Dividend Yield

1.2%

Market Cap (m)

\$886,963

#### Price Performance



Source: IDC

## Estimates

	1Q16 A	2Q16 A	3Q16 A	4Q16 A	FY16 A	1Q17 A	2Q17 A	3Q17 A	4Q17 A	FY17 A	FY18 E
Sales	75,872	50,557	42,358	46,852	215,639	78,351	52,896	45,408	52,579	229,234	255,187
Gross Margin (%)	40.1%	39.4%	38.0%	38.0%	39.1%	38.5%	38.9%	38.5%	37.9%	38.5%	38.7%
Diluted EPS (Adj.)	3.28	1.90	1.42	1.67	8.28	3.36	2.10	1.67	2.07	9.19	11.06
DPS	0.52	0.52	0.57	0.57	2.18	0.57	0.57	0.63	0.63	2.40	2.64
EPS Growth (%)	7.1%	(18.4%)	(23.0%)	(14.6%)	(10.0%)	2.3%	10.4%	16.9%	23.7%	11.0%	20.4%

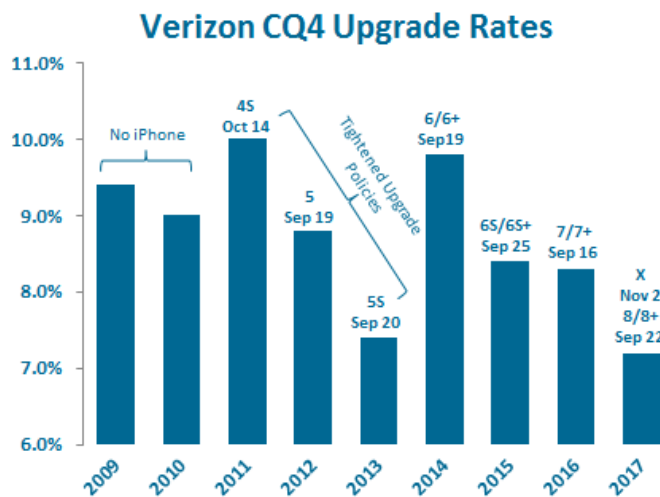
Source: BTIG Estimates and Company Documents (\$ in millions, except per share amount)

Company reports and BTIG estimates

**Please Read: Important disclosures and analyst's certification appear in Appendix**

## Upgrade rates still dropping

This week, Verizon reported a 7% decline in smartphones sold in Q4 on a 7.2% upgrade rate, its lowest Q4 upgrade rate of the past decade and at levels more typically seen in a June quarter. We expect Verizon's peers to report similar metrics, although to be fair there are other devices in the mix that could be pushing reported upgrade rates lower. On the bright side for Apple, Verizon's device ASP was \$50 higher than we expected and there could be signs that upgrade rates are bottoming out for 2018.



Source: Company reports; BTIG  
Tags: iPhone model launched; iPhone model launch date



## Units are still growing, but can ASP deliver on consensus revenue?

Concerns about iPhone X sales have been well documented. Apple's stock has shrugged off a slew of analyst and press reports that highlight these trends. Despite these concerns, Apple will still be able to grow its iPhone unit sales, just not necessarily at the rate that consensus expects. The incremental concern is whether Apple's can hit or even come close to consensus revenue estimates in future quarters, due to its reliance on ASP growth. ASPs are now much more difficult to predict due to Apple's broader and more price diverse product line.

## We believe revenue guidance for March could be as low as \$60 billion

We believe guidance for FQ2 revenue could be as low as \$60 billion compared to current consensus of \$68 billion. We reduced our FQ2 revenue estimate by \$2.5 billion primarily based on a 7 million reduction in the number of iPhones we expect to be sold to 53 million. This was partially offset by a \$33 increase in our ASP assumption, detailed below, and higher estimates for the iPad and Services segments. Our estimate reflects a sequential decline in iPhone ASP, while the consensus estimate assumes a sequential rise in ASP, which has not happened since 2011 when Verizon first started selling the CDMA version of the iPhone 4.

## Our 2018 revenue estimate is \$13 billion below consensus, but reflects 11% growth

We cut our Calendar 2018 revenue estimate by \$500 million to \$262 billion, which implies 11% growth. We are \$13 billion below the consensus estimate of \$275 billion, which implies 17% growth. Our revisions were driven by a 6% reduction in our estimate of phones sold for the year to 226.5 million from 240.0 million offset by a \$32 increase in our iPhone ASP estimate to \$721. Our new ASP estimate reflects a 7% annual increase compared to our prior estimate of a 4% increase.

Apple Revenue Analysis	OLD	NEW	Diff
\$ millions	CY2018	CY2018	
<b>Revenue by Product</b>	<b>262,398</b>	<b>261,889</b>	<b>(509)</b>
iPhone	165,295	163,199	(2,096)
iPad	19,031	19,586	555
Mac	27,177	26,952	(225)
Services	36,145	37,101	956
Other Products	14,750	15,050	300
<b>Annual Revenue Growth</b>	<b>11.3%</b>	<b>10.6%</b>	<b>-0.7%</b>
iPhone	14.2%	11.6%	-2.6%
iPad	-2.5%	0.4%	2.8%
Mac	1.8%	2.6%	0.8%
Services	14.5%	17.6%	3.0%
Other Products	10.6%	12.8%	2.2%

Source: BTIG

## Lower tax rate means higher EPS

A lower tax rate assumption of 19% versus our prior estimate of 25.5% cushions the revenue reduction and actually increases our Calendar 2018 EPS estimate to \$12.00 from \$11.00. Our calendar 2018 EPS estimate is currently \$0.25 above consensus, but likely because consensus has not been adjusted for the change in the tax code.

## Estimates may have to come down, but does the stock?

Apple has shrugged off a slew of press reports and analyst notes highlighting the risk to iPhone sales. However, the unpredictability of the ASP could be the Achilles heel (or maybe slingshot) for the stock. Our estimate of 11% revenue growth may be notably lower than consensus, but it's still impressive for a company at Apple's size and margin profile, thereby deserving a reasonable multiple of Earnings.

Our \$198 target, which remains unchanged, is based on 16.5x (was 18.0x) our Calendar 2018 EPS estimate of \$12.00. That is a discount to the current multiple of the S&P 500 of 18.6x. Our target implies a free cash flow yield of 6.8%.

We recommend that investors avoid trading the quarter given the wide range of ASP outcomes discussed below. It's possible, if not probable, that Apple's stock could take a more than 5% hit if Apple issues the March quarter guidance that we outline. Even if this occurs, we believe Apple can hit our \$198 price target by the end of the year based on the strong recurring revenue dynamics of its growth business, expanding margins and share repurchase activity.

### The Art of Estimating iPhone ASPs

Estimating iPhone ASPs relies on making assumptions on product and SKU mix. Even if you are successful at predicting product mix, using the iPhone list price is not reliable based on moves in currency and the likelihood that Apple discounts products in select markets throughout the world. Take the June 2017 quarter, for example. Reported ASP was \$606, but the only products with a list price below that level are the iPhone 6S 16GB (\$549) and the iPhone SE models (\$399-\$499). It appears that we need to apply a 5%-10% discount to an ASP that is calculated from list price in order to come up with our best guess on ASP. As you will see in the analysis below, you can drive a truck through the ASP range based on the range of iPhone product mix.

### Mix of iPhone X is critical to predict ASP in Q4

The key to figuring out the ASP in calendar Q4 is knowing the mix of iPhone X given its very high ASP. Supplies of the iPhone X were constrained at the November 2nd launch, but it was readily available by the end of the year and should not have limited sales in the quarter. Despite its availability, operator promotions were far less aggressive than prior years and ended up being more focused on Buy One Get One Free (BOGO) for the iPhone 8/8+, rather than on the iPhone X. ([Link](#))

Apple iPhone Trade-In Promotions For Existing Customers					
	6 / 6+	6S / 6S+	7 / 7+	8 / 8+	X
	September 2014	September 2015	September 2016	September 2017	Oct/Nov 2017
AT&T	\$200	\$200	\$650	\$300	\$300 <sup>5</sup>
Sprint	\$200 <sup>1</sup>	\$268-\$468 <sup>3</sup>	\$650	\$350 <sup>4</sup>	\$350 <sup>4</sup>
T-Mobile	\$300 <sup>2</sup>	\$218-\$416 <sup>3</sup>	\$400-\$650	\$300	\$300
Verizon	\$200-\$300	\$100-\$400	\$100-\$650	\$100-\$300	\$100-\$300

Source: Company websites; IR; Trade-In values can vary based on type of device; <sup>1</sup> Requires 2-year contract; <sup>2</sup> No stated offer; <sup>3</sup> Match/beat other offers; <sup>4</sup> Sprint Flex lease; <sup>5</sup> \$300 for 7 Plus, \$200 for other devices

### Stop calling it a super-cycle

This is an off-cycle/S-Model year, which is important to consider when some of our peers push the questionable thesis of this being a "super-cycle" year. There is no evidence from the operators to suggest there is a "super-cycle", but our visibility into China is admittedly very limited. If Apple sold 80 million phones in Q4 it would reflect a 2.2% increase over last year. 61 million phones sold in the March quarter implies 20% growth. As a point of reference, the 6/6+ launch in 2014 (a true super cycle) resulted in 46% unit growth in that December quarter and 40% in the subsequent March quarter. Just take a look at the spike in Verizon's upgrade rate in the very first chart of this report.

### Did the iPhone X represent 36-46% of sales in December quarter?

The table below shows the range of estimates that exist for the mix of phones sold in the December quarter. Our range of estimates implies 36% to 44% of phones sold in the quarter were iPhone X. As a point of reference Wave 7 Research ran surveys in stores in the United States in November and December that indicated that iPhone X represented ~12% and ~25% of iPhones sold in those months, respectively. It's certainly possible that the mix of customers electing to have their phones shipped (which would not be captured by their survey) was more highly weighted to iPhone X.

### When have legacy products represented <20% of phones sold?

We also estimate a relatively high mix of iPhone 8/8+ in our December estimates, and they are also a new product. In fact, at the high end of our range, legacy products represent less than 20% of phones sold in the quarter, which seems implausible based on prior discussions with operators.

Dec-2017 Phone	Units		Unit Mix	
	Low	High	Low	High
iPhone X	29.0	35.0	36%	44%
iPhone 8+	10.0	18.0	13%	23%
iPhone 8	10.0	12.0	13%	15%
Legacy	31.0	15.0	39%	19%
<b>Total</b>	<b>80.0</b>	<b>80.0</b>		

Source: BTIG

### What memory are consumers buying?

ASP is also impacted by the mix of SKU, or what memory size the consumer buys. We included the mix of SKUs determined by survey work from Wave 7 Research in the United States for purposes of comparison. For legacy products, which includes iPhone SE/6S/7, we simply reduced the June quarter ASP by \$100-\$125 to account for stated price reductions. The resulting range of ASPs based on this analysis is \$757-\$859.

### Who is getting a discount on iPhones? Not operators in the US

Experience has taught us that we should apply a 5%-10% discount to this basic math to better predict ASP and presumably account for market discounts to certain markets and distribution channels. To be clear, we do not believe that wireless operators in the United States receive product discounts. In fact, they pay Apple commissions for phones activated in Apple Stores.

December Quarter	BTIG Unit Ests			BTIG Unit Mix			Wave7 Unit Mix	BTIG ASP Ests		
	Low	Midpoint	High	Low	Midpoint	High		Low	Midpoint	High
<b>iPhone X</b>	<b>29.0</b>	<b>32.0</b>	<b>35.0</b>	<b>36%</b>	<b>40%</b>	<b>44%</b>	<b>25%</b>	<b>\$1,044</b>	<b>\$1,052</b>	<b>\$1,059</b>
64GB	20.3	20.7	21.0	70%	65%	60%	62%	\$999	\$999	\$999
256GB	8.7	11.4	14.0	30%	35%	40%	38%	\$1,149	\$1,149	\$1,149
<b>iPhone 8+</b>	<b>10.0</b>	<b>14.0</b>	<b>18.0</b>	<b>13%</b>	<b>18%</b>	<b>23%</b>	<b>26%</b>	<b>\$829</b>	<b>\$837</b>	<b>\$844</b>
64GB	8.0	10.3	12.6	80%	75%	70%	75%	\$799	\$799	\$799
256GB	2.0	3.7	5.4	20%	25%	30%	25%	\$949	\$949	\$949
<b>iPhone 8</b>	<b>10.0</b>	<b>11.0</b>	<b>12.0</b>	<b>13%</b>	<b>14%</b>	<b>15%</b>	<b>28%</b>	<b>\$729</b>	<b>\$737</b>	<b>\$744</b>
64GB	8.0	8.2	8.4	80%	75%	70%	75%	\$699	\$699	\$699
256GB	2.0	2.8	3.6	20%	25%	30%	25%	\$849	\$849	\$849
<b>Legacy</b>	<b>31.0</b>	<b>23.0</b>	<b>15.0</b>	<b>39%</b>	<b>29%</b>	<b>19%</b>	<b>21%</b>	<b>\$475</b>	<b>\$488</b>	<b>\$500</b>
<b>Total</b>	<b>80.0</b>	<b>80.0</b>	<b>80.0</b>					<b>\$757</b>	<b>\$808</b>	<b>\$859</b>
Retail discount				10%	8%	5%		\$682	\$749	\$816

Source: BTIG estimates, Wave7. Data from Wave7 surveys: 12/16/17 and 10/15/17

### \$10 billion swing in revenue based on the range of estimates on mix

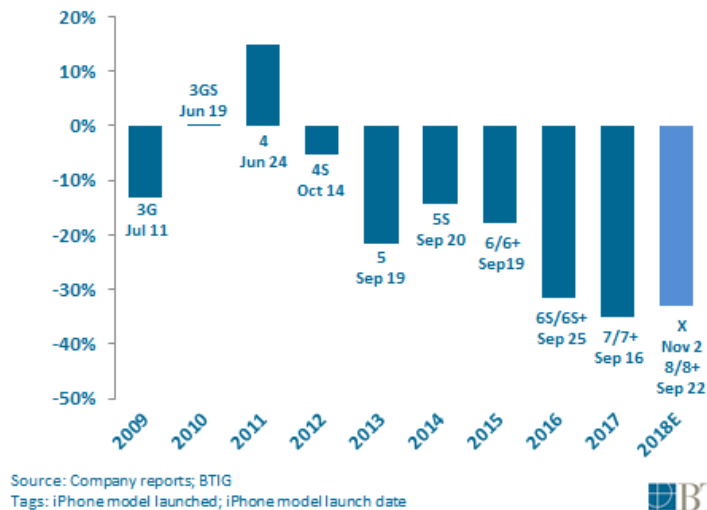
The net result of all the assumptions detailed above is an ASP range of \$682-\$816, which implies a revenue range of \$55 to \$65 billion based on 80 million units sold. We will use the midpoint of that range in our model of \$750, which is up from our prior estimate of \$722, but clearly that is a really wide range of outcomes. If Apple executed at the high end of the range it would result in total revenue of \$91 billion, which compares to guidance of \$84-\$87 billion and consensus of \$87 billion. The low end of the range implies FQ1 revenue of \$81 billion.

### Cutting our March quarter iPhone estimates to 53 million

We are lowering our iPhone unit estimate for the March quarter to 53 million from 60 million based on a more conservative outlook for upgrade rates. Our new estimate represents 4% annual unit growth, which is consistent with the low single digit growth of the past few quarters, but is lower than our prior estimate of 18%.

Our new unit estimate also implies a 33% sequential decline, which is in-line with the declines over the prior two years. Bulls could argue that the November launch of the iPhone X should provide an easier comparable, thereby rendering our 33% sequential decline estimate too conservative. A 20% sequential decline would imply 60 million phones sold and lift our revenue estimate by \$7.3 billion to \$68 billion, which is the consensus estimate for the March quarter. 80 million units does not seem like an easy comparable to us, so we will stick with our estimate of 53 million iPhones sold for the March quarter.

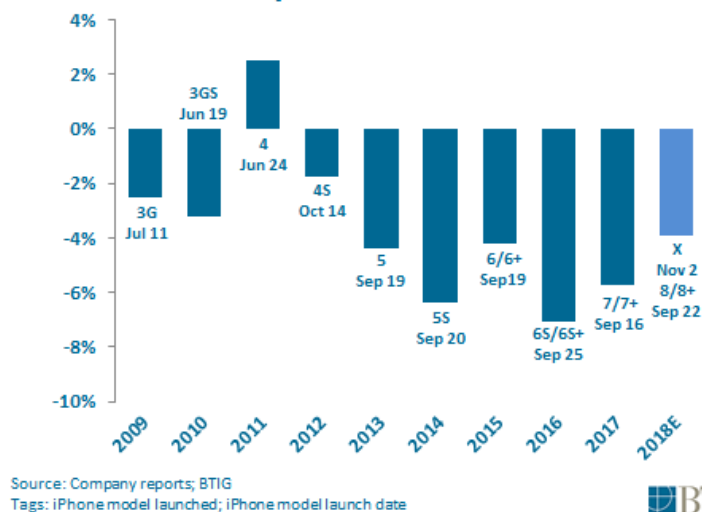
## iPhones: Sequential Unit Growth in CQ1



### Can ASP rise sequentially in the March quarter?

We believe the \$68 billion consensus revenue estimate for the March quarter implies a rise in iPhone ASP. This is likely driven by the belief that the November 2nd launch of the iPhone X and limited supply would help the iPhone X mix in the March quarter compared to the December quarter. It is definitely plausible that Apple could sell a similar number of iPhone X in the March quarter as it did in the December quarter when they were only selling the iPhone X for two months. However, the supply/demand of that phone did quickly move into balance during the December quarter and phone promotions have remain focused on iPhone 8s. A typical seasonal trend is a 4%-7% sequential drop in iPhone ASP in the March quarter. The reality likely falls somewhere in between, as we forecast and is shown in the chart below.

## iPhones: Sequential ASP Growth in CQ1



### What will the mix of phones be in the March quarter?

The table below shows a range of estimates for the mix of phones sold in the March quarter. This time we also provide a range for the total number of phones sold of 53-63 million, given the reduction we made to our estimates. This range of total phones sold implies annual growth of 4%-18%, both impressive, but clearly a very wide range, once again.

Mar-2018 Phone	Units		Unit Mix	
	Low	High	Low	High
iPhone X	18.0	28.0	34%	44%
iPhone 8+	10.0	15.0	19%	24%
iPhone 8	10.0	12.5	19%	20%
Legacy	15.0	7.5	28%	12%
<b>Total</b>	<b>53.0</b>	<b>63.0</b>		

Source: BTIG

The mix of phones is also critical. If the iPhone X mix in the March quarter can exceed the 40% mix at the mid point of the range in the December quarter, Apple will have a shot at growing ASPs sequentially and delivering on consensus revenue estimates. However, that implies a very low mix of legacy iPhone sales.

### No adjustment to SKU mix

We did not make adjustments to our mix of SKU compared to the December quarter although it's reasonable to assume that the mix would move down to lower priced models after the initial launch. The table below includes some more recent survey work from Wave 7 Research, which shows an expected increase in mix for the iPhone 8/8+.

March Quarter	BTIG Unit Ests			BTIG Unit Mix			Wave7 Unit Mix		BTIG ASP Ests		
	Low	Midpoint	High	Low	Midpoint	High	Low	High	Low	Midpoint	High
iPhone X	18.0	23.0	28.0	34%	39%	44%	25%		\$1,044	\$1,052	\$1,059
64GB	12.6	14.7	16.8	70%	65%	60%	64%		\$999	\$999	\$999
256GB	5.4	8.3	11.2	30%	35%	40%	36%		\$1,149	\$1,149	\$1,149
iPhone 8+	10.0	12.5	15.0	19%	21%	24%	28%		\$829	\$837	\$844
64GB	8.0	9.3	10.5	80%	75%	70%	75%		\$799	\$799	\$799
256GB	2.0	3.3	4.5	20%	25%	30%	25%		\$949	\$949	\$949
iPhone 8	10.0	11.3	12.5	19%	19%	20%	29%		\$729	\$737	\$744
64GB	8.0	8.4	8.8	80%	75%	70%	75%		\$699	\$699	\$699
256GB	2.0	2.9	3.8	20%	25%	30%	25%		\$849	\$849	\$849
Legacy	15.0	11.3	7.5	28%	20%	12%	18%		\$475	\$488	\$500
<b>Total</b>	<b>53.0</b>	<b>58.0</b>	<b>63.0</b>						<b>\$783</b>	<b>\$831</b>	<b>\$879</b>
Retail discount				10%	8%	5%			\$705	\$770	\$835

Source: BTIG estimates, Wave7. Data from Wave7 surveys: 1/24/18, 12/16/17 and 10/15/17

### We expect March ASP to drop sequentially to \$720, the low end of our range

Our estimates for the March quarter imply an ASP range of \$783 - \$879. We apply a 5%-10% discount to this basic math in order to generate an estimated reported ASP range of \$705-\$835. In the March and June quarters, discounts are likely to be larger as Apple moves inventory with lower prices in select markets.



### We will use the low end of the range for our FQ2 estimates

We will use the lower end of the ASP range in our model since our unit estimate is now 53 million for the quarter. Our new ASP estimate of \$720 for the March quarter is up \$32 from our prior estimate, but down \$30 from the December quarter and likely below consensus.

### Is 15% revenue growth really a disappointment?

Cutting our iPhone unit estimate to 53 million from 60 million and increasing our ASP estimate to \$720 from \$688 reduces our iPhone revenue estimate to \$38 billion from \$41 billion. Our new estimate implies 15% iPhone revenue growth, which is very impressive, but is down from our prior estimate of 24% growth. These estimates also yield a \$60 billion total revenue estimate, which will be the headline guidance number that investors are waiting for when the company reports FQ1.

### How do you get to \$68 billion in revenue guidance?

If we assumed the high end of the range in the tables above (63 million phones sold at an ASP of \$835) it would lift our iPhone revenue estimate by \$14 billion and imply an astounding 58% iPhone revenue growth. Apple has not grown iPhone revenue that much since FQ1-FQ3 2015 with the true super-cycle of the iPhone 6/6+. Furthermore, it would lift our total revenue estimate for the March quarter to \$75 billion, which is \$7 billion above consensus. That level of revenue would reflect 41% growth compared to last year. Apple reports Feb 1st after the close.

Apple Revenue Analysis	OLD	NEW	Diff
\$ millions	Mar-18	Mar-18	
<b>Revenue by Product</b>	<b>62,872</b>	<b>60,379</b>	<b>(2,493)</b>
iPhone	41,264	38,186	(3,078)
iPad	4,001	4,446	445
Mac	6,049	6,049	0
Services	8,308	8,449	141
Other Products	3,250	3,250	0
<b>Annual Revenue Growth</b>	<b>18.9%</b>	<b>14.1%</b>	<b>-4.7%</b>
iPhone	24.1%	14.8%	-9.3%
iPad	2.9%	14.3%	11.4%
Mac	3.5%	3.5%	0.0%
Services	18.0%	20.0%	2.0%
Other Products	13.1%	13.1%	0.0%

Source: BTIG

## Income Statement

Apple Income Statement								Est	Est	Est	Est	Est	Est
\$ millions	2015	2016	Dec	Mar	Jun	Sep	2017	Dec	Mar	Jun	Sep	2018	Dec
Revenues	233,715	215,639	78,351	52,896	45,408	52,579	229,234	86,000	60,379	50,877	57,931	255,187	92,702
Cost of goods sold	140,089	131,376	48,175	32,305	27,920	32,648	141,048	52,890	36,650	31,136	35,628	156,304	56,455
Gross profit	93,626	84,263	30,176	20,591	17,488	19,931	88,186	33,110	23,729	19,740	22,303	98,883	36,246
R&D	8,067	10,045	2,871	2,776	2,937	2,997	11,581	3,182	3,229	3,270	3,360	13,041	3,337
SG&A	14,329	14,194	3,946	3,718	3,783	3,814	15,261	4,472	4,244	4,188	4,202	17,106	4,774
Operating Income	71,230	60,024	23,359	14,097	10,768	13,120	61,344	25,456	16,256	12,282	14,741	68,735	28,135
Other inc and exp	1,285	1,348	821	587	540	797	2,745	600	600	600	600	2,400	625
NIBT	72,515	61,372	24,180	14,684	11,308	13,917	64,089	26,056	16,856	12,882	15,341	71,135	28,760
Taxes	19,121	15,685	6,289	3,655	2,591	3,203	15,738	6,644	3,203	2,448	2,915	15,209	5,464
Net Income	53,394	45,687	17,891	11,029	8,717	10,714	48,351	19,412	13,653	10,434	12,426	55,926	23,296
EPS	\$9.20	\$8.28	\$3.36	\$2.10	\$1.67	\$2.07	\$9.19	\$3.79	\$2.69	\$2.08	\$2.50	\$11.06	\$4.73
Shares out	5,793	5,500	5,328	5,262	5,233	5,184	5,252	5,127	5,072	5,020	4,970	5,047	4,921
Dividends per share	\$1.98	\$2.18	\$0.57	\$0.57	\$0.63	\$0.63	\$2.40	\$0.63	\$0.63	\$0.69	\$0.69	\$2.64	\$0.69
Dividends	11,464	11,984	3,037	2,999	3,297	3,266	12,599	3,230	3,195	3,464	3,429	13,318	3,396
Margins													
GPM	40.1%	39.1%	38.5%	38.9%	38.5%	37.9%	38.5%	38.5%	39.3%	38.8%	38.5%	38.7%	39.1%
R&D/Revenue	3.5%	4.7%	3.7%	5.2%	6.5%	5.7%	5.1%	3.7%	5.3%	6.4%	5.8%	5.1%	3.6%
SG&A/Revenue	6.1%	6.6%	5.0%	7.0%	8.3%	7.3%	6.7%	5.2%	7.0%	8.2%	7.3%	6.7%	5.2%
Operating Inc	30.5%	27.8%	29.8%	26.7%	23.7%	25.0%	26.8%	29.6%	26.9%	24.1%	25.4%	26.9%	30.4%
NIBT	31.0%	28.5%	30.9%	27.8%	24.9%	26.5%	28.0%	30.3%	27.9%	25.3%	26.5%	27.9%	31.0%
Tax rate	26.4%	25.6%	26.0%	24.9%	22.9%	23.0%	24.6%	25.5%	19.0%	19.0%	19.0%	21.4%	19.0%
Net Income	22.8%	21.2%	22.8%	20.9%	19.2%	20.4%	21.1%	22.6%	22.6%	20.5%	21.5%	21.9%	25.1%
Annual growth													
Revenues	27.9%	-7.7%	3.3%	4.6%	7.2%	12.2%	6.3%	9.8%	14.1%	12.0%	10.2%	11.3%	7.8%
Operating Income	35.7%	-15.7%	-3.4%	0.8%	6.6%	11.6%	2.2%	9.0%	15.3%	14.1%	12.4%	12.0%	10.5%
NIBT	35.6%	-15.4%	-1.6%	3.8%	8.0%	14.2%	4.4%	7.8%	14.8%	13.9%	10.2%	11.0%	10.4%
Net Income	35.1%	-14.4%	-2.6%	4.9%	11.8%	18.9%	5.8%	8.5%	23.8%	19.7%	16.0%	15.7%	20.0%
EPS	43.0%	-10.0%	2.3%	10.4%	16.9%	23.7%	11.0%	12.8%	28.4%	24.8%	21.0%	20.4%	25.0%
Dividends	9.3%	10.1%	9.6%	9.6%	10.5%	10.5%	10.1%	10.5%	10.5%	9.5%	9.5%	10.0%	9.5%
Net cash per share	\$24.85	\$27.91	\$29.76	\$30.09	\$29.27	\$29.56	\$29.56	\$30.86	\$31.21	\$30.67	\$32.26	\$32.26	\$35.26
Net cash	(141,204)	(150,553)	(158,541)	(158,319)	(153,177)	(153,215)	(153,215)	(158,216)	(158,287)	(153,955)	(160,327)	(160,327)	(173,546)

Source: Company reports; BTIG

## Revenues

Apple Revenue Analysis								Est	Est	Est	Est	Est	Est
\$ millions	2015	2016	Dec-16	Mar-17	Jun-17	Sep-17	2017	Dec-17	Mar-18	Jun-18	Sep-18	2018	Dec-18
<b>Revenue by Product</b>	<b>233,715</b>	<b>215,639</b>	<b>78,351</b>	<b>52,896</b>	<b>45,408</b>	<b>52,579</b>	<b>229,234</b>	<b>86,000</b>	<b>60,379</b>	<b>50,877</b>	<b>57,931</b>	<b>255,187</b>	<b>92,702</b>
iPhone	155,041	136,700	54,378	33,249	24,846	28,846	141,319	59,250	38,186	28,313	32,970	158,718	63,731
iPad	23,227	20,628	5,533	3,889	4,969	4,831	19,222	5,824	4,446	4,815	4,681	19,767	5,644
Mac	25,471	22,831	7,244	5,844	5,592	7,170	25,850	7,676	6,049	5,730	7,347	26,801	7,827
Services	19,909	24,348	7,172	7,041	7,266	8,501	29,980	8,750	8,449	8,719	9,433	35,351	10,500
Other Products	10,067	11,132	4,024	2,873	2,735	3,231	12,863	4,500	3,250	3,300	3,500	14,550	5,000
<b>Annual Revenue Growth</b>	<b>27.9%</b>	<b>-7.7%</b>	<b>3.3%</b>	<b>4.6%</b>	<b>7.2%</b>	<b>12.2%</b>	<b>6.3%</b>	<b>9.8%</b>	<b>14.1%</b>	<b>12.0%</b>	<b>10.2%</b>	<b>11.3%</b>	<b>7.8%</b>
iPhone	52.0%	-11.8%	5.3%	1.2%	3.3%	2.4%	3.4%	9.0%	14.8%	14.0%	14.3%	12.3%	7.6%
iPad	-23.3%	-11.2%	-21.9%	-11.9%	1.9%	13.5%	-6.8%	5.3%	14.3%	-3.1%	-3.1%	2.8%	-3.1%
Mac	5.8%	-10.4%	7.4%	14.4%	6.7%	24.9%	13.2%	6.0%	3.5%	2.5%	2.5%	3.7%	2.0%
Services	10.2%	22.3%	18.4%	17.5%	21.6%	34.4%	23.1%	22.0%	20.0%	20.0%	11.0%	17.9%	20.0%
Other Products	20.1%	10.6%	-7.5%	31.2%	23.3%	36.2%	15.5%	11.8%	13.1%	20.7%	8.3%	13.1%	11.1%
<b>Revenue Mix</b>													
iPhone	66.3%	63.4%	69.4%	62.9%	54.7%	54.9%	61.6%	68.9%	63.2%	55.6%	56.9%	62.2%	68.7%
iPad	9.9%	9.6%	7.1%	7.4%	10.9%	9.2%	8.4%	6.8%	7.4%	9.5%	8.1%	7.7%	6.1%
Mac	10.9%	10.6%	9.2%	11.0%	12.3%	13.6%	11.3%	8.9%	10.0%	11.3%	12.7%	10.5%	8.4%
Services	8.5%	11.3%	9.2%	13.3%	16.0%	16.2%	13.1%	10.2%	14.0%	17.1%	16.3%	13.9%	11.3%
Other Products	4.3%	5.2%	5.1%	5.4%	6.0%	6.1%	5.6%	5.2%	5.4%	6.5%	6.0%	5.7%	5.4%
<b>Units</b>													
iPhone	231,218	211,884	78,290	50,763	41,026	46,677	216,756	79,000	53,000	42,500	48,500	223,000	82,500
iPad	54,856	45,590	13,081	8,922	11,424	10,326	43,753	13,500	10,000	10,853	9,810	44,163	12,825
Mac	20,587	18,484	5,374	4,199	4,292	5,386	19,251	5,562	4,346	4,442	5,575	19,925	5,729
<b>Annual Unit Growth</b>													
iPhone	36.6%	-8.4%	4.7%	-0.8%	1.6%	2.6%	2.3%	0.9%	4.4%	3.6%	3.9%	2.9%	4.4%
iPad	-19.3%	-16.9%	-18.9%	-13.0%	14.8%	11.4%	-4.0%	3.2%	12.1%	-5.0%	-5.0%	0.9%	-5.0%
Mac	8.9%	-10.2%	1.2%	4.1%	0.9%	10.2%	4.1%	3.5%	3.5%	3.5%	3.5%	3.5%	3.0%
<b>Sequential Unit Growth</b>													
iPhone			72.0%	-35.2%	-19.2%	13.8%		69.2%	-32.9%	-19.8%	14.1%		70.1%
iPad			41.2%	-31.8%	28.0%	-9.6%		30.7%	-25.9%	8.5%	-9.6%		30.7%
Mac			10.0%	-21.9%	2.2%	25.5%		3.3%	-21.9%	2.2%	25.5%		2.8%
<b>Average Sales Prices</b>													
iPhone	671	645	695	655	606	618	652	750	720	666	680	712	773
iPad	423	452	423	436	435	468	439	431	445	444	477	448	440
Mac	1,237	1,235	1,348	1,392	1,303	1,331	1,343	1,380	1,392	1,290	1,318	1,345	1,366
<b>Annual ASP Growth</b>													
iPhone	11.3%	-3.8%	0.6%	2.1%	1.7%	-0.1%	1.1%	8.0%	10.0%	10.0%	10.0%	9.2%	3.0%
iPad	-5.0%	6.9%	-3.7%	1.3%	-11.2%	1.9%	-2.9%	2.0%	2.0%	2.0%	2.0%	1.9%	2.0%
Mac	-2.9%	-0.2%	6.1%	9.9%	5.7%	13.3%	8.7%	2.4%	0.0%	-1.0%	-1.0%	0.2%	-1.0%
<b>Sequential ASP Growth</b>													
iPhone			12.3%	-5.7%	-7.5%	2.0%		21.4%	-3.9%	-7.5%	2.0%		13.6%
iPad			-7.9%	3.1%	-0.2%	7.6%		-7.8%	3.1%	-0.2%	7.6%		-7.8%
Mac			14.8%	3.2%	-6.4%	2.2%		3.7%	0.9%	-7.3%	2.2%		3.7%

Source: Company reports; BTIG

## Estimate Revisions - Income Statement

Apple Income Statement	OLD	NEW	Diff	OLD	NEW	Diff	OLD	NEW	Diff	OLD	NEW	Diff
\$ millions	Dec-17	Dec-17		Mar-18	Mar-18		FY2018	FY2018		CY2018	CY2018	
Revenues	84,961	86,000	1,039	62,872	60,379	(2,493)	256,908	255,187	(1,721)	262,398	261,889	(509)
Cost of goods sold	52,251	52,890	639	38,352	36,650	(1,702)	157,684	156,304	(1,379)	160,427	159,870	(557)
Gross profit	32,710	33,110	400	24,520	23,729	(791)	99,224	98,883	(341)	101,971	102,019	48
R&D	3,144	3,182	38	3,362	3,229	(133)	13,234	13,041	(192)	13,346	13,197	(149)
SG&A	4,418	4,472	54	4,419	4,244	(175)	17,312	17,106	(206)	17,552	17,408	(144)
Operating Income	25,149	25,456	307	16,739	16,256	(483)	68,678	68,735	57	71,072	71,414	342
Other inc and exp	600	600	0	600	600	0	2,400	2,400	0	2,400	2,425	25
NIBT	25,749	26,056	307	17,339	16,856	(483)	71,078	71,135	57	73,472	73,839	367
Taxes	6,566	6,644	78	4,421	3,203	(1,219)	18,125	15,209	(2,916)	18,735	14,029	(4,706)
Net Income	19,183	19,412	229	12,917	13,653	736	52,953	55,926	2,973	54,737	59,810	5,073
<b>EPS</b>	<b>\$3.74</b>	<b>\$3.79</b>	<b>\$0.04</b>	<b>\$2.55</b>	<b>\$2.69</b>	<b>\$0.14</b>	<b>\$10.47</b>	<b>\$11.06</b>	<b>\$0.58</b>	<b>\$11.00</b>	<b>\$12.00</b>	<b>\$1.01</b>
Shares out	5,125	5,127	2	5,069	5,072	3	5,043	5,047	4	4,977	4,982	5
<b>Dividends per share</b>	<b>\$0.63</b>	<b>\$0.63</b>	<b>\$0.00</b>	<b>\$0.63</b>	<b>\$0.63</b>	<b>\$0.00</b>	<b>\$2.64</b>	<b>\$2.64</b>	<b>\$0.00</b>	<b>\$2.70</b>	<b>\$2.70</b>	<b>\$0.00</b>
Dividends	3,229	3,230	1	3,193	3,195	2	13,306	13,318	12	13,468	13,484	16
<b>Margins</b>												
GPM	38.5%	38.5%	0.0%	39.0%	39.3%	0.3%	38.6%	38.7%	0.1%	38.9%	39.0%	0.1%
R&D/Revenue	3.7%	3.7%	0.0%	5.3%	5.3%	0.0%	5.2%	5.1%	0.0%	5.1%	5.0%	0.0%
SG&A/Revenue	5.2%	5.2%	0.0%	7.0%	7.0%	0.0%	6.7%	6.7%	0.0%	6.7%	6.6%	0.0%
<b>Operating Inc</b>	<b>29.6%</b>	<b>29.6%</b>	<b>0.0%</b>	<b>26.6%</b>	<b>26.9%</b>	<b>0.3%</b>	<b>26.7%</b>	<b>26.9%</b>	<b>0.2%</b>	<b>27.1%</b>	<b>27.3%</b>	<b>0.2%</b>
NIBT	30.3%	30.3%	0.0%	27.6%	27.9%	0.3%	27.7%	27.9%	0.2%	28.0%	28.2%	0.2%
Tax rate	25.5%	25.5%	0.0%	25.5%	19.0%	-6.5%	25.5%	21.4%	-4.1%	25.5%	19.0%	-6.5%
Net Income	22.6%	22.6%	0.0%	20.5%	22.6%	2.1%	20.6%	21.9%	1.3%	20.9%	22.8%	2.0%
<b>Annual growth</b>												
Revenues	8.4%	9.8%	1.3%	18.9%	14.1%	-4.7%	12.1%	11.3%	-0.8%	11.3%	10.6%	-0.7%
Operating Income	7.7%	9.0%	1.3%	18.7%	15.3%	-3.4%	12.0%	12.0%	0.1%	12.6%	12.6%	0.0%
NIBT	6.5%	7.8%	1.3%	18.1%	14.8%	-3.3%	10.9%	11.0%	0.1%	11.9%	11.9%	0.0%
Net Income	7.2%	8.5%	1.3%	17.1%	23.8%	6.7%	9.5%	15.7%	6.1%	10.3%	19.9%	9.7%
<b>EPS</b>	<b>11.5%</b>	<b>12.8%</b>	<b>1.3%</b>	<b>21.6%</b>	<b>28.4%</b>	<b>6.8%</b>	<b>14.0%</b>	<b>20.4%</b>	<b>6.4%</b>	<b>14.9%</b>	<b>24.9%</b>	<b>10.0%</b>
Dividends	10.5%	10.5%	0.0%	10.5%	10.5%	0.0%	10.0%	10.0%	0.0%	9.8%	9.8%	0.0%
<b>Net cash per share</b>	<b>\$30.83</b>	<b>\$30.86</b>	<b>\$0.03</b>	<b>\$31.45</b>	<b>\$31.21</b>	<b>(\$0.24)</b>	<b>\$32.09</b>	<b>\$32.26</b>	<b>\$0.18</b>	<b>\$34.84</b>	<b>\$35.26</b>	<b>\$0.42</b>
Net cash	(158,006)	(158,216)	(210)	(159,394)	(158,287)	1,108	(159,235)	(160,327)	(1,092)	(171,178)	(173,546)	(2,368)

Source: Company reports; BTIG

## Estimate Revisions - Revenues

Apple Revenue Analysis	OLD	NEW	Diff	OLD	NEW	Diff	OLD	NEW	Diff	OLD	NEW	Diff
\$ millions	Dec-17	Dec-17		Mar-18	Mar-18		FY2018	FY2018		CY2018	CY2018	
<b>Revenue by Product</b>	<b>84,961</b>	<b>86,000</b>	<b>1,039</b>	<b>62,872</b>	<b>60,379</b>	<b>(2,493)</b>	<b>256,908</b>	<b>255,187</b>	<b>(1,721)</b>	<b>262,398</b>	<b>261,889</b>	<b>(509)</b>
iPhone	57,788	59,250	1,462	41,264	38,186	(3,078)	161,105	158,718	(2,387)	165,295	163,199	(2,096)
iPad	5,824	5,824	0	4,001	4,446	445	19,322	19,767	445	19,031	19,586	555
Mac	8,099	7,676	(423)	6,049	6,049	0	27,098	26,801	(297)	27,177	26,952	(225)
Services	8,750	8,750	0	8,308	8,449	141	34,832	35,351	519	36,145	37,101	956
Other Products	4,500	4,500	0	3,250	3,250	0	14,550	14,550	0	14,750	15,050	300
<b>Annual Revenue Growth</b>	<b>8.4%</b>	<b>9.8%</b>	<b>1.3%</b>	<b>18.9%</b>	<b>14.1%</b>	<b>-4.7%</b>	<b>12.1%</b>	<b>11.3%</b>	<b>-0.8%</b>	<b>11.3%</b>	<b>10.6%</b>	<b>-0.7%</b>
iPhone	6.3%	9.0%	2.7%	24.1%	14.8%	-9.3%	14.0%	12.3%	-1.7%	14.2%	11.6%	-2.6%
iPad	5.3%	5.3%	0.0%	2.9%	14.3%	11.4%	0.5%	2.8%	2.3%	-2.5%	0.4%	2.8%
Mac	11.8%	6.0%	-5.8%	3.5%	3.5%	0.0%	4.8%	3.7%	-1.1%	1.8%	2.6%	0.8%
Services	22.0%	22.0%	0.0%	18.0%	20.0%	2.0%	16.2%	17.9%	1.7%	14.5%	17.6%	3.0%
Other Products	11.8%	11.8%	0.0%	13.1%	13.1%	0.0%	13.1%	13.1%	0.0%	10.6%	12.8%	2.2%
<b>Revenue Mix</b>												
iPhone	68.0%	68.9%	0.9%	65.6%	63.2%	-2.4%	62.7%	62.2%	-0.5%	63.0%	62.3%	-0.7%
iPad	6.9%	6.8%	-0.1%	6.4%	7.4%	1.0%	7.5%	7.7%	0.2%	7.3%	7.5%	0.2%
Mac	9.5%	8.9%	-0.6%	9.6%	10.0%	0.4%	10.5%	10.5%	0.0%	10.4%	10.3%	-0.1%
Services	10.3%	10.2%	-0.1%	13.2%	14.0%	0.8%	13.6%	13.9%	0.3%	13.8%	14.2%	0.4%
Other Products	5.3%	5.2%	-0.1%	5.2%	5.4%	0.2%	5.7%	5.7%	0.0%	3.3%	3.4%	0.1%
<b>Units</b>												
iPhone	80,000	79,000	(1,000)	60,000	53,000	(7,000)	237,500	223,000	(14,500)	240,000	226,500	(13,500)
iPad	13,500	13,500	0	9,000	10,000	1,000	43,163	44,163	1,000	42,488	43,488	1,000
Mac	5,777	5,562	(215)	4,346	4,346	0	20,043	19,925	(118)	20,159	20,092	(67)
<b>Annual Unit Growth</b>												
iPhone	2.2%	0.9%	-1.3%	18.2%	4.4%	-13.8%	9.6%	2.9%	-6.7%	9.9%	4.2%	-5.7%
iPad	3.2%	3.2%	0.0%	0.9%	12.1%	11.2%	-1.3%	0.9%	2.3%	-3.8%	-1.5%	2.3%
Mac	7.5%	3.5%	-4.0%	3.5%	3.5%	0.0%	4.1%	3.5%	-0.6%	2.6%	3.4%	0.8%
<b>Sequential Unit Growth</b>												
iPhone	71.4%	69.2%	-2.1%	-25.0%	-32.9%	-7.9%						
iPad	30.7%	30.7%	0.0%	-33.3%	-25.9%	7.4%						
Mac	7.3%	3.3%	-4.0%	-24.8%	-21.9%	2.9%						
<b>Average Sales Prices</b>												
iPhone	722	750	28	688	720	33	678	712	33	689	721	32
iPad	431	431	0	445	445	0	448	448	(0)	448	450	2
Mac	1,402	1,380	(22)	1,392	1,392	0	1,352	1,345	(7)	1,348	1,341	(7)
<b>Annual ASP Growth</b>												
iPhone	4.0%	8.0%	4.0%	5.0%	10.0%	5.0%	4.0%	9.2%	5.1%	4.0%	7.2%	3.2%
iPad	2.0%	2.0%	0.0%	2.0%	2.0%	0.0%	1.9%	1.9%	0.0%	1.4%	2.0%	0.6%
Mac	4.0%	2.4%	-1.6%	0.0%	0.0%	0.0%	0.7%	0.2%	-0.5%	-0.8%	-0.8%	0.0%
<b>Sequential ASP Growth</b>												
iPhone	16.9%	21.4%	4.5%	-4.8%	-3.9%	0.9%						
iPad	-7.8%	-7.8%	0.0%	3.1%	3.1%	0.0%						
Mac	5.3%	3.7%	-1.6%	-0.7%	0.9%	1.6%						

Source: Company reports; BTIG

## BTIG Covered Companies Mentioned in this Report

APPLE, INC. (AAPL, Buy, \$198.00 PT; Current Price: \$171.11; Analyst: Walter.Pieczyk)

VERIZON COMMUNICATIONS, INC. (VZ, Neutral, \$N/A PT; Current Price: \$54.29; Analyst: Walter.Pieczyk)

## Appendix: Analyst Certification and Other Important Disclosures

### Analyst Certification

I, Walter Piecyk, hereby certify that the views about the companies and securities discussed in this report are accurately expressed and that I have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report.

I, Joseph Galone, hereby certify that the views about the companies and securities discussed in this report are accurately expressed and that I have not received and will not receive direct or indirect compensation in exchange for expressing specific recommendations or views in this report.

### Regulatory Disclosures

#### Ratings Definitions

**BTIG LLC's ("BTIG") ratings, effective June 12, 2017, are defined as follows:**

**BUY** – A security which is expected to produce a positive total return of 15% or greater over the 12 months following the recommendation. The BUY rating may be maintained as long as it is deemed appropriate, notwithstanding price fluctuations that would cause the target to fall outside of the 15% return.

**SELL** – A security which is expected to produce a negative total return of 15% or greater over the next 12 months following the recommendation. The SELL rating may be maintained as long as it is deemed appropriate, notwithstanding price fluctuations that would cause the target to fall outside of the 15% return.

**NEUTRAL** – A security which is not expected to appreciate or depreciate meaningfully over the next 12 months.

**NOT RATED** – A security which is not rated or covered by BTIG.

**UNDER REVIEW** – Effective immediately, coverage of the following securities is Under Review. Ratings, price targets, disclosures, and estimates for the companies listed below are suspended and should no longer be relied upon.

### Distribution of Ratings and Investment Banking Clients

BTIG must disclose in each research report the percentage of all securities rated by the member to which the member would assign a "buy", "neutral" or "sell" rating. The said ratings are updated on a quarterly basis. BTIG must also disclose the percentage of subject companies within each of these three categories for whom the member has provided investment banking services within the previous twelve months. **Stocks under coverage as of the end of the most recent calendar quarter (December 31, 2017): 278**

**Distribution of BTIG's Research Recommendations (as of December 31, 2017):**

**BUY: 59.0%; NEUTRAL: 37.0%; SELL: 4.0%**

**Distribution of BTIG's Investment Banking Services (as of December 31, 2017):**

**BUY: 20.1%; NEUTRAL: 6.8%; SELL: 0.0%**

For purposes of FINRA ratings distribution rules, BTIG's stock ratings of Buy, Neutral and Sell fall into Buy, Hold and Sell categories, respectively.

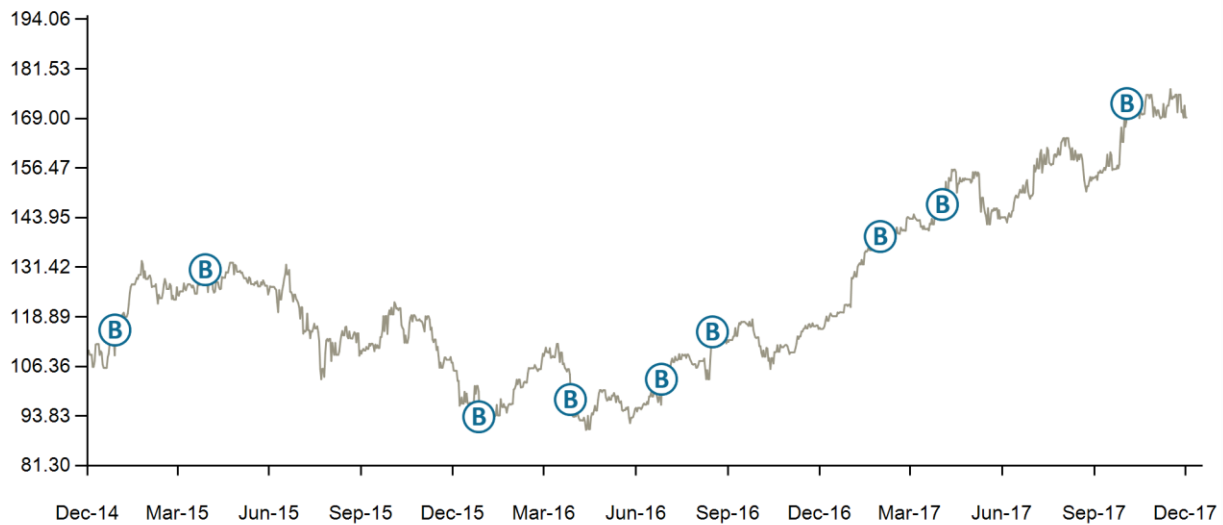
### Company Valuation and Risk Disclosures

#### Apple, Inc. (AAPL, Buy, \$198.00 PT)

**Valuation:** Our \$198 price target is based on 16.5x our CY 2018 EPS estimate of \$12.00, which reflects 25% growth in that year. Our price target implies a free cash flow yield of 6.8% and 8.0% if you reduced the market cap by the more than \$150 billion of net cash.

**Risks:** Apple competes against a number of traditional and start-up wireless device manufacturers who are constantly bringing new products to market that could potentially take share from the company. These competitors could also be more willing to cut prices and have promotional offers in the market.

# Apple, Inc. (AAPL) (\$)



*Note: Closing Price and Target Price have been adjusted for corporate actions.*

Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
20-May-10	33.97	47.14	Walter Piecyk	Buy
21-Jul-10	36.32	50	Walter Piecyk	Buy
12-Oct-10	42.65	53.57	Walter Piecyk	Buy
16-Mar-11	47.14	64.29	Walter Piecyk	Buy
19-Jul-11	53.84	71.43	Walter Piecyk	Buy
18-Oct-11	60.32	78.57	Walter Piecyk	Buy
05-Jan-12	59.72	82.86	Walter Piecyk	Buy
24-Jan-12	60.06	85.71	Walter Piecyk	Buy
09-Apr-12	90.89	NA	Walter Piecyk	Neutral
14-Mar-13	61.79	77.14	Walter Piecyk	Buy
06-Feb-14	73.22	78.86	Walter Piecyk	Buy
24-Apr-14	81.11	85.71	Walter Piecyk	Buy
01-Jul-14	93.52	112	Walter Piecyk	Buy
21-Oct-14	102.47	128	Walter Piecyk	Buy
18-Nov-14	115.47	135	Walter Piecyk	Buy
28-Jan-15	115.31	150	Walter Piecyk	Buy
28-Apr-15	130.56	160	Walter Piecyk	Buy
26-Jan-16	93.42	141	Walter Piecyk	Buy
26-Apr-16	97.82	115	Walter Piecyk	Buy
26-Jul-16	102.95	124	Walter Piecyk	Buy
15-Sep-16	114.92	133	Walter Piecyk	Buy
01-Mar-17	138.96	165	Walter Piecyk	Buy
02-May-17	147.06	184	Walter Piecyk	Buy
02-Nov-17	172.50	198	Walter Piecyk	Buy

## Verizon Communications, Inc. (VZ, Neutral)

**Valuation:** We value companies based on a variety of valuation techniques including Revenue multiples, Enterprise Value to EBITDA multiples, Price to Earnings, Free Cash Flow multiples, and Sum-of-the-Parts. In the case of Verizon, current multiples do not indicate that the company will trade outside of +/- 15% from current levels over the next 12 months. Note that BTIG does not assign specific price targets to Neutral-rated stocks.

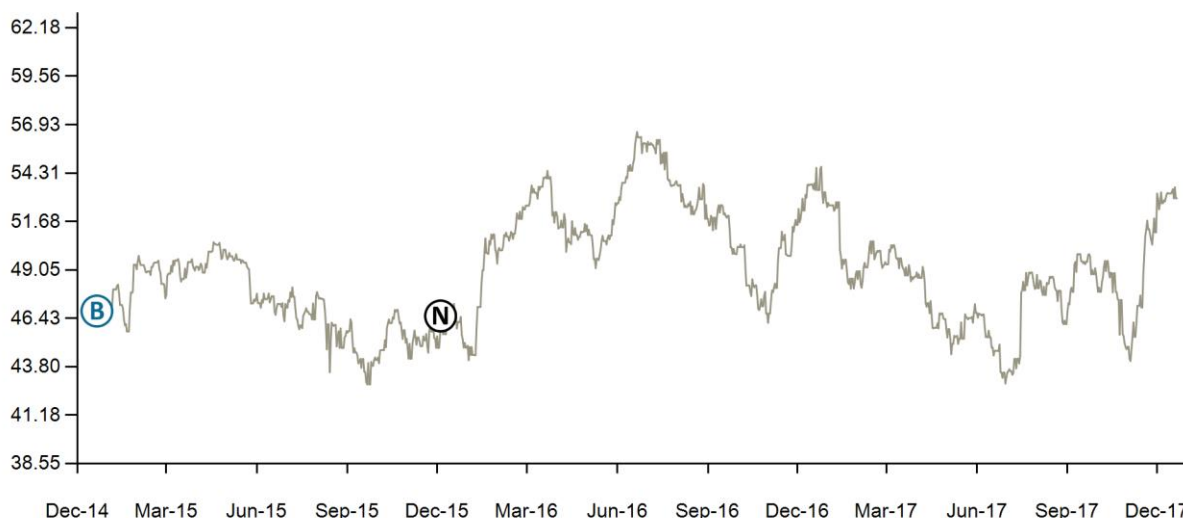
**Risks:** The risks to our Neutral rating is that Verizon is able to increase pricing on customers that are not willing to leave them because of the greater coverage of their wireless networks, thereby driving EBITDA, free cash flow and EPS higher than our estimate. Verizon could also make a large acquisition in order to pivot to a strategy that



offers growth or supports their customers' wireless data growth that would increase the concern by their investors about the company's longer-term ability to fund the dividend.

#### Verizon Communications, Inc. (VZ)

(\$)



*Note: Closing Price and Target Price have been adjusted for corporate actions.*

Date	Closing Price (\$)	Target Price (\$)	Analyst	Rating
01-Jul-14	49.37	60	Walter Piecyk	Buy
15-Dec-15	46.51	NA	Walter Piecyk	Neutral

## Other Disclosures

Additional Information Available Upon Request

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