HEDGEYE

AMI JOSEPH

## HEDGEYE TECHNOLOGY SECTOR

LEGAL

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PERFORMANCE IN TECH BY SEGMENT

YoY Performance by Subsector
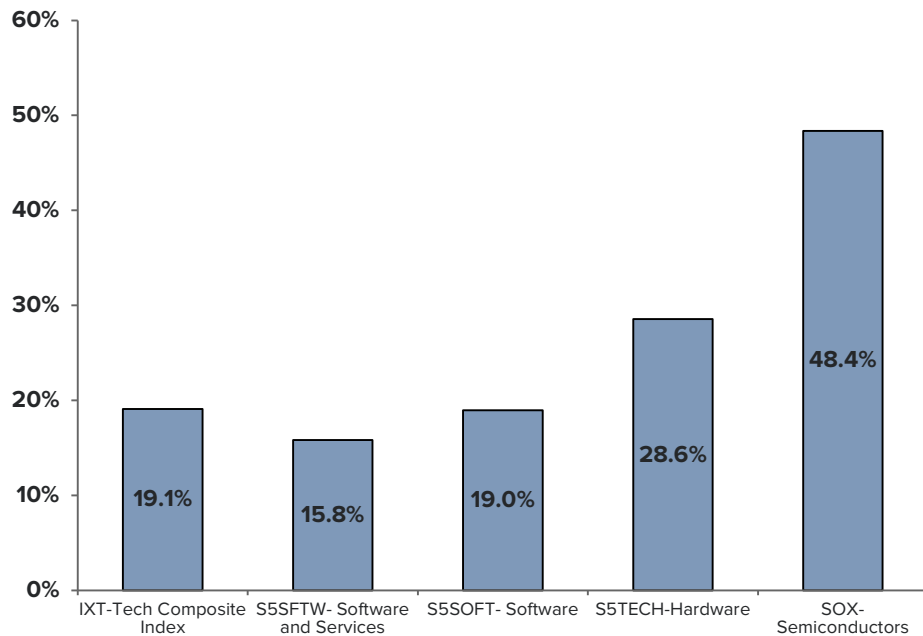
Sector Index 10-Year Performance, Price (Indexed March 2007=100)

3
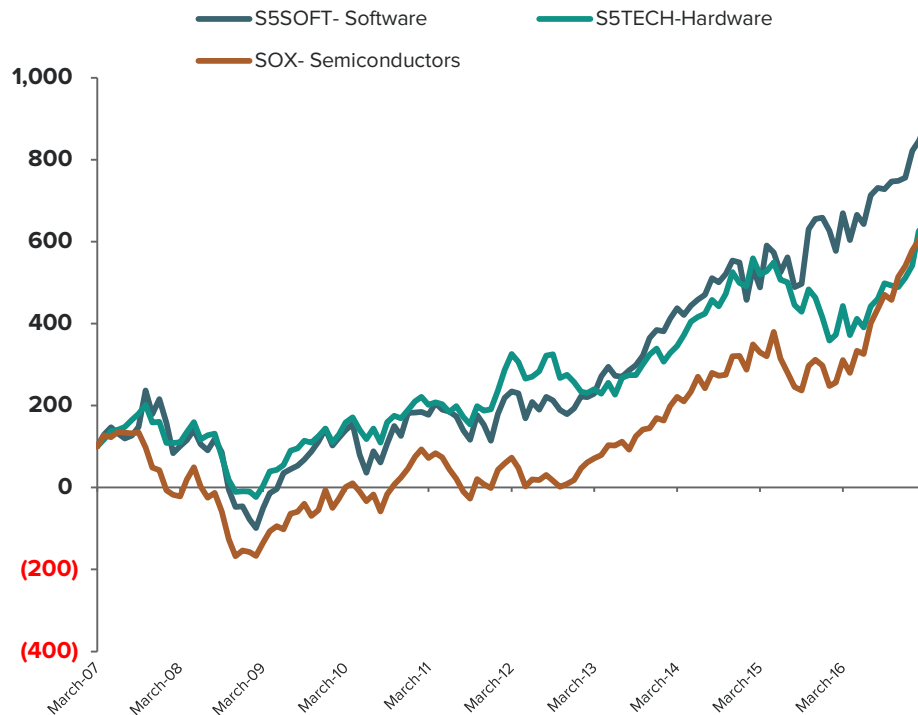
REFLATION SECTORS PEAK: Q1 OF 2017

S&P 500								**Q4 QTD**	**Estimates**			
SALES GROWTH (%)	**CQ1 15**	**CQ2 15**	**CQ3 15**	**CQ4 15**	**CQ1 16**	**CQ2 16**	**CQ3 16**	**CQ4 16***	**CQ1 17**	**CQ2 17**	**CQ3 17**	**CQ4 17**
All Securities	-2.7%	-3.4%	-3.7%	-4.0%	-1.9%	-0.3%	2.2%	4.9%	7.2%	5.3%	5.2%	5.1%
Energy	-34.0%	-31.8%	-34.4%	-34.4%	-29.3%	-24.2%	-14.9%	3.2%	34.8%	25.0%	28.6%	22.3%
Materials	-9.8%	-10.1%	-14.0%	-15.5%	-8.8%	-7.3%	-1.3%	4.0%	5.2%	5.1%	3.8%	3.8%
Industrials	-2.0%	-3.2%	-6.1%	-7.2%	-2.0%	-1.3%	2.1%	2.4%	2.5%	2.6%	3.2%	4.4%
Consumer Discretionary	1.8%	2.1%	3.7%	4.4%	6.3%	8.5%	7.9%	7.9%	6.6%	4.0%	3.4%	4.4%
Consumer Staples	2.5%	0.6%	0.5%	-0.4%	1.2%	0.7%	1.7%	2.8%	2.3%	3.2%	3.4%	3.8%
Health Care	10.3%	8.9%	9.5%	9.6%	9.2%	8.8%	6.9%	5.2%	5.6%	3.3%	4.0%	3.8%
Financials	2.0%	1.6%	0.1%	1.0%	-1.7%	0.7%	5.7%	5.7%	6.6%	2.2%	-0.3%	1.3%
Information Technology	6.0%	3.1%	1.1%	-5.3%	-6.8%	-3.9%	-0.7%	7.0%	7.8%	6.5%	5.3%	5.7%
Telecom	2.6%	2.4%	11.8%	12.0%	11.2%	9.6%	0.6%	-1.7%	-0.2%	0.1%	0.6%	1.0%
Utilities	-3.6%	-4.9%	-2.1%	-12.6%	-10.5%	-2.4%	3.5%	9.2%	9.8%	7.6%	4.2%	0.7%
Real Estate	4.4%	6.4%	7.5%	10.8%	11.4%	7.4%	6.7%	3.6%	2.8%	5.7%	3.7%	4.6%

Data Source: BBG　　　　　　　　　　　　　　　　　　　　　　　　　　*493/500 reported

| S&P 500								**Q4 QTD**	**Estimates**			
EPS Growth (%)	**CQ1 15**	**CQ2 15**	**CQ3 15**	**CQ4 15**	**CQ1 16**	**CQ2 16**	**CQ3 16**	**CQ4 16***	**CQ1 17**	**CQ2 17**	**CQ3 17**	**CQ4 17**
All Securities	1.5%	-1.2%	-3.8%	-6.8%	-8.0%	-3.9%	2.7%	6.4%	9.7%	9.1%	8.6%	13.0%
Energy	-56.7%	-56.5%	-57.5%	-72.6%	-109.6%	-81.6%	-62.5%	-9.0%	565.0%	401.3%	190.3%	151.7%
Materials	-0.4%	6.3%	-15.6%	-17.9%	-16.0%	-9.1%	5.2%	1.7%	9.6%	7.4%	7.3%	16.4%
Industrials	11.3%	-3.0%	-0.7%	-5.4%	-7.3%	-1.9%	-1.8%	-5.4%	-6.0%	0.4%	4.3%	13.5%
Consumer Discretionary	9.3%	9.0%	13.9%	9.4%	17.8%	10.3%	4.7%	4.3%	-1.5%	3.3%	7.3%	11.0%
Consumer Staples	3.6%	0.1%	-2.1%	-0.7%	1.2%	0.0%	6.1%	4.2%	2.6%	5.2%	5.2%	7.1%
Health Care	18.2%	15.1%	14.5%	11.0%	8.1%	4.8%	5.5%	4.7%	0.8%	1.8%	4.6%	8.4%
Financials	7.1%	2.7%	-8.6%	-5.3%	-14.2%	-7.0%	13.0%	6.6%	15.9%	9.7%	6.6%	17.4%
Information Technology	10.0%	6.6%	4.5%	-3.8%	-7.4%	-2.7%	4.6%	11.4%	14.8%	12.2%	8.1%	8.1%
Telecom	8.5%	10.2%	23.7%	27.8%	16.1%	3.5%	-1.5%	0.5%	-2.3%	5.4%	1.2%	-0.3%
Utilities	1.3%	3.0%	0.8%	-49.6%	-1.9%	8.9%	12.4%	110.5%	1.2%	-2.6%	-1.9%	12.0%
Real Estate	12.6%	11.7%	12.5%	14.5%	8.3%	7.1%	6.6%	11.4%	4.8%	4.7%	6.6%	0.9%

Data Source: BBG　　　　　　　　　　　　　　　　　　　　　　　　　　*493/500 reported
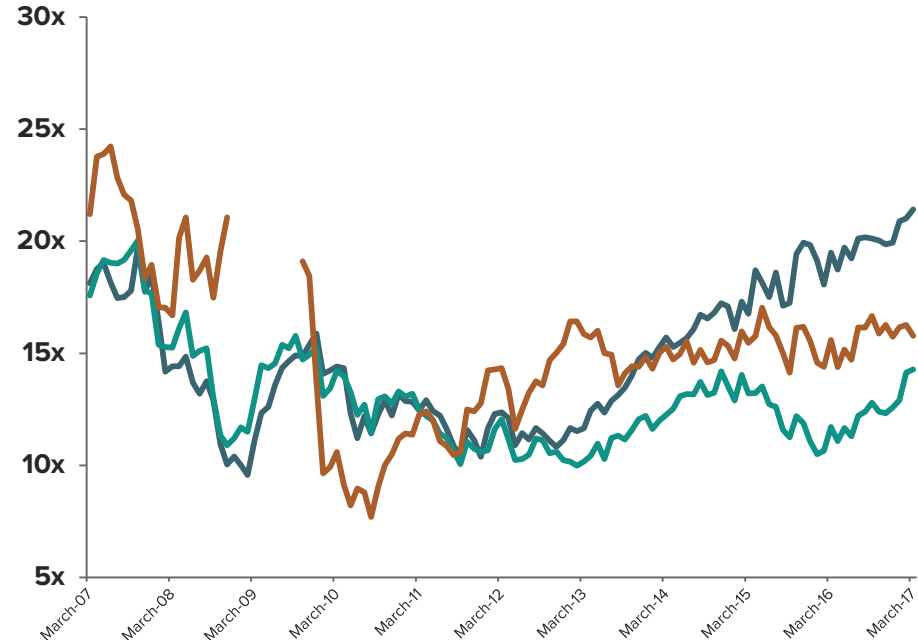
VALUATION METRICS

Sector Index 10-Year EV/S LTM

— S5SOFT- Software   — S5TECH-Hardware
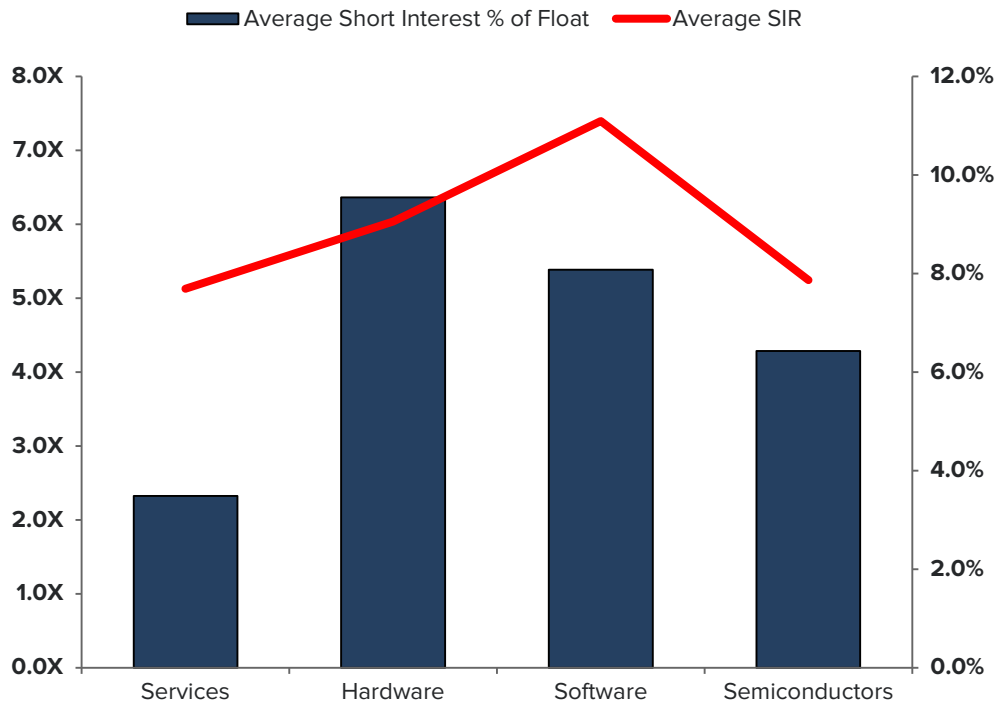— SOX- Semiconductors
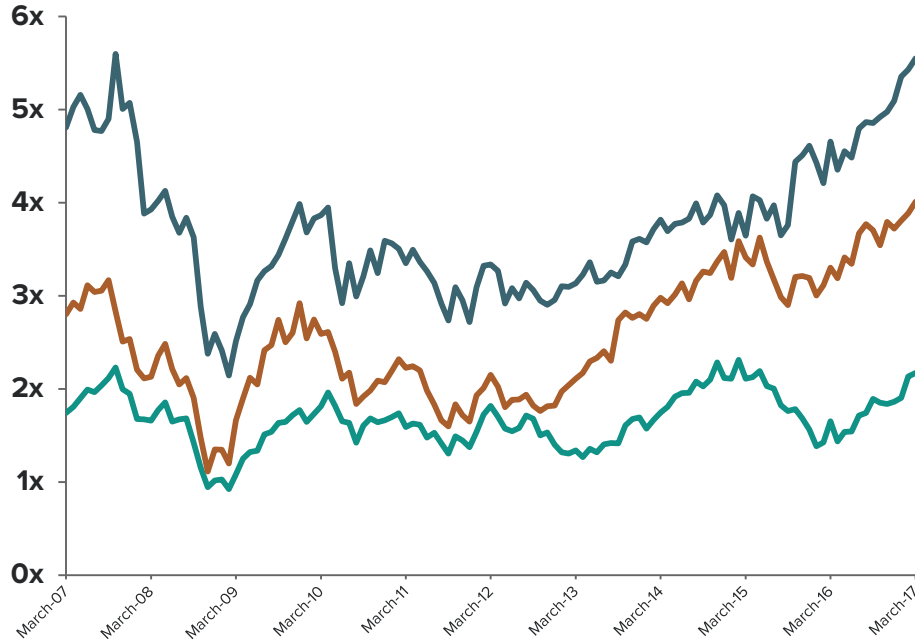
Sector Index 10-Year P/E NTM

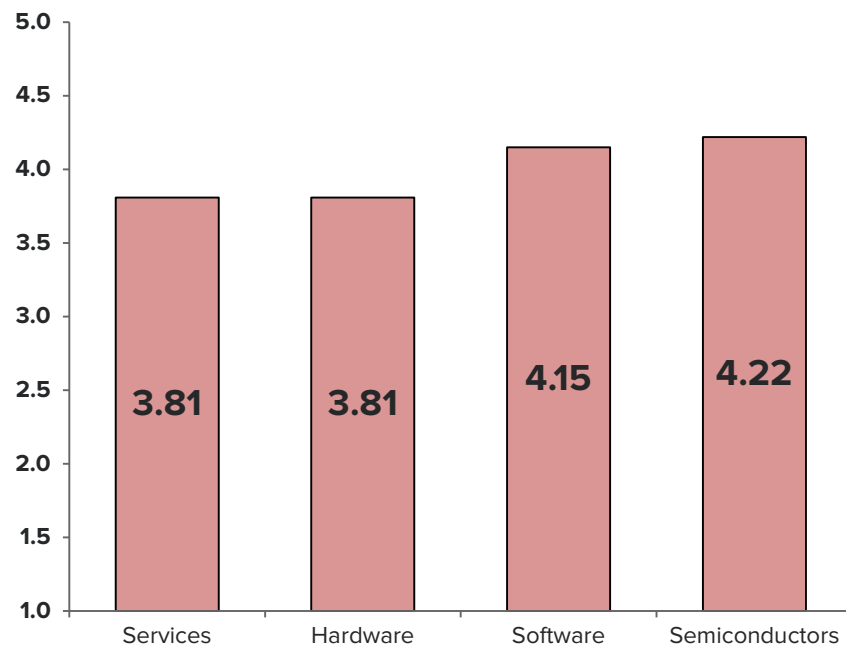— S5SOFT- Software   — S5TECH-Hardware
— SOX- Semiconductors

COVERAGE ANALYSIS

Average Short Interest Ratio and Short % of Float

Legend: Average Short Interest % of Float | Average SIR

Average Analyst Rating
(1- Strong Sell; 5 Strong Buy)

Services	Hardware	Software	Semiconductors
3.81	3.81	4.15	4.22

SENTIMENT ANALYSIS

HIGHEST SHORT INTEREST

	Ticker	Price	Market Cap	CY16 Return	Short % Float	Short Interest Ratio	Analyst Rating (Buy-Hold-Sell)
VMWARE	VMW	$91.73	$37,484	39.2%	33.4%	17.91X	16-18-0
UBIQUITI NETWORK	UBNT	$50.67	$4,166	82.4%	32.3%	13.63X	3-5-4
PAYCOM SOFTWARE	PAYC	$54.94	$3,268	20.9%	28.0%	22.28X	10-3-0
BLACK KNIGHT FINANCIAL	BKFS	$37.85	$5,859	14.3%	26.6%	40.95X	9-4-0
TESLA	TSLA	$263.16	$42,867	-11.0%	26.2%	7.67X	8-10-6
FITBIT	FIT	$5.40	$1,221	-75.3%	26.2%	4.78X	4-14-3
PURE STORAGE	PSTG	$9.90	$1,978	-27.4%	23.6%	4.66X	15-9-0
3D SYSTEMS CORP	DDD	$14.17	$1,603	52.9%	20.0%	9.70X	3-10-4
FIREEYE	FEYE	$12.28	$2,179	-42.6%	17.8%	6.49X	8-22-0
VISHAY INTERTECHNOLOGY	VSH	$16.15	$2,359	37.0%	16.0%	17.72X	1-3-2
SYNAPTICS	SYNA	$49.18	$1,738	-33.3%	15.9%	8.55X	9-7-1
PROOFPOINT	PFPT	$73.37	$3,176	8.7%	15.4%	14.60X	21-2-1
DIEBOLD NIXDORF	DBD	$29.30	$2,210	-13.1%	14.3%	9.09X	5-2-0
BLACKBAUD	BLKB	$76.14	$3,619	-2.1%	14.1%	28.35X	5-5-1
TERADATA CORP	TDC	$30.30	$3,965	2.8%	13.9%	11.24X	1-12-6
ADVANCED MICRO DEVICES	AMD	$13.70	$12,897	295.1%	13.7%	1.41X	10-13-3

LOWEST SHORT INTEREST

	Ticker	Price	Market Cap	CY16 Return	Short % Float	Short Interest Ratio	Analyst Rating (Buy-Hold-Sell)
MICROSOFT CORP	MSFT	$64.98	$502,135	15.1%	0.5%	1.91X	27-10-2
FLIR SYSTEMS	FLIR	$36.06	$4,918	30.9%	0.6%	1.25X	4-5-0
S&P GLOBAL	SPGI	$129.69	$33,533	10.5%	0.7%	1.44X	12-4-0
FACEBOOK	FB	$140.34	$405,580	9.9%	0.8%	1.36X	43-4-2
CISCO SYSTEMS	CSCO	$34.08	$170,668	15.2%	0.8%	2.32X	21-14-1
ADOBE SYSTEMS	ADBE	$127.70	$63,297	9.6%	0.9%	2.20X	22-8-0
SEMTECH CORP	SMTC	$34.35	$2,266	66.8%	0.9%	0.85X	5-1-0
MARKETAXESS HOLDINGS	MKTX	$187.70	$7,055	32.7%	0.9%	2.29X	3-5-0
INTUIT INC	INTU	$119.72	$30,623	20.2%	1.0%	1.62X	7-10-2
ALPHABET	GOOGL	$835.14	$569,757	1.9%	1.0%	2.54X	40-4-1
QUALCOMM	QCOM	$56.92	$84,073	35.1%	1.1%	1.78X	16-14-0
MAXIM INTEGRATED PRODUCTS	MXIM	$45.23	$12,786	5.0%	1.1%	1.68X	11-12-1
DST SYSTEMS	DST	$114.16	$3,578	-4.9%	1.1%	2.46X	4-1-0
APPLE	AAPL	$140.64	$737,873	12.5%	1.1%	2.40X	39-10-1
CACI INTERNATIONAL	CACI	$121.00	$2,952	34.0%	1.1%	3.46X	7-7-0
PLANTRONICS	PLT	$52.99	$1,758	17.0%	1.2%	2.82X	3-3-0

2016 RETURN ANALYSIS- BUYSIDE

**Average Return for CY16
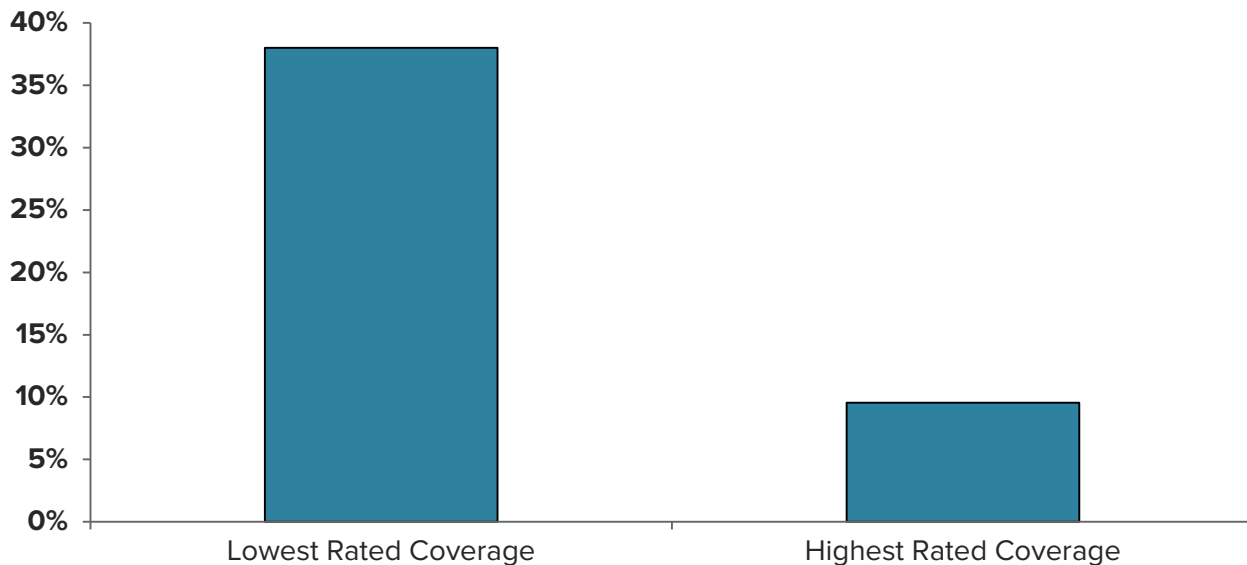(Top 30 Companies per Category)**

■ Without AMD
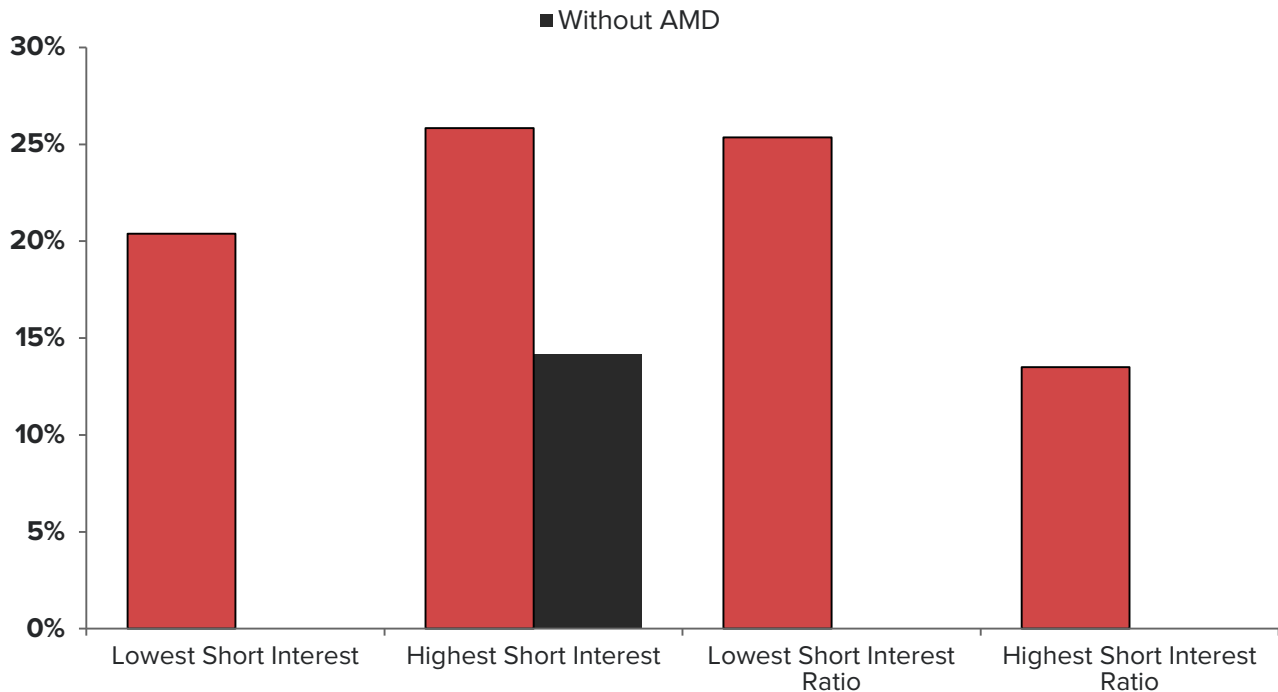
If a tech PM had shorted the 30 highest short interest stocks and longed the 30 lowest short interest stocks, **a 10% alpha return would have been netted in 2016**

Gap between the short interest ratio of the lowest and highest returning stocks was ~2x at the start of 2016

Total Return by Coverage Sentiment

The best returning stocks had the lowest rated coverages

If the tech PM had gone long the basket of lowest sellside rating and shorted the highest rated sellside stocks, **a 30% alpha return would have been netted**

RETURNS FROM TWO BASKETS

As 2017 unfolds, the growth group is looking like an M&A target list

Long Growth + Short Death   Long Death + Short Growth
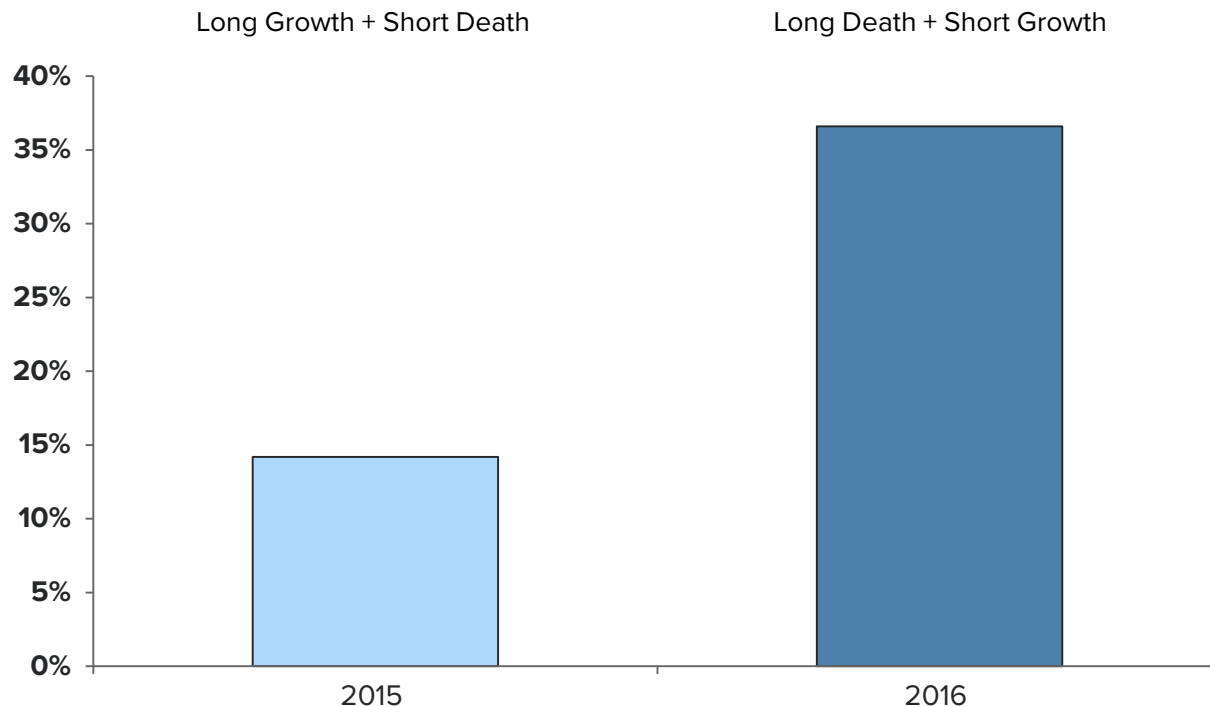
The growth basket, collected at random, included CRM, N, WDAY, SPLK, DATA, PANW, and NOW.

The death basket included EMC, ORCL, SAP, IBM, HP, CSCO, and MSFT.

In 2015, the growth basket put up an average +10% equity growth and the death basket fell -4%.

In 2016 that performance reversed hard, the death group rallied +17% and the growth bucket fell -19%.

SOME GOOD DEALS, SOME OBFUSCATE PROBLEMS

Value of Deals ■ — **Deal Count**

Recent M&A Includes:

Avago-Broadcom merger, then subsequent acquisition of Brocade

Qualcomm acquiring NXP

Oracle acquiring Netsuite

Microsoft acquiring LinkedIn

Softbank acquiring ARM

Analog acquiring Linear

Source: Bloomberg
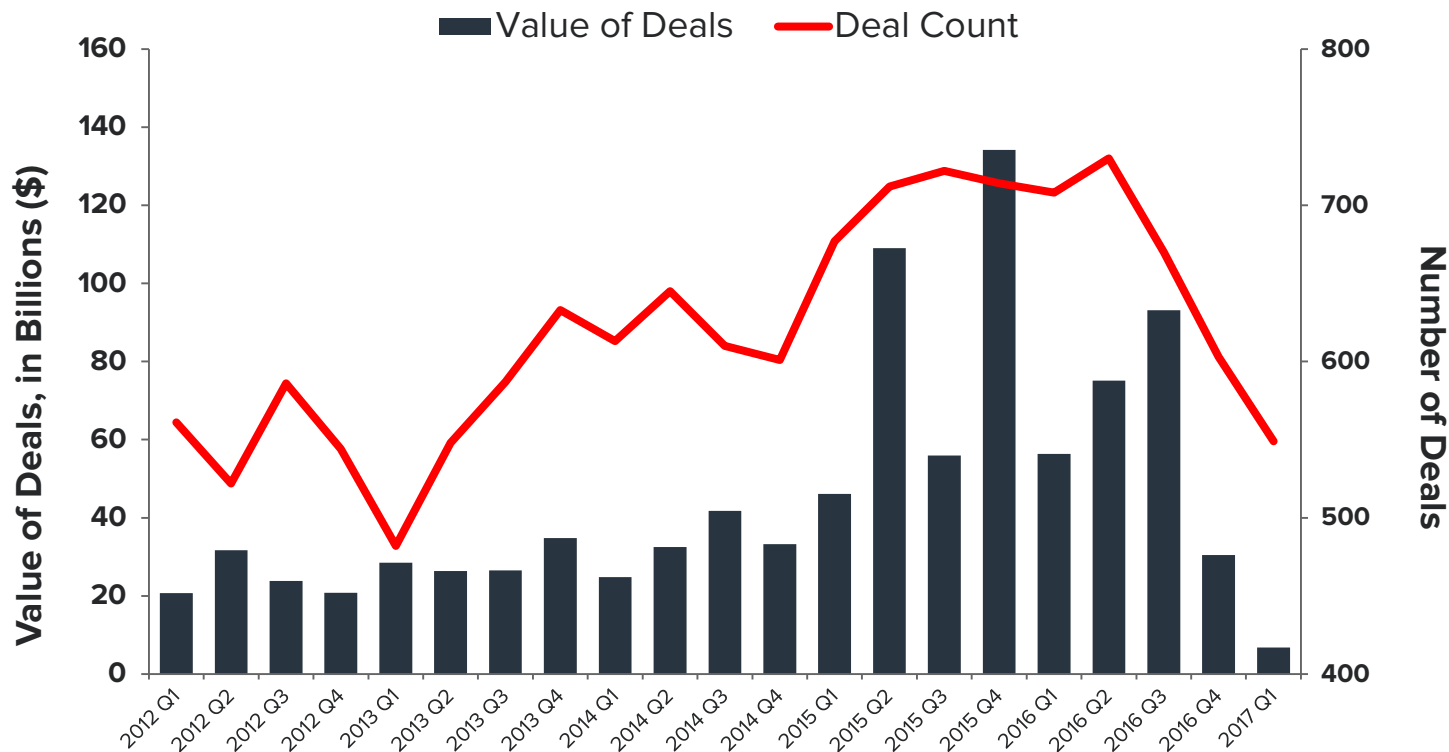
CATALYSTS FOR TECH INVESTING

WHAT WILL DRIVE PERFORMANCE

2017	Next 5 Years
• Launch of iPhone 8	• Heavy Consolidation Phase in Software
• Software M&A Heats Up	
• Tougher PC Comparisons	• Semiconductors Have a Relatively Tight Supply Period (with Bumps)
• Changes in Data Center Spending	
• Optical Networking Cycle	• Beginning of Apparent Cliffs in Legacy Data Center Technologies

LONG & SHORT LIST

TECHNOLOGY:

INVESTMENT IDEAS - LONGS	
MU	Micron Technology, Inc.
GLW	Corning Incorporated

INVESTMENT IDEAS - SHORTS	
SABR	Sabre Corporation
AVGO	Broadcom Ltd
INTC	Intel Corporation
MSCC	Microsemi Corporation

LONG BENCH	

SHORT BENCH	
AKAM	Akamai Technologies

SABRE CORP (NASD: SABR)

RED FLAGS

- Travel Network (70% of revenue) does not grow in-line with airline capacity, not as advertised

- No AHS (30% of revenue) upsell opportunity, not as advertised

- Organic growth rates for AHS below advertised rates

- We challenge other management mantras: not a peaceful oligopoly, AHS is not cloud SaaS, and they overstate recurring revenue to bond audiences

- Finally, we show that adjusted EBITDA is not a proxy for cash flow for SABR

CLOUD SAAS AND "CLOUD SAAS"

SAYING SAAS AND BEING SAAS
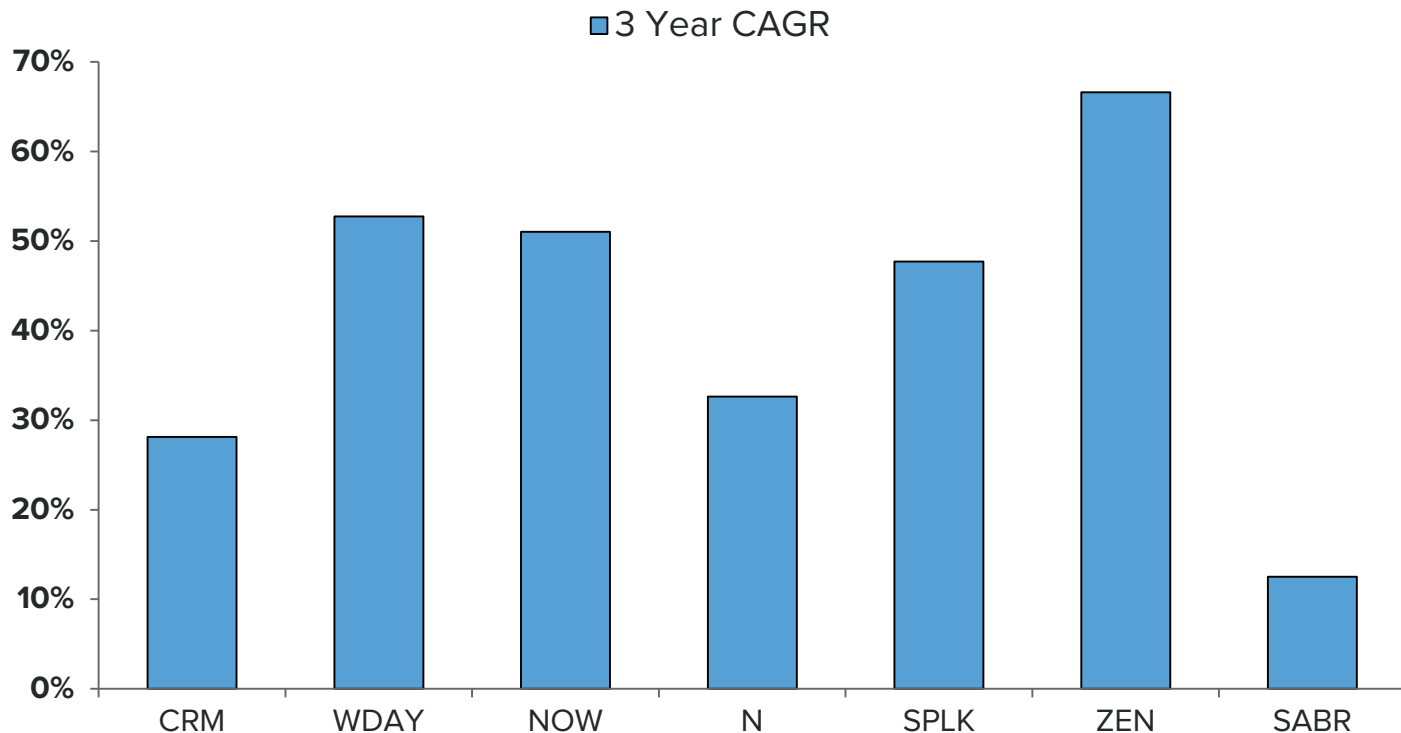
Since we associate the term with breakthrough software- using new approaches, disrupting old markets, and driving rapid growth- there are many would be usurpers to the term

Legend: ■ 3 Year CAGR

Chart categories (x-axis): CRM, WDAY, NOW, N, SPLK, ZEN, SABR

HAVE THEY DONE THIS BEFORE

Although for the year ended December 31, 2013, 94% and 84% of our Travel Network and Airline and Hospitality Solutions revenue, respectively, was Recurring Revenue in that it is largely tied to travel suppliers' transaction volumes rather than to their unit pricing for an airplane ticket, hotel room or other travel product (see "Method of Calculation"), **this revenue is generally not contractually committed to recur annually under our agreements with our travel suppliers**. *(Source: Filings, emphasis added)*

"This revenue is generally not contractually committed to recur annually under our agreements with our travel suppliers." –Risk Factors 10-K 2015

Number of Times "Recurring Revenue" Used in Filings

Category	Value
S-1	61
Form 424B4	46
2015 10-K	18
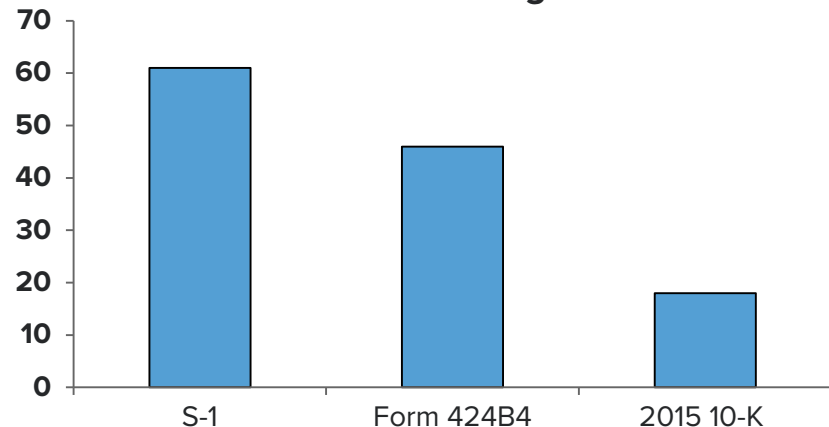
"Recurring Revenue" Used in Conferences during Q4CY16

Category	Value
Leveraged Finance Conference 1	6
Leveraged Finance Conference 2	5
Leveraged Finance Conference 3	6
Q3 Earnings	0
Equity Conference 1	0
Equity Conference 2	0
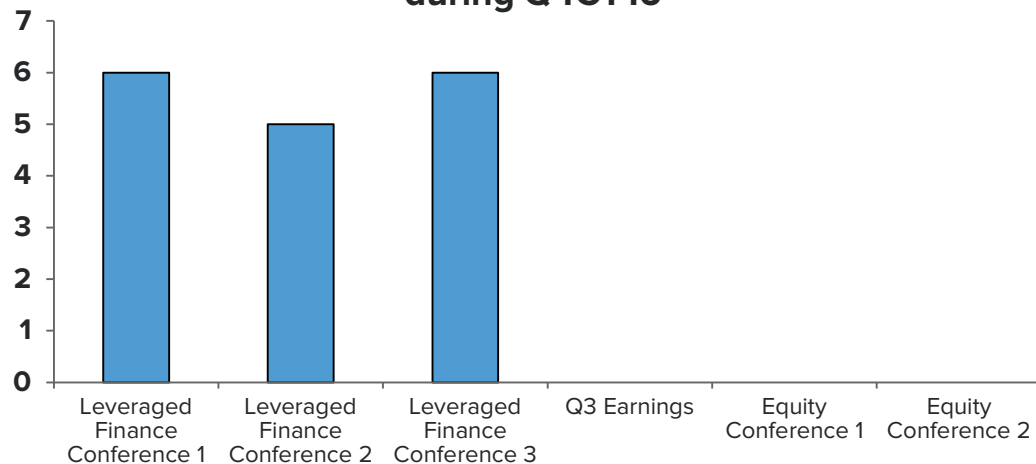
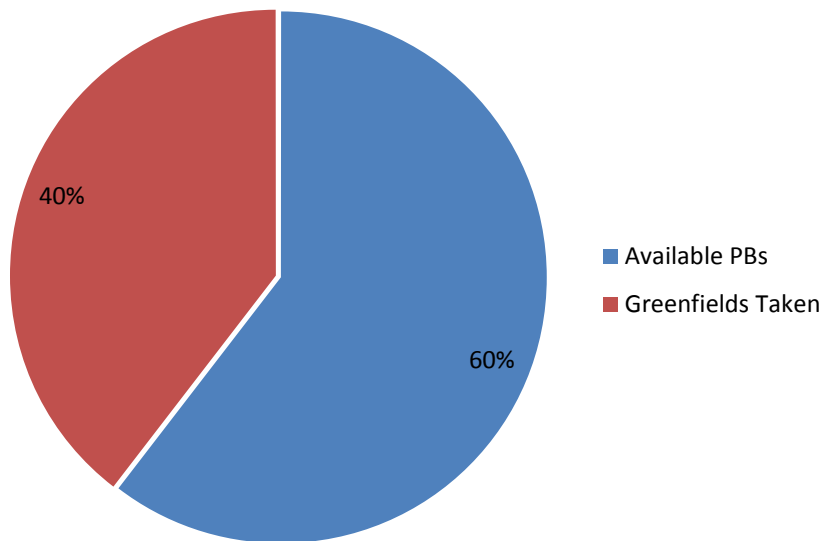# EXISTING WINS SHRINK TAM

650M PB MAY BE A STALE NUMBER
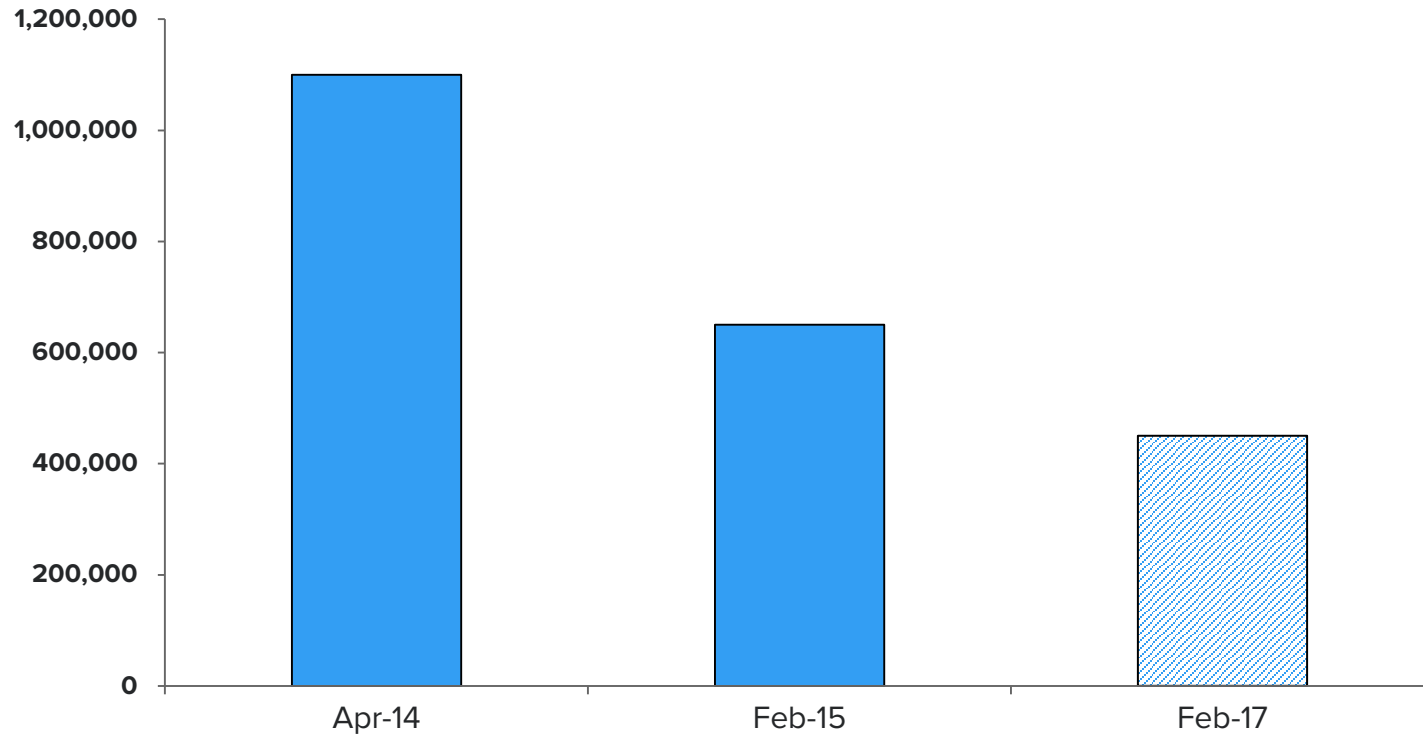
If SABR wins ~40% of the remaining TAM it could imply ~180m new PB wins over a ~3 year timeframe, which would be a 7% CAGR
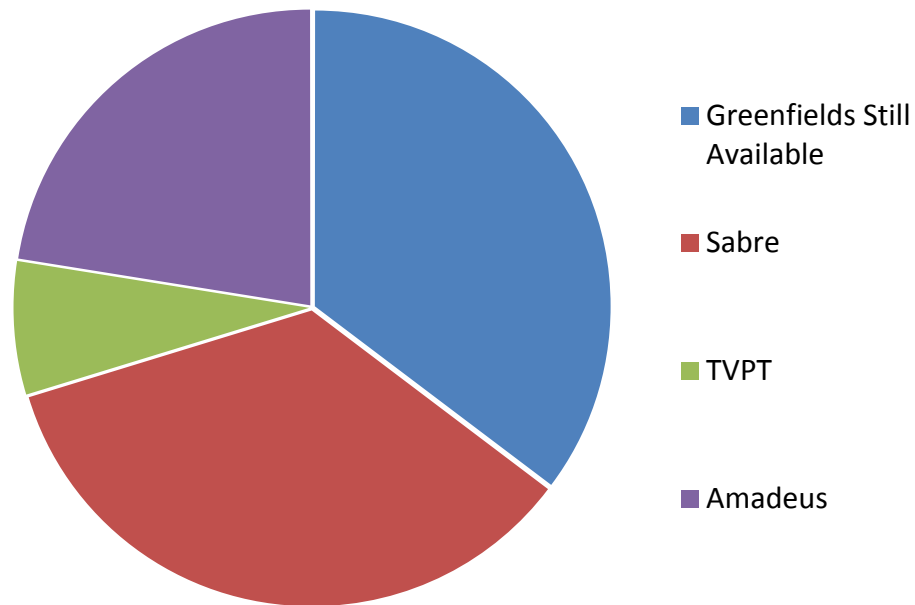
650M PB MAY BE A STALE TARGET

OUR ESTIMATE IS THAT 20-40% OF THE 650M ARE WON

Greenfield Becoming Less Green

- Available PBs
- Greenfields Taken

40%
60%

Shared Wins for the Greenfields

- Greenfields Still Available
- Sabre
- TVPT
- Amadeus

STORIES HELP OWNERS SELL SHARES

Selective use of the term recurring, conflation of the cloud SAAS term, tales of excess growth rates versus reality, have all helped P/E owners exit at a good price

Legend: TPG Group Holdings in SABR | Silver Lake Group in SABR | % of total shares outstanding
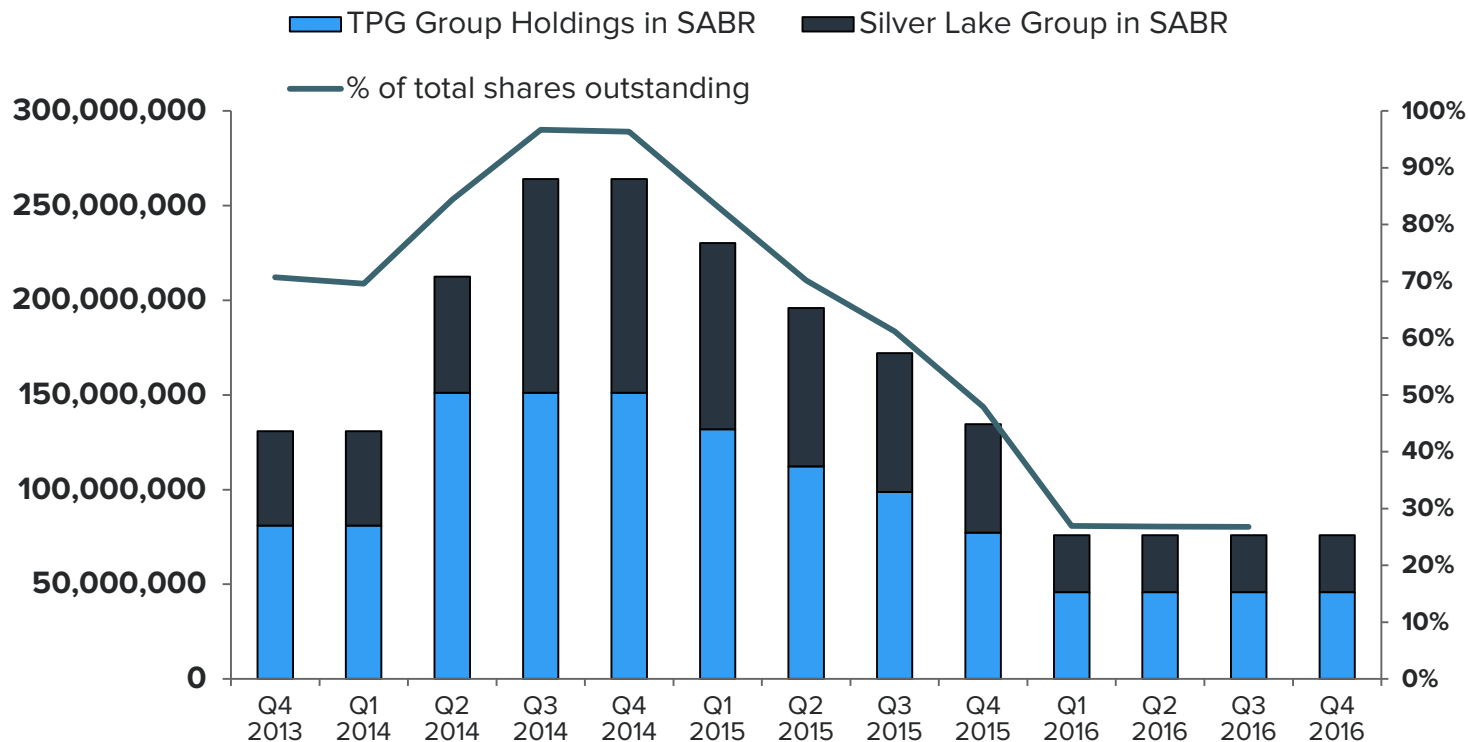
NOT A LOT OF WIGGLE ROOM

$3.4B DEBT, $270M CASH
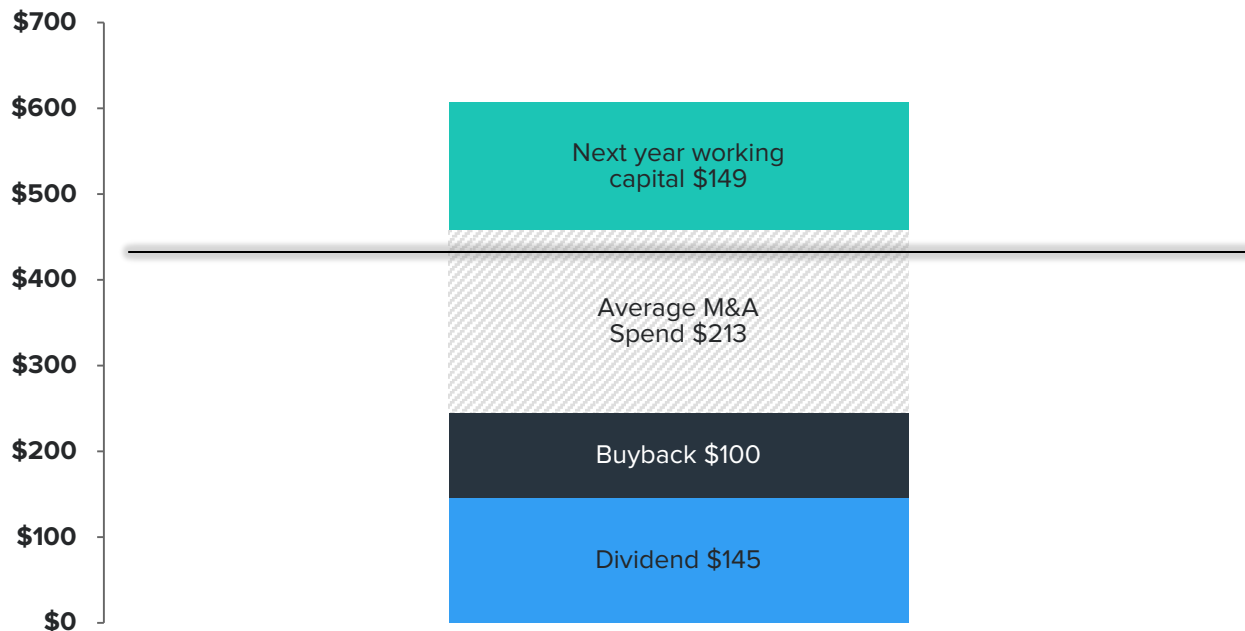
If OCF 1-timers are done, FCF grows in-line with revenue, and management had to increase net debt by ~$120m to fund a $46m dividend increase on a ~$360m FCF year, so how much wiggle room is there?

Chart (stacked bar, $ millions):
- Next year working capital $149
- Average M&A Spend $213
- Buyback $100
- Dividend $145

Y-axis: $0, $100, $200, $300, $400, $500, $600, $700

INTEL CORPORATION (NASD: INTC)

BUYBACK NOT TAILWIND ANYMORE

4.7% TRAILING EPS CAGR 2010-2016 WAS HELPED IN BIG WAY THROUGH BUYBACK
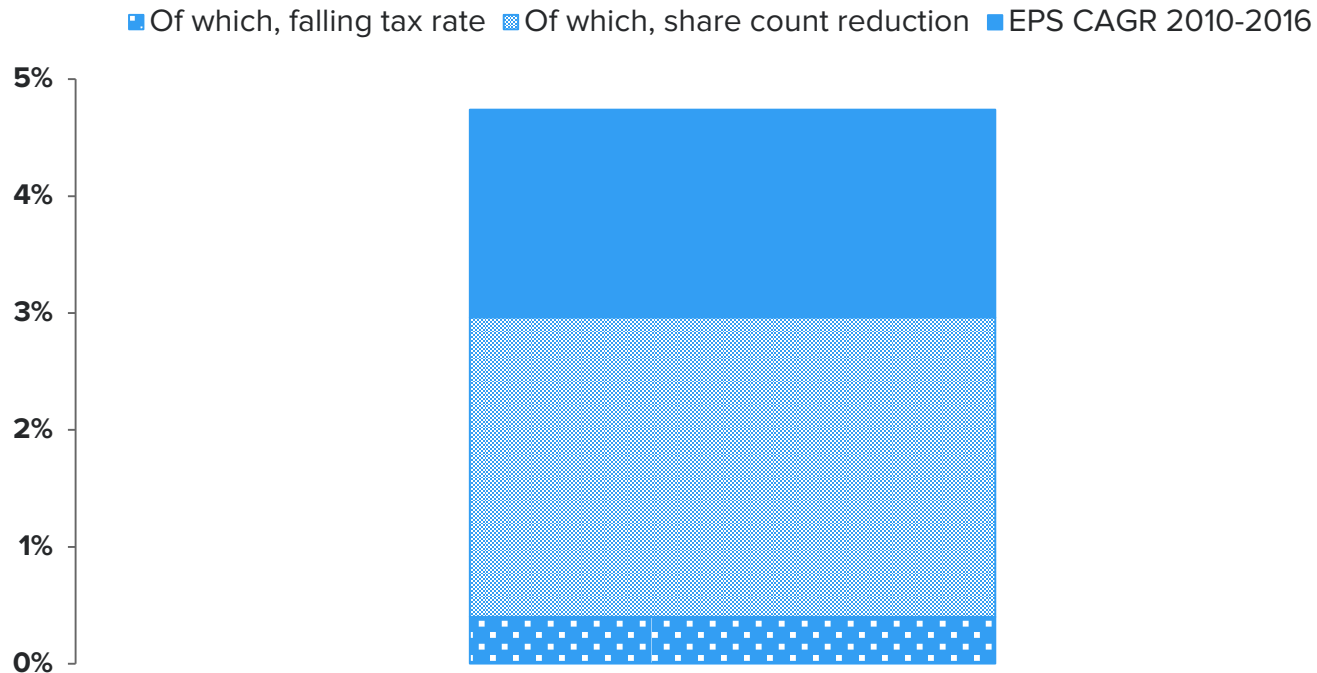
Share count reduction contributed 2.6% of the last 5 years EPS growth CAGR. OP +0.6%, Tax -5% CAGRS in that time.
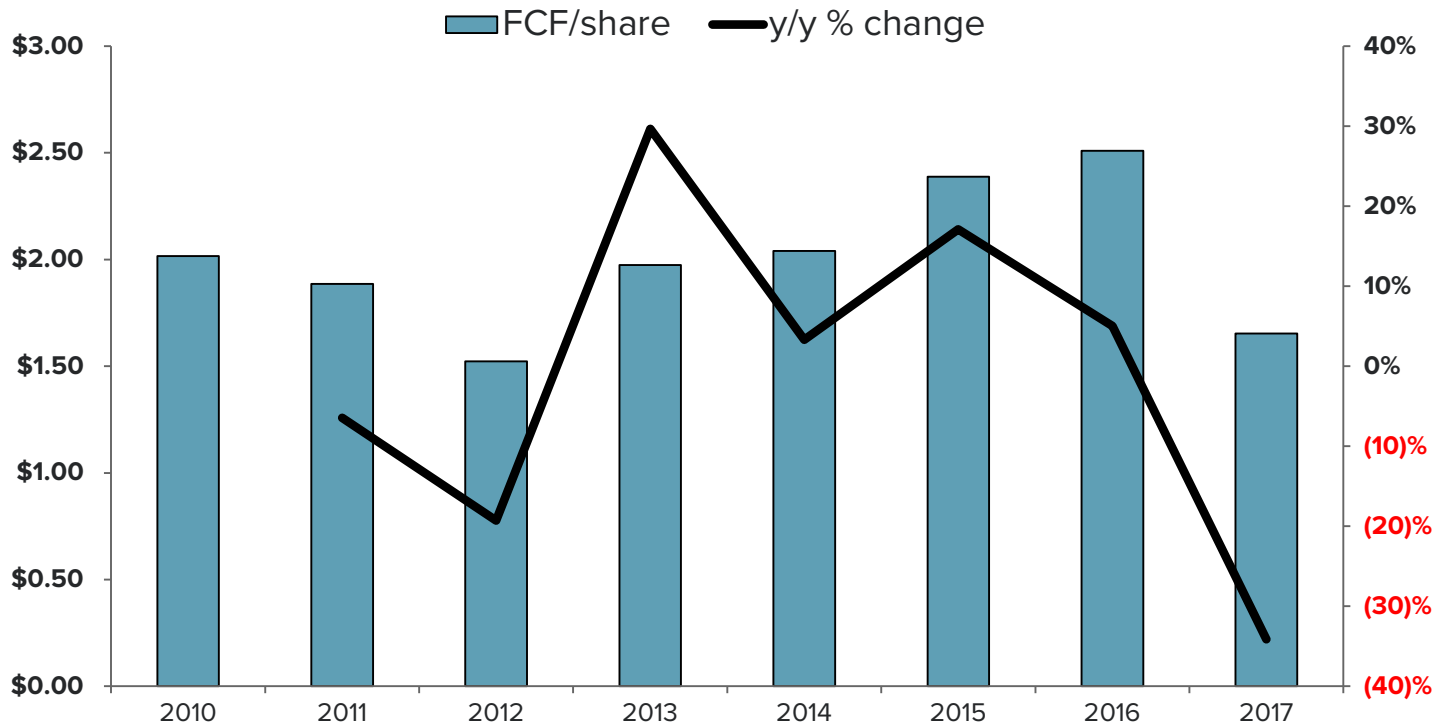
Legend: ■ Of which, falling tax rate ▨ Of which, share count reduction ■ EPS CAGR 2010-2016

CORNING INCORPORATED (NYSE: GLW)

LARGE BUYING YEARS SHIFT INTO REPLACEMENT PERIOD
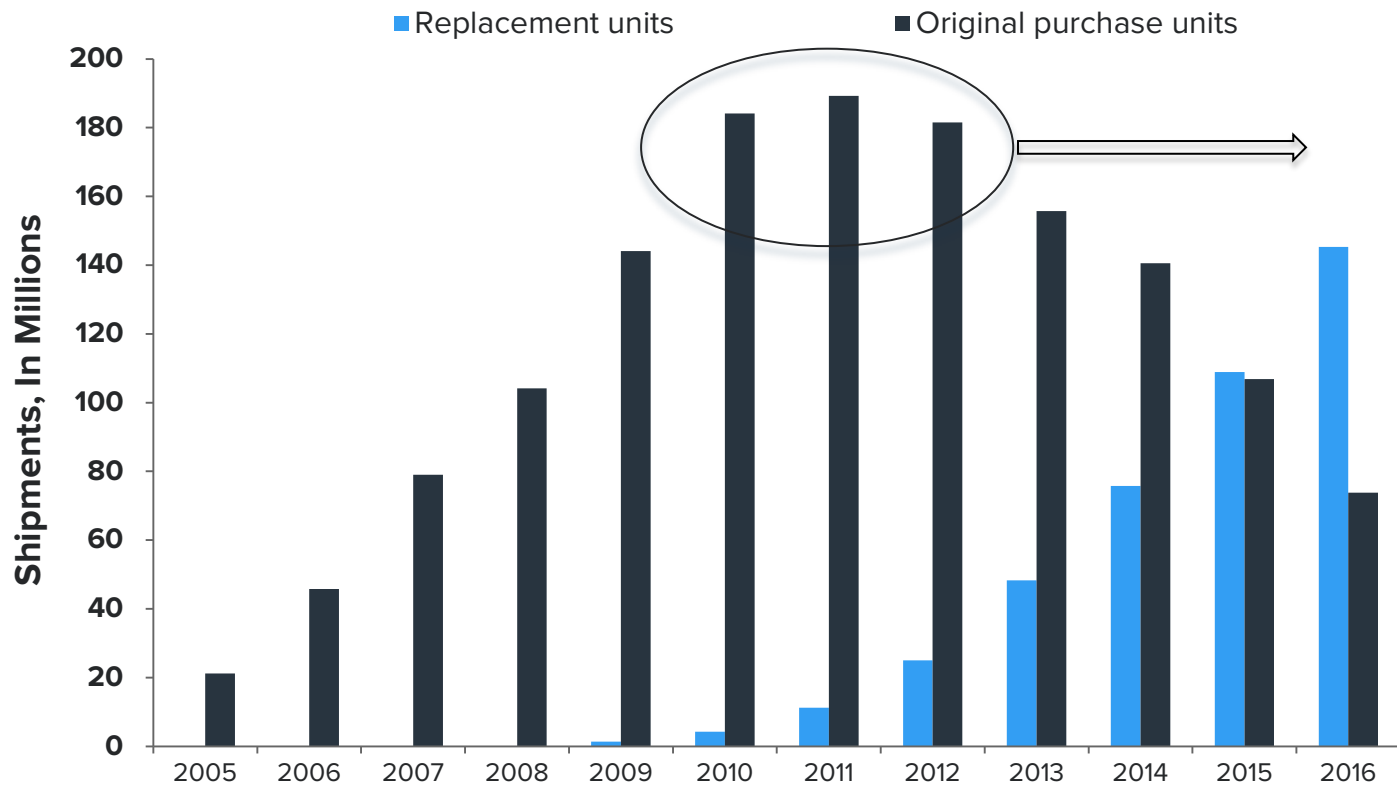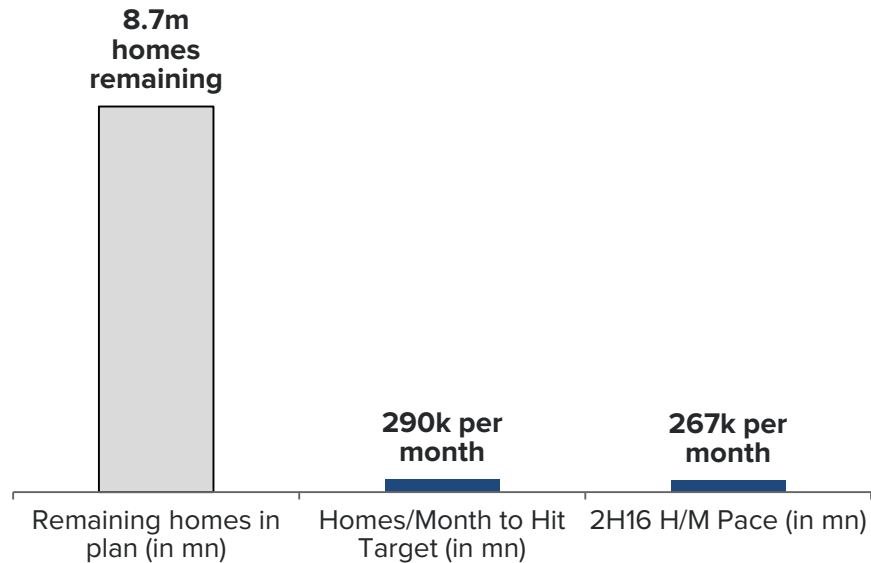

We are coming up on the replacement anniversary of the largest incremental buying years during the LCD TV penetration boom

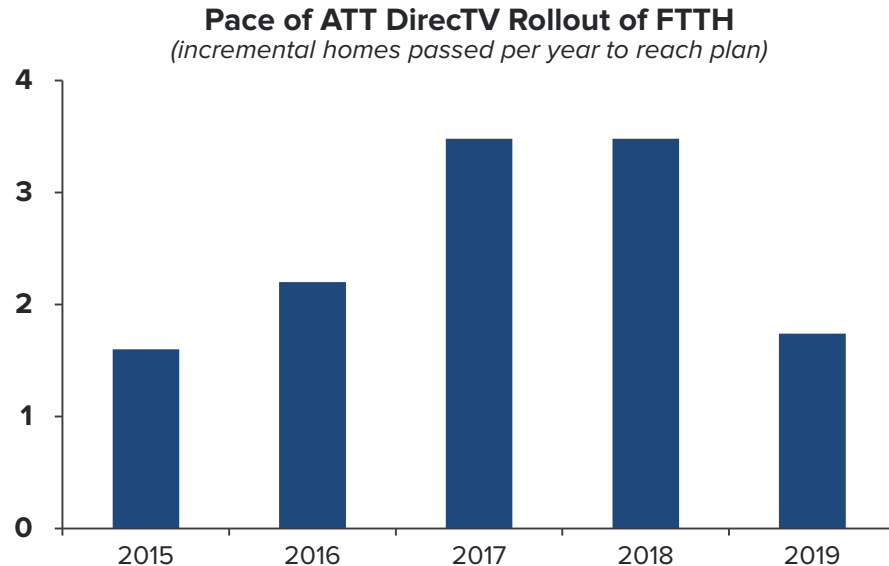To us this implies there is latent replacement cycle *potential*

All we need now is a catalyst!

SO HOW DOES AT&T ROLLOUT LOOK FROM HERE?

MATH FOR PROJECT COMPLETION

ASSUMING EVEN PACE

"By mid-2019 we plan to reach at least 12.5 million locations across 67 metro areas with our 100% fiber network." (March '17)

5% YIELD FOR M-S-D GROWER GETS OVER $38-48

AND WE ARE IN THE ZONE ON BOTTOM-UP MODELING AS WELL