STIFEL

Dycom Industries, Inc. DY – NYSE Buy

Specialty Engineering & Construction

Analysis of Sales/Earnings

F4Q16: Adj EPS of \$1.64 vs. Stifel \$1.60. Solid 1Q17 Guidance. Lower Goodman Rev. Guidance Reflective of Aggressive Pruning?

Dycom reported F4Q16 adjusted EPS of \$1.64 vs our estimate of \$1.60 and consensus of \$1.56. Results were solid, with sales (ex estimated Goodman revs) 1% ahead of our estimate, adjusted operating income 1% ahead of our estimate, and EBITDA in line. F1Q17 guidance is for adjusted EPS of \$1.55 to \$1.70 versus our \$1.62 estimate and consensus of \$1.63. Dycom meaningfully lowered its expectation for F2017 Goodman revenue contributions (a 36.5% reduction at the midpoint), however, EBITDA margins are now expected to approximate DY consolidated levels in 2Q17 versus F2018 previously. Our read is that DY likely pruned low-margin work more aggressively than it initially anticipated. Shares are down in the after market, which we think reflects high expectations for the quarter, concern over the Goodman revision, and the 7.9% recovery in DY the past week vs 0.4% for the S&P 500. We believe that strong backlog numbers (reported tomorrow) and bullish management commentary could swing shares to a slightly positive move.

Organic revenue growth remained strong in the quarter at 20% y/y. Revenues of \$789.2 million exceeded our estimate by 1.2%, and the consensus by 2.3%. In total, sales were up 36.4% y/y and 18.7% q/q.

EBITDA was in-line with our forecast, beat consensus. Adjusted EBITDA of \$126.0 million, or a 16.0% EBITDA margin, was in line with our estimate of \$125.7 million, or 16.1% of sales and beat consensus of \$121 million.

It appears that FCF was positive in the quarter. We calculate adjusted DSO at ~79 days, versus 90 in the prior year.

We think that the expectation for significantly lower Goodman revenues in 2017 but higher margins sooner reflects more aggressive pruning of low margin work than initially anticipated. We are looking for clarification on the call. Dycom now expects Goodman revenues to approximate \$100 million in 2017 versus \$150-\$165 million previously. However, EBITDA margins are now expected to approximate DY consolidated levels in 2Q17 versus F2018 previously.

The key question is where can Goodman revenues and margins go in 2018? We were previously estimating that Goodman could contribute roughly \$0.25 to EPS in 2018 (\$165- \$170 million in revenue, ~\$23-\$25 million in EBITDA or a 14%-14.5% EBITDA margin). At \$115 million in revenues and a 15.0%-15.5% EBITDA margin, we estimate EBITDA would approximate \$17 - \$18 million and EPS accretion \$0.17 - \$0.18 p/s.

DY provided F1Q17 guidance for revenue of \$780 - \$810 million (18%-21% y/y growth) and adjusted EPS of \$1.55 - \$1.70. This compares to our estimate of \$1.62 and consensus of \$1.63. Firm F1Q17 guidance was moderately ahead of initial "first look" guidance, which suggested mid-to-high teens revenue growth, and suggested EPS (by our estimate) of \$1.56 - \$1.67.

<u>Changes</u>	Previous	Current
Rating	_	Buy
Target Price	_	\$102.00
FY16E EPS (Net)	_	\$4.44
FY17E EPS (Net)	_	\$5.39
FY16E Rev (net)	_	\$2.66B
FY17E Rev (net)	_	\$3.07B

Price (08/23/16):	\$91.94
52-Week Range:	\$98 - \$47
Market Cap.(mm):	2,951.3
Shr.O/S-Diluted (mm):	32.1
Enterprise Val. (mm):	\$3,701.0
Avg Daily Vol (3 Mo):	814,026
LT Debt/Total Cap.:	65.1%
Book Value/Share:	\$13.91
Dividend(\$ / %)	\$0.00 / 0.0%
S&P Index	2,186.90

EPS (Net)	2015A	2016E	2017E
Q1	\$0.59	\$1.24A	\$1.62
Q2	0.27	0.54A	0.70
Q3	0.58	1.08A	1.30
Q4	0.97	1.60	1.78
FY Jul	\$2.41A	\$4.44	\$5.39
P/E	38.1x	20.7x	17.1x

Rev (net)	2015A	2016E	2017E
Q1	\$510.4	\$659.3A	\$781.4
Q2	441.1	559.5A	660.8
Q3	492.4	664.6A	780.9
Q4	578.5	779.7	845.8
FY Jul	\$2.02B	\$2.66B	\$3.07B
EV/Revenue	1.8x	1.4x	1.2x

Noelle C. Dilts, CFA Missa Sangimino Stifel Equity Trading Desk diltsn@stifel.com sangiminom@stifel.com (303) 291-5239 (212) 271-3831

(800) 424-8870



Stifel does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

All relevant disclosures and certifications appear on pages 11 - 13 of this report.

F4Q16 EARNINGS SUMMARY

Operating Summary- F4Q16							
	F4Q16A	F4Q16E	Variance	F4Q15A	Y/Y Growth %	F3Q16A	Q/Q Growth %
Total Revenues	789.2	779.7	1.2%	578.5	36.4%	664.6	18.7%
Gross Profit	183.3	182.6	0.4%	132.4	38.4%	144.2	27.1%
margin	23.2%	23.4%	-19.7 bps	22.9%	33.9 bps	21.7%	152.5 bps
SG&A	61.4	62.2	-1.2%	47.5	29.4%	56.5	8.7%
% of sales	7.8%	8.0%	-19.0 bps	8.2%	-42.4 bps	8.5%	-72.0 bps
Adjusted Operating Income	85.8	84.9	1.1%	59.0	45.4%	56.1	53.0%
margin	10.9%	10.9%	-1.0 bps	10.2%	67.1 bps	8.4%	243.4 bps
D&A	36.0	35.5	1.3%	25.9	39.2%	31.6	14.0%
% of sales	4.6%	4.6%	0.4 bps	4.5%	9.2 bps	4.8%	-18.9 bps
Adjusted EBITDA	126.0	125.7	0.3%	88.5	42.5%	91.8	37.3%
margin	16.0%	16.1%	-15.1 bps	15.3%	68.0 bps	13.8%	215.5 bps
Interest Expense	5.1	4.9	4.5%	6.9	-25.8%	3.8	34.5%
Other Income (Net)	3.6	2.5	42.8%	1.3	176.2%	4.3	-17.4%
Taxes	31.6	31.1	1.6%	19.6	61.3%	20.9	51.1%
Tax rate	36.9%	37.7%	-77.4 bps	36.7%	26.0 bps	36.9%	0.0 bps
Adjusted Diluted EPS	\$1.64	\$1.60	2.5%	\$0.97	69.1%	\$1.08	52.0%
Diluted EPS - GAAP	\$1.54	\$1.51	1.7%	\$0.97	58.5%	\$1.00	53.9%

Consensus: Revenues of \$771.5 million, Earnings per Share of \$1.56.

Source: Company reports, Stifel estimates, First Call

EPS: Dycom reported F4Q16 adjusted EPS of \$1.64 versus our estimate of \$1.60 and the Consensus estimate of \$1.56. Dycom was guiding to EPS of \$1.45 - \$1.60. EPS grew 69.1% y/y and 52.0% q/q.

Revenues: Revenues of \$789.2 million were 1.2% above our \$779.7 million forecast and above the high end of DY guidance of \$750-780 million. Revenues were up 36.4% y/y, including 20.0% organic growth. Acquired operations contributed \$44.8 million (includes Goodman) to revenue versus DY guidance of \$40.0 million (did not include Goodman). We estimate that Goodman contributed roughly \$5 million in revenue or the difference between guidance and reported. Given that our estimate did not include Goodman contributions, on an applesto-apples basis, the beat was approximately 60 bps.

Gross Profit: Gross profit of \$183.3 million was in-line with our forecast of \$182.6 million and was up 38.4% y/y and 27.1% q/q. Gross profit margins of 23.2% were 19.7 bps below our forecast.

Adjusted Operating Profit: Adjusted Operating profit (which excludes acquisition-related expenses of \$715K) of \$85.8 million was 1.1% above our estimate of \$84.9 million. Operating margins of 10.9% were in-line with our expectations and grew 67 bps y/y and 243 bps q/q.

Interest Expense: Interest expense of \$5.1 million was slightly above our forecast of \$4.9 million.

Other Income: Other income in the quarter was \$3.6 million, which exceeded our \$2.5 million forecast and benefited EPS by ~\$0.02 p/s.

Taxes: The 4Q tax rate of 36.9% was below our 37.7% estimate, and boosted EPS by \$0.01.

Shares Outstanding. Shares of 32.1 million were in-line with our forecast.

Adjusted EBITDA of \$126.0 million, or 16.0% sales, was in line with our estimate of \$125.7 million, or 16.1% of sales, and beat the Consensus estimate of \$121.1 million.

FISCAL 2016 EARNINGS SUMMARY

Fiscal Year 2016 Earnings Summa	ry		
	F2016	F2015	Y/Y Growth %
Total Revenues	2663.0	2022.3	31.7%
			 ·
Gross Profit	590.4	429.1	37.6%
margin	22.2%	21.2%	95.4 bps
SG&A	216.4	178.7	21.1%
% of sales	8.1%	8.8%	-70.9 bps
70 Or States	0.170	0.070	70.5 505
Adjusted Operating Income	249.0	154.3	61.3%
margin	9.3%	7.6%	171.8 bps
50.4	405.0	00.0	00.40/
D&A	125.0	96.0	30.1%
% of sales	4.7%	4.7%	-5.5 bps
Adjusted EBITDA	390.0	265.5	46.9%
margin	14.6%	13.1%	151.7 bps
Interest Expense	20.0	27.0	-26.1%
Other Income	10.4	8.3	25.8%
Taxes	89.6	51.3	74.8%
Tax rate	37.4%	37.8%	-39.1 bps
Adjusted Diluted EPS	\$4.48	\$2.41	86.1%
Diluted EPS - GAAP	\$4.24	\$2.41	76.0%
Company and involve baseling into 4		0 CE 4 O maillion	EDC -6 \$4.40

Consensus estimates heading into 4Q: Revenues of \$2,654.9 million, EPS of \$4.40. Source: Company reports, Stifel estimates

EPS. Dycom reported F2016 adjusted EPS of \$4.48 compared to \$2.41 in F2015.

Revenues. Revenues of \$2,663.0 million grew 31.7% over F2015 revenues of \$2,022.3 million, including 22.7% growth on an organic basis.

Gross Profit. Gross profit of \$590.4 million grew 37.6% y/y, and margins of 8.1% were 71 bps below F2015 margins of 8.8%.

Operating Profit: Operating profit of \$249.0 grew 61.3% y/y and margins of 9.3% grew 172 bps y/y.

Interest Expense: Interest expense of \$20.0 million compares to \$27.0 million in F2015.

Other Income: Other Income of \$10.4 million compares to \$8.3 million in F2015, increasing 25.8% y/y.

Taxes: The full year tax rate of 37.4% was below F2015 tax rate of 37.8% by 39 bps.

Adjusted EBITDA: Adjusted EBITDA of \$390.0 million, or 14.6% sales, compares to \$265.5 million, or 13.1% in F2015.

Conference Call Schedule

Dycom will hold a conference call to discuss 3Q earnings on Wednesday, August 24, 2016 at 9:00 AM ET.

Dial-In: (800) 230-1074 (Domestic); (612) 234-9960 (International)

Live Webcast: http://www.dycomind.com

Select Questions For the Call:

- 1) What drove the meaningful reduction in expected Goodman revenues from the levels communicated in the June 2nd acquisition announcement? How is Dycom achieving margin expansion more quickly than previously communicated?
- 2) How should we think about Goodman revenues in 2018? Should we see growth over the expected \$100 million in 2017? Should EBITDA margins be in the mid-teens on a full-year basis in 2018? What are Dycom's expectations for this business over the long term? Why does it make sense from a strategic standpoint? Should we expect Dycom to move deeper into the wireless space over the next few years?
- 3) What is Dycom's opinion of Google's announcement that it is testing wireless broadband technologies? Does management believe that the company is slowing fiber deployments as it tests wireless alternatives?
- 4) How is management thinking about the evolution of wireless delivery speeds and the possibility of 1-gig wireless speeds at the cell tower? Does DY view this as a viable risk to the wireline buildout over the next 3-5 years?
- 5) Did the company receive any meaningful CAF II awards in the quarter? What were CAF II-related revenue contributions in the quarter?

Target Price Methodology/Risks

Our \$102 target price is based on 50/50 weighting of 18.5x our 2017 EPS estimate and 9x EV to EBITDA. Our target multiples reflect the assumption that current multiples will at minimum hold as we move deeper into the cycle next year.

Risks:

- 1) General business risk: Dycom is dependent on the spending levels of its customer base.
- 2) Customer concentration remains relatively high at Dycom.
- 3) Competitive markets: Dycom operates in certain fragmented, competitive markets. This can lead to competitive pricing pressures. There are relatively few barriers to entry in the telecommunications contracting industry. Dycom also faces competition from in-house service organizations at some of its customers.
- 4) Weather risk: Extreme weather poses a risk to Dycom's productivity.

Company Description

Dycom Industries, Inc. is a specialty contractor that primarily serves the telecommunications industry. The company's services include engineering, construction, maintenance, and installation for communications providers, both cable and telephone. Dycom also provides underground facility-locating services to various utilities, including telecommunications providers, as well as other construction and maintenance services to electric and gas utilities and others. The company operates primarily in the U.S., although it does provide services in Canada on a limited basis. The company is headquartered in Palm Beach Gardens, Florida.

DYCOM Industries, Inc.
Income Statement
(\$ in mils, except per share data)
FY end July

Financial Operations Summary:	2010A	2011A	2012A	2013A	2014A	1Q15A	2Q15A	3Q15A	4Q15A	2015E	1Q16A	2Q16A	3Q16A	4Q16E	2016E	1Q17E	2Q17E	3Q17E	4Q17E	2017E	2018E
	Jul-10	Jul-11	Jul-12	Jul-13	Jul-14	Oct-14	Jan-15	Apr-15	Jul-15	Jul-15	Oct-15	Jan-16	Apr-16	Jul-16	Jul-16	Oct-16	Jan-17	Apr-17	Jul-17	Jul-17	Jul-18
	000.0	4 005 0	4 004 4	4 000 0	4.044.0	540.4		400.4	570.5	0.000.0	050.0	550.5	0040	770 7	0.000.0	7044	000.0	700.0	0.45.0	0.074.7	0.400.4
Revenues Costs of revenues	988.6 810.1	1,035.9 837.1	1,201.1 968.9	1,608.6	1,811.6 1,475.0	510.4 403.5	441.1 355.4	492.4 388.2	578.5 446.1	2,022.3 1,593.3	659.3 507.0	559.5 450.3	664.6 520.4	779.7 597.1	2,663.0	784.1 601.6	660.8 529.9	780.9 610.9	845.8 642.0	3,071.7 2.391.4	3,409.1 2,639.7
Gross Profit	178.6	198.7	232.2	308.2	336.5	106.9	85.7	104.1	132.4	429.1	152.3	109.2	144.2	182.6	588.8	182.5	130.9	170.0	203.8	680.3	769.4
G&A PWR Integration Expenses	98.1	94.6	104.0	136.0	159.1	44.7	41.8	44.7	47.5	178.7	51.5	47.0	56.5	62.2	217.2	60.2	54.7	63.9	70.2	242.2	262.1
Depreciation and amortization	63.6	62.5	62.7	85.5	92.8	22.9	23.3	24.0	25.9	96.04	27.4	29.9	31.6	35.5	125.0	35.0	36.0	36.8	36.8	144.8	163.3
EBIT (recurring) - Adjusted for one time and PWR integration costs EBIT- Adjusted for one-time, includes PWR integration costs	16.8	41.6	65.5	86.7 61.4	84.7	39.3	20.6	35.4	59.0	154.3	73.4	32.3	56.1	84.9	246.6	87.2	40.2	69.2	96.7	293.4	344.0
Net Interest Expense	14.2	15.9	16.7	23.3	27.0	6.7	6.7	6.6	6.9	27.0	7.3	3.7	3.8	4.9	19.8	4.6	4.9	4.9	4.7	19.1	18.2
Other Income, Net	8.1	2.8	15.8	4.9	11.2	1.8	1.7	3.5	1.3	8.3	1.5	1.1	4.3	2.5	9.4	1.2	1.0	3.5	1.0	6.7	6.0
Pretax Profit - operations	10.7	28.5	64.5	68.3	69.0	34.3	15.6	32.3	53.4	135.6	67.5	29.6	56.6	82.5	236.2	83.8	36.3	67.9	93.0	281.0	331.8
Provision for Income Taxes	4.9	12.4	25.2	27.0	27.4	13.5	6.1	12.0	19.6	51.3	25.5	11.6	20.9	31.1	89.1	31.8	13.8	25.8	35.3	106.8	126.1
Tax rate	45.5%	43.5%	39.0%	39.6%	39.8%	39.4%	39.5%	37.2%	36.7%	37.8%	37.7%	39.2%	36.9%	37.7%	37.7%	38.0%	38.0%	38.0%	38.0%	38.0%	38.0%
Net Income - Recurring (Adjusted for one time and PWR integration)	7.1	21.9	39.4	41.3	41.6	20.8	9.4	20.3	33.8	84.3	42.0	18.0	35.7	51.4	147.1	52.0	22.5	42.1	57.7	174.2	205.7
Net Income - Adjusted for one-time, includes PWR integration costs																					
Net Income -GAAP	5.8	16.1	39.4	35.6	40.3	20.8	9.4	20.3	33.8	84.3	42.0	15.5	33.1	48.5	139.1	49.1	19.6	39.2	54.8	162.8	194.3
Diluted EPS - Recurring (Adjusted for one time and PWR integration)	\$0.18	\$0.61	\$1.14	\$1.22	\$1.21	\$0.59	\$0.27	\$0.58	\$0.97	\$2.41	\$1.24	\$0.54	\$1.08	\$1.60	\$4.44	\$1.62	\$0.70	\$1.30	\$1.78	\$5.39	\$6.32
Diluted EPS - Adjusted for one time, includes PWR integration costs				\$1.17	\$1.16																
Diluted EPS GAAP	\$0.15	\$0.45	\$1.14	\$1.05	\$1.17	\$0.59	\$0.27	\$0.58	\$0.97	\$2.41	\$1.24	\$0.46	\$1.00	\$1.51	\$4.22	\$1.53	\$0.61	\$1.21	\$1.69	\$5.03	\$5.97
B:- 01	00.0	05.0	00.7	00.4	00.0	04.0			00.0	24.0	00.0	00.7	20.4	04.0	20.0	04.0			04.4	04.4	04.4
Basic Shares	38.9	35.3	33.7 0.8	33.1 0.7	33.8 0.8	34.0	34.1 1.0	34.1 0.9	33.9 0.9	34.0 1.0	32.9 1.0	32.7 0.9	32.4 0.6	31.3 0.7	32.3 0.8	31.3 0.8	31.4 0.9	31.4	31.4	31.4 1.0	31.4 1.2
Options Fully Diluted Shares	39.0	0.4 35.8	34.5	33.8	34.6	1.1 35.1	35.1	35.0	34.8	35.0	33.9	33.5	33.1	32.1	33.1	32.2	32.3	1.0 32.4	1.1 32.5	32.3	32.5
I dily bilated Silates	33.0	33.0	34.3	33.0	34.0	33.1	33.1	33.0	34.0	33.0	33.5	33.3	33.1	32.1	33.1	32.2	32.3	32.4	32.3	32.3	32.3
Adjusted EBITDA	85.5	107.0	135.3	182.3	189.7	66.4	47.6	63.0	88.5	265.5	105.7	66.4	91.8	125.7	389.6	128.1	80.5	112.5	137.9	459.1	528.4
EBITDA %	8.6%	10.3%	11.3%	11.3%	10.5%	13.0%	10.8%	12.8%	15.3%	13.1%	16.0%	11.9%	13.8%	16.1%	14.6%	16.3%	12.2%	14.4%	16.3%	14.9%	15.5%
Dycom - Non-GAAP adjusted EBITDA																					
% of Revenues																					
Cost of Revenues	81.9%	80.8%	80.7%	80.8%	81.4%	79.1%	80.6%	78.9%	77.1%	78.8%	76.9%	80.5%	78.3%	76.6%	77.9%	76.7%	80.2%	78.2%	75.9%	77.9%	80.0%
Gross profit	18.1%	19.2%	19.3%	19.2%	18.6%	20.9%	19.4%	21.1%	22.9%	21.2%	23.1%	19.5%	21.7%	23.4%	22.1%	23.3%	19.8%	21.8%	24.1%	22.1%	22.6%
SG&A expenses	9.9%	9.1%	8.7%	8.5%	8.8%	8.8%	9.5%	9.1%	8.2%	8.8%	7.8%	8.4%	8.5%	8.0%	8.2%	7.7%	8.3%	8.2%	8.3%	7.9%	7.7%
D&A	6.4%	6.0%	5.2%	5.3%	5.1%	4.5%	5.3%	4.9%	4.5%	4.7%	4.2%	5.3%	4.8%	4.6%	4.7%	4.5%	5.5%	4.7%	4.4%	4.7%	4.8%
Operating income	1.7%	4.0%	5.4%	5.4%	4.7%	7.7%	4.7%	7.2%	10.2%	7.6%	11.1%	5.8%	8.4%	10.9%	9.3%	11.1%	6.1%	8.9%	11.4%	9.6%	10.1%
Net income	0.6%	1.6%	3.3%	2.2%	2.2%	4.1%	2.1%	4.1%	5.8%	4.2%	6.4%	2.8%	5.0%	6.2%	5.2%	6.3%	3.0%	5.0%	6.5%	5.3%	5.7%
% Change Y-o-Y																					
Revenues	-10.7%	4.8%	16.0%	33.9%	12.6%	-0.5%	12.9%	15.5%	20.0%	11.6%	29.2%	26.8%	35.0%	34.8%	31.7%	18.9%	18.1%	17.5%	8.5%	15.3%	11.0%
Operating income	-64.9%	147.4%	57.4%	32.5%	-2.3%	4.9%	1001.3%	152.3%	88.4%	82.2%	86.7%	56.8%	58.3%	43.8%	59.8%	18.8%	24.6%	23.4%	14.0%	19.0%	17.3%
Diluted EPS	-111.1%	200.4%	153.4%	-7.7%	10.8%	10.0%	-396.2%	155.4%	106.6%	106.6%	109.4%	72.2%	72.9%	55.8%	74.9%	23.0%	31.6%	21.2%	11.5%	19.4%	18.7%
Diluted EPS - Operating	-66.4%	235.5%	86.5%	7.0%	-1.3%	4.9%	-444.0%	155.4%	101.5%	99.7%	109.4%	99.9%	86.8%	65.0%	84.5%	30.2%	29.9%	20.3%	10.8%	21.4%	17.4%

DYCOM Industries, Inc. Segment Model (\$ in mils, except per share data)

Segment Data	2010A	FY2011A	FY2012A	FY2013A	FY2014A	1Q15A	2Q15A	3Q15A	4Q15A	FY2015A	1Q16A	2Q16A	3Q16A	4Q16E	FY2016E	1Q17E	2Q17E	3Q17E	4Q17E	FY2017E	FY2018E
Revenues	Jul-10	Jul-11	Jul-12	Jul-13	Jul-14	Oct-14	Jan-15	Apr-15	Jul-15	Jul-15	Oct-15	Jan-16	Apr-16	Jul-16	Jul-16	Oct-16	Jan-17	Apr-17	Jul-17	Jul-17	Jul-18
								-					•								
Telecommunications	783.6	850.5	1,014.2	1,410.6	1,597.8	457.8	393.4	444.1	524.7	1,820.1	599.3	503.5	602.1	716.9	2,421.8	722.9	604.6	715.5	773.9	2,817.0	3,148.1
Underground Facility Locating	176.3	144.7	130.8	127.9	126.4	30.6	27.3	30.5	36.9	125.4	36.9	33.6	38.5	40.1	149.1	39.1	35.2	40.5	44.5	159.2	165.6
Onderground racinty Locating	170.5	144.7	150.0	127.3	120.4	30.0	27.5	30.3	30.3	125.4	30.3	33.0	30.5	40.1	140.1	33.1	33.2	40.5	44.5	100.2	100.0
Electrical Utilities	28.7	40.7	56.1	70.1	87.4	21.9	20.3	17.7	16.9	76.8	23.1	22.4	23.9	22.7	92.1	22.2	21.1	24.9	27.4	95.5	95.5
T-1-1	200.0	4 005 0	4 004 4	4 000 0	4 044 0	540.4	****	400.4	570.5	0.000.0	250.0				0.000.0	7044		700.0	045.0	0.074.7	0.400.4
Total revenues Total Revenue Growth	988.6	1,035.9 4.8%	1,201.1 16.0%	1,608.6 33.9%	1,811.6 12.6%	510.4 -0.5%	441.1 13.0%	492.4 15.5%	578.5 20.0%	2,022.3 11.6%	659.3 29.2%	559.5 26.8%	664.6 35.0%	779.7 34.8%	2,663.0 31.7%	784.1 18.9%	660.8 18.1%	780.9 17.5%	845.8 8.5%	3,071.7 15.3%	3,409.1 11.0%
	-10.7%			00.070											, .	10.9%	10.176	17.5%	0.3%	15.3%	11.0%
Acquired Revenues (Current Quarter)		33.8	28.1	337.9	283.6	10.1	9.5	8.9	11.8	40.4	40.4	32.9	30.7	40.0	144.0						1
Acquired revenues (Year-ago intra quarter)					78.5	0.0	0.0	0.0	2.8	2.8	2.8										
Organic Growth				5.8%	-0.1%	-2.4%	10.5%	13.4%	18.2%	9.6%	21.9%	19.4%	28.7%	27.9%	24.6%	18.9%	18.1%	17.5%	8.5%	15.3%	11.0%
Storm revenue	0.0	14.1	6.0	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0						1
Organic growth ex storm	-8.8%	-0.1%	14.2%	4.9%	4.7%	-2.4%	10.5%	13.4%	18.2%	9.6%	21.9%	19.4%									
Y-o-Y Revenue Growth																					1
Communications Growth	-8.9%	8.5%	19.2%	39.1%	13.3%	1.7%	15.8%	18.0%	21.6%	13.9%	30.9%	28.0%	35.6%	36.6%	33.1%	20.6%	20.1%	18.8%	8.0%	16.3%	11.8%
Underground Facility Growth rate	-4.4%	-17.9%	-9.6%	-2.2%	-1.2%	-15.9%	-6.6%	3.8%	17.7%	-0.8%	20.6%	22.7%	26.3%	8.6%	18.9%	5.8%	4.8%	5.0%	11.1%	6.8%	4.0%
Electrical Utility Growth rate	-54.1%	41.8%	37.9%	24.9%	24.6%	-16.1%	-5.5%	-13.4%	-12.4%	-12.0%	5.1%	10.3%	35.0%	34.6%	19.9%	-3.9%	-5.9%	4.0%	20.4%	3.7%	0.0%
Percent of Revenue Telecommunications % Underground Facility locating % Electrical Utilities % Total Telecommunications/ Cable split	79.3% 17.8% 2.9% 100.0%	82.1% 14.0% 3.9% 100.0%	84.4% 10.9% 4.7% 100.0%	87.7% 8.0% 4.4% 100.0%	88.2% 7.0% 4.8% 100.0%	89.7% 6.0% 4.3% 100.0%	89.2% 6.2% 4.6% 100.0%	90.2% 6.2% 3.6% 100.0%	90.7% 6.4% 2.9% 100.0%	90.0% 6.2% 3.8% 100.0%	90.9% 5.6% 3.5% 100.0%	90.0% 6.0% 4.0% 100.0%	90.6% 5.8% 3.6% 100.0%	91.9% 5.1% 2.9% 100.0%	90.9% 5.6% 3.5% 100.0%	92.2% 5.0% 2.8% 100.0%	91.5% 5.3% 3.2% 100.0%	91.6% 5.2% 3.2% 100.0%	91.5% 5.3% 3.2% 100.0%	91.7% 5.2% 3.1% 100.0%	92.3% 4.9% 2.8% 100.0%
Telecommunications	47.4%	50.8%	59.0%	63.9%	62.6%	62.6%	65.4%	62.5%	62.1%	63.2%	63.3%		64.7%								1
Cable	32.0%	31.1%	26.0%	23.8%	25.6%	27.1%	23.9%	27.7%	28.5%	26.8%	27.7%		25.9%								
Operating Profit (E) Legacy DY PWR Telecommunications Total	16.8 16.8	41.6 41.6	65.5 65.5	7.6	68.6 16.1 84.7	27.8 11.5 39.3	15.8 4.8 20.6	27.0 8.5 35.4	45.4 13.7 59.0	115.9 38.4 154.3	73.4	32.3	56.1	84.9	246.6	87.2	40.2	69.2	96.7	293.4	344.0
Operating Profit Margins (E)																					1
Legacy DY	1.7%	4.0%	5.4%	6.2%	5.2%	7.9%	4.9%	7.4%	10.6%	7.9%											l
PWR Telecommunications	4 70/		F 40/	2.2% 5.4%	3.2% 4.7%	7.3% 7.7%	4.0%	6.5%	9.1% 10.2%	6.9% 7.6%	44.40/	F 00/	0.40/	40.00/	0.00/	44.40/	0.40/	0.00/	44 40/	0.00/	40.40/
Total	1.7%	4.0%	5.4%	5.4%	4.7%	7.7%	4.7%	7.2%	10.2%	7.6%	11.1%	5.8%	8.4%	10.9%	9.3%	11.1%	6.1%	8.9%	11.4%	9.6%	10.1%
Backlog	1114.0	1412.0	1565.00	2197.0	2330.9	2358.9	2986.0	2912.0	3680.1	3680.1	3967.5	5056.0	5649.3								
NTM Backlog (12-month)	640.0	754.0	909.0	1217.0	1344.9	1395.7	1564.0	1618.0	1618.8	1618.8	1621.7	1998.9	2211.8								
Y/Y Growth																					l
Total Backlog	19%	27%	11%	40.4%	6.1%	18.2%	39.1%	42.3%	57.9%	57.9%	68.2%	69.3%	94.0%								l
NTM Backlog	10%	18%	21%	33.9%	10.5%	25.1%	31.1%	37.2%	20.4%	20.4%	16.2%	27.8%	36.7%								

Source: Company reports and Stifel estimates

DYCOM Industries, Inc.	
Customer Model- Legacy Operations	
(\$ in mils, except per share data)	

	2010 Jul-10	2011 Jul-11	2012 Jul-12	2013 Jul-13	2014 Jul-14	1Q15 Oct-14	2Q15 Jan-15	3Q15 Apr-15	4Q15 Jul-15	2015 Jul-15	1Q16 Oct-15	2Q16 Jan-16	3Q16 Apr-16	4Q16 Jul-16	2016 Jul-16	1Q17 Oct-16	2Q17 Jan-17	3Q17 Apr-17	4Q17 Jul-17	2017 Jul-17	2018 Jul-18
C	А	Α	Α	A	Α	A	A	A	A	A	A	A	A	E	E	E	E	E	Е	Е	Е
Customer Revenue AT&T																					
Wireline			160.3	195.0	253.9	83.5	77.0	87.7	93.4	341.6	108.8	109.3	159.2	185.1	562.4	189.1	160.7	192.9	196.0	738.6	886.3
Wireless AT&T	201.6	218.4	2.0 164.9	54.0 249.0	94.0 347.9	25.0 108.5	20.0 97.0	17.0 104.7	17.0 110.4	79.0 420.6	17.0 125.8	16.0 125.3	19.0 178.2	20.5 205.6	72.5 634.9	19.0 208.1	16.9 177.6	21.1 213.9	20.9 216.9	77.9 816.5	84.1 970.5
CenturyLink	114.7	111.9	163.0	235.4	250.4	66.9	61.8	68.5	90.5	287.7	102.9	83.4	91.1	105.0	382.4	107.2	85.8	98.6	107.2	398.9	418.8
Comcast	141.0	148.4	151.8	174.8	211.2	65.1	58.0	65.2	72.0	260.3	79.3	75.3	95.8	109.4	359.8	111.7	89.4	111.7	116.8	429.5	446.7
Verizon Google	114.1	92.7	136.3	154.8	147.9 57.1	37.4 25.3	27.8 9.1	36.8 31.0	52.6 46.8	154.6 112.2	64.1 55.9	66.3 35.2	69.4 47.5	85.9 63.9	285.7 202.5	79.8 68.3	71.8 61.5	89.8 71.3	89.4 89.1	330.8 290.0	354.0 362.6
Windstream	33.8	59.0	100.3	127.3	96.8	25.3	21.0	22.7	30.4	96.0	42.1	30.7	37.2	50.1	160.1	51.2	35.8	39.4	60.5	186.8	205.5
Time Warner Cable	79.2	57.5	53.9	72.4	99.6	24.9	22.2	23.1	28.3	98.5	32.0	23.2	21.3	25.2	101.7	24.6	23.2	25.5	24.6	97.9	107.7
Charter Commun	61.2 684.3	70.8 687.8	78.1 848.4	91.5 1105.3	82.4 1293.3	18.9 368.9	15.0 311.9	14.8 366.8	15.0 446.0	63.7 1493.6	16.5 518.6	11.7 451.1	12.0 552.5	13.4 658.6	53.6 2180.7	12.4 663.3	12.0 557.0	13.2 663.4	12.7 717.1	50.3 2600.8	55.3 2921.1
y/y growth	684.3	1%	23%	30%	17.0%	368.9 5%	311.9 14%	17%	26%	15.5%	518.6 41%	451.1 45%	552.5 51%	48%	46.0%	28%	23%	20%	9%	19.3%	12.3%
Additional Customers	99.3	162.7	165.8	305.3	304.5	88.9	81.5	77.3	78.7	326.5	80.7	52.4	49.7	58.3	241.0	59.5	47.6	52.1	56.8	216.2	227.0
Telecom	783.6	850.5	1014.2	1410.6	1597.8	457.8	393.4	444.1	524.7	1820.1	599.3	503.5	602.1	716.9	2421.8	722.9	604.6	715.5	773.9	2817.0	3148.1
V/V Contamor Barrania Consult																					
Y/Y Customer Revenue Growth AT&T Wireline				22%	30%	29%	50%	34%	29%	35%	30%	42%	81%	98%	65%	74%	47%	21%	6%	31%	20%
AT&T Wireless					74%	0%	-9%	-26%	-29%	-16%	-32%	-20%	12%	21%	-8%	12%	5%	11%	2%	7%	8%
AT&T	0%	8%	-24%	51%	40%	21%	33%	18%	14%	21%	16%	29%	70%	86%	51%	65%	42%	20%	5%	29%	19%
CenturyLink Comcast	11% -14%	-2% 5%	46% 2%	44% 15%	6% 21%	-16% 21%	10% 23%	25% 26%	51% 23%	15% 23%	54% 22%	35% 30%	33% 47%	16% 52%	33% 38%	4% 41%	3% 19%	8% 17%	2% 7%	4% 19%	5% 4%
Verizon	-14%	-19%	47%	15%	-4%	-13%	-14%	26% 9%	36%	23% 5%	71%	138%	47% 89%	63%	38% 85%	41% 25%	19%	17% 29%	7% 4%	16%	4% 7%
Google	0070	1070	11 70	, , 0	- 7,0	146%	28%	123%	81%	96%	121%	287%	53%	37%	81%	22%	75%	50%	39%	43%	25%
Windstream	-27%	74%	70%	27%	-24%	-15%	17%	-15%	15%	-1%	92%	46%	64%	65%	67%	21%	17%	6%	21%	17%	10%
Time Warner Cable Charter Commun	-6% 13%	-27% 16%	-6% 10%	34% 17%	38% -10%	-8% -18%	-5% -13%	-2% -29%	11%	-1% -23%	29% -13%	5%	-8% -19%	-11% -11%	3% -16%	-23% -25%	0% 2%	20% 10%	-2% -5%	-4% -6%	10%
Total - Top 7	-12%	16%	23%	30%	-10% 17%	-18% 5%	-13% 14%	-29% 17%	-29% 26%	-23% 15%	-13% 41%	-22% 45%	-19% 51%	-11% 48%	-16% 46%	-25% 28%	2%	10% 20%	-5% 9%	19%	10% 12%
Other	-12/0	170	2%	84%	0%	-9%	25%	23%	0%	7%	-9%	-36%	-36%	-26%	-26%	-26%	-9%	5%	-3%	-10%	5%
Total		9%	19%	39%	13%	2%	16%	18%	22%	14%	31%	28%	36%	37%	33%	21%	20%	19%	8%	16%	12%
% Total Revs																					
Wireline		0.0%	13.3%	12.1%	14.0%	16.4%	17.5%	17.8%	16.1%	16.9%	16.5%	19.5%	23.9%	23.7%	21.1%	24.1%	24.3%	24.7%	23.2%	24.0%	26.0%
Wireless				3.4%	5.2%	4.9%	4.5%	3.5%	2.9%	3.9%	2.6%	2.9%	2.9%	2.6%	2.7%	2.4%	2.5%	2.7%	2.5%	2.5%	2.5%
AT&T		21.1%	13.7%	15.5%	19.2%	21.3%	22.0%	21.3%	19.1%	20.8%	19.1%	22.4%	26.8%	26.4%	23.8%	26.5%	26.9%	27.4%	25.6%	26.6%	28.5%
CenturyLink Comcast		10.8% 14.3%	13.6% 12.6%	14.6% 10.9%	13.8% 11.7%	13.1% 12.8%	14.0% 13.1%	13.9% 13.2%	15.6% 12.4%	14.2% 12.9%	15.6% 12.0%	14.9% 13.5%	13.7% 14.4%	13.5% 14.0%	14.4% 13.5%	13.7% 14.2%	13.0% 13.5%	12.6% 14.3%	12.7% 13.8%	13.0% 14.0%	12.3% 13.1%
												13.5%	14.4%	14.0%							
									9.1%	7.6%	9.7%	11 9%	10.4%	11.0%	10.7%						10.4%
Verizon		9.0%	11.3%	9.6%	8.2%	7.3% 5.0%	6.3% 2.1%	7.5%	9.1% 8.1%	7.6% 5.5%	9.7% 8.5%	11.9% 6.3%	10.4% 7.1%	11.0% 8.2%	10.7% 7.6%	10.2% 8.7%	10.9% 9.3%	11.5% 9.1%	10.6% 10.5%	10.8%	10.4% 10.6%
Verizon Google Windstream		9.0%	11.3%	9.6% 7.9%	8.2% 3.2% 5.3%	7.3% 5.0% 4.3%	6.3% 2.1% 4.8%	7.5% 6.3% 4.6%	8.1% 5.3%	5.5% 4.7%	8.5% 6.4%	6.3% 5.5%	7.1% 5.6%	8.2% 6.4%	7.6% 6.0%	10.2% 8.7% 6.5%	10.9% 9.3% 5.4%	11.5% 9.1% 5.0%	10.6% 10.5% 7.1%	10.8% 9.4% 6.1%	10.6% 6.0%
Verizon Google Windstream Time Warner Cable		9.0% 5.7% 5.5%	11.3% 8.4% 4.5%	9.6% 7.9% 4.5%	8.2% 3.2% 5.3% 5.5%	7.3% 5.0% 4.3% 4.9%	6.3% 2.1% 4.8% 5.0%	7.5% 6.3% 4.6% 4.7%	8.1% 5.3% 4.9%	5.5% 4.7% 4.9%	8.5% 6.4% 4.9%	6.3% 5.5% 4.1%	7.1% 5.6% 3.2%	8.2% 6.4% 3.2%	7.6% 6.0% 3.8%	10.2% 8.7% 6.5% 3.1%	10.9% 9.3% 5.4% 3.5%	11.5% 9.1% 5.0% 3.3%	10.6% 10.5% 7.1% 2.9%	10.8% 9.4% 6.1% 3.2%	10.6% 6.0% 3.2%
Verizon Google Windstream Time Warner Cable Charter Commun	97 28/	9.0% 5.7% 5.5% 6.8%	11.3% 8.4% 4.5% 6.5%	9.6% 7.9% 4.5% 5.7%	8.2% 3.2% 5.3% 5.5% 4.5%	7.3% 5.0% 4.3% 4.9% 3.7%	6.3% 2.1% 4.8% 5.0% 3.4%	7.5% 6.3% 4.6% 4.7% 3.0%	8.1% 5.3% 4.9% 2.6%	5.5% 4.7% 4.9% 3.1%	8.5% 6.4% 4.9% 2.5%	6.3% 5.5% 4.1% 2.1%	7.1% 5.6% 3.2% 1.8%	8.2% 6.4% 3.2% 1.7%	7.6% 6.0% 3.8% 2.0%	10.2% 8.7% 6.5% 3.1% 1.6%	10.9% 9.3% 5.4% 3.5% 1.8%	11.5% 9.1% 5.0% 3.3% 1.7%	10.6% 10.5% 7.1% 2.9% 1.5%	10.8% 9.4% 6.1% 3.2% 1.6%	10.6% 6.0% 3.2% 1.6%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom	87.3%	9.0% 5.7% 5.5%	11.3% 8.4% 4.5%	9.6% 7.9% 4.5%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9%	7.3% 5.0% 4.3% 4.9%	6.3% 2.1% 4.8% 5.0%	7.5% 6.3% 4.6% 4.7%	8.1% 5.3% 4.9% 2.6% 85.0%	5.5% 4.7% 4.9% 3.1% 82.1%	8.5% 6.4% 4.9%	6.3% 5.5% 4.1%	7.1% 5.6% 3.2%	8.2% 6.4% 3.2% 1.7% 91.9%	7.6% 6.0% 3.8% 2.0% 90.0 %	10.2% 8.7% 6.5% 3.1%	10.9% 9.3% 5.4% 3.5%	11.5% 9.1% 5.0% 3.3%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3%	10.6% 6.0% 3.2% 1.6% 92.8%
Verizon Google Windstream Time Warner Cable Charter Commun	87.3% Jul-10	9.0% 5.7% 5.5% 6.8%	11.3% 8.4% 4.5% 6.5%	9.6% 7.9% 4.5% 5.7%	8.2% 3.2% 5.3% 5.5% 4.5%	7.3% 5.0% 4.3% 4.9% 3.7%	6.3% 2.1% 4.8% 5.0% 3.4%	7.5% 6.3% 4.6% 4.7% 3.0%	8.1% 5.3% 4.9% 2.6%	5.5% 4.7% 4.9% 3.1%	8.5% 6.4% 4.9% 2.5%	6.3% 5.5% 4.1% 2.1%	7.1% 5.6% 3.2% 1.8%	8.2% 6.4% 3.2% 1.7%	7.6% 6.0% 3.8% 2.0%	10.2% 8.7% 6.5% 3.1% 1.6%	10.9% 9.3% 5.4% 3.5% 1.8%	11.5% 9.1% 5.0% 3.3% 1.7%	10.6% 10.5% 7.1% 2.9% 1.5%	10.8% 9.4% 6.1% 3.2% 1.6%	10.6% 6.0% 3.2% 1.6%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom		9.0% 5.7% 5.5% 6.8% 80.9%	11.3% 8.4% 4.5% 6.5% 83.7%	9.6% 7.9% 4.5% 5.7% 78.4%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6 %	6.3% 2.1% 4.8% 5.0% 3.4% 79.3%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6%	8.1% 5.3% 4.9% 2.6% 85.0%	5.5% 4.7% 4.9% 3.1% 82.1%	8.5% 6.4% 4.9% 2.5% 86.5%	6.3% 5.5% 4.1% 2.1% 89.6%	7.1% 5.6% 3.2% 1.8% 91.8%	8.2% 6.4% 3.2% 1.7% 91.9%	7.6% 6.0% 3.8% 2.0% 90.0%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3%	10.6% 6.0% 3.2% 1.6% 92.8%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration)	Jul-10	9.0% 5.7% 5.5% 6.8% 80.9%	11.3% 8.4% 4.5% 6.5% 83.7%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2%	8.2% 3.2% 5.3% 5.5% 4.5% 4.5% 80.9% Jul-14	7.3% 5.0% 4.3% 4.9% 3.7% 80.6%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15	5.5% 4.7% 4.9% 3.1% 82.1%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16	7.6% 6.0% 3.8% 2.0% 90.0% Jui-16	10.2% 8.7% 6.5% 3.1% 1.6% 91.8%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T	Jul-10	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12	9.6% 7.9% 4.5% 5.7% 78.4%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15	7.5% 6.3% 4.6% 4.7% 3.0% 82.6%	8.1% 5.3% 4.9% 2.6% 85.0%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15	8.5% 6.4% 4.9% 2.5% 86.5%	6.3% 5.5% 4.1% 2.1% 89.6%	7.1% 5.6% 3.2% 1.8% 91.8%	8.2% 6.4% 3.2% 1.7% 91.9%	7.6% 6.0% 3.8% 2.0% 90.0%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17	10.6% 10.5% 7.1% 2.9% 1.5% 92.7%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3%	10.6% 6.0% 3.2% 1.6% 92.8%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink	Jul-10 1.1% 11.6%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 13.5%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast	Jul-10 1.1% 11.6%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14 1.5% 8.3% 3.0%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8%	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9% 5.5%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 5.4%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 13.5% 4.6%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon	Jul-10 1.1% 11.6%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14 1.5% 8.3% 3.0%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0%	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 1.5% 2.1% 14.2%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9% 5.5% 2.3% 2.8% 19.9%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 5.4% 2.1% 3.3% 30.2%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 13.5% 4.6% 1.9% 20.5%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 24.9%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun	Jul-10 1.1% 11.6%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5% 10.0% 5.7%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 12.0% 5.2%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14 1.5% 8.3% 3.0% 0.8% 13.1% 3.9%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 3.3%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0% 12.0% 4.2%	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2% 11.9% 3.5%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3% 13.2% 2.1%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6% 19.7%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 1.5% 2.15% 2.15%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9% 5.5% 2.3% 2.8% 19.9% 3.6%	10.6% 10.5% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 14.9% 2.1% 3.3% 30.2% 2.9%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 13.5% 4.6% 1.9% 2.7% 20.5% 2.9%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 24.9% 3.1%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream	Jul-10 1.1% 11.6%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 0.9% 12.0%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14 1.5% 8.3% 3.0% 0.8%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0%	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2%	5.5% 4.7% 4.9% 3.11% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 1.5% 2.1% 14.2%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9% 5.5% 2.3% 2.8% 19.9%	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 5.4% 2.1% 3.3% 30.2%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 13.5% 4.6% 1.9% 20.5%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 2.1% 24.9%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable	Jul-10 1.1% 11.6% 2.8%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5% 10.0% 5.7% 2.0%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 5.2%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14 1.5% 8.3% 3.0% 0.8% 13.1% 3.9% 2.7%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 3.3% 2.3%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6% 2.8% 2.8%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0% 12.0% 4.2% 2.0%	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2% 11.9% 3.5% 2.2%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4% 2.2%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3% 13.2% 2.1% 2.5%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 19.3% 3.1% 2.2%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8% 2.3%	10.2% 8.7% 6.5% 3.1% 91.8% Oct-16 3.7% 14.0% 2.6% 2.6% 2.7% 2.2%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 1.5% 2.1% 14.2% 2.5% 2.1%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9% 5.5% 2.3% 19.9% 3.6% 2.2%	10.6% 10.5% 10.5% 7.1% 2.9% 1.5% 92.7% 4.3% 14.9% 5.4% 2.1% 3.3% 30.2% 2.9% 2.4%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 4.6% 1.9% 2.7% 20.5% 2.9% 2.2%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 24.9% 3.1% 2.4%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun	Jul-10 1.1% 11.6%	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5% 10.0% 5.7%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 12.0% 5.2%	8.2% 3.2% 5.3% 5.5% 4.5% 80.9% Jul-14 1.5% 8.3% 3.0% 0.8% 13.1% 3.9%	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 3.3%	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6%	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0% 12.0% 4.2%	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2% 11.9% 3.5%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5%	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3% 13.2% 2.1%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0%	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8%	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6% 19.7%	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 1.5% 2.15% 2.15%	11.5% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 15.9% 5.5% 2.3% 2.8% 19.9% 3.6%	10.6% 10.5% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 14.9% 2.1% 3.3% 30.2% 2.9%	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% Jul-17 3.8% 13.5% 4.6% 1.9% 2.7% 20.5% 2.9%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 24.9% 3.1%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5% 10.0% 5.7% 2.0%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8%	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 5.29% 0.9% 12.0% 5.2% 2.2%	3.2%, 3.2%, 5.3%, 5.5%, 4.5%, 80.9%, Jul-14 1.5%, 3.3%, 3.0%, 0.8%, 2.7%, 2.7%, Jul-14 Jul-14 A 23,001	7.3% 5.0% 4.9% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 3.3% 2.3% Oct-14 A 5,210	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 0.6% 0.6% 2.8% 2.4% Jan-15 4.398	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 1.0% 12.0% 4.2% 2.0% Apr-15 A 3.848	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2% 11.9% 3.5% 2.2%	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4% 2.2% Jul-15 A	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9% Oct-15 A	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 1.3% 13.2% 2.1% 2.5% Jan-16 A 5,862	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 15.0% 14.1% 2.8% 1.6% Apr-16 A	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 19.3% 3.1% 2.2%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 2.8% 2.3%	10.2% 6.5% 6.5% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6% 2.7% 2.2% Oct-16 E 5.626	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 2.1% 14.2% 2.5% 2.1% Jan-17 E 5.940	11.5% 5.0% 5.0% 1.7% 92.7% Apr-17 4.3% 15.9% 2.3% 2.8% 19.9% 3.6% 2.2% Apr-17 E 5,009	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 5.4% 2.1% 3.3% 30.2% 2.9% 2.4% Jul-17 E 5.075	10.8%, 9.4%, 6.1%, 3.2%, 1.5%, 92.3%, 1.5%, 4.6%, 2.7%, 2.2%, 2.2%, 1.9%, 2.2%, 2.2%, 1.9%, 2.2%, 2.2%, 1.9%, 2.2%	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 2.1% 3.1% 24.9% 3.1% 2.4% Jul-18 E E 22,492
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink CenturyLink CenturyLink Concertain Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986	9.0% 5.5%, 6.8% 80.9% Jul-11 1.0% 8.7% 2.8%, 0.5% 10.0% 5.7% 2.0% Jul-11 A 21,472 1,292	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% Jul-12 A 19,739 2,926	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 12.0% 5.2% Jul-13 A 20,552 2,998	8.2%, 3.2%, 5.3%, 5.5%, 4.5%, 4.5%, 80.9%. Jul-14 1.5%, 8.3%, 3.0%, 0.8%, 13.1%, 3.9%, 2.7%, Jul-14, 3.01, 3	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 3.3% 2.3% Oct-14 A 5,210 712	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6% 2.8% 2.4% Jan-15 A 4.398 932	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0% 4.2% 4.20% 4.20% Apr-15 A 3.848 616	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2% 2.2% Jul-15 A 4,480 656	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 2.2% Jul-15 A 17,936 2.916	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9% Oct-15 A 5.255 767	6.3% 5.5% 4.1% 2.1% 98.6% Jan-16 2.1% 10.0% 2.9% 1.3% 13.2% 2.5% Jan-16 A 5,862 830	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6% Apr-16 A 4.451 607	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 3.1% 2.2% Jul-16 E 5,428 725	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8% 2.3% Jul-16 E 20,996 2,929	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 2.6% 2.6% 2.7% 2.2% Oct-16 E 5.626 766	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 2.1% 2.5% 2.1% Jan-17 E 5,940 852	11.5% 9.1% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 1.5% 2.3% 2.3% 2.8% 2.8% 3.6% 2.2% Apr-17 E 5.009 622	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 2.1% 3.3% 30.2% 2.9% 2.9% 2.4%	10.8%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.23%, 92.3%, 92.3%, 92.3%, 92.3%, 92.3%, 92.2%, 92	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 4.6% 2.1% 3.1% 24.9% 3.1% 24.9% 3.1% 2.49% 2.492 2.492 2.944
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5% 2.0% Jul-11 A 21,472 1,292 5,307	11.3% 8.4% 4.5% 6.5% 83.7% 3.1% 0.9% 11.5% 5.4% 1.8% Jul-12 A 19,739 2,926 4,967	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.99% 2.9% 12.0% 5.2% Jul-13 A 20.552 2.998 6.120	8.2%, 3.2%, 5.3%, 5.5%, 4.5%, 80.9%, Jul-14 1.5%, 8.3%, 3.0%, 0.8%, 2.7%, Jul-14 A 23,001 3,012, 6,975	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 2.3% Oct-14 A 5.210 712 1,950	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 2.6% 2.4% Jan-15 4.398 932 2.209	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0% 4.2% 2.0% Apr-15 A 3.848 616 1.726	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 13.8% 3.7% 1.2% 11.9% 3.5% 2.2% Jul-15 4.480 656 1.971	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4% 2.2% Jul-15 A 17,936 2,916 7,856	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 1.5% 14.0% 3.2% 2.9% Oct-15 A 5.255 767 2,165	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3.2% 2.1% 2.5% Jan-16 5,862 830 2,637	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 2.0% 14.1% 2.8% 1.6% Apr-16 A 4,451 607 1,885	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 2.0% 19.3% 3.1% 2.2%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E E 20.996 2.929 8.927	10.2% 6.5% 6.5% 1.6% 91.8% Oct-16 3.7% 4.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 766 2.383	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 12.1% 14.2% 2.1% Jan-17 E 5,940 852 2,707	11.5% 9.1% 9.1% 9.1% 9.27% 92.7% Apr-17 4.3% 15.9% 9.3% 2.2% 4.5% 9.5% 9.5% 9.5% 9.5% 9.5% 9.5% 9.5% 9	10.6% 10.5% 7.1% 7.19% 1.5% 92.7% Jul-17 4.3% 14.9% 5.4% 2.1% 3.3% 30.2% 2.4% Jul-17 E 5.075 722 2.169	10.8% 9.4% 6.1% 6.1% 12.2% 12.	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 2.4% Jul-18 E 22,492 2,944 9,689
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink CenturyLink CenturyLink Concertain Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986	9.0% 5.5%, 6.8% 80.9% Jul-11 1.0% 8.7% 2.8%, 0.5% 10.0% 5.7% 2.0% Jul-11 A 21,472 1,292	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% Jul-12 A 19,739 2,926	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 12.0% 5.2% Jul-13 A 20,552 2,998	8.2%, 3.2%, 5.3%, 5.5%, 4.5%, 4.5%, 80.9%. Jul-14 1.5%, 8.3%, 3.0%, 0.8%, 13.1%, 3.9%, 2.7%, Jul-14, 3.01, 3	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 3.3% 0.9% 11.3% 3.3% 2.3% Oct-14 A 5,210 712	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6% 2.8% 2.4% Jan-15 A 4.398 932	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 3.8% 1.0% 4.2% 4.20% 4.20% Apr-15 A 3.848 616	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 3.7% 1.2% 2.2% Jul-15 A 4,480 656	5.5% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 2.2% Jul-15 A 17,936 2.916	8.5% 6.4% 4.9% 2.55% 86.5% Oct-15 2.4% 3.7% 1.5% 14.0% 3.29% Oct-15 A 5.255 767 2.165 4.387	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3% 13.2% 2.15% Jan-16 A 5.862 830 2.637 5.235	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 5.1% 2.0% 14.1% 2.8% Apr-16 A 4.451 607 1.885 3.387	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 3.1% 2.2% Jul-16 E 5,428 725 725 2.240	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 2.6% 2.7% 2.2% Oct-16 E 5.626 766 2.383 4.452	10.9% 9.3% 5.4% 3.5% 92.1% Jan-17 3.0% 10.1% 3.3% 2.1% Jan-17 E 5,940 852 2.707 4,942	11.5% 9.1% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 1.5,9% 2.3% 2.3% 2.3% 2.8% 2.6% 3.6% 2.2% Apr-17 6.009 6.22 2.045 3.981	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 2.1% 30.2% 2.9% 2.4% 5.476 2.196 2.196 2.196 2.496 2.496 2.496 2.496 2.496	10.8%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.2%, 1.6%, 92.3%, 92.3%, 92.3%, 92.3%, 92.2	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 2.1% 3.1% 24.9% 3.1% 24.9% 3.1% 2.49% 2.944 9.689 17.102
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18.166 986 5.041 16,638 318	9.0% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 2.8% 0.5% 10.0% 5.7% 2.0% 5.7% 2.0% 5.7% 2.0% 5.7% 5.7% 5.307 18.821 5.837 18.837 1	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% Jul-12 A 19,739 2,926 4,967 14,766 872	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 0.9% 12.0% 5.2% Jul-13 A 20.552 2.9% Jul-13 A 1.061	8.2%, 3.2%, 5.5%, 4.5%, 4.5%, 4.5%, 4.5%, 4.5%, 4.5%, 4.5%, 3.9%, 0.8%, 13.1%, 3.9%, 2.7%,	7.3% 5.0% 4.3% 4.3% 4.9% 80.6% Oct-14 2.1% 9.4% 0.9% 11.3% 3.3% 2.3% 5.210 712 1,950 4,130	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 0.6% 9.8% 2.8% 2.8% 4.398 932 2.209 4.567 214	7.5% 6.3% 4.76% 4.76% 4.76% 3.0% 82.6% Apr-15 2.7% 11.1% 1.0% 4.2% 2.0% 4.2% 2.3,486 616 1.726 3.665	8.1% 5.3% 4.9% 2.6% 85.0% 1Jul-15 2.5% 13.8% 3.7% 1.2% 11.9% 3.5% 4.480 656 1,971 4.488 2.25	5.5% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4% 2.2% Jul-15 A 17,936 2.916 7.886 16,850 852	8.5% 6.4% 4.9% 2.55% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300	6.3% 5.5% 4.1% 2.1% 99.6% Jan-16 2.1% 10.0% 2.9% 2.13% 2.13% 2.5% Jan-16 830 2,662 830 2,637 5,235 2,100 233	7.1% 5.6% 3.2% 1.8% 91.8% 15.0% 5.1% 2.0% 14.1% 2.8% Apr-16 A 4.451 607 1.885 2.48 2.48 2.48 2.48	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 19.3% 3.1% 2.2% Jul-16 E 5,428 725 2.240 4.354 2.599 260	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17.363 9,500 1,057	10.2% 6.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 2.6% 19.7% 2.2% Oct-16 E 5,626 766 2,383 4,452 2,663 2559	10.9% 9.3% 5.4% 3.5% 18.8% 92.1% Jan-17 3.0% 1.5% 2.1% 2.5% 2.1% Jan-17 E 5,940 852 2.77 4,942 2.900 552	11.5% 9.1% 9.1% 5.0% 3.3% 1.7% 92.7% Apr-17 4.3% 1.59% 2.3% 2.3% 2.3% 2.8% 2.2% Apr-17 E 5.00 6.22 2.045 3.961 2.589 188	10.6% 10.5% 10.5% 7.1% 2.9% 2.9% 1.5% 92.7% Jul-17 4.3% 3.3% 30.2% 2.9% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200	10.8%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.23%, 9.23%, 9.23%, 9.23%, 9.23%, 9.25%, 9.25%, 9.25%, 9.25%, 9.25%, 9.25%, 9.304, 17,610, 10.863, 9.99	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 2.1% 24.9% 3.1% 24.9% 3.1% 2.49% 9.689 17.102 11.782
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18.166 9.866 9.041 16.638 318 1.243	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 0.5% 10.0% 5.7% 2.0% Jul-11 A 21.472 1.292 5.307 18.821 5.88	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 5.4% 1.8% Jul-12 4.967 14,756 872 1,439	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.99% 0.99% 12.0% 5.29% 5.29% Jul-13 A 20,552 2,998 6,1361 1,061 1,071	8.2%, 3.2%, 5.5%, 4.5%, 4.5%, 4.5%, 80.9%, 15.6%, 3.3%, 3.0%, 0.8%, 3.3%, 2.7%, 4.5%	7.3% 5.0% 4.3% 4.9% 4.9% 5.0% 0ct-14 2.1% 9.4% 9.4% 3.3% 0.9% 11.3% 2.3% 0ct-14 A 5.210 712 1.950 4.130 4.130	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 0.6% 2.8% 2.4% Jan-15 A 4.398 9.32 2.209 4.567 2.14 4.543	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 12.0% 4.2% 4.2% 4.2% 6.16 1.726 3.848 6.16 1.726 3.665 189 351	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 1.2% 11.9% 3.5% 2.2% Jul-15 A 4.480 656 1.971 4.448 2.55 432	5.5% 4.7% 4.9% 3.11% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 3.4% 2.2% Jul-15 A 17,936 2.916 7,856 16,850 852 18,85	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300 509	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3.2% 2.1% 2.5% Jan-16 5.862 830 5.2637 5.225 5.2100 2.33 548	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 5.1% 2.0% 5.1% 2.6% 14.1% Ar-16 A 4.451 607 1.885 3.387 2.428 2.428 2.424 2.424	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 14.5% 2.0% 19.3% 3.1% 2.2% Jul-16 E E 5.428 725 2.240 4.354 2.559 2.60 433	7.6% 6.0% 3.8% 2.0% 90.0% 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 4.7% 1.8% 2.6% 1.97% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 2.59 454	10.9% 9.3% 5.4% 3.5% 4.8% 3.5% 92.1% Jan-17 3.0% 10.1% 12.1% 14.2% 2.1% Jan-17 E 5,940 852 2,707 4,942 2,900 252 472	11.5% 9.1% 9.1% 9.1% 9.27% 92.7% Paper-17 4.3% 15.9% 3.3% 2.2% Paper-17 E 5.009 622 2.045 3.981 2.589 198 363	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 5.4% 2.1% 3.3% 30.2% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% 1.6% 92.3% 1.6% 13.5% 13.5% 2.2% 2.2% 2.2% 2.2% 1.650 2.962 9.304 17.610 10.863 9.99 1.733	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 4.42% 4.63% 24.9% 3.1% 2.49% 2.49% 2.49% 2.194 9.689 17,102 11,782 825 17,793
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7%, 5.5%, 6.8%, 80.9% William 1.0%, 8.7%, 0.5%, 10.0%, 5.5%, 10.0%, 5.7%, 2.0%, 10.0%,	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 18% 0.9% 4.967 14,756 872 14,756 872 1,439 2,926	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 0.9% 12.0% 5.2% 5.2% 2.2% A 20.552 2.998 6.120 16.361 1,061 1,771 3,274	8.2%, 3.2%, 5.5%, 5.5%, 5.5%, 4.5%, 4.5%, 80.9%. Jul-14 1.5%, 8.3%, 3.0%, 0.8%, 0.8%, 0.8%, 0.8%, 0.8%, 0.7%, 0.	7.3% 5.0% 4.3% 4.3% 4.9% 80.6% Oct-14 2.1% 9.4% 0.9% 11.3% 3.3% 2.3% Oct-14 A 5.210 712 1,950 4,130 1,105	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 0.6% 9.8% 2.8% 2.4% 2.4% 2.4% 2.209 4.567 2.14 5.43 2.209 4.567 2.14 5.43 2.18	7.5% 6.3% 4.6% 4.7% 4.7% 4.7% 4.7% 1.0% 82.6% Apr-15 2.7% 11.1% 2.0% 4.2% 2.0% Apr-15 A 3.84% 616 1.726 618 51.655 3.665 189 3.134 1.134	8.1% 5.3% 4.9% 2.6% 85.0% 13.8% 3.7% 1.2% 11.9% 3.5% 4.480 4.480 1.971 4.488 4.480 2.2%	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 3.4% 2.2% Jul-15 A 17,936 2.916 7.856 16,850 16,852 1,895 4.420	8.5% 6.4% 4.9% 2.55% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 3.2% 2.9% Oct-15 A 5.255 767 2.165 767 2.165 4.387 2.373 300 509 51,103	6.3% 5.5% 4.1% 2.1% 2.1% 10.0% 2.9% 1.3% 13.2% 2.1% 2.5% Jan-16 830 2,682 830 2,683 5,225 2,100 233 548	7.1% 5.6% 3.2% 1.8% 91.8% 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6% Apr-16 A 4.451 607 1.885 3.387 2.428 4.421 1.318	8.2% 6.4% 3.2% 1.7% 91.9% 14.5% 4.9% 2.0% 19.3% 3.1% 2.2% 5.428 5.428 2.529 2.240 4.354 2.599 2.60 4.33 1.146	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20,996 2,999 8,927 17,363 9,500 1,057 1,919 4,513	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 7.66 2.383 4.452 2.663 2.59 4.54	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 3.3% 14.2% 2.5% 2.1% 5.940 2.1% 5.940 2.2,4	11.5% 9.1% 9.1% 1.7% 92.7% Apr-17 4.3% 1.5% 2.3% 2.3% 2.3% 2.3% 2.2% Apr-17 E 5.009 2.2% Apr-17 E 5.009 3.0% 2.2% 3.170 3.1% 3.170 3.363 3.170	10.6% 10.5% 10.5% 10.5% 7.1% 2.9% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 2.1% 3.3% 30.2% 2.9% 2.9% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 4444 1.030	10.8%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.23%, 9.23%, 1.6%, 92.3%, 1.6%, 1.9%, 2.7%, 2.2%, 2.2%, 2.2%, 2.2%, 2.2%, 1.650, 2.9%, 2.2%, 1.650, 9.9%, 1.7510, 10.863, 9.99, 1.733, 4.388, 4.388, 4.388, 9.9%, 1.733, 4.388, 9.9%, 1.734, 4.388, 9.9%, 1.734, 4.388, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.734, 9.9%, 1.73	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 4.6% 3.1% 3.1% 3.1% 24.9% 3.11% E 22.494 9.689 17,102 11,782 825 1,793 4,476
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18.166 9.866 9.041 16.638 318 1.243	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 0.5% 10.0% 5.7% 2.0% Jul-11 A 21.472 1.292 5.307 18.821 5.88	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 5.4% 1.8% Jul-12 4.967 14,756 872 1,439	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 0.9% 12.0% 5.2% 5.2% 4.20,552 2.998 6.120 16.361 1,061 1,771 3,274	8.2%, 3.2%, 5.5%, 4.5%, 4.5%, 4.5%, 80.9%, 15.6%, 3.3%, 3.0%, 0.8%, 3.3%, 2.7%, 4.5%	7.3% 5.0% 4.3% 4.9% 4.9% 5.0% 0ct-14 2.1% 9.4% 9.4% 3.3% 0.9% 11.3% 2.3% 0ct-14 A 5.210 712 1.950 4.130 4.130	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 0.6% 2.8% 2.4% Jan-15 A 4.398 9.32 2.209 4.567 2.14 4.543	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 12.0% 4.2% 4.2% 4.2% 6.16 1.726 3.848 6.16 1.726 3.665 189 351	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 2.5% 13.8% 1.2% 11.9% 3.5% 2.2% Jul-15 A 4.480 656 1.971 4.448 2.55 432	5.5% 4.7% 4.9% 3.11% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 3.4% 2.2% Jul-15 A 17,936 2.916 7,856 16,850 852 18,85	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300 509	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3.2% 2.1% 2.5% Jan-16 5.862 830 5.2637 5.225 5.2100 2.33 548	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 5.1% 2.0% 5.1% 2.6% 14.1% Ar-16 A 4.451 607 1.885 3.387 2.428 2.428 2.424 2.424	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 14.5% 2.0% 19.3% 3.1% 2.2% Jul-16 E E 5.428 725 2.240 4.354 2.559 2.60 433	7.6% 6.0% 3.8% 2.0% 90.0% 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 4.7% 1.8% 2.6% 1.97% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 2.59 454	10.9% 9.3% 5.4% 3.5% 4.8% 3.5% 92.1% Jan-17 3.0% 10.1% 12.1% 14.2% 2.1% Jan-17 E 5,940 852 2,707 4,942 2,900 252 472	11.5% 9.1% 9.1% 9.1% 9.27% 92.7% Paper-17 4.3% 15.9% 3.3% 2.2% Paper-17 E 5.009 622 2.045 3.981 2.589 198 363	10.6% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 5.4% 2.1% 3.3% 30.2% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444	10.8% 9.4% 6.1% 3.2% 1.6% 92.3% 1.6% 92.3% 1.6% 13.5% 13.5% 2.2% 2.2% 2.2% 2.2% 1.650 2.962 9.304 17.610 10.863 9.99 1.733	10.6% 6.0% 3.2% 1.6% 92.8% 14.2% 4.6% 2.1% 3.1% 2.4% 2.4% 2.4% 2.1% 2.4% 2.1% 2.5% 2.5% 2.5% 2.5% 2.5% 2.5% 2.5% 2.5
Verizon Google Windstream Time Warrer Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warrer Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warrer Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warrer Cable Time Warrer Cable Customer Capex yly % change	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.5%, 5.5%, 6.8% 80.9% 1.0%, 8.7% 2.8%, 0.5% 10.0% 5.7%, 2.0%, 10.0% 5.7%, 2.0%, 10.0% 5.7%, 2.0%, 10.0% 5.7%, 2.0%, 10.0% 5.7%, 10.0	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 18% 4.967 14,766 872 14,766 872 1,439 2,922 27,952	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 0.9% 12.0% 5.2% 5.2% 2.2% A 20.552 2.998 6.120 16.361 1,061 1,771 3,274 31,585	8.2%, 3.2%, 5.5%, 4.5%,	7.3% 5.0% 4.3% 4.3% 4.3% 3.7% 80.6% Oct-14 2.1% 9.4% 0.9% 11.3% 3.3% 5.210 7.12 1,950 4,130 194 569 1,105 8,660	6.3% 2.1% 4.8% 5.0% 4.8% 5.0% 79.3% Jan-15 2.2% 6.6% 0.6% 9.8% 2.8% 2.8% 4.398 932 2.209 4.567 214 543 918 9,383	7.5% 6.3% 4.6% 4.76% 4.76% 3.0% 82.6% Apr-15 2.7% 11.1% 1.0% 4.2% 2.0% Apr-15 A 3.848 616 1.726 3.665 189 351 1.134 7,681	8.1% 5.3% 4.9% 2.6% 85.0% 13.8% 3.7% 1.2% 11.9% 3.5% 2.2% 11.95 4.480 656 1.971 4.480 555 432 1.263 9,065	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 3.4% 2.2% Jul-15 A 17,936 2.916 7.856 16.850 16.850 4.420 34,789	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300 509 1.103	6.3% 5.5% 4.1% 2.1% 99.6% Jan-16 2.1% 10.0% 2.9% 2.1% 2.5% Jan-16 A 5,662 830 2,637 5,235 2,100 233 548 946 12,529	7.1% 5.6% 3.2% 1.8% 91.8% 91.8% Apr-16 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6% Apr-16 A 4.451 607 1.885 3.387 2.428 264 429 1.318 10.318	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 3.1% 2.2% Jul-16 5.428 7.25 2.240 4.354 2.599 260 433 1.146 11,757	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17.363 9,500 1,057 1,919 4,513 46,208.1	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 4.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 259 454 1.097	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% Jan-17 3.0% 1.5% 2.1% 4.2% 2.5% 2.1% Jan-17 E 5.940 852 2.77 4,942 2.900 252 4,744 72 1.101 13,226	11.5% 9.1% 9.1% 1.7% 92.7% Apr-17 4.3% 1.59% 2.3% 2.3% 2.3% 2.3% 2.2% Apr-17 E 5.009 2.2% Apr-17 19.9% 3.0% 2.2% 19.9% 3.170 10.968	10.6% 10.5% 10.5% 10.5% 7.1% 2.9% 2.9% 1.5% 92.7% Jul-17 4.3% 4.39% 2.1% 3.39% 30.2% 2.9% 2.9% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444 1.030 11,511	10.8%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.2%, 1.6%, 92.3%, 1.6%, 92.3%, 1.6%, 1.9%, 2.7%, 2.0.5%, 2.2%, 2.2%, 2.2%, 2.2%, 2.2%, 1.650, 2.962, 9.304, 1.7,610, 10.863, 9.99, 1.733, 4.398, 4.7,779, 4.734, 4.779	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 2.4% Jul-18 E 22,492 2.944 9.689 17,102 11,782 8.255 1,793 4,476 48,611
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Concast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex yly % change Customer Capex yly % change	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7% 5.5% 6.8% 80.9% Jul-11 1.0% 8.7% 0.5% 10.0% 5.7% 2.0% Jul-11 A 21.472 1.292 5.307 18.821 588 1.240 2.821 30.068	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 5.6% 5.4% 1.8% Jul-12 A 19,739 2,926 4,967 14,756 872 1,439 2,992 27,952	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 12.0% 5.2% 12.0% 5.2% 14.061 1.061 1.771 3.274 31,585	8.2%, 3.2%, 5.3%, 5.5%, 4.5%, 4.5%, 80.9%, 15.5%, 80.9%, 15.5%, 80.9%, 15.1%, 3.0%, 0.8%, 3.3%, 2.7%, 10.1%, A.23,001, 3.012, 6.975, 17,482, 737, 2.100, 3.675, 33,981, 12%, 12%, 12%, 12%, 12%, 12%, 12%, 12	7.3% 5.0% 4.3% 4.9% 4.9% 5.0% 9.4% 9.4% 9.4% 3.3% 0.9% 11.3% 0.9% 11.35 0.210 712 1.950 4.130 1.94 5.69 1.105 8.660	6.3% 2.1% 4.8% 5.0% 5.0% 5.0% 5.0% 6.6% 0.6% 2.6% 2.6% 2.6% 2.4% 2.4% 2.4% 2.4% 2.4% 2.4% 2.4% 2.4	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 12.0% 4.2% Apr-15 A 3.848 616 1.726 3.665 189 351 1.134 7.681	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 13.8% 3.7% 1.2% 11.9% 2.2% Jul-15 4.480 656 1.971 4.488 2.5% 4.29 656 1.971 4.488 2.5%	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 4.22% Jul-15 A 17,936 2.916 6.850 852 1.895 4.420 34,789	8.5% 6.4% 4.9% 2.5% 86.5% 2.4% 13.4% 3.7% 1.5% 2.9% 2.9% Oct-15 A 5.255 767 2.165 4.387 3.09 5.09 1.103 11,604	6.3% 5.5% 4.1% 2.1% 88.6% Jan-16 2.1% 10.0% 2.9% 1.3% 2.15% 2.5% Jan-16 A 5.862 830 2.627 5.235 2.100 233 548 946 12,529	7.1% 5.6% 3.2% 1.8% 191.8% Apr-16 4.0% 5.1% 2.0% 5.1% 2.0% 14.1% 2.8% 1.6% Apr-16 4.451 607 1.885 3.387 2.428 2.428 2.429 1.318 10.318	8.2% 6.4% 3.2% 17.9% 91.9% 19.9% 14.5% 4.9% 2.0% 2.0% 5.428 725 5.428 725 2.240 4.354 2.259 2.60 4.33 1.146 11.757	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057 1,919 4,513 46,208.1	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 4.7% 1.4.0% 4.7% 2.6% 19.7% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 2.59 454 1.097 12.074	10.9% 9.3% 5.4% 3.5% 4.8% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 12.1% 12.2% 2.1% Jan-17 E 5.940 852 2.707 4.942 2.900 252 472 1.101 13.226	11.5% 9.1% 9.1% 9.1% 9.27% P.7% 92.7% P.7% 92.7% Apr-17 4.3% 15.9% 15.9% 19.9% 2.2% P.509 622 2.045 3.981 2.589 198 363 31.1.70 10.966	10.6% 10.5% 10.5% 7.1% 2.1% 1.5% 92.7% Jul-17 4.3% 14.9% 5.4% 2.1% 2.1% 2.1% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444 1.030 11,511	10.8% 9.4% 6.1% 6.1% 12.2% 1.6% 92.3% 1.6% 92.3% 1.6% 13.5% 2.7% 2.2% 1.6% 2.2% 1.6% 2.2% 1.6% 2.2% 1.6% 2.2% 1.6% 2.3% 1.8% 2.3% 2.3% 1.8% 2.3% 2.3% 2.3% 1.8% 2.3% 2.3% 2.3% 2.3% 2.3% 2.3% 2.3% 2.3	10.6% 6.0% 3.2% 1.6% 92.8% 14.2% 4.5% 21.1% 3.1% 2.4% 14.2% 4.6% 24.9% 3.1% 2.4% 15.2% 15.2% 17.93 4.476 48,611
Verizon Google Windstream Time Warrer Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warrer Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warrer Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Total Customer Capex yly % change AT&T Customer Capex yly % change AT&T CenturyLink CenturyLink CenturyLink CenturyLink CenturyLink CenturyLink CenturyLink CenturyLink CenturyLink	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7%, 5.5%, 6.8%, 80.9% 1.0%, 8.7% 2.8%, 0.5% 10.0% 5.7%, 2.0%, 10.0% 5.7%, 2.0%, 10.0% 5.7%, 2.0%, 10	11.3% 8.4% 4.5% 6.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 18% 4.967 14,766 872 14,766 872 14,792 2,992 27,952	9.6% 7.9% 4.5% 5.7% 78.4% 1.2% 7.9% 0.9% 1.2.0% 5.2% 2.2% 4.20,552 2.298 6.120 16,361 1,061 1,771 3,274 31,585	8.2%, 3.2%, 5.5%, 5.5%, 5.5%, 4.5%, 4.5%, 4.5%, 4.5%, 80.9%, 11.5%, 8.3%, 3.0%, 0.8%, 13.1%, 3.9%, 2.7%, 2.10, 13.012, 6.975, 17.482, 737, 2.100, 3.675, 33.981, 12%, 0.9%, 0.8%, 12.5%, 12.5%, 13.012	7.3% 5.0% 4.3% 4.3% 4.9% 80.6% Oct-14 2.1% 9.4% 0.9% 11.3% 3.3% 2.3% Oct-14 A 5.210 712 1,950 4.130 1,105 8,660	6.3% 2.1% 4.8% 5.0% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 0.6% 9.8% 2.8% 2.4% 2.4% 2.4% 2.4% 2.209 4.567 2.14 5.43 9.38 9.38 9.38 9.38 9.38 9.38 9.38 9.3	7.5% 6.3% 4.6% 4.7% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 1.0% 4.2% 2.0% Apr-15 A 3.84% 1.0% 4.2% 2.0% Apr-15 1.134 7.681	8.1% 5.3% 4.9% 2.6% 85.0% 13.8% 3.7% 1.2% 2.2% 11.9% 3.5% 2.2% 11.971 4.480 656 1.971 4.482 2.55 432 1.263 9,065	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 3.4% 2.2% Jul-15 A 17,936 2.916 7.856 16.850 4.420 34,789 -22% -3% -3%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300 509 1.103 1.1604	6.3% 5.5% 4.1% 2.1% 99.6% 39.6% 2.1% 10.0% 2.9% 2.13% 2.13% 2.5% 30.2,662 830 2,637 5,235 2,100 233 548 946 12,529	7.1% 5.6% 3.2% 1.8% 91.8% Ps.18% 1.8% 1.8% 1.8% 2.0% 14.1% 2.8% 1.6% Apr-16 Apr	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 3.1% 2.2% Jul-16 5.428 7.25 2.240 4.354 2.599 260 433 1.146 1.757	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057 1,919 4,513 46,208.1	10.2% 8.7% 6.5% 91.8% 91.8% 91.8% Oct-16 3.7% 14.0% 14.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 259 454 1.097 12,074	10.9% 9.3% 5.4% 3.5% 1.8% 92.1% 10.1% 3.0% 1.5% 2.1% 2.5% 2.1% 2.1% 2.1% 2.1% 14.2% 2.5% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 15.2% 16.2%	11.5% 9.1% 9.1% 1.7% 92.7% Apr-17 4.3% 1.5% 2.3% 2.3% 2.3% 2.3% 2.0% Apr-17 E 5.009 3.0% 2.2% Apr-17 10.968	10.6% 10.5% 10.5% 10.5% 7.1% 2.9% 2.9% 1.5% 92.7% Jul-17 4.3% 4.49% 2.1% 3.3% 30.2% 2.9% 2.9% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444 1.030 11,511	10.8%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.2%, 9.23%, 1.6%, 92.3%, 1.6%, 1.9%, 2.2%, 2.2%, 2.2%, 2.2%, 2.2%, 2.2%, 2.2%, 1.650, 2.9%, 2.2%, 1.650, 9.99, 1.731, 1.650, 9.99, 1.733, 4.388, 47,779, 1.650, 9.99, 1.733, 4.388, 4.740, 9.99, 9.99, 1.733, 4.388, 4.740, 9.99,	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 2.1% 3.1% 2.4% Jul-18 E 22,494 9.689 17,102 11,782 8.25 5.7.93 4.476 48,611 4%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex yly % change AT&T CenturyLink Comcast Customer Capex yly % change AT&T CenturyLink Comcast	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7% 5.5% 6.8% 80.9% 10.0% 8.7% 2.8% 0.5% 10.0% 5.7% 2.0% 11.472 1.292 5.307 18.821 588 1.240 2.821 30.068	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% 5.4% 1.8% Jul-12 A 19,739 2,926 4,967 14,756 872 1,439 2,992 27,952	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.99% 0.99% 12.0% 5.29% 5.29% 5.29% 14.0% 5.29% 15.29% 15.25% 16.361 1.061 1.071 1.071 3.274 31,585	8.2%, 3.2%, 5.5%, 4.5%, 4.5%, 4.5%, 80.9%, 15.6%, 6.3%	7.3%, 5.0%, 4.3%, 4.9%, 4.9%, 5.0%, 4.9%, 4.9%, 5.7%, 80.6%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 9.4%, 13.3%, 9.9%, 11.3%, 6.210, 712, 1.950, 4.130, 194, 569, 1.105, 8,660, 1.105, 8,660, 1.105	6.3% 2.1% 4.8% 5.0% 5.0% 5.0% 5.0% 6.6% 6.6% 6.6% 2.6% 2.6% 2.6% 2.6% 2.6	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 12.0% 4.2% 4.2% 4.2% 4.2% 4.2% 4.2% 4.2% 4.7% 11.134 7.681	8.1% 5.3% 4.9% 2.6% 85.0% Jul-15 13.8% 3.7% 1.2% 6.35% 2.2% Jul-15 4.480 656 1.971 4.488 2.55 4.32 1.263 9,065	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% A.4% 2.2% Jul-15 A.17,936 16,850 852 1,895 4,420 34,789 4.420 34,789 4.420 34,789 4.420 4.3% 13% 13% 13% 13% 13% 13% 13% 13% 13% 1	8.5% 6.4% 4.9% 2.5% 86.5% 2.4% 13.4% 3.7% 1.5% 2.9% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.185 4.387 3.09 1.103 11,604	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3% 2.1% 2.5% Jan-16 A 5,862 830 2.637 5.255 2.100 233 548 946 12,529 33% -11%	7.1% 5.6% 3.2% 13.2% 14.1% 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6% 14.451 607 1,885 3.387 2,428 429 1,318 10.318	8.2% 6.4% 3.2% 1.7% 1.7% 91.9% Jul-16 14.5% 4.9% 2.0% 5.428 725 2.240 4.354 2.259 2.60 4.33 1.146 11,757	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057 1,919 4,513 46,208.1	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 4.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 2.59 454 1.097 12.074	10.9% 9.3% 5.4% 3.5% 4.8% 3.5% 1.8% 92.1% Jan-17 3.0% 10.1% 14.2% 2.5% 2.1% Jan-17 E 5,940 852 2,707 4,942 2,900 252 472 1,101 13,226	11.5% 9.1% 9.1% 9.1% 9.27% 92.7% Paper-17 4.3% 15.9% 15.9% 15.9% 19.9% 2.2% Paper-17 E 5.009 622 2.045 3.981 2.589 198 363 3.1,170 10.968	10.6% 10.5% 10.5% 7.1% 2.1% 92.7% Jul-17 4.3% 14.9% 5.4% 2.1% 3.3% 30.2% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444 1.030 11,511	10.8% 9.4% 6.4% 6.4% 6.4% 1.6% 1.6% 1.5% 1.6% 1.5% 1.5% 2.2% 1.6% 2.2% 1.6% 2.2% 1.6% 2.2% 1.6% 1.9% 2.2% 1.650 2.962 2.962 2.962 1.733 4.398 1.733 4.398 1.773	10.6% 6.0% 3.2% 1.6% 92.8% 14.2% 4.5% 2.1% 3.1% 2.4% 14.2% 4.6% 2.19% 3.1% 2.4% 14.2% 4.6% 15.2% 15.2% 15.2% 17.93 4.476 48,611 4.6% 17.5% 17.93 14.476 4.6% 17.6%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Concast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Concast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex yly % change AT&T CenturyLink Commun Time Warner Cable Customer Capex yly % change AT&T CenturyLink Comcast Verizon Google	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7% 5.5% 6.8% 80.9% 10.0% 8.7% 10.0% 5.7% 2.0% 10.0% 5.7% 2.0% 10.0% 5.7% 10.0% 5.7% 10.0% 5.7% 10.0% 5.7% 10.0% 5.7% 10.0% 5.5% 10.0% 5.5% 10.0	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% Jul-12 A 19,739 2,926 4,967 14,756 872 1,439 2,992 27,952	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 0.9% 2.2% Jul-13 A 20.552 2.998 6.106 1.061 1.071 1.771 3.274 31,585	8.2%, 3.2%, 5.5%, 4.5%, 4.5%, 4.5%, 4.5%, 80.9%, 11.1%, 3.0%, 0.8%, 3.3%, 2.7%, 4.5%, 3.3%, 5.5%, 3.3%, 5.5%, 3.3%, 5.5%	7.3%, 5.0%, 4.3%, 4.9%, 3.7%, 80.6%, 9.4%, 3.3%, 0.9%, 11.3%, 6.2	6.3% 2.1% 4.8% 5.0% 5.0% 5.0% 5.0% 6.6% 6.6% 6.6% 2.6% 2.6% 2.6% 2.6% 2.6	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 12.0% 4.2% 4.2% 4.2% 4.2% 4.2% 4.7% 11.76 3.848 616 1.726 3.665 189 351 1.134 7.681	8.1% 5.3% 4.9% 2.6% 85.0% 13.8% 3.7% 1.2% 11.9% 2.2% 11.94 4.480 656 1.971 4.488 2.53 1.263 9,065	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% A.4% 2.2% Jul-15 A 17,936 2.916 7.856 16,850 852 1,895 4.420 34,789	8.5% 6.4% 4.9% 2.5% 86.5% 2.4% 13.4% 3.7% 1.5% 2.9% Oct-15 A 5.255 767 2.165 4.387 3.20 2.373 3.00 5.09 1.103 11,604	6.3% 5.5% 4.1% 2.1% 89.6% Jan-16 2.1% 10.0% 2.9% 1.3.2% 2.1% 2.5% A 5.862 2.37 5.285 2.100 2.33 548 946 11,529 33% -111% 19% 15%	7.1% 5.6% 3.2% 1.2% 1.2% 1.2% 1.2% 1.2% 1.2% 1.2% 1	8.2% 6.4% 3.2% 1.9% 91.9% 14.5% 4.9% 2.0% 2.0% 5.428 725 5.428 725 2.240 4.354 2.259 2.60 4.33 1.146 11.757 2.1% 11.757	7.6% 6.0% 3.8% 2.0% 90.0% 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057 1,919 4,513 46,208.1	10.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 4.7% 1.40% 4.7% 2.6% 19.7% 2.2% Oct-16 E 5.626 766 2.383 4.452 2.663 2.59 454 1.097 12.074	10.9% 9.3% 5.4% 1.8% 92.1% Jan-17 3.0% 10.1% 12.1% 14.2% 2.1% Jan-17 E 5,940 852 2,707 4,942 2,900 252 472 1,101 13,226	11.5% 9.1% 9.1% 9.1% 1.7% 92.7% Apr-17 4.3% 15.9% 15.9% 2.3% 2.8% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 3.6% 19.9% 19.8% 19.8% 19.8% 19.8% 19.8%	10.6% 10.5% 10.5% 7.1% 2.1% 1.5% 92.7% Jul-17 4.3% 5.4% 2.1% 3.3% 30.2% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.711 200 444 1.030 11,511	10.8% 9.4% 6.4% 6.4% 6.1% 13.5% 12.5% 12.5% 12.5% 13.5% 13.5% 2.7% 2.7% 2.7% 13.5% 2.9% 12.7% 13.5% 13	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 24.9% 3.1% 2.4% 5.11 17.82 825 1.793 4.476 48,611 4% -1% 3.8% 8.8%
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Total Customer Capex yly % change AT&T CenturyLink Comcast Verizon Google Coustomer Capex yly % change AT&T CenturyLink Comcast Verizon Google Windstream Vindstream Vindstream Vindstream Vindstream Vindstream	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7%, 5.5%, 6.8%, 80.9%, 10.0%, 6.8%, 10.0%, 10.0%, 5.7%, 2.0%, 10.0%, 5.7%, 2.0%, 10.0%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% 4.967 14,756 872 1,4792 2,922 27,952	9.6% 7.9% 4.5% 5.7% 78.4% 1.2% 7.9% 0.9% 1.20% 5.2% 2.2% 4% 20,552 2.2% 4% 20,552 2.2% 4% 20,552 2.2% 4% 20,552 2.2%	8.2%, 3.2%, 5.5%, 5.5%, 5.5%, 5.5%, 5.5%, 5.5%, 5.5%, 80.9%. Jul-14 1.5%, 8.3%, 3.0%, 0.8%, 0.	7.3% 5.0% 4.3% 4.3% 4.9% 80.6% Oct-14 2.1% 9.4% 0.9% 11.3% 3.3% 0.9% 11.3% 2.3% Oct-14 A 5.210 712 1,950 4,130 1,105 8,660	6.3% 2.1% 4.8% 5.0% 4.8% 5.0% 9.3% Jan-15 2.2% 6.6% 0.6% 9.8% 2.8% 2.4% 2.4% 2.209 4.567 2.14 543 932 2.209 4.567 11% 10% 5.0% 11% 10% 5.0% 11% 10% 5.0% 11% 10% 10% 10% 10% 10% 10% 10% 10% 1	7.5% 6.3% 4.6% 4.7% 4.7% 4.7% 10% 82.6% Apr-15 2.7% 11.1% 2.0% 4.2% Apr-15 A 3.848 616 1,726 3.665	8.1% 5.3% 4.9% 2.6%, 85.0% 13.8% 3.7% 1.2% 11.9% 3.5% 2.2% 11.95 4.480 656 1.971 6.710 6.7	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4% 2.2% Jul-15 A 17,936 2.916 7.856 16.850 16.850 34,789 2-22% 34,789	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300 509 1.103 11,604	6.3% 5.5% 4.1% 2.1% 10.0% 2.9% 1.3% 13.2% 2.1% 2.5% 2.1% 2.5% 330 2.682 830 2.637 5.235 2.100 2.33 548 946 11.529	7.1% 5.6% 3.2% 1.8% 91.8% 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6% Apr-16 A 4.451 607 1.885 3.387 2.428 264 429 1.318 10.318	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 3.1% 2.2% Jul-16 5.428 7.25 2.240 4.354 2.599 260 433 1.146 11,757	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057 1,919 4,513 46,208.1	0.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 14.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 7.662 7.662 2.383 4.452 2.663 2.59 4.54 1.097 12.074	10.9% 9.3% 5.5% 1.8% 92.1% Jan-17 3.0% 10.1% 14.2% 2.5% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 3.3% 6.5% 8.8%	11.5% 9.11.5% 9.11.5% 9.2.7% Apr-17 4.3% 15.9% 2.3% 2.3% 2.3% 2.2% Apr-17 E 5.009 622 2.045 3.6% 2.2% Apr-17 10.968	10.6% 10.5% 10.5% 10.5% 7.1% 2.9% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 2.1% 2.1% 2.1% 2.9% 2.4% 2.19% 2.9% 2.4% 2.19% 1.030 11,511 -7% -7% -7% -7% -7% -7% -7% -7% -7% -7	10.8% 9.4% 9.4% 9.4% 9.4% 9.4% 9.4% 9.4% 9.4	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 3.1% 2.1% 3.1% 2.49% 24.9% 3.17,102 11,782 825 1,793 4,476 48,611
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex yly % change AT&T CenturyLink Commun Time Warner Cable Total Customer Capex yly % change AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Google Windstream Charter Commun Time CenturyLink Comcast Verizon Google Windstream Charter Commun	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7% 5.5% 6.8% 80.9% 10.0% 8.7% 2.8% 0.5% 10.0% 5.7% 2.0% 14.472 1.292 5.307 18.821 588 1.240 2.821 30.068	11.3% 8.4% 4.5% 6.5% 83.7% 3.1% 0.9% 11.5% 5.6% 1.8% 1.8% Jul-12 A 19,739 2,926 4,967 14,756 872 1,439 2,992 27,952	9.6% 7.9% 4.5% 5.7% 78.4% Jul-13 1.2% 7.9% 2.9% 2.9% 2.2% Jul-13 A 20,552 2.2% Jul-13 A 20,552 2.998 6.1,061 1,071 3,274 31,585	8.2%, 3.2%, 5.5%, 4.5%, 4.5%, 4.5%, 80.9%, 11.144 1.5%, 3.0%, 0.8%, 2.7%, 11.1%, A. 23.001 3.012, 6.975, 17.482, 737, 2.100 3.675, 33.981 12%, 0%, 14%, 7%, 7%, 13%, 19%, 19%, 19%, 19%, 19%, 19%, 19%, 19	7.3% 5.0% 4.3% 4.9% 3.7% 80.6% Oct-14 2.1% 9.4% 9.4% 9.4% 9.4% 9.4% 11.3% 2.3% Oct-14 A 5.210 712 1.950 4.130 1.95 8.660 1.105 8.660 1.105 8.660	6.3% 2.1% 4.8% 5.0% 3.4% 79.3% Jan-15 2.2% 6.6% 2.6% 0.6% 2.8% 2.4% Jan-15 4.398 9.32 2.209 4.567 2.14% 9.38 9.38 9.38 9.38 9.38 9.38 9.38 9.38	7.5% 6.3% 4.6% 4.7% 3.0% 82.6% Apr-15 2.7% 11.1% 11.1% 12.0% 4.2% 2.0% Apr-15 A 3.848 616 1.726 3.665 189 351 1.134 7.681	8.1% 5.3% 4.9% 2.6% 85.0% 13.8% 3.7% 1.2% 11.9% 2.2% 11.994 4.480 656 1.971 4.488 255 432 1.263 9,065	5.5% 4 7% 4 9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 3.4% 2.2% Jul-15 A 17,936 2.916 852 1.895 4.420 34,789 -22% -33% 1.3% -4% 16% -4%	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 2.9% Oct-15 14.0% 3.2% 2.9% Oct-15 5.767 2.165 4.387 2.373 300 509 1.103 11,604	6.3% 5.5% 4.1% 2.1% 99.6% Jan-16 10.0% 2.9% 13.2% 2.1% 2.5% Jan-16 A 5.862 830 2.637 5.235 2.100 2.33 548 946 112,529 15%	7.1% 5.6% 3.2% 1.8% 91.8% Apr-16 4.0% 15.0% 5.1% A 4.451 607 1.885 3.387 2.428 2.428 2.429 1.318 10.318	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 4.9% 2.0% 4.31% 2.2% Jul-16 5.22% Jul-16 5.22% 19.3% 4.35 2.240 4.354 2.599 2.60 4.33 1.146 11.757 11% 11% 14% -3%	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 2.8% 2.3% Jul-16 E 20.996 2.929 8.927 17,363 9,500 1,057 1,919 4,513 46,208.1	10.2% 8.7% 6.5% 91.8% 91.8% Oct-16 3.7% 4.7% 1.4.0% 4.7% 1.8% 2.6% 19.7% 2.2% Oct-16 5.626 766 2.383 4.452 2.663 2.59 454 1.097 12.074	10.9% 9.3% 5.4% 1.8% 92.1% Jan-17 3.0% 10.1% 12.1% 12.1% 14.2% 2.5% 2.1% Jan-17 5.940 852 2.707 4.942 2.900 252 472 1.101 13.226	11.5% 9.1% 9.1% 9.1% 9.1% 9.1% 9.27% 92.7% 92.7% 4.3% 15.9% 2.3% 2.3% 2.2% 9.1% 9.1% 9.1% 9.1% 9.1% 9.1% 9.1% 9.1	10.6% 10.5% 10.5% 7.1% 2.9% 1.5% 92.7% Jul-17 4.3% 5.4% 2.1% 3.3% 30.2% 2.4% Jul-17 E 5.075 722 2.169 4.235 2.2711 200 444 1.030 11,511	10.8% 9.4% 6.1% 6.1% 1.2% 1.6% 1.6% 1.6% 1.6% 1.6% 1.5% 1.5% 2.7% 1.5% 1.5% 1.5% 1.5% 1.5% 1.5% 1.5% 1.5	10.6% 6.0% 3.2% 1.6% 92.8% 92.8% 14.2% 4.5% 2.1% 3.1% 24.9% 24.9% 17.102 2.944.476 49.681 17.82 4.9689 17.102 4.9689 17.102 4.9689 17.103 4.476 49.6811 49.689 49.681 49.681 49.689 49.681 49.689 49.681 49.6
Verizon Google Windstream Time Warner Cable Charter Commun Top 7 % of Telecom DY Revenue as a % capex (Penetration) AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Customer Capex - Consensus Estimates AT&T CenturyLink Comcast Verizon Google Windstream Charter Commun Time Warner Cable Total Customer Capex yly % change AT&T CenturyLink Comcast Verizon Google Coustomer Capex yly % change AT&T CenturyLink Comcast Verizon Google Windstream Vindstream Vindstream Vindstream Vindstream Vindstream	Jul-10 1.1% 11.6% 2.8% Jul-10 A 18,166 986 5,041 16,638 318 1,243 3,224	9.0% 5.7%, 5.5%, 6.8%, 80.9%, 10.0%, 6.8%, 10.0%, 10.0%, 5.7%, 2.0%, 10.0%, 5.7%, 2.0%, 10.0%	11.3% 8.4% 4.5% 6.5% 83.7% Jul-12 0.8% 5.6% 3.1% 0.9% 11.5% 5.4% 1.8% 4.967 14,756 872 1,4792 2,922 27,952	9.6% 7.9% 4.5% 5.7% 78.4% 1.2% 7.9% 0.9% 1.20% 5.2% 2.2% 4% 20,552 2.2% 4% 20,552 2.2% 4% 20,552 2.2% 4% 20,552 2.2%	8.2%, 3.2%, 5.5%, 5.5%, 5.5%, 5.5%, 5.5%, 5.5%, 5.5%, 80.9%. Jul-14 1.5%, 8.3%, 3.0%, 0.8%, 0.	7.3% 5.0% 4.3% 4.3% 4.9% 80.6% Oct-14 2.1% 9.4% 0.9% 11.3% 3.3% 0.9% 11.3% 2.3% Oct-14 A 5.210 712 1,950 4,130 1,105 8,660	6.3% 2.1% 4.8% 5.0% 4.8% 5.0% 9.3% Jan-15 2.2% 6.6% 0.6% 9.8% 2.8% 2.4% 2.4% 2.209 4.567 2.14 543 932 2.209 4.567 11% 10% 5.0% 11% 10% 5.0% 11% 10% 5.0% 11% 10% 10% 10% 10% 10% 10% 10% 10% 1	7.5% 6.3% 4.6% 4.7% 4.7% 4.7% 10% 82.6% Apr-15 2.7% 11.1% 2.0% 4.2% Apr-15 A 3.848 616 1,726 3.665	8.1% 5.3% 4.9% 2.6%, 85.0% 13.8% 3.7% 1.2% 11.9% 3.5% 2.2% 11.95 4.480 656 1.971 6.710 6.7	5.5% 4.7% 4.9% 4.7% 4.9% 3.1% 82.1% Jul-15 2.3% 9.9% 3.3% 0.9% 11.3% 3.4% 2.2% Jul-15 A 17,936 2.916 7.856 16.850 16.850 34,789 2-22% 34,789	8.5% 6.4% 4.9% 2.5% 86.5% Oct-15 2.4% 13.4% 3.7% 1.5% 14.0% 3.2% 2.9% Oct-15 A 5.255 767 2.165 4.387 2.373 300 509 1.103 11,604	6.3% 5.5% 4.1% 2.1% 10.0% 2.9% 1.3% 13.2% 2.1% 2.5% 2.1% 2.5% 330 2,682 830 2,683 5,235 2,100 2,233 5,48 46 12,529	7.1% 5.6% 3.2% 1.8% 91.8% 4.0% 15.0% 5.1% 2.0% 14.1% 2.8% 1.6% Apr-16 A 4.451 607 1.885 3.387 2.428 264 429 1.318 10.318	8.2% 6.4% 3.2% 1.7% 91.9% Jul-16 3.8% 14.5% 4.9% 2.0% 3.1% 2.2% Jul-16 5.428 7.25 2.240 4.354 2.599 260 433 1.146 11,757	7.6% 6.0% 3.8% 2.0% 90.0% Jul-16 3.0% 13.1% 4.0% 1.6% 15.1% 2.8% 2.3% Jul-16 E 20,996 2,929 8,927 17,363 9,500 1,057 1,919 4,513 46,208.1	0.2% 8.7% 6.5% 3.1% 1.6% 91.8% Oct-16 3.7% 14.0% 14.7% 1.8% 2.6% 19.7% 2.2% Oct-16 E 5.626 7.662 7.662 2.383 4.452 2.663 2.59 4.54 1.097 12.074	10.9% 9.3% 5.5% 1.8% 92.1% Jan-17 3.0% 10.1% 14.2% 2.5% 2.1% 14.2% 2.1% 14.2% 2.1% 14.2% 2.1% 3.3% 6.5% 8.8%	11.5% 9.11.5% 9.11.5% 9.2.7% Apr-17 4.3% 15.9% 2.3% 2.3% 2.3% 2.2% Apr-17 E 5.009 622 2.045 3.6% 2.2% Apr-17 10.968	10.6% 10.5% 10.5% 10.5% 7.1% 2.9% 2.9% 1.5% 92.7% Jul-17 4.3% 14.9% 2.1% 2.1% 2.1% 2.9% 2.4% 2.19% 2.9% 2.4% 2.19% 1.030 11,511 -7% -7% -7% -7% -7% -7% -7% -7% -7% -7	10.8% 9.4% 9.4% 9.4% 9.4% 9.4% 9.4% 9.4% 9.4	10.6% 6.0% 3.2% 1.6% 92.8% Jul-18 4.3% 14.2% 4.6% 3.1% 2.1% 3.1% 2.49% 24.9% 3.17,102 11,782 825 1,793 4,476 48,611

DYCOM Industries, Inc. Statement of Cash Flows (\$ in mils, except per share data)

	2010A	2011A	2012A	2013A	2014A	1Q15A	2Q15A	3Q15A	4Q15A	2015A	1Q16A	2Q16A	3Q16A	4Q16E	2016E	1Q17E	2Q17E	3Q17E	4Q17E	2017E	201
sh Generated from Operating Activities:	5.040		00.4	05.0	40.0	00.0		00.0	00.0	04.0	00.0	45.5	00.4	40.5	407.0	40.4	40.0	00.0	510	100.0	+
Net Income	5.849	16.1	39.4	35.2	40.0	20.8	9.4	20.3	33.8	84.3	30.8	15.5	33.1	48.5	127.9	49.1	19.6	39.2	54.8	162.8	
Depreciation & Amortization Stock-based compensation	63.6 3.4	62.5 4.4	62.7 6.8	85.5 9.9	92.8 12.6	22.9 3.9	23.3 3.7	24.0 3.2	25.9 3.2	96.0 13.9	27.4 4.5	29.9 4.2	31.6 3.9	35.5 4.3	124.5 16.9	35.0 5.7	36.0 4.2	36.8 3.9	36.8 4.3	144.8 18.2	
Deferred Taxes	1.9	14.7	9.9	(2.3)	(6.3)	(3.5)	4.8	2.7	(2.8)	1.2	(4.0)	4.2	3.9	4.3	(4.0)	5.7	4.2	3.9	4.3	10.2	
Other non cash items	(6.4)	(6.5)	(15.7)	(4.0)	(11.6)	(1.3)	(3.2)	(5.5)	(3.4)	(13.4)	(4.0)	(2.0)	11.6	(2.0)	10.3	(2.0)	(2.0)	(2.0)	(2.0)	(8.0)	
Sub-Total	68.3	91.3	103.1	124.3	127.5	42.9	38.0	44.6	56.7	182.2	61.5	47.6	80.2	86.4	275.6	87.8	57.9	78.0	94.0	317.8	
Sub-1 otal	66.3	91.3	103.1	124.3	127.5	42.9	30.0	44.0	36.7	102.2	61.5	47.0	00.2	00.4	2/5.0	01.0	37.9	70.0	94.0	317.0	
Cash Used in operations																					
Additions to Plant, Property & Equipment	(55.4)	(61.5)	(77.6)	(64.7)	(89.1)	(18.0)	(20.7)	(38.1)	(26.2)	(103.0)	(40.8)	(49.8)	(48.3)	(40.0)	(178.8)	(43.8)	(43.8)	(43.8)	(43.8)	(175.0)) (
Changes in Working Capital Items	(14.2)	(47.4)	(37.9)	(17.5)	(43.3)	(32.0)	34.4	(4.3)	(38.3)	(40.3)	(90.4)	27.8	(46.0)	(14.9)	(123.5)	(59.6)	53.2	(82.7)	29.4	(59.7)	
Sub-Total	(69.6)	(108.9)	(115.5)	(82.2)	(132.4)	(50.0)	13.6	(42.4)	(64.5)	(143.3)	(131.2)	(22.0)	(94.2)	(54.9)	(302.2)	(103.3)	9.4	(126.4)	(14.4)	(234.7))
Free Cash Flow from Operations	(1.2)	(17.6)	(12.5)	42.1	(5.0)	(7.1)	51.6	2.3	(7.9)	38.9	(69.6)	25.6	(14.1)	31.4	(26.6)	(15.5)	67.4	(48.4)	79.6	83.1	
Free Cash Flow per share	(\$0.03)	(\$0.49)	(\$0.36)	\$1.25	(\$0.14)	(\$0.20)	\$1.47	\$0.06	(\$0.23)	\$1.11	(\$2.05)	\$0.76	(\$0.43)	\$0.98	(\$0.80)	(\$0.48)	\$2.09	(\$1.49)	\$2.45	\$2.57	
							,														
Cash Generated from/(Used In) Investing Activities:																					
Acquisition of Business	-	(36.5)	-	(330.3)	(17.1)	(8.4)	(1.5)	-	(22.1)	(31.9)	(48.6)	(0.2)	-	-	(48.8)					-	
Restricted Cash	-	0.2	0.9	-	(0.3)	-		(0.5)	0.0	(0.5)	(0.5)	-	-	-	(0.5)					-	
Proceeds from sale of assets	8.8	12.3	24.8	5.8	15.4	1.7	2.3	2.7	2.6	9.4	1.3	1.1	4.1	2.5	9.0	1.2	1.0	3.5	1.0	6.7	1
Purchase of short term investments	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Investments in cost and equity method investees	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Other, net	-		-	0.1	-	(0.5)		(3.5)	-	(4.0)			(1.7)	-	(1.7)				-	-	_
Total Cash Flows from Investing Activities	8.8	(23.9)	25.7	(324.4)	(2.0)	(7.2)	0.9	(1.3)	(19.5)	(27.1)	(47.7)	0.9	2.3	2.5	(42.1)	1.2	1.0	3.5	1.0	6.7	
Cash Generated from/(Used In) Financing Activities:																					
Borrow (repay) of credit facility	-			170.9	6.2	9.7	(33.3)	12.9	79.0	68.2	36.0	(28.0)	110.8	(34.9)	83.9	13.3	(69.4)	43.9	(81.6)	(93.8)	
Proceeds from issuance of 0.75% senior convertible notes due 2021											485.0	-	-	-	485.0					-	
Proceeds from sale of warrants											74.7		-	-	74.7					_	
Purchase of convertible note hedge											(115.8)	-	-		(115.8)					_	
Borrow (Repay) of other borrowings		52.2		93.8	-				(1.0)	(1.0)	(277.5)	-	-	-	(277.5)					_	
Repayment of capital lease obligations	(1.0)	(0.6)							(,	()	(=)				(=,						
Exercise of Stock Options	0.0	1.3	6.5	5.3	14.6	0.6	1.8	4.5	2.1	8.9	0.1	1.6	0.1	1.0	2.8	1.0	1.0	1.0	1.0	4.0	
Stock/Debt issuance costs	(3.2)	(5.2)	0.0	(6.7)	14.0	-	1.0	(3.5)	(0.3)	(3.9)	(14.5)	(1.0)	0.1	1.0	(15.5)	1.0	1.0	1.0	1.0	4.0	
Stock repurchase	(4.5)	(64.5)	(13.0)	(15.2)	(10.0)		(17.1)	(13.5)	(56.5)	(87.1)	(70.0)	(1.0)	(100.0)	-	(170.0)						
Other, net	(0.2)	(0.2)	1.1	0.3	(1.8)	(0.1)	(1.8)	2.8	2.8	3.7	(0.1)	(0.7)	(100.0)	-	(0.8)					-	
Total Cash Flows from Financing Activities	(8.9)	(17.0)		248.3	9.0	10.1	(50.5)	3.1	26.1	(11.2)	117.9	(28.1)	10.9	(33.9)	66.7	14.3	(68.4)	44.9	(80.6)	(89.8)	+
	(0.5)	(17.0)	(3.4)	240.3	5.0	10.1	(30.3)	5.1	20.1	(11.2)	117.0	(20.1)	10.5	(33.5)	00.7	14.5	(00.4)	44.0	(00.0)	(05.0)	
Net effect of currency	-	-	-																		
Change in Cash	(1.4)	(58.6)	7.8	(34.0)	2.1	(4.2)	2.0	4.1	(1.3)	0.6	0.5	(1.6)	(0.8)		(1.9)					(0.0)	F
Cash used in discontinued operations																					
End of Period																					T
Cash and s.t. investments	103.3	44.8	52.6	18.607	20.7	16.5	18.4	22.5	21.3	21.3	21.8	20.2	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	1
Total debt (face value)	135.4	187.8	187.6	452.0	457.8	467.4	433.9	446.7	525.6	525.6	766.2	738.3	849.0	814.1	814.1	827.3	758.0	801.9	720.2	720.2	
Equity (adjusted)	394.6	351.9	392.9	428.4	484.9	509.5	504.9	522.2	507.2	507.2	419.3	444.0	386.0	435.5	435.5	485.6	506.3	546.5	602.3	602.3	_
Debt as % of capital	25.5%	34.8%	32.3%	51.3%	48.6%	47.8%	46.2%	46.1%	50.9%	50.9%	64.6%	62.4%	68.7%	65.1%	65.1%	63.0%	60.0%	59.5%	54.5%	54.5%	
Net Debt as % of capital	7.5%	28.9%	25.6%	50.3%	47.4%	46.9%	45.1%	44.8%	49.9%	49.9%	64.0%	61.8%	68.2%	64.6%	64.6%	62.5%	59.3%	58.9%	53.8%	53.8%	.I
not best as 70 of capital		20.070		00.070	47.470	40.570		44.070	40.070	40.070	04.070	01.070	00.270	04.070	04.070	02.070	00.070	00.070	00.070	00.070	
Cash and equivalents per share	\$2.65	\$1.25	\$1.52	\$0.55	\$0.59	\$0.47	\$0.52	\$0.64	\$0.61	\$0.61	\$0.64	\$0.60	\$0.58	\$0.60	\$0.60	\$0.60	\$0.60	\$0.60	\$0.60	\$0.60	
Net Cash and equivalents per share	(\$0.82)	(\$4.00)	(\$3.92)	(\$12.83)	(\$12.50)	(\$12.84)	(\$11.83)	(\$12.11)	(\$14.48)	(\$14.48)	(\$21.97)	(\$21.42)	(\$25.10)	(\$24.79)	(\$24.79)	(\$25.12)	(\$22.89)	(\$24.17)	(\$21.58)	(\$21.69)	-
Debt to TTM EBITDA	1.58x	1.76x	1.39x	2.48x	2.41x	2.43x	2.06x	1.90x	1.98x	1.98x	2.51x	2.28x	2.41x	2.09x	2.09x	2.01x	1.78x	1.79x	1.57x	1.57x	
DOID NODAT (A . A A . NIDOL)	4 400	0.50/	5.00/	5.00/	4.707					0.007					44.00/					40.007	1
ROIC: NOPAT / (Avg. Assets- Avg. NIBCL)	1.4%	3.5%	5.6%	5.8%	4.7%					8.0%					11.2%				J	13.0%	1
ROIC ex Cash	1.7%	4.0%	6.0%	6.1%	4.7%					8.1%					11.4%				J	13.1%	1
ROIC ex Cash and Intangibles	2.7%	6.3%	8.7%	9.1%	7.4%					12.1%					16.1%					18.2%	1
																			J		1
Return on Equity (Avg.)	1.5%	4.3%	10.6%	8.7%	8.8%					17.0%					29.5%					31.4%	-1

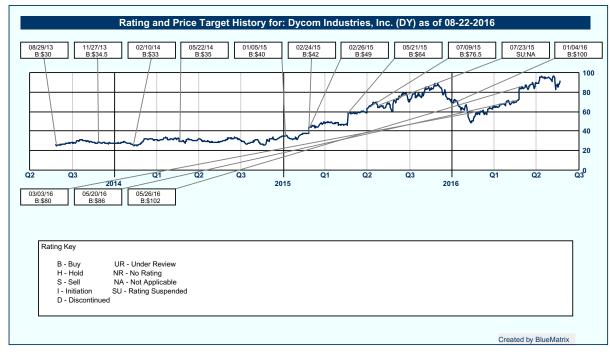
DYCOM Industries, Inc. Balance Sheet (\$ in mils, except per share data)

	2010A	2011A	2012A	2013A	2014A	1Q15A	2Q15A	3Q15A	4Q15A	2015A	1Q16A	2Q16A	3Q16A
ASSETS													
ASSETS Current Assets:													
Cash & Cash Equivalents	103.3	44.8	52.6	18.6	20.7	16.5	18.4	22.5	21.3	21.3	21.8	20.2	19.3
Accounts Receivable	110.1	138.6	141.8	252.2	272.7	296.8	267.3	265.8	315.1	315.1	361.6	318.3	355.3
Costs and estimated earnings in excess of billings	110.1	130.0	127.3	204.3	230.6	257.0	212.3	248.0	274.7	274.7	333.7	302.4	358.2
Inventories	16.1	20.6	26.3	36.0	49.1	47.0	43.8	45.2	48.7	48.7	57.7	57.9	61.3
Deferred Tax Asset	14.9	16.0	15.6	15.9	16.8	21.0	18.7	19.3	20.6	20.6	22.0	19.2	20.6
Income tax receivables			4.9	2.5	0.0	20			20.0	20.0	22.0	29.3	15.3
Securities available for sale					-								
Short term investments													
Prepaid Exp. Other Current Assets	78.3	110.5	8.5	10.6	12.7	14.5	23.8	20.1	16.2	16.2	20.9	19.4	18.7
Total Current Assets	322.8	330.3	376.9	540.2	602.7	652.7	584.4	620.9	696.6	696.6	817.6	766.6	848.8
Property, Plant and Equipment, net	136.0	149.4	158.2	202.7	205.4	206.1	207.1	226.3	231.6	231.6	265.5	290.5	309.8
Goodwill and other intangibles, net	207.5	231.1	174.8	393.1	385.2	387.3	383.6	379.5	392.6	392.6	415.6	410.9	406.3
Accounts receivables net													
Securities available for sale		0.0											
Deferred tax asset													
Other Assets	13.3	13.9	62.2	17.3	16.0	16.0	18.4	30.4	38.1	38.1	32.8	35.5	34.4
TOTAL ASSETS	679.6	724.8	772.2	1153.3	1209.3	1262.2	1193.5	1257.1	1358.9	1358.9	1531.5	1503.5	1599.3
LIABILITIES & EQUITY													
Current Liabilities:													
Current maturities of long-term debt	0.0	0.2	0.1	7.8	10.9	11.7	12.5	0.0	3.8	3.8	5.6	5.6	9.4
Accounts payable and other accrued expenses	25.9	39.4	36.8	78.0	63.3	66.4	52.1	64.5	71.8	71.8	93.4	70.8	93.0
Billings in excess of costs	0.4	0.7	1.5	13.8	13.9	14.0	16.4	14.3	16.9	16.9	12.4	14.3	11.1
Accrued Self Insurance claims	28.1	26.1	25.2	29.1	32.3	33.5	34.2	38.0	35.8	35.8	38.1	37.5	39.4
Income Taxes payable													
Customer advances													
Other current liabilities	42.8	52.0	50.9	70.3	76.1	86.9	63.0	78.2	98.4	98.4	102.8	73.5	89.7
Total Current Liabilities	97.2	118.5	114.6	198.9	196.5	212.6	178.2	195.0	226.7	226.7	252.3	201.7	242.5
Long-term debt	135.4	187.6	187.5	444.2	446.9	455.6	421.4	446.7	521.8	521.8	636.0	612.5	724.0
Accrued self Insured Claims	24.8	23.3	23.6	27.3	33.8	36.2	38.3	39.5	51.5	51.5	49.9	51.0	51.3
Deferred tax liabilities	24.2	39.9	49.5	48.6	42.3	43.0	45.6	48.8	47.4	47.4	45.0	69.6	75.6
Other Liabilities	3.4	3.6	4.1	6.0	4.9	5.2	5.1	4.9	4.2	4.2	4.4	4.5	4.1
Total Liabilities	285.0	372.9	379.3	724.9	724.3	752.7	688.7	734.9	851.7	851.7	987.6	939.3	1097.5
Stockholders Equity:													
Total Stockholders' Equity	394.6	351.9	392.9	428.4	484.9	509.5	504.9	522.2	507.2	507.2	543.9	564.2	501.7
LIABILITIES & STOCKHOLDERS' EQUITY	679.6	724.8	772.2	1153.3	1209.3	1262.2	1193.6	1257.1	1358.9	1358.9	1531.5	1503.5	1599.3
Course: Company reports	0.610	124.0	112.2	1100.0	1209.3	1202.2	1193.0	1237.1	1330.9	1330.9	1001.0	1303.3	1000.0

Source: Company reports

Important Disclosures and Certifications

I, Noelle C. Dilts, certify that the views expressed in this research report accurately reflect my personal views about the subject securities or issuers; and I, Noelle C. Dilts, certify that no part of my compensation was, is, or will be directly or indirectly related to the specific recommendations or views contained in this research report. Our European Policy for Managing Research Conflicts of Interest is available at www.stifel.com.



For a price chart with our ratings and any applicable target price changes for DY go to http://sf.bluematrix.com/bluematrix/Disclosure?ticker=DY

The rating and target price history for Dycom Industries, Inc. and its securities prior to February 25, 2015, on the above price chart reflects the research analyst's views under a different rating system than currently utilized at Stifel. For a description of the investment rating system previously utilized go to.www.stifel.com.

Stifel or an affiliate expects to receive or intends to seek compensation for investment banking services from Dycom Industries, Inc. in the next 3 months.

Stifel or an affiliate is a market maker or liquidity provider in the securities of Dycom Industries, Inc..

The equity research analyst(s) responsible for the preparation of this report receive(s) compensation based on various factors, including Stifel's overall revenue, which includes investment banking revenue.

Our investment rating system is three tiered, defined as follows:

BUY -We expect a total return of greater than 10% over the next 12 months with total return equal to the percentage price change plus dividend yield.

HOLD -We expect a total return between -5% and 10% over the next 12 months with total return equal to the percentage price change plus dividend yield.

SELL -We expect a total return below -5% over the next 12 months with total return equal to the percentage price change plus dividend yield.

Occasionally, we use the ancillary rating of **SUSPENDED** (SU) to indicate a long-term suspension in rating and/or target price, and/or coverage due to applicable regulations or Stifel policies. **SUSPENDED** indicates the analyst is unable to determine a "reasonable basis" for rating/target price or estimates due to lack of publicly available information or the inability to quantify the publicly available information provided by the company and it is unknown when the outlook will be clarified. **SUSPENDED** may also be used when an analyst has left the firm.

Of the securities we rate, 49% are rated Buy, 42% are rated Hold, 3% are rated Sell and 6% are rated Suspended.

Within the last 12 months, Stifel or an affiliate has provided investment banking services for 15%, 7%, 0% and 13% of the companies whose shares are rated Buy, Hold, Sell and Suspended, respectively.

Additional Disclosures

Please visit the Research Page at www.stifel.com for the current research disclosures and respective target price methodology applicable to the companies mentioned in this publication that are within Stifel's coverage universe. For a discussion of risks to target price please see our stand-alone company reports and notes for all Buy-rated and Sell-rated stocks.

The information contained herein has been prepared from sources believed to be reliable but is not guaranteed by us and is not a complete summary or statement of all available data, nor is it considered an offer to buy or sell any securities referred to herein. Opinions expressed are subject to change without notice and do not take into account the particular investment objectives, financial situation or needs of individual investors. Employees of Stifel, or its affiliates may, at times, release written or oral commentary, technical analysis or trading strategies that differ from the opinions expressed within. Past performance should not and cannot be viewed as an indicator of future performance.

As a multi-disciplined financial services firm, Stifel regularly seeks investment banking assignments and compensation from issuers for services including, but not limited to, acting as an underwriter in an offering or financial advisor in a merger or acquisition, or serving as a placement agent in private transactions.

Affiliate Disclosures

"Stifel", includes Stifel Nicolaus & Company ("SNC"), a US broker-dealer registered with the United States Securities and Exchange Commission and the Financial Industry National Regulatory Authority and Stifel Nicolaus Europe Limited ("SNEL"), which is authorized and regulated by the Financial Conduct Authority ("FCA"), (FRN 190412) and is a member of the London Stock Exchange.

Registration of non-US Analysts: Any non-US research analyst employed by SNEL contributing to this report is not registered/qualified as a research analyst with FINRA and is not an associated person of the US broker-dealer and therefore may not be subject to FINRA Rule 2241 or NYSE Rule 472 restrictions on communications with a subject company, public appearances, and trading securities held by a research analyst account.

Country Specific and Jurisdictional Disclosures

United States: Research produced and distributed by SNEL is distributed by SNEL to "Major US Institutional Investors" as defined in Rule 15a-6 under the US Securities Exchange Act of 1934, as amended. SNEL is a non-US broker-dealer and accordingly, any transaction by Major US Institutional Investors in the securities discussed in the document would need to be effected by SNC. SNC may also distribute research prepared by SNEL directly to US clients that are professional clients as defined by FCA rules. In these instances, SNC accepts responsibility for the content. Research produced by SNEL is not intended for use by and should not be made available to retail clients, as defined by the FCA rules.

Canadian Distribution: Research produced by SNEL is distributed in Canada by SNC in reliance on the international dealer exemption. This material is intended for use only by professional or institutional investors. None of the investments or investment services mentioned or described herein is available to other persons or to anyone in Canada who is not a "permitted client" as defined under applicable Canadian securities law.

UK and European Economic Area (EEA): This report is distributed in the EEA by SNEL, which is authorized and regulated in the United Kingdom by the FCA. In these instances, SNEL accepts responsibility for the content. Research produced by SNEL is not intended for use by and should not be made available to non-professional clients.

The complete preceding 12-month recommendations history related to recommendation(s) in this research report is available at https://stifel2.bluematrix.com/sellside/MAR.action

Brunei: This document has not been delivered to, registered with or approved by the Brunei Darussalam Registrar of Companies, Registrar of International Business Companies, the Brunei Darussalam Ministry of Finance or the Autoriti Monetari Brunei Darussalam. This document and the information contained within will not be registered with any relevant Brunei Authorities under the relevant securities laws of Brunei Darussalam. The interests in the document have not been and will not be offered, transferred, delivered or sold in or from any part of Brunei Darussalam. This document and the information contained within is strictly private and confidential and is being distributed to a limited number of accredited investors, expert investors and institutional investors under the Securities Markets Order, 2013 ("Relevant Persons") upon their request and confirmation that they fully understand that neither the document nor the information contained within have been approved or licensed by or registered with the Brunei Darussalam Registrar of Companies, Registrar of International Business Companies, the Brunei Darussalam Ministry of Finance, the Autoriti

Monetari Brunei Darussalam or any other relevant governmental agencies within Brunei Darussalam. This document and the information contained within must not be acted on or relied on by persons who are not Relevant Persons. Any investment or investment activity to which the document or information contained within is only available to, and will be engaged in only with Relevant Persons.

In jurisdictions where Stifel is not already licensed or registered to trade securities, transactions will only be affected in accordance with local securities legislation which will vary from jurisdiction to jurisdiction and may require that a transaction carried out in accordance with applicable exemptions from registration and licensing requirements. Non-US customers wishing to effect transactions should contact a representative of the Stifel entity in their regional jurisdiction except where governing law permits otherwise. US customers wishing to effect transactions should contact their US salesperson.

The recommendation contained in this report was produced at 23 August 2016 22:01EDT and disseminated at 23 August 2016 22:01EDT

Additional Information Is Available Upon Request

© 2016 Stifel. This report is produced for the use of Stifel customers and may not be reproduced, re-distributed or passed to any other person or published in whole or in part for any purpose without the prior consent of Stifel. Stifel, Nicolaus & Company, Incorporated, One South Street, Baltimore, MD 21202.